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Special Issue
“EHMA 2023 Abstract Book”

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Introduction to the Special Issue

I feel greatly honoured to introduce this edition of the Abstract Book published in the framework of the 28th edition of the EHMA Annual Conference, EHMA 2023. Our conference is recognised as the preeminent annual meeting of health management thanks to the outstanding contributions of the many abstract presenters, and speakers who each year showcase inspiring developments that are achieving excellence in health management across Europe, and the rest of the world.

The EHMA 2023 Abstract Book is the result of an extensive collective effort. As every year, a group of distinguished reviewers from the EHMA membership and the network of the conference Co-Hosts join forces to assess the 280 submitted abstracts. By giving a voice to hundreds of researchers, practitioners, and experts, who have dedicated their careers to investigating the practice of health management, this publication supports the progress towards excellent health management for sustainable and resilient health systems across Europe.

The Board of Directors and I are committed to the EHMA mission of spreading knowledge on effective health management and leadership. We are pleased to have our Annual Conference as a powerful platform to achieve these objectives. As an EHMA member for several years, I have witnessed the conference's reputation, as the preeminent place to share cutting-edge research, innovation and best practices in health management, growing year by year among my peers.

Furthermore, this year, the EHMA Conference will bring together experts from across Europe and the world to discuss solutions on the future of health management and leadership. What makes our conference a unique event in health management is the strong emphasis on innovative practices, as well as the great attention that is paid to the exchange of knowledge on leading, managing and organising healthcare services, and leading health systems in times of constant transformation.

This year, the abstract book is published as a special edition of ProspettiveInOrganizzazione. This journal shares the EHMA mission to support the spread of knowledge on management, with a demonstrated interest in the healthcare sector. Furthermore, the periodical addresses Italian and international scholars and practitioners in business organisation.

The EHMA 2023 theme is 'Health management: sustainable solutions for complex systems'. Acknowledging the multifaceted complexity of today's health management, the intricacy of European health policy, and the new challenges to organisations and systems posed by digital transformation, climate change, and other threats to their sustainable development, the conference aims to facilitate the sharing of enduring, replicable, pioneering solutions. The EHMA Board and Scientific Advisory Committee have also identified the five tracks that shape the program, namely:

- Governance, leadership, and social responsibility
- Management, operations, and practice
- Human capital, professionalism, and people management
- Finance and economics
- Policy and regulations

Additionally, five topics were selected to help steer the focus:

- People-centred systems
- Health technology and digital transformation
- Workforce of the future
- Sustainable and resilient health systems
- Healthcare access, delivery, and outcomes.

The present publication provides a compendium of innovations that have been adopted across Europe and worldwide and serves as an overview of the current status and operations of European health systems and organisations, as well as a preview of forthcoming trends in health management. The abstract book is structured in a manner that mirrors the Conference programme. It consists of selected abstracts from a record 280 submissions and whose authors consented to their publication.

As a university professor, medical doctor, and President of the European Health Management Association (EHMA), I acknowledge the crucial role of research in informing, transforming, and ultimately improving the management of health systems, organisations, and service delivery. It is my hope that the ensuing pages will furnish all people involved in health management with a handbook of solutions and access to experts to consult. In doing so, this book will facilitate the sharing of best practices and the creation of connections between health leaders and managers throughout Europe.

Professor Sandra C. Buttigieg
EHMA President

ALTEMS has accepted with great enthusiasm EHMA's invitation to host the 28th Annual Conference of a scientific society that has left a tangible mark in the development of healthcare systems across Europe. ALTEMS shares at least three distinctive features with EHMA. The first is the significant focus of all activities and research on robust scientific evidence and on deep relevance for institutions. The second concerns an openness to a multiplicity of disciplines called to jointly develop adequate managerial models for healthcare systems. Finally, the third aspect is precisely the importance that the two organisations recognise in investing in long-lasting relationships with the many and diverse actors who populate health systems. We believe that guaranteeing health protection to as many citizens as possible in the European continent necessarily implies a deep awareness that the health sector is by all means an ecosystem, whose balance must be sought through strategic policies at national and European level. EHMA, as well as ALTEMS, cultivate relationships and collaborations with academic institutions, health institutions of member countries and the EU but also with the industry in the sector and third sector associations, such as those that represent the interests of patients and citizens.

The EHMA 2023 Annual Conference offers a unique opportunity for all those who believe in the power of relationships and in the diffusion of ideas to improve health systems and to promote the health of people.

We are looking forward to seeing you in Rome!

Prof. Americo Cicchetti
Director of ALTEMS

About the EHMA Conference

The EHMA Conference is Europe's preeminent conference on health management. Each year it gathers the full healthcare ecosystem, including health managers and leaders, healthcare professionals, researchers, academics, industry representatives, and decision-makers from Europe, and beyond.
The EHMA Conference provides a platform to discuss the latest health management research, tools and evidence from renowned researchers, academics and professionals. It is concerned on translating research into practice. It creates opportunities for dialogue and exchange on solutions to ensure the sustainability and resilience of health systems.

The EHMA 2023 Annual Conference

EHMA 2023 is the 28th edition of our Annual Conference.
This year's conference theme is 'Health management: sustainable solutions for complex systems'. Three years of the COVID pandemic have exposed gaps and vulnerabilities in European health systems, and the immense pressure on the health and care workforce. Sustainable solutions and strategic thinking are needed to drive the transformation of health systems.
EHMA 2023 is structured around five tracks that reflect the holistic practice of health management, and frame the lenses through which contemporary topics are analysed and discussed.

The European Health Management Association

The European Health Management Association (EHMA) strives for excellent health management for a healthy Europe by supporting the spread of knowledge on effective health management practices. Active since 1982, EHMA exists so that Europe's citizens and communities can benefit from quality, safe, value-based care and health systems.
Our focus is on enhancing the capacity and capabilities of health management to deliver high-quality healthcare and support the successful implementation of health policy. Our commitment is on supporting the provision of data and research findings for evidence-based decision-making and monitoring health policies and practices.
EHMA is the only membership organisation in Europe to bring together the full health management ecosystem, including health and hospital managers, healthcare professionals, researchers, academia, policy and decision-makers. We are a recognised and respected amplifier of best practices in the evolution of health management, and we provide an environment where evidence, challenge and experience are valued and complex debates on current topics can take place.

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Ms Caterina Bosio, Università Cattolica del Sacro Cuore, Italy
Prof Sandra C. Buttigieg, MD, University of Malta, Malta
Ms Agnese Cangini, Università Cattolica del Sacro Cuore, Italy
Prof Antonella Cifalinò, Università Cattolica del Sacro Cuore, Italy
Dr Concetta Cristofaro, Università Magna Graecia, Italy
Dr Rui Dang, Westminster International University in Tashkent, Uzbekistan
Mr Ranieri De Maria, Università Cattolica del Sacro Cuore, Italy
Mr Egidio De Mattia, Università Cattolica del Sacro Cuore, Italy
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Mr Andrea Di Pilla, Università Cattolica del Sacro Cuore, Italy
Ms Sofia Di Pippo, Università Cattolica del Sacro Cuore, Italy
Prof Fausto Di Vincenzo, Università degli Studi G. D'annunzio, Italy
Ms Giovanna Failla, Università Cattolica del Sacro Cuore, Italy
Ms Giulia Falasca, Università Cattolica del Sacro Cuore, Italy
Dr Alessandra Fiore, Università Cattolica del Sacro Cuore, Italy
Dr Irene Gabutti, Università Cattolica del Sacro Cuore, Italy
Dr Luca Giorgio, Università Cattolica del Sacro Cuore, Italy
Nabil Jamshed, MSc MBA, Guy's and St Thomas' NHS Foundation Trust, UK
Prof Dr Marija Jevtic, MD, University of Novi Sad, Serbia
Prof Axel Kaehne, Edge Hill University, United Kingdom
Prof Todorka Kostadinova, Medical University - Varna, Bulgaria
Dr Eszter Kovács, Semmelweis University, Hungary
Ms Roberta Laurita, Università Cattolica del Sacro Cuore, Italy
Prof Federico Lega, University of Milan, Italy
Dr Silvia Lopes, National School of Public Health (ENSP), Portugal
Prof Teresa Magalhães, National School of Public Health (ENSP), Portugal
Prof Ann Mahon, University of Manchester, United Kingdom
Prof Daniele Mascia, Università LUISS Guido Carli, Italy
Dr Pamela Mazzocato, Karolinska Institutet, Sweden
Prof Francesco Saverio Mennini, Università Tor Vergata, Italy
Dr Federica Morandi, Università Cattolica del Sacro Cuore, Italy
Prof Dr Henk Nies, Vilans, The Netherlands
Mario Cesare Nurchis, MD, Università Cattolica del Sacro Cuore, Italy
Dr Laura Paleari, A.Li.Sa. Azienda Ligure Sanitaria, Italy
Ms Sara Consilia Papavero, Università Cattolica del Sacro Cuore, Italy
Ms Alessandra Pernice, Università Cattolica del Sacro Cuore, Italy
Prof Manfred Pferzinger, IMC University of Applied Sciences Krems, Austria
Prof Rocco Reina, Università Magna Graecia, Italy
Mr Niccolo Salvini, Università Cattolica del Sacro Cuore, Italy
Prof Walter Sermeus, KU Leuven, Belgium
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Dr Walter Vesperi, Università Magna Graecia, Italy

Experiencing and witnessing disruptive behaviours towards nurses in COVID-19 teams, patient safety and errors in care

Dr Gillie Gabay[1], Dr Sigal Shfran-Tikva[2], Prof Avi Kluger[3], Ms Liron Asraf[4]

[1]Achva Academic College, Israel. [2]Jerusalem College of Technology, Israel. [3]The Hebrew University, Israel. [4]Ben-Gurion University of the Negev, Israel

Context

Disruptive behaviours (DBs) of nurse managers and team co-workers' are negatively associated with a perceived safe climate and are a risk factor for patients' safety. Yet, it is unknown whether and to what extent these effects were prevalent in COVID-19 wards and among witnesses of DBs.

Method

A questionnaire was distributed on social networks and completed by nurses in various Israeli healthcare organisations using snowball sampling between October and December 2021. The questionnaire included seven previously published measures and a question on whether the participant had worked in a COVID-19 ward. The minimal sample size by power analysis was 236. hypotheses were tested with correlations and structural equation modelling.

Results

DBs of nurse managers and team co-workers towards nurses were higher in COVID-19 teams. As hypothesised, DBs were negatively correlated with a safe climate and positively with patient safety (fewer errors). The jarring consequences of DBs towards nurses in work teams lead to anxiety, depression, anger, and frustration, in an environment of a continuing shortage of nurses, low job satisfaction, persisting burnout, and migration of highly qualified nurse specialists. Indeed, DBs by nurse managers have been associated with the poor psychological well-being of team nurses and their intention to quit. The data were consistent with a model suggesting that a safe climate is related to fewer DBs and DBs largely mediate the effects of a safe ward climate on errors. Surprisingly and importantly, the strongest predictor of errors, including preventable mortality, is witnessing DBs and not being a victim of DBs.

Discussion

This study linked a safe climate, DBs towards nurses, and patient safety. DBs towards nurses impede open communication and collaboration among team co-workers. To reduce preventable errors and improve patient safety, nursing managers must understand the importance of eradicating DBs through monitoring, training, and managing climate safety. A safe climate and zero tolerance to DBs by nurse managers must be regularly measured to enable the identification of high-risk situations of DBs and of safety issues that put patients at increased risk of errors in care. Nursing management is also called upon to foster an authentic leadership style, found to decrease DBs and provide nurses with a safe work environment significantly. Training should aim at listening, which alleviates DBs and contributes to the hospital's performance, patient compliance, and patient satisfaction. Improving patient safety is a pressing challenge related to leadership, safety climate, continuous quality improvement, and hospital sustainability.

Towards sustainable health workforces: the roles of governance, planning and data

Dr Gareth H Rees[1], Mr Cris Scotter[2], Dr Rosemary James[3], Mr Levan Samadashvili[4]

[1]ESAN University, Peru. [2]WHO Europe, Denmark. [3]Institute for Global Health, University College, United Kingdom. [4]Innovations and Reforms Center, Georgia

Context

Sustainable workforces are critical to health and care delivery as it is well accepted that without health workers, there can be no health services. Nevertheless, despite there being a significant investment and focus on health workforce development over the previous two decades many countries continue to struggle to make more progress on alleviating health persistent workforce problems such as shortages, maldistributions, retention, and skill deficits. A barrier to achieving this appears to be weaknesses of critical capabilities in the areas of health workforce governance processes, planning abilities and data collection, which if corrected should increase a country's achievement of a sustainable health workforce.

Methods

Beginning with secondary data from a content analysis of the health workforce governance, health workforce planning and health workforce data literature, strands of good practices are revealed from which a framework for health workforce sustainability was developed. Building on work by Batenburg (2015) and WHO Europe, primary data from two recent health workforce surveys on health workforce governance and health workforce planning were analysed against the recently developed framework. This analysis suggested four health workforce readiness / maturity archetypes that are defined by differing levels of governance, planning and data capabilities and actions, enabling country clusters to be identified.

Results

The results reveal that different countries cluster to show, with some variability, the attributes of 4 different archetypes. The archetypes proposed are characterised as: (a) Archetype 1, Minimal or Zero Governance that is primarily related HRM or personnel management type activities and has little influence on the health system or labour market; (b) Archetype 2, Ineffective or Passive Governance, where there a few of the required capabilities evident and there may be some influence on supply; (c) Archetype 3, Active Governance, where an HRH unit exist within the country's health system and has influence in terms of supply and labour market outcomes; and lastly (d) Archetype 4, Proactive Governance, where HRH is recognised as key part of a country's health system and operates in conjunction with other elements of health system's strategising and monitoring.

Discussion

The results are useful to indicate the level of governance capability as a marker for the relative maturity of a country in terms of their health workforce polices and processes, ability to effect change and capacity to adapt to meet the health system's changing needs. Country clusters permit increasingly targeted and individualised technical cooperation or development opportunities for countries or for cluster members that have similar issues. The archetypes also point to a mix of improvement actions that are more appropriate and situated considering a country's histories traditions, interrelations to build key capabilities across the three key areas of workforce sustainability, such as governance, planning and data collection. The archetype mechanism also allows for monitoring of capability improvement and continuity and can be used as a proxy workforce sustainability measure.

Workplace ostracism undermines work well-being in healthcare

Ms Sirpa M. Manninen[1], Prof Sanna Laulainen[1], Prof Timo Sinervo[2], Mr Samuli Koponen[1]

[1]*University of Eastern Finland, Finland.* [2]*Finnish Institute for Health and Welfare, Finland*

Context

The healthcare sector is facing a global crisis in terms of workforce keeping. Several studies have indicated that healthcare professionals are exposed to a variety of severe occupational stressors, such as high workloads and low social support. Workplace ostracism can also be as one work stressor (Hobfoll, 1989). Workplace ostracism is a phenomenon where someone is rejected or excluded from social interaction at work without any words or explanations. This phenomenon is often overlooked in the healthcare professions, although the phenomenon is quite common in healthcare (Qi, Qai, Liu, & Feng, 2020). This paper aims to increase understanding of workplace ostracism and its association for job satisfaction, stress, and experienced health. In addition, the results indicate which factors can protect from workplace ostracism.

Methods

The participants of the study consisted of healthcare workers (nurses, practical nurses, social workers, doctors) and managers from all levels (N = 569; n= 482 working in patient work, n= 87 working in management positions at different levels) from two Finnish university hospitals. The data was collected in January 2021 as a web-based survey. To obtain a sample of respondents that was as heterogeneous as possible, different types of outpatient clinics, emergency departments, surgical units, inpatient wards, and intensive care units were included. The study was designed to collect experiences about workplace ostracism as well as workers' well-being from health and social workers in university hospitals during year 2020. Data was analysed by linear regression analysis and mediator models.

Results

Results raise worrying. Even 72 precent of healthcare workers (n = 418) had experienced workplace ostracism at least in some form. Workplace ostracism was experienced by every occupational group, including managers. Most frequently workplace ostracism was experienced as a failure to respond to a greeting in the workplace. Workplace ostracism had a clear direct association with job satisfaction, stress, and experienced health. Loneliness fully mediated the relationship between workplace ostracism, stress, and experienced health, and partly mediated the association between workplace ostracism and job satisfaction. Self-esteem partly mediated the association between workplace ostracism, stress, job satisfaction, and experienced health. The main factors associated with workplace ostracism were social support from co-worker and a good social climate, which acted as protective factors against workplace ostracism.

Discussion

Workplace ostracism has been limited studied in Europe. This study is a breakthrough in European research on well-being at work in healthcare. According to the results of this study, workplace ostracism is a very detrimental phenomenon, especially in terms of job satisfaction. Well-being at work and job satisfaction are not only the responsibility of one employee, but they are also built on the cooperation of the entire organisation, at all levels. Identifying and preparing for the causes of emotional loneliness in the workplace would be important for achieving the organisation's goals and good well-being at work. If the healthcare sector can in the future pay more attention to inclusion and belongingness in work environments, this may result in higher numbers of nurses and other staff willing to work in healthcare fields. Overall work well-being in the healthcare sector also makes it more attractive to work.

Utilising dormant workforce talent: developing, supporting & integrating multinational doctors in England through the medical support worker (MSW) programme, a sustainable workforce initiative

Dr William Sacre, Dr Rachel Rajadurai, Mr Thomas Kearney, Dr Ivan Trotman, Mr Manraj Digpal, Dr Celia Ingham Clark

NHS England, United Kingdom

Content

The Medical Support Worker (MSW) Programme began during the pandemic to provide clinical support by employing International Medical Graduates (IMGs) resident in the UK but not practising as doctors. It offers the opportunity to refresh and use clinical skills in a supervised setting while undertaking the registration requirements to enter the medical workforce. Since 2020 the programme has evolved through professional and pastoral support and by diversification from secondary care to include primary care and mental health. Since inception, over 1000 IMGs have been employed. Continuing central funding for this initiative requires demonstration of value for individuals, systems and services.

Methodology

To measure the impact of the MSW programme on workforce provision, individual wellbeing and financial value across employing organisations, data and intelligence were obtained from several sources. Surveys were distributed electronically to a previous sample of MSWs using purpose-designed forms to examine the scope of work undertaken and to gain insight into progress to registration and employment. In addition, information on career demographics and qualitative feedback was sought. The individual, departmental and organisational impact was assessed through analysis of written business cases and qualitative feedback from medical directors, department consultants, educational supervisors and workforce managers. Finally, the economic impact of the programme was evaluated through a cost analysis. System elements with a potential financial benefit associated with the programme were quantified using published resources on national education and training expenditure.

Results

At time of surveying, 84 of 145 MSWs had attained registration with the General Medical Council (GMC). 85% of these were employed as doctors and 58% were employed in the same geographical region as their MSW post. Feedback from the surveyed sample was positive and reported as “a valuable NHS working experience…. and a gateway into the UK Healthcare system”. In post, MSWs were able to undertake duties at a level of a junior doctor aside from not having the right to prescribe nor make independent clinical decisions. Qualitative feedback received from doctors supervising and working with MSWs identified enhanced team morale and opportunities for clinical development. For the MSW, the post inspired confidence in preparing for GMC examinations and familiarisation with the UK healthcare system. Economic evaluation of the programme estimated a potential annual net cost-benefit of £104 million (€117 million), across education, training and service domains.

Discussion

The MSW programme provides benefit to healthcare services by providing a skilled employment opportunity for non-practising IMGs resident in the UK and creates a sustainable pipeline into junior medical posts, with demonstrable financial savings across educational, training and service domains. Recent evaluation provides greater programme oversight, with recognition of a synergistic benefit to both individual and system. Within the role, MSWs attain professional development and pastoral support, whilst providing benefits to the wider team and department, through enhanced capacity and capability. Improvement in job satisfaction optimises productivity and theoretically staff retention. Current intelligence indicates a supply of eligible applicants for up to five further years and, through ongoing investment, the integrity of this sustainable cost-effective workforce initiative can be maintained.

A realist review of the international literature demonstrating how governance and decision-making during the 2008 financial crisis impacted health workforce resilience for COVID-19 and future health system shocks

Dr Padraic Fleming[1], Dr Louise Caffrey[2], Dr Sara VanBelle[3], Dr Sarah Barry[1], Dr Sara Burke[1], Ms Jacki Conway[4], Dr Rikke Siersbaek[1], Mr David Mockler[5], Prof Steve Thomas[1]

[1]Centre for Health Policy and Management, Trinity College Dublin, Ireland. [2]School of Social Work and Social Policy, Trinity College Dublin, Ireland. [3]FWO, Institute of Tropical Medicine, Belgium. [4]Everlake, 5 Marine Terrace, Dun Laoghaire, Ireland. [5]Library Reader Services, Trinity College Dublin, St James Hospital, Ireland

Context

The Great Recession, following the 2008 financial crisis, led many Governments to adopt programmes of austerity and restrictive fiscal policies. This had a lasting impact on health system functionality, resources, staff (numbers, motivation and morale) and patient outcomes. These impacts were both positive (innovation in delivery) and negative (demotivated staff), which ultimately impacted health system resilience. This study aimed to understand how health system resilience, and in particular health workforce resilience, was impacted and how this affects readiness for subsequent shocks.

Methods

A realist review identified legacies associated with austerity (proximal outcomes) and how these impact the distal outcome of health system resilience. EMBASE, CINAHL, MEDLINE, EconLit and Web of Science were searched (2007– May'21), resulting in 1,081 articles. Further theory-driven searches resulted in an additional 60 studies. Descriptive, inductive, deductive and retroductive realist analysis (utilising excel and Nvivo) aided the development of Context, Mechanism, Outcomes Configurations (CMOCs), alongside stakeholder engagement to confirm, refine or refute emerging results. Causal pathways that led to proximal and distal outcomes of interest and how this impacts health systems resilience were revealed.

Results

Of 1,081 articles identified, 178 relevant studies (101 quantitative, 34 qualitative, 43 mixed) were analysed after screening, followed by 26 additional theory-focused papers. CMOCs focused primarily on the resilience of the health workforce revealing how: 1) priorities influenced by outside agents (e.g. Troika, governmental departments), led to a focus on external transparency and distrust in policy agenda, compounded by poor communication; 2) efficiency driven culture and performance monitoring meant professionals could not recognise their interests and values leading to sense of powerlessness, detachment and professional dissonance; 3) sustained restrictive economic policies that impacted patient care, eroded values, causing moral disequilibrium and diminished view of profession; 4) having undergone reflective equilibrium, health professional maintained control by circumventing policy to deliver care – further isolating decision makers; and 5) street-level bureaucracy eventually leads to moral distress resulting in apathy and burn-out.

Discussion

Austerity challenged underlying resilience mechanisms, however the CMOCs can be leveraged by policy-makers and management to develop resilient strategies that protect and promote sustainable outcomes for health service providers and users. This review reveals the importance of transparent, open communication, in addition to co-produced and value-driven policies in order to avoid scenarios that can be detrimental to workforce and health system resilience.

The role of governance modes in dealing with complexity of healthcare systems: evidence from three regions in Italy

Dr Natalia Oprea[1], MSc Gianmario Cinelli[1], MSc Michela Bobini[1], Prof Francesco Longo[2], Prof Mario Del Vecchio[1]

[1]SDA Bocconi School of Management, Italy. [2]Bocconi University, Italy

Governance has long been identified as a key contributor to improving health sector. Likewise, governance shapes the capacity of actors to formulate policies, cope with daily challenges and unexpected events. Despite its recognised importance, governance is still an elusive concept, while its operationalisation and assessment still contested (Pyone et al. 2017).

Health systems can follow different logics to realise governance. Three common archetypes referring to hierarchies, networks and markets describe the modes, or the forms, governance can take. Managing COVID-19 pandemic offers an exemplary case of the influence of governance modalities. In Italy, for instance, striking regional differences were observed in the way actors were able to take timely decisions and in the effectiveness of their response choices (Bosa et al. 2021).

Understanding how health system governance works (or not) in practice and how to design it, can help us disentangle potential pitfalls and prioritise solutions. This work investigates the role of governance modes in regional health systems' configuration and organisation. Using a multiple case study design, we analysed three Italian regions on the main dimensions of the health assessment framework proposed by Savedoff and Smith (2016). Selected governance functions were then specified according to three governance styles. The analysis was based on triangulated data collected through direct observation, semi-structured interviews and document analysis.

Findings show that despite increased complexity and interdependency in the health system, the three regions followed different logics of organisation. In turn, this logic influences the configuration and the processes within the healthcare system. Thus, hierarchy principles were consistent with a homogenous and concentrated structure, market-driven with a heterogeneous and context-dependent organisation and fragmented in the case of network-based model.

This paper offers two important theoretical reflections. First, it contributes to current debates in health governance by adopting the principles of a validated framework to assess regional health governance. Second, we propose an analytical framework that envisions how the bureaucratic, network and market-based models influences governance functions and structures.

Our work has also practical implications. After the pandemic hit, different governments have launched extensive health reforms to which the EU Next Generation Plan gave a major boost. To build back better health systems will require a differentiated approach for which the distinction between modes of governance and their interplay can prove functional.

Organising contemporary oncology care; a systematic literature review of multi-hospital oncology networks

Drs Roos van der Ven[1,2], Dr Daan Westra[2], Drs Felice van Erning[1],[3], Prof Dr Ignace de Hingh[3],[2],[1], Prof Dr Aggie Paulus[2]

[1]Netherlands Comprehensive Cancer Organisation, Netherlands. [2]Maastricht University, Netherlands. [3]Catharina Hospital, Netherlands

Context

The sustainability of health care systems is pressured by aging, increasing multimorbidity and complexity of care, rising costs, and inefficiencies due to system fragmentation. This is especially true in oncology, a field that experiences rapid innovation and has one of the largest patient populations, with over 19 million patients worldwide. To efficiently deliver high quality and state of the art oncology care, hospitals thus increasingly collaborate across organisational boundaries. Although inter-hospital collaboration is a necessity in oncology care, it is still unclear how to best organise such multi-hospital oncology networks. This study therefore examines what is known about these networks.

Methods

In August 2022, we systematically reviewed oncology network literature following the Joanna Briggs Institute guidelines. In consultation with a librarian, we searched PubMed using a combination of 16 MeSH-terms and 45 key-words related to networks and oncology care. These were identified using an exploratory search, expert consultations, theme identification, and MeSH-tree exploration. The search yielded 5031 articles, which were screened on title and abstract. Of these, 324 were screened on full-text. We included peer-reviewed articles that focus on service-delivery oncology networks of ≥3 autonomous hospitals in high-income economies. Editorials and position papers were excluded. In each step a sample was screened by the first and second author separately (>95% agreement for title and abstract screening, 89% for full-text screening). From the 40 included articles, we extracted network characteristics, as well as network success factors and outcomes. From five articles, data was extracted by the first and second author (100% agreement).

Results

Articles included descriptive papers (n=8), studies investigating networks' success factors (n=14), or papers investigating network outcomes (n=17). One paper studied both success factors and outcomes. Of the forty included articles, 63% was published in medical journals, 83% was published after 2010, 70% focused on a single network, and 50% focused on tumor-specific networks. The median network size was 15 hospitals (range 3-256). The studies regarding success factors, describe more than twenty relevant factors, of which power (im)balances, internal legitimacy, organisational learning, assessment, and (institutional) environment are mentioned most often (three or more times each). Of the studies investigating network outcomes, 59% measured indirect patient outcomes (such as use of multidisciplinary tumor boards, guideline adherence, and (decrease in variation in) treatment utilisation).

Another 24% measured direct patient outcomes (such as overall survival and debulking). The remaining 18% measured both. These articles predominantly show positive results.

Discussion

The results show that oncology network research is a relatively young field. While many studies focus on indirect patient outcomes, initial results from outcome studies are promising, suggesting that networks are an effective way of organising contemporary oncology care. However, the heterogeneity of success factors makes it difficult to identify the best way to organise such networks. As such, it remains difficult and labour intensive for hospitals in practice to set up effective oncology networks. While descriptive studies provide examples, they are insufficiently linked to networks success factors and their outcomes. This case-based approach to the oncology network literature limits its ability to build a robust knowledge-base regarding the optimal organisational structure of such a complex, innovative, and costly clinical field. Future research should therefore seek to identify networks' effects on important clinical outcomes and to establish a clear link between these effects and tangible success factors.

Oncological care at home: a systematic review of the experiences of cancer patients and their caregivers

MD, MPH Maria Francesca Furmenti, PhD Gaia Bertarelli, PhD Francesca Ferrè

Management and Health Laboratory, Institute of Management, Sant'Anna School of Advanced Studies, Italy

Context

Homecare supports person-centred care, ensuring the possibility of a greater involvement and collaboration of patient's relatives and friends. Picker Principles of person-centred care define the key elements that should underlie the delivery of care. Cancer has turned into a chronic disease that can be managed at patient's home. In this study we conduct a literature review to investigate the dimensions underlying cancer patients' and caregivers' experience with home care, to understand to what extent health services are provided from the perspective of person-centred care and whether there are patients' needs that have not yet been included in the Picker framework.

Methods

We carried out a systematic review of the literature using three databases, Pubmed, Scopus and WoS for a total of 703 articles. Articles about paediatric patients, other chronic diseases and systematic reviews were excluded. Bibliometrix was used for bibliometric analysis and PRISMA guidelines were followed. 57 articles were included in the review. The extracted data were categorised according to the type of care (Palliative, Support, Therapeutic, Recovery after transplant, Rehabilitation), the target population (patients or caregivers), the study design and the dimensions related to patients and caregivers' experience. The dimensions related to experience were extracted and synthesised using the meta-aggregation approach, then classified through the Picker framework. In the analysis experience refers not only to the evaluation of healthcare services, but also to support actions and to patients and caregivers' unmet needs.

Results

The review shows that the most frequent type of care in the home setting is palliative care, followed by support and therapeutic interventions. Regarding the study design, 43 articles were qualitative, 8 quantitative, 6 used a mixed-methods approach. According to the 8-dimensions of Picker Principles of Person-centred care, most of the studies included in the review report considerations about "Emotional support, empathy and respect", followed by "Clear information, communication, and support for self-care". These results apply both to patients and caregivers. The analysed articles show that information, effective communication, support for self-care, involvement in decisions and respect for preferences are the most frequent patients' unmet needs. Moreover, an emerging need is ease of use of equipment and new technologies (e.g., tele-medicine) in the home environment. On the other hands caregivers need a better balance between individual needs and a better care to the patient.

Discussion

In person-centred care, individual’s specific health needs and preferences are the driving force behind all health care decisions and quality measurements. Patients feedback and evaluation are therefore at the core of the patient-centred framework. Emotional support, communication and information represent the components of home care that emerge most from patients' experience. Many recent articles report an increased use of telemedicine (teleassistance, monitoring) in the homecare setting as support for self-care. Considering the growing role of technology in home care, a new category about usefulness and ease of use could be added in the patient-centred framework. Healthcare organisations should design home care interventions to support and involve both patients and caregivers. Moreover, information needs to be used to continuously improve the way health care policies are designed and managed.

Patient advocacy associations and their evolution in the digital era

Dr Federica Morandi[1], Ms Alessandra Pernice[1], Dr Eugenio Di Brino[2]

[1]Università Cattolica del Sacro Cuore, Italy. [2]ALTEMS - Graduate School of Health Economics and Management, Italy

COVID 19 changed the life of the planet, confronting everyone with the need for a profound change in the way society lives and is organised. Healthcare systems worldwide has been put in strain. Both healthcare providers and patients have faced unsustainable efforts to maintain the equilibrium between resources and needs. From patients' perspective the associations aimed at their representation- the so named patient advocacy associations, have suddenly experienced the need to greatly implement digitalisation to support patients, especially those affected by chronic conditions. As documented by Ovretveit (2021) during the pandemic patients, care givers and patient advocacy associations developed new digital technologies or adapted the existing ones to properly answer the patients' needs.

Although the large amount of evidence about how healthcare organisations have reorganised the patient care processes by using new technologies such as telemedicine, telerehabilitation and so on, there is a lack of evidence about decisions, strategies and solutions that patient advocacy associations have developed during the pandemic in order to maintain the connection with patients and their relatives (i.e. psychological support, advisory), but also to continue to guarantee the usual services provided to patients (i.e. training). In order to fill this gap, we surveyed a sample of patient advocacy associations through a semi-structured questionnaire. The latter was composed of five sections each of which dedicated at assessing if patient advocacy associations during the pandemic have developed/maintained the following activities: i) training ii) virtual listening desks; iii) digital health provision; iv) emergency services (e.g. DPI distribution); (v) future development of changes adopted.

The questionnaire was submitted to the sample between April and October 2020.

The sample is composed by associations operating in different pathological area, thus making the results richer and representative. Results show that during the pandemic patient advocacy associations have dedicated time and efforts to meet the patients' needs, both to support and to maintain the contact with them, by activating all the virtual communication patterns. Besides that, great efforts has been dedicated to provide training both about the usual topics related to the specific pathologies, but also aimed at providing more information about the virus spread, the vaccination programs, the DPIs use and importance. Data show that during the pandemic patient advocacy associations have intensified their proximity to patients. Finally results coming from the last section of the questionnaire document the patient advocacy associations willingness to maintain in the future the changes experienced during the pandemic.

Our results shed a light upon the important role of patient advocacy associations during the COVID 19 pandemic and their efforts to maintain the contact with the patients. Besides that, evidence allow also to reflect upon the ability of patient advocacy associations to quickly react to the unknown situation, by demonstrating a good openness to change. Finally, their project to maintain some of the experienced changes also after the pandemic highlight their antifragile characteristics, that is the ability of a system not just to react to a change but rather to modify its characteristics and eventually to improve also when the emergency situation is ended.

Boosting shared decision making by integrating patient preferences into the electronic health record

Dr Mirjam Garvelink[1], Ms Marloes Bak[2], Ms Atena Mahboubian[2], MD Okke de Weerdt[3], Prof Paul van der Nat[1,4]

[1]Department of value-based healthcare, St. Antonius Hospital, Netherlands. [2]Vrije Universiteit, Netherlands. [3]Department of Internal medicine, St. Antonius Hospital, Netherlands. [4]IQ Healthcare, Radboud University Medical Center, Netherlands

Aim

Multiple Myeloma (MM) patients and caregivers are not equally aware of all four shared decision-making (SDM) steps (choice, options & information, preferences, decision) in their care trajectory which may hinder SDM. We assessed the extent to which SDM takes place from multiple perspectives (observer, patient, healthcare professional (HCP)) and identified ways to improve this process as part of an improved electronic health record (EHR) for MM.

Methods

Mixed-methods study with data from audiotaped consultations (observer based: OPTION5, ACEPP), patient surveys (SDMQ9, CPS, prepDM) and HCP interviews (based on the theory of planned behaviour) to assess and explain SDM processes. Self-reported SDM scores, observed behaviours and HCP's statements were tied to the 4 SDM steps in order to identify what SDM elements to target in the electronic health record (EHR). In co-creation sessions with stakeholders it was determined how to incorporate these elements in the EHR.

Results

Data was collected from 31 consultations, 19 surveys, 10 HCP interviews. Patient reported SDM (SDMq9) scores were 67/100, Preparation for SDM 43/100. Observed SDM was 27/100, communication of outcomes median=3/5. Step 2 (options & outcome information) was most explicitly observed. Other SDM steps were merely implicit, and spread over time and persons. A prepared and active patient was seen as the most important facilitator for SDM.

Conclusion

Some important elements of SDM were implicitly present, leading to average SDM scores. To improve SDM, three adaptations were made to the EHR: 1) patient activation through questionnaires to prepare for SDM; 2) central visualisation of preferences; 3) monitoring of patient reported SDM for quality improvement.

Discussion

This solution is promising as it focusses on SDM steps 1 and 3 that are not often well-performed, enables SDM processes to take place over time and by different actors and empowers patients for their role in SDM.

Change management for services redesign in healthcare: a conceptual framework

Ms Sofia Silvola, Dr Umberto Restelli, Mr Davide Croce

Università LIUC - Carlo Cattaneo, Italy

Context

The healthcare sector faces unique challenges in implementing process innovations, such as resistance to change due to professional autonomy and fragmentation. The shift towards value-based, patient-centred care and increasing complexity in diseases require integrated processes involving multiple stakeholders. Managing change in this complex environment is becoming more difficult and essential for the success of change initiatives. This work aims to identify and describe drivers of change management in the context of healthcare services redesign, through the development of a conceptual framework.

Methods

The development of the conceptual framework is based on the multidimensional and multi-method eight-phase approach, combining literature review with qualitative research. Concepts are then identified, deconstructed, and integrated through an iterative process performed by the researchers. The final framework is validated and revised to incorporate feedback and reflect the dynamic context of healthcare. The phases consist in literature review, thematic analysis, content analysis, concepts deconstruction, concepts aggregation, graphical design of the conceptual framework, external validation/testing and revision.

Results

The conceptualisation of the framework integrates 53 published articles concerning change management frameworks used in healthcare and 42 change management models applied to the healthcare context, through 244 implementation actions. The aggregation of the concepts led to the identification of 15 macro topics, which were then used to formalise an integrated change management framework. The 15-steps conceptual framework for supporting change in healthcare process innovations resulting from the analysis consists in: 1) awareness, 2) assessment, 3) vision, 4) need, 5) wins, 6) plan, 7) communication, 8) resistance, 9) training, 10) test, 11) revision, 12) implementation, 13) monitoring, 14) institutionalisation, 15) iteration.

Discussion

The framework was developed through a multi-method process including literature analysis, qualitative methods, and co-creation with experts. The framework is intended to be a general tool for different healthcare contexts and serves as a guide to support change. Pilot tests will validate the method, and the analysis is supported by desk research and expert opinion. Limitations include a non-systematic literature review and involvement of experts from only two national contexts. Future research should explore other contexts for applicability and the framework may be revised for future changes.

Supporting shared decision-making and communication in breast cancer: the ShareView project

Dr Natalia Oprea[1], MSc Vittoria Ardito[1], Dr Jean-Christophe Chiem[2], Dr Samuel Salvaggio[2], Fatima Cardoso, MD[3], Leonor Matos, MD[3], Alessandro Minisini, MD[4], Ms Rosanna D'Antona[5], Prof Oriana Ciani[1]

[1]SDA Bocconi School of Management, Italy. [2]International Drug Development Institute (IDDI), Belgium. [3]Breast Unit, Champalimaud Clinical Center / Champalimaud Foundation, Portugal. [4]Oncology Unit, Academic Hospital of Udine, Italy. [5]EuropaDonna Italia, Italy

Background

Several treatments are available for patients with breast cancer (BC). Decision aids (DAs) are interventions that provide patients with information about available therapies, clarifying the congruence between decisions and personal values, and fostering shared decision-making (SDM), which is known to increase quality of care. The aim of this work is twofold: i) to investigate the diffusion of DAs in BC centres in Europe, including perceived barriers and facilitators; ii) to pilot the prototype of a web-based DA for BC patients.

Methods

A cross-sectional survey targeting breast specialists was distributed across BC networks. The questionnaire had 17 questions (4 Likert-scale, 4 multiple-choice, the remainder single-choice). Then, focus groups (FGs) were conducted in two different settings to test the usability, acceptability, feasibility of a web-based application developed for BC patients facing the choice between endocrine-based therapy versus chemotherapy. The application uses the Generalised Pairwise Comparisons statistical method allowing patients to compute a personalised and quantitative benefit-risk estimation of clinical trial data by analysing outcomes in the order of importance most relevant to them.

Results

198 valid responses were collected through the survey. Respondents were mostly medical oncologists (35%), or surgeons (35%). A good attitude towards a participatory communication approach (4.29 on a 1-5 scale, 95%CI: 4.15-4.44) was observed. Female respondents (62%) reported statistically significant higher scores than males, e.g., regarding the importance of involving caregivers in the decision-making, or the need to provide patients with DAs to foster engagement. Overall, 55% claimed that DAs were available in their organisation, of which 86% reported to use them regularly. Paper-based DAs were the most common type in the sample. Developing DAs with scientific evidence was deemed the most important enabler for sustained uptake, while prevalence of uncodified communication strategies and poor integration in the hospital systems were considered the main barriers. The focus groups simulated a scenario discussion between participants, lasting around two hours. Overall, participants positively appraised the tool as helpful, useful and accessible. Clinicians reported the facilitating role of the tool for interaction (e.g., quick visualiser, minimising information asymmetry), while patient representatives emphasised feeling at the centre of the process as a person, not just as patient (e.g., humane conversation,

perceived care and consideration). The results were corroborated by high agreement levels (M>3.5, SD<0.8) in the Acceptability and Feasibility of Intervention measures (1-5 scales).

Conclusions

This study suggests an insufficient availability of DAs in BC centres in Europe, with a prevalent use of paper-based tools rather than digital instruments, typically reported in the literature. This study sheds light on the current integration of DAs in BC care in Europe, explores developmental factors of a new web-based DA, and raises awareness on the importance of integrating SDM principles when communicating with patients.

The importance of human resources in health management: the continuing professional development (CPD)

Mr Francisco Antunes, Mrs Ana Pinto, Mrs Beatriz Marçal, Mr Leonardo Trancoso, Mrs Sofia Oliveira

National School of Public Health, Portugal

Context

Human resources for health is considered a worldwide priority by the World Health Organisation (WHO). The increase of chronic and degenerative conditions and warning threat of noncommunicable diseases means a rapidly changing healthcare context. In order to have an effective response to the health needs of the wider public, healthcare professionals need to be appropriately trained and supported throughout their careers so that their skills, knowledge and competencies are developed. Healthcare needs can be met through emerging new evidence-based practice, therefore regularly updating healthcare professionals is of the upmost importance.

Methods

This study aims to critically analyse continuous professional development (CPD) in six selected countries: Australia, Netherlands, South Africa, United Kingdom (UK), United Stated of America and Portugal. Furthermore, it also aims to draw recommendations for a future CPD system in Portugal. A common scheme of analysis was applied to investigate the following variables: (i) CPD institutional framework; (ii) accreditation of CPD providers and events, and system of credits; (iii) CPD funding and sponsorship (iv) barriers/facilitators to CPD participation and (v) the impact of CPD in human resources for health.

Results

In most countries mandatory CPD was a requirement for licence renewal of all healthcare professionals, however discrepancies were found among the required hours. Education centres were responsible for CPD accreditation in the UK, while in other countries, that came under each professional council. There were disparities in the funding and sponsorship of CPD activities and the most common barriers were the lack of individual commitment or time, lack of support, the cost or inadequate training. On the other hand, several benefits were found for the different stakeholders. The UK had a more structured CPD system, guided by patient safety, effectiveness and a better experience for staff and patients, involving different education tools such as simulation training, interprofessional and evidenced based practice. Regarding Portugal, mainly voluntary CPD was mentioned, and many barriers established, nevertheless leadership had a positive impact on CPD engagement.

Discussion

As shown by results, CPD systems can benefit from a structured base, with requirements and oversight. The active participation of the different stakeholders can help implement CPD programs, which can impact healthcare professionals' engagement and their ability to meet population's health needs. There was a positive association between the subsistence of CPD and effectiveness, health professional´s motivation and retention, as well as health investigation and innovation, and most importantly healthcare quality at the analysed countries. Nevertheless, no strong evidence was found regarding the impact of CPD in healthcare workforce or organisations. The results allow us to infer that Portugal could benefit from adopting a structured CPD system, one that promotes effectiveness and improves patient and staff experience as outcomes, therefore improving healthcare quality.

Enhancing leadership skills and competence in strategic management among leading physicians using a conceptual model

Mr Filip Dumez, Dr Walter Swinnen, Ms Silke Vanderyse

AZ Sint Blasius, Belgium

There is a strong increase in the number of studies and reports by Key Opinion Leaders, emphasising the importance of the role of physicians in hospital management. Studies on clinical governance accentuate the importance of strong clinical leadership to drive improvement efforts and increase hospital performance.

A variety of elements complicate physicians' fulfilment of their leadership role. The concepts of leadership and management are not clearly distinguished. Management is a transactional process that focuses on (budget) control. Leadership is a transformational process that focuses on shaping the organisation's future. Hence, leadership requires more strategic skills (e.g., envisioning, empowering, aligning).

Other challenges are related to the positions of medical doctors within the organisational system. Several issues have been reported: unclear definition of roles and expectations, non-hierarchical culture, strong focus on clinical expertise, lack of adequate reimbursement, balance between different activities, lack of formal power, limited people-management skills, difficulties in department-wide thinking, insufficient knowledge, inadequate training and coaching.

Taking this into account, we aspired to bring our medical leaders' involvement in hospital management to a higher level through a multifaceted approach, aiming to create ability, motivation, and opportunity. The HR policy for the medical staff was revised, and more attention was given to role clarification, setting evaluation criteria, and yearly evaluation and coaching of medical leaders. Medical department heads were provided with more data on their performance. The yearly training on medical leadership was more aligned with the hospital strategy and objectives. A yearly 2 day- refreshment training program for strategic management has been introduced.

Finally, a strategy model was introduced: the Vergilius model, a holistic approach to tackling all dimensions of governance and formulating concrete projects or options. The model was formatted as a 3 year policy plan with yearly follow-up. A policy advisor assisted in editing and providing quantitative data. The medical department head presented a plan to the board of directors in 2021, including the desired investments and staff. In consensus, a follow-up table was created, and tasks were appointed to the appropriate managers.

Thirty of the 33 department heads succeeded in make a 3 year plan. Two considered the format unsuitable and one failed. Twenty-nine department heads had successful follow-up meetings in 2022. Over 100 projects were defined, various in nature (infrastructure, reorganisation of service, multidisciplinary cooperation, transmural initiatives, training and development, etc.).

The overall perception of this approach is positive. Future initiatives will focus on gathering more data on the effect of the approach on strategic thinking and leadership skills in the medical department.

Career pathways and competency acquisition for hospital leaders

Dr Irene Gabutti[1,2], Ms Ilaria Valentini[3], Prof Americo Cicchetti[1,3]

[1]Post-Graduate School of Health Economics and Management (ALTEMS), Università Cattolica del Sacro Cuore, Italy. [2]Università Cattolica del Sacro Cuore, Italy. [3]Università Cattolica del Sacro Cuore, Italy

Context

The evolution of patients' needs, the progressive ageing of the population, the recent COVID-19 pandemic and the changes it induced are amongst items that put high pressure on healthcare organisations. In this evolving scenario, emerging professional profiles must meet expectations by acquiring more and more specialised expertise. Managers must often face higher levels of organisational accountability and work in less individualistic and more "team-oriented" ways. New managerial and coordination responsibilities emerge. The research evaluates hospital CEOs training and career trajectories, as well as their competence profiles, to find the best fit to achieve successful results.

Methods

In collaboration with the International Hospital Federation (IHF), we have administered an e-survey to Hospital CEOs worldwide. The survey is made up of five sections: general information, training pathways, career pathways, competency relevance assessment and competency self-assessment. The 40 competencies under consideration were selected from the IHF's Global Competency Directory. The same survey was translated into four different languages to improve distribution (English, Spanish, Portuguese and Italian). Replies were anonymous. In addition to a descriptive analysis of the sample, the presence of different training and career pathways was assessed and matched to competency profiles through Anova tests. Tukey range tests highlighted which training/career characteristics mostly influenced competency acquisition.

Results

We have received 249 replies from hospital CEOs in 16 counties. Training and career pathways are variable and significantly associated to the acquisition of some key competencies. Moreover, communication and entrepreneurial skills are among those considered most lacking and should be prioritised in training programs. Gender may affect choices on the type of organisation in which to work and on career options (mixed career ladders).

Discussion

Understanding how to improve training and career pathways of CEOs to improve their skill mix is key in times of deep changes in the healthcare sector. This study focuses on a gap analysis, which is useful in identifying substantial differences between hospital CEOs' desired competencies and the ones that they have developed concretely. The analysis of top managers' educational and professional backgrounds allows to map and compare training and career pathways across nations. This, in turn, provides the bases for benchmarking activities across countries, with implications on the detection of best practices and on international mobility opportunities.

Assessing physicians' managerial attitude: a scale validation process

Prof Americo Cicchetti[1],[2], Dr Federica Morandi[1],[2], Ms Ilaria Valentini[1], Prof Fausto Di Vincenzo[3]

[1]Università Cattolica del Sacro Cuore, Italy. [2]Post-Graduate School of Health Economics and Management (ALTEMS), Università Cattolica del Sacro Cuore, Italy. [3]Università Degli Studi Gabriele D'annunzio, Italy

Since the 1990s, the Italian Health Systems have been subjected to a profound reorganisation both in terms of organisational models and in terms of roles. More specifically at the middle level, has been introduced new managerial figures, named doctors-managers. These innovations have profoundly changed both careers and job characteristics since new tasks and responsibilities have been assigned to them. There is a wide debate about the difficulties that doctor managers must face daily, mainly because they must perform both clinical and managerial tasks at the same time. Even in the more recent periods healthcare systems have been subjected to important innovations and changes, for example the patient centred care approach, and lastly the COVID 19 pandemic disruption. These challenges have imposed to enlarge the number and the nature of the competencies that doctor managers need to possess. The possess of managerial attitude has been recognised as one of the most important behavioural conditions necessary to succeed in complex environments. The aim of this study is validating a new scale aimed at assessing the managerial attitude of doctor managers.

The process started with an extensive review of the literature conducted independently by two researchers, aimed at identifying the most relevant papers in the managerial area, more specifically those interested on the competences useful for doctors-managers. After a discussion between the two researchers, 26 articles have been selected and subsequently analysed through the with NVivo software to extract the main concepts of each article. As a result, 171 items have been identified, and after removing the 45 items duplicates, the final list were composed by 126 items. Then researchers have identified just 65 items as real competencies. This final list has been finally grouped into different area basing on the Spencer and Spencer's model (1993). Later researchers started with the validation process of the scale, through a panel of 61 health management experts using the e-Delphi Method. All the responses were anonymous.

The questionnaire was divided into two sections: (i) demographic information of respondents; (ii) assessment of experts' opinion about the suitability or unsuitability of each item within the proposed area. Cronbach's alpha was used to measure the internal consistency of each area.

Since the first round, all areas present at least 75% of agreement about the right placement of items, thus evidencing the right placement of the items and their usefulness to measure the managerial attitude. These results allow to provide very fresh evidence about the new competences that doctor managers need to possess and pave the way for future analyses aimed at assessing the degree of managerial attitude of physicians staffed into middle managerial roles. This evidence may help healthcare managers and policy makers to better design career patterns and also to more properly project training paths.

Enabling task shifting to increase the accessibility of primary care provision in Lithuania

Mr Marius Ciurlionis[1,2], Ms Solveiga Smagariene[2], Ms Diana Smaliukaite[2]

[1]Vilnius University, Faculty of Medicine, Lithuania. [2]Ministry of Health of the Republic of Lithuania, Lithuania

Background

As the Lithuanian healthcare system faces an uneven distribution of healthcare professionals across the country, long waiting times, and regional inequalities in access to healthcare services, there is a growing demand to redistribute the roles of healthcare professionals and to empower nurses to carry out a greater range of autonomous tasks, especially in primary care. One of the main prerequisites for empowering nurses and ensuring the optimal use of human resources is the redistribution of functions within the family health team.

Methods

Mixed methods were used to determine practices and tasks, that could be redistributed among the health workforce – physician, nurse, and nursing assistant. Healthcare professionals(n=18) were split into two focus groups, consisting of physicians (n=9) and nurses (n=9) aiming to identify: activities potentially to be shifted; barriers for task-shifting and measures to be taken. Focus group discussions were followed by a survey (n=83) exploring the perception and attitudes of nurses towards task shifting.

Results

The identification of practices that could potentially be transferred came from analysis resulting from focus group discussions with physicians and nurses. These practices included the prescription of care supplies and medical equipment, consultations, management of preventive programs, and referrals for tests or scans. Regulation and legal restrictions, a lack of skills, and inadequate training were noted as boundaries to task shifting. The creation of nursing education programs and legislation modifications were acknowledged as measures to assist reforms. The survey results supported the areas of task shifting and the need for skill development acknowledged during focus group discussions.

Discussion

In primary healthcare, delegating tasks is a crucial tool for managing workloads. Task shifting's potential to make basic healthcare services more accessible will be tested in the pilot project already this year. However, further research is required to determine how task shifting might free up more time for the family health team to spend on consultation, treatment, and making a diagnosis.

Green procurement management: how to contribute to reducing CO2 emissions instantly with economic benefit

Prof Dr Dr Wilfried von Eiff, Dr med. Maximilian von Eiff

Center for Hospital Management, Germany

Context

Two EU-wide legal acts are challenging hospitals as well as manufacturers of medical products to change their common business models pertaining production and usage of medical devices: the Medical Device Regulation (MDR) and the European Climate Law (ECL). The health care sector is responsible for 4,4% of the global pollution burden and hospitals contribute significantly to CO2 emissions. Of particular importance for influencing the carbon footprint extension is the usage of single-patient-use medical products, the repairing of instruments used in surgery, the utilisation of one-way clinical textiles and the waste of food produced with high energy consumption.

Methods

An online-poll under 191 hospitals was performed based on a structured questionnaire with focus on the meaning of ecological criteria in the procurement decision-making process. Additionally, ecological-driven cost-benefit-analyses of selected medical products (e.g. ablation catheters, ultrasound scissors, clinical textiles) were carried out in order to point out the influence on carbon footprint and economy and to demonstrate the effects of a „green“ purchasing strategy. The purpose was to identify working areas typical for CO2 emissions and to expose definite measures contributing to a reduction of the carbon footprint, to the conservation of valuable and rare resources and to cost savings.

Results

By medical remanufacturing of selected medical products (from the producer declared as single patient use products) in combination with an increase of the repair quota of surgical products the operating costs for the use of these products could be reduced by 30 to 45%. Simultaneously, the carbon footprint was strikingly decreased by more than 50% and the resource consumption by nearly 30%. As an example, the material costs of a catheter-based coronary intervention could be reduced from € 3,500 to € 850 when using remanufactured devices. It was also observed that remanufacturing contributes to avoiding rationing, especially in cases where expensive devices (e.g. ultrasound catheters) are used for the gentle treatment of toddlers (e.g. closing a foramen ovale). In comparison with reusable laundry disposable gownings generate a 4,5 fold higher waste volume, lead to a 35% higher eutrophication potential and are less effective in preventing surgical site infections.

Discussion

Although, sustainability management is accepted to be an important task of hospitals, its significance on the strategic agenda of hospitals is low, as yet. The persistent cost pressure in health care in combination with a tremendous investment gap hospitals are suffering from, are addressed as causes for a low priority of ecological initiatives. It is, therefore, necessary to identify fields of activities where ecological and economical effects can be achieved simultaneously. Especially in the areas of medical remanufacturing of high-tech single patient use products, the repairing of steel-made surgical products, the use of clinical textiles and food preparation every hospital has the opportunity to tremendously contribute to a decrease of CO2 emissions and to a conservation of rare and valuable resources. The MDR sets a time limit for the certification of re-processable products, but currently the capacity of the „Certified Bodies“ to perform these certifications on time is restricted.

A conceptual framework for board of directors to drive sustainable development in hospitals

Dr Bart Noort, Drs Mark Nijenbanning, Drs Jan Piet Hoekstra

University of Groningen, Netherlands

Context

The healthcare sector is facing significant sustainability challenges, including high CO2 emissions and waste production (Heijnen, 2020; Manfred, 2020). Hospitals are increasingly moving towards more sustainable practices, such as purchasing reusable items and reducing emissions, driven by new technologies and stricter regulations (Ordway et al., 2018). However, hospitals often face challenges in overcoming cultural, procedural, and governance-related barriers to change. For example, hospital personnel may face tensions between goals for care quality, cost, and sustainability (McGain & Naylor, 2014). This study aims to enhance our understanding of how hospital governance can influence and motivate employees towards sustainable care delivery.

Methods

This study was based on a case study of six hospitals in the Netherlands that participated in a Healthcare Green Deal initiative aimed at promoting sustainability in the healthcare sector. Qualitative data was collected through document analysis and interviews to map sustainability initiatives within the organisation, and to understand the role of the hospital boards of directors in shaping the internal organisation towards sustainability. Identified variables (sustainable governance and human enabling factors) were scored by all authors to establish the degree of sustainable maturity of each hospital. The cross-case analysis provided insights into the impact of governance on sustainable initiatives.

Results

The study found that all participating hospitals initiated sustainable actions, such as reducing waste, saving energy, and improving personnel wellbeing. These actions were often initiated by green teams, consisting of medical professionals and support staff. Some hospital boards also appointed a sustainability coordinator to drive and support initiatives. However, there were significant differences in the governance and intensity of sustainable initiatives between hospitals. Two governance characteristics were critical in determining the success of these initiatives: the extent of central or decentralised governance, and the presence of concrete, measurable sustainability goals. The study also identified three human enabling factors - visibility, empowerment, and motivation - that play a critical role in driving sustainable impact. Based on these variables, the six hospitals were ranked in terms of their sustainable maturity (Figure 1).

Discussion

The study proposes a conceptual framework for hospitals to understand and improve their sustainability maturity (Figure 2). The framework emphasises the importance of central governance for the visibility of sustainability initiatives within the organisation. At the same time, decentralised governance, such as through a sustainability coordinator with a strong mandate, can drive coordination and support of sustainable initiatives, empowering staff to initiate action. The board of directors also need to be aware of the importance of having clearly formulated sustainability goals. Concrete and measurable sustainability goals increase extrinsic motivation, as well as the empowerment of hospital staff. The combination of these three human enabling factors is crucial for hospitals to realise sustainable impact. When sustainability initiatives are visible within the organisation and when hospital staff is sufficiently empowered, intrinsic motivation increases. Both intrinsic and extrinsic motivation, as well as empowerment, are likely to be key predictors of the quantity and quality of sustainable initiatives. The framework provides a tool for hospitals to evaluate their organisation's sustainability maturity, sustainability performance, and guide the development of their sustainability agenda. Further empirical validation is needed to fully validate and refine the model.

How to reduce the environmental footprint of healthcare systems: a scoping review of environmental interventions

Dr Anna-Veera Seppanen, Dr Zeynep Or

The Institute for Research and Information in Health Economics (IRDES), France

Context

Global warming poses an increasing threat to health and healthcare systems (HCS). HCS are major contributors to global warming, responsible for up to 10% of national environmental footprints worldwide. Nevertheless, healthcare's contribution to global warming is largely overlooked in policy and there is a need to identify interventions that could reduce it in order to develop strategies to improve the environmental sustainability of HCS. The aim of this scoping review was to identify interventions that may reduce the environmental impact of healthcare and contribute to developing a framework for action for improving the environmental sustainability of HCS.

Methods

We conducted a systematic search for peer-reviewed articles published in English, French or Swedish between 2010 and May 2022 in Medline and Web of Science, following the Joanna Briggs Institute guidelines. Reference lists were assessed, and hand searches performed to retrieve additional publications and grey literature via Google. We included publications from high-income countries that describe and estimate the effect of an intervention (implemented or theoretical) that aims to reduce the environmental footprint of the HCS or parts of it. Publications not concerning the health care sector directly and publications not providing any quantified impact estimate (nor synthesis thereof) were excluded. Data on publication type, study methods, setting, objective, sample size, intervention, and estimated effect were extracted. Included publications were synthesised in a table by type of intervention and healthcare sector, and interventions were described in a narrative synthesis.

Results

Out of 4,442 titles and 216 abstracts reviewed, we included six systematic reviews, 32 peer-reviewed articles, and five reports from the grey literature. The majority focused on the hospital sector and micro-level interventions. Interventions included, for instance, reducing patient travel through telemedicine appointments, implementing Green protocols, shifting from single-use to reusable equipment, shifting from gas-based to intravenous anaesthetics and improving waste management, which reduced the environmental impact across several healthcare sectors. Modelling studies suggested that the effect of single micro-level measures remains limited, and larger reductions require interventions at the organisational level, such as comprehensive climate protocols, care provision redesign or national health system strategies combining different environmental interventions and innovation with more structural measures.

Discussion

There is increasing evidence on how to combat climate change through interventions in the HCS, but micro-level interventions are insufficient if not accompanied by organisation-level change combining environmental policies and innovation with public health measures. The evidence on macro-level strategies largely relies on modelling studies and is limited for strategies reducing healthcare consumption and ‘waste’ in care provision, assuring appropriateness of care and strengthening primary prevention. More real-world evidence on organisation-level interventions beyond the hospital sector, and on interventions reducing demand for care, is needed to guide decision making.

Competing governance objects – a challenge to the welfare system's resilience

Dr Arja-Tuulikki Malin

LAB University of Applied Sciences, Finland. University of Helsinki, Finland

Context

Public health, social and rescue services were recently reformed in Finland. The reform changed responsibilities of organising these services. The responsibility was removed away from roughly 200 municipalities and transferred to 22 new regional services counties. Before the implementation Finnish government restricted temporarily municipalities right to make long-term contracts with private health and social service providers, because municipalities had started outsourcing the essential services. This study explored this case by focusing on the governance (Torfing et al. 2012; Peters 2015; of the national reform and the disagreement on the activities causing harm for the reform.

Methods

Research questions were directed on identifying governance objects (Gjaltema, Biesbroek & Termeer 2020) and contradictions related to them. The data consisted of 97 official documents, where both ministry of social affairs and health, and municipalities defended their perspectives concerning the outsourcing.

Results

Three types of governance objects were identified: Shared, rejected and competing objects. Shared objects of governance between ministry and municipalities were identified in the documents, where municipalities agreed with the objectives of the national reform. However, some municipalities rejected governance objects, which were represented by ministry (reform). Competing objects of governance were identified in the documents, where municipalities claimed, that by outsourcing the services that they pursued the same goals as the reform, but only from the municipality's point of view. The means of the solution and timing were also different.

Discussion

Competing objects of governance may lead to a failure of a reform. Following recommendation was made. The use of hierarchical tools interconnected with the use of the tools which support bottom-up developmental activities may support system resilience (Hosseini, Baker & Ramirez-Marquez 2016) during a reform process.

What makes health systems resilient? An analytical framework drawing on learnings from the COVID-19 pandemic

Mag Miriam Reiss[1], Dr Thomas Czypionka[1,2], Dr Markus Kraus[1], Dr Monika Riedel[1]

[1]Institute for Advanced Studies (IHS), Austria. [2]London School of Economics, United Kingdom

Context

The COVID-19 pandemic posed an unprecedented challenge which caught many health systems worldwide widely unprepared. This novel situation put existing theoretical models of resilience to the test. The aim of our research was to develop a comprehensive analytical framework on health system resilience in the context of infectious diseases. In addition to serving as a tool to analyse preparedness and resilience of health systems, the analytical framework is intended to provide guidance to decision makers in health policy – not only in the face of an imminent shock, but also during 'normal' times.

Methods

The analytical framework was developed based on a two-tiered approach. First, a comprehensive review of the existing literature was conducted to identify relevant frameworks on health system resilience as well as previously discussed determinants of resilience. Second, input was gathered in several rounds of internal and external consultations with designated field experts and stakeholders, drawing on their experiences from the pandemic. Experts and stakeholders from the following institutions were consulted: ECDC, WHO European Observatory on Health Systems and Policies, the Austrian COVID-19 Future Operations Platform, HOPE, and EUREGHA.

Results

The framework distinguishes between prerequisites of health system resilience, which address precautions to be taken in 'normal' times, and response strategies in the face of shocks (e.g., pandemics). Both sections are further divided into six building blocks that were adapted from the WHO health system framework: governance & leadership, information & research, financing, physical resources, human resources, and service delivery. A comprehensive understanding of health systems is applied, as resilience is addressed in the action areas of public health, primary care, secondary care and long-term care. An overarching component on contextual factors – sub-divided into situational factors (e.g., political constellations), structural factors (e.g., demography, fundamental rights), cultural factors (e.g., social cohesion, health literacy), and international factors (e.g., international connectedness) – represents a distinctive feature of the framework and an important addition to the existing spectrum of resilience frameworks.

Discussion

In order to be better prepared for future health crises, the foundations for a resilient health system must already be laid in 'normal' times and in all areas of the health system. In the face of an imminent shock, adequate response strategies need to be developed. An essential learning from the COVID-19 pandemic has been that contextual factors of societies and sub-groups play a major role in the ability of health systems to overcome a shock, as they impact the implementation and effectiveness of crisis management policies.

Sustainability accounting and reporting practices in healthcare organisations: a systematic review of the literature

Prof Marta Marsilio[1], Ms Martina Pisarra[2]

[1]University of Milan, Italy [2]Università Cattolica del Sacro Cuore, Italy

The development of information and communication technologies (ICTs) enlivened the debate on the relationship between sustainability and digitalisation (or digital transformation), especially in the healthcare sector. Sustainability is a cross-disciplinary concept and attracts the interest of scholars among different research fields. However, literature agrees on the "triple bottom line objectives" (Elkington, 1998)(p.37) of sustainability (i.e., environmental, economic, social). Among management studies, this requires embracing a multistakeholder and multidimensional evaluation of a firm's impacts. Accordingly, financial accounting and reporting have been considered unable to provide adequate measures of social and environmental impacts. Sustainability accounting (Elkington, 1993) received increasing attention among accounting scholars, however, literature claims a lack of evidence on digital transformation in the area of accounting and sustainability with only some recent studies that started to analyse the link between digitalisation and sustainability, investigating the impacts on firms' performance or the involvement of stakeholders. Being accountable on sustainability and digitalisation is considered relevant to satisfy both external and internal stakeholders' accountability needs.

Despite the relevance of sustainability reporting, accounting, and accountability, for all the stakeholders, in public sector, little attention has been registered. However, embracing the three level of analysis (i.e., environmental, social, economic) is considered highly relevant.

This study aims at investigating sustainability accounting of digitalisation (or digital innovations) providing a multistakeholder and multidimensional framework for the impacts' evaluation, by identifying indicators (how) and reporting tools (where). To present a picture of the extant of research, a systematic review on Web of Science database has been performed investigating "accounting" AND "sustainability" AND "(digital innovation OR transformation) OR digitalisation". The analysis of results has been supported by Bibliometrix tool (Aria & Cuccurullo, 2017) that allowed to provide more objective, structured and reliable analyses of a large body of records, identifying shifts in the boundaries of the disciplines, inferring trends over time, and identifying the most performing institutions and scholars.

Preliminary analyses highlight a lack of evidence of the issue investigated in management studies, nevertheless emphasising a growth of interest. Literature suggests different reporting tools such as Balance Scorecard, balance sheet or social balance sheet, however, there still is a lack of evidence on both indicators and tools. The thematic map (see Figure) suggests both healthcare and public sectors as central (relevant) nodes, however, still underdeveloped. Further findings will be presented during the oral presentation.

Further research should "engage" (Adams & Larrinaga-González, 2007) with healthcare organisations to investigate accounting or accountability and management systems that improve digitalisation sustainability impacts.

Value-based healthcare principles in the full cycle of care: implementation and development of a cardiac care network in the Netherlands

MSc Marieke de Wit[1], Dr Jeroen van de Pol[1], Luc Theunissen, MD[1,2], Hans Janssen, MD[1,3], Martijn Burg, MD[1,4], Prof Lukas Dekker[1,5,6], Dr Paul Cremers[1], Dr Dennis van Veghel[1,6]

[1]Netherlands Heart Network, Netherlands. [2]Máxima Medical Center, Netherlands. [3]Anna Hospital, Netherlands. [4]Elkerliek Hospital, Netherlands. [5]TU/e, Netherlands. [6]Catharina Hospital, Netherlands

Introduction

The Netherlands Heart Network (NHN) is a joint-effort of all relevant healthcare providers in primary, secondary, and tertiary care in the Southern region of the Netherlands. The NHN was initiated to offer the most relevant patient-outcomes at the lowest costs according to the principles of Value-Based Healthcare (VBHC). To achieve this, patient relevant outcomes and healthcare costs are evaluated in close collaboration with patients, healthcare professionals and health insurers . In order to achieve the highest patient value the NHN has initiated physician-driven networks concerning specific heart conditions (e.g. atrial fibrillation, heart failure, coronary artery disease, and valvular heart disease).

Methods

The physician-driven network teams use a solid methodology based on VBHC principles to define transmural care standards, measure and discuss outcomes, establish initial conditions and costs, and implement improvement projects as elements of the PDCA-cycle. A steering committee, consisting of representatives of participating hospitals, general practitioner organisations and physicians, governs the strategic direction of the NHN. Additionally, to reflect on the healthcare pathways and to provide advice on the patients' needs a Patient Advisory Board and patient panels are in place for strategic advice and knowledge on the patients' healthcare experience. A backbone organisation functions as network facilitator to form the linking pin between the steering committee and the networks of the NHN through the provision of information through data collection and analysis, generating support to guide changes processes and facilitating meetings.

Results

Multidisciplinary networks of the NHN have defined, implemented and continuously improved transmural care standards per heart condition based on multiple completed PDCA-cycles. Recurring audits are employed to confirm adherence to guidelines and completeness of registrations of necessary quality indicators and outcomes using real-world data. Since implementation of the care standards, both a reduction in hospitalisations (ORage,sex-adj.(CI95%);0.50(0.40-0.62)) and healthcare costs (25%) have been achieved. To further increase the potential of the NHN, an innovation agenda has been developed to guide impactful innovations into practice. To this end, an innovation committee, consisting of both medical specialists and care group managers, have drafted criteria for the selection of the most impactful innovations on patient value. As such, the NHN functions as a catalyst for implementing new innovations according to the principles of VBHC. Within the framework of the NHN, evaluations are performed evidence-based and translated into scientific evaluations and publications through rigorous research.

Discussion

Commitment of participating organisations to the NHN is formally agreed upon and confirmed via a collaboration agreement for a period of 5 years. However, striving for optimising patient value leads to new challenges in healthcare delivery. Currently, healthcare providers in the Netherlands are financed individually and mostly paid based on volume. The NHN is currently analysing which type of financial model would be suitable for shifting from a ‘volume focus’ towards a ‘value focus’. Shifting to a sustainable, value focused model requires a ‘next level’ collaboration and commitment. To reach a ‘next level’ involved parties are asked to speak their vision and ambition with regards to the future collaboration in the NHN. The NHN would like to have a dialogue with the EHMA audience, on both the technical financial models, but also on the cultural aspects of this desirable shift. How can we, as backbone organisation, make this transformation possible?

PPP in the healthcare service ecosystem: how do we measure performance?

Mr Federico Umberto Mion

Ospedale Regionale di Lugano - Ente Ospedaliero Cantonale, Switzerland

Context

In recent years the use of PPPs has become increasingly popular also in the healthcare sector (Torchia, Calabrò, & Morner, 2015), even if it has been assessed mainly looking at the infrastructural level. Given the complexity of relations between the parties, the heterogeneity of actors involved, and their respective needs, an ecosystem approach could be adopted to better understand PPPs and their value creation (Aarikka-Stenroos & Ritala, 2017). Hence, we may identify different layers of stakeholders within the ecosystem of PPPs in healthcare thinking in terms of beneficiaries of service delivery: the organisation (both private and public), the society, and the patient. Literature suggests that they have multiple interests, and they assess performance differently.

Methods

First, desk research and literature review were conducted to define performance in PPP-delivered services. A reclassification of the existing literature on PPPs in healthcare has been performed. Indeed, studies have been classified by their main focus in terms of the above-mentioned beneficiaries.

After having recognised that in the extant research the most frequent purposes of a PPP are infrastructure, capacity building, policy, and economic development, as also emerged from the systematic review performed by Roehrich et al. (Roehrich, Lewis, & George, 2014), the paper shows that small focus has been given until today on the outcome of a PPP at patients' level.

Different performance metrics may be used to assess the efficiency, the effectiveness, and the value created by the service delivery under a PPP. Hence, semi-structured interviews will be conducted to assess the interests and performance dimensions relevant to each stakeholder.

Results and discussion

PPPs in services require a full understanding of the value of the service itself, grounded around the interests of the stakeholders. No single analytic framework can capture the diversity, relevant parameters, and qualities of PPPs. Brinkerhoff & Brinkerhoff suggest a purpose-based framework that examines the expression of the defining features of partnership as they relate to achieving particular purposes. These include: policy, service delivery, infrastructure, capacity building, and economic development" (Brinkerhoff & Brinkerhoff, 2011).

Furthermore, extant literature offers an incoherent picture of PPP outcomes with regards to its benefits and disadvantages.

Therefore, the work aims to focus on the performance side of service PPPs (i.e. effectiveness, benefits, and efficiency) in the healthcare sector from a multi-dimensional view using a purpose-based approach.

Economic burden of healthcare-associated infections in hospital care: case-control study in Québec, Canada

Prof Eric Tchouaket[1,2], Ms Katya Kruglova[1], Ms Stephanie Robins[1], Ms Suzanne Leroux[1], Ms Fatima El-Mousawi[1], Ms Maripierre Jubinville[1]

[1]Université de Québec en Outaouais, Canada. [2]Université de Montréal, Canada

Context

Healthcare-associated infections (HCAIs) generate a burden for hospital care by creating additional treatment costs, elevating the risk of morbidity and mortality, and reducing quality of life. Patient care costs include the increase in overall consumption of care, extended length of stay, and an increased need for medication, procedures, and laboratory tests. Adherence to clinical best practices of infection prevention and control (IPC) is essential for patient safety. The assessment of the additional costs attributable to the occurrence of HCAIs is a necessary step towards understanding the cost-effectiveness of IPC programs. This study aims to evaluate the economic burden of HCAIs.

Methods

Based on a case-control study, the extra costs attributable to six HCAIs were estimated across five hospitals in Québec, Canada. Medical charts of adult patients who had been hospitalised for at least 72 hours from July 1, 2019–June 30, 2020 were reviewed. Patients who had contracted an HCAI (cases) were matched with patients who had not contracted an HCAI (controls) over the same period of hospitalisation and in the same unit. Matching was based on patients' age, sex, primary diagnosis and comorbidities. Data from hospital archives were collected, including patients' demographic characteristics, type of infection, date of discharge or death, care and services received, and information pertaining to the relative level of resources used (NIRRU in Québec). To evaluate the additional costs attributable to the occurrence of HCAIs and compare cases and controls, data analyses were performed using a 5% threshold. Analyses include descriptive, Mann-Whitney tests, and multivariate models (GLM).

Results

To date, 219 case-control pairs have been identified where 52% are males and 48% are females. Preliminary descriptive analyses demonstrated an excellent level of matching between cases and controls with respect to age (mean age is 71 years in both groups), principal diagnosis, and comorbidities (same four most frequent conditions in both groups). The clinical severity distribution among cases was 22.4% mild or moderate and 77.6% severe or very severe, compared to 44.7% and 55.3%, respectively, among controls. Mann-Whitney U tests indicated cases had a significantly higher NIRRU score (relative level of resources used) (Mdn=1.95, SD=2.86) compared to controls (Mdn=1.64, SD=2.47), p=.002. Multivariate analyses will estimate the difference between NIRRU scores controlling for patients' demographic characteristics and risk factors.

Discussion

In this ongoing study, our team aims to determine the economic burden attributable to HCAIs across hospital settings with varying levels of the complexity of the care and services provided. A case-control study design was used because it allows for studying infrequently occurring conditions such as HCAIs, comparing similar groups that are only differentiated by the presence of the condition, and accounting for multiple risk factors. Next steps include converting the relative level of resources used into monetary values in order to estimate the extra healthcare costs incurred due to the occurrence of HCAIs, while taking into consideration patients' primary diagnoses, risk factors, and comorbidities. Calculated costs will then be integrated into a large-scale project where return on investment in IPC programs will be evaluated. Findings of this case-control study will inform diverse policy makers and stakeholders in healthcare about the cost-benefit of investing in IPC resources in hospital care.

Practical guidance for the application of time-driven activity-based costing in an integrated maternal care unit from a value-based healthcare perspective

MSc Maud van den Berg[1], Dr Hilco van Elten[2], Prof. Dr. Ir. Kees Ahaus[1]

[1]Erasmus School of Health Policy and Management, Netherlands. [2]Nyenrode Business University, Netherlands

Context

Value-based healthcare (VBHC) aims to improve patient outcomes and experiences and reduce costs of care. Whereas numerous healthcare studies address health outcomes, costing studies in healthcare are limited – especially those adopting a VBHC perspective. Accurate cost knowledge of patient care-pathways is often lacking in healthcare organisations, while cost information is a necessity for managers to plan resources, compare innovations, and improve decision-making. VBHC advocates the use of Time-Driven Activity-Based Costing (TDABC) as an accurate yet relatively practical approach to calculate healthcare costs. This study aims to provide insight into the methodological application of TDABC in practice and to provide practical guidance for professionals and academics in the field of healthcare services- and management.

Methods

The VBHC literature advocates the use of TDABC due to its specific patient-centred, condition-focused approach. TDABC is based on two parameters: unit cost of resources and the time needed to perform an activity, with process maps of patient care pathways as an underlying principle. In our Dutch case-study, we apply TDABC in an integrated maternal care unit (IMCU) with the aim to evaluate costs before and after substitution of clinical maternity care with primary maternity care. This intervention was initiated from a VBHC perspective, with the aim to improve continuity of care and therefore patient experiences, but also to reduce healthcare costs by involving less costly resources. Furthermore, it is the aim to use the TDABC cost information as input for the design of a value-based payment method.

Results

We based our application on the internationally known 7-step framework of Kaplan and Anderson (2007). In the end, the process had an iterative character as it was performed in co-creation with academics, practitioners, financial controllers, and managers of the IMCU to ensure a comprehensive application. The purpose of this paper is to document the process of calculating costs in the context of maternity care, using TDABC. We aim to describe our challenges and considerations in our real-world application of TDABC methodology and propose pragmatic solutions to these challenges.

Discussion

The literature presents TDABC as a pragmatic approach to calculate healthcare costs. The 7-step framework of Kaplan and Anderson (2007) suggests that TDABC applications are rather straight-forward and linear. However, a critical review of the literature shows limited evidence for this claim. Furthermore, TDABC studies in literature tend to focus on the result, instead of the method. We believe we can contribute to the field by our extensive description of the application of the method in practice.

By sharing our post-hoc, practical, and methodological knowledge, we aim to stimulate the uptake of TDABC in practice to improve overall cost knowledge and therefore a thorough investment in VBHC.

Building sustainability initiatives with accredited graduate healthcare management educational programs: outcomes and impact over the past decade

Dr Anthony Stanowski[1], Dr Daniel West[2], Mr Paul Murphy[3]

[1]*Commission on Accreditation of Healthcare Management Education, USA.* [2]*University of Scranton, USA.* [3]*Canon Solutions America, USA*

INITIATIVE: In 2017, the Commission on Healthcare Management Education (CAHME) and Canon Solutions America (Canon) developed an award for graduate programs in healthcare management focusing on sustainability as guided by Canon's corporate philosophy of "kyosei". The CAHME-Canon Partnership encourages and recognises sustainability efforts in accredited graduate programs. This award is inspired by Canon's contributions to a sustainable society and serves to incorporate the ideals of sustainability in future healthcare leaders. It recognises the considerable influence of education on creating sustainable, inclusive, and socially responsible healthcare organisations.

RELEVANCE: Healthcare managers need tools and resources to develop sustainable healthcare initiatives. This is true in the areas of patient safety, quality of care, and cost management. Healthcare management education programs must develop leaders that can:

- adapt to constant change in an organisation and environment;
- efficiently and effectively manage resources;
- create cultural competence;
- manage internal and external stakeholder relationships.

Transformational healthcare leaders recognise the importance of social responsibility and social justice. The World Health Organisations recognises health as a human right. Teaching future leaders how to develop and design public-private partnerships to improve global health creates opportunities for research, scholarship and innovation. The CAHME-Canon partnership serves as an excellent example in recognising and highlighting sustainability initiatives that can change corporate culture.

CONTEXT: CAHME's mission is to advance the quality of healthcare management education. At the heart of Canon's commitment to the world community is the belief that we are building a better world for future generations. This CAHME-Canon partnership advances excellence by identifying university initiatives that demonstrate sustainability using applied examples. Graduate programs must provide evidence/outcomes to qualify for the award.

CASE STUDY: The University of Scranton's MHA program was the 2018 award winner. We will review the lasting impact of the award at Scranton as a case study. The presentation will also review the 8 other winning programs, and present the impact on those programs.

FINDINGS: Sharing results with other accredited graduate programs encourages excellence in leadership development. In an age of economic uncertainty in healthcare, adapting successful initiates based on evidence and results can encourage inclusion and improve the quality of training for future healthcare leaders in other programs. The CAHME-Canon Sustainability framework can be replicated in other countries enhancing global health outcomes and preparing global healthcare leaders. The presentation will provide concrete examples of sustainability from these universities with outcomes data to support future application.

INNOVATIVE CONTRIBUTION TO POLICY, PRACTICE AND/OR RESEARCH: Sharing knowledge and expanding awareness about applied sustainability expands excellence and identifies new areas for research and project development. This is at the core of corporate social responsibility. The award highlights those educational institutions that focus on sustainable organisational principles based on evidence-based management, modelling, program engagement, identifying innovation, and creating new partnerships. The award goals are:

- to identify, promote and broadly share successful sustainability projects
- to establish new outcome metrics, benchmarks, and parameters of excellence for the profession
- to establish a mentoring relationship with award winning healthcare management programs within their university and among other healthcare management programs.
- to raise awareness of university stakeholders to influence policy formulation at the local, state, and national levels.
- to encourage graduates of programs to make contributions to their community and the broader world society.

Fostering resilience in the health care system in the context of the post COVID-19 pandemic recovery: the case of an acute teaching hospital in Malta

Dr Gianpaolo Tomaselli[1,2], Mr Steve Agius[1],[2], Prof Dr Sandra C. Buttigieg[2,1]

[1]Mater Dei Hospital, Malta [2]University of Malta, Malta

COVID-19 pandemic has put extreme pressures on health care systems globally [1]. The challenging situations which occurred due to this outbreak have exposed health care systems to uncertainties and failures in ensuring access to health care services for all individuals, supply chain disruption, hospital bed capacity, and workforce shortages among others [2, 3, 4]. In the view of post pandemic recovery, governments worldwide have been called to implement additional strategies and measures in order to strengthen and improve the health care service delivery and contribute to the resilient recovery of the economy. Health care system resilience refers to the ability of health organisations to prepare for, recover from, and absorb shocks while maintaining core functions and meeting the ongoing and urgent care needs of communities [5, 6]. Resilient health systems can therefore effectively adapt to dynamic situations and reduce vulnerability throughout the system and beyond [7]. However, the application of this concept in healthcare is relatively new, and it was only after his COVID-19 pandemic that this topic gained attention.

This work aims to investigate what strategies and measures are currently being adopted to foster health care system resilience in the post COVID-19 period. A qualitative approach was adopted and document analysis was conducted on current literature available as well as on a number of hospital documents (including annual reports and hospital data) of an acute teaching hospital in Malta.

Results show that the hospital is adopting several strategies and measures in order to recover both in the number of interventions that have been suspended due to the COVID-19 as well as in outpatient appointments. The hospital is currently focusing on overcoming new challenges and continue to carry out reforms in the way the service is provided. COVID-19 has shown unpreparedness in meeting the pandemics demands (e.g. limited number of ventilators, oxygen concentrators, etc.) and hence adequate plans to prepare for future outbreaks are currently being taken into account. Future efforts will also be directed towards ensuring that enough ICU (Intensive Care Unit) beds are available for patients who need organ support, such as mechanical ventilation and renal replacement therapy. Additional measures will also be directed towards infection control and prevention of cross-infection, ensuring proper ventilation and that personal protective equipment (such as face masks and gloves) are always in stock. The hospital will also direct its investments to Artificial Intelligence (AI) and telemedicine. Finally, initiatives related to employees' health and well-being will continue to be promoted – as the pandemic showed the burden imposed to the healthcare workforce and the importance of keeping a healthy work environment to ensure the quality and safety of the service provided.

Relevant issues in sustainable health planning: a materiality analysis in Portugal, 2021

Dr Ana Cristina Garcia[1],[2], Dr Carlos Matos[3],[4], Prof Tiago Correia[1], Prof Paulo Ferrinho[1]

[1]Global Health and Tropical Medicine (GHTM), Institute of Hygiene and Tropical Medicine, NOVA University of Lisbon, Portugal. [2]Department of Epidemiology, National Institute of Health Doctor Ricardo Jorge, Portugal. [3]Public Health Department, Northern Region Health Administration, Portugal. [4]School of Medicine and Biomedical Sciences, University of Porto, Portugal

Context

Sustainable health planning aims to focus on health as a result, determinant and enabler of sustainable development. Being a complex process, several tools are available to support its feasibility. Materiality analysis allows prioritising topics by relevance, through the perception of stakeholders from different sectors on the relative importance of environmental, social, economic and governance issues, enhancing the implementation of strategies aligned with sustainable development and the achievement of the Sustainable Development Goals (SDGs). The objective of this study is to identify, and order by relevance, sustainability issues relevant to the construction and implementation of sustainable health plans in Portugal.

Methods

Using a validated framework for Portugal, adapted from the GAPFRAME model, as a tool for translating the SDGs into relevant topics to be included in planning for sustainable health, and under the Global Reporting Initiative guidelines, a materiality analysis was carried out. Data related to the perceptions of the relevance of 32 sustainability issues as determinants or facilitators of achieving high levels of health were collected through a self-completion questionnaire applied to 127 stakeholders of the National Health Plan 2021-2030 of Portugal (NHP 2021-2030). Stakeholders were organised into two study subpopulations: from the health sector (57.5%) and from other sectors of society (42.5%). Issues were organised in four dimensions: Planet, Society, Economy and Governance. An ordinal scale of 1 to 10 points (1 – zero relevance; 10 – maximum relevance) was used. A univariate analysis was performed, and a materiality matrix was constructed to contrast the average scores of the two subpopulations.

Results

Seventy-four stakeholders (58.3% of the total) participated: 53 from the health sector (72.6% of the respective subpopulation) and 21 from other sectors (38.9% of the subpopulation from environmental, economic and governmental sectors, and social areas except health). The materiality matrix showcases the 32 sustainability issues located in its upper right quadrant, revealing a high relevance of all the issues analysed, both for internal (health sector) and external (other sectors) stakeholders. A more detailed analysis reveals a very high relevance attributed to the issues "Organisation of health services and provision of care" (the highest one), "Living conditions" and "Individual and group behaviours" (from the dimension Society). Lesser relevance was attributed to the issues "Sustainable consumption" (the lowest one), "Sustainable production" (both from the dimension Economy) and "Equal opportunity" (dimension Society). In the dimensions Economy, Planet and Governance, the issues "Employment", "Water" and "Peace" presented the highest relative relevance, respectively.

Discussion

Materiality analysis, a tool commonly used in sustainability reporting and communication strategies, have been found to be valuable for strategic planning. Applied to health planning, it seems to open a fruitful way for the selection and implementation of sustainable health strategies. The materiality analysis conducted in Portugal in the context of the NHP 2021-2030, mobilised different stakeholders from diverse sectors, allowing the identification of ‘material´ issues from a pool of 32 environmental, social, economic and governance issues. All of them were perceived highly relevant to the construction and implementation of sustainable health plans in Portugal. A more detailed analysis showed a relative higher relevance attributed to societal issues, namely the “Organisation of health services and provision of care”, and a relative lower relevance attributed to economic issues, namely “Sustainable consumption”.

Healthcare waste management during the COVID pandemic: analysis of organisational and environmental impacts in four Italian healthcare facilities

Dr Chiara Cadeddu[1],[2], Dr Mattia Di Russo[1],[2], Dr Aurora Heidar Alizadeh[1],[2], Dr Mario Cesare Nurchis[3],[2], Dr Silvio Capizzi[4], Dr Costanza Cavuto[5], Dr Ornella Di Bella[5], Dr Daniele La Milia[6], Dr Gabriella Nasi[7], Dr Martina Sapienza[7], Dr Aldo Rosano[8], Prof Walter Ricciardi[1],[2]

[1]Università Cattolica del Sacro Cuore, Italy. [2]Italian Institute for Planetary Health, Italy. [3]Fondazione Policlinico Universitario Agostino Gemelli, Italy. [4]Istituto Europeo di Oncologia, Italy. [5]Istituto Regina Elena, Istituti Fisioterapici Ospitalieri, Italy. [6]Istituto Mediterraneo per i Trapianti e Terapie ad Alta Specializzazione, Italy. [7]Ospedale Cristo Re, Italy. [8]Istituto Nazionale per l'Analisi delle Politiche Pubbliche, Italy

Context

The use of personal protective equipment (PPE) in healthcare has hugely increased because of the Sars-Cov-2 pandemic, both in wards repurposed for COVID-19 patients and in those that maintained their usual operations. As pointed out by the World Health Organisation, the care that should have been put in planning the disposal of the consequent waste of these PPE has been very often overlooked. For these reasons, we aimed to assess the trend in Healthcare waste (HW) production during a 6-year period in four Italian Healthcare Facilities, exploring it from both the organisational and the environmental perspectives.

Methods

Data from 2016 to 2021 were retrieved from the risk management departments of the four facilities, located in Milan (Istituto Europeo di Oncologia - IEO), Rome (Istituti Fisioterapici Ospitalieri-IFO and Cristo Re - CR), and Palermo (Istituto Mediterraneo per i Trapianti e Terapie ad Alta Specializzazione - ISMETT). Waste quantities per capita and per inpatient days were calculated. The correlation between the amounts of HW generated (in relation to occupied beds) and the fraction of beds attributable to COVID-19 was analysed using Pearson's correlation coefficient. For the analysis of CR, which provided annual data only, a Mann-Kendall test was adopted to detect annual monotonic trends. An Interrupted Time Series Analysis (ITSA) was performed to identify trends and level changes in monthly HW production after the COVID outbreak. The average weight of HW per patient was used to estimate the CO2 production of different facilities and the consequent costs.

Results

The HW weight per occupied bed increased in all the four facilities, with different variations in the annual trend of production (IFO +4%, 10.8 tons/year; ISMETT +9%, 25.2 tons/year; IEO +3%, 6.8 tons/year; CR +6%, per an amount of 7.8 tons/year) but only CR showed a marginal significant trend ($p=0.07$, Mann-Kendall test). Compared with pre-COVID period, the increase of HW production per occupied bed was +34% for ISMETT, +25% IFO, +13% CR, +9% IEO. ITSA showed a change in HW production immediately following pandemic's start for IEO and ISMETT and a marginally significant difference between pre-COVID and post-COVID slopes of the increase ($p=0.07$) for ISMETT, which also showed a significant correlation between HW production and the proportion of hospital load referable to COVID-19 ($r=0.8$, $p<0.01$). Before pandemic the CO2 emissions weighted 487 kg/patient compared to pandemic period (768 kg/patient), with per capita cost of 1705€ and 2688€ respectively (+983€/patient).

Discussion

To the best of our knowledge, this is the first study to take into account the issue of waste management and its consequences in different healthcare facilities located in the Northern, Central and Southern Italy. The overall increase in HW production observed in the study period confirms that HW disposal is an urgent issue for the healthcare management, to be addressed with attention when implementing monitoring systems for hospitals. Further studies comparing bigger facilities are required in order to obtain more accurate estimates of the phenomenon. In any case, more adequate disposal of HWs and strategies introducing circular economy principles, like recycling and sterilising when feasible, could contribute substantially to reducing air pollution due to high CO2 emissions and have a general important impact for the climate crisis emergency, and simultaneously reduce the economic impact on health systems which have been already deeply hit by the COVID pandemic.

Sustainable solutions of complex environmental concern in management of pharmaceuticals

Dr Milica Paut Kusturica[1], Prof Dr Marija Jevtic[1,2,3], Prof Catherine Bouland[3]

[1]Faculty of Medicine University of Novi Sad, Serbia. [2]Institute of Public Health of Vojvodina, Serbia. [3]Université Libre de Bruxelles (ULB), Research centre on Environmental and Occupational Health, School of Public Health, Belgium

Human pharmaceuticals are listed as emerging contaminants by UNESCO. Their detection and elimination represent the crucial step according to the "2030 Agenda for Sustainable Development" Goal Targets. Pharmaceuticals become an environmental concern when entering the environment which occurs when residues are excreted after consumption or when unused pharmaceuticals are discarded improperly. The vast majority of pharmaceuticals have not been sufficiently explored for their long-term toxic effects, presence, and fate in the environment. However, certain pharmaceutical groups such as beta-blockers, antibiotics, anticancer drugs, and endocrine disruptors have been shown to cause devastating effects on the ecosystem including increased mortality, and impairment of the physiological and reproductive functions of aquatic species.

Considering that pharmaceuticals provide an unquestionable benefit to human health, great care must be taken not to restrict access to those pharmaceuticals that are necessary but to prevent their negative environmental impact. Given that 'prevention is better than cure' the priority is avoidance of pharmaceutical waste.

Various policy interventions are recommended across the lifecycle including source-directed, user-orientated, and waste management measures, to prevent the creation of household pharmaceutical waste and to ensure environmentally friendly ways of pharmaceutical household waste disposal. Preventive measures include rational pharmaceutical consumption, prescribing greener drugs, or designing pharmaceuticals that are benign and easily biodegradable, improved disease prevention, personalised medicine, enhanced dimensioning of pack sizes, and marketplaces for redistribution of unused pharmaceuticals.

The next step is to prevent unavoidable waste to reach the environment due to the practice of improper disposal of unused pharmaceuticals from households which represents a global phenomenon. Thus, effective collection schemes and take-back programs with the main purpose to offer an easy method for disposal of pharmaceutical waste represent an important measure to protect the environment.

Given that financial moment plays a significant role in pharmaceutical waste disposal systems, one of the valuable solutions is an implementation of the EPR laws which require that pharmaceutical manufacturers manage their products in all phases of their life cycle, including end-of-life treatment and waste management.

Finally, educating health professionals and the public and partnership between environmental and healthcare scientists are of crucial importance in all phases of the pharmaceuticals' lifecycle. The heart of all joint efforts should be the "One Health" approach to tackle pharmaceutical waste and enhance human, animal, and environmental health that are strongly interconnected.

Sustainable solutions of complex environmental concerns in management of pharmaceuticals demand among innovative management, public health and one health approach. Also, it is necessary to strengthen responsibility and procedures not only for the health sector/professionals (by strengthening knowledge in environment and health), but also citizens (by strengthening health literacy).

Improve quality of healthcare services through certification and accreditation of state health services organisation (Cyprus)

Dr Nicolas Nicolaou

State Health Services Organisation, Cyprus

Context

State Health Services Organisation (SHSO) is the largest healthcare provider in Cyprus, with 9 hospitals and 38 health centres in all cities and provinces with more than 7500 employees. SHSO is a newly established Cypriot organisation with the main purpose of taking over, from the Ministry of Health, the administration and management of state hospitals. The state hospitals of Cyprus, which the previous decades were under the responsibility and supervision of the Central Government, are called to become sustainable and competitive within the framework of the General Health System (GHS). The Hospitals and Health Centres of the State Health Services Organisation (SHSO) form the backbone of the GHS. SHSO aims to strengthen its competitive position and the quality of the through improvement of healthcare services, via certifications and accreditation.

The purpose of this paper is to study the way of certification as well as the accreditation, of the largest health service provider in Cyprus, in the context of the competitive GHS.

Methods

Study of certification and accreditation models and examples of other large health organisations in the context of adoption of good practice as well as to learn mistakes and omissions that took place in the health organisations under certification / accreditation. In addition, a series of actions including cooperation with the Cyprus Organisation for Standardisation, transfer of good practice from the advanced Quality Assurance Units (QAUs) to the newly established QAUs and actions for horizontal preparations for clinic certification are being pursued. Data collection was done through literature review, data analysis and empirical observation.

Results

SHSO has completed the certification of the Ambulance Department and 3 clinics with ISO 9001:2015 and ISO 15224:2016. In addition, SHSO is proceeding with the preparation of a series of departments with these standards. Lastly, 2 of the largest hospital of the Organisation, have started the preparation process for Accreditation cycle.

Discussion

Investment in quality is essential importance for the sustainability of SHSO. The certification as well as the accreditation strengthens the position of the organisation in the competitive environment of Cyprus, improves the image of the organisation, increases the trust of the patients and increases the efficiency of the staff. The commitment of the top management is a condition for this investment.

Agile governance fusion – Modern governance & thoughtful leadership

Mr Nabil Jamshed

Guy's and St Thomas' NHS Foundation Trust, United Kingdom. Good Governance Institute, United Kingdom. Black Country Healthcare NHS, United Kingdom

Solving complexity through a governance solution that is simple and effective to deliver outcomes. With a vision to create a truly integrated oversight of governance, with a focus on 360 governance (leadership, vision, risk management, assurance, transparency, openness, honesty, objectivity and accountability) on key business areas and functions; quality and safety, people, finances and resources and regulatory compliance, an innovative governance approach was introduced at Guy's and St Thomas' NHS Trust. Integrated Governance Assurance and Performance (IGAP) was launched. The expected outcome was an ability for a holistic and 360 view, cross-fertilisation of impact on key business areas and drawing context and intelligence from the data.

IGAP took the dynamic governance principles forward by creating a fusion between the work of King IV, Nancy Kline's work on "Time to Think" through co-creation methodology of engagement with its stakeholders and key members of the committee.

The aim of the project included:

- Removing duplication by removing redundant governance
- Creating a golden thread that allows a truly bottom up and top down (Board-to-ward and ward-to-Board) oversight of key issues
- Enabling conversations by introducing agenda items as questions, using techniques from Nancy's work
- Using the principles of integrated reporting in a slight variation that enables cross fertilisation of ideas and impact across key business areas of Quality and Safety, People, Operational Performance and Finance and resource

During the course of this project, our own list of capital which are linked to our key business domains that we operate under. These key areas of business were identified as:

- Quality and Safety – our no one priority
- People – Similar to Human Capital and our largest spend
- Operational Performance – like manufacturing capital
- Finance – which included innovative ideas and transformation

Through the means of the existing resources, a governance and oversight framework was built where all 93 services which are categorised under 8 large directorates reported against defined metrics against the above headings. Though, 80% of assurance was sought from quantitative data the crucial 20% assurance was built from qualitative data such as patient feedback, stake holder engagement, staff concerns raised, working with system partners and intelligence held by our regulators.

A perfect fusion of the concepts of Integrated Reporting Framework (IRF) from King IV, Nancy Kline's "Thinking Space" and co-production methodology enabled a tailor made effective solution that was fit for purpose. Thinking is the management skill that is practiced not too often due to the nature of the work and reacting to situations. However, thinking time well spent sharpened our thought process and allowed our senior leadership team to become visionary leaders.

Some of the early benefit realised includes;

- Effective and efficient meetings where every minute is utilised to think and consider all aspects of business in an integrated way
- Clarified accountabilities, where solutions are owned locally by the leadership teams
- Improved communication and transparency where all involved worked through a single version of the truth with a single filtration process that enables cross fertilisation
- Open culture where challenge becomes second nature and conversations are focused, away from omni combatant approach towards collective team accountability
- Risk driven business planning and running of the core activities.
- Effective and meaningful escalations, where key themes are identified and reported to the management

Lastly, governance structure that is purposeful and aligned to strategic vision fulfilment.

Snapshot of leadership in healthcare in the 21st century: a systematic review

Ms Marzia Di Marcantonio

Università Cattolica del Sacro Cuore, Italy

Context

Leadership has been discussed since the beginning of civilisation, but researchers are still striving to answer this question. Various contexts and models have been the focus of leadership studies to comprehend its efficacy and understand the relationship between leadership and management. These studies do not seem to examine health organisations effectively. The complex system that defines health organisation, which has been influenced by external variables such as governor choices, innovative technologies, and threats has stimulated more inquiry.

Methods

Considering the development of leadership studies and the transformations that health organisations have seen over the past century, this study provides a systematic review of the current research on leadership in the healthcare sector. Two databases, Web of Science and Scopus, were examined for the review. Thousands of results were obtained from an initial search using leadership- and healthcare-related phrases. As a result, a string was developed to limit and classify the vast number of articles. The string consists of the field terms "leadership AND healthcare AND value or principle OR (mixed with) behaviour AND ethics OR medical OR physician AND NOT nurse OR nursing." The string has been developed with a focus on leadership in health care, with an emphasis on the personas of physicians, who have been the most affected by the New Public Management reforms. In truth, health organisations such as the Italian one has been dramatically modified by new rules and regulations since 1990, with the initial effects not being evident until the early 2000s (see Mascia, Morandi and Cicchetti, 2014). Only Italian and English articles published between 2000 and 2022 were considered. There were fifty-five papers detected on the Web of Science dataset and 781 in Scopus, for a grand total of 836 articles. To bring the total number of articles for the review to 840, four additional papers from previously identified and determined relevant sources were added. The initial step of the screening technique was to check there were no duplicates; fifty-one papers were found to be duplicates and were subsequently removed. In the second phase, the titles and abstracts of every single publication were meticulously scanned. If an article did not meet all the inclusion criteria, it was disqualified. If the information contained in the article's title and/or abstract was deemed sufficient, the articles were included in the full-text screening phase. Even though this resulted in the exclusion of several full-text publications for evaluation, it allowed to be as exhaustive as possible during this phase. Only thirteen of the 840 articles discovered were deemed appropriate.

Results

Despite the small sample size, the results indicate that confusion exists in the healthcare sector regarding the distinction between manager and leader and between medical and clinical leadership. In addition, the hybrid position of medical manager, who are first and foremost physicians, is emphasised in contrast to the development of a leadership disconnected to clinical activities.

Discussion

Despite the substantial emphasis on moral and ethical frameworks, the results indicate that the topic of leadership in healthcare should receive more attention in future leadership research to aid policymakers in the decision-making process.

Exploring the conceptual relationship between clinical leadership and patient experience

Mr Aniekan Ekpenyong[1], Ms Kirsten Armit[2], Dr Joanna Inman[3], Prof Jeremy Brown[1], Prof Axel Kaehne[1]

[1]Edge Hill University, United Kingdom. [2]Faculty of Medical Leadership and Management (FMLM), United Kingdom. [3]Chesire and Wirral Partnership NHS Foundation Trust, United Kingdom

Context

Leadership development of healthcare professionals has been prioritised in the NHS as an essential strategy to improve organisational outcomes and patient care. This has given rise to several leadership development programmes, frameworks, and models to support this enterprise. One way to evaluate the effectiveness of leadership is by using the quality-of-care indicator, patient experience. However, the conceptual and evidential link between leadership development and patient experience has not been systematically investigated yet.

Method

We conducted an exploratory study to obtain qualitative data on the perceptions of clinical staff about the association between leadership training and patient experience. In this poster, we report on evidence gathered from physiotherapists working in the English National Health Services (NHS). They were interviewed about how they conceptualised leadership and patient experience in the NHS. Respondents were recruited through their participation in the Faculty of Medical Leadership and Management (FMLM) Clinical Leadership Fellowship programme. Interview data were analysed using the qualitative content analysis approach.

Results

Respondents commented on the complexity of associating leadership impact on patient experience. Leadership was hypothesised to affect the patient experience in two broad ways: at the micro-level and meso-level. At the micro-level, leadership was said to influence patient experience through clinician leadership of self and patient-clinician interaction. How a clinician interacts with and manages difficult and uncertain situations with patients impacts their experiences. We noted that respondents saw the link through the lens of focusing their ability to act on patients' needs, understanding when to take decisions and when to share decision-making with patients. At the meso-level, patient experience was said to be influenced by the demonstrative value of leadership for colleagues and on teams with regard to prioritising patient care. Teams that are focused on improving the experiences of patients are those with distributed leadership roles, an empowering environment to act on behalf of the patient and the presence of a culture that encourages reflective learning.

Discussion

Findings from our study reveal a conceptual gap when linking leadership with patient experience. This resonates with current evidence highlighting the difficulty in understanding the specific role of leadership in enhancing patient care. In addition to the two levels of leadership impact highlighted in the study, organisational culture and team climate may play a key role in the mechanism of leadership influence on patient experience. There is some indication that in the presence of mediators such as a favourable work environment and staff empowerment, a decrease in adverse patient events and an improvement in patient satisfaction will occur. Thus, clinical leaders could have a role to play in ensuring a positive team/unit climate, and ultimately, the experiences of patients, through appropriate relationship management at the micro- and meso-levels, and the strengthening of clinical governance and other core care processes.

Innovation after research: generating value from the hospital units – the University Hospital of Coimbra case

Dr Ines Antunes Ferreira, RN Carmen Nogueira, MSc Patricia Couceiro, Dr Alexandre Lourenço

University Hospital of Coimbra, Portugal

Due to the role of innovation in economic development and its effect on the competitiveness of organisations, like in many other countries, the Portuguese healthcare sector has already realised the importance of innovation. However, a national health innovation strategy does not exist. This leads, on the one hand, to the non-involvement of patients in the assessment of innovative solutions and, on the other hand, to SMEs and start-ups being unable to focus on developing products that the ecosystem can scale up. The hospital sector in Portugal is mainly composed of state-owned hospitals with limited managerial autonomy, which do not have a competitive nature and tend to ignore the need to incorporate innovation and the underlying knowledge when adopting new technologies. Therefore, technological and organisational innovation adoption is frequently prevented. One of the main preventive factors is the lack of partnerships between healthcare institutions and other parties in the ecosystem, like academia and start-ups. However, the same is not valid for the University Hospital of Coimbra (UHC).

UHC's Innovation Unit, established in 2019, counts today 30 projects of innovation in the most diverse areas of health. The purpose of this work is to do a retrospective analysis of the evolution, with a careful look at the faced challenges, of an innovation office in a public hospital in Portugal that successfully has rowing against the tide. In three words, culture, leadership, and time are the critical barriers to innovation. And with that in mind, we develop a strategy to promote it.

Portugal can learn from other countries that are leaders in innovation in the sector, and the same works the other way around. In a field that is still rising, sharing experiences is the way through. The opportunity to develop and incorporate new approaches can lead to new and innovative care models in which hospitals play a more central and decisive role. Healthcare innovation needs to consider hospitals as significant players; the sooner they can be ready with the appropriate abilities and infrastructure, the better. The real target is to have innovation coming out from them.

How to support the sustainability of good practices on digitally enabled integrated person-centred care transferred to heterogeneous contexts? Sharing the results of the JADECARE Joint Action

Ms Yhasmine Hamu[1], Dr Ane Fullaondo[1], Dr Jelka Zaletel[2], Mr Denis Opresnik[3], Dr Martina Rimmele[4]

[1]Institute for Health Services Research Kronikgune, Spain. [2]National diabetes programme coordination group at Ministry of Health Slovenia, Slovenia. [3]National Institute of Public Health of Slovenia, Slovenia. [4]Bavarian Health and Food Safety Authority, Germany

Context

JADECARE (the Joint Action on digitally enabled integrated person-centred care) contributes to innovative, efficient and sustainable health systems, by providing expertise and sharing good practices to assist the Member States in undertaking health system reforms. It enables the National authorities to benefit from solutions in digitally enabled integrated person-centred care by supporting the transfer of four good practices in the field to 21 other settings of so called Next Adopters (NAs). JADECARE involves a total of 45 organisations from 16 European countries holding different levels of penetration, adoption and maturity of integrated care, providing a complete scenario of different idiosyncrasies.

Methods

An implementation strategy has been developed for enabling the transfer of experiences and knowledge of the four good practices. It is a three-step method that includes a series of techniques, concrete procedures, guidance and recommendations. The three main phases are: Pre-implementation (planning and preparation), Implementation (roll-out and operation, based on PDSA cycles) and Post-implementation (impact assessment and learning). In parallel and starting from the beginning of the project, the Sustainability strategy of JADECARE intends to strengthen the use of the outcomes of 21 new practices after the end of the Joint Action. It aims to further reinforce the capacity of partners to successfully address important aspects of health systems' transformation, with a focus on the transition to digitally enabled integrated person-centred care. For this means, the strategy identifies three core elements: policy environment, ownership of sustainability and culture of collaboration and consensus seeking.

Results

The focus on the preparation of the local environment and the consideration of the contextual determinants of the 21 end implementers has been considered a key to modulate the success of the transfer process of JADECARE. Taking this into account, the NAs initially identified more than 150 local needs aligned with the four good practices that finally resulted in the definition of 64 interventions included in their action plans that target more than 4 million people. Furthermore, the conception and deployment of interventions has embedded the core elements of the Sustainability strategy. In this line, the NAs have identified key stakeholders and have achieved a high involvement of relevant healthcare professionals in their implementation processes. Additionally, National authorities of participating countries and others have built a community of stakeholders that explores ways to boost and leverage the inclusion of digitally enabled integrated person-centred care at policy level.

Discussion

JADECARE supports knowledge transfer, generates evidence on integrated care and improves collaboration among participating stakeholders. Supported by the guidance of the Sustainability strategy, it aspires to produce enduring benefits beyond the Joint Action by ensuring the continuity and scale up of the implemented interventions. In this regard, decisive aspects for ensuring the sustainability of the practices have been identified both by NAs and National authorities. They include seeking for successful cross-sectional communication between policy makers planning health system strategies and frontline experts (healthcare professionals, IT and others) as well as striving for a two-way dialogue which favours a co-design and co-creation approach. And finally, looking for synergies not only within healthcare but at a broader societal scale.

A dynamic business modelling approach to address sustainable performance in healthcare organisations

Assist. Prof Guido Noto[1], Assoc. Prof Federico Cosenz[2], Dr Giuliana Cavadi[2], Dr Giovanni Scirè[3]

[1]University of Messina, Italy. [2]University of Palermo, Italy. [3]BPNLab, CNR, Italy

Context

Healthcare sector organisations play a well-recognised crucial role in supporting the health of communities worldwide. These organisations articulate the provision of health services by involving other community players, both up and downstream, thus significantly impacting the sustainable development of their regional area. However, pursuing sustainable outcomes in this context is not easy as it displays relevant organisational and inter-organisational complexities to frame and manage (Noto et al., 2023). From the perspective of sustainable development, healthcare organisations are called to balance the objectives related to their mission (e.g., safeguarding population health, saving lives, providing quality of care, increasing life expectancy, etc.) with others related to financial sustainability and their environmental impact (Cavicchi et al., 2022).

Method

Given the scale and complexity of the healthcare sector, additional methodological efforts are required to provide managers with strategy design and performance management tools which may also include measures of the sustainable value (i.e., economic, social, and environmental) created in the long-term (Vainieri et al., 2020).

Based on the above, the paper aims to suggest the adoption of a Dynamic Business Modelling for Sustainability (DBMfS) approach (Cosenz et al., 2020) to manage the performance of healthcare organisations according to a sustainable perspective. Such a perspective is oriented to consider not only output but also outcome measures related to these organisations' economic, social, and environmental value.

Results

Pursuing the research objectives implies investigating how to adapt the DBMfS approach to the specific strategic and organisational attributes characterising healthcare organisations' sustainable value generation processes (i.e., value creation, delivery, and capture). To this end, after examining the rationale of the DBMfS method and its working principles in healthcare organisations, the paper describes an illustrative application of its practical use, thus enabling an analysis of its potential implications in terms of advantages and limitations.

Discussion

Healthcare management scholars have only recently proposed the use of business model constructs in healthcare organisations, thereby introducing a further managerial tool from private-sector practices. Drawing on this research stream, findings are expected to offer a critical exploration of a systemic sustainability-based approach to designing and implementing innovative organisational models and service formulas for advancing current healthcare settings and related performance.

Healthcare in Ukraine during the war: challenges, lessons & conclusions for re-thinking of medical systems

Dr Olena Chernenko

MEDCAPITALGROUP; Ukrainian Medical Alliance Charity Fund, Ukraine

The healthcare system of Ukraine has been going through huge challenges since February 24, 2022, when the full-scale war began. The report describes wide range of problems faced by the healthcare system in general, by public and private hospitals, and entire segments of medical services. All information will be systematised in the following aspects: infrastructural, functional, personnel, supplying, logistics & medical transportation. The peculiarities of the healthcare system in the regions with active combat actions and in the rear areas outside the war zones will be described. The interaction of general hospitals with the units of military medicine will be observed. It will also be mentioned that the Ukrainian healthcare system has been going through a period of transformation and reform since 2017 till now. The experience of the war provides many insights into how the next steps in health policy should be adjusted. Emphasis will be placed on risk management and threat management in healthcare, for better resilience and sustainability.

The experience gained by the Ukrainian healthcare system is unprecedented, it reveals weaknesses that weren`t visible in peacetime, and should be taken into account by the medical authorities in all countries – to build stronger healthcare systems in our turbulent times of geopolitical, social, economical, and demographical challenges.

Sustainable solutions in climate action by strengthening the role of Medical Doctors

Prof Dr Çiğdem Çağlayan[1], Dr Melike Yavuz[2], Ms Funda Gacal[3], Prof Dr Marija Jevtic[4,5], Ms Anne Stauffer[6]

[1]Kocaeli University, Faculty of Medicine, Department of Public Health, Turkey. [2]Bahçeşehir University, Faculty of Medicine; HASUDER – the Association of Public Health Specialists in Turkey, Turkey. [3]Health and Environment Alliance (HEAL), Turkey. [4]University of Novi Sad, Faculty of Medicine, Institute of Public Health of Vojvodina, Serbia. [5]Université Libre de Bruxelles (ULB), Research centre on Environmental and Occupational Health, School of Public Health, Belgium. [6]Health and Environment Alliance (HEAL), Belgium

Climate change and its health effects have been a growing concern among health professionals and the healthcare sector. Sustainable solutions in climate action demand a systematic approach in the healthcare sector, new procedures, and important infrastructure investments to strengthen preparedness and resilience. But the most important task in this process is to achieve the best possible preparedness of health professionals themselves.

This study aimed to measure the awareness, perception, and knowledge of health professionals about climate change, and to examine the factors which shape their position and level of awareness.

The research population of this descriptive study consists of medical doctors from Turkey, Serbia and EUPHA-ENV members. The data were collected with an online-questionnaire consisting of 29 questions in total, prepared by the researchers in line with the information obtained by the literature search.

This study was carried out within the scope of the Collaboration Project for Environment, Climate and Health (ÇİSİP) funded by the European Union. Ethical approval was obtained with the decision numbered 2021-06/04 of Bahçeşehir University Clinical Research Ethics Committee.

In spring 2023, more than 400 participants (medical doctors) from Turkey, Serbia and from the other countries in the European region responded to the survey. Survey questions included their perception on climate change impacts and the increase of extreme weather events, their concern about climate change, and the role of health professionals in climate mitigation and adaptation.

The awareness, perception and knowledge of the health care workers participating in our study on the health effects of climate change were found to be high in general. Health professionals participating in this study think that their colleagues have an important role in the health effects of climate change.

In general, medical doctors think that the health sector should be concerned about this issue and that effective measures can be taken, but the sector is not yet sufficiently prepared for the health effects of climate change.

Using the investigation about awareness, knowledge, and perception of medical doctors on climate change and its health effects we can establish necessary steps towards sustainable solutions in climate action, by strengthening the role to medical doctors through education, by appreciating needs, responsibilities and opinions in their role according to climate change issues.

Urban planning and Public health expertise as a pillar of sustainable solutions in health management

Prof Dr Marija Jevtic[1,2], Prof Dr Stefano Capolongo[3], Dr Andrea Rebecchi[3], Prof Catherine Bouland[2]

[1]University of Novi Sad, Faculty of Medicine, Institute of Public Health of Vojvodina Serbia, Serbia. [2]Université Libre de Bruxelles, Research Centre on Environmental and Occupational Health, School of Public Health, Belgium. [3]Dept. of Architecture, Built environment and Construction engineering (dABC) School of Architecture, Urban planning, Construction engineering (AUIC) Design & Health Lab. Politecnico di Milano, Italy

To achieve inclusive, safe, resilient and sustainable cities, one could use synthesis of the challenging relationship between urban planning and Public Health as stated by WHO (2016): "Health is the precondition of urban sustainable development and the first priority for urban planners".

The "Health in All Policies" strategy, clearly underlines how health depends on the quality of outdoor and indoor living environments. Healthy living and requirements for healthy places, infrastructure for the public good and Public Health, social vulnerability and equality are just a few aspects in a complex matrix when designing the urban spaces for healthy, active and walkable cities.

We should plan and organise healthcare networks having in mind complex circumstances (learnt by pandemic crisis). The concept of the "15 minutes city" as a city of proximity, provides an opportunities to meet the needs for sustainable, fair, quality, healthy living, as well as healthcare. Walkable cities and "15 minutes city" could also increase resilience, pandemic preparedness and help in health crisis management and prevention.

A city of proximity is based on the physical characteristics and people's needs, but also (from a public health perspective) needs in healthcare deliveries. Architects and public health experts in their friendship in expertise insist on long term planning and lessons learnt from COVID pandemic to improve future health care infrastructure.

Improvement of health systems' sustainability and resilience require strategies, activities and solutions both in infrastructure and health workforce. Learning from the management of pandemic crisis, the localisation of hospitals into the city boundaries, can guarantee both the limitation of flows outside urban areas, containing possible risks of contagion in large high density city centres and the accessibility from the urban areas. Also, different areas must host local facilities able to provide: health services at the primary level, with prevention and health promotion activities.

Sustainable European health systems need to adopt a wide understanding of sustainability considering economic, environmental, and social aspects using urban planning and public health expertise.

Health sector can participate towards achieving the sustainable development goals by respecting the urban health planners' and public health professionals' expertise, achieved from the lessons learnt during COVID 19 pandemic, for example.

The hospitals of the future will have to increasingly reflect on its roles, especially towards the most fragile users, and in the same time should increase its own resilient. Urban planning, together with Public health provides sustainable solutions in the management of health sector.

Participatory and evidence-based planning of primary healthcare services in Kosovo

Dr Bajram Maxhuni

AQH project, Kosovo

Context

AQH project in Kosovo funded by the Swiss Agency for Development and Cooperation and implemented by the Swiss TPH aims to ensure that the health of the population of Kosovo has improved, with strengthened healthcare providers and managers able to meet the needs of the patients (especially vulnerable groups), who are more aware of their rights and needs. In this context, AQH supported 12 project municipalities to develop health masterplans through adopting inclusive and evidence-based planning approach.

Method

In order to ensure ownership of the masterplan and inclusiveness of the relevant stakeholders, municipal Mayors are encouraged to establish a Steering Committee, comprised of health, social and education sectors, as well as, community representatives/CSOs, to oversee and guide the process of development of participatory and community needs based primary healthcare masterplan. Members of the steering committee and working groups received training on health planning using Result Based Management (RBM) concepts and approaches.

Evidence is ensured through series of studies conducted by AQH project in collaboration with the local authorities and NGOs, including Quality of Care study, Knowledge, Attitudes and Behaviours study, Community Health Needs study, and analysis of the most frequent diagnosis in the PHC institutions.

Results

12 comprehensive and based on community needs primary health care masterplans are developed and adopted by the respective municipal assemblies.

Discussion

Primary healthcare health masterplan developed by the project municipalities is a five-year development plan which is generated through adopting key guiding principles of result-oriented planning such as: situation/problem analysis and prioritisation, stakeholder analysis and involvement, SMART defined expected results and performance indicators with the targets and benchmarks set for each indicator, and appropriate monitoring and evaluation framework.

It should be emphasised that municipalities demonstrated commitment with the respect to ownership and responsibility for implementation primary healthcare masterplans.

In addition, this process was an excellent opportunity for the municipalities to put into practice knowledge and skills gained from the management training package provided by AQH project in collaboration with the Kosovo Ministry of Health, in particular, modules on planning primary healthcare services, quality management, and monitoring and evaluation.

How Managed Entry Agreements contribute to the governance of pharmaceutical spending: the Italian case

Dr Francesco Trotta, Dr Maria Alessandra Guerrizio, Dr Aurora Di Filippo, Dr Agnese Cangini

Agenzia Italiana del Farmaco, Italy

Context

The majority of countries in the OECD area are applying Managed Entry Agreements (MEAs) to guarantee both the access to novel (potentially) innovative high-costly medicines and the sustainability of the pharmaceutical expenditure. Italy is one of the first countries in Europe to have adopted MEAs and two main categories are applied through Monitoring Registries: outcome-based agreements and financial-based agreements. The aim of this study is to analyse the financial impact of MEAs for medicines monitored through AIFA registries during 2019-2021 period in Italy.

Methods

All the medicines monitored through AIFA registries which have generated a pay-back in the time-period 2019-2021 were included in this study. Revenues paid by manufacturers (so-called pay-back) for each medicinal product and type of MEA, were collected through the pharmaceutical spending monitoring activities. The expenditure data related to 2019-2021 time-period and by single year were collected through the administrative database, so called “Traceability of medicines”. Each medicine was grouped according to the category of MEA: financial-based, outcome-based and mixed MEA (in case of a medicine subject to different MEAs). The total amount of the pay-back cashed in during 2019-2021 for each medicine was calculated. This was compared to the expenditure observed in the same time-period. The incidence of pay-back on the expenditure was provided by type of agreement (e.g., payment by result, risk sharing, etc) and by category of MEA (Financial-based, outcome based, and mixed MEA).

Results

During the period 2019-2021, 73 medicines generated pay-back by manufacturers; 11 medicines (15%) were excluded since they were not reimbursable/delivered within INHS or their registries have been closed in the reference period, giving an overall sample of 62 medicines included in the analysis. A total amount of payback of 327.5 million euro was gathered from the sample medicines during the 3-year period, corresponding to 0.8% of the overall expenditure for medicines purchased by public health facilities in Italy. The majority of the pay-back was related to financial-based MEAs (158.1 million euro, 48.3%); the other categories, the outcome-based MEAs and mixed MEAs gave a less extent of payback (74.5 million euro and 94.2 million euro, respectively). The median incidence of pay-back on the overall expenditure of the medicines included in the analysis was 3.8%: 6.7% for mixed MEAs, 3.3% for outcome-based MEAs and 3.7% for financial-based MEA.

Discussion

Despite the increasing utilisation of MEAs, scarce evidence exists regarding the financial impact, in particular as instrument to manage the increasing pharmaceutical expenditure. Our study found a reduced effect of MEAs on expenditure. These results suggest the need to identify criteria to prioritise and lead the application of these agreements, to choose among the types of available agreements and to define the core elements of the agreements. We found five main variables which may help when (and if) establishing a MEA and can be summarised as following: i) grade of immaturity of clinical data package; ii) the bar's height for evaluating the value threshold; iii) administrative burden; iv) immediate or delayed effect of discounts; v) duration of contracts/agreements and time for data collection. The combined weight of these variables may drive the decision in establishing a certain type of MEA.

Artificial intelligence in healthcare management

Dr Andreas Walkenhorst, Mr Christian Sturm, Mrs Sarah Greier, Mrs Nathalie Herborn

Accadis Hochschule Bad Homburg, Germany

In recent years, research on Artificial Intelligence has received attention from academia, and business. Despite the increasing interest in AI, a standard definition has yet to be established. However, based on current research, several common characteristics can be identified to define AI: Artificial intelligence can perceive the environment and its complexity (Nakashima, 1999; Nilsson, 1998; MacKworth et al., 1998), evaluate data (Kaplan & Haenlein, 2019; Nakashima, 1999; Nilsson, 1998) and – with a certain degree of autonomy – make decisions and take actions (Kaplan & Haenlein, 2019; Nilsson, 1998). Nevertheless, research on Artificial Intelligence has proceeded in many academic fields: computer scientists continuously develop more advanced deep-learning algorithms (Bengio et al., 2021) and neuronal networks (Levi et al., 2018), social scientists discuss the legal and ethical constraints and implications of AI (Cath, 2018; Belk, 2021), and economists research the impact of Artificial Intelligence for all stakeholders of the economic system (Furman & Seamans, 2019).

The healthcare sector is characterised by data-intensive processes and the associated high data density, which is particularly interesting for AI research and application (Jiang et al. 2017). In addition, demand is constantly rising for high-quality healthcare while simultaneously avoiding increasing costs for healthcare services (Kingston et al., 2018). Accordingly, AI – a technological innovation – is a crucial driver in increasing quality healthcare and, consequently, better medical outcomes – without increasing cost (Bergman et al., 2015). However, current research is noticeably focused on medical-oriented applications of artificial intelligence (Jiang et al., 2017). This focus of application has shifted during the COVID-19 pandemic. As a result of the scarcity of medical materials, medical disposables, and specialised healthcare professionals, the focus has shifted to developing AI-driven tools to improve human capital and material usage (Baz et al., 2021; Bin et al., 2022).

However, the research on AI applications in healthcare management is still limited and highly fragmented. Furthermore, academia has offered limited application-oriented research to support medical institutions in implementing Artificial Intelligence applications in management processes. Therefore, we conducted a qualitative meta-analysis to first identify the various areas of application of AI in healthcare management. The systematic analysis identified a variety of current AI research areas in healthcare management. We furthermore identified how the different AI applications are applied and demonstrate the medical and economic impact of these applications. Furthermore, we highlight promising areas for further AI application in healthcare management but also areas that are currently not suitable for implementing AI applications. Further, multiple promising research opportunities in AI-related healthcare management research are outlined. This is necessary to advance the current application-specific research on Artificial Intelligence further. So far, the research has proliferated in recent years and generated a set of fragmented studies; however, the research is far from developing a robust corpus of literature, which failed to support medical organisations and healthcare management with concrete evidence of the benefits and implementation of AI.

Artificial Intelligence on the improvement of hospital efficiency - an automated surgical scheduling tool using machine learning and optimisation algorithms

MSc Joana Seringa[1,2], MSc Alice Paulo[2], Dr Rui Cortes[1,2]

[1]NOVA National School of Public Health, Portugal. [2]Lean Health Portugal, Portugal

Introduction

The scheduling of surgical patients is a complex and time-consuming task that requires balancing the clinical needs of patients with the availability of resources such as operating rooms and surgical teams, ensuring its efficient use. Traditional manual scheduling methods are often prone to errors and can lead to delays in surgery and long waiting times for patients, as well as to same-day cancellations due to lack of operating time. To improve the overall efficiency and surgical patient outcomes, there is a growing need for the development of automated scheduling tools. Therefore, this abstract presents the development of a software tool for the automatic scheduling of surgical patients.

Methods

The software tool was developed following the biodesign framework of Stanford [1], which includes a deep understanding of the needs of the end-users and a co-creation approach between the developers and the end-users (hospital managers and operating room and surgical department directors), to ensure a tailored solution that meets the specific needs for efficient surgical scheduling. In a first instance, the software tool uses a machine learning model to estimate the operating room time of each surgery. Then, an optimisation algorithm is implemented to schedule surgeries based on the estimated operating room time, clinical priority of patients, days waiting for surgery, and availability of resources. Considering as a constraint an operating room's occupancy rate of at least 85%. The algorithm considers other constraints such as the scheduling of similar surgeries together and the need for intensive care unit. The software also allow customisation according to the strategy of each hospital.

Results

The results of this study demonstrate that the software tool can effectively prioritise patients and schedule surgeries in a way that maximises the use of available resources, balancing with the clinical needs. The implementation of this software has the potential to improve the workflow, operating room efficiency and surgical patient outcomes. For instance, by scheduling similar surgeries together, the software tool can improve overall efficiency by reducing the need for multiple set-ups.

Conclusion

This study presents a software tool for the automatic scheduling of surgical patients based on clinical priority and days waiting for surgery. The software uses a machine learning model to estimate the surgical time of each surgery and incorporates a set of optimisation criteria to improve efficiency. The results show that the tool can effectively prioritise patients and schedule surgeries in a way that optimises the use of available resources, balancing with the clinical needs. This tool has received excellent reception from healthcare professionals and hospital managers, revealing its relevance in the current context.

Systematic review of machine learning algorithms for triage in emergency department

Dr Emre Guvey, Mr Can Demirbaş, Prof Dr Mesut Çimen

Acibadem University, Turkey

The triage process in emergency departments is a critical step in providing prompt and effective medical care. Traditionally, the triage process has relied on the subjective clinical judgment of medical staff, which can be prone to errors and inconsistencies. The increasing availability of health data and the rapid development of machine learning algorithms have led to a growing interest in using these algorithms to support the triage process.

This systematic review aims to assess the evidence on the use of machine learning algorithms for triage in emergency departments, with a focus on their potential for supporting health management and providing sustainable solutions for complex systems.

A comprehensive search of electronic databases was conducted to identify relevant studies published between 2010 and 2023. Inclusion criteria were studies that applied machine learning algorithms to the triage process in emergency departments, and reported on the accuracy or performance of the algorithms.

The studies used a range of machine learning algorithms, including decision trees, random forests, neural networks, and support vector machines. The results of the studies showed that machine learning algorithms can effectively support the triage process, with prediction accuracy ranging from 86% to 93%.

The results of this systematic review demonstrate the potential of machine learning algorithms to significantly enhance the accuracy of triage assessments in emergency departments. These algorithms have the potential to provide sustainable solutions for complex health systems by processing large amounts of data, identifying patterns, and reducing the risk of adverse outcomes for patients. However, further research is needed to address the challenges of data quality and variability in the triage process and to develop models that can be effectively employed in real-world settings. This research has the potential to support the delivery of high-quality and sustainable health management solutions.

Machine learning algorithm predicts mortality, length of stay and hospitalisation costs after aortic valve implant based on five simple metrics

Dr Maria Zisiopoulou, Dr Alexander Berkowitsch, Mr Leonard Redlich, Prof Dr Stephan Fichtlscherer, Prof Dr David Leistner

Department of Cardiology, University Hospital Frankfurt, Goethe University, Germany

Introduction

Models enabling pre-procedural prediction of TAVI (transcatheter aortic valve implant) outcomes are crucial for an optimal treatment strategy and management decisions. Therefore, the aim of our present study was to investigate if a clinically- and practice-oriented machine learning decision tree algorithm (DTA) could predict 1-year mortality, length of hospital stay and treatment costs based on prospectively gathered pre-interventional (baseline) patient-reported outcome measure (PROMs) data and EuroSCORE II (ESII) as well as simple follow-up data, namely only the emergence (or not) of any acute complication after TAVI.

Patients & Methods

In this prospective pilot study, a total of 284 patients (137 female, median age: 81 yrs.) with clinically severe aortic valve stenosis who underwent TAVI were enrolled. ESII, EuroQol-5D-VAS (EQ5DVAS), Kansas City Cardiomyopathy Questionnaire (KCCQ) and clinical frailty scale (CFS) were assessed one day before TAVI. The occurrence of any acute (within 30 days after TAVI) post-procedural complication was recorded. Using these data and implementing a CART (classification and regression tree) DTA algorithm cut-off values for TAVI outcomes' prediction have emerged.

Results

ES II values > 2.025 and emergence of any complication were associated with a 26,8% 1-year mortality while ESII values > 2.025 and EQ5DVAS values < 32,29 were associated with 25,9% 1-year mortality even in patients without post-procedural complications. KCCQ values < = 31,5 predicted a length of stay (LoS) of more than 8 days in 63,9% of patients, while the emergence of any complication after TAVI implantation resulted in a LoS of > 8 days in 57,5% of patients with KCCQ > 31. Emergence of any acute complication resulted 33,3% more costs than in patients without acute complications; in patients without complications, a CFS value > 4 resulted 36,2% more costs in TAVI patients without complications.

Conclusions & significance

We provide for the first time an user-friendly model to predict mortality, LoS and costs after TAVI using simple, transparent and explainable cut-off values of ESII and PROMs before implantation and a simple binary event (any complication) after implantation. On the basis of this evidence, all TAVI team members and their patients and their relatives or families can rely on some few simple key metrics for final decision making.

Machine learning and digital health in the big data era: a systematic review

Prof Marta Marsilio[1], Dr Gabriele Infante[1], Dr Marco Frontini[2,3]

[1]Università degli Studi di MIlano, Department of Economics, Management and Quantitative Methods, Italy, [2]LINK UP, Italy. [3]CERBA Healthcare, Italy

Telemedicine has emerged as a transformative technology in healthcare, enabling the remote delivery of medical services to patients. The avoided costs of in-person services and the aging of the population are motivating researchers worldwide to utilise digital tools and sensor-based technologies. The availability of patient-specific big data is increasing and becoming easier, including medical history, current symptoms, and lab results.

Machine learning (ML) and artificial intelligence (AI) methods are increasingly being applied in telemedicine to improve health outcomes (Cummins et al., 2020), including disease diagnosis and prediction. Due to the heterogeneity of data sources, a ML method should be tailor-made on the type of dependent variable (regression, classification, survival) and numerous covariates. For this reason, the investigation for appropriate methods could be trivial, leading to a growing interest in a comprehensive and rigorous evaluation of the existing literature on these applications.

The aim of this systematic review is to provide an overview of ML methods applied in telemedicine for health outcomes and to identify the most used, differentiating for the types of dependent variable, contexts, aims and performances.

The review focuses on recent studies that have used ML or AI algorithms to diagnose diseases, recommend treatments, and predict patient outcomes in a digital health context. A systematic search of the literature was conducted using relevant databases, such as Web of Science (WOS), PubMed and Scopus. As an example, the WOS query, applied to titles, was formulated as «(machine learning OR "ML" OR artificial intelligence OR AI) AND ("Tele*" OR "telemedicine" OR "telehealth" OR "digital health")». The PRISMA guidelines for systematic reviews (Page et al., 2021) were followed. The analysis and interpretation of the results were performed using the R package bibliometrix (Aria & Cuccurullo, 2017).

The results of the systematic review indicate that ML methods have been successfully applied in telemedicine to diagnose a wide range of diseases, including cancer, heart disease, and neurological conditions. ML algorithms have been trained on large multi-source datasets to accurately identify disease patterns and improve diagnostic accuracy. A variety of single spot papers in terms of ML algorithm and context were detected, indicating novel applications in the panorama of digital health.

However, despite the promising results, the review also highlights some of the limitations of ML in telemedicine. One of the main limitations is the availability of comprehensive and high-quality datasets, as well as the public availability of the data. Another limitation is the variability in the performance of different ML algorithms, which can lead to inconsistent comparisons and reduced accuracy.

Integrating environmental sustainability dimension into HTA: the state of the art and possible trajectories.

Ms Michela Bobini

Università Cattolica del Sacro Cuore, Italy

Context

In the health economic literature, the link between the environment and health outcomes has long been documented and the World Health Organisation reported that environmental impacts are expected to cause approximately 250,000 additional deaths per year, between 2030 and 2050. However, evidence of integration of environmental considerations into HTAs is sparse, with a lack of consistency in methodological approaches. Nonetheless, there is increasing public pressure and demand from healthcare stakeholders for environmental considerations to be formally incorporated into guidelines and HTAs . In addition, It is yet unclear how many researchers and HTA organisations are already working on this sustainability dimension, in what way and what they have achieved as of now.

Method and objective

In this context, the purpose of this research is twofold: i) to provide an overview of the progress achieved by different HTA's organisations (agencies, governmental department, research centre, institution etc) around the world with respect to the integration of an environmental sustainability dimension; ii) to explore possible approach and methods in order to integrate environmental sustainability into HTA from those identified as emerging approach. To achieve the objectives described above data were collected by means of a questionnaire submitted to 75 HTA organisations based on their membership, as of October 2022, of International Network of Agencies for Health Technology Assessment and European network for HTA. The survey was developed on basis of results of a literature review and it explores at which stage of adoption the organisation is about the integration of ES dimension into HTA which activities are carried out to do it (actions on the organisational structure, methods and approaches) and which method would be preferable to adopt.

Results

The study collected 18 responses from different HTA's actors (agencies, research centres, institutes, government department) which are from 15 different countries: Argentina, Australia, Belgium, Canada, Finland, Germany, Hungary, Italy, Lithuania, Malasyia, Malta, Spain, Sweden, UK, USA. All of the respondents were in favour about incorporating environmental sustainability dimension into HTA but only the 39% of the respondents is somehow considering to include it into HTA. In addition, only few organisations formalised the incorporation of ES into HTA as strategic objective and actually worked on this topic. Respondents expressed their likelihood to adopt different methods and processes to incorporate environmental impact into HTAs, but a clear preference didn't emerge. The respondents identified as hindering factors the scarce availability of data or difficulty in tracing data back to a specific technology and the absence of scientific consensus on the most appropriate integrative approach to capture environmental impacts of a technology.

Discussion

In the healthcare sector, there is a growing awareness of the impact of human activity on the climate and the need to curb this impact, both because environmental changes could directly affect people's health and because policy makers have broad mandates and objectives that go beyond healthcare. Agencies, research centres, National institutions and governments, in some countries have begun to consider environmental impacts when evaluating new technologies. However, each method has certain limitations and, despite the increasing attention paid to environmental impacts, the formal incorporation of these factors into a key area of decision-making such as HTA continues to be poor.

Using horizon-scanning methodologies to support the implementation of digital and other innovative technologies that address Antimicrobial Resistance (AMR)

Ms Oshin Sharma, Mr James Woltmann, Dr Anne Oyewole, Ms Aoife Oliver, Ms Emily Robertson, Ms Oluwatomi Arisa, Ms Akvile Stoniute, Ms Lucy Barrass, Ms Jan Kinnersley

Newcastle University/NIHR Innovation Observatory, United Kingdom

Context

The National Institute of Health and Care Research (NIHR) Innovation Observatory (IO) undertook a series of scans that address the challenges concerning Antimicrobial Resistance (AMR). Our robust horizon-scanning methodologies integrated with expertise from the NHS AMR Programme Board and worked simultaneously to encourage the adoption of innovative technologies that can reduce the demand for antimicrobial prescription, improve patient health outcomes and achieve a more sustainable use of national health resources. Pairing traditional/manual and novel semi-automated horizon-scanning techniques with clinical expertise creates a blend of digital tools and specialist insight that promotes confidence in the digital transformation of the healthcare space.

Methods

A comprehensive outline of AMR concepts and key terminology was compiled by the IO's Information Specialist Team, based on scoping discussions with and evidence reports from the NHS AMR Programme Board. The four main subthemes/clinical areas identified were urinary tract infections, respiratory tract infections, sepsis, and surgical site infections. Specific search strategies were formulated for the scans performed, combining Medical Subject Headings (MeSH)/key terms identified with Boolean operators. The horizon scanning methodologies developed by the IO included the identification of information sources that specifically disclosed signals for detection and diagnostic technologies. An integrated horizon-scanning approach was employed by systematically reviewing primary and secondary sources using a combination of traditional and novel automated AI/machine learning techniques. Sources included clinical trial registries, regulatory authorities, academic, funding, and soft intelligence sources. A key dataset, reviewed by clinicians, was developed to support decision-making in the implementation of digital and other innovative technologies.

Results

Our main datasets included 640 technologies with focus on the prevention, detection, and monitoring across the different AMR subthemes/clinical areas. A significant proportion of technologies (322, 50%) specifically targeted respiratory tract infections, subsequently followed by urinary tract infections (157, 25%), sepsis (110, 17%) and surgical site infections (51, 8%). Development activity for the innovation was largely concentrated in the US and UK, with 23% (150) of technologies being developed within the UK. Emerging trends included technologies utilising rapid accurate detection and bacterial differentiation, application of novel materials such as catheter coatings and innovative analytical techniques such as biosensors, microfluidics, and breath analysis innovations. Other examples of novel digital innovations included AI-based disease identification software, rapid detection via smartphone applications, and monitoring of patient data through cloud-based technologies.

Discussion

A significant proportion of technologies were diagnostic innovations addressing unmet needs within populations: targeting causative pathogens, identifying novel biomarkers, creating new opportunities for high predictive performance, and discriminating between bacterial and viral infection. Furthermore, due to the extensive initial RTI dataset, an additional ‘refresh’ scan was commissioned specifically focussing on lower respiratory tract infections for more up-to-date technologies that could help alleviate upcoming winter pressures on healthcare services. Through the combination of robust horizon-scanning methodologies, input from clinical experts, and a variety of comprehensive sources, this series of scans can promote confidence in the digital transformation of the healthcare space. This insight enables policymakers to endorse the accelerated adoption of these novel innovative technologies to partially relieve the demand on primary or secondary care services, and further informs the digital transformation of AMR efforts worldwide.

The impact of a CF carrier screening to the general population: results from an Italian HTA

Dr Lucrezia Ferrario[1,2], Dr Emanuela Foglia[1,2], Ms Francesca Romano[3], Dr Cinzia Colombo[4], Dr Rita Banzi[4], Dr Chiara Gerardi[4], Dr Eleonora Allocati[4], Dr Paola Mosconi[4], Dr Carlo Castellani[5]

[1]Carlo Cattaneo – LIUC University and LIUC Business School, Italy. [2]HD LAB – Healthcare Datascience LAB - Carlo Cattaneo – LIUC University, Italy. [3]Carlo Cattaneo – LIUC University, Italy. [4]Istituto di Ricerche Farmacologiche Mario Negri IRCCS, Italy. [5]Cystic Fibrosis Centre, IRCCS Istituto Giannina Gaslini, Italy

Context

Cystic fibrosis (CF) generates a significant clinical, social, and economic burden worldwide. There exist CF screening program to detect carrier adults, thus enabling informed reproductive choice. Whilst screening programs are currently active in Israel and Australia, the Italian National Healthcare Service (NHS) does not offer a screening program to the general population. Given the relevance of the topic, this study aims at defining the impacts to offering the CF carrier screening to the general prenatal and pre-conceptional population, compared to the current situation, where such procedure is guaranteed only to high-risk individuals to give birth to a CF child.

Methods

In the years 2021-2022 a Health Technology Assessment (HTA) was conducted assuming the Italian NHS perspective, as a multi-dimensional approach useful to validate any innovative technology. The nine HTA dimensions, derived from the EUnetHTA Core Model were deployed, considering different data sources: 1) evidence-based information, derived from a systematic literature review, to define efficacy and safety indicators, as well as the specific features of the CF screening program; 2) real-life data resulting from the Italian clinical practice, that were useful to the economic evaluation of the CF screening program and for the definition of CF direct costs (considering the possibility to administer CF modulator drugs to 63% of CF patients), as well as to verify the economic and organisational sustainability of such program, with a budget impact analysis; 3) qualitative perceptions collected through questionnaires and interviews, involving healthcare professionals, patients and the general population, examining the social and equity impacts.

Results

Results revealed the absence of robust evidence to draw conclusions on the effectiveness of CF carrier screening, especially in terms of population capability to take informed reproductive choice. CF carrier screening devoted to the general population is related to a decrease in the CF incidence rate (0.007% versus 0.026%). From an economic perspective, assuming a target population composed of woman between 18 and 50 years old, a return on investment up to 6 years from the screening's introduction emerged. However, the CF carrier screening program would be capable to reduce both the overall length of stay related to the care and treatment of CF individuals (-40%) and the CF patients and caregivers' productivity losses (-42%). Healthcare professionals, citizens, as well as most of patients and families declared a positive attitude toward the CF screening program, demonstrating its overall acceptability, with greater perceived social and ethical impacts.

Discussion

The HTA results have demonstrated the acceptability of the CF carrier screening to be offered to the general population. Despite the need of economic and organisational investment and the lack of clear evidence on optimal features of the screening program, the HTA revealed that it could effectively support carrier couples in their reproductive choices, thus also generating the possibility of extending such a model to other genetic diseases. However, a pilot clinical trial that could demonstrate the appropriate organisational setting for the delivery of this kind of screening, as well as its ability to support individuals to take informed reproductive choice, is required, thus narrowing the currently existing literature gap. In addition, further economic analysis should be performed, given the changing scenario related to CF modulator drugs eligibility.

Multidimensional analysis of models for drug supply chains in an hospital setting

Ms Michela Franzin[1], Ms Marzia Bonfanti[2], Ms Sofia Silvola[2], Mr Nicola Soliveri[1], Mr Gabriele Pagani[1], Ms Monica Anna Fumagalli[1], Mr Marco Veronesi[2], Mr Paolo Barletta[2], Mr Umberto Restelli[2], Mr Edoardo Croce[2], Mr Davide Croce[2]

[1]ASST Papa Giovanni XXIII, Italy. [2]Università LIUC - Carlo Cattaneo, Italy

Integrated models for drug supply chains, such as therapy management models, are recently emerging. The single dose drug distribution model aims to ensure adherence to the 5R rule (the right patient; the right drug; the right dose; the right route of administration; the right time) and can be implemented in two ways: "per-patient" or "per-product". The benefits of this model are not yet widely recognised or documented in literature or clinical practice. The aim of this study is to identify the advantages of this model.

In order to conduct a multidimensional evaluation of the single dose management system, a comparison was structured between the as-is system in place at ASST Papa Giovanni XXIII in Bergamo (Italy) since 2012 (E-prescribing System + Automated Unit Dose Distribution System + Manual Package System) and the system without single dose management (E-prescribing System + Manual Medication Dispensing System). The analysis is conducted through a multidisciplinary evaluation applying the Mini-HTA developed by the National Board of Health, Danish Centre for Evaluation and Health Technology Assessment (DACEHTA, 2005). This model, after a technical description of the technological alternatives under comparison, allows an assessment of the patient dimension, economic and organisational impacts.

Based on literature, the implementation of a single dose management system for medication administration is estimated to lead to an annual reduction in medication errors ranging from -1,256 to -5,810 (-60,08%) with a mean decrease in hospitalisations related to medication errors of 36 (-14,60%). Adoption of the E-prescribing System by prescribers leads to increased patient safety and ease of monitoring, improved interdepartmental communication, and greater satisfaction among clinical specialists. However, administrators may face challenges such as a lack of an alert system for incorrect data entry, limited control over drug dosage, and difficulties handling urgent requests. The single dose management system has a cost-effectiveness advantage over the system without single dose management, with annual cost savings ranging from -76,934 € to -120,916 € due to avoided hospitalisations, and a cost per error avoided of between 83.20 € € and 454.81 €. Additional cost savings include reduced medicine consumption (-112,721 €) and stocks (-2,441 €), as well as reduced nursing time derived from single dose management system implementation (-1,769,883 €).

The analysis demonstrated the validity of the single dose management system in ASST Papa Giovanni XXIII, accompanied by a particularly relevant adherence to the model by users. The limitations of the analysis are identifiable in the monocentric evaluation as well as in the limited availability of scientific evidence.

Automated technologies for the enhancement of laboratory medicine efficiency

Dr Emanuela Foglia[1,2], Dr Lucrezia Ferrario[1,2], Dr Elisabetta Garagiola[1,2], Prof Daniela Basso[3], Prof Mario Plebani[3]

[1]*Carlo Cattaneo – LIUC University and LIUC Business School, Italy.* [2]*HD LAB – Healthcare Datascience LAB - Carlo Cattaneo – LIUC University, Italy.* [3]*Department of Medicine-DIMED, University of Padova, Italy*

Context

The most prevalent errors that may occur in the Laboratory pre-analytical phase, are represented by patient misidentifications, transcription errors, use of incorrect tubes, labelling errors, insufficiently labelled samples, and irregularities in labelling requirements. Innovative technologies grounding on automation have been developed within the Laboratory setting, to support phlebotomists in the draw phase, by detecting manual errors at the blood collection point, trying to minimise the above errors. This study aims at defining the efficacy and efficiency outcomes concerning the implementation of automated solutions, enabling a total process testing management, from blood sample collection tubes processing to results reporting activities.

Methods

The analysis considered the comparison among the following three scenarios.

- Scenario 1: absence of automated solutions, enabling a total laboratory automation.
- Scenario 2: presence of automated solutions, enabling a total laboratory automation, for the automatic sample traceability to blood collection, through the entire process (considering an introductive phase of such innovative technologies, assuming the first three months of introduction learning curve).
- Scenario 3: presence of automated solutions, enabling a total laboratory automation, for the automatic sample traceability to blood collection, through the entire process (considering a complete technology learning curve, in terms of in-depth knowledge of such technologies).

Real-life data referred to each scenario have been retrospectively collected, based on specific information already available in the Laboratory Information System (LIS), concerning efficiency, accessibility, and organisational factors, useful to compare the related three principal Scenarios of reference, understanding the potentialities of automated solutions to contribute to Laboratory workflow improvement.

Results

Results revealed that the introduction and the automated solutions advanced knowledge, enabling a total laboratory automation (Scenario 3), would be related to achieve a higher overall efficiency in the process, considering a medium size Italian Laboratory, reprocessing on average 381,474 samples per year. A decrease in the rate of number of prescriptions not completed was registered (-53%). Considering the blood samples collection topic, the collection in inappropriate tubes problem is approximately halved over time (from 1,160 samples to 672, -42%). An additional decrease of mislabelled samples (-47%) emerged, contributing to an improvement of the workflow. Focusing on both the detection of samples with haemolysis and those with irregularities, Scenario 3 presents a higher detection rate, equal to 116% and to 92% respectively. Furthermore, a better efficiency was also registered considering the underfilled tube rate, that would yield inaccurate results: in Scenario 3 no blood samples with underfilled tube emerged.

Discussion

The analysis has demonstrated the strategic relevance related to the automated solutions' introduction within the Laboratory setting, in the overall improvement in the efficiency of the process, thus also reporting a reduction in identification error and tube mislabelling. Furthermore, the capability to detect samples with irregularities is crucial in the care of patient. Thus, automation technologies may support the operator in avoiding such anomalies, that would imply the repetition of the blood sample collection, creating, consequently, inefficiency in the process. To make the results more robust, additional research activities are required. On the one hand, the economic evaluation of such automated technologies will be assessed to understand if their introduction in the clinical practice would generate economic and organisational savings. On the other hand, the level of acceptability of such automated technology will be explored, thus involving a panel of healthcare professionals that are users of such innovations.

Implementing whole genome sequencing for paediatric population with suspected genetic disorders: results from a survey of organisational aspects

Dr Mario Cesare Nurchis[1,2], Dr Gianmarco Raspolini[1], Prof Gianfranco Damiani[1,2]

[1]*Università Cattolica del Sacro Cuore, Italy.* [2]*Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Italy*

Context

According to the 2020 report by National Vital Statistics, congenital malformations, deformations and chromosomal abnormalities accounted for 22.2% of all deaths in neonates, 20.8% in infants, and 10.7% in toddlers, targeting the paediatric population as really vulnerable. Whole-genome sequencing (WGS) has demonstrated better diagnostic yield than other Next-generation sequencing (NGS) techniques, such as Whole-exome sequencing (WES). A survey was conducted to assess the organisational aspects of introducing WGS, alongside the WES, in the clinical workflow.

Methods

According to EUnetHTA Core Model recommendations and a framework available in the scientific literature, four research questions peculiarly linked to genetic diagnostic technologies were retrieved. The online questionnaire was developed with four sections univocally addressing the above questions and other sections addressing participants and clinical centers' characteristics and organisational aspects (Table 1). The surveyed population consisted of biologists, physicians, bioinformatics, and laboratory technicians involved in the workflows of WGS and/or WES, working in all of the facilities in Italy in which WGS and/or WES are performed. The population heterogeneity is intended to promote comprehensiveness in the overall assessment. Descriptive analysis was performed and presented in a tabular and graphical way. A Wilcoxon signed-rank test was conducted to outline differences between categorical questionnaire items. Analyses were run in STATA 17 and 0.05 p-value was considered for statistical significance. Informed consent was obtained at the beginning of the questionnaire.

Results

The survey has been completed by 21 respondents of which 48% physicians, 38% biologists, 9% bioinformatics, and 5% technicians. No differences were found between WGS and WES in terms of dedicated co-operation and communication activities. Strong agreement was found about the centralisation of both WGS (73%) and WES (82%) to highly specialised care units in order to achieve better economic and qualitative benefits. No statistical difference was found between the professional category and the willingness to decentralise the diagnostic workflow phases ($p = 0.23$). Interviewees agreed on the higher investments required for implementing WGS with respect to WES in the diagnostic workup. All respondents agreed that both genomic techniques contribute to simplifying the diagnostic pathway in case of suspected genetic disorder, even though WGS, if not used as the last tier, dramatically reduced the adoption of further tests.

Discussion

Survey findings could inform the proper allocation of resources for the implementation of WGS within health systems. Failing to consider organisational aspects in technology assessments could result in unequal access to health services as well as inefficiencies and ineffectiveness of quality of care and health outcomes delivery. Given the challenge posed by rare diseases, the emergence of WGS as a first-tier test has the ability to alter the cost trajectory of diagnosing genetic disorders in the paediatric population, providing better health outcomes, and avoiding unnecessary health services. Internationally, a wider implementation of WGS could also allow advancements in medical knowledge through the reveal of novel disease-causing genetic variants. To conclude, the present study could steer the decision-making process through accurate planning and organisation of genetic health services having always in mind the disadvantaged population to which WGS is directed.

From the standards of care to a set of performance indicators for the management of Spinal Muscular Atrophy (SMA): methods and lessons learnt

Prof Lucia Ferrara, Dr Federica Dalponte, Prof Valeria Domenica Tozzi

CERGAS SDA Bocconi, Bocconi University, Italy

Context

Spinal Muscular Atrophy (SMA) is a rare neuromuscular disorder that affects approximately 1 in 11,000 live births. In 2018 an international panel of experts published a consensus statement on SMA standard of care and highlighted several recommendations on how to best diagnose SMA and how to best manage musculoskeletal, orthopaedic, nutrition, breathing, swallowing and gastrointestinal problems, and bone health. All these recommendations aim to improve the management of SMA patients from a clinical perspective. This study aimed at developing a set of performance indicators for the management of SMA using the standards of care available in the literature.

Methods

We conducted a three-phase iterative process following the methodology developed by COMET for the definition of Core Outcome Set (COS). First, a preliminary list of indicators was defined by the research team based on a literature search and two-rounds of workshops with a panel of 30 expert physicians, composed by neurologists, paediatric neurologists, and paediatricians, who were engaged to discuss the indicators and grade their priority and feasibility. Based on this preliminary list, we then scored the indicators according to two dimensions: target of the indicator, namely if the indicator can be applied to all patients or only to a sub-group of patients; and feasibility of the indicator (high or low) based on the possibility to measure the indicator with the information available in the administrative databases of the hospitals. Based on these two dimensions we categorised the indicators in four sub-groups: A) indicators with high feasibility that can be applied to all patients; B) indicators with high feasibility that can be applied only to a sub-group of patients; C) indicators with low feasibility that can be applied to all patients; and D) indicators with low feasibility that can be applied only to a sub-group of patients. Finally, we conducted a feasibility assessment of the sub-group A in three case studies in Italy. For the feasibility assessment we conducted four in-depth interviews with data experts and accountants in each site to evaluate three dimensions: applicability, availability, and retrievability. We then conducted a survey with a panel of physicians to evaluate the applicability of the set of indicators in different hospital configurations. Results were then discussed with an Expert panel group (EPG) composed of a key clinical expert, two representative of patient associations (Famiglie SMA and UILDM), a representative of the Italian Federation of Healthcare and Hospitals (FIASO) and a representative of the Italian National Agency for Regional Healthcare Services (AGENAS).

Results

A preliminary list of 69 indicators were identified from the literature and the workshops with the expert panel. 20 of these 69 indicators were ranked in the high feasible and applicable to all patients group and included in the feasibility study. Based on the feasibility assessment and the discussion with the EPG a final set of 15 indicators was identified.

Discussion

The current study has three main implications. First, from our knowledge this is the first attempt to identify a set of performance indicators for the management of a rare disorder, that goes beyond the clinical evaluation. Second, the method followed allowed the operationalisation of the standard of care into performance indicators that are feasible and applicable to all patient targets. Third, the methods developed can be replicate in other context and for other disorders.

A change management perspective on the implementation of value-based healthcare

Dr Dorine van Staalduinen[1,2], Prof Paul van der Nat[3,4], Prof Willem-Jan Bos[1,4], Prof Anne Stiggelbout[1,5]

[1]Leiden University Medical Center, Netherlands. [2]Leiden University, Institute of Public Administration, Netherlands. [3]Radboud Institute for Health Sciences, Netherlands. [4]St. Antonius Hospital, Netherlands. 5Erasmus School of Health Policy & Management, Netherlands

Context

Value-Based Healthcare (VBHC) has been touted internationally as the management strategy that would increase healthcare quality and decrease costs. It implies a change from a volume-driven to a value-driven healthcare system. Previous research on the implementation process of VBHC is limited. This is unfortunate, as studies in the change management literature unequivocally show that the process of change is an essential determinant of the success or failure of change. This study contributes to VBHC practice and research with an in-depth examination of VBHC implementation processes in two hospitals. We investigated the change approach used to implement VBHC and why this approach was used.

Methods

We used a comparative case study design and collected data in two Dutch hospitals through qualitative document analysis (mission statements and, implementation, multi-year, and external advisory plans) and semi-structured interviews. We interviewed 23 participants with various backgrounds: board of directors, project managers, advisors, healthcare professionals and patient representatives. We started the analysis with deductive coding, with an analytical framework based on change management literature regarding planned and emergent change. We also used inductive coding, to achieve a complete understanding of the implementation processes and identify important elements that were not picked up in the deductive analysis.

Results

In the first hospital, VBHC implementation can be characterised as a planned process, with the board of directors as initiator and departments that applied for support in a VBHC implementation trajectory to become a well-functioning Integrated Practice Unit (IPU). A steering committee and an operational team were responsible for implementation progression. The second hospital had a rather emergent approach: management and the board of directors were less involved in monitoring but more in facilitating the change (through money & capacity), the process focused on continuous learning, and healthcare professionals designed a major part of the VBHC content. The cross-case analysis emphasised advantages and disadvantages of these approaches. For instance, while structure was sometimes preferred by professionals in new IPUs as guidance, the rather emergent approach lacked a clear structure and pre-set expectations, which often resulted in the feeling of having to reinvent the wheel. On the other hand, the planned approach, which has this structure or blueprint, sometimes hindered a professional's sense of ownership and personal motivation for VBHC. Furthermore, active involvement of the board of directors can be an advantage when this encompasses facilitating and propagating VBHC but it might be a disadvantage if it includes intensive monitoring of the progression.

Discussion

We argue that one best way to manage change towards VBHC doesn't exist since this depends on environmental factors in hospitals and the stage of implementation. Despite this, with our study, we provided meaningful insights into how VBHC can be implemented in a hospital setting (either academic or non-academic), and we identified characteristics of change that should receive particular attention in the implementation of VBHC. Future research should aim to further understand the process of implementing VBHC, ideally by incorporating different contextual factors and studying how VBHC is sustained and diffused. Lastly, this research stresses the need to incorporate a management perspective in the expanding VBHC literature. We emphasise that healthcare and VBHC practice in particular, can learn from evaluating implementation approaches using change management perspectives.

Chemotherapy compounding areas: an analysis of different organisational and logistic configurations

Dr Emanuela Foglia[1,2], Dr Federica Asperti[1,2], Dr Daniele Bellavia[1,2], Dr Fabrizio Schettini[1,2], Dr Elisabetta Garagiola[1,2], Dr Andrea Marsilio[3], Dr Caterina Morassutto[3], Dr Adriana Cecchi[3], Dr Lucrezia Ferrario[1,2]

[1]Carlo Cattaneo – LIUC University and LIUC Business School, Italy. [2]HD LAB – Healthcare Datascience LAB - Carlo Cattaneo – LIUC University, Italy. [3]Operative Unit, Drug Policies, Medical Devices and Prosthetic, Regional Healthcare Coordination Agency, Italy

Chemotherapy preparations are mainly developed by the compounding areas of Hospital pharmacy departments. Hospital pharmacists are concerned about the risks of manipulating these drugs: many cytotoxic drugs present an occupational health risk and exhibit mutagenic, teratogenic, and carcinogenic properties. The risk from exposure to antiblastic chemotherapeutics can be significantly reduced by taking specific preventive measures that focus on centralisation of facilities and activities. This study aims at defining efficient strategies useful to optimise the current available compounding units, assessing the potential advantages related to the implementation of automated solutions or to the opportunity to create a centralised compounding area.

A Health Technology Assessment was conducted in Friuli-Venezia Giulia Region (Northern Italy), comparing the following scenarios, defining the more efficient organisational setting.

- Chemotherapy compounding within more than 4 territorial areas, using only manual preparation systems.
- Chemotherapy compounding within 2 or 4 territorial areas, using automated preparation systems.
- Chemotherapy compounding within 1 centralised regional area, using automated preparation systems.

Scenario 2 and Scenario 3 were also stratified based on two logistical levels: i) star approach, where drugs' delivery involves one vehicle to meet the demand of a specific single hospital; ii) milk-run approach, where drugs' delivery involves one vehicle to meet the demand of different hospitals.

After a narrative literature review useful to retrieve efficacy and safety indicators, the economic and organisational sustainability of the Scenarios were explored. Furthermore, healthcare professionals' perceptions were collected to gather their acceptability of such organisational changes, using a 7-item Likert scale.

Literature reports that grouping prescriptions in centralised unit for chemotherapy preparation could result in significant savings on drugs' waste (-79.5%±13.7%). Furthermore, the use of automated procedures results in a decrease in the errors' preparation rate. From an economic perspective, the hospital costs related to a single preparation was equal to 25.70€ and 19.18€ for manual and automated procedure, respectively.

The total costs related to Scenario 1 are equal to 4,283,105€. In the attempt to modify the organisational setting, using different logistic approach, Scenario 2 would lead to an economic saving ranging from -34% (star approach) to -39% (milk-run approach). Scenario 3 would generate a saving of 60% independently from the drugs' delivery method utilised.

Healthcare professionals declared a higher usefulness and a higher intention to use automated solutions, rather than manual systems (p-value>0.05), given the achievement of higher quality of care.

Results have demonstrated that partially centralised compounding areas are likely to be an efficient strategy; thus, the implementation of both Scenarios 2 and 3 would lead hospitals to benefit from economies of scale, resulting in a decreased cost per preparation. However, although Scenario 3 grants more economical benefits, it is likely to undermine the level of services for patients who need to get their therapies, due to possible logistic difficulties in the region. In addition, despite automated solution are related to a large initial investment, their routinely use would allow an overall process optimisation, with a consequent increase of efficacy and safety profiles for both patients and healthcare professionals involved in such activities.

However, the modification of the current organisational and the logistic settings should be supported by adequate change management programs to foster their acceptability and to enable all stakeholders to understand their related benefits and added value.

Learning from excellence in healthcare management: the breast cancer care pathway

Maria Francesca Furmenti, MD, MPH, Mr Davide Vicari, Dr Francesca Ferrè

Management and Health Lab, Institute of Management, Sant'Anna School of Advanced Studies, Italy

The evaluation of care delivered to breast cancer women is a crucial issue, due to its still high incidence (355,457 new cases in Europe) . The evaluation of care can be assessed through international quality indicators (eg. EUSOMA) or using national performance evaluation systems. Most of these indicators focus on a single event but to understand how the assistance is delivered across the different phases, indicators could also be assessed through a pathway perspective.

To improve quality in healthcare an adopted approach is the positive deviance (PD) approach, intended to focus on process variations that lead to positive results, making leverage on the diffusion of positive examples within healthcare organisations. From the PD approach derives the initiative called Learning from Excellence (LfE), which aims to provide a mean of identifying and capturing learning from episodes of positive deviance.

The aim of this study is to support LfE in breast cancer care using evidence collected by a systematic performance evaluation system in Italy, characterised by benchmarking and public disclosure.

This study consists of a quantitative and a qualitative phase. In the former, oncology care is investigated at the regional level, starting from indicators of the oncology pathway referred to 125 healthcare providers in 11 Italian regions that share an interregional performance evaluation system (Italian Regional Performance Evaluation System). Data from the three-year period 2019-2021 were utilised, and 11 performance indicators were measured and evaluated. For each stage of the care pathway an annual score was calculated as the arithmetic mean of the ratings of the indicators that make up each stage. Finally, the overall area (understood as a geographic-organisational entity delivering cancer care) assessment was computed as the weighted average of the individual stages for each year (Screening , Treatments, Outcomes, Follow up, Palliative care). The result is, for each area, a continuous assessment, in the range 0-5, which briefly expresses the area's annual performance in the breast oncology pathway.

To identify best practise, the weighted average of each phase and the positive trend over the years were taken in account[MFF1] . After conducting the quantitative assessment, researchers carried out a site visits in collaboration with the selected best performer to detect the clinical and organisational model beyond the successful performance.

Based on preliminary analysis derived from the performance evaluation system, the best performing areas are located in Veneto, the province of Bolzano and Tuscany. The site-visits are planned to take place in early spring 2023 and are expected to highlight the distinctive formal and informal clinical and organisational arrangements beyond the successful performance thus contributing to the celebration of positive occurrences.

This study contributes to the development of concrete examples on the application of the PD approach.

Using hospital benchmarking to improve performance – analysis of three years of Risk Adjusted Mortality Index hospital score due to outcomes of critically ill inpatients

MSc Ana Craveiro[1], MSc Susana Ferreira[1], António Marques, MD[1,2], Pedro Vita, MD[1,2], Irene Aragão, MD[1], Aníbal Marinho, MD[1,2]

[1]Centro Hospitalar Universitário de santo António, Portugal. [2]School of Medicine and Biomedical Sciences (ICBAS), Portugal

Context

Utilisation of benchmarking is a widespread practice at health systems, providing public recognition of best practices, and right kind of competition among providers. IAMETRICS benchmarking is used for most hospitals in Portugal and Spain. Centro Hospitalar e Universitário de Santo António (CHUdSA) ranked in first place, for several years, as the best Portuguese hospital in its category, due to, among others, a good performance on RAMI (Risk Adjusted Mortality Index). The aim of this study is quantify the contribution of intensive care in this result (global score of hospital on RAMI), therefore identifying some performance correlated factors and improvement opportunities.

Methods

From IAMETRICS platform, all cases, which contributed to Hospital's RAMI, were collected. Those with at least 24h of stay at ICU or IMCU were completed with all information included on SIMH database (Hospitals Morbidity Information System). Several scenarios were modulated in order to determine contribution of critically ill cases to hospital's global RAMI. Inpatient cases were aggregated among three categories as they had an outcome better, worse or equal than expected mortality on RAMI. We described hospital's pathway from admission to discharge for each category of inpatients. Collected information about immediate referral hospital wards to ICU or INCU; day of hospital stay when it occurred ;most frequent Present / Non present on Admission Diagnosis and comorbidities (as coded on DRG – APR with ICD-10); most frequent surgical procedures, readmissions on ICU/IMCU < 48h

Results

The impact of ICU/IMCU inpatients from 2017- 2019 on hospital's RAMI was of 0, 1195, 0,1261,01185, 523 saved lives in comparison to IAMETRICS RAMI standard. Average age was of 64, 2, 62% of inpatients were male, 34% of inpatients arrived to ICU/IMCU directly from ER (36% better outcome than standard,17% equal to standard and 32% worse than standard). 17% of inpatients were emergent surgical cases (23% better, 5% equal, 6% worse), 19% of cases were elective surgical cases (23% better, 5% equal, 6% worse). 1, 7% of inpatients were readmitted to ICU/IMCU (1,5% better, 1,0% equal, 2,4% worse). Inpatient days until admission at ICU/IMCU were of 1-3 days for 35% of inpatients (37% better, 29% equal, 26% worse). For 55% of inpatients ICU/IMCU admission was at 5th day or more from hospital's admission (51% better, 37% equal, 65% worse).Surgical inpatients from vascular and hepatobiliary surgery, including liver transplantation.

Discussion

The IAMETRICS benchmarking allows to quick conclusions on relative ranking position of common medical specialties, but not so clearly about critical inpatients and ICU/IMCU's performance, regarding the standards. Portuguese health authorities include as an important KPI, linked to financial contracts, the hospital's RAMI. This study was able to quantify ICU/IMCU's contribution to hospital's overall performance on RAMI. Study was able to identify which kind of patients had a worse outcome than expected, and allows some continuous improvement efforts. Also allows a comparison between commonly ICU/IMCU used scores, for gravity and mortality prediction as SAPS II, and the risk classification system on RAMI. Therefore, study concludes about real value of IAMETRICS benchmarking to establish a relative position ranking for critical care outcomes, and its utility for this kind of hospital casuistic.

Processes and structures affecting tumour board quality: a systematic review

MMag. Andrea Schweiger[1],[2], Prof. Dr. Guido Offermanns[1],[2]

[1]University of Klagenfurt, Austria. [2]Karl Landsteiner Society, Austria

Context

In many healthcare systems, multidisciplinary teams (MDTs or tumour boards) are critical in cancer care and known as the gold standard for enhancing the quality of oncological care in Austria and worldwide. However, they claim a high range of financial, human and time resources, while the effectiveness of MTDs and their benefit to patients are still insufficiently evaluated. A Systematic Review of the literature was conducted, summarising the available evidence on the effectiveness of tumour boards, aiming to analyse the structures and processes that affect the quality of MDTs.

Methods

We systematically reviewed the literature in the Cochrane, CRD, Embase and Medline databases. Only studies published between 2011 and April 2021 concerning MDTs in clinical settings were considered. PICO elements (Population, Intervention, Comparison, Outcome) were used as parameters to set up inclusion and exclusion criteria. The selection of articles followed the criteria defined in the PRISMA Statement. Two researchers independently controlled and evaluated 303 full-text articles out of 944 abstracts through the RAYYAN tool. During the review process, PICO exclusion criteria were iteratively adapted and specified. For the more extensive Literature Review, data from sixty-one selected studies were extracted. Twenty-two articles were included to answer our specific research question on the quality of MDTs. The relevant information was categorised in a table for each included article and classified according to the author, study design, method, objective and conclusion categories.

Results

Twenty-two articles focused on the structures and processes that affect MDTs' quality. Characteristics of an effective MDT, facilitators and barriers influencing teamwork and decision-making were identified. Factors like organisation, quality and availability of patient information, leadership, team and meeting management, and workload/time pressure can affect the quality of a meeting.

Conclusion

The Systematic Review showed that studies analysing the effectiveness of tumour boards published between 2011 and 2021 focused on decision-making, self-assessment instruments and quality and patient-centred treatment. In this context, research focused on the characteristics of an effective MDT and factors influencing teamwork in cancer care. There is evidence of positive effects on patient management in several dimensions, which should encourage the development of multidisciplinary care based on scientific evidence from team research. Clinical care can be significantly supported, and quality development through effective tools can be supported. Nevertheless, further research is needed to systematically evaluate the quality of multidisciplinary cancer meetings and their benefits to patients.

How different boundary types influence social community teams' efforts for integrated care

MSc Martian Slagter

University of Groningen, Netherlands

Context

Living in safe and supportive communities is of high value to enhance social health and well-being (WHO). Since 2015 in the Netherlands, the responsibility for social care services shifted from the national level to the municipalities to make this care more accessible and to integrate health and care services in local living environments of people. Social Community Teams (SCTs) work intensively with people. They need to collaborate with local (health) organisations facing multiple boundaries. This study aims to unravel the interplay between the boundary types and the SCTs' actions (boundary work), and its effect on their pursuit for integrated social health and care services.

Methods

For 18 months, we followed three SCTs from the same organisation with different professional foci: vocational students with housing problems, young football club members, and a multi-problem street. The SCTs formulated their own change goals for self-appointed internal and external stakeholders to target their actions for service integration. The team members responded to a personalised bi-weekly questionnaire (425 in total). We made field notes of researcher observations, and recordings of team meetings and (focus) interviews of the participants and stakeholders (32,6 hrs.). In a still on-going analysis, we use an open inductive, and deductive qualitative process-based methodology to analyse patterns in and between the cases. We aim to generate practical lessons for SCTs practitioners and enrich the boundary work theory research.

Preliminary findings

Five different boundary types in the SCTs pursuit for integrated care influence boundary work and actions: (1) social boundaries: the team and the stakeholder; (2) role boundaries: the activities belonging to the (professional) the teams' and stakeholders' role; (3) rule boundaries: what they are permitted to do; (4) resource boundaries: the (im)possibilities to act; and last (5) competency boundaries: the knowledge or skills the SCTs and the stakeholder hold.

Different boundaries impact the progress of teams, their collaboration with stakeholders and their experimenting and reflecting processes. We coin joint experimentation and mutual learning 'team boundary play' spurring integration resulting in new joint boundaries. (For example, integrating the team's social care activities in a football club's policy and their collaboration with trainers). Different (combinations of) boundary types hinder or support the SCTs differently. We are analysing how and why these positive or negative effects occur in an integrated care context.

Discussion

When a SCT does not protect boundaries (e.g., professional standards or resources), reaching out to experiment with others seems harder to achieve, especially in a multi-stakeholder context with divergent, and possible conflicting demands and boundaries. The SCT's boundary play might play a crucial role in collaboration across boundaries but the combination with internal focused protecting activities might enhance the progress in achieving joint goals for service integration.

Network care in the cardiology domain: evaluating the impact of a value-driven network

Ms Lise Moers[1], Dr Frederique Hafkamp[1], Dr Jeroen van de Pol[1], Luc Theunissen, MD[2,1], Hans Janssen MD[3,1], Martijn Burg, MD[4,1], Prof Lukas Dekker, MD[5,6,1], Dr Dennis van Veghel[5,1]

[1]Netherlands Heart Network, Netherlands. [2]Máxima Medical Center, Netherlands. [3]Anna Hospital, Netherlands. [4]Elkerliek Hospital, Netherlands. [5]Catharina Hospital, Netherlands. [6]Eindhoven University of Technology, Netherlands

Context

As in many countries, network care is currently a topic of great interest in the Netherlands, as transmural collaboration has proven to contribute to improve healthcare outcomes. However, methods to evaluate the impact of those networks are scarce and/or limited to the sole evaluation of clinical health outcomes. Therefore, the Netherlands Heart Network (NHN), a joint-effort of healthcare providers in the full cycle of cardiac care in the south of the Netherlands, developed a method to evaluate the impact of its transmural network from different perspectives and get insight in the added value of this network on the patient value.

Methods

A threefold method was developed to gain insights in the impact of value-driven networks. Firstly, by use of several statistical analyses, the impact of the care network on clinical outcomes and healthcare costs was examined. Secondly, aside from these more ‘traditional’ analysis, the impact on patients was evaluated by means of patient panels, which specifically provides input on the patients’ experiences, the Patient Advisory Board, which contributes on a strategic level, and the Harteraad, which is a national association for patients with a heart disease and functions as a feedback party in the NHN. Thirdly, it was evaluated how healthcare professionals experienced the network collaboration, in specific the introduction of regional transmural care standards. In this evaluation, six key domains were investigated (i.e. individual factors, organisational factors, guidelines, collaboration, patient outcomes and healthcare processes).

Results

Since the introduction of the NHN, the network initiative has shown demonstrable impact on healthcare outcomes (Cremers, Henricus-Paul, et al. "Regional collaboration to improve atrial fibrillation care: preliminary data from the Netherlands heart network." Journal of Arrhythmia 35.4 (2019): 604-611.). A regular evaluation cycle has been installed for evaluation of patient value, in which patient representatives at various levels meet periodically. Patient evaluations are used to incorporate the patients' perspective in the evaluation cycle and serve as input into discussions among healthcare providers for prioritising patient-relevant outcomes. Evaluation amongst healthcare professionals has shown prominent factors to improve a value-driven network, among others; increasing visibility of patient-relevant outcomes (mean±SD);0.09±0.78)), facilitating engagement in the healthcare process (0.26±1.04)), cooperation outside of the own organisation (0.39±0.90), time availability (0.11±0.96), and education about newly-developed transmural care standards (0.14±0.90).

Discussion

As methods for evaluation of network care and transmural care are still scarce and/or limited to evaluation of healthcare outcomes and costs, the NHN aimed to close this knowledge gap by presenting an innovative method for evaluation of cardiac care networks on multiple dimensions; outcome level, patient level and healthcare professional level. This method has shown demonstrable impact in the region of Southeast Brabant (The Netherlands) and led to development of new interventions and strategies to further improve the impact of this cardiac care network. During the EHMA Conference we are more than willing to illustrate this threefold method for evaluating the impact of a transmural cardiac care network from different perspectives, since this method is applicable on a broader scale and for networks concerning other specialties.

Quality improvement in multidisciplinary cancer team meetings at a university hospital: first results of a self-assessment tool

MMag. Andrea Schweiger[1],[2], Prof Dr Guido Offermanns[1],[2]

[1]University of Klagenfurt, Austria. [2]Karl Landsteiner Society, Austria

Introduction

In Austria, treatment recommendations for patients with cancer are made by multidisciplinary teams in weekly meetings (MDTs or tumour boards) using a high range of financial, human and time resources. Although there is much information about multidisciplinary teamwork in healthcare, evidence for their quality in cancer care is still missing. The first results of a developed and tested self-assessment tool for tumour boards and assessment of structures and processes, such as team culture, decision-making and quality of presented information to identify the potential for quality improvement in MDT meetings, are reported.

Methods

A mixed-methods approach, including a systematic review of the literature and interviews with expert MDT members, was used to develop the Austrian Tumour Board Inventory from October 2020 to date. The online survey, which included 44 items, was conducted on nine MDTs in an academic hospital in Austria. The Likert scale was used to assess the structures and processes within the boards and an open question for improvement strategies after each question. One hundred sixty-one health professionals completed the online survey (response rate of 81%). The data obtained were transferred to SPSS. Descriptive statistics were used to assess the team culture, decision-making and the quality of presented information (comparison of mean scores) between and within tumour boards. Psychometric evaluations are currently carried out, including exploratory factor analysis and confirmatory factor analysis. Analysis was theoretically grounded in a quality assessment framework for implementation strategies and outcomes.

Results

Findings from quantitative questions suggest a mainly neutral mean score in the analysed dimensions, such as decision-making, the quality of presented information and team culture throughout the sample. Results can be compared between different tumour boards to show the strengths and potential for improvement of the processes, structures and results. Findings from open questions show that health professionals have ideas for improvement (i.e., presentation of the latest information, accurate documentation and improving the quality of patient information).

Conclusion

The critical function of MDTs in cancer care regarding different healthcare factors, i.e., decision-making, the quality of presented information and team culture and their impact on cancer treatment, was revealed. Our survey indicates possibilities for improvement in structures, processes and outcomes quantitatively and qualitatively. Although most participants are open to improvement, they face organisational challenges and shortages in everyday work, making it hard to implement new strategies. By implementing the developed self-assessment tool in Austrian tumour boards, we enable continuous improvement of MDTs. Further research is needed to develop a standardised self-assessment tool for tumour boards, while the tool can also be applied in other countries and contexts.

Impact of the COVID-19 pandemic on gender disparities in cancer care access in Europe: a cohort study using the survey for health, ageing and retirement (SHARE Survey)

Dr Rui Dang

Westminster International University in Tashkent, Uzbekistan

Background

During the COVID-19 pandemic, the full range of gender gaps in cancer care access and treatment interruptions are not yet comprehensively understood or well documented throughout Europe. This study used the Survey of Health, Ageing and Retirement in Europe (SHARE Survey) to gain insights into the impact of COVID-19 on the trend in gender gaps in care access, and the gender disparities for delayed and forgone treatments during the COVID-19 Pandemic.

Methods

The SHARE Survey is a multidisciplinary, cross-national, and longitudinal survey, which is the most prominent pan-European panel study for people aged 50+. The sample from 26 EU Member States, Switzerland, and Israel comprises 1663 male and 1986 female cancer patients interviewed during the COVID-19 Pandemic (2020 and 2021), plus 1720 male and 2052 female cancer patients interviewed in 2017. Binary logistic regression models are estimated to examine the association between forwent and delayed healthcare use and different socioeconomic characteristics.

Preliminary results

During the pandemic, the prevalence of forwent medical treatment was 19.7% and 11.0% for female and male cancer patients, respectively. The prevalence of postponed medical care appointments was 44.3% and 35.8% for female and male cancer patients, respectively. Forgone and postponed cancer care was associated with female sex and education level. In comparison, in 2017, the prevalence of hospital visits was 34.0% and 38.7% for female and male cancer patients, respectively.

Conclusions

The COVID-19 Pandemic may impact cancer patients' health access and quality of life, particularly for female patients with low Socioeconomic status. The gender inequalities in cancer care access increased significantly during the COVID-19 Pandemic. The current impact of the COVID-19 Pandemic on cancer care in Europe may result in delays in identifying new cancers and treatment delivery. These problems, if unmitigated, will influence cancer morbidity and mortality and gender disparities in healthcare access in Europe and Israel. Health systems must continually evolve to adapt to epidemiological, demographic, and societal needs. It may be a priority for the health systems to be furtherly reformed towards solidarities in healthcare and achieving good well-being and Gender Equality, through universal health coverage and digitalisation in healthcare.

Primary care during the pandemic: lessons learnt from five European countries

Dr Markus Kraus, Mr Christoph Stegner, Ms Miriam Reiss, Dr Thomas Czypionka

Institute for Advanced Studies (IHS), Austria

Background & Objective

The COVID-19 pandemic necessitated wide-ranging adaptations to the organisation of health systems, and primary care is no exception. This study aims to collate insights on the various impacts of the pandemic on primary care. The gained knowledge should help to increase pandemic preparedness and resilience of the primary care system.

Methods

We conducted a qualitative study employing semi-structured interviews with primary care providers in Austria, Denmark, France, Hungary, and Italy. A total of 31 interviews were conducted between June and August 2022 and subjected to an overarching analysis to identify key themes.

Results

Disruptions to service delivery led to a widespread adoption of telemedicine. Despite the rapid increase in telemedicine usage and efforts of primary care providers to organise face-to-face care delivery in a safe way, some patient populations such as elderly or chronically ill patients were particularly affected by disruptions in service delivery. Moreover, primary care providers perceived a substantial propagation of misinformation about COVID-19 and vaccines among the population, which also threatened patient-physician relationships. At the same time, primary care providers faced an increased workload, had to work with insufficient personal protective equipment and were provided with incongruous guidelines while pandemic response policies were mostly focused on hospitals. There was a consensus among primary care providers that they were mostly side-lined by public health policy in the context of pandemic management.

Conclusion

A better integration of primary care with public health and a better involvement of the primary care sector into the pandemic response would have generated a benefit for both patients and care providers. Primary care is well-equipped to manage most mild cases, thereby potentially relieving pressure from hospitals. Continuity of usual care should be prioritised and can be safeguarded by care provision via telemedicine or face-to-face, depending on the individual case.

Prerequisites and response strategies for tackling a pandemic: lessons for secondary care from five European countries

Dr Monika Riedel, Mag Miriam Reiss, Dr Thomas Czypionka, Dr Markus Kraus

IHS, Austria

Background & objective

The COVID-19 pandemic clearly highlighted the limited capacities in health systems including hospitals. This study collates experience and insights on challenges and strategies in secondary care management during the pandemic. The gained knowledge should help to facilitate pandemic preparedness in hospital care.

Methods

52 semi-structured interviews with managers and executive staff of hospitals in Denmark, France, Germany, Hungary and Italy were conducted in Summer 2022 and were analysed by researchers in the respective countries. Subsequently, an overarching analysis was conducted to identify key themes and derive recommendations for improved preparedness.

Results

Despite marked differences between their national health systems, the investigated countries encountered similar problems. Concerning prerequisites, experts from most countries noted lack of up-to-date or sufficiently tested pandemic plans, too scarce resources dedicated to information transfer, including insufficient availability or usability of IT systems within and across organisations. Pandemic responses worked best in case of pre-existing cooperations and due to highly motivated staff. Often, in-house solutions for emerging problems were developed before support from authorities arrived. Keeping staff motivated and healthy got increasingly difficult due to the duration of the crisis, burden of work, diminishing societal support, poor governance regarding administrative burdens and (monetary) recognition of work.

Conclusion

The pandemic intensified pre-existing problems in the hospital sector – most notably, staff shortages and information deficits – and accelerated developments that had begun already pre-pandemic. Experts from all five countries agreed that better equipped and integrated primary care and more suitable e-health solutions could take strain off hospitals. Professional managerial support for health organisations could improve processes. Regular practical tests of pandemic plans would point out needs for updates as well as trainings and other resources, thus enabling providers to concentrate on their core tasks in times of crisis.

Test-trace-isolate-support strategies in the COVID-19 pandemic: lessons from three European countries to improve public health preparedness

Mag Miriam Reiss[1], Dr Thomas Czypionka[1,2], Dr Monika Riedel[1], Dr Markus Kraus[1]

[1]Institute for Advanced Studies (IHS), Austria. [2]London School of Economics, United Kingdom

Context

Test-trace-isolate-support (TTIS) strategies constitute an essential part of public health policy to combat infectious disease outbreaks. As the COVID-19 pandemic represented an unprecedented challenge to public health systems and the first large-scale use of TTIS efforts, there is a lot to be learnt from the experiences in various countries during the crisis. The aim of this study is to gather insights on successful aspects as well as gaps and failures regarding TTIS strategies in three countries/regions, and to derive recommendations for improving preparedness of public health systems for future pandemics.

Methods

Three case studies conducted in Austria, Catalonia (Spain), and England (UK) served as the basis for this research. The case studies were following a qualitative paradigm, using semi-structured interviews coupled with preparatory document analysis. In total, 21 interviews were conducted with representatives of public health authorities or organisations that were directly involved in TTIS activities. In all three countries/regions, the respective samples covered both the central and the local/regional level, as well as different regions (urban and rural) to ensure broad representation. The interviews were conducted face-to-face or via videoconference in spring/summer 2022. The resulting case studies were then subjected to an overarching analysis, which was guided by a category system based on six building blocks adapted from the WHO health system framework: service delivery, physical resources, human resources, information and research, governance and leadership, and financing. Sub-categories within these building blocks that were relevant to the specific cases were identified inductively.

Results

In the context of service delivery, major themes that emerged were accessibility of testing, service delivery for vulnerable groups, prioritisation in peak times, and compliance of the public. Themes related to human resources included staff recruitment and training, qualification requirements, and the role of non-health professionals. Physical resources appeared to be of lower relevance, with the lack of testing capacities emerging as the only recurring theme. In contrast, information and research turned out as a highly important category. Major themes in this context were the inadequacy or lack of information and data transfer systems, the bureaucratic burden associated with TTIS, communication from the government, accessibility of information, health literacy and trust in science and politics, and the potential of digital technologies. Important themes pertaining to governance and leadership were the lack of feasibility or practicability of regulations, flexibility in guidelines, central vs. decentral organisation, and general reforms of public health governance systems. Financing of testing and financial support for isolated individuals were the only recurring themes regarding financing.

Discussion

Public health systems were not sufficiently prepared for some of the challenges that the COVID-19 pandemic entailed. In particular with respect to TTIS, authorities were often forced to improvise and come up with ad-hoc solutions to problems evolving with the epidemiological situation. Valuable lessons to be learnt from these experiences include the importance of accessibility of services, of good communication and functioning information systems, of sustainable staff management, and of building trust to ensure high compliance of the public. Moreover, the pandemic has shone light on needs for far-reaching reform in public health governance systems to improve resilience and preparedness for future pandemics.

Assessing the impact of a COVID-19 vaccination promotion programme in England

Prof Axel Kaehne[1], Dr Julie Feather[2], Prof Evangelos Kontopantelis[3]

[1]Edge Hill University Medical School, United Kingdom. [2]Edge Hill University EPA, United Kingdom. [3]Division of Informatics, Imaging and Data Sciences; Faculty of Medicine; University of Manchester, United Kingdom

Context

COVID-19 vaccination promotion programmes were critical in improving vaccination rates in the population in England. In the North West of England, vaccination rates had been particularly low with 18.34% of eligible citizens remaining unvaccinated in 2021. COVID-19 Vaccination Promotion programmes in England aimed to address vaccine inequalities through providing people with information, tackling misinformation and facilitating access to vaccinations. We analysed population vaccination data to ascertain if a specific promotion programme in the North West of England made a difference, and to whom.

Methods

We used service call data and regularly updated population vaccination data to ascertain the effect of the programme, i.e. whether a call from the programme staff to a citizen led to a vaccination, called a ‘conversion’. Our dataset contained 44,715 call entries in the period from January 2022 to May 2022. We used descriptive and inferential statistical analysis to determine the impact of the programme on vaccination rates in the population.

Results

Our analysis showed that the service led to a significant number of vaccinations for 957 citizens in the period assessed (2 January 2022 to 15 May 2022). This represents a 5.3% conversion rate of calls to citizens. Our results also indicate that the service converted fewer calls to citizens into vaccinations as time progressed, which is to be expected given the complex interplay of factors leading to vaccinations. We also conducted and report sub-population analyses for sex, ethnicity, vulnerable populations using JCVI categories and health inequalities, and deprivation, with results indicating some surprising variations across sub-population demographics.

Discussion

Establishing whether a call to a citizen is associated with a subsequent vaccination presented a particular challenge to our analysis. We developed an analysis model for ‘vaccination conversion’ which will help stimulate further discussion about how to effectively measure the impact of vaccination promotion programmes. We also identified significant learning around what works in vaccine promotion programmes and for whom. Our analysis further indicated the broader public benefits for communities through implementation and delivery of a COVID-19 Vaccination Promotion Programme.

The importance of the existence of a uniform evaluation model in the development of the Home Hospitalisation Units of the Portuguese national health system

Ms. Cláudia Almeida

Nova National School of Public Health, Portugal

Introduction

The emergence of Hospital at Home (HH) units in Portugal is a recent event, with the first unit being created in 2015. However, there has been an exponential growth in the number of units, with about 34 units in operation in the public service. This growth is due to the paradigm shift in health care provision, but also to the pressing need to increase supply in view of the increased demand for health care. Thus, it is important to analyse the indicators, the way they are completed, and their results provided by these units to understand how they have evolved, and which strategies should be replicated or changed.

Methodology

This study is an observational, retrospective, longitudinal study, based on the administrative data reported by the Portuguese HH units between January 2020 and March 2021. The 21 available indicators were also analysed, according to the monitoring model defined for HH. These data served as support to the analysis of the clinical guidance standards regarding patients with the possibility of admission to these units.

Results

Although there are indications transversely defined for reporting by the HH units of 21, very diverse gaps were found at the level of this reporting. About 10% of the units have significant reporting failures, i.e., with more than one indicator not filled in. At this point, the most common indicators are those related to costs and those related to HD visits. The cost indicator presents yet another additional problem, since there are no uniform standards on which elements to consider and as such we are confronted with very disparate values, preventing clear conclusions on efficiency.

The indicators related to the number of patients treated, mortality and average delay are those that are reported more frequently, with mortality presenting an average between 1.5% and 1.9%, depending on the period under analysis.

Conclusions

The Portuguese experience in terms of HH, although presented as uniform and with very interesting results in terms of effectiveness, reveals a very varied set of experiences, both in terms of the patients' admission, with units admitting more complex patients than others, as well as in terms of the teams, with different forms of organisation. Although, in a first analysis, indicators are found that show a good performance in terms of mortality or average delay, discrepancies are also found that are difficult to justify. Therefore, it is necessary that the analyses carried out consider the different realities, a situation that does not currently occur due to the lack of indicators directly related to the patient who is admitted, for example. Regarding costs, it is not possible to guarantee that all units take into consideration the same type of elements. Thus, it is essential to create an objectively defined evaluation model so that it is possible to assess the success or failure of the implementation of these programs in a concrete way, with redefinition and clarification of existing indicators, because it is only possible to ensure an efficient investment in the expansion of units, if it is possible to understand within the large field of action that HH provides which is the most efficient governance model to follow.

Exploring innovative applications to optimise and adapt pharmacotherapeutic of multimorbid patients in the Basque Country

Ms Irati Erreguerena[1], Dr Maria Dolores Martinez[2], Ms Ricardo Samper[2], Ms Elena Valverde[2], Ms Carmela Mozo[2], Dr Ane Fullaondo[1]

[1]Kronikgune institute for Health Services Research, Spain. [2]Osakidetza Basque Health Services, Spain.

Context

Due to population ageing and advances in medical science, people with chronic diseases and polypharmacy are living longer. Challenges are how healthcare systems can cope with the cost burden of chronic disease, sustain a quality independent living for patients; and ensure sustainable healthcare and social care systems through digital transformation. Innovative solutions as well as sustainable integrated workforce solutions are emerging as an alternative to tackle this challenge.

Methods

Within the European Gatekeeper project, the Basque Country region has implemented a quasi-experimental study (non-randomised, concurrent and controlled study) titled “management of people with chronic diseases and polypharmacy". The aim is to explore and assess the effectiveness and experience of using a web platform (CheckTheMeds) based on AI models to optimise the pharmacological prescription and promote the use of a mobile application (My Treatment) to improve adherence of patients with polypharmacy. The intervention has been deployed in 11 Integrated Health Organisations (IHOS) of Osakidetza Basque Health Service, Basque Country, Spain and includes the participation of 275 healthcare professionals (doctors, nurses and pharmacy staff) from Primary Care (PC) centres. More than 690 patients (65 age or older, with 2 or more chronic diseases, and 9 or more chronic or on-demand medicines prescribed) are divided into the intervention and control group. After signing the informed consent, validated questionnaires are filled out to measure the health status (Barthel test) and adherence to treatment (Morisky Green test). The PC pharmacist is in charge of revising the treatment through CheckTheMeds platform. The piloting will last until June 2023.

Results

The evaluation is being done at baseline and after 6 months of follow-up. The preliminary data extracted from OAS (Oracle Analytics Services) Osakidetza database reflected that the average age of the recruited patients is 77.9 years, and 58% are male. Baseline average prescription of 13.6 medicines and the final average prescription of 12.2 medicines (Data from 91 out of 175 patients). 49% of the users are independent (Barthel Test) according to baseline data (44% final data). 82% of the patients are compliant (Morisky Green test) at baseline and 89% are compliant at final evaluation. A workshop to evaluate the intervention experience has been conducted as part of the qualitative evaluation. At the end of the intervention, a focus group will be carried out with the end users (professionals and end-users).

Discussion

The enhancement of Primary Care teamwork, the inclusion of new roles and the reinforcement of workforce coordination and communication are essential for constructing sustainable healthcare systems and person-centred care systems. Innovative technologies can boost the improvement of appropriate polypharmacy, together with adherence to prescribed medication, which will result in more effective treatments with fewer PRMs and health complications, and therefore, improved efficiency in the use of healthcare resources. As a consequence, better use of resources can improve the efficiency of health systems. Thus, the coordinated action of healthcare professionals, in close collaboration with the patient, is postulated as a common denominator in strategies aimed at improving adherence to treatment and offering new caring skills. This integrated care model is flexible and can be replicated at a large scale in different environments.

Internal auditing in healthcare: emerging approaches from a survey across Italian health organisations

Dr Camilla Falivena, Prof Elisabetta Trinchero, Prof Valeria Rappini, Prof Francesca Lecci

SDA Bocconi, School of Management, Italy

Context

The literature on internal auditing (IA) highlights three main gaps concerning: i) understanding of the role of IA; ii) the perception of internal stakeholders about the role and usefulness of IA; iii) IA practices and related ethical and accountability issues (e.g., Roussy and Perron (2018)). Such a situation also affects the healthcare setting. To date, IA has been widely conceived as a tool to support patient safety (van Gelderen et al., 2017). However, Langella et al. (2022) have recently called for research to better explore the relationship between context and IA approaches.

Method

This study attempts to explore how IA conceived and applied within the healthcare sector in Italy. To that end, a mixed-methods study has been carried out. It has consisted of: i) focus groups with relevant stakeholders to identify the most critical issues; ii) surveys to internal auditors operating within public healthcare organisations across the Italian Regions to identify the most significant characteristics and approaches; iii) surveys to practitioners to explore how they perceive the impact of IA. The analysis has also involved the analysis of relevant documents.

Results

In Italy, the approach to IA is shaped by national laws and regulations and best practices established within the organisations. Over time, IA has increasingly been considered a support to the corporate governance systems. The analysis has underlined: i) application perspectives (i.e., clinical risk management, quality assurance and internal control, accreditation, clinical audit); ii) characteristics of the auditing process, meant by the focus of the process (significant events, adverse events, relevant topics from the perspective of practitioners, agreed processes, best practices), source of data, time of the analysis, methodologies and tools; iii) organisational solutions (e.g., ad-hoc structure or dedicated staff); iv) role and evolutionary dynamics (e.g., significant event audit, compliance audit, clinical audit, operational audit); v) connection with operational systems and consolidation of the function.

Discussion

The analysis confirms the complexity emerging from the literature (Mihret and Grant, 2017; Roussy and Perron, 2018), and the absence of an agreement around the role of IA. The causes might be retrieved in the plurality of objectives. The variety of approaches also reveals the existence of context-mechanisms configurations (Hut-Mossel et al., 2021) that lead to different practices and arrangements across organisations, even within the same Region. Although specific characteristics of the Italian National Health System might limit scalability, further research should perform cross-country analysis. This analysis will allow a better understanding of whether and to what extent IA contributes to the sustainability and resilience of health organisations from an international perspective.

Using child health measures to understand pathways to overall health system performance

Dr Dheepa Rajan[1], Dr Susanne Carai[2], Dr Martin Weber[2], Mr Nathan Shuftan[3], Dr Ingrid Wolfe[4], Dr Danielle Jansen[5]

[1]European Observatory on Health Systems and Policies, Belgium. [2]WHO, Greece. [3]European Observatory on Health Systems and Policies, Germany. [4]KCL, United Kingdom. [5]RUG, Netherlands

Context

Children are a vulnerable population regarding their health needs, especially because their voices are not heard over those of caretaking adults. It can be argued that if a health system works well for children, it may point to it working well for the rest of the (less vulnerable) population groups. Using the WHO Health System Performance Assessment (HSPA) Framework, we wish to see if child health measures can help illustrate possible pathways to understanding overall systems performance.

Methods

We used qualitative data from WHO EURO child health system assessments in Tajikistan and Romania to understand how well major health system functions: governance, financing, resource generation, and service delivery, were performing. Using the HSPA Framework, we assessed 2 indicators: unnecessary hospitalisations and unnecessarily prolonged hospitalisations in children, selected as tracers for the service delivery function to assess system performance since quality is an important system goal. We selected two tracer conditions: acute respiratory and intestinal infection as their care pathway (WHO standards) should involve primary care services rather than hospitalisation. Detailed analyses of medical records were undertaken to assess the indicators and tracers. For Tajikistan, DHS data provided the percentage of parents who sought first-contact treatment for their child's fever/diarrhoea at hospital, giving insight into primary care bypassing.

Results

Unnecessary hospitalisations prevalence in the sample hospitals was 40.5% of child health cases in Tajikistan, and 57.9% in Romania, demonstrating that a surprisingly high number of children who could and should be treated in primary care are not only taken to hospital but are also unnecessarily treated as in-patients. In addition, unnecessarily prolonged hospitalisations in Tajikistan were 63%, and 44.4% in Romania, demonstrating that many of these children were also being kept in hospital for long periods of time. For Tajikistan, DHS data showed that, respectively, 26% and 23% of parents with feverish or diarrhoeal children went to the hospital as the first point of contact, so they were also bypassing primary care for conditions which should typically be triaged in primary care first. Data from the qualitative child health system assessments showed clear weaknesses in many areas including the (a) health workforce sub-function of resource generation with a lack of pre-service training in child health for primary care personnel, leading to multiple referrals; (b) pharmaceutical sub-function with the lack of affordable drugs at primary health care facilities leading to care-seeking behaviour directly at secondary level or above; (c) health financing function with both providers and patients incentivised to seek care above PHC level.

Discussion

The data point to parents bypassing primary care, indicating a weak primary care sub-function of service delivery as per the HSPA framework. This led to an overuse of hospital services for conditions which are best treated at primary care where services are closer to patients, families, and communities. This has comprised the effectiveness of service delivery as measured through unnecessary, and unnecessarily prolonged, hospitalisations for children's respiratory and intestinal symptoms. The root causes of this compromise in care quality can be found in health system functions, for example, the resource generation & financing functions, where targeted interventions are needed to address this quality gap. In conclusion, the HSPA framework can help provide narrative for child health service measures giving insight for policy-makers on how the health system overall is doing in specific performance dimensions.

Workforce availability on the intra-procedural stage of endoscopy procedures: a single-centre time and motion preliminary efficiency study

Marco Bassi, MD[1], Pasquale Apolito, MD[1], Raffaele Aspide, MD[2], Annalisa Cappello, MD[1], MSc Davide Allegri[1], MSc Cristiano Fabbri[3], Stefania Ghersi, MD[1], MSc Giuseppe Indelicato[1], MSc Carmelo Cascone[1], MSc Mauro Tiacci[1], Dr Paolo Tubertini[3], MSc Pierfrancesco Ghedini[1], Stefano Guicciardi, MD[1],[4], Vincenzo Cennamo, MD[1]

[1]AUSL Bologna, Italy. [2]IRCCS Istituto delle Scienze Neurologiche di Bologna, Italy. [3]IRCCS Azienda Ospedaliero-Universitaria di Bologna, Italy. [4]Department of Biomedical and Neuromotor Sciences, University of Bologna, Italy

Background and aims

Increased demand for endoscopy facilities has stimulated studies on efficiency.

This study used a Time-and-Motion method to evaluate the effective use of healthcare resources in the intra-procedural phase of endoscopy procedures in a gastrointestinal department of a tertiary care referral hospital and to identify potential recruitable resources.

Methods

Consecutive esophagogastroduodenoscopy (EGD), colonoscopy (PCS) and endoscopic retrograde cholangiopancreatography (ERCP) were prospectively observed during the study period.

For all the procedures total duration in the endoscopy room (TDE) and endoscopy procedure time (PT) were mapped. In the EGD and PCS groups, the activity and "available time" of a second allocated nurse were evaluated. In the ERCP group, endoscopy activity and off-work time of endoscopy staff were evaluated.

Results

87 EGD, 77 PCS and 55 ERCP were analysed.

The mean TDE (mins) was 27.06 for an EGD, 39.32 for a PCS and 67.12 for an ERCP.

Average PT (mins) was 11.31 for an EGD, 23.21 for PCS and 38 for ERCP. The second nurse executed the task in 66.6% of EGD and 58.4% of PCS, with a mean available time with respect to the mean TDE of 19.52 min for EGD and 24.33. min for PCS. In the ERCP group, one endoscopist and one nurse were off-work for an average time of 28.34 min per procedure and in the first 10 min after patient entry into the room, in 80% of cases.

Conclusion

Even with the limitations of a single-centre study, our Time-and-Motion study showed potentially recruitable health care resources during procedural phase of endoscopic procedures.

Workforce efficiency and technology acquisition: the role of performance management systems (PSMs) in creating services improvement in radiologic area

Dr Alessandro Furnari[1,2], Dr Claudio Buongiorno Sottoriva[1,2]

[1]*SDA Bocconi School of Management, Italy.* [2]*CeRGAS, Italy*

Context

Population healthcare needs are increasing in all developed countries. In this context, given the increase in requests of diagnostic imaging procedures, managing examination volumes of radiology healthcare services is a crucial issue nowadays. The latter have an increasingly greater capability of depicting a clear picture of the human body and technology is rapidly evolving, making it a powerful ally in understanding patients' situation. At the same time, radiology is one of the most standardised and operationalised disciplines in medicine. Thus, evaluating Radiologic Operative Units (ROU) performance is a key issue in healthcare sector. The topic is particularly relevant in large public healthcare organisations that operate in universalistic healthcare systems, that are often dealing with shrinking resources and wide unmet needs.

Methods

The paper explores activity and efficiency of seven ROUs of the largest public hospital in Italy, with around 500 employees within the Radiology Department, in order to identify criticalities in providing healthcare services. It also allows to define a structured methodology to promote technology acquisition in a context of low available resources. The research team aimed at designing a performance management system (PMS) for the radiology department. This involvement can be defined as action research, since researchers participated actively in the discussions about productivity and potential paths for improvements.

First, researchers conducted semi-structured interviews with all the heads of the ROUs, both considering medical and technical staff. Then, radiologic teams' performance was quantitively assessed with primary data provided by the healthcare organisation. The assessment considered medical, nursing, and technical personnel involved in the delivery of radiology services and attempted to draw a comparison between the expected workforce based on delivered services and the actual worked hours. It was further refined by allowing for other types of personnel duties, such as the night-time and on-call rotations.

Results

The assessment results were shared in several consecutive focus groups, that were aimed firstly at refining the model and, afterwards, at discussing performance and potential improvement paths. Large efficiency gains possibilities emerged due to the low healthcare workforce productivity and the necessity of modern radiologic machines acquisition. The PMS applied to ROUs also facilitated comparisons between different units and offered the possibility to identify organisational criticalities, such as workforce motivation and logistic issues.

Discussion

The result of the study is particularly relevant for researchers and practitioners for at least two complementary reasons. First, the developed PMS might allow for intra- and inter-organisational comparison of ROUs in other contexts and can be easily replied. Second, we analytically reviewed the productive positioning of the ROUs in a specific context, quantitively and qualitatively describing the productive critical issues and exploring potential paths of improvement.

Bridging the gap between caregiver demand and service offering: a multi-method and multi-stakeholder study in Italy

MsC Alberto Mangini[1], Dr Eleonora Gheduzzi[1], Prof Guendalina Graffigna[2], MsC Michele Paleologo[2], Prof Cristina Masella[1]

[1]Politecnico di Milano, Italy. [2]EngageMinds HUB, Università Cattolica del Sacro Cuore, Italy

Context

Population aging and progressive loss of autonomy are putting the global healthcare system at risk. In Italy, more than 22% of the population is over 65, with many living in rural areas with limited healthcare and social service access, leading to social exclusion and frailty. Caregivers play a crucial role in "aging in place" practices in this scenario, but there are no planned and structured moments of education and support specifically dedicated to this figure, making caregivers metaphorically orphans of care and subject to a pragmatic psychological burden. It is therefore critical to inform and support caregivers in the network.

Methods

This research focuses on the needs of the elderly and their caregivers in the single case study of the Province of Cremona (Lombardy Region). The area was chosen as a primary observatory due to its high proportion of elderly residents and the presence of a wide range of healthcare and social services. A multi-method and multi-stakeholder foundational research approach was adopted, consisting of three main steps: (1) desk analysis to map and represents through flow-charts all health, social-health and social services provided by the formal care network in the province of Cremona for the frail elderly and their caregivers, as well as those provided by the informal care network identified through a snowball technique; (2) analysis of the needs of the stakeholders involved directly or indirectly in elderly care through individual interviews lasting about one hour; and (3) analysis of caregiver needs through semi-structured interviews lasting about one hour.

Results

The analyses revealed that: (1) in Cremona, the formal care network provides 21 services dedicated to the frail elderly and caregivers and 6 services are provided by the informal network and dedicated to family caregivers and professional informal care. People faces difficulties in accessing these services, as there are often no official sites and only social media pages that may not be up-to-date, and cross-referencing and information on social services on health-related sites is hard to find ; (2) the 21 stakeholders interviewed reported recurring problems such as shortage of personnel, inadequate training of current operators, need for data and information management, access to infrastructure and technology, access to services for the population, need to keep caregivers engaged and improve communication within the network; (3) the 20 interviewed caregivers cited similar needs pertaining to five main categories: organisational and pragmatic, information, social and health support, psychological and personal, engagement needs.

Discussion

The findings contributed from both a theoretical and managerial perspective. First, the study provided a comprehensive overview of the needs and expectations of elders and their caregivers in the Cremona Province, thereby allowing researchers to identify key areas of concern and prioritise them accordingly. Second, the study revealed the presence of a rich territory of services and resources available in the area. However, despite the vast offer, the lack of integration and communication among stakeholders affects the efficiency and quality of the service offering. Additionally, the absence of a central hub for information causes a mismatch between service providers and caregivers' demand. To address these issues, a platform to inform and guide caregivers about health and social care services offered in the territory could be a useful and appropriate solution. The further development of such a platform will be undertaken in the following months.

Booking systems as strategic levers to manage waiting lists in healthcare, a systematic literature review

Dr Paola Roberta Boscolo[1], Dr Laura Giudice[1], Assoc Prof Andrea Rotolo[1], Prof Rosanna Tarricone[2,1], Assoc Prof Lorenzo Fenech[1]

[1]SDA Bocconi School of Management, Italy. [2]Università Commerciale Luigi Bocconi, Italy

Context

Long waiting times to access outpatient care are observed in many healthcare systems, as they tend to naturally occur when demand exceeds supply. However, the waiting required to access outpatient services appears often too long and may signal a poor performance at organisation or system's level. Most governments consider the reduction of waiting times a priority, acknowledging the implications of long waiting time for patients, in terms of distress, dissatisfaction and adverse health consequences. This work aims at investigating the topic of waiting lists for outpatient care in connection with managerial tools and strategies to tackle them. Among the tools, we focus mostly on booking systems related to outpatient care.

Methods

We conducted a systematic realist review of peer-reviewed contributions published on international scientific journals, aiming to (i) understand which disciplines deal with management of waiting lists in healthcare, (ii) identify the main issues and themes emerging as connected with the management of waiting lists to access outpatient care, (iii) identify and frame solutions that can be enacted to effectively manage the access to outpatient care, and (iv) verify whether booking systems have proven to be effective in reducing and keeping waiting times stable, how they work and where. A few rounds of systematic searches (a first exploratory search and two subsequent ones to adjust the focus) were run in parallel on Scopus and PubMed. In order to be as inclusive as possible, simple combinations of the following keywords were used: 'waiting list', 'booking system', 'healthcare'.

Results

From the analyses, it emerges that the challenge of keeping the wait to access care under control has been on the policy agenda internationally for the last 20 years at least; moreover, issues related to waiting times to access outpatient services seem to occur with similar traits in every healthcare system, and especially in publicly funded ones. A first group of contributions deals with patients' behaviour and non-attendance. Multiple works focus on the inefficiencies caused by non-attendance and investigate possible solutions. A second group of papers deals, more in general, with strategies and interventions to contain or reduce the wait, adopting various strategies and tools. Among these, several booking systems appear to be the most promising asset to better align and connect demand with supply. Finally, a third group of studies highlights the relevance of contextual factors in enabling and increasing the effectiveness of managerial and policy interventions, such as effective communication, info brokerage systems, a set of clear and shared rules, patient education etc.

Discussion

While access to life-saving treatments, such as transplants, has been the focus of an extensive number of studies over time, timely access to outpatient care has been under-researched. Nevertheless, the available evidence suggests that policies alone have not been sufficient in driving stable improvements on the waiting time field. A few studies integrate the policy perspective by highlighting the importance of continuous management on the ground. Overall, the review illustrates how well-designed booking systems are often effective in improving timely access to care and supporting patient-centred care models. Such tools can support delivery by boosting capacity, centralising and allocating demand, while fostering a more collaborative climate among professionals, communities of practices or local health authorities.

Trends patterns in emergency inpatient admissions from multimorbid heart failure patients

MSc Joana Seringa, Dr Bruno Moita, Dr Patrícia Marques, Dr Rui Santana
NOVA National School of Public Health, Portugal

Background

Heart Failure (HF) is a major public health issue, affecting an estimated 64.34 million people worldwide. It is associated with a poor quality of life, being a leading cause of hospitalisation in the USA and Europe. Multimorbidity is frequent in patients with heart failure, which is particularly concerning once it may precipitate acute decompensation leading to greater healthcare utilisation and the risk of complications. The study aimed to characterise the trends patterns in emergency inpatient admissions from multimorbid heart failure patients.

Methods

Adult inpatient data of all public Portuguese NHS hospitals from 2002 to 2019 was analysed. The outcome measure of this study was emergency inpatient admissions from multimorbid, adult patients with a diagnosis of heart failure (defined as patients with heart failure and at least two additional chronic conditions). Heart failure was defined by International Classification of Diseases, Ninth Revision, Clinical Modification (ICD-9-CM) – 428 category - and Tenth Revision (ICD-10-CM) codes – I50 category. To identify patients with multiple chronic conditions, we considered patients with two or more chronic conditions using the Chronic Condition Indicator methodology from the AHRQ Healthcare Cost and Utilisation Project.

The sample was characterised using descriptive statistics regarding sex, age group, type of admission, number of chronic conditions, the correspondent body system of the chronic condition, and discharge status. The average length of stay and the cost per admission were also estimated.

Results

Emergency inpatient admissions from multimorbid heart failure patients represented 6.7% (n=759,817) of the total hospitalisations. Emergency inpatient admissions from multimorbid patients with HF the incidence raised from 3.7% in 2002 to 12.3% in 2019. Women (54.8%) and individuals aged 65 years or older (89.8%), with heart failure and multimorbidity had a higher prevalence of emergency inpatient admissions. The average length of stay from multimorbid heart failure patients emergency inpatient admissions were 12.0 days (SD = 12.4), and the estimated unit cost per admission was 3,171.83 € (SD = 3,966.98).

Regardless the age group, hypertensive diseases were the comorbidities more frequent (61.3% of all admissions), being present in 22.0% of admissions by patients aged 18-39 years, 51.0% in patients aged 40-64 years, 61.0% by patients aged 65-79 years, and 64.0% of patients aged 80 years or older. Metabolic Disorders were the second most frequent comorbidity (43.9% of all admissions) for all the age groups, except 65-79 years old group, whose second most frequent comorbidity was diabetes mellitus (36.6% of all admissions).

Conclusion

Multimorbidity is highly prevalent in hospitalised patients with heart failure, registering a growing trend of emergency inpatient admissions from this population.

Expectations of primary healthcare patients – can patients be segmented from the point-of-view of expected health benefits?

Ms Laura J. Pitkänen, Ms Sanna Lakoma, Mr Paulus Torkki

University of Helsinki, Faculty of medicine, Population Health, Finland

Context

Primary healthcare acts as a gatekeeper for secondary healthcare, among other things. Thus, some patients present with expectations that are mostly bureaucratic in nature, such as a referral to secondary care. Such a visit is unlikely to yield health benefits. This is relevant in terms of measuring outcomes.

Our research questions are:

- What sort of expectations do patients have when visiting a doctor in primary care?
- Can patients be segmented based on expected health benefits?
- Are patients' expectations met: can they tell beforehand which sub-segment they belong to?

Methods

This is a quantitative study that utilises data from EMR as well as questionnaire data. The questionnaire was carried out at the Kalasatama Health and Wellbeing Center in Helsinki, Finland, in June-July 2022. We recruited 200 patients who had a pre-booked visit at a doctor's office. The patients filled in a questionnaire both before and after the visit. The pre-visit questionnaire consisted of multiple-choice questions assessing patient needs and expectations based on literature. Post-visit, the same options were given to assess what had been done during the visit.

Results

We have yet to receive the EMR data, so these results are preliminary and based on questionnaire data only. The options given in the questionnaire are presented in table 1, categorised according to whether they imply an expected health benefit, or whether the patient expects a doctor's certificate or a referral. Each patient may have more than one expectation.

Table 1. Frequency of different expectations.

Expectation	Frequency
Expectations of health benefit	
I want to discuss my health problem / medication / treatment options	62 %
I want the doctor to find out what is wrong with me	44 %
I want to understand my health problem / diagnostic results better	27 %
I want the doctor to give me a physical examination	21 %
I want the doctor to prescribe new medications	12 %
Doctor’s certificate or referral	
I want a referral to diagnostic examinations (laboratory, imaging, EKG)	31 %
I want a referral to a specialist	23 %
I want a doctor’s certificate	14 %
I want a referral to another professional (i.e. psychologist, physiotherapist)	12 %

Chart 1 presents the distribution of patients according to the category of their expectations. 12 % had expectations for a referral or doctor’s certificate only – all others had only/also health benefit related expectations.

Chart 1. Distribution of patients.

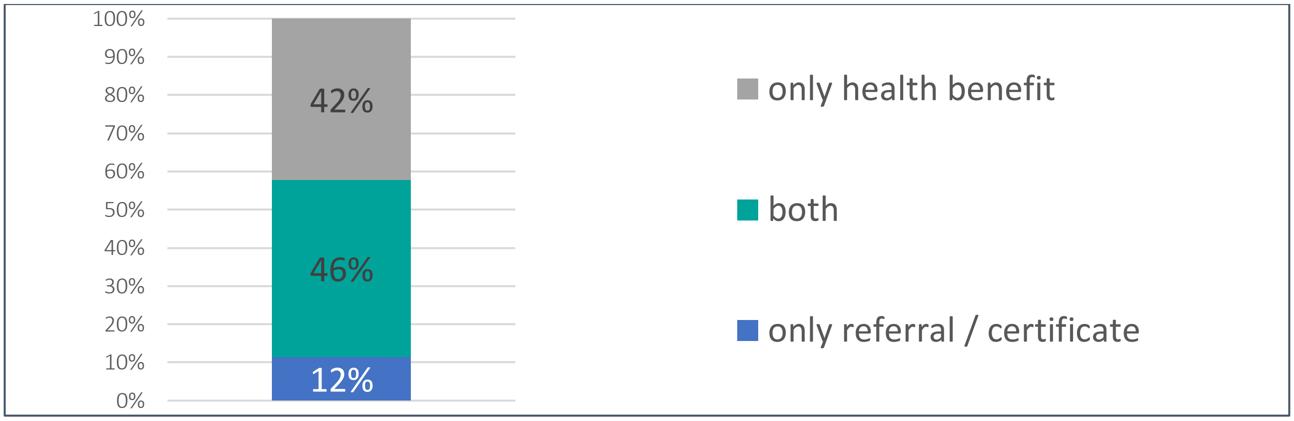
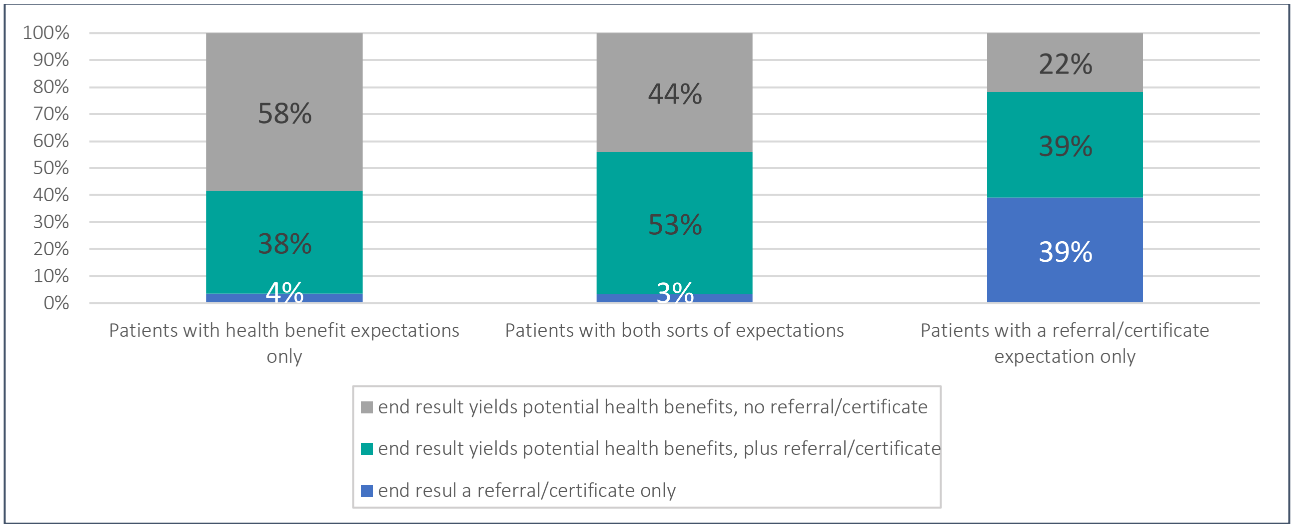


Chart 2 presents the end results of patients with different categories of expectations.

Chart 2. End results by category of patient expectations.



Discussion

Relatively few patients present with a bureaucratic expectation only. With EMR data, we will be able to segment the patients to the chronically ill and the healthy, which may change this result somewhat. Even so, focusing on developing an outcome measure for this sub-segment should probably not be our first priority. Instead, the existence of this segment must be taken into consideration when measuring outcomes – for example, by adding an option such as “the reason for my visit is not an illness or symptom” to PROM questionnaires. The preliminary results show that patients’ expectations for a referral or doctor’s certificate are mostly met. However, for most patients, the visit also included discussions and/or examinations, which are potentially health-beneficial.

Integrated care and patient's satisfaction: evidence from the case of people with epilepsy

Dr Maria Paola Caria[1], Ms Rossella Pellegrino[2], Prof Stefano Villa[2]

[1]CERISMAS-Centro di Ricerche e Studi in Management Sanitario, Italy. [2]Università Cattolica del Sacro Cuore, Italy

Context

Epilepsy is a complex chronic disease often associated with comorbidities, and it is characterised by a quite high level of intensity of service in terms of both pharmaceutical consumption and access to hospital care (ED visits and hospital admissions).

The present paper tries to accomplish three different goals:

- How can we measure the concept of integrated care in the case of complex and chronic diseases such as epilepsy?
- Is integrated care a feature of healthcare provision that is positively evaluated by patients?
- Which are the most effective organisational models to implement the concept of integrated care?

Methods

First, we have tested, developed, and administered a survey to a sample of persons of epilepsy. The study sample consisted of 474 adults over 18 years of age with epilepsy, treated at six specialised centres in different Italian regions, who participated in a survey.

Secondly, we have involved, throughout the research process, a panel of key experts that, following an iterative process, have supported researchers in the design of the protocol and in the interpretation of the results.

Results

The statistical analysis show a quite robust evidence: patients who perceive their care approach as integrated, are more likely to declare themselves overall satisfied with the management of their epilepsy (OR=2,48, CI=1,14-5,39), even taking into account other possible confounding variables (such as: frequency of epileptic crisis, number of accesses at the centre, need for a caregiver support, anxious state, recent change of therapy or centre).

Discussion

The results of the survey and the insights of the focus groups organised with the directors of the Centres show that the focused factory model can work well in the case of complex and chronic disease such as epilepsy but, at least, three conditions need to be met.

First, the centre needs to respect some criteria in terms of (i) minimum number of patients to be treated; (ii) availability of technologies (iii) presence of all professions, specialisations and competences needed to guarantee a comprehensive care of the disease.

Secondly, the six different patient profiles require different services and imply a significantly different impact on activities and costs. It is important to tailor care processes around the specific patient characteristics.

Finally, to avoid problems of access to care, it is necessary to spread the competences and specialised competences concentrated at the CCC in the primary care sector close to patients' homes.

Deployment of SHARE approach in ADLIFE project to encourage the share decision-making in a patient-centred approach

Ms Irati Erreguerena Redondo[1], Dr Ana Ortega-Gil[1], Dr Dolores Verdoy Berastegui[1], Ms Anne Dichmann Sorknæs[2], Ms Natassia Kamilla Juul[2], Ms Søren Udby[2], Mr Esteban Manuel Keenoy[1]

[1]Kronikgune Institute for Health Services Research, Spain. [2]OUH, Svendborg Hospital, Denmark

Context

Serious illness, advanced stages of chronic diseases, or multi-morbidity raise the stakes for engaging patients and families in health care decisions, essential components of appropriate care. Shared decision-making (SDM) is a process where clinicians and patients work together to clarify treatment, management, or self-management support goals. ADLIFE is an EU-funded project to improve the quality of life of the elderly with advanced chronic diseases by providing integrated intelligent personalised care via a digitally enabled holistic and integrated ICT Toolbox. It includes Clinical Decision Services to support the personalisation and management of the care plan and facilitate shared decision-making.

Methods

The ADLIFE project seeks to promote and encourage the possibility of integrating SDM through the Personalised Care Plan Management Platform (PCPMP). From more than 22 accepted definitions of SDM, ADLIFE has implemented the adapted SHARE Approach[1] for exploring and comparing care options through meaningful dialogue about what matters and benefits the patient the most. The model includes a five-task process: (i) Seeking the involvement of the patient (healthcare professionals); (ii) Helping the patient explore and compare treatment options: (iii) Assessing the patient's values and preferences; (iv) Reaching a decision, (v)Evaluating the patient's decision. The SHARE approach aligned with the Clinical Decision Services, proposes the involvement of patients and professionals in different tasks such as information transfer, risk communication and preferences elicitation, tailoring options or broader decision-making.

Results

In ADLIFE the SDM process is suggested by the PCPMP. It includes information and evidence that supports the approach, establishing the relation and connection between the tasks and actors involved in the process. The suggestions appear in specific situations to engage on share decision-making. Moreover, the professionals can engage in the process at any other moment. Based on the SHARE approach, professionals will be provided with quick help for each of the five tasks, including the definition of the task, aids for professionals and for patients and support about how and when to carry out the task through accessing information materials and a webinar about ADLIFE SHARE approach. The ADLIFE's patient-centred care model and the tools implemented, such as share decision-making model, will respond to the individual patient's situation and improve the relationship between patients, carers, and professionals.

Discussion and Conclusions

The goal of shared decision-making is to make sure that the patient feels fully involved in decisions about treatment and care, explained by: "No decision about me, without me". The SDM model implemented in ADLIFE boost in a helpful way how professionals and patients can be involved in a clinical decision, considering both the professional and scientific angle, as well as the patient's values. This approach can improve self-management and adherence, not only medicines management but also factors such as diet, exercise, self-monitoring, and participation in self-management education courses, encouraging the transformation of the systems towards a people-centred approach. ADLIFE focuses on motivating healthcare professionals to engage in SDM routinely and promote patient autonomy, involvement, voice, emotions, and trust. The project has driven an SDM culture to encourage and improve the ability and skills of clinicians to perform SDM activities.

Acknowledgements

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[1] The SHARE Approach Essential Steps of Shared Decision Making. Content last reviewed September 2020. Agency for Healthcare Research and Quality, Rockville, MD. https://www.ahrq.gov/health-literacy/professional-training/shared-decision/tools/share-poster.html

Designing, implementing and managing people centred integrated care using standard operating procedures and quality improvement methodologies

Dr Rachelle Kaye[1,2], Prof Theodoros N. Arvanitis[3], Dr Sarah N. Lim Choi Keung[3], Dr Dipak Kalra[4,5], Ms Dolores Verdoy Berastegi[6], Dr Esteban de Manuel Keenoy[7]

[1]Assuta Medical Centers, Israel. [2]Kay-Tor Conuslting Services, Israel. [3]School of Engineering, College of Engineering and Physical Sciences, University of Birmingham, United Kingdom. [4]The European Institute for Innovation Through Health Data, Belgium. [5]University of Gent, Belgium. [6]Institute for Health Services Research Kronikgune, Spain. [7]Institute for Health Services Research Kronikgune, Spain

Context

Implementing patient-centred digitally enabled integrated care is challenging, both at a project and programme level. ADLIFE is a large-scale project, funded through the Horizon 2020 programme. It focuses on the implementation of integrated care planning and management for patients with advanced chronic conditions, by coordinating all care providers, the patient and carers. It is supported by digital platforms for patient care planning, management and patient empowerment. The implementation of the integrated care process and supporting technologies, in seven very different healthcare systems, has required a systematic and collaborative approach to enable deployment, continuous learning and formative evaluation.

Method

The methodology used was an adaptation of the Standard Operating Procedures (SOP) approach combined with a continuous monitoring and quality improvement methodology to support the adjustment and alignment of processes along the way in order to ensure a successful deployment. An overall project SOP was developed collaboratively by the project management teams that met biweekly based on a model developed in ADLIFE's precursor project - the C3-Cloud project. The SOP provided an "on-the-ground" explanation of what needs to happen to ensure the planning and deployment of the digitally supported integrated care process in all the countries. It assured the requisite level of uniformity, and reduced miscommunication and ambiguity among team members and project partners. The monitoring tool was based on the SOP to enable the identification of problems and obstacles in real time, in order to make the necessary changes and adjustments and assure quality of outcomes.

Results

Based on the collaborative development of the SOP, each implementation site developed a local adaptation in the form of a local operating procedures manual (MOP). This process raised many questions and issues that highlighted the challenges of adapting international guidelines and common digital tools to meet local unique needs and conditions. The biweekly discussions where these issues were raised and resolved, refined the project level SOP as well as the evaluation methodology. Thus, the development of the SOP at project level and the MOPs at local level has facilitated a dynamic, yet systematic design for the implementation of the ADLIFE patient oriented integrated care process and the supporting digital technologies in seven very different settings. It has provided a very effective and efficient project management methodology and tools for both overall and local project management teams, as well as systematic documentation for continuous improvement and evaluation.

Discussion and Conclusions

The ADLIFE pilots will be implemented in March 2023, thus the deployment design and planning is near completion. Designing and planning integrated care projects and programmes is challenging, even for a single location or system. Projects are even more complex when they involve planning and implementing processes supported by common digital tools in multiple locations and systems. A set of clear organising principles using an SOP/MOP methodology provides an overall structure that supports both a requisite level of commonality and uniformity for purposes of comparison and evaluation while enabling sufficient flexibility for adaptation to local needs and conditions. The approach used is consistent with the current thinking on implementation research and will support a formative evaluation methodology that will enable future scalability and transferability. The ADLIFE SOP/MOP approach to design and management aims to be tested and refined in the implementation of regional and national integrated care programs.

People-centred perspective from a technical paradigm: estimating and optimising medical exposure to paediatric congenital heart disease patients

Ms Susmita Afroz[1,2], Dr Hilde M Olerud[1], Dr Bjørn Helge Østerås[3], Dr Anita Nordsteien[1]

[1]Department of Optometry, radiography and lighting design, University of South-Eastern Norway, Norway. [2]Department of paediatric cardiology, Oslo University Hospital, Norway. [3]Department of Physics and Computational Radiology, Oslo University Hospital, Norway

Disclosure statement

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Introduction

An improved people-centredness in managing congenital heart disease (CHD) requires empowering the patients as well as the system around them. Patients need to know associated risk not only with the treatment but also with the supplemental diagnosis and follow up. All of these are associated with risk in the form of radiation dose. This risk is hard to quantify but with empiricism we can come to one step closer to facilitate empowering the paediatric cardiac patients and their families. The empirical data can be understood and communicated by the clinician to the patients.

Purpose

To explore how a quantitative study about developing knowledge on radiation exposure and health risk for CHD patients contributes to people-centred healthcare.

Methods and Materials

The empirical data of nearly 6000 CHD patients is collected from manual registries and medical information systems retrospectively over 30 years. The useful data needs to be uncovered using dose estimation and optimisation for clinician to make the procedures better for the patients. The planned outcome of the study is considered according to the people-centred framework provided by WHO spanning four action domains: (1) individuals, families, and communities (2) health practitioners (3) health care organisations and (4) health systems.

Results

Empowering patients to get better individual intervention, optimised procedure, and improved quality of life and allowing families to give informed consent. The developed knowledge helps practitioners having patient specific treatment plan, increased awareness about radiation and control to maximise the radiation protection to provide holistic and compassionate care. The findings also have impact on hospital, a good estimation of no of procedure is acquired to plan for the expected examinations for the patients, setting up interventional laboratory and optimising procedures as part of the management and quality system. Furthermore, the result can be used as an aggregated knowledge for national and international bodies to issue new guidelines or recommendations that can become a tool to inform patients to better risk assessment.

Conclusion

Implementing the findings of an empirical research in the form of knowledge and practice empowers the concerned groups to have rightful participation thus attains the goal of people-centredness.

The perceived impact of Type 2 Diabetes Mellitus on daily life - a comparative analysis between people with multimorbidity and health care professionals

Prof Ana Rita Pedro[1,2], Mr Fernando Genovez Avelar[2], Ms Beatriz Raposo[2], Ms Ana Cunha[2], Mr Hugo Martinho[3], Mr João Couceiro[3], Mrs Marisa Pardal[3], Mrs Filipa Bernardo[3], Prof João Raposo[4], Prof João V. Cordeiro[1],[2]

[1]Comprehensive Health Research Center, Portugal. [2]NOVA National School of Public Health, Portugal. [3]Astrazeneca Portugal, Portugal. [4]NOVA Medical School, Portugal

Context

An effective communication and a person-centred care approach is crucial to chronic disease management, especially in complex diseases such as Type 2 Diabetes Mellitus (T2DM). Patients' daily life decisions may impact their quality of life and care, particularly when associated with multimorbidity. This condition can negatively interfere with well-being, quality of life and functionality. Understanding the impacts that people living with T2DM and multimorbidity (PT2DMM) perceive may be key to improve health care and shared decision-making. This study aims to compare the perception of these impacts from the perspective of PT2DMM and health care professionals (HCP).

Methods

Quantitative, observational, and cross-sectional study, conducted through two online surveys directed at: (i) PT2DMM (T2D and, at least, one more health condition), residents and healthcare users in Portugal (N=423); and (ii) HCP (physicians and nurses) that assist people with T2DM and provide healthcare in Portugal (N=181). Seven dimensions of disease impact were evaluated – social, employment, family life, mental health, body consciousness, physical well-being, and quality of life – according to a scale of negative, none and positive impact, as well as evaluated in a score format (0-positive impact to 10-negative impact). Statistical analysis and chi-square test were performed in SPSS® v28.

Results

Data analysis revealed that only the perception of disease impact on quality-of-life was convergent ($p=0.324$) between PT2DMM and HCP. Alternatively, we found divergence ($p<0.001$) in social, family, and professional aspects, in which the highest percentage was found at different levels (no impact for PT2DMM and negative impact for HCP). Overall, the highest score of perceived impact for PT2DMM was "mental health" (8.04±2.83) and was "physical well-being" for HCP (9.08±2.28). Globally, the lowest perceived score for both perspectives was related to "family life", although with different burdens (PT2DMM-6.32 vs 8.05-HCP). In general, the HCP reported more negative than PT2DMM.

Discussion

The convergence of perspectives is critical to meet the real needs of people with T2DM, particularly in a multimorbidity context. Person-centred care improves health outcomes and shared decision-making can contribute to this purpose. Based on the results of this study, the perception of disease impact is generally more negative to HCP, revealing that PT2DMM have a certain level of resilience in coping with the disease, even in a multimorbidity context.

An inverted container in containing and not containing hospitalised patients – A multidisciplinary narrative inquiry

Dr Gillie Gabay, Prof Smadar Ben-Asher

Achva Academic College, Israel

Context

The World Health Organisation (WHO) defines sustainable healthcare systems as systems that improve, maintain, or restore health, while minimising negative impacts on the environment and leveraging opportunities to restore and improve it, to the benefit of the health and well-being of current and future generations. Patient-centred care (PCC) was found to reduce costs enhancing fiscal sustainability. PCC calls to contain patients in their time of crisis. This study extended the knowledge on provider-patient interactions in the hectic environment of acute care by applying Bion's container-contained framework from psychoanalysis.

Method

Following ethical approval, we performed a narrative inquiry of the experiences of twelve patients upon discharge from lengthy hospitalisations in acute care. Interviews were conducted upon discharge and about one-month post-discharge.

Findings

While Bion presents three modes of containing, data analysis suggests four modes of containing. In nurturing provider-patient interactions, typical of an active container-contained mode, patients experienced humanised care, symptom control, hope, and internal locus of control, yielding patient gratitude toward providers, well-being, and post-discharge self-management of chronic illnesses. In rigid and wall-free modes of containing, patients experienced a sense of powerlessness and discomfort. The study revealed a new mode of container-contained, the "Inverted Container", which extends Bion's theory and contradicts PCC. In inverted containers, due to the burnout of providers, patients contained the providers rather than vice versa, yet patients reported feeling gratitude toward providers. Gratitude constitutes a defence mechanism and reflects a traumatic experience during hospitalisation, which led to post-discharge distrust in providers and hospitals and poor self-management of illness.

Discussion

Hospital environments are complex, and fast-paced, inhibiting PCC. Without adequate organisational support, PCC will be inhibited by tensions around balancing competing demands. To effectively provide PCC, provider-patient interactions in lengthy hospitalisations must shift along both a clinical axis and a relationship axis, a shift that will facilitate containing patients through reflections, projections, and transference. Since PCC is resource-intensive, it can only occur within supportive hospitals. Providers require to redesign care, incentives, assessment, and feedback. Interventions for providers and management are: a). Acknowledging the powerfulness of provider-patient interactions. b). Focus training and professional development on an ongoing building of the capacity to contain patients while delivering care. c). Managements are called upon to modify the term PCC to “person-centred care”, as a prerequisite to PCC. d). Managements are called upon to establish mechanisms to contain providers' distress by focusing on the art of Doing and Being to integrate empathy and compassion into practice.

The EU Joint Action on strengthening eHealth including telemedicine and telemonitoring for health care systems for cancer prevention and care – eCAN

Dr Andrea Pace[1], Dr Victoria Leclerq[2], Dr Efthyvoulos Kyriacou[3], Dr Andrea Zauli[4], Dr Christos Schizas[5]

[1]IRCCS Regina Elena Cancer Institute, Italy. [2]Sciensano cancer center, Belgium. [3]Cyprus University of technology, Cyprus. [4]IRCCS S Raffaele Hospital, Italy. [5]National eHealth Authority, Cyprus

Context

The recent availability of eHealth interventions presents unique opportunities to enhance cancer prevention and care by increasing intervention reach, adapting to various setting of care, being readily available where users live, work, and play, and tailoring information to patients' needs. The use of telehealth technology is a recent approach that is both patient-centred and protects patients, caregivers and health professionals. The eCAN JA explores the role of telemedicine tools (for teleconsultation and telemonitoring) in two clinical trials focusing on tele-rehabilitation and tele-psychological support in different populations of cancer patients in 10 European countries. The integration of telemedicine tools such as teleconsultation and telemonitoring may allow to improve person-centred care and patients' empowerment. Both patients and health care providers (HCPs), can therefore benefit by harnessing the potential of eHealth tools which integrate and automate assessments based on patient-reported outcomes measures (PROMs).

Methods

The pilot projects will be conducted in 10 European countries with a multicentric, prospective, randomised, open label design in patients affected by Breast Cancer (BC) (Pilot 1a), Head and Neck (H&N) (Pilot 1b) and Advanced cancer (Pilot 2). 354 patients will be enrolled in this project, in 15 european cancer centers. Patient Reported Outcomes, Experiences, Patients' activity and lifestyle will be monitored by a dedicated tele monitoring systems. Data will be collected from subjects manually (quality of life, distress, pain level) and automatically through wearable devices (daily activity, sleep quality, heart rate etc.). A secure web platform will provide dashboard to clinicians for decision support and will enable future Artificial Intelligence (AI) applications.

The main objectives of the pilots are:

1. To assess the impact of teleconsultation program and telemonitoring focused on rehabilitation in the aftercare for patients with BC (1a) and H&N (1b) cancer on the PROs (QoL and pain) compared to usual care.
2. To assess the impact of teleconsultation program and telemonitoring focused on psychological support for patients with advanced cancer on the PROs (QoL and stress) compared to usual care.

Patients will be randomly assigned either to the experimental group or to the control group using a 1:1 ratio. Recruitment will begin in June 2023 and will continue until May 2024. Patients in the intervention group will receive weekly teleconsultation for 8 consecutive weeks: tele-rehabilitation training in Pilot 1 and tele-psychological support in Pilot 2. Outcome measures (PROMs data exploring QoL, pain, distress) will be collected longitudinally during the intervention with dedicated digital application and distant Telemonitoring.

Conclusions

The integration of telemedicine tools such as teleconsultation and telemonitoring may allow to improve person-centred care and patients' empowerment. Both patients and health care providers (HCPs), can therefore benefit by harnessing the potential of eHealth tools which integrate and automate assessments based on patient-reported outcomes measures (PROMs). The results of the eCAN project will improve our knowledge on benefits and risks for teleconsultation and telemonitoring in cancer patients care and will facilitate Health Care Professionals skills in communication with patients and their families in the context of remote care and telemedicine. Abstract presented on behalf of WP5-6-7 eCAN participants.

Exploring competences for managing telemedicine: a systematic review of the literature in healthcare

Ms Sofia Di Pippo

Catholic University of the Sacred Heart, Italy

Context

Telemedicine use has significantly increased in recent years, certain because of COVID-19 (Jnr, B. A. 2020).Telehealth is defined as a method of offering healthcare services to patients using a variety of communication tools such as phones and video-conferencing platforms (Dorsey, Tool, 2016). In this scenario, the tasks and responsibilities of healthcare workers have changed (WHO, 2020, Odendaal et al. 2020) and the competencies required of them have shifted. The goal of this study is to analyse prior literature research about competences required to professionals who use telemedicine.

Methods

A systematic review of the literature will be done to identify, evaluate, and summarise all relevant studies about the competences needed for healthcare professionals who work in virtual outpatient clinics. In particular, after the definition of the research question, a search in the most pertinent databases (Web of Science, PubMed, Scopus) and journals will be conducted. The research findings will be examined to remove duplicate articles and to determine which are the most related to our objective.

Results

Our research will identify the primary competences needed by healthcare workers who adopt technologies in their daily working routine. We shall outline the technical and behavioural skills needed in this field. We can certainly expect to find e-skills and informatics knowledge (Li et al., 2019; van Deursen et al. 2019) among the technical ones. On the other hand, communication skills, networking skills, teamwork ability, leadership abilities, problem solving, decision making, and willingness to learn (Jose et al., 2022) will surely be found in the second group of competencies.

Discussion

The adoption of technology in the health system, while representing a new approach to provide high-quality care to patients, also represents a new challenge for all workers. In fact, healthcare workers, like all other professionals involved in digital transformation and smart working, need additional skills to succeed in their jobs. At our knowledge, there are no previous evidence aimed at mapping all the skills and competences required for health professionals working in virtual outpatient clinics. This work represents a first attempt to fill this gap, and besides that it paves the way for future studies aimed at building the job profile of healthcare professionals enrolled into digital healthcare services provision. Knowledge about job profile characteristics is of quintessential importance both for policy makers and for healthcare managers in order to better design career patterns and to more properly project training paths.

Patient satisfaction and cost saving analysis of telemedicine in patients with inflammatory bowel disease.

Dr Fabrizio Bossa[1], Dr Sonia Carparelli[1], Dr Maria Guerra[1], Dr Francesco Cocomazzi[1], Dr Giuseppina Martino[1], Dr Monica Annese[1], Dr Nicola Bellucci[2], Dr Anna Roberta Gagliardi[3], Dr Fulvia Terracciano[1], Dr Luigi Pacilli[4], Dr Francesco Perri[1]

[1]Gastroenterology Department – Fondazione Casa Sollievo della Sofferenza – IRCCS, Italy. [2]Department of Informative System - Fondazione Casa Sollievo della Sofferenza – IRCCS, Italy. [3]Department of Economics, University of Foggia, Italy. [4]Health Administration – Fondazione Casa Sollievo della Sofferenza – IRCCS, Italy

Context

Crohn's disease (UC) and Ulcerative Colitis (UC) are chronic inflammatory bowel diseases (IBD). Telemedicine (TM) is particularly useful in patients with chronic diseases who need frequent monitoring to achieve therapeutic outcomes and improve their quality of life. We examined the differences in patient satisfaction with telemedicine versus in-person visits. We also examined the potential cost savings benefits of utilising telemedicine.

Methods

All consecutive patients with IBD in clinical remission evaluated by Partial Mayo Score (PMS) for UC and Harvey Bradshaw Index (HBI) for CD were considered eligible. After a questionnaire investigating the ICT skills, patients were randomised to telemedicine or in-person visits. All patients were asked to respond to an 11-item survey investigating their trust in telemedicine. Enrolled patients underwent a telehealth or in-person visit after three months and were asked for a standard questionnaire to evaluate the direct and indirect costs. Patients randomised to telehealth also responded to a 28-item survey investigating their degree of satisfaction.

Results

We enrolled 35 patients with IBD randomised to telemedicine (n= 22; 11 with CD; 13 female; mean age 45 years) or in-person visits (n= 8; 5 with CD; 3 female; mean age 52 years). Regarding trust in TM, 28 patients (80.5%) were confident or interested in telemedicine, and 30 (88.3%) were satisfied with the information received about telehealth management. However, eight patients (23.0%) thought that telemedicine would have no positive effects on their health status. 13 out of 22 patients randomised to TM (59.1%) resided in another province than that of our hospital. Sixteen patients (72.7%) had a high school diploma or degree. All patients randomised to TM were satisfied with telehealth and considered the information received during the visit clear. From a technical point of view, only one patient had problems with connection, and three patients needed the support of a caregiver. Nineteen patients (95.5%) thought telehealth's efficacy was equivalent to an in-person visit. Nineteen patients (86.4%) were convinced that telehealth is a tool to be promoted for future clinical practice. Patients randomised to telemedicine declared savings on average of 125 € compared to in-person visits.

Discussion

In patients with IBD in remission, telemedicine is feasible and effective in the majority of patients. In addition, TM has allowed significant cost savings without reducing health assistance quality.

An HTA methodology for the rapid implementation of telemedicine in an existing care pathway: the patient experiences and the results of Italian healthcare organisations involved in the project “Telemedicina Subito”

Dr Sara Consilia Papavero, Mr Fabrizio Massimo Ferrara, Dr Andrea Fracasso

ALTEMS School of Economics and Management of Health Systems – Catholic University of Sacred Hearth, Italy

Context

The Italian Recovery and Resilience Plan (RRP) recognise, in the Mission 6.1, the central role of telemedicine to strengthen the proximity of health care to patients, as already demonstrated by the different experiences during the COVID-19. The investment represented, for the health care organisation, an opportunity to digital transition, considering the different contexts, technological and organisational fragmented. Given the need to implement telemedicine without disrupting the existing care pathways, the study aims to develop a methodology that can permit a rapid implementation that starts with an analysis of the actual context by different perspectives, according to the HTA approach.

Methods

Since March 2020, we have conduct in 17 centres, a quality improvement study, collecting sociodemographic characteristics of patients, technical details of telemedicine visits, patient feedback, medical judgment about complexity of clinical decisions, and need for in-person re-evaluation. The present study is the result of the “Telemedicina Subito” initiatives, that permit the rapid implementation of telemedicine using operating manual, structured according HTA approach. The methodology, developed thanks this voluntary initiative, is based on a "bottom-up" approach: analysing existing clinical, organisational, and administrative processes, and defining if/ how the same processes can be performed by replacing the contact in the presence by remote interactions through a communication system available, known, possibly free and GDPR compliant. For each televisit provided by centres was recorded and shared a set of anonymous indicators for measure the effectiveness of the projects and obtain objective data to support the improvement of processes and programming services.

Results

We collected data related 3416 televisits, involving patients with a median age of 47 (IQR: 11 - 72). Patients mostly used a smartphone (68%) with high audio-video quality (69%). Interacting with patients was very easy in 68% of visits. Patients reported no difficulty in sharing documents and high satisfaction in 83% of visits. Perceived complexity of clinical decisions was generally medium (44%), whereas 8.2% of cases required in-person re-evaluation. Finally, in 2264 televits it was possible to collect the city of residence of the patient for the evaluation of the environmental impact of telemedicine: the televisits made by the patients that are outside the city (on which we have been able to evaluate distances by the centers) were 1553 (69%), the median distance was 146 km (IQR: 84 - 275) and median carbon emission saved is 13,87 Kg (IQR: 7,98 – 26,13), with a total amount savings of ~ 18 tons.

Discussion

The most important finding of this study was the ability to develop a methodology for the rapid implementation of the telemedicine, valid in different contexts and specialties, non-invasive compared to the existing clinical pathway and inexpensive. This approach allows the healthcare organisations to immediately provide telemedicine to patients and is fully compatible and synergistic with the future regional and national platforms provided by the RRP. Indeed, when these platforms will be available it will be sufficient to replace the communication platforms (e.g.Skype®, Microsoft Teams®), adopted today with regional ones leaving unchanged the process tested and capitalising on the experience gained in the meantime. The main limitation of our study is related with evaluation of effectiveness considering only a satisfaction of the patients. Future studies could consider the experience of the healthcare professionals involved and the real benefits on the care of patients and the organisation.

Telehealth and HIV: exploring the attitude of patients with HIV about using telehealth

Dr Federica Dalponte[1], Dr Elisabetta Listorti[1], Dr Lolita Sasset[2], Dr Maria Mazzitelli[2], Dr Annamaria Cattelan[2], Dr Lucia Ferrara[1]

[1]CERGAS - SDA BOCCONI, Italy. [2]Azienda Ospedale - Università Padova, Italy

Context

With COVID-19, traditional care settings have long not been accessible due to the case surge and the impossibility to physically reach hospitals and outpatients. This has caused an accelerated adoption of telemedicine in the attempt to guarantee continuity of care for non-urgent conditions and chronic patients. Several studies have already identified potential benefits connected to the employment of telehealth within HIV care during COVID-19 (i.e., improving access to care, mitigation of stigma), however limited evidence is available on the preferences of HIV patients toward telemedicine beyond the pandemic, on which the research intends to give a contribution.

Methods

We drafted a survey based on an HIV-specific questionnaire on telehealth developed by Dandachi et al. (2020)1. The survey was administered to HIV+ patients attending in-person clinic visits at the University Hospital of Padua (Italy) during two periods, July-November 2021 and June-October 2022. The survey maps the availability of digital tools, the perceived benefits of telehealth, the concerns connected with telemedicine use, and the expected frequency of use. Survey responses have been matched with patients' personal and clinical information, including age, sex, country of origin, education, HIV risk factors, years living with HIV, ART regimen, viral load and comorbidities. Descriptive and inferential statistics, using logistic regression models, have been used in order to assess the impact of patients' personal and clinical information on the propensity to use telehealth, as mapped by the survey.

Results

We collected around 600 responses. The preliminary results show more than half of respondents (57%) being fully supportive of telehealth initiatives. Reported benefits are mainly related to being able to better organise their own schedule and not having to physically visit the clinic. On the other hand, concerns are most frequently related to the doctor not being able to accurately assess the patient's condition. Preliminary regression results show that the factor that influences most patients' opinion is their availability of tools to make video calls, which increases the odds of using telehealth. In adhering to telehealth initiatives, patients who have had an infection for more years appear the least likely to do so. In determining the frequency of using telehealth services, having comorbidities reduces the willingness to use them frequently. Older patients appear to be more concerned about the circulation of personal data on the Internet.

Discussion

The results allow to better explore the attitude about telehealth of Italian HIV+ patients and the personal and clinical factors affecting the propensity to use telehealth services. The evidence from this research can inform future action of policy makers regarding the adoption of multichannel care models for specific sub-groups of HIV patients.

Determinant factors of access to medical specialty telemedicine consultations in the context of the COVID-19 pandemic: a systematic review

Dr Ana S. Cunha[1],[2], Prof Ana R. Pedro[2],[3], Prof João V. Cordeiro[2],[3],[4]

[1]NOVA National School of Public Health, Portugal. [2]Public Health Research Center, Portugal. [3]Comprehensive Health Research Center, Portugal. [4]Interdisciplinary Center of Social Sciences, Portugal

Context

The COVID-19 pandemic accelerated the digital transition process in healthcare, which required a rapid adaptation of stakeholders. The use of telemedicine has increased to reduce face-to-face encounters and to facilitate access to specialised medical services. However, as telemedicine is not yet accessible to all, its rapid implementation has magnified pre-existing inequalities in access to digital health care. This study aimed to characterise the determinant factors of telemedicine access to hospital medical specialty consultations, and to identify the main opportunities and challenges generated by this technology, in the context of the COVID-19 pandemic.

Methods

A systematic review was conducted according to PRISMA Statement Guidelines. Qualitative, quantitative and mixed-methods studies published between January 3rd, 2020, and December 31st, 2021, were identified in 4 databases (Scopus, Web of Science, PubMed and Cochrane COVID-19 Study Register) using established criteria, to answer the following research question: What are the determining factors of the impact of telemedicine on access to medical specialty consultations during the COVID-19 pandemic? The protocol of this review was registered and published in PROSPERO (CRD42022302825). A methodological quality assessment was conducted using MMAT (Mixed Methods Appraisal Tool) version 2018. The studies obtained were selected through pre-defined inclusion criteria and peer reviewed. The results were integrated into a thematic synthesis to identify facilitating factors and barriers of telemedicine use to access to medical specialty consultations. The main opportunities and challenges of telemedicine were identified by interpreting and aggregating the thematic synthesis results.

Results

Of the 106 identified studies, 9 met methodological quality standards and inclusion criteria. All studies were originally from the United States of America. The main identified facilitating factors to telemedicine use were: health insurance coverage; prevention of SARS-CoV-2 infection; access to Internet services; access to technological devices; better management of work-life balance; and savings in travel costs. The main identified barriers to telemedicine use were: lack of access to Internet services; lack of access to technological devices; racial and ethnic disparities; low digital literacy; low income; age; language barriers; health insurance coverage; concerns about data privacy and confidentiality; geographic disparities; and performing complementary diagnostic tests or delivering medical results. Aggregating the research results, we identified different technological; sociocultural and demographic;

socioeconomic; and ethical and legal challenges and opportunities for the adoption of telemedicine services.

Discussion

This systematic review identified several technological, socioeconomic, sociocultural, demographic, legal and ethical factors that can challenge and/or create opportunities for the use of telemedicine services to access hospital care. Health insurance coverage was one of the main factors that facilitated the use of telemedicine services during the COVID-19 pandemic and that the lack of access to technology and internet services were identified as the factors that most limited telemedicine use during the same period. People belonging to racial or ethnic minorities, with lower income, aged over 55, with language barriers, living in non-metropolitan areas or with a lower income, were the less frequent users of telemedicine. In order to expand access to healthcare and provide high-quality care for all through digital solutions, especially among the most vulnerable communities, the determinants identified in this systematic review should be further researched and met with informed and dedicated responses in the future.

A model for developing and assessing communication skills in graduate healthcare management education programs for early careerists

Prof Daniel West Jr.[1], Prof Bernardo Ramirez[2], Dr Irene Gabutti[3], Prof Steve Szydlowski[1], Prof Cherie Ramirez[4]

[1]University of Scranton, USA. [2]University of Central Florida, USA. [3]Universita Cattolica del Sacro Cuore, Italy. [4]Simmons university, USA

Context

The multidisciplinary nature of healthcare teams in applied settings demands well developed communication skills to maintain fluid and functional relationships and interactions between the team members. A model and theoretical framework has been developed, implemented and evaluated for 10 years in the training of early healthcare professionals pursuing postgraduate studies. The Communication Skills Training (CST) model as designed enhances intrapersonal and interpersonal behaviours, skills and competencies. This CST model, initially developed in the U.S., has been used and tested in health management education (HME) partnerships in Latin America, Australia, and Eastern & Central European (CEE) countries.

Methods

Healthcare organisations recognise the importance of effective communication. Improved communication enhances patient safety, quality of care, and clinical outcomes. Most training programs focus on didactic education but fall short on actual application and integration of this knowledge. The authors have designed a model that allows professionals to demonstrate and modify behaviours and skills. Existing models were reviewed in the training literature. Elements of several models that were determined to be useful in improving communication were combined and built around principles of applied behaviour modification and observational learning. A formal Communication Skills Training (CST) program was designed and incorporated into a second-year graduate leadership course in a Master of Health Administration (MHA) program. The course combined didactic materials, lectures, theories, videotaping, role playing scenarios and handouts. Counsellors -in- training under supervision in the graduate counselling department were used to independently observe live sessions of health administration students resolving management problems and providing feedback on verbal and nonverbal behaviours used in the communication process. MHA students were assigned to small groups for videotaping sessions.

Results

Videotape reviews and written evaluations by counselling students were used to provide verbal and written feedback to health administration professionals on specific behaviours. Another set of videos were produced to see if students used the constructive feedback to improve skills. Data was collected yearly and aggregated for 10 years. On average, 83% of students improved their communication style, 67 % evidenced new behaviours, and 80% of students modified their personal behaviours as a result of using this training model. All students completed personal reflection papers providing feedback on the efficacy of the new model. This data was analysed and qualitative reports prepared and shared.

Discussion

Directors of graduate programs in healthcare management need to bridge the gap that exists between academia and applied healthcare settings. A competency based model offers a way to transfer skills, knowledge and competencies across settings for early careerists. Continuous quality improvement can be demonstrated with the CST model. The CST model can be modified and adapted to provide improved development programs for managers and leaders. The CST training model has successfully been used in several public-private partnership training programs in several countries. The results are sustainable and transferable across different regions globally, and the CST model has been used in low, middle and high income countries for communication skills training.

Rasch model analysis of medical responsibilities left undone

Mr Simon Dello, Ms Dorothea Kohnen, Prof Walter Sermeus

KU Leuven, Belgium

Context

The phenomenon of missed nursing care (MNC) has been studied extensively the past two decades. It has been linked with rationing in healthcare systems and shown to be an indicator of poor quality of care. The mediating effect of MNC as a process measure between systemic and organisational factors and patient outcomes is well established. This phenomenon of rationing of care has not been documented in other healthcare professionals (e.g. physicians) active within acute care hospitals. This study aims to explore the psychometric properties of a newly developed scale to measure the phenomenon of medical responsibilities left undone among physicians.

Methods

This study concerns a primary data analysis as part of the Magnet4Europe study, an ongoing study under the European Commission's Horizon 2020 framework aiming to evaluate the transfer, implementation, scale-up and cost-effectiveness of the Magnet® model of organisational redesign as a system-level approach to improve clinician wellbeing. Magnet4Europe is conducted in 69 acute care hospitals in 6 European countries (Belgium, England, Germany, Ireland, Norway and Sweden). Medical responsibilities left undone is assessed using an instrument comprising 11 items and conceptually derived from the Tasks Undone scale. The response scale is a binary , indicating if a responsibility was left undone or not. Using Rasch analysis, various psychometric properties of the instrument, e.g. unidimensionality, will be assessed as well as the model fit using various fit statistics and item response functions (IRFs) exploring the relationship between the latent variable and the probability for a certain response.

Results

Across all 69 European hospitals in total 2,190 were among physicians were collected. Only complete cases were used for this analysis, resulting in 2,048 observations in total. Preliminary analysis demonstrates that the reliability of person separation statistic (WLE) (analogue to Cronbach's alpha) is 0.619 indicating a moderate fit between the data and the Rasch model. Both the infit mean square error (MSE) (0.99) and outfit MSE (0.96) approach 1, indicating model fit expectations are met. Results of the principal components analysis indicate no correlation among the standardised residuals, implying that the data adhere the model requirement of unidimensionality. Item difficulty indicated that items related to direct care, e.g. "Pain management" (3.214, SE 0.08) and " Diagnose, treat or provide continuous care to hospital inpatients" (2.503, SE 0.07) are most difficult, meaning in this case they are least left undone.

Discussion

Adopting the Rasch Measurement Theory Approach allows to evaluate how the data fit the model and how well all items included in the scale perform. Overall, the model fit is acceptable and the standardised residuals show no correlation. The importance of measuring missed nursing care and its association with patient outcomes has been demonstrated numerous times. The results of this analysis indicate that the instrument developed to capture the phenomenon of medical responsibilities left undone among medical staff has sound psychometric properties and can also be used for this purpose. Performance of the scale in different groups of physicians will need to be evaluated further. This novel instrument is not exhaustive in capturing all responsibilities of physicians by any means, since this is far more complex. It does however demonstrate that the instrument has useful properties and can therefore be considered as proxy measure to easily monitor quality of care.

Critical insights into the control of community nurses’ work using labour process theory: effective management or conscious exploitation?

Dr Lise Elliott

University of Manchester, United Kingdom

Context

I use labour process theory (LPT) to provide critical insights into the mechanism used to control and manage the work of a group of nurses. LPT is a well-established theoretical framework, used to analyse and illuminate the labour process of nurses who administer IV antibiotics, to patients in the community. In recent decades, LPT has been increasingly utilised to analyse service work, including care-giving labour. In this study, I use LPT to provide critical insights into the mechanisms used to manage and control the nurses' workload and work pace and ask – is this effective management, or conscious exploitation?

Methods

My research uses evidence from data produced through an ethnographically-oriented study of a group of nurses, in a large city in the North of England. The fieldwork was undertaken in 2016 (from July to November). During this period, I carried out over 140 hours of field observations, which were worked across 22 individual shifts. I also undertook semi-structured interviews with the six community nurses who participated in my study. I observed the nurses as they went about their work, but did not observe them providing direct care to patients (this was deliberate and allowed me to focus solely on the perceptions, attitudes, concerns and behaviours of the nurses). The data was produced from detailed field observations of the nurses and verbatim interview transcripts. This data was analysed thematically and inductively, supported by the use of NVivo.

Results

Using LPT as the theoretical lens, my research highlights how work intensification and work extensification is used by the nurses’ employer (or their management proxy), to control the workload and work pace of a nurse, on every shift. Despite the nurses working outside the geographical confines of a typical healthcare setting – which would allow for more traditional forms of control – the nurses’ workload and work pace was managed and controlled using a combination of patient allocation and the organisational, expectation that patients allocated to a nurse, would be successfully treated by the end of each shift. This study highlighted that the allocation of patients was not based on the time it took to actually treat patients in their home and so, as a consequence, the nurses’ shifts were routinely extended (unpaid), to ensure all allocated patients were treated successfully.

Discussion

The mechanism used to manage the nurses, relied on them being willing (consenting) to work after the (official) end of their shift. They appeared to do this for at least two reasons. Firstly, an obligation to fulfil expectations that all their patients will be treated by the end of their shift. Secondly, a commitment, that they needed to complete the treatment of all their patients, derived from their own professional and personal values. However, the ‘cost’ of this commitment to care was not borne by the nurses’ employer; but rather, by the nurse themselves. A cost of either; unpaid, extra hours worked, or the concern and sense of guilt resulting from rushing their patient’s treatment and potentially compromising their care. Based on the data, the former was very common, the latter, very rare. There was no obvious cost to the employer – is this conscious exploitation, or effective management of resources?

Crisis migration and health workforces: the case of Venezuelan migrant healthcare workers in Peru

Dr Gareth H Rees

ESAN University, Peru

Context

This study focuses on migration due to social or economic crises, where health workers find themselves unable to continue work in their home country. It reviews the arrival of Venezuelan health workers before and during the pandemic into Peru, which is the country that experienced the world's highest COVID-19 death rate per 100,000 of population.

Methods

The case is derived from the content analysis of Peruvian government reports, surveys and Ministry of Health employment data, along with reports and news items from third parties. These data are combined to produce a narrative case study that outlines the antecedents, the scale of the migration and outline these problems experienced by this group of healthcare workers to integrate into Peruvian society and its health system. The case includes numerical data on the estimated size and scope of the migration, numbers of health workers and how these health workers were eventually mobilised as part of Peru's COVID-19 response.

Results

The case reveals that there are misconceptions around the significant number of Venezuelan refugees and migrants that have entered Peru. Many are legal, came through regulated ports of entry with valid passports, and a significant number wish to remain living in Peru. The numbers of health workers that left Venezuela between 2012 and 2017 have been recorded to be 22,000, doctors, 6030 nurses and 6,600 health technicians. Of these, it is estimated that between 4000 – 3000 doctors and about 2,500 health technician and nurses presently reside in Peru. However, there are significant barriers for these Venezuelan healthcare workers to be registered and practice. Many do not work in their professional field due to financial and qualification recognition barriers. However, during the pandemic Peru allowed unregistered but qualified foreign health workers to be allowed to work in the state health service within limits.

Discussion

The case reveals a similar range of problems common to other jurisdictions and that are shared by more voluntary migrant health workers. As such, the economically restrictive or bureaucratic processes to register qualifications with the State and meet professional body requirements to be legally allowed to practice are not unique to Peru. The Peruvian government concession to access this workforce as pandemic impacted its health system and the introduction of civil society programmes to improve Venezuelan medical worker access to qualification and professional registration as the pandemic demand wanes, means the country has begun to utilise this healthcare resource more effectively. Thus, the case reveals that the pandemic crisis management has opened new entry points for migrant healthcare workers, reduced administrative hurdles, and even blurred professional boundaries that have been strongly contested in the past. It is too early to say whether these developments will be sustainable and create solutions that benefit both the country and the healthcare workers.

Health workforce challenges in Romania - medical doctors between public policy responses and reality

Dr Monica Georgiana Brinzac[1,2], Dr Marius Ionuț Ungureanu, MD[1,2], MPH Maria Lorena Vescan[1], MPH Diana Nemeş[1,2], Prof Cătălin Ovidiu Baba[1]

[1]Department of Public Health, Babeș-Bolyai University, Romania. [2]Center for Health Workforce Research and Policy, Babeș-Bolyai University, Romania

Health workforce (HWF) in the right number, the right distribution and right skills is essential for health systems to ensure the highest attainable standard of health. HWF plays a central role in the well-functioning of health systems. Currently, Romania is facing significant HWF challenges, related to not only maldistribution of health personnel, but also poor working conditions, as clearly shown by the COVID-19 pandemic.

The aim of this study is to assess the current status of HWF in Romania, with a focus on medical doctors, by making use of the health labour market framework.

We used secondary data in the annual report on the Activity of Healthcare Facilities, by the National Institute of Statistics, for the period between 2009 and 2021, which we triangulated with policy documents and other relevant reports data.

Compared to 2009, the overall number of physicians increased, but the regional distribution is still skewed.

This trend indicates an increasingly ageing workforce, highlighted by a new age group of medical doctors starting in 2014 - 75 and above. Moreover, the number of physicians aged 65 and above (4,240) is three times higher than in 2009 (1,386). Conversely, the share of doctors aged 25 to 34 has increased by 62,55%. The distribution of physicians varies largely between regions, ranging from 4,681 in the Sud-Muntenia region, to 15,866 in the rich București-Ilfov region in 2020.

HWF represents a priority of the most strategies and policies, as both the past and the present National Health Strategy has several objectives and measures targeting HWF.

The Romanian healthcare system needs educational policies linked with health labour market policies, not only increasing the number of physicians, but rather implementing enrolment policies in the development regions, to address migration and emigration, to improve skill mix composition in rural areas, and to manage dual practice.

Digital aid for talking more about death and dying: incorporating advance care planning to integrated care management tools

Dr Ana Ortega-Gil[1], Dr Iñaki Saralegui[2], Ms Bárbara López[1], Dr Hanno Ullrich[3], Ms Anne Swoboda[3], Ms Gabriela Maxwell[4], Dr Laura De la Higuera[5], Dr Anne Dichmann Sorknaes[6], Dr Barak Nahir[7], Dr Timothy Robins[8], Dr Fritz Arndt[3], Dr Anna Hestner[9], Mr Bunyamin Sarıgül[10], Dr Mustafa Yüksel[10], Dr Gokce Banu Laleci Erturkmen[10], Dr Dolores Verdoy[1], Dr Esteban De Manuel Keenoy[1]

[1]Kronikgune-Institute for Health Services Research, Spain. [2]Osakidetza Basque Health Service, Spain. [3]Gesunder Werra-Meißner-Kreis Ltd, Germany. [4]Graeme Medical Centre, United Kingdom. [5]Osakidetza Basque Health Service, Spain. [6]Svendvorg Hospital, Denmark. [7]Assuta Ashdod Hospital, Israel. [8]University Hospitals Coventry & Warwickshire NHS Trust, United Kingdom. [9]Region Jämtland Härjedalen, Sweden. [10]SRDC corp, Turkey

Context

People living with chronic diseases often experience a gradual decline in health due to exacerbations. The period of decline offers the opportunity to shift from evidence-based to preference-based clinical decision making. Conversations about illness trajectory and resulting guidance ensures care plan continuity and adaptation to the evolving needs of the late stages of the disease. This process, including the clarification of expectations and discussions about options for palliative care, is known as Advance Care Plan (ACP)[1][2].

Methods

ADLIFE is an EU project that aims to improve the quality of life of older people with advanced chronic diseases by providing integrated intelligent personalised care via an ICT Toolbox. ADLIFE care plan aims to identify and determine patient's care preferences and expectations from the reflection on how an illness is experienced and the care for patients facing at every stage of the disease. This work presents the digital aid for professionals specifically designed for Advance Care Planning. It supports the deliberation and implementation of shared decisions regarding future healthcare challenges when the patient is not able to make such decisions or when time runs against reflection. The impact of the ADLIFE digital tools will be explored in a pilot study in seven clinical sites.

Results

A cross-site ACP process analysis was performed to find the digitalisation gaps and opportunities, from which a set of digitalised potential tools and procedures were derived. Five clinical sites had the Advance Directives as the only approach to ACP and narrowed the scope to palliative care, and two of them had a full ACP implemented process. Nine experts participated on the selection among analysed tools and procedures. The majority voted tools were selected as final set. A detailed description of their functional requirements and workflow was prepared for developers who included the ACP aid on the care plan management platform. The six-step digital aid guides professionals through the conversations related to the end-of-life care and through the collection and reminding of the patient's preferences. The result of the process is also optionally visible to the patient and her caregivers based on their shared decision with the professionals.

Discussion

Clinical, shared-decision-making and tech experts from ADLIFE has designed digital support that helps focus patient-clinician conversations, provides guidance about the information and outcomes to be acknowledged, and helps clarifying personal values. The result of this work is the ACP aid that guides practitioners to assess participants' decisional needs, provide decision support interventions and co-create the ACP. The successful implementation of the ACP completes the overall personalised care trajectory of a multi-morbid patient.

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The interaction between stakeholders in a generative co-design method with business tools: a case study for a digital innovation in a breast cancer clinic

Mr Pieter Vandekerckhove[1], dr. Marleen de Mul[2], Dr Antionette De Bont[3], Dr Benjamin Harris[4], Dr Philip Cendoma[5], Dr Steven Howard[5]

[1]Delft University of Technology, Netherlands. [2]Erasmus University Rotterdam, Netherlands. [3]Tilburg University, Netherlands. [4]Oxford University Hospitals, United Kingdom. [5]University of Alabama at Birmingham, USA

Context

The long-term impact of digital health interventions is often low due to a lack of uptake, funding, scalability and clinical evidence. From a business modelling perspective the importance of addressing implementation considerations early on has been highlighted. Generative co-design (GCD) is a collaborative creative process for early phase innovations with diverse stakeholders who can bring the salient concerns early on in the process. However, currently GCD is heavily focused on designing products or services and the individual contribution of non-design stakeholders in GCD is still unknown. The aim of this study was to develop and test a GCD method which incorporates more business modelling aspects to aim for an intervention with a higher impact and explore further the role of non-designers in this process.

Methods

To develop and test this method a case was selected involving the breast cancer clinic in a Dutch regional hospital (Franciscus Gasthuis & Vlietland), which was undergoing a digital transition and was developing a care path for adolescents and young adults (AYA) with breast cancer. Through snowball sampling, a group of 17 potential stakeholders were identified. After individual interviews, a group of 10 diverse stakeholders was assembled (2 care staff, 5 care managers, 1 patient, 1 designer, 1 ICT expert). These stakeholders participated in three 2-hour GCD workshops, which incorporated design thinking (mind-mapping, prototyping) and business tools (value proposition canvas). The workshops aimed for: (1) a strategic opportunity, considering clinical needs, care path opportunities and market competition; (2) a prototype with a strategic fit into care; (3) implementation strategies considering funding and scalability.

Results

The psycho-social needs for AYA breast cancer patients at diagnosis was initially identified as a problem by the patient and further contextualised by the care managers and clinicians. The patient, designer and ICT expert drove the ideation process for the prototype AYA SMART, each highlighting aspects of the complex dynamic care process. A multi-platform digital and physical integrated personalised coaching solution (including VR) was proposed to help prepare patients for treatment (reducing uncertainty and anxiety) and to improve patient education and social isolation. To improve the information (memory) and emotional processing of patients, parts of the solution were physical, such as a goodie bag in a social bus or taxi experience or physical flyers in an experience and game hall. The care managers and the patient focused the implementation strategies on features which would take into account scalability and integration in existing hospital systems, lesser clinical evidence burden (e.g. self-management apps) and promising impact (VR).

Discussion

The interaction of non-designers as care and experience expert stakeholders, an ICT expert and care managers in combination with a designer, early on in a GCD process which incorporates design and business tools can help to develop a digital health intervention prototype with a strategic plan for long term impact. Generative co-design tools helped to map out the design-oriented needs and concerns of different stakeholders through, for instance, the mind-mapping and prototyping activities. The business model tools helped to steer the ideation process in a strategy direction which might be more profitably from a business perspective. Further research could help to assess how this method can help to develop a robust business case of a further iterated version of the prototype, and eventually test how successful it is on the long term.

Impact of digital therapeutics for the management of chronic diseases: systematic review

Ms Ilaria Valentini[1], Mr Filippo Rumi[2], Prof Americo Cicchetti[1,2]

[1]Università Cattolica del Sacro Cuore, Italy. [2]ALTEMS, Università Cattolica del Sacro Cuore, Italy

Context

Nowadays, the increasing number of patients affected by metabolic, cardiovascular, and pulmonary chronic diseases represents one of the major challenges for National Health Systems. Chronic illnesses are the leading cause of hospitalisation, particularly among the elderly, posing sustainability issues due to the massive quantity of resources required. The development of digital health provides a new model for managing this type of health condition, which has improved the management of these patients and reduced the related healthcare direct and indirect costs. The development of digital health has provided a new management tool for chronic conditions. Digital therapeutics (DTx) are a subset of Digital Health. They are evidence-based therapeutic interventions driven by high-quality software programs designed to prevent, manage, or treat medical disorders or diseases. DTx can be used through web-based portals or smartphone applications, which allows patients to self-care and lifestyle interventions to actively engage in the management of their clinical condition.

Methods

This systematic review aims to synthesise recent literature on Digital Therapeutics to investigate their impact in terms of clinical effectiveness and/or cost-effectiveness in the treatment of chronic diseases. We systematically searched 4 databases (PubMed, Web of Science, Elsevier, and Scopus) to identify articles on DTx published in the last five years (2017 to 2022), in accordance with the PRISMA guidelines. We have selected only randomised controlled trials (RCTs) studies about DTx designed for chronic disease management by identifying their effectiveness in terms of efficacy and cost outcomes. We have included only studies in English. For the appraisal of the risk of bias, we have used the Risk of Bias 2 Tool for RCT studies. The included studies were narratively summarised by categorising the DTx according to the chronic diseases they were applied to.

Results

We retrieved 195 articles, out of which fourteen studies met the inclusion criteria and were included in the review. In all the included studies, the intervention group used DTx for the treatment of chronic diseases, while the control group received standard treatments without DTx. There are limited evidence on the cost-effectiveness of DTx, with only two articles meeting the inclusion criteria. In all the included studies, the DTx group showed significant evidence of improved patient parameters, reduced re-hospitalisations, and decreased utilisation of healthcare providers, resulting in a reduction of costs in the management of chronic disease patients. The methodological quality assessment revealed moderate to high risks of bias, especially because blinding of patients was not possible due to the nature of the intervention. This may have introduced some bias in the studies included in the review.

Discussion

This systematic review provides evidence for the impact of Digital Therapeutics in the management of chronic diseases. The introduction of DTx has been shown to result in a significant reduction in costs and an increase in the effectiveness and adherence of care, leading to an overall improvement in the quality of life of patients compared to standard care. DTx is an emerging area, especially in the post-pandemic scenario, due to its potential role in patient self-management by providing evidence-based and personalised external support to chronic disease patients. Based on the results, an appropriate health technology assessment framework would be a valuable tool to evaluate these products.

Towards the development of an implementation framework for AI/ML-powered applications in healthcare organisations

Ms Vittoria Ardito[1], Prof Giulia Cappellaro[2,1], Prof Amelia Compagni[2,1], Mr Francesco Petracca[1], Mr Luigi Preti[1]

[1]CeRGAS SDA Bocconi, Italy [2]Bocconi University, Italy

Context

An increasing interest in clinical artificial intelligence (AI) – and in particular in learning-based systems – has been observed amongst scholars and healthcare professionals. However, while clinical AI has been shown to be effective and has the potential to change the delivery of patient care, its implementation in healthcare organisations is complex, and several are the challenges that currently hamper its uptake in the daily practice. This work proposes a theory-informed implementation framework to be used as a managerial tool to guide the implementation of AI within healthcare organisations.

Methods

This multi-stage work is based on a mixed methodology. The first step consists of a systematic literature review, aimed at investigating barriers and enablers observed in the implementation of clinical AI in organisational settings, with a focus on empirical studies reporting on learning-based AI-powered interventions used by healthcare professionals. The review has been conducted using the PRISMA methodology and four databases (PubMed, Scopus, EBSCO, and Web of Science) were searched through three blocks of keywords (AI, implementation, healthcare). The synthetised scientific evidence will then be interpreted and conceptualised adapting established implementation science theoretical frameworks, previously collected and systematised. Implementation science is a research stream that seeks to identify and address the barriers that slow the uptake of proven interventions. As a result, a preliminary version of our implementation framework for AI is developed. This will be later shared, discussed, and validated with a focus group with subject matter experts (SMEs).

Results

The research is currently ongoing, and its activities will be finalised by April, 2023. Preliminary results from the empirical review highlight that implementing clinical AI requires the combination of several interdependent AI-specific features, such as trust, transparency, or data governance, which should be governed in an implementation process. Concurrently, multiple actors need to be engaged at different stages in the implementation process with tailored resources and approaches. Compared to established implementation science frameworks, we therefore plan to account for the specific features of AI to develop a dedicated conceptual framework.

Discussion

The implementation of clinical AI is a hot topic that will have a central role in the debate in the near future. Implementing clinical AI in healthcare organisations is a multi-layered, multi-stakeholder effort, influenced by many interdependent factors, and AI-specific characteristics such as learning, autonomy, and inscrutability, pose additional degrees of complexity compared to traditional digital and IT technologies. This works highlights the need to further elaborate on the determinants of successful implementation of learning-based clinical AI to provide the management of healthcare organisations with viable indications on how to arrive to a daily use of proven health interventions.

Personalised digitally driven communication with patients at the emergency department

Dr Gillie Gabay[1], Assoc. Prof Attila Gere[2], Dr Glenn Zemel[3], Dr Howard Moskowitz[4]

[1]Achva Academic College, Israel. [2]Hungarian University of Agriculture and Life Sciences, Hungary. [3]Dupage Valley Anesthesiologists, Inc., USA. [4]Mind-Genomics Associates, USA

Context

The World Health Organisation (WHO) defines sustainable healthcare systems as systems that improve, maintain or restore health while minimising negative impacts on the environment and leveraging opportunities to restore and improve it, to promote the health and well-being of current and future generations. Quality of care is a pillar of hospital sustainability. Patient dissatisfaction with communication at emergency departments, however, is a barrier to quality care and results from a lack of human connection, lack of control over the situation, low health literacy, deficient information, and poor support of clinicians at a time of uncertainty and crisis for the patient.

Method

This explorative study presents a novel approach to test drivers of patient satisfaction with clinicians' communication at the emergency department (ED) and guiding communication by these preferences. The sample comprised 112 Americans from the New York greater area, who visited an emergency department in the past year. A conjoint-based experimental design was performed. The categories of the experimental design encompassed acknowledged aspects of communication with providers, enabling comparison among them when exploring communication at the ED by patient preferences. Respondents rated 4032 messages by the extent to which each message drives their satisfaction with communication at the ED.

Results

No differences were found for the total panel. Mathematical K-means clustering was applied on the 48 coefficients. Three mindsets emerged based on commonality in response patterns to each message, transcending age, gender, and visit frequency. An ANOVA coupled with Tukey post hoc test, indicated that differences among the mindsets are significant, highlighting the different messages that drive satisfaction with communication for members of each mindset. Patients belonging to mindset1 seek an acknowledgment of their crisis by listening to them. Patients belonging to mindset2 seek information and physical privacy. Patients belonging to mindset3 seek empathy and anxiety alleviation.

Discussion

A strategy of using a few targeted mindset-tailored messages, may facilitate patient-centred communication even in the chaotic work environment of the ED. A web-based predictive algorithm was developed to enable clinicians to identify the mindset-belonging of patients at the ED to a mindset in the sample and communicate targeted mindset-tailored messages to promote patient satisfaction with communication and enhance quality care. This novel strategy complements other APPs in the ED to facilitate needs of clinicians and sustainability of hospitals.

The impact of the Self-Portrait's design elements on child engagement in care, children's emotions and cognition, and their personal development

BSc Claire Verkijk[1], Dr Kasia Tabeau[1], MSc Mathieu Gielen[2], Dr Marie-Lise van Veelen[3]

[1]Erasmus University Rotterdam, Erasmus School of Health Policy and Management, Department of Health Services Management and Organisation, Netherlands. [2]Delft University of Technology, Faculty of Industrial Design Engineering, Department of Human Centred Design, Netherlands. [3]Erasmus University Medical Center, Sophia Children's Hospital, Pediatric Brain Center, Child Brain Lab, Netherlands

Context

Although engaging digital technology in paediatrics has become increasingly prevalent, a tool specifically for children with a brain condition is lacking. The Child Brain Lab is currently developing such a tool, the "Self-Portrait", which potentially has great impact for involving these children in their care. Namely, the Self-Portrait aims to prepare children on tests of their brain function and provide feedback on obtained results. To ensure that the Self-Portrait meets its promise, we study the impact of the design elements of the Self-Portrait on children with a brain condition and their care. Additionally, we provide improvement suggestions for its design.

Methods

Our study consists of three parts: 1) determining the intended types of impact of digital technology on children and their care; 2) determining the design elements of the Self-Portrait; 3) evaluating the influence of the design elements on the types of impact. We obtained data from diverse stakeholders of the Child Brain Lab (Erasmus MC-Sophia Children's Hospital): child patients, caregivers, and developers involved in the creation of the Self-Portrait. We followed a qualitative research design, which consisted of interviews with 4 developers (part 1), document analyses (of, amongst others, 30 design drawings) (part 2), interviews with 3 children, 2 cocreation sessions with 7 children, and 2 focus groups (one with 10 children, one with 14 caregivers and developers) (part 3). Data was analysed through thematic analysis. For this purpose, both deductive and inductive codes were used and supported by Atlas.ti.

Results

Results from part 1 show that there are different types of impact that can be grouped under 1) child engagement in their care, 2) children's emotions and cognition, and 3) the personal development of children. Moreover, the design of the Self-Portrait can be described by a combination of 1) visual, 2) usability, 3) interactional, and 4) motivational elements (part 2). Our results from part 3 show that the design elements of the Self-Portrait can influence various types of impact. The results are summarised in a conceptual model that provides insight into the relationship between design elements and the types of impact for the Self-Portrait. Based on the conceptual model, suggestions for improvement are made.

Discussion

The present study shows how a digital tool for children with a brain condition can have several types of impact on children themselves and their healthcare. We have linked different child-friendly design elements to different types of impact, both of which can be divided into categories. This study gives insight into the role that digital technology can play in paediatrics, while also providing points of improvement for the design of the Self-Portrait. Furthermore, the results may offer information and guidance for the design of similar tools for children in future care practice. Since the current research is conducted during the development of the Self-Portrait, it is recommended for follow-up research to examine the impact of the tool when effectively implemented.

Patients' perspectives on ethical principles to fairly allocate scarce surgical resources during the COVID-19 pandemic: a Q-methodology study

Anouk van Alphen, MD[1], MSc Caroline Lekkerkerker[2], Dr Job van Exel[2,3], Dr Rob Baatenburg de Jong, MD[1], Dr Kees Ahaus[2]

[1]Department of Otorhinolaryngology, Erasmus University Medical Centre, Netherlands. [2]Erasmus School of Health Policy & Management, Erasmus University Rotterdam, Netherlands. [3]Erasmus Centre for Health Economics Rotterdam (EsCHER), Erasmus University Rotterdam, Netherlands

Context

The rapid global spread of Coronavirus disease (COVID-19) led to the postponement of many surgeries. Healthcare professionals were faced with dilemmas as to how to fairly allocate surgical capacity. However, what constitutes a fair allocation had never been clearly defined. There are several ethical principles which all have different perspectives on what is 'fair'. While the views of healthcare professionals on fair allocation have been given considerable attention, the views of patients have largely been overlooked. To address this imbalance, our study aimed to identify which ethical principles are most supported by patients regarding the fair allocation of surgical resources.

Methods

A Q-methodology study was conducted between April and May 2021. A purposively selected sample of Dutch patient representatives (n=16) ranked ordered a set of statements covering different viewpoints on fair allocation from 'agree' to 'disagree' according to their point of view, followed by interviews to motivate their rankings. Centroid factor analysis followed by a varimax rotation were used to identify subgroups who broadly agreed in terms of their rankings. These factors, together with qualitative feedback from the interviews, were interpreted and described as perspectives.

Results

Our analysis identified two perspectives, both of which supported utilitarianism as ethical principle to guide surgical resource allocation. In perspective 1, resource allocation should aim to maximise the health gains based on individual patient characteristics. This viewpoint was labelled 'clinical needs and outcomes'. In perspective 2, as with viewpoint 1, allocation should maximise health gains, but this should also consider societal gains. Viewpoint 2 was labelled 'population outcomes and contribution to society'.

Discussion

There was broad agreement among patients that utilitarianism should be the guiding ethical principle for fair allocation of scarce surgical resources. The insights gained from this study should be integrated into policymaking and prioritisation strategies in future healthcare crises.

The anatomy and strategies of dual leadership governance in Finnish wellbeing services counties

Mr Jari Salomaa

Nordic Health Group, Finland

The organisation of public healthcare, social welfare and rescue services reformed in Finland. The responsibility for organising these services was transferred from municipalities to wellbeing services counties 1.1.2023. The key objective of the reform is to improve the availability and quality of basic public services throughout Finland. Under the reform, a total of 21 self-governing wellbeing services counties were established in Finland. In addition, the City of Helsinki is responsible for organising health, social and rescue services within its own area. The joint county authority for the Hospital District of Helsinki and Uusimaa is responsible for organising demanding specialised healthcare separately laid down by law.

The highest decision-making power in each wellbeing services county will be exercised by a county council, whose members and deputy members will be elected in county elections. The first county elections held on 23 January 2022. The term of the first county council started on 1 March 2022 and run until 31 May 2025. From 2025 onwards, county elections will be held every four years in conjunction with municipal elections, and the term of the county council will always start at the beginning of June. The responsibility for organising health, social and rescue services will be transferred from municipalities to wellbeing services counties from the beginning of 2023. Municipalities will remain responsible for promoting the health and wellbeing of their residents. The public sector will remain the organiser and primary provider of services. Private sector actors and the third sector will supplement public health and social services. Five collaborative areas for healthcare and social welfare will be created to secure specialised services. People will continue to be allowed to use health and social services across regional boundaries.

The aim of the study (PhD) is to create more understanding about dual leadership in the wellbeing services counties with the framework based on executive leaders (both political and responsible official) identity structuration, professional-based leadership culture and the necessity of dynamics in the critical executive groups (board and executive teams). The core of the study is question: how can we describe, understand and develop the anatomy of dual leadership and its governance strategies in large and multifunctional wellbeing organisations, which have totally new identity to live.

The study is based on multiple case study (two wellbeing counties) and it's methodology is in the administration and leadership studies. The empirical material will be gathered by focus and individual groups interviews and focus surveys.

The results will be useful for national authorities (Ministry of Social Affairs and Health, Ministry of Financial Affairs) and +20 wellbeing counties.

Organisational culture and ideology in healthcare management within China. A literature review about Wuhan's makeshift hospitals

Prof Tommaso Pellin[1], Dr Earle John Du Plooy[2]

[1]University of Bergamo, Italy. [2]University of Verona, Italy

Context

Organisational culture has been proven (Adisa et al., 2019) to be of pivotal importance to an effective patient-centred healthcare system. The recent pandemic, as well as the more frequently occurring natural disasters, make emergency organisational culture all the more indispensable, not only for running a temporary field hospital, but any fixed health facility as well. Yet the recent pandemic, especially in the first phases, has demonstrated that the whole organisation of a hospital was not only an internal matter of the hospital staff, but belonged to the whole community, inasmuch as it was fraught with ideological values, loaded by a superior authority and subjected to highly ideologised narration to the external audience.

Methods

For this research, the makeshift hospitals built in Chinese Hubei provincial capital, Wuhan, in January 2020, Huosheshan Hospital and Leishenshan Hospital, were selected as case studies. Literature about management staff in both hospitals was collected both in Chinese and in international main academic journals devoted to healthcare management. Besides conceptual tools belonging to the theory of organisational management and more in general of healthcare system management were employed to evaluate the information provided, other conceptual tools were needed: for instance theoretical tools belonging to the field of system language management, i.e. "the explicit and observable effort by someone or some group that has, or claims authority over the participants in the domain to modify their practices or beliefs" (Spolsky, 2009), as well as those of critical discourse studies, i.e. "an orientation towards language [highlighting] how language conventions and language practices are invested with power relations and ideological processes which people are often unaware of (Fairclough, 2013; see for instance Koteyko 2017).

Results

Reports about the process of building and about the equipment of the two Wuhan makeshift hospitals are abundant in international and Chinese resources; information about the procedures of the staff of managing infections risks and optimising healthcare provision are available in Chinese sources as well. The level of objectivity in the discourses therein suggest that the intended audience consists of professionals from the relevant technical fields. On the other hand, information about staff management purely in terms of organisational culture, even on a cursory level, seems lacking. The discourse in articles devoted to staff appear influenced by ideological values: indeed, they are frequently filled with WAR metaphors (such as DOCTORS ARE HEROES or SOLDIERS, and NON-STAFF ARE BACKLINE). On these grounds it is possible to maintain that such discourses are aimed at a wider, external and non-professional audience.

Discussion

The cases of Wuhan's makeshift hospitals are likely to be comparable to other cases in European countries, at least for the same phase of the pandemic. The results show that in a healthcare system, especially in major emergency events, proper language management, both regulating language and the communication of the contents, is highly suggested. As the majority of information about a hospital nowadays goes online, is shared on social media and manipulated for ideological goals, language management proves invaluable and of central importance when managing staff. When consideration is given to satisfaction and external influence, a realisation of the care needed to best manage the communication strategies starts to become clear. The perception of healthcare users, community and entities outside of the organisation greatly influences how people relate to the healthcare system.

A transformative quality of work environment program from the UAE: The "WAZN" program

Prof Mohamad Alameddine[1], Ms Eman Rashed Saif[2]

[1]University of Sharjah, UAE. [2]Supreme Council for Family Affairs, UAE

WAZN is a transformative and comprehensive program aiming at redesigning the work environment in all of the Emirate of Sharjah (UAE) governmental and semi-governmental agencies (more than 90 institutions) into a healthy one taking care of the physical, psychological and professional wellbeing of approximately 17,000 employees in Sharjah. The WAZN project aims at assessing and improving the work environment and culture, advising on the establishment of supportive policies and procedures, as well as establishing a comprehensive database that would support evidence based decisions in relation to the quality and safety of the work environment for Government of Sharjah employees. WAZN has 14 complementary dimensions for work environment health, safety and readiness, including:

1. Improving the physical environment
2. Prevention and limiting work accidents
3. Improving the psychosocial environment
4. Encouraging community participation
5. Encouraging physical activity during working hours
6. Promoting nutrition and healthy eating habits at work
7. Supporting smoke-free workplaces
8. Linking the workforce with primary health care facilities
9. Supporting working parents
10. Sun protection policy for outdoor workers
11. Develop plans to handle risks and crises to facilitate flexible handling during emergency situations.
12. Handling crises and pandemics

The Wazn Program is led by the Supreme Council for Family Affairs with the College of Health Sciences at the University of Sharjah being the strategic academic partner.

We will share with the attendants the way the program was structured, the main facilitators and barriers, the list of Key Performance Indicators under each of the dimensions (around 60 in total) and would share some of the preliminary data under the various dimensions and indicators. The plan is for this program to be transformed into the "Sharjah Excellence in Health Workplaces Award."

This presentation would be an excellent opportunity to exchange expertise, share experiences and solicit feedback between the various countries attending the event.

Skill-mix innovations for Integrated Care across Europe: The example of two European-funded projects – CANCERLESS and CO-CAPTAIN

Mr Alejandro Gil-Salmerón[1], Dr Niamh Lennox-Chhugani[2], Dr Igor Grabovac[3]

[1]International Foundation for Integrated Care, Spain. [2]International Foundation for Integrated Care, United Kingdom. [3]Medical University of Vienna, Austria

Introduction

The evidence points out the need for current health and care systems to shift towards improving quality at the same time as increasing efficiency and equity. Thus, reorganising services for more person-centred integrated care requires the adoption of "skill-mix changes" by the health workforce. One of the most promising skill-mix innovations for improving the integration of care is the introduction of "patient navigators" developing individualised assessments, designing shared care plans, and monitoring persons' health and well-being. Although "patient navigation" has shown promising results in North America, it is still largely unknown in Europe.

Methods

The International Foundation for Integrated Care is a partner in two European-funded projects advocating for the adoption and implementation of patient navigation practices to improve accessibility, as well as quality and coordination of care for persons experiencing homelessness (CANCERLESS) and for persons living with mental ill-health (CO-CAPTAIN). Furthermore, the intervention aims at facilitating access to primary and secondary cancer prevention care and services in both projects. The projects are using the Consolidated Framework for Implementation (CFFI) and the Research and the Reach, Effectiveness, Adoption, Implementation and Maintenance (RE-AIM) frameworks to explore and explain pilot implementation of patient navigation in 4 pilot sites.

Results

The existing evidence in CANCERLESS suggests major barriers to cancer preventive services for persons experiencing homelessness across Europe. Thus, the patient navigation intervention has been co-adapted for this population in four different pilot sites in Austria, Greece, Spain, and UK. This co-adaption through focus groups with health and social care professionals and individuals with lived experience of homelessness, resulted in a Health Navigator Model that is now being piloted and tested using CFIR and RE-AIM frameworks to inform future policies and practices. The team have developed training materials for health and care professionals delivering the model to develop their skills. This same methodology will be used by CO-CAPTAIN which starts in June 2023, aiming at improving the coordination of mental healthcare systems with primary healthcare and specifically with cancer preventive services.

Conclusions

Although CANCERLESS and CO-CAPTAIN have not yet delivered results that demonstrate impact, work to date in CANCERLESS with the target communities in pilot sites demonstrates that the needs that they are addressing are considerable issues for healthcare systems in those cities and across Europe. The lack of accessibility to healthcare for persons experiencing homelessness and individuals living with mental ill-health directly impacts their health and mortality rates. That is why skill-mixed innovations such as patient navigation which bring integrated person-centred care is crucial and its implementation needs to be studied within the European context.

Improving the patients experience using PREMs: an optimisation model

Dr Elisa Peruzzo, Dr Sabina De Rosis, Prof Milena Vainieri
Sant'Anna School of Advanced Studies, Italy

Customer experience has become a key aspect to manage for practitioners, and a relevant topic for scholars, in particular when a service is provided. Services are always experienced (Carbone and Haeckel 1994). This is true for any kind of service, including healthcare services provided by public providers. As stated by Berry (2019, pag. 79), "in no other service is managing the "customer experience" more important than in healthcare".

Healthcare services are highly personal and relation intensive (Berry 2019). Relational quality and relational outcomes can be very important in creating and maintaining a positive healthcare-user experience and relationship over time. The experience perception is also based on functional aspects, which are linked to technical performance of the service, and mechanic tangible aspects with the service (Berry et al 2006). In this perspective, patient experience data can be a valuable informative support for assessing and improving the quality of patient experience, by understanding what is value to patients (Young and McClean 2008; Coulter et al 2014; Gleeson et al 2016; Blackmore and Kaplan 2017). The Patient-Reported Experience Measures (PREMs) intend to elicit what actually occurred to patients while they received care along their journey in a hospital or a care pathway, so providing practitioners with specific information on 'what does not work' and 'what works' in the point of view of patients (Coulter et al 2014).

The paper is aimed at investigating the patient experience with hospital stay, in two Italian regions, using an optimisation model for quality improvement in hospitals.

This study uses data from the PREMs Observatory of the Tuscany and Veneto region (Italy), which is an ongoing and continuous system of patient self-reported feedback collection and reporting to practitioners, on the hospitalisation experience (De Rosis et al, 2020).

In order to analyse functional, mechanic and humanic aspects of the experience with the hospital stay, we used variables related to the standard dimensions of experience with hospitalisation (Coulter et al, 2009; De Rosis et al, 2020) as covariates and the general satisfaction with the service as dependent variable.

We performed ordinal logistic regression models predicting patient satisfaction, then the regression coefficients were incorporated into a constrained nonlinear optimisation problem selecting the most efficient combination of predictors necessary to improve the satisfaction of patients.

The study is currently ongoing. We expect to predict how the different aspects of hospitalisation experience can affect the whole satisfaction of patients. The optimisation algorithm will allow us to select key aspects of experience and the relative increase they can lead to the patient satisfaction. We will also measure the improvement in overall satisfaction given by the total number of experience variables.

The findings will inform practitioners in relation to the prioritisation of their quality improvement actions based on the patient-reported data. The study will provide information on the key aspects of experience to work on to increase the general satisfaction of patients. The optimisation model assumes of cost-equivalence (e.g., the cost to increase each experience aspect by 1% is equivalent).

The role of leadership in continuous improvement maturity: a literature review

Mr Jesse Hilverda[1], Dr Oskar Roemeling[1], Dr Kjeld Aij[2]

[1]University of Groningen, Netherlands. [2]Erasumus MC, Netherlands

Context

Lean Management (LM) is a process improvement methodology that has the continued interest of healthcare scholars and practitioners. The importance of leadership in LM adoption has been well established. One of the main objectives of LM is to transition into a culture of continuous improvement, which can be studied in terms of continuous improvement maturity. In this review, we explore the role of leadership in reaching the goal of a mature improvement approach in healthcare organisations. More specifically, we provide an overview of leadership activities important in realising continuous improvement maturity and we propose a related framework.

Methods

In this research, we performed a scoping literature review that adheres to the PRISMA guidelines. Based on prior research, twenty high quality academic journals that focus on the publication of healthcare management oriented studies were included in the search strategy. Following the grounded theory approach and through qualitatively coding the data, the role of leadership in terms of activities was identified in relation to the level of continuous improvement maturity.

Results

After completion of the search, 23 out of 464 articles were found eligible for further analysis and were included in this review. During the analysis of the papers, we identified a total of 58 leadership activities across nine leadership themes. For example, the theme Focus and Vision is typified by leaders that align LM with the overall business strategy, and the theme Training shows leaders that invest in educating their personnel. Next, we set out to map the leadership activities across the levels of continuous improvement maturity. Here, we identified three stages namely: begin, intermediate, and expert, and we show which activity is relevant in which stage. Based on our findings, we argue that elements such as leadership styles, workforce involvement, the extent to which LM is promoted throughout the organisation, and the extent to which staff autonomy is enhanced are highly important and integral in obtaining continuous improvement maturity.

Discussion

This review is the first to provide an overview of LM leadership activities in relation to continuous improvement maturity. Building on our findings we developed a framework that distinguishes between three stages of continuous improvement maturity. We labelled the stages as begin, intermediate, and expert, and in the framework we highlight the various activities that are linked with the three stages. This reviews adds to our current understanding as it focuses on activities, rather than the more customary qualities or behavioural traits of leaders. Moreover, we advance three propositions to support and guide future research in this domain. This review indicates that, in order to grow in continuous improvement maturity, leaders might want to consider their style of leadership, stakeholder involvement, how to create alignment with the business strategy, and their role in increasing employee autonomy among the workforce.

Social prescribing in Lisbon: adaptations of work processes and challenges to implement a people-centred integrated care intervention

Ms Louíse Hoffmeister, Dr Ana Gama, Mr Cristiano Figueiredo, Dr Joana Henriques, Prof Sónia Dias

NOVA National School of Public Health, Public Health Research Centre, Comprehensive Health Research Center, CHRC, NOVA University, Portugal

It is broadly acknowledged that individuals' health is influenced by multiple social determinants, like lifestyles, socioeconomic conditions, and social inclusion. Estimates show that around 20% of patients consult general practitioners for problems that are primarily social. Additionally, the growing aging of the population and the increased burden of non-communicable diseases has added complexity to the management of health systems. Interventions within a person-centred integrated care framework can help strengthen health systems resilience and sustainability. Social prescribing (SP) is an innovative and intersectoral intervention that allows healthcare professionals to refer patients to a link worker, who within a person-centred approach co-designs an intervention plan and connects them to a wide range of non-clinical services in the community, based on their personal needs. SP has been implemented in Lisbon (Portugal) since 2018 through a comprehensive strategy that encompasses the engagement of users, health professionals, link workers and community partners. This implementation has required some reorganisation in terms of planning, staffing, and intervention in the primary health care units involved, as well as new efforts in monitoring and evaluating to ensure the effectiveness of the intervention. Through this mixed-methods evaluation study, it has been possible to collect data about the re-organisation of work processes and the challenges encountered during the implementation. Regarding health unit and users relationship, the team involved in intervention implementation developed communication materials and education sessions to promote users' awareness about SP intervention. In regard to the primary care units, most of the work has been carried out with general practitioners, nurses, and social workers, in raising awareness about the subject, training them on the SP pathway, which allowed them to plan and implement the intervention. At the same time, the unit's social workers had to take up a new role as link worker, which prompted them to adjust the work they already carried out by using new methodologies (e.g., supporting people more closely) and harnessing the full potential of community resources. In terms of the interaction between the community partners and the health units, social institutions were invited to take part in the planning and design of the instruments and the intervention through regular meetings, discussions about SP scientific articles and case studies. This, in turn, helped strengthen their connection and reinforced the local network that must be in place for a more sustainable and integrated health care, which can only be achieved by the development of intersectoral interventions such as this. Consequently, this should lead to more resilient health systems.

Air traffic control tower as a metaphor for managing complexity in transitional care: an organisational perspective

Ms Ginevra Gravili[1], Ms Ludovica Florenzano[2], Ms Francesca Loia[3], Mr Donato Scolozzi[2], Ms Carla Samà[2]

[1]DEMDI, University of Bari, Italy. [2]KPMG, Milano, Italy. [3]University of Bari, Italy

The last decade has seen growing attention to transitional care, intended as a broad range of services and environments designed to promote the safe and timely passage of patients between levels of health care and across care settings (Coleman and Boult, 2003; Naylor and Keating, 2008). Patients, especially those who generally receive many real-time providers and frequently move within healthcare settings, can be vulnerable to breakdowns in care and have the greatest need for adequate transitional care services (Coleman and Berenson, 2004; Naylor et al., 2011). However, this field is characterised by several challenges such as many transitions are unplanned, result from unanticipated medical problems, occur in "real-time" during nights and on weekends, involve clinicians who may not have an ongoing relationship with the patient, and happen so quickly that formal and informal support mechanisms cannot respond in a timely manner (Coleman and Berenson, 2004). In such a scenario, although it is evident how essential it is to define adequate transitional care models (Hirschman et al., 2015), the relevant literature has highlighted the increasing complexity related to this field (Leyenaar et al., 2018).

Starting from these considerations, this work aims to propose an organisational perspective within transitional care systems useful for managing the complexity and triggering new reflections on the theme. To meet this research aim, this study is based on a qualitative investigation approach that follows the Case Study model (Yin, 2004). In particular, this work recognises the usefulness of metaphor (Morgan, 1996), in this case of the "Air traffic control tower", as a tool for designing organisational change and interpreting healthcare reality, with the aim to describe the process of taking care of the patient and to offer insights about the managing complexity in organised structures (Gawande, 2010).

Interviews with directors, managers, and technicians involved in airport solutions shed light on the organisational behaviour that emerged in the air traffic control tower context, useful for important considerations in transitional care. Through the identification of the roles, relationships, and procedures within the air traffic control tower, new considerations for transitional care have emerged in relation to the activity of transitioning the patient from one structure to the other. Such a metaphor allows us to fully grasp the mechanisms of choice of individuals under conditions of uncertainty, mechanisms that decisively influence intra- and extra-company knowledge-sharing processes. The metaphor has highlighted that knowledge systems, characterised by actors facing the process of acquiring/disposing of solutions, ideas, and experiences, without underestimating the originality of people's individual behaviours, can be implemented in the healthcare system. In this sense, the study offers several insights, potentially capable of generating useful implications for both researchers and professionals in both the healthcare and organisational and managerial sector.

EU leadership to fight childhood cancer using Artificial Intelligence (AI)

Ms Pilar Gangas[1], Ms Fiona Lyne[2], Ms Niamh Lennox-Chhugani[3], Mr Arturo Alvarez[4]

[1]International Foundation for Integrated Care (IFIC), Spain. [2]International Foundation for Integrated Care (IFIC), Ireland. [3]International Foundation for Integrated Care (IFIC), United Kingdom. [4]International Foundation for Integrated Care (IFIC), Spain

Context

Childhood cancer -also known as paediatric cancer- represents the leading cause of death from disease for children and adolescents in Europe. Cancer care is actually depicted as one of the areas that might benefit most from an increased use of eHealth. In particular, cancer care is expected to benefit strongly from the EU European Health Data Space that is being developed under the umbrella of the European Digital Strategy that seeks to provide a solid framework and "a coordinated approach to make the most out of the opportunities offered by AI and in the same way, to address the new challenges that it brings, putting EU at leaders, from a deep sense of social responsibility.

Methods

Two EU funded projects, EU4CHILD and UNICA4EU, are meant to lay the foundations for the development of an AI based platform able to share paediatric cancer data across the EU. The future platform will connect through a federated system different data repositories, but also clinical trials results, in order to improve several types of cancer detection, diagnosis, prognosis and treatment. As the analysis of big data cannot be done by humans, AI thus might add to human intelligence and experience. The uptake of artificial intelligence in the fight against paediatric cancer involves social, healthcare and technical approaches, all of them relevant for policymaking.

Results

Being UNICA4EU still on progress, some results can be shared from the already finished project EU4CHILD. Stakeholder consultation involved triangulating the results using a segmented by profile survey that was translated into the consortium languages, personals interviews and focus groups, involving 324 participants. Fieldwork focused on healthcare professionals, considered to be the most important to improving diagnosis, treatment and survivorship quality of life, but also on carers, those taking the decisions on behalf of children and adolescents, together with IT experts and citizens. Among their priorities, the ones most important for them included: equal access to treatment; improving quality of life for cancer patients and survivors (addressing the side and late effects of treatment) and improving early detection of cancer. In regards to the future EU platform, the needs of the key stakeholders included decision support advise for diagnosis and treatment for healthcare professionals; to provide reliable and understandable information on prevention, early detection, diagnosis and treatment for caregivers; AI to be accountable for IT experts; and that it includes understandable information on cancer early detection for EU citizens.

Results from the fieldwork will be presented in the Conference to support these and other recommendations, derived from the work developed by EU4CHILD consortium, ongoing under

UNICA4EU EU funded pilot project. Placing equity at the core of EU policies in its fight against cancer is a key lesson of a solidarity based community in which the most vulnerable, children and adolescents living with cancer and survivors, will be better supported through an AI based platform able to be a game changer thanks to knowledge and data sharing, promoting the integration of care in the EU. Indeed, in the Europe´s Beating Cancer Plan, Artificial Intelligence is depicted as a potentially powerful tool to beat paediatric cancer.

Tigullio Luogo di Salute (TLS): the reorganisation of Asl4 for proximity healthcare, digitalised and accredited to excellence

Dr Sara Giacobbe[1], Dr Cristina Ulivi[1], Dr Vincenzo Lizzio[1], Dr Daniela Mortello[1], Dr Ilaria Benvenuti[1], Dr Alessia Brioschi[1], Dr Maria Elena Secchi[1], Dr Francesco Orlandini[1], Dr Paolo Petralia[1], Dr Yuliya Shcherbina[2]

[1]Asl4, Italy. [2]Accreditation Canada, Canada

Context

Tigullio Luogo di Salute (TLS) was created, on a mandate from Liguria Region, as a pilot project to systemise, standardise and integrate telemedicine tools into care services for patients. TLS has been designed to be replicated in the other areas of the region. Connectivity and tools for the shared use of data have been studied and developed in partnership with “Liguria Digitale”. The accreditation process of excellence by Accreditation Canada has been an essential part of the whole experimental reorganisation project for proximity healthcare, also digitalised, by Asl4 Liguria. The aim of the accreditation is to have an external and objective evaluation of the new implementation of telemedicine services.

Methods

The accreditation process of excellence included several specific standards recognised internationally. "Accreditation Canada" was chosen as accreditation body since it has also developed specific standards for telemedicine. In total, 30 standards have been assigned to Asl4, including some specifically related to TLS: leadership, outpatient services, rehabilitation, home care, telemedicine, population health and well-being for the prevention of chronic diseases. Accreditation standards contain a variable number of criteria, some of which are classified as "mandatory organisational practices" and are related to the safety of care. Specific value-based indicators have been defined, described in TLS Regulations, and monitored by a specific "Organisation Mission Group". The undergoing changes include the growing involvement of patients, caregivers, and the community in general, already in the planning phase.

Results

The experimental phase of TLS project ended on August 31st 2022, whilst on December 31st 2022, Asl4 completed the systemisation/standardisation phase. At the beginning of 2023, Asl4 has started the dissemination of the experience, both internally and externally. The accreditation process of excellence is spread over the total of three years and in December 2022 Asl4 achieved the certification at "Gold" level. For the next two years, Asl4 shall be working on the implementation of further increasingly challenging requirements and shall continue to integrate the project with ISO 9001:2015 certification already in place in the organisation for all services (health, administrative and technical), as well as with the mandatory regional institutional accreditation. Specifically, the intention is to test technological and IT systems in the sectors of telemedicine, tele-rehabilitation and remote data control and in external environments in hub and spoke offices of Asl4.

Discussion

Asl4 has launched specific training courses to support the ongoing changes (Leadership Course in collaboration with the Polytechnic University of Milan and Lean Methodology Course in collaboration with the University of Siena/Telos). The participation and engagement of Asl4 staff members during this project have brought an important added value, both personally and professionally, that has been strategic during the implementation of organisational changes in healthcare systems and the delivery of care. The moment of the Accreditation Survey was perceived positively, as a peer review among professionals committed to share knowledge for mutual growth. Asl4 has also appointed internal team leaders, auditors and established a survey coordination group; all of them have guided the process internally and have encouraged the whole organisation to work towards the survey.

Using AI for mass screening of diabetic retinopathy as a disruptive technology implementation: Ukrainian experience for global perspectives

Dr Kyrylo Goncharuk[1], Dr Andrii Korol[2], Dr Olena Chernenko[3]

[1]Ukraine Diabetic Federation, Ukraine. [2]Filatov Institute of Eye Diseases and Tissue Therapy of the National Academy of Medical Sciences of Ukraine, Ukraine. [3]MEDCAPITALGROUP Healthcare Consulting Agency & Ukrainian Medical Alliance Charity Fund, Ukraine

Diabetes Mellitus (DM) is one of the fastest-growing chronic diseases in the world. Diabetic retinopathy (DR) is leading preventable vision impairment, associated with DM, but its damaging effects can be prevented with timely screening and treatment.

MedTech startup CheckEye was partnered with the leading national Filatov Institute of Eye Diseases and Ukrainian Diabetic Federation and was aimed at a creating cloud-based AI and machine learning-based DR diagnostic platform.

The platform analyses photographs of the patient's eye fundus, making diagnosis available to thousands of people, especially in rural areas, where there is little access to modern diagnostics. Till now we achieved 92% accuracy in detecting DR and 84% in appropriately detecting the stage of the disease with AI-driven solution during the screening of an eye fundus, and proceed to work on increasing the % of accuracy in detecting DR to over 90%.

Patient-centric approach environment for eye care where early detection is accessible across a multitude of locations will be created – in Ukraine and beyond. It will help millions of people to prevent vision loss. Wider effects of this approach will include reducing the economic burden of vision impairment for Healthcare systems and governments.

A qualitative analysis of the key contextual factors for the scaling-up of the ADLIFE digital solution in the Basque Health Service

Dr Nerea González[1,2], Dr Ana Ortega-Gil[1], Ms Bárbara López[1], Dr Janika Bloemeke[3], Dr Oliver Groene[3], Mr Jonah Grütters[3], Dr Dolores Verdoy[1], Dr Esteban De Manuel Keenoy[1]

[1]Kronikgune-Institute for Health Services Research, Spain. [2]Osakidetza Basque Health Service, Spain. [3]Optimedis, Germany

Context

The translation of new digital solutions in different settings requires analysing the contextual factors. The results might contribute to developing strategies addressing barriers, for a successful implementation. ADLIFE is an EU funded project to improve the quality of life of older people with advanced chronic diseases by providing integrated personalised care via innovative digital solutions. The contextual factors of the participating organisations were evaluated to identify the most relevant ones for the translation of this innovation action into routine practice. This work presents the main contextual factors that would influence the effectiveness of these solutions in the Basque Health Service.

Methods

To structure this evaluation process, a bespoke framework for implementation assessment was developed, based on the Health Information System evaluation framework HOT-fit and the Consolidated Framework for Implementation Research (CFIR). These frameworks provide a structured and systematic way to identify constructs influencing the implementation of ADLIFE. Semi-structured interviews were conducted with different stakeholders before the implementation of the ADLIFE toolbox. A standardised set of questions was utilised, based on the main dimensions of the developed framework (human, organisation, technology). These interviews were conducted online. They were recorded, transcribed, pseudonymised and subsequently analysed using qualitative content analysis. These analyses were conducted using the software MAXQDA.

Results

A total of 9 interviews were conducted: 2 primary care physicians, 2 specialised care physicians, 2 nurses, 2 IT staff and a manager. Through the implementation of the ADLIFE toolbox, interviewees expect improvements in communication between professionals and with patients, as well as facilitation of patient empowerment. Training about the new systems and time to get used to them were considered essential, which would help to overcome the digital gap that currently influences the lack of adherence to this type of intervention. Finally, direct linkage between the existing and the new systems were considered key to motivate professionals to participate and to facilitate the integration of patient care.

Discussion

The scaling up of the ADLIFE toolbox in the Basque Health Service requires it to be integrated into the digital systems currently used for the management of the Electronic Health Record. ADLIFE can serve to promote an improvement, not only in quality of life, but also in the quality of care, provided that professionals who care for these patients are involved. This knowledge will help to establish the most effective strategies to facilitate the intervention in the Basque Health Service.

Acknowledgements

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Artificial intelligence to support primary care

Elettra Carini, MD, MSc RN Marica Scotellaro, Ms Roberta Cosi, Dr Alice Borghini, MD, Domenico Mantoan, MD, MSc Maddalena Iodice

Agenzia Nazionale per i Servizi Sanitari Regionali, Italy

Context

The adoption of Artificial Intelligence (AI) in health, as provided by the National Recovery and Resilience Plan (PNRR), aims to facilitate the activities of professionals and access to health services by citizens. Within primary care, the use of AI can: improve primary care processes, help professionals in diagnostics and support business analytics. The objective of the AI project is the definition, implementation and commissioning of an IT platform for the provision of digital services, aimed at supporting in an innovative way, through AI techniques and algorithms, healthcare professionals and their carers in the context of primary care provision.

Methods

The commissioning of the platform funded by the PNRR involves the design, development, installation and management of software and hardware modules that enable digital AI services. A pilot study on a representative sample of healthcare professionals will be carried on to validate the efficiency and effectiveness of the functionalities implemented. Indicators will be set up and measured and a user satisfaction questionnaire will be created.

Results

The AI project is funded with 40 million euros by NextGenerationEU plan and a call is ongoing to commit the realisation of the national AI platform. The first release of the AI platform will be by 2024 and a pilot on a significative sample of GPs will start afterwards. The overall number of GPs in Italy is 39.270 and the sample will take into account the working area, the age and number of patients in charge of the health professionals. The indicators measured will be about the utilisation of the platform, changes in diagnosis and therapy and they will allow to adjust the functionalities of the platform for a better uptake and efficiency. The questionnaire will survey the satisfaction of both patients and GPs using the platform.

Discussion

The implementation of the AI platform should improve access to health services for patients and the accuracy and timeliness of diagnosis and therapy for professionals, as well as improving the assistance experience and reducing the administrative burden for professionals. Digitisation and AI can produce huge changes in health and lead to a new era in health provision.

Telemedicine and management of chronic disease: where we are and how we can improve it

Dr Fabrizio Chiusolo[1], Dr Francesco Cellini[2], Mr Federico Crea[3], Mr Matteo Morandi[3], Mr Andrea Roselli[3], Prof Fabrizio Massimo Ferrara[3], Prof Bernardo Ramirez[4], Prof Irene Gabutti[3]

[1]Bambino Gesù Children's Hospital, Italy. [2]Policlinico Gemelli, Italy. [3]ALTEMS, Italy. [4]Miami University, USA

Introduction

The last pandemic has accelerated digitisation and pushed healthcare companies to focus on digitally converting all aspects of care delivery, including cost structure, clinical quality, data transparency, and most importantly, the patient experience. Digitisation of healthcare has the enormous potential to improve our ability to accurately diagnose and treat disease and improve the usability of healthcare for the individual. The concept of telemedicine is to guarantee access also to all those patients who would not be able to benefit from the classic face-to-face version, due to various difficulties. This tool must act in synergy with the organisational and clinical characteristics of each healthcare context.

Methods

The aim of the study is to understand how a patient should be managed in telemedicine, to understand what can be the moments and the opportunities to include certain services in telemedicine in order to simplify/improve the management of the disease and the life of patients during their care pathway. Three semi-structured interviews were conducted and addressed to 3 figures with a role in the implementation of a telemedicine process in a health facility: Human Resource (HR), Information Communication Technology (ICT) and Health Direction (HD). Each interview consists of 4 questions. In the HR interview, topics such as the impact of the introduction of telemedicine on patients and caregivers and how the digital education process is being facilitated will be addressed. The interview for ICT will address issues regarding the process of technology organisation and digital education of healthcare staff. The content of the interview for HD will cover the approach and impact of telemedicine on patients.

Results

Six different healthcare professional were interviewed, 3 from Italy and 3 from US.

The pandemic situation has brought about a change in the relationship between patient and care-giver, facilitating patient direct involvement in the care process due to easier access to care standing at home and the greater availability of caregivers. Similarly, the care-giver experiences a new type of relationship with the patient by reducing the rate of hospitalisation. Surely motivating and incentivising care-givers can ease the transition to digital. For both, digitisation must be boosted. Digitisation means that there is less risk of viral infection, reduced waiting lists, improved digitisation of patients/care-givers. Improvements in the digital transition process can be facilitated by the involvement of patient associations, the creation of the single national electronic chart and a deep analysis on return on investments. Conclusions. Telemedicine appropriate tool to manage chronically ill patients. Need of implementation of managerial tools that can increase the role of telemedicine in management.

Development of a model of digital healthcare ecosystem based on blockchain technology

Dr Daniel Bjelica[1], Prof Dr Aleksandra Labus[1], Prof Dr Marija Jevtic[2,3], Prof Dr Artur Bjelica[2]

[1]*Faculty of Organisational Sciences, Serbia.* [2]*Faculty of Medicine, University of Novi Sad, Serbia.* [3]*Université Libre de Bruxelles (ULB), Research centre on Environmental and Occupational Health, School of Public Health, Belgium*

Blockchain technology represents an innovative approach to remodeling the healthcare system that offers a wide range of integrated functions: data access flexibility, security, privacy, decentralised storage, transparency, immutability, authentication, disintermediation, verifiability, programmability, and interconnection. As an initial step in the project of planning the application of blockchain technology in the digital health ecosystem, it is necessary to determine the key stakeholders who will be involved in the implementation. For the blockchain-based projects, nodes represent the basis of the blockchain network. Typical nodes in the handling of electronic health information are doctors and other medical personnel, pharmacists, healthcare facilities, laboratories. Each of the mentioned entities or nodes has a requirement that the data is safe, reliable and efficiently processed within the unified complete medical history. In addition, when planning the application of blockchain technology in the digital health ecosystem, the readiness of stakeholders for the thorough implementation of blockchain-based projects should also be taken into consideration. Experience on stakeholder readiness for blockchain implementation can be drawn from the research on blockchain implementation in other sectors.

We propose a model of a digital health ecosystem based on blockchain technology with the following characteristics:

The core model is represented by two databases – patient health records and data of business transactions carried out by the health institution with other stakeholders in the digital health ecosystem.

The model supports two levels of data interoperability: patient-centric and institutional interoperability.

In relation to patients, the formulation of the model is patient-centric, thus promoting a qualitatively new level of data interoperability.

Institutional data interoperability is supported in the proposed model through the exchange of information of the health care institution with other stakeholders.

Key data transactions in the proposed model are based on the application of blockchain technology.

The application of blockchain technology in the given model enables the management and verification of data without intermediaries, without compromising authenticity, with continuous availability, verifiability of data and the existence of complete transparency.

Based on preliminary investigation, the developed model is planned to be implemented in a private healthcare organisation in the Republic of Serbia.

PROCare4Life lessons learnt

Ms Gangas Pilar[1], Ms Louro Claudia[2], Ms Raquel Bouça[3], Ms Elda Judica[4], Ms Mayca Marin[5], Ms Mona Ahmad[6], Mr Yusuf Semerci[7]

[1]International Foundation for Integrated Care (IFIC), Spain. [2]Kinetikos, Portugal. [3]Campus Neurologico Senior, Portugal. [4]Casa di Cura Privata del Policlinico, Italy. [5]Asociacion Parkinson Madrid, Spain. [6]University of Muenster, Germany. [7]Maastricht University, Netherlands

Context

PeRsOnalised Integrated CARE Solution for Elderly facing several short or long term conditions and enabling a better quality of LIFE (PROCare4Life) has been an EU funded project, implemented over the period of January 2020 through June 2023. This Innovation Action (IA) has aimed to contribute to the improvement of older adults' quality of life and better management of their condition, through an IT based personalised, integrated care solution.PROCare4Life has been codesigned with its future end users, older adults living with chronic neurodegenerative conditions (Dementia), Parkinson's and/or comorbidities. PROCare4Life has seeked to facilitate and improve the monitoring and awareness, creating an ICT based support system able to share their data with their selected caregivers and healthcare professionals. PROCare4Life has developed a digital app that includes an easy to use personalised care plan and access to health and care professionals. Through wearable devices such as smartphones and fitbit, together with other devices such as in depth cameras, binary sensors in doors, PROCare4Life system can monitor the user's health data evolution. Personalised recommendations on their Physical Activity (PA) or medication intake help older people and their carers to better monitor the health status, from an integrated, people centred perspective.

Methods

Team members from 14 partners located in 6 EU funded counties had gathered to create, from a multidisciplinary perspective, the PROCare4Life solution. Over PROCare4Life implementation, three waves of pilots in 6 pilots' sites helped to codesign, fine tune and improve the PROCare4Life system. User requirements were collected using mixed qualitative and quantitative research techniques, that were iteratively tested and fine-tuned over the 3 phased approach to pilots implementation. Pilot 1 focused on testing the technical feasibility and usability of the PROCare4Life system. Pilot 2 focused on the characterisation and validation of the PROCare4Life system metrics. Pilot 3 focused on assessing the usability and clinical impact of the PROCare4Life final version, also addressing the replicability of usage of the system for other chronic conditions.

Results

The lessons learnt methodology used by PROCare4Life has been an adaptation of the widely accepted Project Management Institute (PMI) methodology. The phases covered by PROCare4Life lessons learnt methodology have involved: 1. Identification of lessons learnt through internal research; 2. Document; 3. Analysis; 4. Reporting for different targeted stakeholders. PROCare4Life consortium has identified some of its main challenges, such as COVID19, or the challenge to deploy large scale pilots, together with adapting the system to the real digital skills and capabilities of people living with chronic neurodegenerative conditions. As best practices, promoting a continuous development implementation strategy flexible enough to adapt to COVID19 induced problems, but also prioritising internal multidisciplinary team work and enhanced communication.

Discussion

Knowledge sharing through lessons learnt methodologies is part of implementation science and project management, being its main goal to learn from the past with the hope that it might affect positively the future, not only of PROCare4life itself and its consortium members, but of other future projects and initiatives that might profit from the ways in which this project managed its challenges, but also from its best practices.

Search and rescue: health information and prediction systems for first responders in disasters

Ms Ana María Aldea Reyes, Ms Marta Burgos González, Ms Susana Izquierdo Funcia

Escuela Española de Salvamento y Detección con Perros, Madrid, Spain

The Search and Rescue (SnR) project was launched on July 1, 2020, funded by the European Commission under grant agreement 882897. Its main objective is the development of technologies that help emergency teams to reduce search and rescue times for victims in disaster situations, as well as promoting a common holistic response framework for the different teams of first responders.

Aim

In the SnR research project, the ESDP collaborates with entities from public and private sector belonging to countries from the European Union, forming a consortium that aims to develop technologies that improve risk detection, data collection from the affected area, as well as the processing and optimisation of the use of these data including health data collected from the victims. This optimisation in the flow of information, the improvement of communications, the receipt of information from emergency teams in real time, will help first responders to carry out their work more safely. The creation of a common, uniform and agile platform and the development of tools capable of reflecting the situation in the disaster area will increase the quality of care, allowing it to reduce response/search/rescue and rescue times for victims. The communication platforms, the personal location and the collection of information from different devices, together with the computer architecture capable of supporting all these elements will be responsible for the success of this project. One of the most innovative aspects of this project is the development of location systems for rescue dogs, which determine the location of the victim immediately through GPS coordinates and its automatic registration on the platform together with inclusion of health data from the victims in the system that allow to make predictions about their evolution, allowing the first responders to have information that they can use for decision making.

Methods

Since the beginning of the SnR project, the needs of the first responders as end users have been taken into account through different qualitative and quantitative research tools (workshops, interviews and questionnaires). Emergency, search and rescue experts together with technology developers work to create innovative technologies that increase the safety of first responders and reduce the rescue time associated with acting in different types of emergencies in complex response environments. One of the most important phases of the project has been to apply and evaluate the general approach of the SnR platform and to define the validation activities, in order to guarantee the validity of the results according to the scientific and technical objectives. A series of tests has been designed and executed to monitor progress and validate the methodologies and technologies developed by SnR. The test has been based on real life scenarios and has been case studies based on seven complex use cases specific to the SnR domain.

Results

The development of a computer architecture for the collection and circulation of data, the fusion of different sources to create a common analysis of the situation provides us with a general image of the catastrophe scenario. The detection of risks in real time thanks to the sensors, the distribution of equipment in the work area, the automatic analysis of triage in survival time, the location is produced by the K9 teams; tells us about advanced procedures that will help us reach the highest level of response capacity in catastrophes.

Digital innovation in healthcare: a case study

Dr Anna Roberta Gagliardi[1], Dr Nicola Bellucci[2]

[1]Department of Economics, University of Foggia, Italy. [2]Information Systems Department, Casa Sollievo della Sofferenza - IRCCS, Italy

Context

Healthcare operations management is crucial for healthcare professionals and managers to encourage an efficient, effective, and sustainable healthcare service. For this aim, a snapshot is suggested to illustrate how crucial digital technologies were with the outbreak of the COVID-19 pandemic.

Methods

In order to analyse how digital technologies in the healthcare sector responded to the outbreak of the pandemic from COVID-19, a qualitative case study approach was chosen. The research context is the "Casa Sollievo della Sofferenza" Research Hospital, an essential healthcare reference institution for Central and Southern Italy. Data collection has been carried out using various tools, mainly focus groups, semistructured interviews, and formal documentation.

Results

The Online Services Portal was inaugurated in August 2017 and offers hospital users remote services such as online controlled outpatient medical orders and real-time monitoring of waiting times at the cash desks.

The immediate benefits were: the reduction of stress linked to waiting times for access to the counters, the reduction of the number of people in waiting rooms, and the increase in places available. In November 2022, more than 1500 online checked outpatient medical prescriptions were reached: a significant result that shows how increasingly users appreciate the service.

The Online download service was the other significant digital healthcare solution developed during the pandemic by COVID-19. Through this service, the patient could remotely download laboratory reports and radiological images. In November 2022, 31% of all users had remotely downloaded radiological reports and images, and 69% had downloaded laboratory reports.

Discussion

The results obtained and confirmed by recent scientific literature encourage clinical governance not to stop and implement new drivers in operations management to ensure a sustainable future for the global health system.

Evaluating time trends and determinants of obesity inequalities in the adult population: the case of England

Dr Paolo Candio

University of Trento, Italy

Context

Obesity presents a major public health management issue, adversely impacting the health system of many countries in the European continent. Evidence for a socio-economic gradient in the prevalence of excess weight in adults has accumulated over the last decades. Most studies have adopted a cross-sectional approach and failed to examine how inequalities in excess weight have evolved over time. In addition, only few studies examined the role of key determinants of excess weight across the body mass index (BMI) spectrum. This is important to adequately inform the design of obesity policy. This study aimed to fill these research gaps by providing up-to-date estimates for the English adult population.

Methods

The index of Multiple Deprivation (IMD) (quintiles) was selected as the dimension of socio-economic inequality. Individual-level data from a representative sample of 83,447 adults from the Health Survey for England (2009-2019 waves) were analysed. Post-stratification weights were constructed using an inverse probability weighting method and a raking procedure was used to control for selection bias. Annual IMD quintile-changes in mean body mass index (BMI), and its distribution, were examined using pooled and pseudo-panel regression analyses to identify significant linear trends in BMI within, and between sub-groups and cohort-specific trajectories, respectively. Linear and unconditional quantile regression models were estimated to identify key predictors of change in mean BMI and BMI distribution, respectively.

Results

Compared to the IMD least deprived, the top three most deprived groups increased mean BMI significantly over time, showing significant trend differences. The intermediate quintile group showed a BMI increase only over the 2009-2014 period (mean BMI change: 0.640, $p=0.013$), whereas the most deprived group showed a large increase only over the following 5-year period (2014-2019, mean BMI change: 1.295 $p<0.001$). The population BMI distribution progressively flattened over time, with an increasing proportion of adults with obesity accumulating mostly among the most deprived. Having a limiting longstanding illness was consistently found to be the single strongest factor associated with BMI and particularly with a severe obesity status.

Discussion

Over the last decade, socio-economic inequalities in obesity have risen steadily in England. A nuanced understanding of these inequalities is required by public health managers to guide resource allocation and targeting of population-level interventions.

Promoting patient empowerment in Atrial Fibrillation across healthcare systems: how to ensure health equity and access?

Ms Caterina Bosio, Ms Serena Barello, Ms Gloria Anderson, Prof Guendalina Graffigna

EngageMinds HUB, Università Cattolica del Sacro Cuore, Italy

Context

In Atrial Fibrillation (AF) patient empowerment is a fundamental component of care. Digital tools area acquiring an increasing role across healthcare systems in empowerment interventions, however they often fall short in terms of access and health equity, particularly when frail, disadvantaged and hard to reach patients are concerned. In this scope, this work describes the development and cross-cultural adaptation of a digital patient empowerment tool dedicated to frail AF patients across 6 countries within the scope of the AFFIRMO project, an EU-funded project under the European Union′s Horizon 2020 research and innovation program.

Methods

Cross-country research was conducted across Europe through the following steps: 1) we generated a library of educational/informational materials relevant to patients/caregivers and aimed at increasing their level of empowerment. 2) We prioritised the identified materials according to profiles of empowerment and information needs of the prototypical patients (i.e. «Personas») generated on the basis of the Patient Health Engagement Model (PHE-model) to imagine an easier use of these materials; 3) A co-creation workshop, involving patients' representatives and representative of clinicians has been conducted in order to get input for the best development and structuration of the empowerment toolbox and to incorporate suggestions from the targets; 4) Materials selected for the tool box have been translated into the different languages 5) and assessed in a pilot phase of in-depth interviews to (12) clinicians and (24) patients, equally distributed in the six countries in order to assess the tools readability and understandability.

Results

Through a systematic English literature review, 7 documents were selected and articulated for different levels of patient engagement basing on the 4 levels of the Patient Health Engagement Model®. Materials were translated from English into the languages of the six participating countries (Italy, Spain, Serbia, Romania, Bulgaria, Denmark). The cross-country in-depth interviews allowed a deep revision and adaptation of the different materials in a cultural embedded approach. It was possible to identify some cross-cultural optimisation elements, common to all the countries, i.e. content simplification to make easier for patients to understand the materials, and adaptation of the epidemiological data and drug names reported based on the health guidelines of each country. There were also country-specific adaptations: Eastern Europe countries required a greater materials simplification because some of the services illustrated in the materials (in particular psychological support services, e.g. mindfulness) are not guaranteed by the local health service.

Discussion

The AFFIRMO empowerment toolbox was adapted and optimised not only formally but also substantively to the health systems and cultures of the six countries involved in the project. This thanks to a sensitive and fully participative process, which included patients and clinicians across countries in all the phases of the empowerment toolbox development. These evidences claim for an enhanced cross-cultural sensitiveness when developing digital tools dedicated to patients empowerment, particularly when different healthcare systems are concerned. The problem of health equity and access to empowerment opportunities is today a growing – although often underestimated – in international digital initiatives. It is necessary to consider the cultural, organisational, and political peculiarities of the different countries when planning patient empowerment initiatives, this in particular when frail, low digital literate and aged patients are concerned, such as AF multi-morbid patients.

Accountability within the public healthcare system. The effect of accurate information release on the service delivery

Dr Earle John Du Plooy, Mr Giovanni Righetti

University of Verona, Italy

Context

Deficits in accountability are seen as a major contributor to the poor quality of public services the world over, and this is especially true in emerging markets and developing countries (Gottlieb, 2016). Extant literature is dominated by "felt accountability", an individual-level accountability of self, which often falls short of reaching the upper echelons of institutions where it is needed most (Bovens, 2007). Within healthcare, accountability at institutional level has received very little scholarly attention. The challenge entails disentangling an established trust relationship between patients and community on the one end, and their healthcare providers with relevant management bodies on the other (Hollowell et al., 2022).

Methods

Having access to accurate information on shared goals towards quality care provision enhances transparency and optimises the chances of aligning these goals (Hibbart et al., 2004). Healthcare users, particularly within the public sector often fail to experience any level of empowerment in these dynamics (Wei, 2020). Drawing from Corporate Social Responsibility literature, our study analyses the benefit of using Environmental Social and Governance (ESG) reporting (Chassin et al., 2010) to structure information release within a controlled testing environment. We propose a field experiment where standardised patient satisfaction surveys are used to gather data inside the general waiting rooms of hospitals in Western Cape Province of South Africa. We monitor the patient satisfaction surveys in conjunction with native complaint box submissions from patients, where information about healthcare performance has been provided, against a control group.

Results

Our field experiment aims at assessing the effect of release of relevant information (information release, IR) by healthcare management to patients. Specifically, we test whether IR would trigger:

In healthcare Users (patients):

- U1: More perceived accountability from management ("they release information so they want to be checked, thus I should use the complaint box more").
- U2: More empowerment ("I could complain before, now with more information I can do it better and target my complaints in a more efficient way").

In healthcare Management:

- M1: More accountability ("now that I am checked, I should account for my actions and adjust [and eventually improve] my management decision".)

Discussion

On one hand, we expect that the community that is informed of the goals, projects and values-based objectives is in a better position to elevate expectations of their leaders. This is in line with other work from Hibbart et al. (2004) and Svolick (2005). Moreover, we expect that the improvement of performance indicators over time creates better quality service provision, since its demand is grounded on solid and objective measures. The release of accurate and relevant information by organisations towards the final users, within a standardised format e.g. the ESG framework, would go a long way towards addressing lack of trust. This will invariably trigger a cycle rooted on accountability grounds and redefine the organisational culture in the health facility. The purpose of the research is to propose a model where a cycle of accountability can be established at institutional level. The study demonstrates that a reciprocal system of both “felt” and “bottom up” accountability can be established, which over time will plateau to enhance the organisational culture towards better health outcomes.

Does autonomy affect multidisciplinary team performance? The mediating role of boundary spanning

Dr Luca Giorgio, Dr Federica Morandi, Ms Roberta Laurita

Catholic University of the Sacred Hearth, Italy

The complexity of modern medicine calls for organisational solutions able to guarantee effectiveness and efficiency such as new health technologies, new policies practices, new models for the research, diagnosis, treatment, and follow-up of patients, following the "patient-centred care" approach. In this sense, multidisciplinary teams represent a solution to provide the horizontal coordination in healthcare settings. These teams are composed of healthcare professionals with different specialties who meet regularly to discuss clinical cases and to determine the most appropriate treatment. The present study aim at extending this line of research by exploring how organisational characteristics and relational variables influence team members performance. We empirically tested our hypotheses on 174 healthcare professionals belonging to 22 multidisciplinary teams part of 14 hospitals within the I-NHS. We administered a questionnaire to all team members of the teams involved and based on their preferences we used a paper based or an online format. The collection process spanned five months, from May to September 2020. The sample is composed of 146 physicians and 28 healthcare professionals, e.g., nurses and psychologists. Various disease management teams have been involved: most respondents belonged to the Breast Unit. We obtained all reported estimates by using the software package STATA 14. Hypothesis 1 predicts team member perception of autonomy and higher performance. The regression results do not provide support for this hypothesis but the positive coefficient of the regression evidences a relationship between the two variables in line with the literature. We found support for the second hypothesis predicted that the higher the number of boundaries spanning ties – ties with colleagues working in other healthcare organisations- the lower the performance. In Hypothesis 3, we predicted that the number of external relations moderates the relationship between autonomy and performance. The results support this hypothesis indicating that the relationship between autonomy and performance was moderated negatively and significantly by boundary spanning. This moderation indicates a greater tendency to report lower performance for healthcare professionals who report many external relationships rather than those with few connections. Multidisciplinary teams operate to provide the most appropriate and high-quality care, especially in treating complex patients. For this reason, it is fundamental to deeply analyse how they work and the conditions that can improve their performance. Although the statistical analysis does not support the first hypothesis, the results show a positive relationship. In line with the literature, when teams perceive direct control over the activities and the tasks assigned to them, their performance increases. In our second hypothesis we demonstrated that boundary-spanning behaviours are time and energy consumers due to the search process that requires professionals to collect the right information and resources from outside and to internally report them to the team, thus decreasing the overall team performance. Finally, our results confirm the third hypothesis: when the rules are clear, the organisation of the work is well-defined, and the decisions are standardised, the boundary-spanning activity is un-useful. On the other hand, when the degree of autonomy is high, the decision to seek outside advice relates to a team's specific characteristics without necessary impacting on performance. The study aimed at extending existing literature on multidisciplinary teams in healthcare providing evidences on how organisational choices and team members behaviours influences team performance.

Overcrowding and boarding time in Emergency Department in Italy

Dr Emanuela Foglia[1,2], Dr Federica Asperti[1,2], Dr Daniele Bellavia[1,2], Dr Fabrizio Schettini[1,2], Dr Emanuele Porazzi[1,2], Dr Lucrezia Ferrario[1,2]

[1]Carlo Cattaneo – LIUC University and LIUC Business School, Italy. [2]HD LAB – Healthcare Datascience LAB - Carlo Cattaneo – LIUC University, Italy

The overcrowding in emergency departments (EDs) represents a primary concern for hospitals, that are often called to efficiently manage patient demands and reducing EDs stress. Overcrowding would cause higher boarding time (BT), that is a critical indicator of quality of care for hospitals: extended periods awaiting an inpatient bed in the ED may exacerbate the patients' clinical conditions, increasing the time required to stabilise their acute problem in hospital. As such, the present research activity aims at defining the ED performance in Italy, with the identification of a specific KPI dashboard and the factors leading to a greater boarding time.

Real-life data, referring to an ED located in Northern Italy, were collected considering the time horizon 01/01/2019 and 07/31/2022 and focusing only on adult ED accesses (N=131,602). At first, a specific KPI dashboard was structured, assessing the following indicators: time between ED access and first visit, boarding time, ED overall stay, patient' clinical condition based on a triage activity (thus coding patients in white, yellow, green, and red priorities), ED repeated access within 72 hours, ED abandonment rate. In addition, the National Emergency Department Overcrowding Scale (NEDOCS) and the Emergency Department Working Index (EDWIN), were examined to analyse overcrowding determinants. Data were divided considering the specific years of reference, in the attempt to understand the ED access trends between the pre-pandemic, the pandemic and the post-pandemic time-horizon. Secondly, a bivariate correlation was performed to understand the organisational factors leading to an increase of the boarding time.

No consistency emerged in the time between ED access and first visit, except for white codes: only half of the patients has been visited within 30 minutes or 60 minutes, for yellow and green priorities respectively. Within the Short Stay Observation, overall process time is consistent with national guidelines of at least 36 hours. There's an increasing trend in ED repeated accesses within 72 hours, especially in 2022, for red and yellow codes. Consistent results are reported considering EDWIN and NEDOCS scores. NEDOCS index showed a decrease in overcrowding of approximately 13% between pre-pandemic and post-pandemic years. EDWIN index revealed overcrowding for yellow and green codes, with a decrease of 21.28% between 2019 and 2020. The bivariate analyses revealed that the ED time band (β=-0.057, p-value=0.000), patient's code (β=-0.028, p-value=0.005), and ED organisational (β=0.039, p-value=0.000) asset affect the time between ED access and first visit.

The analysis of the KPI revealed an 87.5% and a 100% consistency with the Italian standard ED guidelines and the Pisa University target values, respectively. However, BT in the emergency department is one of the most important factors of ED overcrowding: in particular, BT is higher at night, when lower human resources are involved. In this view, results revealed the need to define a strategy useful to shorten the BT. Both waiting time and the overall process time have increase over the years 2019-2022, despite the pandemic period.

This study demonstrates the usefulness of the EDWIN and NEDOCS indices in assessing ED crowding and overcrowding. The integrated measurement of both indicators may provide more comprehensive information for understanding ED dynamics and potential prediction of critical situations, thereby improving ED management.

COVID-19 and surgical waiting times: the response strategy of a Local Health Authority

Stefano Guicciardi, MD[1,2], Vincenzo Cennamo, MD[1], Anna Maria Baietti, MD[1]

[1]AUSL Bologna, Italy. [2]University of Bologna, Italy

Background & objective

An important indirect effect of COVID-19 has been the widespread delay in waiting times for elective surgical procedures.

From March 2020 to the first half of 2022 the surgical waiting lists of the Local Health Authority of Bologna grew continuously from 8000 to 12400 patients (+55%).

To deal with this dramatic burden, a strategic recovery plan was developed at the beginning of 2022 aimed at restoring the surgical response for the elective procedures.

Methods

The implementation of the strategy started in February 2022 and was based on a multi-pillar approach. First, a reporting system was adopted to monitor trends in waiting lists and to share performance results with surgical units; second, patients with longer waiting times were reassessed and their preparation was rescheduled according to the updated clinical priority; third, the overall surgical capacity was progressively increased, both with the reorganisation of hospital wards and with the reallocation of health workforce to operating theatres. Additionally, agreements were stipulated with local private hospitals to decrease the impact of low-complexity procedures.

Results

Between February and October, surgical capacity moved from 78% to 90% compared to the pre-pandemic levels and from the second half of 2022 it was possible to interrupt and slowly reverse the expansion of waiting lists, with an initial 4% reduction of the global volume of patients.

In total, 80% of patients expected to undergo surgery before December 2021 were treated and performance on key oncological procedures positively improved.

Conclusion

Although more efforts will be necessary to maintain and strengthen the results reached so far, the adoption of a local response strategy was essential to address the COVID-19 backlog of elective surgery, that still represents a relevant public health concern.

Similar experiences from health authorities should be disseminated among professional communities to adopt common effective practices.

Developing senior healthcare scientists as leaders and service improvers

Dr Nathan Proudlove

University of Manchester, United Kingdom

This short paper demonstrates the development of the roles that senior healthcare scientists play in healthcare delivery. As part of a wider national programme, it focuses on evidence they can be equipped to conduct and lead quality and service improvement (QI).

Healthcare scientists play a crucial role. The UK NHS has over 56,000 healthcare scientists across more than 50 specialisms, delivering over a billion diagnostic and scientific investigations and treatment interventions a year across 150 specialist services; 80% of clinical decisions depend on their input. They also implement technological innovations, including personalised medicine (e.g. genomics and bioinformatics), AI-based tools (e.g. in radiotherapy planning) and remote monitoring (e.g. in cardiology and audiology). These developments make their roles and expertise more important in supporting (and sometimes replacing) consultant-level doctors.

Under the leadership of the UK's Chief Scientific Officer, the 2010 Modernising Scientific Careers framework aimed to establish a new, comprehensive pathway through all scientific specialisms and career levels, combining academic and workplace education and training, awards and certification. There is now a portfolio of certified programmes from BSc through MSc to DClinSci. This last is the Higher Specialist Scientist Training (HSST) Programme. It is the main route to eligibility for Consultant Clinical Scientists posts – the pinnacle of their profession.

HSST is run by the University of Manchester and Manchester Metropolitan University. It consists of three roughly-equal components: leadership and management, advanced clinical science skills and an applied research thesis. The leadership and management component is provided by Alliance Manchester Business School. One notable element of this is a large unit on QI involving trainees conducting a workplace project. From this, we are building a portfolio of peer-reviewed journal papers documenting some of these QI projects to SQUIRE reporting standards, as exemplars for their peers and as evidence of Kirkpatrick Level 4 learning evaluation (targeted outcomes from workplace application of learnt behaviours and skills). [We will provide many examples in a fuller presentation – extracts in Figures.]

Many industries and organisations have struggled to adopt and embed QI. We view enablers of our success to be: dedicated study time set aside for the programme, the motivation of the academic credits, accompanying units on practical leadership and coaching behaviours, structured and pragmatic QI approaches and tools, and staff commitment to support. In many cases, trainees report this unit gives them the opportunity and toolkit to pursue work they have wanted to do for some time.

While the majority of each cohort produce work well on the way to being publishable, it is an 'add on' to their work and study, and workloads is a major barrier to greater dissemination. Some take QI and QI leadership forward as a core part of their thesis project.

ROSIA – a PCP for rehabilitation

MSc Patrícia Couceiro, MSc Cármen Nogueira, Dr Inês Ferreira, Dr Alexandre Lourenço
Centro Hospitalar e Universitário de Coimbra, Portugal

Healthcare systems in Europe face the combined challenge of limited resources and an increasing demand spurred by rising cases of chronic conditions. The situation is intensified in depopulated areas, where the proportion of elderly people is higher (anticipating the situation in urban areas in 20 years' time) and the distances to access healthcare are longer. This situation creates a pressing need for a fundamental rethink of the way health services are organised.

Reorganising rehabilitation services has been identified as an urgent need, due to the significant implications they have in people's lives (including the painful consequences of traveling from remote areas) and the burden they place on the healthcare system.

ROSIA is pre-commercial procurement (PCP) that wants to pave the way for the extensive deployment of the self-care model for long-term conditions and disabilities by focusing on rehabilitation. Supported self-care and self-management is a critical rehabilitation component. It enables patients to be as independent as possible using their personal assets and capabilities. The public healthcare system should aim for patient-centred services to foster these qualities.

Three public procurers from Aragón (Spain), Coimbra (Portugal) and Dublin (Ireland) will jointly procure ROSIA's service design and deployment. Seven knowledge partners will support them. Two Portuguese municipalities are also partners in ROSIA.

As a PCP, ROSIA consists in a process in which public organisations purchase research and development (R&D) services to develop innovative products, services, or solutions that address specific needs and challenges. The objective is to support the development of innovative solutions, products, or services that meet the needs of the procuring organisation and bring value to society.

ROSIA is ready to deploy a complete solution set for scale-up: it includes an open platform to integrate third-party solutions, a tailored integrated care path, a catalogue of personalised services for patients, a motivational programme realised through community interventions – and all of it aligned in a value-based service model.

By redesigning rehabilitation services to better conform to patients' realities, needs and expectations. ROSIA is an efficient way to warrant their ability to benefit from those services, regardless of where they live, and to improve their health and experience. We hope to accomplish a triple victory: Patients, Healthcare and Entrepreneurship. Patients in rural areas will be able to work through their rehabilitation programs from home and to extend them as much as they need. The healthcare system will be able to increase its capacity with current resources.

PCP effectively supports innovation, bridges the gap between R&D and the market, and fosters collaboration between the public and private sectors.

The Gastropack System as an effective alternative to the demand and supply model in healthcare

Francesca Lodato, MD[1], Liza Ceroni, MD[1], Dr Cristiano Fabbri[2], Stefano Guicciardi, MD[1,3], Buonfiglioli Federica, MD[1], Ramona Schiumerini, MD[1], Silvia Giovanelli, MD[1], Pasquale Apolito, MD[1], Nunzio Pio Longo, MD[1], Vincenzo Cennamo, MD[1]

[1]AUSL Bologna, Italy. [2]IRCCS Azienda Ospedaliero-Universitaria di Bologna, Italy. [3]Department of Biomedical and Neuromotor Sciences, University of Bologna, Italy

Background

The Italian National Healthcare Service is under great pressure from the increased demand for specialist services. Requests are managed on a simple "supply and demand" mechanism, opening possible risk of inappropriateness and case mismanagement. In recent years in Bologna, we applied the Gastropack system (GS), a shared access system between GPs, requesters, and gastroenterology specialists. The aim of this analysis is to evaluate whether Gastropack reduces mismanagement and demand for services.

Methods

In GS, patient's diagnostic work-up, including clinical consultations and/or abdominal ultrasound and/or endoscopic procedures, is scheduled on the basis of a multidisciplinary agreement between GP and gastroenterologists during a preliminary contact sharing clinical information medical history and symptoms. The GS has been implemented in a mountain area of Bologna AUSL, Alto Reno, where GP could freely joint the project or send patients to pre-existing Open Access System (OAS). Prospective data of patients with upper GI symptoms accessing the GS and the OAS were analysed.

Results

Between 2016 and 2020, 6318 patients were managed for gastroenterology services by GS and 8150 by OAS. 12203 exams were performed through OAS and 17493 through GS; total instrumental exams were significantly higher in OAS (66% vs 43%, $p<.05$). A significantly higher repeated exam/rate on the same patient was observed in the OAS than in the GS for all services considered. Repeated exams are 20% in OAS vs 8% in GS ($p<.05$) and 46% of total repeated exams are instrumental in OAS vs 18% in GS ($p<.05$). We then analysed the difference in referral/patients' rate in the last year in the different areas of Bologna AUSL, noting that the only area where there was a reduction in demand for gastroenterology services was the Gastropack area.

Conclusions

GS is an efficient system in reducing unwarranted repetition of gastroenterological instrumental services. GS has also been shown to be a virtuous system in that it reduces the demand for services, likely reducing inappropriate demand.

Research and innovation in personalised medicine: a descriptive synthesis of actors in the European Union and in China

Dr Francesco Andrea Causio[1], Dr Ilda Hoxhaj[2], Dr Flavia Beccia[1], Ms Marzia Di Marcantonio[1], Dr Timo Strohäker[3], Dr Chiara Cadeddu[1], Prof Walter Ricciardi[1], Prof Stefania Boccia[1,4]

[1]Università Cattolica del Sacro Cuore, Italy. [2]University of Padova, Italy. [3]Steinbeis Europa Zentrum (SEZ), Germany. [4]Fondazione Policlinico Universitario A. Gemelli IRCCS, Italy

Context

Research and innovation (R&I) actors are considered to be fundamental in shortening the translational gap of personalised medicine (PM) into the health systems. The Integrating China in the International Consortium for Personalised Medicine (IC2PerMed) project has been providing support for innovative and personalised medicine (PM) research, funding, and implementation in both the European Union (EU) and China through the use of dedicated actions. Within the framework of IC2PerMed, our objective was to conduct a landscape analysis of R&I actors working in the field of PM in both the EU and China.

Methods

Desk research on any R&I actors in the field of PM was carried out in two phases. This involved searching the grey literature as well as institutional repositories for relevant documents written in English and Chinese and published up to January 2022. It was decided to extract data on the R&I country as well as the field of activity. Presented here is a synopsis that is descriptive of each actor.

Results

We discovered 78 R&I actors, 63 of which were located in the EU and 15 in China. The most among the member states of the EU is held by Germany. Research and Technology Organisations were found to be the most prevalent of the categories that were taken into consideration. This was the case in both the European Union (75%) and China (47%), where they are on par with public institutions. The research and development actors that were found were active in a wide variety of fields, including genomics, digital health, and drug development.

Discussion

Both the EU and China can point to a large number of distinct R&I actors working on PM-related issues. However, these actors share very few characteristics. In spite of this, additional efforts are required to guarantee that they are encouraged to collaborate in order to bridge each other's gaps and work synergistically in order to prevent the waste of resources and efforts.

Digital transformation in healthcare organisations: opportunity for leveraging in private clinics

Dr Lior Naamati-Schneider[1], Dr Fiorella Pia Salvatore[2]

[1]Hadassah Academic College Jerusalem, Israel. [2]University of Foggia, Italy

Healthcare organisations function in incessantly changing environments due to factors such as demographic, economic, social, and political changes. At the same time, health organisations must contend with pressure to reduce public per capita spending on health.

These forces them to adapt their medical, managerial, and business activities to survive. Digital transformation is one survival mechanism that consists of a substantial and continuing business and organisational change deriving from the growing use and integration of digital technologies to improve business performance and implement innovative business models.

The adoption of digital transformation began before the outbreak of the COVID-19 pandemic, but it encountered considerable opposition from health sector patients and staff, both medical and managerial, for various reasons. In many senses, the pandemic period and its constraints accelerated the adoption and acceptance of digital transformation by staff, managers, and patients.

Whereas large healthcare organisations such as hospitals and HMOs had prior experience in adopting business strategies at various levels, small private clinics had and still have less experience with these strategies. Their experience in this regard has yet to be studied.

Small private clinics function in a highly competitive free market as for-profit business organisations, but they are regulated and receive no economic support. Therefore, they must adopt competitive business models, including implementing digital technologies.

This qualitative categorical study presents an exploratory study conducted in dental clinics. A total of 17 in-depth interviews with dentists who run private dental clinics were conducted to present and map the perceptions and difficulties in adapting to a competitive healthcare market in the digital era.

Four main categories were detected in the analysis: Implementation of Changes, Obstacles and Difficulties in Adopting Digital Transformation, Added Value of Adopting Digital Technologies, and Cost-effectiveness of Adopting Changes.

This analysis presents profound, far-reaching changes in the overall environment creating a dynamic and competitive environment. Still, no planned changes were observed, such as the construction of a managerial strategy for clinics and the adoption of processes and technologies as part of that strategy.

The initial analysis highlights diversity in the scope and the areas (treatment, service, marketing, etc.) in which, despite the obstacles, it is easier to implement the change, whereas there are other areas in which there is little tendency to adopt change and even opposition and fear of doing so. This variability was also found to be related to individuals' characteristics, worldviews, and age, together with the clinic's characteristics, such as size, the volume of clients, and the turnover.

The findings make it possible to generate recommendations and actions for the benefit of the clinics and the patient in this competitive market and for better, stable, and sustainable healthcare systems and organisations.

Moving to value-based management: how to set up a real-time digital monitoring tool for a time-dependent care pathway

Mr Egidio de Mattia[1,2], Ms Carmen Angioletti[3], Assist Prof Antonio Giulio de Belvis[1,2]

[1]Fondazione Policlinico Universitario Agostino Gemelli IRCCS, Italy. [2]Università Cattolica del Sacro Cuore, Italy. [3]Scuola Superiore Sant'Anna di Pisa, Italy

Background

In-hospital management, the need to manage the patient according to a logic of continuity of care and integration between different care settings has become increasingly evident. This requires a shift from an organisation in silos according to the specialised department to one organisation organised around the patients' needs. In this regard, Clinical Pathways (CP) can be seen as an application of process management and a new way of thinking to improve patient care and patient care experiences. However, the successful implementation of CPs depends on the availability of entrenched clinical outcomes monitoring systems capable of informing clinicians about their performance. However, recent studies have shown that having an ex-post monitoring system is not enough. Still, it is essential to provide real-time information to the care team to manage the patient's care pathway timely. Healthcare organisations should provide healthcare workers with a daily and proactive management tool to monitor the patients' real-time conditions.

Objective

Based on an analysis of current emerging trends in hospital organisational design, the present research project aims to define the main steps for setting up a real-time digital monitoring tool for patients with a time-dependent clinical condition and then evaluate the impact of the implementation of such digital tool within a research hospital (both in terms of clinical performance and care-team well-being).

Methods

To properly set up the digital monitoring system, the following activities were carried out: definition of the multidisciplinary and multiprofessional working group; definition of algorithms for the diagnosis, treatment, and rehab/follow-up phase; identification of rules for flagging (manually and automatically) patients alongside the clinical pathway (CP); identification of critical points of the CP to be monitored; process mapping in the current information system; pilot to test the Dashboard interface with the support of a multi-professional team. Then, a pre-post analysis will be conducted.

Results

The resulting dashboard is a daily management tool that provides the care team with a comprehensive view of patients stratified according to their risk alongside their care episodes. In addition, the care team receives alerts and can meet in real-time to make decisions quickly.

Conclusion

We expect this type of intervention to be more likely to improve adherence to clinical guidelines, and timeliness in caretaking, which is often related to better health outcomes and equity in care access. The proposed tool could help in identifying improvement areas by activating audit and feedback strategies. In addition, the integration of artificial intelligence techniques could generate predictive and preventive models to ensure continuous quality improvement in care delivery.

Vertical integration of primary and secondary care as a mean to add cost-effectiveness and equity of care?

Maria Lovén, MD[1], Dr Laura Pitkänen[1], Markus Paananen, MD[2], Assoc. Prof Paulus Torkki[1]

[1]University of Helsinki, Finland. [2]University of Oulu, Finland

Context

The rising cost of healthcare has led to a need for ways to improve cost-effectiveness while ensuring equal access to care for a wider population. Models of vertically integrated care, in which a hospital specialist visits primary care, have been shown to enhance patient satisfaction, perceived quality, and improve access to care. However, few studies have measured the cost-effectiveness of this model or simultaneously reported on both patient-reported outcomes and costs.

Methods

We conducted a review of literature on vertically integrated care, following PRISMA guidelines and searching multiple databases for articles published between 1992 and 2022. We included 21 original articles written in English that reported on both quality and costs. The COVIDence tool was independently used by two researchers to screen the results. The JBI tool was used for the quality appraisal. the Quadruble aim framework was used to categorise the results.

Results

Our findings suggest that, from the patient's perspective, the specialist in primary care setting is a more economical and satisfying solution. Furthermore, the arrangement promotes equity of care through better accessibility and lower costs for the patient. However, measuring direct costs over the whole care path and combining the indirect cost of care proved to be complex.

Discussion

The results of vertical integration so far have been mixed. It is difficult to conclude the final result of cost-effectiveness due to the complexity of identifying and quantifying the factors that drive costs, and combining those with the direct costs over the whole care path. However, it is clear that the model is superior from the patient's point of view. As stated by the World Health Organisation, primary health care is considered the cornerstone of an equitable and resilient health system - even and the specialist in primary care setup could support this. The overall gain of the set-up depends on the values of society and the importance placed on equity, the economic burden on patients, and the increase in health and satisfaction of patients and healthcare professionals besides the direct monetary effect for the commissioner.

Personalised medicine in the age of big data

Pharm.D Lorella Magnani

Catholic University of the Sacred Heart, Italy

Personalised medicine does not literally mean the creation of drugs or technologies unique to a patient, but the classification of individuals into subpopulations that differ in susceptibility to a disease, biology and/or prognosis, response to a therapy, and adaptation to the patient subtype or individual case. "Big Data" has enabled important advances in this direction, however, to develop successful personalised therapies, it is not enough to identify specific molecular targets or the patient's omics profile, but other interconnected and sometimes unknown factors are needed: pharmacokinetics and pharmacodynamics, drug interactions, etiologic factors, interindividual and gender differences. The idea of personalised medicine for diabetes is on the rise, with the promise of reducing the growing burden of the disease worldwide, and refers to an approach that integrates "Big Data" to characterise an individual's health status, pathophysiology, clinical phenotypes, prognosis, and likely response to treatment to build predictive models, optimise care and outcomes. The DMT2 is a complex disease with many genetic and etiologic variants, and patients vary in age of onset, clinical features such as body weight and blood glucose control, outcomes, and progression. Although much research has focused on omics sciences and biomarkers identification, it is very likely that a personalised medicine approach, based on phenotypic characteristics collected during medical examinations, may offer the advantage of early identification of the risk profile and therapy best suited to the phenotype, in terms of glycemic goal and complications. The pilot study, based on the work of Emma Ahlqvist et al. and the Risk Assessment and Progression of Diabetes (RHAPSODY) project, which aims to test this approach, is divided into three phases: the first, to select a cohort DMT2 patients of newly diagnosed, co-pathology-free, drug-naïve using data collected during visits (age at diagnosis, HbAc1, BMI, HDLc, C-peptide/HOMAIndex); the second, to identify 5 predefined clusters, according to RHAPSODY classification and representative of Ahiqvist's original ANDIS clusters (SIDD-SIRD-MOD-MDH), through K-means algorithm, at which correspond different risks of complications (before proceeding to the third stage, the 5 phenotypes are subsequently stratified by sex); the third phase, involves selecting the 1st line (metformin) and 2nd line (SGLT-2i - GLP-1 RA) drug treatment according to the Guidelines, AIFA algorithm (Note 100) and the following criteria: HbA1c target, effect on body weight/BMI, age at diagnosis, risk of hypoglycemia, tolerability profile (contraindications, side effects, interactions), concomitant therapies. During the 24-month follow-up, glycemic target, disease progression and complications, drug switches, adverse events, number of drop-outs to start 3rd line treatment or insulin therapy, urgent specialist visits, hospital admissions for severe hypoglycemia are monitored, in relation to the type of drug(s) or association(s), chosen according to the phenotype; resource consumption is assessed by budget impact analysis. The results, can be used to adapt the therapy not only to the type of hyperglycemia detected, but also to the phenotypic profile, to guide the individualised care plan, most appropriate for each patient, dynamic, modeled on the evolution of needs, with process and outcome indicators, included in the electronic health record and/or in dedicated Apps, telemedicine, etc..., consultable by the patient, the specialist and the general practitioner, for an integrated and multi-professional care.

Seasonality and work habits of medication errors in a psychiatric correctional setting: preliminary data and prevention management

Dr Kyriakoula Manaridou[1,2], Dr Olympia Konstantakopoulou[2,3], Dr Petros Galanis[4], Dr George Charalampous[2], Dr Charalambos Dokos[5]

[1]St. Josef AMEOS Psychiatric Hospital, Germany. [2]Department of Nursing, School of Health Sciences, Frederick University, Cyprus. [3]Center for Health Services, Management and Evaluation, Department of Nursing, National and Kapodistrian University of Athens, Greece. [4]Laboratory of Clinical Epidemiology, Department of Nursing, National and Kapodistrian University of Athens, Greece. [5]Institute of Pharmacology, University Clinic of Cologne, Germany

Context

Medication error is defined as any preventable event that may cause and lead to inappropriate medication use or patient harm. Quality health studies are quite difficult in correctional settings. In this study, we focused upon the identification of medication errors in a forensic psychiatric setting.

Methods

Data from a retrospective study concerning prescribing errors (May – August 2021) of a psychiatric clinic included in a correction setting were collected. Every prescription error is documented according to the protocol of previous EQUIP study. The severity, seasonality, hierarchy and work habits concerning each medication error are recorded. A double blind examination of those records is conducted.

Results

Thirty-two medication errors were isolated during the double-blind examination of the medication charts of 190 forensic patients (108 men: 82 women). Background psychiatric disorders varied widely from substance use disorder, psychoses and paedophilia. Most of the medication errors are accomplished by nurse staff (n=18); less from the senior consultants (n=11) and three medication errors from the head of the clinic. Most of the prescription errors were isolated during June and July (n=8 and n=16 respectively), a period where most of the workers are in holidays. The majority (n=31) of those prescription errors were classified as minor mistakes, without any important adverse event. 65.62% of them are included in the group of analgesics (nonsteroidal and steroidal anti-inflammatory agents).

Discussion

According to the quality and quantitate results of the study, communication between medical and nurse staff is important to reduce medication errors, therefore adverse events in correctional settings. Medication errors remain a significant quality health index and education in pharmacology and therapeutic are important. Continuous evaluation and controlling of the medication charts, specifically during summer period are essential. According to our results, July is the month of greater incidence in medication errors. Summer months are the months that most of the workforce goes to holidays. Therefore, it can be assume that there is a moderate control on these months. Although these are errors, are minors and not related with patients psychopathological condition, most of them concerned a substantially group of medications, the analgesics. Our qualitative results revealed problems of dysanagnosie and missing data upon prescription of medication. This leads to the conclusion that forensic psychiatrists should focus not only on evaluation of prescription but correcting the missing information in their medication charts. Double check of the medication charts seems to be a reasonable prevention management of medication errors in forensic psychiatry clinics.

Patient journey disruptions: the obstacle of integrated and coordinated care

Dr Märt Vesinurm, Dr Annika Bengts, Prof Paul Lillrank

Aalto University School of Science, Department of Industrial Engineering and Management, Finland

Background

We clarify the concepts used to understand and analyse a patient's progress through a health service system. A patient pathway describes plans and intentions. Within it we distinguish between the clinical pathway of decisions and interventions, and the care pathway of supportive activities. As a patient pathway is implemented, it turns into a patient journey of what is done and what happens to a patient's medical condition and what is experienced and felt. We introduce 'patient journey disruption' as a concept describing the events that need to be managerially prevented from happening to accomplish integrated, coordinated and seamless care.

Methods

The method used is conceptual analysis. The conceptual analysis builds on four steps: ontology 'what is it, and what is it not'; epistemology 'how does it manifest what can be known about it'; dynamics 'how does it behave and what leads to what', and finally technology 'how can we manipulate the phenomenon and subject them to experiments.' We position this concept in the domain of healthcare operations management, which implies the following methodological positions: domain knowledge -based transformations are separated from the way they are arranged and organised as flows, the flow unit and its journey through and between service encounters is identified, the ideal state is an integrated seamless flow and any deviation from this signifies a lack of control, production is improved through problem solving that requires understanding of root causes and dynamics, and finally services are co-created by providers and patients.

Results

Patient journey disruptions are agency-based harmful events in the execution of the care pathway that deviates the patient journey from what can be reasonably expected. Patient journey disruptions are management failures, which is why they should be studied by healthcare operations management scholars with the intention to find ways to prevent them from happening. Patient journey disruptions are mostly of interest in the cases of chronic patient processes, which tend to be lengthy and complex, yet plannable. Empirically, there are three perspectives of interest. First, the disruption as an event (what happened) needs to be understood, for example, a documentation error. Second, the causes can be classified into those coming from personal encounters, system failures or both, those arising from a patient's behaviour, and those related to situational contingencies that are not handled appropriately. Third, the consequences of disruption need to be studied to assess the loss of value.

Conclusions

We present a realignment of the terms and definitions of the patient pathway as what is planned and patient journey as what happens. We believe that separating clinical and care pathways is extremely important for research in the healthcare operations management field and provide a conceptually coherent way of separating clinical and managerial tasks. We believe that the introduction of the concept of patient journey disruptions into the literature provides a new, systematic way of approaching the different shortcomings in our healthcare production systems.

Telemonitoring in hospital at home programs

MS Romana Gomes[1], Prof Teresa Magalhães[2]

[1]Nova National School of Public Health, Universidade NOVA Lisboa, Portugal. [2]Nova National School of Public Health, Public Health Research Centre, Comprehensive Health Research Center, CHRC, Nova University of Lisbon, Portugal

Context

Hospital at Home (H@H) programs, complemented with telemonitoring, has advantages in monitoring and coordinating of health care services. The development of digital solutions requires conducting a field study to gather information about the clinical context, identify the groups of actors and involve them in the development of the technological solution. The assessment of the experience and listing the barriers, enhancing factors and requirements for telemonitoring, from the perspective of the H@H professionals, should be part of this development. This research will allow us to understand what is necessary to develop and implement, enhancing the success of this type of intervention.

Methods

Delphi Technique was applied to evaluate the experience of H@H professionals on the potential use of telemonitoring and to identify their level of agreement regarding the necessary requirements, barriers and enhancing factors of a cross-sectional telemonitoring tool adapted to H@H programs. The selection criteria of the experts was based on identifying the coordinators of the units with the highest number of patients with discharge in the 2020 - 2021 biennium. It was defined that a given item reached consensus if it obtained a percentage of agreement of at least 66.6%. Considering the first round was an open answer questionnaire, it was established that the maximum number of rounds would be three, avoiding continuing for a long period, which would tend to potentiate the occurrence of discontinuations. In the first round, a content analysis was carried out, providing new knowledge, and increasing the researcher's understanding of the theme.

Results

According to this research almost all experts (95%) believe that H@H professionals are prepared for the use of telemonitoring tools. However, most experts did not have contact with telemonitoring in the context of H@H. Only 5 experts, representing 4 H@H, indicated having experience with telemonitoring. In the present study, the experts gathered agreement on 22 potentiating factors, 17 barriers and 35 requirements. Many of the enhancer factors listed may, if poorly implemented or managed, become barriers to the use of telemonitoring.

Discussion

It is believed that the present work has created a knowledge base for the implementation of telemonitoring projects in H@H providers. It also promoted the sharing of knowledge between H@H providers, through the availability of results throughout the various rounds. The knowledge and evaluation of what we have today, leverages the decisions of the administrators / managers on how we can better manage the risk of investments (strengthening the process of analysis/comparison of solutions/services or suppliers and knowing the barriers to overcome), allows identifying what we need to improve, enhance, and build in the future. As future research, studies are needed to allow a more comprehensive evaluation of the user experience (as a patient or caretaker) seeking to better understand the advantages and acceptance criteria in the use of telemedicine solutions.

Chronic disease management during the COVID-19 pandemic & the emergence of digital healthcare: a literature review

MBA Achillefs Vratimos, MSc candidate Ilias Champilomatis

National and Kapodistrian University of Athens, Greece

During the COVID-19 pandemic there has been a direct impact on healthcare services in regular care, particularly for patients with chronic conditions. This included reduced access to primary healthcare, cancellation of elective medical and surgical procedures, and disruptions to screening programs. Shortages of medication used to manage chronic conditions were also observed at the beginning of the COVID-19 pandemic due to global supply chain disruptions. Finally, patients with chronic conditions faced lifestyle disruptions due to the COVID-19 pandemic, specifically in physical activity, sleep, stress, and mental health, which need to be better addressed. Among the efforts to address the access problem of patients with chronic diseases, a shift towards remote health services has been observed.

The COVID-19 pandemic is leading to a rapid transition away from in-person ambulatory care. Almost immediately, virtual and asynchronous care delivery by outpatient providers has become the new normal. Telemedicine can not only maintain essential medical care for chronic disease patients in many low- and middle-income countries throughout the COVID-19 pandemic, but also strengthen primary health care delivery and reduce socio-economic disparities in health care access over the long-term. The rapid development of teleconsultations has been one of the most visible innovations in health service delivery during the pandemic and played a key role in maintaining access to care, particularly during lockdown periods.

In this paper we will outline the above subjects based on the available literature of the last 2 years with the aim of examining whether a general trend has been formed in the matter of dealing with this particular issue.

An investigation into the attitudes of medical, nursing, and healthcare management students towards AI

Dr Ecenur Aydemir

Acibadem University, Turkey

Context

Artificial intelligence (AI) has rapidly been advancing and changing the healthcare industry. With AI being used to automate processes and make diagnoses, there is a growing concern about the future healthcare workforce's comfort level with this technology. The aim of this study is to determine the level of fear or comfort of medical, nursing, and healthcare management students towards AI in the healthcare industry.

Methods

The research method for this study is a survey, which is being administered to medical, nursing, and healthcare management students. The survey instrument is the General Attitudes to Artifical Intelligence Scale (Schepman&Rodney, 2022) which consists of 20 questions that assess students' knowledge, attitudes, and perceptions towards AI in healthcare.

Results

The data will be evaluated to reveal the participants' attitudes toward AI. It is expected that the results of the survey will reveal the students' concerns and hopes about AI's impact on their future careers.

Discussion

The findings from this study will provide insight into the current and future state of the healthcare workforce's attitudes towards AI. This information will be useful in guiding the development and implementation of AI in healthcare and in addressing any fears or concerns that healthcare professionals may have. By understanding the attitudes of future healthcare workers, the healthcare industry can better prepare for the integration of AI and ensure that it benefits both patients and healthcare professionals.

Is the impact perceived by people with Type 2 Diabetes Mellitus influenced by the number of simultaneous diseases? – an analysis of correlations

Prof Ana Rita Pedro[1,2], Mr Fernando Genovez Avelar[2], Ms Beatriz Raposo[2], Ms Ana Cunha[2], Mr Hugo Martinho[3], Mr João Couceiro[3], Mrs Marisa Pardal[3], Mrs Filipa Bernardo[3], Prof João Raposo[4], Prof João V. Cordeiro[1],[2]

[1]Comprehensive Health Research Center, Portugal. [2]NOVA National School of Public Health, Portugal. [3]AstraZeneca Portugal, Barcarena, Portugal. 4NOVA Medical School, Portugal

Context

Type 2 Diabetes Mellitus (T2DM) is a multidimensional disease that has a significant impact on a persons' life. The multimorbidity context associated with T2DM can be translated into a significant influence on well-being, quality of life and functionality. Understanding the impacts perceived by people living with T2DM (PT2DM) in a multimorbidity context is critical to improve healthcare and to promote shared decision-making. This study aims to evaluate the correlation between the perception of these impacts with the number of simultaneous diseases.

Methods

Quantitative, observational, and cross-sectional study using an online survey of adults with T2DM, residents and healthcare users in Portugal (N=464). Seven dimensions of disease impact were evaluated using a score index (0-positive impact to 10-negative impact): social, employment, family life, mental health, body consciousness, physical well-being, and quality of life. Spearman's correlation coefficient was used to analyse the correlation between disease count associated with T2DM and the score index of perceived disease impact. Strength of correlation (r) was calculated, and a P value < 0.01 was considered statistically significant using SPSS® v28.

Results

A total of 464 responses were analysed (50.9% female, mean age 62.4±10.2 years, 47.8% with university education, and 47.4% pensioned). 8.9% of respondents had no other disease besides T2DM, 91.1% reported multimorbidity, and 48.0% reported 4 or more concomitant diseases. Hypertension was the most common condition associated with DM2 (62.3%), followed by hypercholesterolaemia (44.3%) and obesity (43.6%). Regarding correlations, social impacts ($\rho=0.086$) and family impacts ($\rho=0.055$) did not show statistical significance. On the contrary, perceived impact on quality of life ($\rho=0.273$), physical well-being ($\rho=0.243$) and body perception ($\rho=0.230$) revealed the highest statistically significant values, although with a low correlation.

Discussion

A significant portion of respondents had at least one morbidity associated with T2DM, which reveals a high prevalence of multimorbidity in our sample and might require additional concerns about health care and disease management. Multimorbidity associated with DM2 can negatively affect the perceived impact of this disease on the daily life, as disease management becomes more complex. However, our results reveal a low correlation between the number of simultaneous diseases and their perceived impact, indicating that there are no significant variations regarding the burden of disease. In the future, in-depth analysis of the dimensions where this correlation is higher should be performed.

AIFA monitoring registries as a tool for achieving effective real clinical practice

Ms Clizia Argirò, Mr Andrea Beligni, Ms Adriana Brusegan, Ms Marianna Serino, Mr Luca Paoletti, Mr Giovanni LaCivita, Ms Giulia Cavalleris, Mr Alessandro Miglietta, Ms Francesca Panfilo, Mr Federico Pigato, Ms Tiziana Comandone, Mr Giovanni Di Fiore, Mr Andrea Falzon, Ms Marisa Fiordelisi, Mr Enrico Ottavio Giannini, Ms Chiara La Maida, Ms Clarita Macagnino, Ms Leonarda Maurmo, Mr Alberto Michielon, Mr Luca Pantaleo, Mr Seydou Sanogo

Rete Nazionale degli Specializzandi in Farmacia Ospedaliera, ReNaSFO, Italy

Context

In 2007 the Italian Drug Agency (AIFA) launched the AIFA Monitoring Registries platform (AMR), an innovative tool that monitors the use of pharmaceutical products in real-world practice. The AMR are based on the prescriptive appropriateness and the application of the Managed Entry Agreements (MEAs) that outline the arrangements between AIFA and the Pharmaceutical Industry. The aim of this work is to highlight how the use of the AMR can facilitate a uniform access to the treatments for the entire Italian territory.

Methods

The inclusion of medicines in the AMR is based on the novelty of the product along with the potential changes of the risk/benefit balance that can occur while the drug is administered. The AMR platform is an IT tool that includes the following sections: patient's personal data (Section 1), eligibility and clinical data (Section 2), drug prescription (Section 3), drug supply (Section 4), revaluation of patient's status (Section 5) and end of treatment (Section 6). Sections 1,2,3,5,6 are filled out by the clinician whereas section 4 is edited by the hospital pharmacist. Furthermore, another section is dedicated to the applicability of the economic agreements between AIFA and the Pharmaceutical Industry which identifies how the expenditure is split between the two parties.

Results

The sections are filled out based on a questionnaire submitted to the physician and the pharmacist. Thanks to a series of questions, the system can detect whether the patient is eligible for the therapy or not. If the answers don't meet the requirements, the physician cannot move forward and the prescription is not allowed. On the contrary, if all the requirements are satisfied then the prescriptive appropriateness is guaranteed and the treatment can be initiated in line with the conditions stated by AIFA. In accordance with what is outlined in the MEA, the prescriptive appropriateness, the level of compliance, the schedule of administration, the timing and motivation for ending the treatment and, also the treatment outcome (failure/success) all define who will take charge of the cost of the treatment for each patient.

Discussion

Relying on the MR favours the achievement of many improvements: it guides the prescriptive appropriateness, it delivers an equal and fast access to innovative therapies with no difference on the Italian territory, it improves the surveillance on the safety of medications and tracks homogenously the pharmaceutical expenditure. Moreover, the centralised and web-based system makes the process more reachable and user friendly.

Italy is the first country to introduce such an innovative prescriptive tool. To date, the platform is active in more than 3500 healthcare facilities, it involves 52 regional deputies, 963 Medical Directors, 32857 physicians and 2318 hospital pharmacists. 49 pharmaceutical industries are currently involved in the platform with at least one pharmaceutical product. Moreover, this system allows AIFA and the pharmaceutical industries to swiftly carry out the reimbursements stated in the contractual agreements. Besides, the hospital pharmacist rises as an essential figure in the management of the registries.

An information system to support the management of clinical trials: a conceptual model

Mr Eduardo Soares[1], Ms Teresa Magalhães[2]

[1]Instituto Português de Oncologia, Portugal. [2]Nova National School of Public Health, Public Health Research Centre, Comprehensive Health Research Center, CHRC, Nova University of Lisbon, Portugal

Background

The global emergence of new diseases, the evolution and increase of research in the development of new drugs and their favourable economic impact, have determined an increase in clinical trials in hospital clinical research units. Several strategies have been used to enhance its development in Portugal and combat existing barriers.

Objective

This field work intends to develop a conceptual model of an information system to support the management of clinical trials.

Methods

This work consists of a qualitative exploratory-descriptive and observational study, consisting of two parts. The first involved semi-structured interviews with twenty-six professionals participating in clinical trials, observation of six clinical research units of hospital institutions of the National Health Service and literature review, with the purpose of building the first version of a conceptual model. The second part consisted of a panel of twelve experts to adjust and validate the conceptual model conceived. Data analysis was performed through content analysis.

Results

The results reveal that research teams present several needs, including organisation, resources, autonomy and support. Teams face several challenges in the development of clinical trials concerning strategic and management policies, technology and information systems, and the organisation of processes. In the development of clinical trials, research teams worry about the conduct of research, the individuals they care for, the strategies to be used in research and the organisational behavior. A clinical trial management support system can improve organisation, management and security.

The conceptual model to support the management of clinical trials is characterised by being dynamic and involving several modules with different functions. The modules of the conceptual model include: clinical trial status, clinical trial support, financial management, stock management, appointment scheduling management and document management. The model also includes an alert module, informing that the person is in a clinical trial, and another one aimed at the individual participating in a clinical trial. Interoperability, data security and access management, the opportunity to create indicators and the opportunity to manage calendars are attributes of the model.

Conclusions

The development of a conceptual model to support the management of clinical trials could streamline the processes of management effectiveness of research units and bring benefits for hospital administration. This can facilitate the evolution of knowledge, early and free access to innovative medicines and sustainability of health services, thus improving health care.

Beyond experience and evidence in healthcare management: a new method for evidence-based design thinking

Dr. Ir. Kasia Tabeau, Ms. Naomi Seldenthuis, Dr. Ir. S.G. Elkhuizen

Erasmus School of Health Policy and Management, Rotterdam, Netherlands

Solving complex problems in healthcare requires solutions to meet the current evidence, but also to fit the experiences of patients, relatives, and professionals. Most healthcare managers apply evidence-based management approaches such as Theory Informed Problem Solving (TIPS). Experience-based methods such as Design Thinking are gaining notoriety but are still little used. In this research, we address how design thinking can be integrated into TIPS by creating a new method for solving complex healthcare problems. In this way, we provide managers with an approach that allows them to create people-centric solutions that are grounded in evidence.

To create our new method, which we coin evidence-based design thinking, we conducted interviews with 4 students at the Erasmus School of Health Policy and Management (Erasmus University Rotterdam, The Netherlands). The programs that the students follow educate them in evidence-based working in healthcare while also including courses on design thinking in this context. The interviews started with discussion of TIPS (Van Aken et al., 2012) and design thinking (Luchs, 2015) with the students. Hereafter, we asked the students to create a new method integrating design thinking into TIPS based on this discussion. Interviews were held digitally, recorded and transcribed automatically; we used a shared whiteboard for the creation of the methods. We analysed the created methods in terms of phasing, and the use of evidence and experience in each phase.

Based on the insights from our analysis, we found that the phasing of TIPS (i.e., problem definition, analysis and diagnosis, solution design, intervention, and learning and evaluation) could be adapted in three ways. First, a phase of problem discovery could be added before problem definition. Second, the ‘solution design’ phase can be further divided into three steps: creation of the solution, prototyping and prototype testing. Third, the intervention phase can be replaced by a more common ‘implementation’. As regards to the usage of evidence and experience in the method, we found that using a combination of evidence and experience seems to be important in the problem discovery, analysis and diagnosis, and creation phases. Moreover, often mentioned evidence to be used in these phases are scientific literature and knowledge on stakeholder values and concerns, while the opinions of users should be explored to include their experiences in the solution.

In summary, we created a new method that integrates design thinking into theory informed problem solving. This evidence-based design thinking method consist of 8 steps (problem discovery, problem definition, analysis and diagnosis, solution creation, prototyping, prototype testing, implementation and evaluation) and integrates the usage of experience in managers’ traditional way of working. Compared to TIPS in isolation, this method allows them to 1) ensure the right problem is solved through thorough discovery, 2) solve this problem in the correct way by not only creating but also prototyping and testing solution, and 3) include the experiences of users in the approach and not only scientific literature and stakeholders’ values and concerns. Our evidence-based design thinking method should be tested in practice with managers so it can be further improved.

Analysing the relationship between performance and technology adoption in the healthcare sector: an organisation-based view

PhD Student Francesca De Domenico, Ass.t Prof Guido Noto, Ass. Prof. Maria Cristina Cinici

University of Messina, Messina, Italy

Context

In recent years, scholars have devoted increasing attention to the adoption of technologies in the healthcare sector (Shani et al., 2000; Lettieri, 2009, Davis et al., 2015), analysing also their impact on performance (Salge and Vera, 2009). While few studies have found a positive relationship between technology adoption and financial performance (e.g., Menachemi et al., 2006), most of this research has focused on the impact of specific technologies on the performance of organisational units or medical specialities (Adler-Milstein et al., 2015). In this regard, Zengul et al. (2018) demonstrated the link between higher adoption of high-tech services and total margin. Laurenza et al. (2018) found that technologies could potentially increase efficiency and, at the same time, enable the provision of better quality and reduced response times, with many benefits for different stakeholders (such as national health systems, physicians and patients).

However, to the authors' knowledge, scholars neglected to consider yet how the overall propensity for technology adoption affects organisational performance. This research aims to fill this gap by investigating the relationship between technology adoption and organisational performance. Assuming that healthcare is shifting towards new patterns and models, it is crucial to unravel this connection in order to offer precise managerial and policy suggestions. New technologies and devices can be effective tools to improve the quality of healthcare. However, simply investing in new technologies is not enough to add value to healthcare organisations.

Method

To address our research objective, data from 85 Italian healthcare organisations were analysed through ordinary least squares (OLS) regressions on panel data from 2016 to 2019. To measure organisational propensity to adopt technology, we constructed an indicator by comparing spending on active implantable medical devices and total spending on healthcare goods. These devices are mainly used in surgical treatments. In some treatments, physicians choose whether to use a device or provide the service without it; other treatments can be performed exclusively with these technologies. Consequently, this indicator measures the overall propensity to adopt health technologies at the organisational level and the ability to deliver treatments that require the use of such devices. As a performance measure, we have selected an indicator that measures average hospitalisation days (AHPI) for surgical treatments (for the same type of treatment over time). This is a decreasing indicator (i.e. lower values correspond to better performance) that measures the performance of healthcare and organisational processes.

Results

Our analysis revealed interesting results highlighting that increased technology adoption leads to better organisational performance within healthcare facilities. In particular, a greater propensity to adopt the technology within healthcare facilities, which in our case, translates into implantable medical devices, generates better hospital performance in terms of the AHPI.

Discussion

To the authors' knowledge, this is one of the first studies focusing on the link between technology adoption and overall organisational performance. To do that, the article proposes an innovative solution to measure technology adoption at the organisational level. This element, although representing one of the original features of the research, is also one of the key limits. Another limitation is related to the fact that the research is conducted in Italy, therefore results may be influenced by the peculiarity of the Italian Health System. To overcome this limit, further research may compare these results with those coming from other national health systems.

Week surgery: an efficacy management model based on intensive care

Ing Maria Beatrice Pagani, Dr. Claudio Trotti

Centro Ortopedico di Quadrante, Omegna, Italy

Context: in today's health care setting, organisational models are evolving from the perspective of intensity of care in order to improve the appropriateness of hospitalisation. This study aims to make a qualitative and quantitative assessment of the internal and external levers that prompted the Strategic Management of Quadrant Orthopaedic Center to introduce Week Surgery.

Methods: The first part of the paper briefly describes the history of the Hospital Company and a review of the literature to contextualise the Week Surgery and Intensive Care Hospital model. In the second part, the objectives of the management trial are analysed with explicit reference to quantitative data: production volumes, accredited beds, average hospital stay by type of surgery, average pre-intervention hospital stay, and the distribution of admissions versus the number of inpatient days.

Results: Identify the organisational conditions to be included in each of the four areas of the operational map (Villa S. et Al): Clinical Governance, Operational Management, People Management, and Organisational Arrangements. This new organisation frees up six average beds per day of ordinary hospitalisation (major surgery activity), which when projected onto annual activity (10 months or so), turns out to be 120 more surgeries with appropriate setting by intensity of care.

Discussion: Nowadays, external organisational levers (regional policy) are pushing them to reorganise; it is important that new models include careful analysis before they are implemented. The Week Surgery model we applied made it possible to establish an area dedicated to medium/low intensity care by meeting the criteria of appropriateness of hospitalisation and freeing up major surgery beds (about 120 more surgeries/year, acting positively on waiting lists). This model can be exported in other contexts, in particular in hospitals with planned surgery.

Fast track surgery: an efficacy goal to reduce waiting list

Dr. Claudio Trotti, Dr. Erica Albizzati

Centro Ortopedico di Quadrante, Omegna, Italy

Context

In Italy, the national health costs, approximately 30 billion are spent each year for interventions of hip and knee prosthesis; in addition to healthcare costs, the second problem of orthopedic prosthetic surgery is the extension of the waiting lists. The aims of the study is to highlight how the reorganisation (according to the fast track [FT] principles), of the clinical-organisational pathway currently used, maximises the relationship between the outcomes of the treatments and the costs, acting positively on LOS (length of stay) and on the waiting list.

Methods

We analyse the current path and scientific literature on FT and Valued-based Helthcare (VBHC) in prosthetic surgery in the last 10 years and translating the fast track model, by experimenting it on a group of patients, into current practice.

We tested 2 group of patients: esperimental group of 7 patients in the FT protocol (5 M and 2 F-mean age 63.15) and the control group of 7 patients from the traditional rehabilitation protocol (5 M and 2 F-mean age 64.9). Clinical outcomes (NRS, ROM, WOMAC, LOS), satisfaction questionnaires and economic data were collected at the admission, discharge and follow up.

Results

One patient required post-operative blood transfusion in the FT group, and three in the traditional pathway group. The decrease in hemoglobin values between the first and second post-surgery day was more evident for the patient undergoing a traditional protocol (mean = 1.5 g / dl, compared to the 0.7 g / dl drop in FT group patients), as well as between the pre-intervention condition and the second post-intervention day (mean = 4.4 g / dl for the control group versus 3.1 g / dl for the FT group). On the other hand, the drop in hemoglobin values between the pre-intervention condition and the first post-intervention day was similar (mean = 2.8 g / dl for control group patients versus 2.4 g / dl for FT group). The lenght of stay in FT group is 3.14 days in hospital, while the patients in the control group shows 12.1 days.

The score on the WOMAC scale, administered on the third post-operative day, was lower (and therefore better) for the anterior hip prosthesis of the experimental group (67 versus 82 of the control group) and for the unicompartmental knee prostheses of the experimental group (63.8 versus 95.6 of the control group), also considering the individual categories.

The study shows a reduction of the cost of hospitalisation in the FT protocol versus the traditional pathway (-7755,77 euro/patient).

Discussion

FT pathways guarantees the respect of VBHC principles, reducing LOS, morbidity and convalescence with an evident reduction in costs related to hospitalisation. We registered excellent patient's outcomes and satisfaction and a positive impact on the waiting list. This model is feasible and exportable to similar realities.

Organisational perceptions towards hospital-associated deconditioning within two NHS healthcare organisations: a multiple case study

Ms Joanne Russell, Dr Axel Kaehne, Professor Barbara Jack, Dr Kate Zubairu

Edge Hill University, Ormskirk, United Kingdom

Context

Hospital-associated deconditioning (HAD) is thought to occur as a result of inactivity during hospitalisation and can result in a significant functional decline across a range of physical, mental and emotional health domains. The resultant loss of independence and function means up to a third of individuals are leaving hospital with a newly acquired disability, unrelated to the initial reason for hospital admission, and a new dependence on health and social care services. HAD contributes to increased length of hospital stay, increased likelihood of discharge to nursing care facilities, rehabilitation placements, or need for social packages of care. Despite several targeted campaigns to improve patient activity and function during hospitalisation, deterioration in mobility and function continue to be observed.

Existing literature indicates a range of organisational, staff and patient factors may exist which contribute to the lack of activity and maintenance of function when in hospital. These have previously been explored at local or micro ward levels through the perspectives of both patient and frontline (predominantly nursing) clinical staff. The literature does not yet offer insights into wider organisational perspectives towards deconditioning, or those of staff indirectly involved in patient care. This study aims to contribute to this gap within the existing literature and explore HAD at a meso organisational level, including factors which may be contributing or inhibiting positive steps towards addressing deconditioning.

Methods

A multiple-case study approach was taken across two NHS acute hospital organisations. Semi-structured Interviews were used to collect data from a purposive sample of both clinical and non-clinical staff. Non-clinical staff invited to participate in the study, include administrative, leadership and managerial professionals indirectly responsible for patient care, such as those who influence policy and strategy, education, training, and patient safety. Three sub cases selected across three differing clinical units, include a general medical ward, a geriatric medical ward and a multi-disciplinary frailty assessment unit. Clinicians including a range of nursing, allied health and medical professionals from each unit were invited to participate in the study.

Results

A preliminary analysis of the interviews revealed the complexity of ensuring staff engaged in effective collaborative work to prevent HAD for patients. In particular, organisational domains such as environmental suitability, training and education, resource availability and task demand, were highlighted as of critical importance to halting HAD during hospital stays. Applying an organisational readiness for change theory helped us to explore the organisation's barriers and enablers to implementing effective processes combatting HAD.

Management of Chronic Obstructive Pulmonary Disease (COPD): strategies to reduce exacerbations and disease burden in Portuguese health system context

Dr. Ana S. Cunha[1],[2], Dr. Beatriz Raposo[1],[2], Dr. Filipe Dias[1],[2], Dr. Susana Henriques[3], Dr. Hugo Martinho[4], Prof. Ana R. Pedro[2],[5]

[1]NOVA National School of Public Health, Lisbon, Portugal. [2]Public Health Research Center, Lisbon, Portugal. [3]AstraZeneca Portugal, Corporate Affairs, Barcarena, Portugal. [4]AstraZeneca Portugal, Medical Affairs, Barcarena, Portugal. [5]Comprehensive Health Research Center, Lisbon, Portugal

Context

Respiratory diseases contribute significantly to the morbidity and mortality of populations and are the third leading cause of death in Portugal. Chronic Obstructive Pulmonary Disease (COPD) is the third leading cause of death worldwide, after cardiovascular disease and stroke. Since the severity of symptoms and exacerbations may occur differently among patients and are a relevant event in the natural history of COPD, it is important to identify people in high risk and treat earlier, providing an effective follow-up of patients. This study aimed to identify and reach consensus on possible strategies to prevent exacerbations and associated complications.

Methods

A Delphi methodology was performed with a panel of 15 Portuguese experts, including: physicians, nurses, health managers, policy-makers, experts in public health and health promotion, and patient organisations. A consensus level of 73.3% was predefined for each strategy, using a scale ranging from "Agree" to "Disagree". Three rounds were performed to answer and obtain consensus to six questions, concerning early diagnosis and follow-up of patients. The first round was performed to identity the main constraints faced by the Portuguese Health System in managing COPD, the main obstacles in the identification and management of COPD exacerbation and effective strategies to mitigate the constraints and barriers identified. The second and third rounds were conducted based on analysing the content of this information and voting on each indicator created to achieve consensus. Thereafter, the indicators obtained were grouped into two scopes: constrains and barriers, and strategies to reduce COPD exacerbations and disease burden.

Results

A total of 138 valid indicators were generated by the experts. Of these, 45 were strategies to reduce COPD exacerbations and disease burden, which 41 obtained consensus mostly at the "agree" level. The indicators that obtained the highest level of consensus were: Adequacy of treatment schemes attributed to severity and GOLD criteria (100% agree); Improve of clinical information sharing (100% agree); Improve of articulation between Hospitals, Primary Health Care Units and Home Care (100% agree); Greater empowerment of patients and professionals (100% agree); Investment in the training of professionals, with consequent empowerment of Primary Health Care Units for COPD care (93.3% agree).

Discussion

This study highlights the importance of more integrated investment in respiratory health care and the recognition of the impact of COPD on patients’ life, on healthcare systems and on economies. Prevention and appropriate treatment of exacerbations are important strategies for better management of COPD, and also for reducing the associated morbidity and mortality. The experts emphasised that the articulation between the different levels of care must be improved, which includes the efficient integration of information systems and the decentralisation of hospital competences. The COVID-19 pandemic has further alerted the population to the importance of individual and collective respiratory health, so it is crucial to maintain the focus on investing in actions to promote health and COPD knowledge. Despite the extensive efforts to reduce the prevalence of COPD and the growing scientific progress in this area, there are still several improvements to be made at all levels of health care.

Telehealth as a tool to optimise the pre-hospital pathway: an extreme case study in southern Italy

Dr. Anna Roberta Gagliardi[1], Dr. Patrizia Chierchini2, Dr. Maddalena Quintili[2], Dr. Francesca Troiano[2], Dr. Giuseppe Furia[2], Dr. Carmela Puleo[2], Dr. Antonio Vinci[2]

[1]Department of Economics, University of Foggia, Foggia, Italy. [2]Local Health Authority Roma 1, Roma, Italy

Context

The COVID-19 pandemic has had a significant impact on health systems around the world. In particular, the suspension of scheduled surgical activities, guaranteeing only urgent surgeries, has inevitably lengthened the waiting time for treatment of patients with a diagnosis other than COVID-19, resulting in inefficient management of the operating rooms.

This study aims to describe the advantages of telehealth services for managing patient operations and care.

Methods

This study, focusing on a dataset including 166 major surgery interventions from the data warehouse of the "Casa Sollievo della Sofferenza" Research Hospital (Italy) from January 2021 to November 2022, examined, in particular, the Pre-hospital Pathway.

The research, analysing the leading Key Performance Indicators and comparing them between the two years of investigation (2021 in the absence and 2022 in the presence of the telehealth service), highlighted potential changes in organisational and operational dynamics.

Results

The main results indicate a better efficiency of the Time Management of the operating room. The data show a significant reduction "of the index of re-planning of surgical operations" from 16.27% in 2021 to 7.5% in 2022. In addition, the number of surgeries performed in the operating room has been optimised from 71.4% in 2021 to 90% in 2022.

Discussion

Introducing the telehealth service in the Pre-hospital Pathway is a valuable tool to spread the culture of Change Management within the health organisation.

Enhanced operations management and improved patient experience are the tangible results of this study.

The economic burden of Atopic Dermatitis and Psoriasis in Europe: analysing the available evidence to guide a value-based decision making

Dr Floriana D'Ambrosio[1], Dr Ada Maida[1], Dr Ciro Pappalardo[1], Dr Anna Scardigno[1], Dr Anna Nisticò[1], Lawyer Roberto Ricciardi[2], Dr Giovanna Elisa Calabrò[1],[2]

[1]Section of Hygiene, University Department of Life Sciences and Public Health, Università Cattolica del Sacro Cuore, Rome, Italy. [2]VIHTALI (Value In Health Technology and Academy for Leadership & Innovation), Spin-Off of Università Cattolica del Sacro Cuore, Rome, Italy

Context

Atopic Dermatitis (AD) and Psoriasis are the most common chronic inflammatory skin diseases, characterised by a complex multifactorial etiology, in which genetic and environmental factors interact both in etiopathogenesis and development of the disease. With an increasing life expectancy and rapidly ageing population worldwide, their rising prevalence, also in the adult population, and consequent long-term morbidity and impairment represent an important but still underestimated public health issue. An assessment of their costs may be useful in providing recommendations for policy and decision makers in order to identify the most appropriate responses to patients' needs.

Methods

A systematic literature review was performed querying three online database (PubMed, Scopus, Web of Science) from January 2012 to October 2022. Studies carried out in European countries, written in English language, and focused on the economic burden of AD and psoriasis in the adult population were selected.

Results

The overall research in the three databases yielded a total of 18 studies. Across countries, AD and psoriasis were associated with large healthcare expenditures. Annual direct medical costs per patient with DA, whose main expenses were pharmacological treatments, specialised care and hospitalisations, ranged between €3133,00-€5191,00. Similarly, hospitalisations, medications, and outpatient care contributed to total direct medical costs within a variable range of €4755,00 and €7999,00 for patients with psoriasis. Average non-medical direct costs, including travel expenses, amounted to €39,00-€117,00 per AD patient and €0,4-€122,5 per patient with psoriasis. Moreover, mean out-of-pocket (OOP) expenditures to manage AD and psoriasis per patient per year were approximately €350,00-€927,12 and €60,00-€531,00, respectively. Productivity loss was the key driver of annual indirect costs, which amounted, per patient, to €370,00-€14.236,00 for AD and €379,00-€4221,00 for psoriasis. The severity of skin lesions, gender, age, and the involvement of comorbidity also affected the economic burden of these diseases.

Discussion

The management of AD and psoriasis in the adult population requires targeted public health interventions, also in the light of disruptive innovation, in terms of new available drugs, in order to guarantee adequate responses to the health needs of affected patients and the sustainability of health systems according to a value-based health care perspective. Our research provides a comprehensive view of the costs of AD and psoriasis in Europe. Assessing the burden of these conditions also in adults could guide a value-based decision-making process that can identify the most appropriate responses for patients, focused on their real health needs.

Institutional tools for controlling and preventing the conflict of interest and double loyalty of doctors

Dr Rodica Gramma

State University of Medicine and Pharmacy Nicolae Testemitanu, Republic of Moldova

The phenomenon of double loyalty and conflict of interests is frequently discussed in the modern literature. The ethical codes, from the most ancient times of the medical profession, announced the obligation of doctors to show full loyalty to their patients. With this fundamental idea of medicine in mind, patients generally trust the doctors' decisions from the first contact, with the belief that the physician will act in their best interest only . However, the challenges of the current medical practice put us in front of an unpleasant reality, when doctors have to choose between the benefit of their patient and the interest of a third party. A study carried out on a sample of 1070 doctors from different hospitals and primary care institutions in the Republic of Moldova determined the existence of the phenomenon of double loyalty. By anonymously completing an online questionnaire, doctors admitted that they frequently face such dilemmas and conflicts. Practically, every fourth respondent (26.4%) recognised the existence of a conflict between the interests of the patient's good and the economic benefits of the institution (the manager asked them to save institutional resources instead of providing patient's necessary treatment). Close to this number (23.3%) is the group of those who admitted that they should act in the interest of the insurance company, even if they understand that the conditions imposed are against the benefit of the patient. 69 respondents (6.4%) confirmed that some pharmaceutical companies offered them very attractive and motivating conditions to give preference in prescribing drugs from certain manufacturers. And the other 16 respondents recognised that they are employed at the same time in a public and private institution, having situations when they promote the private institution for their own financial interest. About 14% of the participants confirmed that they went through situations when they had to take the side of a colleague, despite the interests of a patient. All these situations significantly influence the moral climate, the integrity as well as the image of the staff of a healthcare institution. Thus, the managers of institutions mandatory should adopt some clear institutional policies with reference to cases of conflict of interests and double loyalty in medical practice. The implementation of important ethical tools for managing and, most important, for preventing such situations becomes an imperative of current healthcare management.

The importance of the interactive voice response on the sustainability of attendance in primary health care

MSc Daniel Teixeira da Silva, Dr Ana Fialho

Universidade Évora, Portugal

This research, which starts from the new challenges that primary health care has been subject to, in the face of population aging and the increase in chronic diseases that lead to greater pressure on health systems, analyses the improvement of attendance in primary health care services in order to make service delivery more efficient.

This article highlights the impact of the interactive voice response system (IVR) on the economic, environmental and social sustainability of attendance in primary health care, having denoted results in terms of human and financial, environmental resources with a reduction in face-to-face travel of the patients.

In this context, it is necessary to reflect on improving attendance in primary health care, in order to make the provision of the service more efficient and to prevent patients from having to go in person to, in particular to make appointments or request a prescription of exams and medicines that they need every month, which often implies sleeping outside the primary health care facilities, in order to ensure their turn, which the post-COVID has emphasised.

It is in this sense that we convene the interactive voice response system, as a tool that can improve access to primary health care, in a framework in which it is intended to be increasingly sustainable.

In this way, we will start our analysis path by assessing the state of the art of administrative care in primary health care, followed by a brief overview of the interactive voice response system in the context of health.

Additionally, at a later stage of maturing of the IVR system in primary health care, new potentialities may be associated with it. Namely, new potentialities may be associated with it, as we pointed out, the inclusion of information on dosage and on medication and on specific treatments for the patient, through the establishment of synergistic application between the IVR system and artificial intelligence, repercussions in terms of funding, with an increase in central government allocations for those with better performance and efficiency, accompanied by additional salary incentives for human resources.

Finally, it will also be possible to promote the integration of several different IVR systems, in order to facilitate the integration of care between hospitals and primary health care, always starting from a patient-centricity, in a call for the patient-oriented centring.

How could the organisational model of online pharmaceutical companies evolve in the future?

Dr Nadia Di Carluccio[1], Dr Fiorella Pia Salvatore[1], Dr Pietro Vito[2], Prof Primiano Di Nauta[1]

[1]Università degli Studi di Foggia, Italy. [2]Università degli Studi di Roma "Sapienza", Italy

How could the organisational model of online pharmaceutical companies evolve in the future?

The online pharmacy market in Europe and North America is estimated to reach 128 billion dollars in 2023 (Singh et al., 2020). The pandemic has accelerated the trend towards online purchases, registering 282 new pharmacies/parapharmacies, reaching around 1,145 establishments at the end of February 2021. Innovation and technology in healthcare have contributed to the affirmation of new organisational and managerial approaches in pharmaceutical companies, making the role of the pharmacist increasingly managerial.

In a study of Singh et al. (2000), it is highlighted that 76% of the respondents declared that e-Pharmacy is more convenient than the existing purchase way and that 35% of the pharmaceutical market in India refers to chronic diseases. This phenomenon affirms the importance of a "self-care" approach in the implementation process of healthcare assistance. Giua et al. (2021) highlight an increase not only in services of prescriptions and pharmaceutical products delivery but above all in telephone consultations.

This paper aims at highlighting how the pharmacy is not only a “pharmacy of services” (Decree 2010), but is also solicited to adopt new models to fit” and not “mis-fit” the challenging context. Starting from the System Thinking framework (Rubenstein-Montano, 2001), the next direction should be analysing interactions between the pharmacy business structures. Besides the need to focus not only on the (new) organisational models for the “online” pharmacy, it is also necessary to take into consideration the role of the pharmacist. If on one hand technologies represent great opportunity for consumers, on the other hand, they may put consumers at risk of losing the “pharmacist - patient/customer” relationship. It is important to take into account the introduction of appropriate tools and technical-professional transversal training characterised by a “T-Shaped” approach (Barile et al., 2021). In conclusion, the adoption of technologies, new knowledge, skills and professional experience of the pharmacist can co-exist.

Examining patient-reported feedback and their use for the improvement of health service

Dr Elisa Peruzzo, Prof Milena Vainieri, Dr Sabina De Rosis

Sant'Anna School of Advanced Studies, Italy

The Joint Commission International Accreditation Standards for Hospitals (2021), among Standards for Academic Medical Center Hospitals, also includes "the hospital measures, analyses, and—when necessary—improves the patient experience in order to enhance the quality of patient care". Thus, measuring and monitoring healthcare services' user experience and satisfaction is crucial to understand what to improve and what works. Despite this, some hospitals still have inflexibility and traditional hierarchical structures regarding quality improvement (Rahman and Osmangani, 2015). In fact, many healthcare organisations collect data about user experience, but their use is rare for service re-design and quality improvement actions (Coulter, 2016). The literature stresses the presence of several barriers in the use of patients' data, and the need of research in respect to additional impeding factors: professional, organisational and practical/data-related barriers (Davies and Cleary, 2005; Davies et al., 2008; Gleeson et al., 2016; Reeves and Seccombe, 2008).

In healthcare setting, the users' voice is mainly collected using PREMs (Patient-Reported Experience Measures) survey as a tool that allows to capture the standard dimensions of hospitalisation experience (Coulter et al., 2009). In Italy, a systematic, in-continuous and digital Observatory collecting PREMs about hospital stay is present in Tuscany and Veneto. Its system encompasses both collection and reporting to practitioners in real-time (De Rosis et al, 2020).

Our aim is to investigate what moves healthcare organisations to shift from data collection to data use, by exploring value-based initiatives of using patients' experience data.

The study is performed by using an online quali-quantitative questionnaire. For the analysis, we used Stata software for quantitative data and NVivo for qualitative data.

The results of survey allow us to investigate how and why different public hospitals implemented innovative practices focused on patients' feedback. The study is currently ongoing. Based on the preliminary results, we currently found the following determinants in the patient-data use. (i) At organisational level, mission, vision, cultural factors, structured team are considered the main drivers. (ii) At professional level, available resources, skills and competences in data reporting and data analysis appear the most important. (iii) At practical level, managerial tools that enable to collect and report patients' voice are determinants in the patient-data use.

About the practices' collection, we expect, first, to collect more practices implemented at ward level (micro level) by front-line professionals. Second, we suppose to find (i) more actions for improving, as a priority, the hospital comfort manageable at ward level (i.e., noise of the department), and (ii) more practices to minimise and/or solve aspects considered critical by patients and caregiver. Finally, preliminary data suggest a difficulty to manage positive aspects for enhancing best practices and for motivating professionals.

The study will provide insights to managers and professionals about the key aspects of patient experience for implementing strategies and practices from micro to macro level to increase the service quality, improving patient experience, and, at the same time, maintaining cost and efficiency.

A collaborative platform for person-centred information on health care availability, quality, and outcomes: the Italian National Portal for the Transparency of Health Services

Dr Fabrizio Carinci, Ing Fortunata La Valle, Dr Francesco Enrichens, Ing Giulio Siccardi, Dr Alice Borghini, Dr Domenico Mantoan

AGENAS, Italy

Context

AGENAS supports the implementation of health policies in collaboration with Regions and Autonomous Provinces. In 2021, the Agency was granted 25Mn€ to implement the "National Portal for the Transparency of Health Services" as part of the National Recovery and Resilience Plan financed by "Next Generation EU". Aim of the Portal is to use modern forms of targeted information to orient personal choices at anytime, anywhere. A specific attention is devoted to the delivery of health care at home or close to the point of residence, consistently with the reorganisation of services in the decentralised governance of the Italian health system.

Methods

The Portal is coordinated by a Steering Board ("Cabina di Regia"), including staff of AGENAS and representatives of Regions, National Associations of health professionals and field experts. The project will involve other Regions and Autonomous Provinces, representatives of citizens, professionals, and scientific associations, consistently with the directions of the program. The five-year workplan adopts an inclusive approach in which "communities of practice" will directly contribute to the contents, using an interoperability tool that will feed data to the Portal.

The system envisages three different user profiles: citizen, professional and policy maker. Health related information will be made available for all facilities identified by online searches, using keywords related to a user-specified health problem. Different projects led by AGENAS will complement the available data through updated health care quality indicators. A range of visualisations including infographics, maps and multidimensional outputs will be available on different devices to inform users dynamically.

Results

The five-year project started on 1st January 2022. During the first year, AGENAS has consolidated the coordination of the project, starting software development according to the approved workplan. A beta version of the Portal was delivered in late 2022, including a thematic search of health topics and a cartographic tool for the online search of health facilities. An alpha release of the interoperability tool and a Portal App available for initial testing on mobile for IOS and Android OS, have been deployed at the end of the year.

The main entry to the portal is available here. The beta version of the search tool is available here. The collaborative development has continued in 2023 in three directions: communities of practice, deployment of the new Content Management System, and modernisation of user experience of results from the National Outcomes Programme (PNE).

Discussion

The creation of national portals to deliver targeted health information to citizens and health professionals is increasing worldwide. However, heterogeneous approaches followed the pioneering platform developed by NHS Choices in the UK, showing different functions, features, and target end-users. Implementations range from platforms using credentials to offer services through the portals, to those delivering series of performance reports informing the public regularly and systematically. The Italian Portal somehow sits in between: while it does not attempt using personal health data, it endorses a comprehensive vision, based on the principle that health information is actionable only if is relevant, understandable, accurate and timely. Following lessons learnt during the COVID-19 pandemic, and consistently with the Resilience Plan, the Italian Portal aims to deliver health information responding to personal needs close to home, a goal that can be only fulfilled with the active collaboration of all relevant stakeholders.

Consulto: building a distributed system of vertically integrated micro-provider organisations offering hybrid care for people with complex conditions following a value-based care model

Dr Basem Higazy[1,2], Dr Baher Higazy[1,2]

[1]EPFL, Switzerland. [2]Consulto, Switzerland

Context

Consulto is a novel form of healthcare organisation composed of Virtual Integrated Practice Units (vIPUs). Each vIPU specialises in serving one patient population living with a complex medical condition or multiple co-occurring conditions. The vIPUs are organised as a distributed network of vertically integrated micro-provider organisations (VIMPROs). A vIPU has a team of independent healthcare professionals (HCPs) connected virtually and follows a pre-defined integrated patient pathway and HCP workflow. A VIMPRO integrates a dedicated team of HCPs, and tailored digital tools for HCPs customised to the vIPU workflow. It is also supported by digital patient companions offering tailored material for patient education, patient journey visualisation, PROMs questionnaires, a patient diary, and symptom tracker, among other functionalities that help the patient in their role as a partner in their healthcare journey. This decentralised healthcare ecosystem is designed and maintained by Consulto, a Swiss based startup, in partnership with leading hospitals, medical networks, and independent doctors.

Methods

The researchers used the value-based healthcare (VBHC) framework of Micheal Porter, 2006 to design the vIPUs. Each vIPU has the same 11 features as a physical IPU would, according to Porter. The researchers interviewed heads of departments of 13 centres offering integrated care in Switzerland, 3 Independent general practitioners, 14 specialists active in chronic pain management, and seven patients with low back pain for no longer than six months. The researchers conducted a scoping review of over 4000 articles published on virtual team-based care to define the benchmark and current best practices in integrated and managed care. They also consulted websites of providers offering integrated care whose work was not captured in peer-reviewed articles. They used design thinking and complex adaptive system thinking to develop the distributed ecosystem and the digital tools and infrastructure required to sustain it. Lastly, they deployed a user-centred design methodology to design the digital user experience (UX) and user interface (UI) for the HCP and patient-facing interfaces.

Results and discussion

The researchers advance Porter's understanding of an IPU by reimagining the IPU features in a digital native health system. They position technology not as an enabler to digitise a physical IPU workflow but as a transformer allowing IPUs to form, function, and scale outside hospital walls and across different healthcare networks. HCPs are administratively and fiscally independent but functionally bound to the vIPU or vIPUs they are part of. An HCP follows a pre-designed workflow as part of a dedicated team across an integrated patient pathway. An HCP workflow intersects with other HCPs' workflows at dynamic pre-defined events, such as a consultation between a neurologist and a physiotherapist to make a management plan for a patient with low-back pain after initial assessment by a pain specialist. This digital native and dynamic understanding of an IPU at the Meso level allows for new possibilities at the Macro level, i.e., building a decentralised healthcare ecosystem formed of a distributed network of vIPUs; a healthcare ecosystem system whose unit of healthcare delivery is no longer 'the individual doctor' but 'the team of dedicated HCPs' offering integrated and personalised care at a scale. This novel ecosystem solution shifts healthcare delivery from the current siloed paradigm to collective- and augmented intelligence — the combined intellectual capital of the dedicated HCPs. Foremost, It advances the VBHC agenda by endeavouring its first step: building IPUs at scale.

Young medical specialists in an ageing health workforce: why we should listen to their needs. German rheumatology as a case study

Dr Ellen Kuhlmann, Prof Torsten Witte, Dr Diana Ernst, Prof Alexandra Dopfer-Jablonka

Hannover Medical School, Germany

Background

Health labour market monitoring revealed a trend towards ageing health workforces, especially in high-income European countries, which exacerbates existing shortages of healthcare workers. These developments challenge health workforce management and strongly call for investment in retention and the young generation of healthcare workers. The pressure is especially strong for small medical specialties, where intra-professional competition is fierce and career options are more flexible. However, the needs of young health professionals are generally poorly reflected in health workforce policy and management, including lack of women in leadership positions despite growing numbers of women doctors and students. This research focuses on young medical specialists and explores their needs and perceptions. We use rheumatology in Germany as a case study, aiming to contribute to more sustainable health workforce policy.

Methods

A qualitative explorative approach and mixed methods were applied. A questionnaire-based online survey with young rheumatologists and residents (n=49) in Germany, in-depth qualitative interviews (n=11) and a focus group with residents and young rheumatologists in different career stages were carried out between December 2021 and spring 2022; additional expert information was collected. The selected country reflects labour market conditions of an ageing population and increasing workforce shortages, while the rheumatology case study considers a specialty that is strongly hit by shortages and a decreasing workforce trend in the young age cohort; the period of research considers the conditions of the COVID-19 pandemic.

Results

The findings put a spotlight on a number of problems and needs of young physicians that have not been considered adequately in health workforce management. The following major topics were identified from the survey and specified in the interviews: increase in stress and workload; long work hours that negatively affect the work-life-balance; gender inequality and sexual harassment, as well as lack of women leaders and role models, and poor support for childcare especially during the pandemic. The young physicians also called for improvement in career support and the establishment of mentoring programs, greater choice and flexibility concerning the rotation during residency, and overall more time for research. There was a general perception that health policy does not adequately support rheumatology as a specialty, e.g. poor remuneration schemes, and missing training facilities, while institutional conditions do not consider the needs of young rheumatologists. Some positive issues of rheumatology were also mentioned, especially greater continuity of patients, better patient communication, and less frequent emergencies in relation to other specialties.

Discussion

The results highlight crucial gaps in health workforce management that may increase stress and frustration of young rheumatologist and thus challenge effective retention. Our findings may provide some guidance for management efforts, yet action taken on the organisational level must be flanked by structural change in the health system.

Violence against doctors and health care workers: a view from junior doctors across Europe

Dr Ellen McCourt, Dr Alvaro Cerame, Mr Mathias Korner, Dr Francisco Mourao

European Junior Doctors Association, Belgium

Context

The right to health is a fundamental human right. This right extends to the safety of healthcare workers in the performance of their roles. However Junior Doctors and other health care workers are increasingly facing violence in their workplace. Violence is not restricted to the most severe or disabling physical violence, but includes physical, verbal, emotional/psychological, sexual and institutional violence; violence is perpetrated by our patients, their families, our colleagues, the media, the environments in which we learn and the systems in which we work. The violence experienced by Junior Doctors and other health workers has an impact on the individual and on the care they are able to provide for their patients.

Methodology

The European Junior Doctors Association (EJD) approached 24 member organisation to investigate the reported levels and nature of violence against junior doctors in their country, the preventative strategies deployed and the consequences and potential consequences on the specialist medical workforce of the future.

Results

EJD approached 24 European nations to gather existing data on violence against Junior Doctors in Europe. The results demonstrated extremes of experience with some nations experiencing high levels of serious physical violence and other low levels of physical violence but higher levels of emotional or institutional violence.

Junior Doctors from across Europe reported both experiencing and witnessing physical and verbal abuse against themselves or colleagues, verbal abuse was more prevalent than physical, with clinics being the most common location for primary care residents and hospital wards the most common location for hospital residents. Junior doctors reported increasing levels of violence during and following the COVID-19 pandemic. Junior Doctors also reported increasing levels of institutional violence resulting in poor morale, deteriorating mental health, and burnout.

Current and potential solutions were grouped into themes – actions for law makers/enforcers, actions for employers (sufficient security staff, sufficient clinical staff, adherence to zero tolerance cultures etc) and actions for doctors (de-escalation training, reporting to employers and police etc). For the potentially more ambiguous institutional violence - safe working hours, sufficient staffing, sufficient physical resource, increased professional autonomy, reduced administration tasks, and an open, honest and safe culture throughout the medical hierarchy were suggested as violence reduction strategies.

Discussion

Violence against doctors and health professionals exists in multiple forms. EJD recognise the hugely negative impact violence has on the socio-psychological wellbeing of doctors and other health professionals, the care received by patients and its contribution to rising levels of burnout experienced by the health workers in their workplace. Steps must be taken to protect the physical and emotional health of health workers in the workplace, and to re-conceptualise medical workforce planning to promote working environments and conditions that protect wellbeing and prevent burnout.

Caring for caregivers: a critical look at managing human capital in a struggling system

MA Friederike Sahling, MA Lukas Kerschbaumer, Dr Siegfried Walch
MCI – The Entrepreneurial School, Austria

Context

The care sector faces numerous challenges. One of the most pressing issues is the personnel shortage and the unfulfilled demand for skilled care professionals, which cannot be alleviated by the inflow of potential workers from other countries. Hence, maintaining high-quality care services and retaining experienced staff in the sector is crucial. The here presented study was conducted from March to July 2022 on behalf of the federal state of Tyrol, including 128 professionals from the health sector, identifying and counteracting current and prospective potentials, needs, and challenges in care and nursing.

Methods

Based on a desk research/literature review a guideline for interviews and a discussion group was established, always in close cooperation with a project advisory board compiled from representatives of experts of public health, health care politics, human resources, long-term, inpatient, and outpatient care. In sum, 49 explorative interviews with 128 participants ranging from experts in middle to high management positions, advocacy groups, works councils, physicians, and case and care management were conducted. The topics of the guideline were used as a rough orientation and at the same time, narrative elements were not only allowed but also encouraged. This approach provided insights into the different levels of the field in terms of day-to-day work, middle and higher management, and political advocacy. Participation was voluntary, all participants signed informed consent, and interviews were transcribed and analysed using content analysis.

Results

The results indicate the need for additional incentives for the nursing profession and financial support for nursing staff and students (e.g. waiving tuition fees for students, long-term expansion of support for trainees, housing assistance). The results also reveal a desire for changes in the daily working conditions. These changes include reducing weekly work hours, providing more predictability in scheduling, increasing flexibility in work hours, and providing better childcare. The study also reveals the need for addressing structural problems, increasing public awareness, and improving the representation of the nursing profession. It became clear that besides representation, appreciation, and staff shortages, the lack of management skills among executives has a significant negative impact on work quality. It is necessary for the management to align their agendas even more with the professionals in terms of contemporary work settings, relief for non-care activities to specialised service providers, and retaining older employees in the profession.

Discussion

The results suggest that higher salaries, more recognition, or better work schedules represent only half of the solutions proposed to improve or make the nursing profession more attractive. A central requirement of nursing and care professionals is the improvement of the management skills of decision-makers. This would mean a significant and sustainable upgrading of working conditions for nurses, as opposed to one-time bonuses or mere political promises. As a result, higher quality in personnel management and the management of work processes would contribute to a more positive image of nursing activities and possibly evoke more interest in the profession. As long as new professionals are put into an old, suboptimal system, turnovers will remain high, to the chagrin of staff and patients. The strained situation in nursing will therefore have to be combated not only by more personnel but also by targeted promotion of management skills.

Destructive leadership and psychosocial health among public sector care workers

Dr Marja Hult[1], Dr Marjo Ring[1], Dr Minna Kaarakainen[2],[3]

[1]University of Eastern Finland, Finland. [2]University of Eastern Finland, Finland. [3]Savonia University of Applied Sciences, Finland

Context

In this study we are interested in destructive leadership and psychosocial health among public sector care workers, especially mediating roles of job resources and work meaningfulness. There is recognised global shortage of care sector workers which make necessary to maximise staff retention and work-related health and well-being. Management problems and negative leadership i.e. destructive leadership behaviours have been found to be a part of the problem which is also harmful to employee health and wellbeing. The aim was to examine the effect of destructive leadership on psychosocial health through job resources and work meaningfulness among care workers.

Methods

This cross-sectional study is based on the data of the study among care workers. Care sector in this study is considers health and social care as well as early education and childcare. Cross-sectional survey data were collected from 600 public sector care workers in Finland in the spring of 2022. The response rate to the survey was 60%. A self-administrated questionnaire contained questions about background information and variables of interest: destructive leadership, psychosocial health, job resources and work meaningfulness. As a proxy for destructive leadership, we constructed an indicator using 14 questions defining adverse leadership, such as authoritarian, aggressive and abusive leadership behaviours. A structural equation model using path analysis was applied to test the hypotheses. Analysis method was path analysis which is a specific form of structural equation modelling (SEM), where all the variables in equation are sum variables.

Results

The hypothesised model did not have a good fit. Instead, a reduced model without a direct path from Destructive Leadership to Work Meaningfulness (non-significant) had an excellent fit: $\chi2$ [1] = 0.673, p=0.412, NFI=0.999, CFI=1.000, RMSEA=0.000 (95% CI 0.000–0.100). There was a significant negative relationship between destructive leadership and psychosocial health. Moreover, destructive leadership related significantly negatively to job resources. Job resources related positively to work meaningfulness. Job resources also had a positive relationship to psychosocial health. Work meaningfulness related positively to psychosocial health.

Discussion

This study highlighted the importance of the knowledge of harmful management styles in care organisations. Destructive leadership behaviours affect to the job resources, work meaningfulness and psychosocial health. Our novel proposed model, where the harmful effect of destructive leadership on psychosocial health was mediated through diminished job resources and decreased work meaningfulness, had a god statistical fit. In this study, destructive leadership had the strongest negative correlation with the following job resources: overall satisfaction with working conditions, social support at workplace and a possibility to participate in decision-making concerning own work. Study indicated that good job resources increase work meaningfulness, resulting from satisfying, motivating and engaging work situations and inspiring work tasks. In our results, destructive leadership decreased work meaningfulness, albeit the association was not direct. The work meaningfulness of care workers should be supported on every occasion by eradicating harmful leadership behaviours with education and training targeted to leaders.

Towards effective retention policies: working hours and EWTD compliance in Junior Doctors in Europe 2022

Dr Alvaro Cerame, Dr Ellen McCourt, Dr Francisco Ribeiro

European Junior Doctors, Belgium

Background

Increasing attention is being paid to the improvement of working conditions as means to achieve effective retention policies. Working conditions of Junior doctors (JDs) affect postgraduate training (PGT) outcomes and training, patient safety and physician's health.

Summary of work

A summary of European Working Time Directive (EWTD) compliance data gathered by the European Junior Doctors (EJD) during the year 2022 is presented alongside a review of the relevant literature.

Summary of results

EJD's data gathered for the 2022 National Interim Report Survey shows that 18 countries (75%) have transposed the EWTD for JDs into national legislation. 6 Countries, 25% of the sample decided not to implement the directive. In terms of enforcement of the directive, in the countries which implemented the European regulation our members report that it was not enforced in 14 countries (77%). In those countries, the National Junior Doctors' Associations report that no oversight system is put into place at the level of the PGT program, institution or regional/national level. Some countries report 60-70h per week as regular working hours. Only 4 members reported that the 48h-limit was enforced (Germany, Poland, Norway, UK). Those countries describe that there are oversight systems at the level of the program and the institution. Some countries report partial implementation of European regulations and the possibility of opting out from national regulations on a voluntary basis.

Discussion And Conclusion

Excessive working hours beyond EWTD and the absence of adequate resting times and facilities pose a serious threat to the wellbeing of JDs. Available literature shows that physicians with high burnout rates, high hourly loads, long hours and working extended night-shifts had a strong negative impact on patient safety. Evidence suggests that reducing working hours from long or continuous shifts and ensuring appropriate rest has been linked to fewer medical errors and fewer accidents. Moreover, reducing working hours where there is excess does not negatively impact PGT or patient outcomes.

Take Home Messages

More data needs to be gathered and on a regular basis on EWTD compliance in JD.

Oversight systems must be implemented as well as penalty systems when the working hours regulations are not complied with.

Reducing working hours and ensuring adequate rest time has proven to be a beneficial measure to improve JDs wellbeing and patient safety and does not negatively impact PGT.

Breaking barriers and perceptions: a path towards the increase of health professionals research engagement

MSc Liliana Sousa[1,3], Dr Carla Oliveira[2,3,4], Dr Ana Carvalho[1]

[1]Escola de Economia e Gestão - Universidade do Minho, Portugal. [2]FMUP - Faculdade de Medicina da Universidade do Porto, Portugal [3]i3S – Instituto de Investigação e Inovação em Saúde, Universidade do Porto, Portugal. [4]Instituto de Patologia e Imunologia Molecular da Universidade do Porto – IPATIMUP, Portugal.

Context

While the benefits of having health professionals (HP) participate/lead research projects within their healthcare organisation have been demonstrated, their research engagement remains suboptimal. With this project we aimed at understanding the main enablers and barriers that HP face to successfully engage in research, how they perceive organisational support, and how this influences their research engagement. Previously, we conducted a systematic literature review on enablers/barriers that HP face when engaging in research and performed preliminary interviews to understand and provide real-world examples of HP participating in research projects in Portugal (manuscript-in-development). Hereafter, a questionnaire was developed to validate theoretical assumptions.

Methods

The survey questionnaire consisted of four distinct parts: i) sociodemographic variables to characterise the sample; ii) evaluation of the main enablers and barriers identified in the previous literature review and preliminary interviews on a Likert scale); iii) assessment of the perceived organisational support (POS) through the proposed scale by Eisenberger et al (1986); iv) assess how this influences their research engagement, through an adapted scale. The target population under study includes 888 health professionals (medical doctors, nurses, and diagnostic and therapeutic technicians), working in public organisations from north to south of Portugal, specifically focused on clinically active HP that may or may not be involved in research. The questionnaire was distributed through Qualtrics software and the computerised system of the organisations, and the results were analysed with SPSS and SmartPLS software.

Results

We observed that 75.7% of HP who participated in the study are female, and most respondents are in the age group between 26-35 (33%), followed by the age group 36-45 years old (31.2%). Medical doctors are the most representative category in the sample with 35.8%, diagnostic and therapeutic technicians are the least represented category with 29.4% and nurses represent 34.8% of the sample, within 45 different specialties/health services. Through the results of the questionnaire, it was possible to identify motivation and personal interest as the main enablers for HP research engagement, while lack of time, lack of recognition and low organisational support represents the main barriers. The results also demonstrate that the level of research engagement is higher when the individual works in a university-hospital or in a health organisation linked to research institutes, and low levels of perceived organisational support negatively affects HP's level of research engagement.

Discussion

Although there is no direct link identified in the literature between POS and research engagement, we unravelled that the greater the perception of organisational support, the greater will be the research engagement level of HP, as we believe that the POS construct can have a mediating effect on research engagement, and the consequences of the high level of POS among HP are linked to positive cooperative behaviours aiming to achieve organisational goals. It's essential to align human resource management practices to strategically reinforce research involvement of Portuguese HP through time-management systems that recognise research activities, recognition and awards for involvement in research, and development of research support offices in health organisations. The main contribution with this PhD project is to provide a better understanding of the impact that active HP, performing research, have on the research culture in the Portuguese public health organisations, through a human resource management perspective.

People-centred care in a rural Catalan territory: how we relate and support each other among hospital and primary care professionals, and social and health integration in the close future

Laura Giménez Jordán[1], Miquel Perona Pagan[2], Míriam Ceña Rodríguez[2], Ester Chirveches Pérez[2], Lavinia Vico Besó[2], Jordi Milozzi Berrocal[1]

[1]Consorci Sanitari Alt Penedès-Garraf, Spain. [2]Institut Català de la Salut, Spain

Context

Our project is carried out in the territory of Alt Penedès-Garraf, in Catalonia. This territory is made up of 2 level 2 hospital centres, a CUAP (Primary Care Emergency Centre) and 12 basic primary care centres. Before the arrival of COVID with its catastrophic consequences for our health system, all the professionals had already detected the need to improve interprofessional communication in order to be able to provide adequate support according to each level of care complexity, refocusing energies on attention focused on the person.

Methods

We approached 3 aspects: improvement of the adequacy of referrals from primary care to second level centre, virtual support from hospital doctor to family doctor through teleconsultation, optimising patient return from outpatient hospital consultation to primary care centre. We created multidisciplinary work groups by medical-surgical specialty, with family doctors and hospital professionals. Protocols for clinical management and adequacy of referrals were developed for each specialty for prioritising the attendance, starting an empirical treatment or making supplementary tests. The objective is to provide the best care centred on the person, offering the health resource at the right time, be able to prioritise patients based on real need and making each phase of the care process provide added value. Instead of the teleconsulting, when a referral is inadequate, feedback is given to the family doctor by hospital doctor, in accordance with the agreed management protocols, offering management support if necessary.

Results

The project has helped us improve in 3 aspects: having health information traceability (thanks to a new computer platform), improving the adequacy of referrals to the second level, as well as the outpatient waiting lists and the improving communication between interlevel professionals basing clinical practice on person-centred care.

Discussion

At the beginning, the proposal generated some initial disagreement because feeling of disempowerment of family doctors, not being able to directly dispose of the resource they decide, as previously did. But at the long term, this barrier disappeared when it was understood that it was a patient centred model but also it increased de self-resolution and skills of primary care teams. Consequently, all professionals are involved in the care process, we avoid duplications and we improve the management of outpatient care and the efficiency of the care process. In the near future we will work to integrate social work into the same collaborative system, implementing a proactive function instead of a reactive one, detecting people at risk, and anticipating their needs.

Nursing homes and considerations on person-organisation fit theory to improve the recruitment and retainment of health workforce

MSC RN Lorena Martini[1], MSC RN Luigi Apuzzo[1], Dr Irene Gabutti[2], MSC RN Daniele Pandolfi[1], MD Domenico Mantoan[1]

[1]National Agency for Regional Health Services, AGENAS, Italy. [3]Advanced School of Health Economics and Management (ALTEMS). Catholic University of the Sacred Heart, Italy.

Context

Countries around the world have received recommendations to improve the attractiveness, retention and training of their health workforces (HWFs) within health systems. Back in 2006, the World Health Organisation (WHO) identified which countries were experiencing "critical shortages" of staffing and provided them with recommendations on key interventions to increase their attractiveness for retaining hired health workers. This challenge is greatest in nursing homes, which generally have lower wages but high working hours, low social relevance of work and suffer from lower investment than other sectors.

Methods

This study is a national survey carried out by the National Agency for Regional Health Services AGENAS, on residential care assistance structures, extracted from the Italian official national database. The questionnaire consisted of 57 questions and was sent to all national structures in the period from September to November 2021. Two independent researchers participated in the survey, assisted by a manager, who guided the researchers in constructing and conducting the survey as well as in the analysis of the data received. The structures were contacted personally when there were questions to which answers of dubious interpretation were provided. Statistics were performed in STATA 15.

Results

We received responses from 1509 nursing homes, in 19 regions (90.4% of the total). The results were analysed on the following variables: (i) Average seniority of doctors; (ii) Average seniority of nurses; (iii) Type of environment; (iv) Training programs; (v) Presence of the Director of Nursing; (vi) Use of electronic health records; (vii) Use of telehealth; (viii) Presence of the nurse on the night shift; (ix) Presence of the healthcare assistant on the night shift. The dependent variables (i);(ii) were related to the other independent variables through two multiple linear regressions. Significant associations are reported for medical personnel ($p = 0.05$) for the variables type of setting, presence of training, the nursing director, the use of telemedicine, the nurse and the health assistant on the night shift. For nursing staff, there are significant associations ($p=0.05$) for the variables type of setting, presence of the nursing director, electronic health record and the presence of the nurse and healthcare assistant on the night shift ($p=0, 1$).

Discussion

The type of setting seems to influence the willingness of professionals not to abandon their work, to the advantage of public nursing homes compared to private ones, due to the greater security that public work offers in Italy. Our research highlights the existence of some characteristics that can be managed by the management of a nursing home which can significantly impact the seniority of both medical and nursing staff. The characteristics favouring the willingness, on the part of healthcare professionals, to remain at work in a nursing home, must be well known by the managers of these structures, in what is known as the "war for talents".

The family or community nurse: definition of the staffing standard to involved by 2027

MSC RN Maddalena Iodice, MSC RN Marica Scotellaro, MSC RN Lorena Martini, Ms Mimma Cosentino, MD, PhD Alice Borghini, MD Domenico Mantoan

Agenzia Nazionale per i Servizi Sanitari Regionali, Italy

Context

The family or community nurse (FCN) is the health professional who provides nursing assistance in primary care. The reform, promoted by the National Recovery and Resilience Plan (NRRP), Mission 6 Health Component 1, defines the role of the FCN in the new Italian organisation of primary healthcare. The objective of this study is to define availability of nursing staff for primary healthcare facilities, estimating the minimum number of FCNs to be involved by 2027 in Community Health Houses (CHH), Community Hospitals (CH), Territorial Coordination Centers (TCC) and Continuity of Care Units (CCU).

Methods

The estimate of the number of available and active nurses in 2027, involved in National Health Service (NHS), was calculated by considering the estimated number of retirements (considering only the pension parameter at age 65), as well as additional staff availability resulting from planned educational plans in university courses. Regarding the educational pathway for nurses, the number of available and planned places for admission to the Bachelor of Nursing and Pediatric Nursing courses from the 2018/2019 academic year was considered, with a 75% success rate. Finally, to define the minimum standard of nursing staff necessary to assure the quality of healthcare services in primary care facilities throughout the Country the following parameters have been considered: services offered, operating hours and catchment area.

Results

In 2020, the number of nurses employed by the NHS was 264,686. Nurses trained in 2022-2026 and available by 2027 will be 61,760. The estimated number of retirements in 2022-2026 is 21,050. The estimated number of additional nurses available by 2027 is 40,710 and the estimated number of nurses available and active in 2027 will be 305,396. According to the reform, the reference standard is 1 FCN every 3,000 inhabitants within the primary care facilities. The FCNs will be distributed as follow: for each CHH (1350 financed by NRRP) 7-11 FCNs are planned, ranges 9,450-14,850; for each TCC (600 financed by NRRP) 4-6 FCNs are planned, ranges 2,400-3,600; for each CH (400 financed by NRRP) 7-9 FCNs are planned, ranges 2,800-3,600; for each CCU (600 by 2026 provided by reform) 1 FNC is planned (total 600 FNCs). The total amount of FCN needed will range from 15,250 to 22,650.

Discussion

The FCN plays a role in facilitating and monitoring the care pathway for all patient groups and ensures multidisciplinary integration, including health and social networks. The FCN promotes education and involvement of people and their caregivers, including through telemedicine and telenursing tools. The number of FCNs, who will be involved in the new territorial facilities, constitutes the nursing staffing standard that each region of the Italian territory will adopt to implement the new primary care reform, enshrined in Ministerial Decree No. 77/2022. The new model of territorial health care strengthens the Italian NHS, which will be more patient-oriented, close to communities and aimed at reducing inequalities in the country. Therefore, the FCN will play a strategic role in sustaining the Italian organisational model of primary care. Considering the additional number of FCNs needed in the near future, our result will help policy makers to plan the training offer.

Exploring the potential of community health workers to address future health system challenges in Romania

Dr Marius-Ionuț Ungureanu[1,2], Ms. Monica Georgiana Brînzac[1,2], Prof. Cătălin Ovidiu Baba[1]

[1]Department of Public Health, Faculty of Political, Administrative and Communication Science, Babeș-Bolyai University, Romania. [2]Center for Health Workforce Research and Policy, Faculty of Political, Administrative and Communication Science, Babeș-Bolyai University, Romania

Context

Similar to many health systems across the world, the Romanian health system has been facing with severe health workforce shortages in the past decades. Historically, the focus on addressing these challenges has been almost exclusively on fixing the numbers of health workers. Other relevant aspects, such as workforce distribution, innovations in skill-mix, workforce motivation, investments in uptake of innovative, digital solutions have not been part of the solution pack so far. Moreover, challenges and solutions regarded physicians, most of the times. Recently, community health workers have gained a lot of attention in the Romanian health system, given their potential to address challenging areas of the system, in order to improve access to, and quality and equity of health services. This paper aims at exploring those areas in which further investment is necessary in order to fulfil this potential.

Methods

This paper is based on a qualitative, exploratory analysis of policy documents in the Romanian health systems, related to health workforce and community health workers. Additionally, we have used existing scientific literature to identify models that can provide added value to the further development of the community health workforce in Romania.

Results

Currently, community health workers in Romania provide a mix of clinical, social and public health services. Existing legislation clearly delineate their roles, although not enough mechanisms are provided to ensure successful inter-professional collaboration with other healthcare professionals (including, but not limited to, general practitioners and nurses), social workers, mental health workers, and education specialists. Similarly, digital tools are not enough developed to support data collection and analysis, which could further serve to improve the quality of services provided and inform the range of additional services that beneficiaries need.

Discussion

Based on our findings, investments need to be done in order to fully equip community health workers to address individual and community needs. They need to include at least three areas: (1) initial and continuous professional development to support digitalisation of services; (2) adequate funding for provision of high-quality services; (3) improvement of governance mechanisms to ensure a better connection with the health and social care sectors.

Are community hospitals the next (door) big thing in France?

Pr Nicolas Sirven[1,2], Dr Catherine Keller[1]

[1]EHESP, France. [2]Arènes CNRS (UMR 6051) & INSERM (ERL 1309), France

Context

The 2019 reform of the healthcare system in France started the development of community hospitals (“hôpital de proximité”). The idea is to assigns hospitals new tasks and public health objectives with regard to population needs within the area they are located in. Community hospitals provide exclusively medical care in coordination with local ambulatory care providers. In the context of medical deserts and health workforce reduction, they provide a more direct access to medical technology in imagery, biology and e-health. Our research question is whether community hospitals provide substitute or complementary care to the local ambulatory sector?

Method

This study proposes a two-fold approach to this issue by combining an original two-fold cross-disciplinary perspective. First, quantitative evidence is derived from a longitudinal analysis of the determinants of spatial accessibility. Using hospital level data between 2016 and 2021, we estimated panel fixed-effects models with a two-step floating catchment area index for general practitioners, nurses, and chiropractors as the explained variable. Amongst the explanative variables, we give special attention to the Saidin index, a measure of technological equipment in the hospitals. The sign of the coefficient indicates whether community hospitals provide substitute or complementary care to the local ambulatory sector. Second, a theoretical debate explores the potential mechanisms at play underlying this result from a legal perspective. Several hypotheses are formulated and discussed.

Results

Our statistical analysis suggested that over the period, a small increase in the medical technology at the local level was strongly associated with an increase in the volume of ambulatory care from GPs, while no result appeared significant for nurses and chiropractors. Complementary analysis during the COVID pandemic in 2020 are currently being carried out. From a legal perspective, the community hospital seemed to achieved the expected spill over effects that where expected from a previous reform. In 2016, vertical integration of public hospitals (a.k.a. “Groupement Hopsitaliers de Territoire” – GHT) was meant to develop ambulatory activities in connection with hospital activity. We shall argue that community hospital success come from previously missing legal attributes. The 2019 reform provided five main legal innovation that gave community hospitals the required flexibility to meet the heterogenous health services needs in various local areas.

Discussion

Our results suggest that community hospital foster access to local ambulatory care without substitution effects. Amongst the potential mechanisms at play, our analysis underlined the positive influence of shared governance of the community hospital with local authorities and practitioners and inclusive leadership. Patients pathways of care are improved by a gatekeeping system as community hospital play the role of the first level of hospital care, and isolated GPs in rural areas can refer patients to specialised care more efficiently. These results support the idea that the community hospitals initiative in France is both innovative and disruptive.

REACHING OUT: a global peer support framework to sustain the primary care workforce in a burnout crisis

Mr Yunis Fazaldin[2]*, Ms Aminah Hussan[2]*, Ms Maya Satheeskaran[1]*, Mr Hajin Dho[2]*, Avishek Basu[1] *, Mr Samir Tariq[1]*, Dr Maria T Farkas[2]

[1]Imperial College London, School of Medicine, United Kingdom. [2]Imperial College London, Business School, United Kingdom
**These authors all contributed equally as first-authors to this project*

Context

The rise of burnout among clinicians has become a global crisis. A UK survey found that primary care doctors are among those most at risk of experiencing burnout (British Medical Association, 2019). With growing responsibilities and burden on primary care worldwide, this risk is likely to increase. Wider literature denotes that combined interventions to mitigate burnout, directed at both individual and organisational levels, are most effective in reducing work stress. Peer-support (PS) is one such intervention with a growing body of evidence. Defined as resources provided by colleagues, PS can take multiple forms, and can be either organisationally-mandated (formal) or informal. However, limited literature exists to evaluate what is needed to allow for effective clinician engagement with PS. This study aims to explore how PS manifests in primary care, and identify moderating factors of PS specific to primary care, paving the way for future interventions.

Methods

A narrative literature review (NLR) was first conducted to evaluate the attributes that result in successful engagement with PS in healthcare settings. The search was conducted over five databases using a set search criteria. Grey literature searches and snowballing were employed to highlight further titles for inclusion. Fifty-three papers were selected after screening and analysed for extraction of moderating factors. The qualitative study that ensued utilised semi-structured interviews. These were conducted on fifteen purposively sampled primary care clinicians across England to collect a national perspective. Clinicians included in interviews varied in seniority. Interviews were conducted online, recorded and transcribed verbatim, and subject to investigator triangulation. Transcripts were then analysed using inductive thematic analysis until theoretical saturation was achieved.

Results

The NLR yielded seven moderators of engagement with PS in healthcare settings among clinicians, including Hygiene, Facilitator and Organisational Factors, Accessibility, Time, and Sustainability. However, there was a predominant focus on secondary care settings and formal PS mechanisms. This motivated a qualitative study to explore informal PS mechanisms in primary care. The qualitative study identified five major forms of PS in primary care: emotional, professional development, work sharing, mentoring, and acts of friendship. Four primary care-specific moderators were evaluated: Interpersonal Relationships, Individual Traits, Practice-specific Factors (relating to aspects unique to primary care working environments), and Occupation-specific Factors (referring to aspects intrinsic to the primary care profession). These resulted in sub-moderators such as workspaces, workplace culture, hierarchy, and clinician self-perception. In the context of the NLR, findings were used to develop a comprehensive global framework to enhance clinician engagement with PS, for use by healthcare managers.

Conclusion

This study is the first, to the authors' knowledge, to focus on informal PS between clinicians, and fill critical literature gaps in understanding moderators of PS engagement in primary care. As such, optimised PS presents a unique opportunity to unlock more sustainable and resilient primary care workforces, that experience lower levels of burnout. The novel framework described in this study exploits commonalities between international primary care settings, and hence can be applied to European models of primary care. The framework offers a roadmap for health managers, outlining where efforts can be directed to improve clinician engagement with PS, by augmenting existing relationships between colleagues and their work environments. With healthcare systems facing increasing levels of austerity post-pandemic, this offers the opportunity to curate cost-effective strategies in workforce organisation and management to encourage retention and cohesion in primary care.

How to deal with the technostress in healthcare professionals? A balanced model between competencies and behavioural traits

Ms Alessandra Pernice[1], Dr Luca Giorgio[2], Dr Federica Morandi[1], Prof Americo Cicchetti[1]

[1]Università Cattolica del Sacro Cuore, Italy. [2]ALTEMS - Graduate School of Health Economics and Management, Italy

The COVID-19 pandemic has stressed the need to reorganise both healthcare services provision and healthcare workers. Specifically, there would be an evolution of health professionals, moving from healthcare to "digital healthcare" professionals (Brice et al., 2020). Therefore, it is of the essence to improve the competencies of health professionals so that they can adapt to the new way of working (Vaziri et al., 2020). Another point of attention, related to healthcare professionals' degree of preparedness and the behavioural consequences connected with the use of the technologies like as technostress (Brod, 1984; Weil and Rosen, 1997).

The aim of this study is to analyse both the level of digital competencies possessed by healthcare workers, and to provide evidence about the technostress phenomenon.

With this work we investigate the impact of digital innovation on healthcare personnel through a semi-structured questionnaire. The sample belongs to different organisational levels, enrolled both in clinical and administrative roles.

Before administering the questionnaire to a wide sample, we have decided to test it with a few numbers of healthcare professionals, who constitute our pilot sample. These professionals have been very helpful to test the validity of the questionnaire such as to obtain some preliminary results useful to respond to the proposed research questions.

The first result of the study will demonstrate an existing relationship between healthcare workers use of digital technologies their level of digital competences. Specifically, according to the literature, we have measured a direct correlation among these two dimensions, such as the higher is the degree of competencies possessed the higher is the use of digital technologies.

The second result we expect provides evidence about the correlation between the personality trait related to the openness to change and the use of digital technologies. Also, in this case we expect a positive correlation which demonstrates that the higher is the openness to change assessed in healthcare professionals, the higher is the use of digital technologies in patients' care.

Finally, the last expected result will demonstrate a certain degree of correlation between the use of technologies and the level of stress measured in healthcare workers, this relationship may be moderated by the degree of competencies possessed.

With this paper we will try to provide managerial and policy making implications. From a managerial perspective, the model will equip healthcare managers with the appropriate degree of skills and capabilities needed to manage technostress in their professional environment. From a policy perspective, national and regional governments should plan new and innovative training programs aimed at increasing familiarity with new technologies. This could help avoid all possible negative consequences of technostress, especially with regard to healthcare managers, given their strategic role within modern healthcare organisations and systems.

Employee voice: encouraged speaking-up reflecting on job satisfaction

Ms Eva Krenyacz[1], Mrs Agnes Devecsery[2], Mr Zsolt Molnar-Gallatz[2]

[1]Corvinus University of Budapest, Hungary. [2]St John Central Hospital, Hungary

Context

In recent times, the economic, political and legal environment has significantly changed for healthcare institutions. The shocks were caused mainly by the pandemic, continuous cutting back of budget, and resource extraction. Nevertheless, the employment status of Hungarian health workers was modified with the prohibition of informal payment and compensation/increase of wages (Gaal et al 2020). The payment settlement of other healthcare workers and support staff were not taken in place, and tension further increased in human resources. Due to the constantly worsening conditions, the hospitals' maintainer (State) expected to survey employee satisfaction without guidelines.

Research question

How do the healthcare workers evaluate the work factors in the hospital environment and how can management influence these factors in an over-regulated and polarised environment?

Methods

The research is based on quantitative methodology; a complex institutional satisfaction questionnaire was surveyed in one of the largest hospitals in Hungary. The first part of the questionnaire is the Minnesota Satisfaction Questionnaire (MSQ, Weiss et al. 1967) and the second part is an open-questioned assessment of environmental factors. The response rate is 25%, and data processing with factor analysis, used by SPSS, AMOS.

Results

First, the result is understanding the nature and assessment of satisfaction in the hospital and integration into the decision-making of management. The studied factors are classified based on correlations among the items of MSQ and qualitative evaluations (intrinsic, extrinsic factors and task enrichment, empowerment factors), that is outlined the actions of the dissemination (categorised by resource-intensive and relationship-based assignments).

The study highlights the roles of employees and organisational weak spots of human resource management (HRM) practices in a Hungarian hospital and provides a pathway to improving equity upset in the presented legal environment and/or in crisis times. The hospital management has taken on the task of assessing and managing the tensions arising from environmental changes and incorporating them into its strategy (HR), considering justice, equity and diversity.

The data are compared to international hospital results (Martins & Proença, 2012, Walkowiak & Staszewski, 2019), thus the management draws conclusions in an extended context.

Junior Doctors’ perception on the emerging and pressing issues on healthcare in Europe

Dr Alvaro Cerame, Dr Ellen Mccourt, Dr Francisco Ribeiro

European Junior Doctors, Belgium

Background

Europe is facing a substantial deficit of healthcare professionals, particularly physicians. It is important to understand the perceptions of junior doctors (JDs) in order to address some of the emerging issues and to focus on effective retention policies.

Summary of work

A summary of the National Interim Report survey was gathered by the European Junior Doctors (EJD) during the year 2022. This survey which was answered by 24 National Junior Doctors’ Associations explores the importance of different topics for this collective in the continent.

Summary of results

EJD’s data gathered for the 2022 National Interim Report Survey shows that 63% of the surveyed organisations claimed that Medical workforce planning was an issue of the utmost importance, fort 25% very important and only 12% of countries mentioned it was not important. At the same time to the question: Is post-graduate training (i.e. choice of specialty, training conditions, quality, examinations) currently a problem or is it expected to be a problem within the next 5 years? The answer were: 21% utmost important, 50% very important, 17 % important and 12% less important. We also explored how important was going to be the topic of flexible working schemes in their countries: 50% claimed it was less important that the other topics. Free mobility was also considered as not important or less important in up to 50% of cases. Whereas salaries were considered to be an emerging issue for many Junior Doctors organisations.

Discussion and conclusion

Medical workforce planning is an emerging issue which is vital to almost every JD organisation. There is an important deficit of doctors producing gaps in the workforce fuelling excessive working hours and damaging wellbeing. Salaries are algo a big issue for European Junior Doctors. Lastly flexible working schemes occupy a middle positions while mobility is not currently expected to be a problem in the upcoming years.

Do I have to share my “precious” knowledge? The role of physicians’ narcissism and commitment in the knowledge sharing practices

Dr Simona Leonelli[1], Dr Federica Morandi[2], Prof Fausto Di Vincenzo[3]

[1]Università di Padova, Italy. [2]Università Cattolica, Italy. [3]Università degli Studi "G. d'Annunzio", Italy

Background

Knowledge sharing within healthcare organisations is necessary since peer discussion is fundamental for solving complex clinical cases.

Knowledge sharing allows to share best practices, to create knowledge, and to learn opportunities (Bartol & Srivastava, 2002; Harb et al., 2021; Surve & Natarajan, 2015). However, knowledge sharing determinants are unclear, except for the debate about the role of technical and social aspects of organisations (Kim et al., 2020). In contrast, there are just little shreds of evidence about the impact of individual characteristics (Harb et al., 2021). In order to fill this gap, we intend to explore how personality traits, in particular narcissism, affect the knowledge-sharing behaviour among physicians and besides that how organisational commitment mediates this relationship.

According to Gentile et al. (2013), narcissism consists of three aspects: Leadership/Authority (LA), Grandiose Exhibitionism (GE), and Entitlement/ Exploitativeness (EE).

Methods

In order to answer our research questions, we collected primary data through an online questionnaire administered in the last quarter of 2020. Our sample was composed of 115 physicians. Data were analysed using the partial least square technique, using Smart-PLS software.

Results

Physicians scoring high levels of LA don’t share their knowledge because it helps them to maintain supremacy. In the second case, physicians scoring high levels of EE are more likely to share their knowledge, but only because this elevates them as gurus. GE shows a negative but not significant relationship. LA shows a positive and significant relationship with organisational commitment, while GE is negative. Acting as a leader pushes individuals to be more empathic regarding the organisation. At the same time, for those characterised by high levels of GE, the focus remains on the self. Finally, results show that organisational commitment is positively related to knowledge-sharing behaviour, but it fully mediates only the relationship between physicians’ GE and knowledge-sharing behaviour. Physicians characterised by high levels of GE negatively affect knowledge-sharing through the full mediation of organisational commitment (Figure 1).

Implications

Organisations with a low knowledge sharing degree should pay attention to individual traits and organisational variables such as commitment.

Clinicians’ perception of their work environment and resource staffing adequacy and their relation with well-being and care-related factors: reports from the Magnet4Europe baseline survey

Prof Walter Sermeus[1], Mr Simon Dello[1], Ms Dorothea Kohnen[1,2], Dr Luk Bruyneel[1], Prof Matthew McHugh[3], Prof Linda Aiken[3]

[1]KU Leuven Institute for Healthcare Policy, Belgium. [2]KU Leuven Research Group Work, Organisational, and Psychology, Belgium. [3]Center for Health Outcomes and Policy Research, University of Pennsylvania School of Nursing, USA

Context

Magnet4Europe is a cluster randomised controlled trial, with wait-list controls designed to evaluate the effects of organisational redesign, based on the Magnet® model, on nurses’ and physicians’ well-being in over 60 European hospitals (1). In the US, the Magnet model has been associated with improved mental health, reduced burnout, and turnover among nursing staff (2). Research activities conducted within Magnet4Europe are expected to improve significantly the work environment of health professionals in hospitals, especially after the COVID-19 pandemic. The current abstract aims to present a preliminary analysis of the baseline data collected among nurses and physicians at participating hospitals.

Methods

This study used a cross-sectional data set of direct care nurses (n=6,643) and physicians (n=2,187) from general acute care hospitals (n=64) in six European countries (Belgium, England, Germany, Ireland, Norway, Sweden). The data collection took place by means of online questionnaires between November 2020 and June 2021. Data were collected on clinicians’ perception of their working environment and staffing resource adequacy. Outcome variables included clinician well-being (burnout, job satisfaction, anxiety, depression, turnover intention, work-life conflict, overall health), organisational outcomes, and reports of patient safety and quality of care. In a first step of the analysis, individual data was aggregated at the hospital level and subsequently at the country level. Next, mean hospital scores for nurses and physicians of the various constructs were calculated by country. Lastly, we estimated the effects of clinicians perceived working environment and staffing on their well-being, organisational outcomes and reports of safety and quality.

Results

Our preliminary results showed that a substantial proportion of nurses and physicians in every country reported quality of care deficits, high rates of burnout, anxiety, and depression, job dissatisfaction, intention to leave, work-life conflicts, and poor overall health. Among both, nurses and physicians, improved work environments and adequate staffing resources had a substantially positive effect on all outcome variables.

Discussion

Our preliminary results indicate that European hospitals vary in the well-being of their clinicians, in organisational outcomes related to clinician well-being and patient care, and in the practice of patient safety and quality of care. This is reflected in nurses' and physicians' report working at participating hospitals. While we found that different nations have different levels of scores on various indicators of well-being and other care-related outcomes, and physicians and nurses are sometimes similar in their evaluations of their hospitals and their own well-being, the results accentuate the variation in average outcomes across hospitals within nations. In particular, they emphasise the extent to which both, physicians and nurses perceive the work environments as well as the staffing and resource adequacy within their hospitals in a common fashion which is strongly associated with the various outcomes that in turn can be improved in European hospitals with organisational redesign.

Migrant healthcare workers and exacerbating inequalities during the COVID-19 pandemic: what to learn from international experiences on health systems?

Dr Ellen Kuhlmann[1], Dr Marius-Ionut Ungureanu[2,3], M.sc. Monica Brinzac[4,3], Prof Alexandra Dopfer-Jablonka[5]

[1]Hannover Medical School, Germany. [2]Faculty of Political, Administrative and Communication Sciences, Babes Bolyai University, Romania. [3]Center for Health Workforce Research and Policy, Faculty of Political, Administrative and Communication Sciences, Romania. [4]Department of Public Health, Faculty of Political, Administrative and Communication Sciences, Babeș-Bolyai University, Romania. [5]Department of Rheumatology and Immunology, Hannover Medical School, Germany

Background

The migrant healthcare workforce (HCWF) is an important pillar of the health labour market. During the COVID-19 pandemic, migrant healthcare workers (HCWs) played a crucial role in maintaining healthcare delivery and resilience of the health system. However, there is evidence of disadvantages of migrant HCWs and structural racism, in particular from the UK and Brazil, while data are lacking for high-resourced EU healthcare systems with more effective pandemic policies. This study aims to research migrant healthcare workers through an intersectional health system-related approach. More specifically, we seek to contrast international findings from countries with worst case scenarios and a more favourable pandemic scenario in Germany.

Methods

An intersectional research framework was created and a rapid scoping study performed. In addition, secondary analysis of selected items taken from two COVID-19 surveys carried out in Germany was undertaken to compare perceptions of national and foreign-born healthcare workers, using descriptive statistics.

Results

According to the rapid scoping study, the available research is focused on worst-case pandemic scenarios of Brazil and the United Kingdom, highlighting racialised discrimination and higher risks of migrant healthcare workers. The German data, however, did not reveal significant differences between national-born and foreign-born healthcare workers for items related to health status, perceptions of COVID-19 infection risk, protective workplace measures, and government pandemic measures. Notably, this included COVID-19 infection as well as vaccination uptake. Nonetheless, items related to social activities and workplace conditions with higher infection risk indicate a higher burden of migrant healthcare workers.

Discussion

COVID-19 pandemic policy must include migrant healthcare workers, but simply adding the migration status is not enough. We introduce an intersectional health system-related approach to understand how pandemic policies may create and exacerbate inequalities, considering different levels of health systems, organisations and professions, and individual actors. During a global health crisis, health system failures may impact like wildfire and spark destructive dynamics of existing inequalities stemming from the work and living conditions of migrant HCWs.

Cross-border mobility: how to track different groups of mobile health professionals?

Dr Zoltán Cserháti, Dr Eszter Kovács, Dr Miklós Szócska

Semmelweis University Health Services Management Training Centre, Hungary

Context

Ensuring that health systems have the right number and skills of health professionals is a challenge. Good quality data and indicators are needed for human resource planning and the development and evaluation of related health policy interventions.

The emigration of health workers from abroad is a key problem for Hungary in terms of the supply of health professionals. The international practice of monitoring international mobility is based primarily on tracking graduates registered in the destination countries, with less emphasis on the perspective of the countries of origin. There are no agreed solutions for determining the losses from mobility, and the use of data from the country of origin is also limited.

Methods

Inflow data for medical doctors from the OECD Health Professional Mobility Database and outflow data from the Hungarian Healthcare Human Resources Monitoring System were combined for the period 2010-2018. Foreign-born and foreign-nationality medical graduates in Hungary were also tracked for the period. We analysed data separately for the six most popular target countries. Based on the data, we could identify different groups of mobile health professionals and different patterns for destination countries.

Results

The results of the analyses confirmed that data on the number of doctors registered in the destination countries are not suitable for determining the extent of outflows that represent losses in the countries of origin. A combined analysis of the indicators of mobility in the country of origin and the country of destination allowed the identification of different groups of doctors emigrating from Hungary. The effect of the outward mobility of doctors who graduated in Hungary in the context of student mobility could be isolated. Regarding different destination countries, the dominant mobile groups varied. For the UK, the mobility is dominated by Hungarian doctors, for Norway and Israel, the inverse mobility of medical graduates is the most significant. Both these two groups are involved nearly equally in the case of Germany and Sweden, while between Hungary and Ireland, the mobility of medical doctors born in other countries is also significant.

Discussion

The results point to the desirability of giving a greater role to monitoring outflows, losses and student mobility in international data collections and comparative analyses.

Health workforce planning: challenges, opportunities and recommendations from an international systematic literature review

MSc RN Lorena Martini[1], MSc RN Luigi Apuzzo[1], Dr Irene Gabutti[2], MSc RN Daniele Pandolfi[1], Domenico Mantoan, MD[1]

[1]National Agency for Regional Health Services, Italy. [2]Advanced School of Health Economics and Management (ALTEMS). Catholic University of the Sacred Heart, Italy.

Context

Healthcare systems around the world are facing great challenges in guaranteeing the supply of healthcare services in these particular years also due to the COVID19 pandemic. In this historical context, the planning of the health workforce (HWF) becomes fundamental to guarantee the correct offer of all the necessary services to populations. However, correct HWF planning is a phenomenon of vast complexity and not easy to manage, with potential risks in guaranteeing the necessary health services for patients, especially when there is a need to expand the health offer.

Methods

This is a systematic review of the international literature, with the aim of investigating which are the main methods adopted by governments and healthcare companies, to plan the recruitment and distribution of the workforce within the healthcare systems. The review was conducted during the period April-December 2022, by two independent researchers, adopting the model of the PRISMA methodology. Searches were conducted on the main databases such as PUBMED, Cochrane, Scopus, Google scholar, and grey literature searches were carried out, searching on government sites and scientific companies in the health management sector, with a focus on the topic of HWF management of health services. The support of a third reviewer was useful in evaluating the choice of articles to be selected.

Results

The search returned more than 6,000 documents, which were analysed by title, abstract, and full-text reading as we continued with the in-depth study and skimming of the articles themselves. Finally, 21 articles, including 12 systematic reviews, from countries around the world were included in our review, including studies conducted in Europe, North America, South America, Australia, Asia and Africa. All the countries of the world are addressing the issue of healthcare personnel planning, changing the provision of services towards person-centred systems. Our research has highlighted that personnel planning models based on different approaches: i) supply-based, ii) demand-based, iii) need-based, with personnel planning techniques generally based on specific models or on expert opinions.

Discussion

Through this review it is possible to appreciate how much the topic of HWF planning is addressed by all countries in the world. It emerges that it is difficult to find a method defined as a gold standard in this sense due to the extreme heterogeneity of the contexts and health needs of the population. A recommendation is certainly that of benchmarking between the various countries and optimising the collection and management of data, linking the system of services to that of costs, investing healthcare sector and adopting elastic systems and self-updatable that take into account all the needs and the different specificities of the health professions by not focusing exclusively on medical and nursing personnel, also considering the possibility of evaluating the skills actually used and their modification through task shifting activities and the modification of skill-mix.

What really matter for healthcare workers: a six pillars methodology experience

Dr Annarita Panebianco[1], Dr Luca Giorgio[2], Dr Federica Morandi[3], Prof Alessandro Ridolfi[4], Prof Americo Cicchetti[3]

[1]Istituto Dermopatico dell'Immacolata, Italy. [2]Graduate School of Health Economics and Management - ALTEMS, Italy. [3]Università Cattolica del Sacro Cuore, Italy. [4]Università San Raffaele, Italy

Context

In the post-COVID era healthcare systems are facing several new (and old) challenges. On one hand, the COVID-19 pandemic has revealed the need of a higher number of healthcare workers such as the necessity of new competences and skills. On the other hand, it has stressed some of the pre-existing problems: patients ageing and an increasing number of chronic conditions. Therefore, it is necessary to understand how to reshape healthcare systems and organisations to improve healthcare delivery. By taking into consideration the development patterns of healthcare systems, it is possible to identify six specific future perspectives: (i) Speeding up of the transformation and innovation processes; (ii) greater involvement of patients in their care pathway; (iii) development of new models of care delivery; (iv) digital transformation; (v) enhancement of the human capital; (vi) increasing networking and partnership development.

Methods

With the aim to investigate the work experience of healthcare workers, a survey has been performed involving 89 employees belonging to an Italian private hospital. To minimise bias and to ensure a representative sample, we employed a stratified random sampling strategy (Kish, 1965). Data collected pertain employees' feedback about their Employee Experience (EX), by using the Six Pillars methodology, which focuses on Integrity, Resolution, Expectations, Time and Effort, Personalisation and Empathy. The questionnaire was composed of 31 questions articulated into two sections. The first section concerns what they more appreciate in their actual position, while the second section aims at exploring which aspects may be attractive by thinking to a new position (or organisation) to working in. Answers have been provided through a Likert scale ranging from 1 to 5 where 1 is scarcely important and 5 is very important.

Results

The data obtained was aggregated by area of interest, i.e. which of the Six Pillars they refer to and by type of survey, divided per section (current job and possible new future work). The comparative analysis reveals that the importance given by the responded substantially varies between those section: it is the case of integrity and personalisation. Looking at the response by the category of healthcare professionals, our results show variance for the category of healthcare professionals and tenure. Employees directly interacting with patients, such as nurses, report a high value for empathy; it is also considered important by long tenured professionals. Finally, we show that all the respondents consider crucial the use of digital technology.

Discussion

In labour-intensive organisations, especially in the healthcare sector, human capital plays a critical role in the delivery of quality services. Thus, it is essential to understand healthcare professionals need to provide optimal care for patients. We aim to offer an innovative perspective on this topic, by assessing the needs and expectations of healthcare professionals. In the current context, characterised by scarcity and increasing resignation is fundamental to retain healthcare professionals: six pillars can be an important driver in identifying the changes necessary to reach the highest quality levels in healthcare service delivery, as well as in increasing the attraction and retention of healthcare workers.

Our study is not free of limitation. The sample size should be expanded also involving other hospitals. Collaboration with impartial and independent entities should be sought to obtain unbiased opinions and identify the most impactful actions on staff well-being.

Analysing the mediating effect of perceived organisational support on budgetary feedback and role satisfaction: evidence from healthcare

Dr Manuela Paolini[1], Dr Federica Morandi[2], Prof Fausto Di Vincenzo[1], Prof Domenico Raucci[1]

[1]University of Studies G. d'Annunzio, Italy. [2]Catholic University of the Sacred Heart, Italy

The accountability of care approach has profoundly changed the responsibilities and the tasks assigned to healthcare professionals. Physicians enrolled into middle managerial positions, requiring the pursuit of budgetary objectives as well as the fulfilment of clinical responsibilities. The hybridisation of "doctor-managers" role makes these physicians exposed to role ambiguities, causing unsatisfaction for their budget holder position, which can negatively affect behaviours and managerial performance. This leads to seek, within the research perspectives of hybrid professionalism, greater convergences of the new managerial role with their predominant clinical-professional culture.

Budgetary Performance Feedback (BPF), as driven by the related users' feelings, plays a key role in supporting a more effective incorporation of the managerial role. It provides doctor-managers with information about discrepancies between their actual performance and the goals they are expected to reach, helping to reduce their exposition to job uncertainties and the associated stressors. Nevertheless, in the healthcare management literature, empirical studies exploring the role of BPF from a psychology-based perspective are scant, mostly with reference to mid-level management's feelings towards this information.

The aim of this study was to shed a light on the role of BPF in influencing doctor-managers' budget holder Role Satisfaction (RS) and their Perceived Organisational Support (POS) as well as the mediating role of this latter in the feedback-satisfaction link.

We believe that to the extent BPF clarifies doctor-managers role expectations about budget, doctor-managers should feel well and perceive themselves as supported in their dual role. Also, favouring POS should reinforce well-being at work, helping to arise the degree of satisfaction with their role.

To test research hypotheses, questionnaires were administered to 332 doctors heading of Operational Units of Italian public hospitals, obtaining a response rate of 37.95%. Thus, a regression model was performed.

Findings highlighted that BPF positively influences both POS ($\beta = 0.523$, $p \leq 0.001$) and RS ($\beta= 0.301$, $p \leq 0.001$) and that POS fully mediates the link between doctor-managers' feelings of BPF and their RS (indirect effect of 0.193, $p \leq 0.001$).

Our results aim at increasing the knowledge in the accountability of care field. They contribute to the scant psychology-based empirical research into the individual-level benefits of accounting information, adding evidence on the neglected role of feedback perceptions in mitigating doctor-managers' role ambiguity reactions and related adverse psychological outcomes. Findings also suggest healthcare management to support doctor-managers by BPF to positively affect their psychological orientation towards managerial role.

Loss of empathy in primary care professionals after COVID pandemic. Strategies to regain empathy

Dr Oscar Garcia, Dr Carlos Bernades, Dr Antoni Peris, Dr Alba Brugues

CASAP, Spain

Context

Catalan Primary care teams (PCT) are responsible for diagnosis, cure and follow-up to be developed by specialist in family and community medicine, both doctors and nurses. Abilities both in clinical knowledge and communication skills is basic to perform daily work. COVID 19 pandemic meant a huge pressure on PCT after lockdown, with a notorious increase in consultations and a demanding immediacy attitude from patients to professionals. As a consequence, professionals performance shifted to defensive decisions, showing less empathy and an increase in drug and tests prescription. We aim now to show how we managed to recover empathy and better clinical performances.

Methods

We used the Jefferson Medical Empathy Scale, to assess the evolution of the different dimensions during the pandemic and post-pandemic. We also used healthcare quality indicators provided by Catsalut. The results of both results were correlated to study overdiagnosis and overtreatment.

Results

The results obtained in the monitoring of empathy over de last year show a significant increase in levels compared to the situation just after de COVID19 pandemic.

Discussion

The main finding of this study is the empathy growth in all professional groups especially among nurses. Considering the other groups a certain stagnation highlights among medical doctors and attention to costumer staff. There has been an increase of compassionate/palliative care concerning the most emotional aspect of empathy. Comparing to the literature available we may find almost a five point difference with the pre-pandemic state. The health care quality indicators studied show a tendency to improvement. The ones with the greatest improvement are the clinical decisions to demand complementary tests such as PSA blood test or radiology, opposite to pharmacological decisions. However, more studies are needed to confirm this improvement. The difference observed on empathy results among different sexes has to be considered. Previous reports in the literature show women present a better score when compared to men. Comparing gender we may initially state men worsen quicker in the Jefferson scale. However men are the ones with better results after the pandemic. This results may indicate difference in problem management between sexes. Conflict resolution approaches tend to be more impulsive among men and rather reflective in women. One of the key elements for improving empathy has been the reorganisation of the agendas and the workload of all levels of the team. To convey this, an Assistance Committee has been promoted. Made by two professionals from each estate of the team. Said Committee generates an internal consensus to improve work dynamics, care flows and the workload in the daily schedules of professionals. This consensus is validated by all levels and optimises the available resources in a coordinated manner.

The evolution of controllers from ideal role-types to hybrid roles in health-care organisations

Prof Antonella Cifalinò[1], Prof Stefano Baraldi[1], Prof Giuliana Monolo[1], Prof Paola Sacco[1], Mr Andrea Mariani[1], Prof Marco Rizzo[1], Prof Irene Eleonora Lisi[2]

[1]CERISMAS - Università Cattolica Sacro Cuore, Italy. [2]Università Cattolica Sacro Cuore, Italy

Scholars have long recognised that the roles played by controllers in organisations are particularly complex and ill-defined (Henning and Moseley, 1970). The vivid debate that developed around the topic starting from the 1980s (Hopper, 1980; Sathe, 1983) and that still characterises accounting literature nowadays (Wolf et al., 2020) demonstrates that an inherent ambiguity underlines the roles of controllers. Controllers perform a "service" function (Lambert and Sponem, 2012) that typically locates them at a difficult nexus of various functional or hierarchical boundaries (Goretzki et al., 2018). Accordingly, they navigate multiple expectations of various organisational counterparts, including the control-type needs of corporate top managers and the decision-making needs of business managers. As a result, controllers are typically assigned a wide-ranging set of tasks and responsibilities (Hartmann and Maas, 2011), variously related to scorekeeping, attention-directing and problem-solving functions (Simon et al., 1955).

The complexity and ambiguity of the roles of controllers is particularly evident in healthcare organisations, where they are confronted with multiple and different expectations such as those of clinical and financial management located both at the corporate level and the operating unit level. For example, in the health-care setting controllers need to cope with the trade-off between involvement and independence experienced when they take part in the decentralised decision making of clinical unit managers (Kurunmäki, 1999) or the process of hybridisation occurring between the expertise of medical professionals and management accountants (Jacobs, 2005; Kurunmäki, 2004). Nowadays, since the diffusion of big data and artificial intelligence offers great opportunities to develop new predictive analyses, controllers have to increasingly navigate complex and even conflictual expectations from various organisational counterparts.

Relying on the management accounting literature, the purpose of our study is to suggest a novel model to depict the variety of controllers' roles in healthcare organisations and to offer an empirical investigation of their diffusion in the context of the Italian-NHS. We used a web-based questionnaire method to collect data. Participants included 345 controllers from Italian health-care organisations listed in the Ministry of Health database.

Our model suggests that two variables are particularly relevant to analyse the roles of controllers: (i) their orientation toward the production of data/information rather that to their use to support decision and guide behaviours; (ii) their focus on short-term/operational results rather than on long-term/strategic results. Accordingly, four ideal types of controllers' roles are suggested, and namely: bookkeeper (orientation to data/information – short-term/operational focus); business advisor (orientation to decisions/behaviours – short-term/operational focus); performance officer (orientation to data/information – long-term/strategic focus); strategic partner (orientation to decisions/behaviours– long-term/strategic focus). Furthermore, empirical results offer an analysis of the diffusion of such roles in Italian health-care organisations. Results suggest that, while a given role may prevail over the others in each organisational context, pervasive hybridisation processes – combining more than one role at the same time - are mostly relevant to navigate multiple expectations and complexities. These findings offer relevant practice implications to frame and support the professional development of controllers in healthcare.

Preparing pharmacy professionals for new ways of integrated working

Dr Sarah Willis, Dr Ali Hindi, Dr Imelda McDermott, Prof Ellen Schafheutle

University of Manchester, United Kingdom

A workforce that can span organisational boundaries is key to delivering integrated healthcare. Yet developing a workforce with the capabilities to practise across an integrated health system, in different settings, is complex. It requires practitioners to navigate challenges to their professional identity, as purpose and expectations of workers differ between settings. Such differences can create tensions that become barriers to effective working. In order to prepare both workers and settings for new ways of working, training, time and resources are needed. In this paper we consider the conditions under which pre- and post-registration pharmacy professionals actively participate in different settings.

Methods

Data collection using semi-structured interviews involved two stakeholder groups: pre- and post-registration pharmacy professionals who were taking part in funded training and work placements across a number of settings, designed to develop practitioners who had both the capabilities to work in different settings, and the understanding of how their work in these settings contributes to integrated care (learners); and staff responsible for supporting and monitoring learners' developing competencies and capabilities (supervisors). Interviews explored: how learners entering a setting navigate the complexity of the role and are prepared for working within an integrated health system; what supports sense-making in practice; how learners are supported to become active participants in the workplace; how learners acquire the resources needed for action; how organisations support learners to meet the demands of a setting. Interviews were audio-recorded with consent, transcribed verbatim and anonymised before being analysed using a modified framework approach.

Results

Findings suggest learners cope with the challenges of a new setting through building up familiarity and involvement in a workplace. Interaction with a range of staff developed shared knowledge and provided learners with understanding of the structure and culture of the setting, creating the conditions for learners to flourish and sense-making to occur. Giving learners some autonomy in their work was important, as was recognising learners needed time to settle in and work out how to apply their skills within new contexts. Supervisors were viewed as instrumental for this to occur. They nurtured learners, provided constructive feedback on development, and were a key resource for learners to feel valued and supported, affording them with a sense of psychological safety. However, lack of clarity regarding purpose of the roles, and varying organisational priorities, resulted in little alignment between settings in terms of conceptualisation of integrated working outside of the local context.

Discussion

Key to preparing a pharmacy workforce that can work in different settings is effective workplace supervision. Supervision underpins learners' developing practice and promotes active participation in a setting. Yet confusion regarding the nature and scope of pharmacy professionals' beyond the local context produced some uncertainty regarding how best to prepare learners to work effectively in and across different settings. Because pharmacy practice settings are traditionally characterised as having different purposes, which is played out in different expectations and roles of pharmacy professionals practising there, for work-based experience spanning different settings to be effective, it needs to supported by supervisors who ideally collaborate across settings, with aligned organisational priorities and purpose.

Remote health care: the ambition of an inclusive organisational model

Eng. Valeria Giordano, Dr Gerardo Corea, Dr Daniela Sgroi, Dr Francesca Milito
ASL ROMA 3, Italy

Context

Both the actions of PNRR Mission 6 and DM 77/2022, containing the service standards and the reform of territorial care and which the Italian Regions will be committed to implementing over the next 5 years, place the possibilities offered by the digitisation of regional health systems. However, this innovation process poses the problem of the "digital exclusion", well highlighted during the COVID-19 pandemic.

However, the digital divide risks adding up to social inequality: social inequality is one of the main factors of the digital divide and at the same time the digital divide is one of the increasingly significant factors in the development and increase of social inequality, especially if it is combined with the territorial inequality, which favours the impoverishment of conditions of growth and autonomy and of social inequality.

It is therefore important that personnel committed to guaranteeing access to care, assistance and health promotion services for the whole population - including fragile people and immigrants - develop the skills and abilities useful both to work effectively within new care and assistance settings (telemonitoring, teleconsultation, televisits, etc.) and to ensure that the new integrated and digitally supported health services are inclusive of the entire resident population on the national territory.

Methods

It is therefore proposed to carry out a process of co-creation of the transversal skills that health care personnel will have to acquire in order to guarantee inclusive digital healthcare. The evaluation was carried out through field and study activities.

The European, national and regional reference documents were analysed and meetings were attended on the products of certain platforms regarding telemedicine services for the local health authority, also analysing and re-elaborating existing company services and procedures.

Short questionnaires have been designed regarding the necessary skills identified, in order to obtain inclusive remote care, and the professional roles to be included, in order to receive concrete feedback from all the actors most involved in these activities, thus submitting it to mostly company users dedicated to this.

Results

The results obtained from the analysis of the data and of the feedback received and processed at the end of the survey administration, will be used in specific workshops to identify and discuss the threshold skills and promote key roles, thus addressing them to the training managers of the healthcare companies and the regions, to responsible for the digital health services of the regions and healthcare companies, responsible for hospital-territorial and social-health integration, as well as doctors, psychologists, nurses, physiotherapists, professional educators, social workers, cultural mediators and technical personnel involved in digital health services.

Conclusions

It is suggested to expand this preliminary study, extending the survey to the identified professional roles and allowing the effective co-creation of the related soft skills.

Digital simulation as a tool for healthcare teams to acquire and improve managerial competencies

Prof Santiago Spadafora[1], Prof Bernardo Ramírez[2], Dr Irene Gabutti[3]

[1]Universidad ISALUD, Argentina. [2]University of Central Florida, USA. [3]Università Cattolica del Sacro Cuore, Italy

Throughout the years 2015 to 2019, ISALUD University, in Buenos Aires, together with other 12 Latin American and European universities, and in the frame of the Erasmus+ Capacity Building program – Cooperation for innovation and the exchange of good practices, developed the project "Professionalisation on Result-based Healthcare Management through Distance Education and Simulation-Based Training" -LASALUS-, which designed an e-learning collaborative Latin-American curriculum in healthcare management and the structure of a health management training simulator, with the aim to improve the managerial competencies of managers in healthcare organisations. In the last years we have expanded our network by developing a collaborative partnership with the University of Central Florida and the Catholic University of del Sacro Cuore in Rome. At the same time we have expanded the application of these virtual learning tools to our health organisations partners, to support our alumni and also the training sites used by our students. So, in a way it is becoming a 360 degree approach where we have seen significant benefits for our academic and professional development activities.

The result-based digital simulation in the different functional units is a powerful and practical educational and on the job training tool for those who hold managerial positions in healthcare organisations. Managers at all levels of a healthcare organisation can use digital simulations that contain diverse data scenarios to solve practical problems and situations and learn from the results of their individual virtual interventions. As they practice and further develop their competencies, they can also understand how to review managerial processes and then in real life improve their performance individually and in teams. As a management development and on-the-job training this method is a powerful practical learning tool. These digital tools are used for hard skills, such as financial management, cost containments, resource allocation, and outcomes measurement, but is also very effective for essential skills such as leadership, team work, communication, and negotiation skills.

Having a competency-based curriculum and a simulation tool to design different management scenarios for each of the products of healthcare functional units has been an extremely important step in the competency-based training of healthcare managers. The focus of our team to deepen and expand the training of managers, for them to be able to face the challenges of healthcare organisations in this 21st century are:

- The continuation and expansion of other projects aimed at the same end, such as the Latin American Consensus for the Internationalisation in Postgraduate Education -CONSENS-, designed together with other 15 Latin American and European higher education organisations that we started during the years 2020 and 2021, in the framework of the Erasmus+ Capacity-Building Project, Structural program.

- The joint work with other institutions specialised in healthcare management, such as associations of healthcare managers, such as ACHE and EHMA and hospital and other healthcare organisations associations to further integrate academia with practice.

With the results of these experiences, our group is increasingly promoting the international cooperation of universities with wide healthcare management expertise, with practicing organisations that will produce a synergetic development of successful projects aimed at the advancement and improvement of managerial competencies of healthcare teams.

Hospitals interface with modernity

Dr Luigi Bellante

Azienda Ospedaliero Universitaria S'Andrea, Italy

Context

The main purpose of each hospital company is to provide patients with diagnosis, care and rehabilitation activities, in a constant way, in quality and quantity, with optimal timing and costs. Advanced care services can be obtained if you make some considerations: first, an overview of the current characteristics of the Italian population, then the new type of patient, then the prescriptions of the current National Regulations of the sector. These instances, combined with each other, led to a rethinking of the hospital organisational model, bringing out, where possible, the model for "care intensity".

Methods

Have been researched virtuous Italian hospitals by intensity of care, grouped according to their basic needs and organisational logic. To complete this monitoring, a systematic review of the Italian literature on the subject of hospital care intensity and the impact of organisational innovations on care modalities was necessary. In particular, articles published on the following search engines were analysed: MedHunt, Medical World Search, Cliniweb, Doctor’s Guide, Healthfinder, Medical Matrix, Medweb, Web of Science. This activity was implemented by a review of the main publications on the organisational evolution of hospitals, as well as on the proceedings of conferences and literature prepared on the subject by Regional Health Agencies, Agenas and Companies. Four cases of intensive care hospitals were studied in depth: the community hospital – Alano di Piave – Veneto, the hospital Costa – Porretta Terme – Emilia Romagna, the hospital Galliera Genova – Liguria, the pediatric hospital Bambino Gesù Roma – Lazio.

Results

In the community hospital Alano di Piave, it was understood that a care reality had to be created that would meet the critical needs of geriatric patients and their social sphere. The Costa hospital - one of the first Italian truths for the intensity of care - follows for years the NICE algorithm for the classification of surgical complexity. The hospital of Galliera has a medical coordinator and a nurse for each area that provides a service, in this hospital diagnosis and treatment are carried out by processes and therefore with a vision of continuity and integration in care, going beyond the concept of department. The pediatric hospital Bambino Gesù, in order to meet the fragility of the patients it treats, it has within its own departments of super-specialisation, such as the inpatient unit of the Semi-Intensive Medical, Neonatal and Follow-up Unit (SIN).

Discussion

The intensive care hospital can be said to be the natural arrival of a process starting from the doctor and reaching the patient. The resulting change in hospital organisations has not only been of a building type, but, above all, functional, if we think that it has meant a profound renewal within the dynamics of Health Care Professionals and between them and the users who benefit from the services provided. In addition, there is a cultural change in the figure of the patient, aware and informed of his dignity and right to the best possible care, attentive to the respect of his "ethical" experience and no longer just a passive interpreter of the therapeutic act. In addition, as a result of technical and technological progress, there has been an important trend towards super-specialisation within the "caregiver" class, which can be managed by multidisciplinarity and teams.

The second victim phenomenon in Germany - results from the SeViD-studies

Ms Hannah Roesner[1], Ms Victoria Klemm[1], Dr Stefan Bushuven[2], Dr Matthias Raspe[3], Dr Hartwig Marung[4], Prof Dr Reinhard Strametz[1]

[1]Wiesbaden Business School, RheinMain University of Applied Sciences, Germany. 2Institute for Hospital Hygiene und Infection Prevention and Hegau-Jugendwerk Hospital Gailingen, Health Care Association District of Constance, Germany. 3Department of Internal Medicine, Infectious Diseases and Respiratory Medicine, Charité—Universitätsmedizin Berlin, Germany. 4MSH Medical School Hamburg, Department Health Sciences, Germany

Context

Second Victims (SV) are defined as healthcare professionals being traumatised by an unanticipated adverse patient event, a healthcare mistake, or a patient harm. SV may develop unhealthy coping mechanisms, such as depression, substance abuse, or social isolation, which will lower the standard of care provided to future patients. The SeViD (Second Victims in German-speaking Countries) questionnaire was used to better understand the Second Victim Phenomenon (SVP) in Germany. We investigated SVP in various occupational groups regarding prevalence, causes, and predisposition.

Methods

We conducted three cross-sectional online surveys carried out in 2019, 2020 and 2022 among convenient samples of physicians (SeViD-I), nurses (SeViD-II), and EMS-physicians (SeViD-III). The surveys contained 46 items. SeViD II and III additionally included BFI-10 to identify risk factors for prevalence and symptom load and explicitly assessed influence of the COVID-19 pandemic. Statistical analysis was conducted using chi² test and binary logistic regression models to study the influence of various factors on the risk of becoming a SV, the magnitude of symptoms and the time to self-perceived recovery.

Results

All studies showed a high prevalence of SVP of overall 57% (SeViD-I: 59%, SeViD-II: 60%, SeViD-III: 53.1%), with a 12-month prevalence among SVP of 61% of the physicians, 49% of nurses and 25.8% of EMS-physicians. The major incidents that led to SVP varied slightly. Unexpected patient death or suicide was the primary important event in SeViD-I (35%) and SeViD-II (29%). According to SeViD-III, the majority (29%) of important events included patient harm. In all studies, peer support was the most often requested kind of assistance. The top measures considering support strategies among participants were the opportunity to discuss emotional and ethical issues and prompt debriefing as well as crisis intervention after an incident. SeViD-I was conducted before, SeViD-II and -III during the COVID-19-pandemic. However, only a small number of SVP-causing occurrences (SeViD-II: 9%; SeViD-III: 4%) were linked to the COVID-19-pandemic.

Discussion

SVP is common among medical physicians, nurses and EMS-physicians. They all favor similar coping mechanisms and primarily look for peer support. The German healthcare system should create support initiatives emphasising peer support to assist SV. Only healthcare professionals who are emotionally and psychologically stable can deliver high-quality treatment to their patients and enable patient safety. Future studies should concentrate on expanding support solutions for health care systems globally and focus on further occupational groups.

Transforming Saudi Arabia's health workforce in the last phase system of care

Prof Julie Davies, Dr Zeyad Alghamdi, Dr Saud Altamimi, Ms Thamina Anjuman, Mr Guanzhong Huang, Ms Moza Al-thani, Dr Mateen Ellahi, Dr Yara Alsoqair, Dr Rawan Alshehri

University College London, United Kingdom

Context

Saudi Vision 2030 is driving health sector transformational change. The last phase of life system of care (LPSOC) is being re-designed as patient and family centric. Physicians in Saudi Arabia, however, do not tend to specialise in palliative care (Almutairi, 2023), an important component in end-of-life care (EOLC). Moreover, in the Kingdom nurses' knowledge of palliative care is very limited (Abudari et al., 2019). This study examines workforce transformations and culture changes required for compassionate care, patient choice, and hospice services in multidisciplinary teams to support patients and their families during the last phase of people's lives.

Methods

Our qualitative study included a two-week field visit in January 2023 in Riyadh and Jeddah where nine research team members interviewed 60 key policy makers and leaders using snowball sampling. These included vice presidents, the chief strategy officer, directors, business managers and management consultants in the Health Holding Company (HHC, Ministry of Health) in different clusters (i.e., health providers). We also interviewed a strategist of a major hospital group, partners in management consultancy firms, insurance organisations, and clinicians and administrators in public, private and specialist hospitals. Semi-structured interviews and focus groups with participants were based on transformational change literature and national policy documents, particularly Kotter's (1995) model of transformation which has been adopted in the Accountable Care Organisation Manual used to guide implementation of health strategy in the Kingdom.

Results

Interview data were transcribed and mapped onto the Kotter (1995) framework. Using the Gioia (Gioia et al., 2013) method, we identified key themes from our analysis: the importance of communications, culture change, and devolution. Pace was a key issue as well as the challenge of ambitious workforce plans in primary and palliative care which is not currently valued by the medical profession in Saudi Arabia. There are specific local challenges in Makkah in recruiting and retaining a Muslim only workforce in transforming the Kingdom's health system. Initial findings on workforce transformation challenges in the Saudi health sector for Vision 2030 were presented at a business club in the British Embassy, and at the alumni and health club and a research seminar in a local business school to check for understanding and whether the findings resonated with individuals and health care practitioners living in Saudi Arabia.

Discussion

Clearly, policy makers have driven a sense of urgency about creating a multidisciplinary LPSOC workforce in Saudi Arabia. Clusters are required to develop and implement a communications plan to communicate the cluster's vision. This might include patient stories to capture the imaginations of the public and health providers. Culture change from a 'cure' to palliative care approach must be embedded. Learning through wider consultations and approaches such as community participatory action research can support devolution. Professionalisation of and respect for the nursing workforce is also a key requirement for integrated and value-based healthcare within the Kingdom's strategic vision. There is significant potential for transforming the medical, nursing, and other clinical school curricula and for the Saudi Commission for Health Specialties to re-prioritise incentives for a critical mass of health care and associated professionals in the last phase of life system of care workforce.

Self-assessment of intercultural competences of medical doctors and nurses in Poland in the face of current refugee challenges

Dr Bożena Freund

Jagiellonian University, Faculty of Management and Social Communication, Cracow, Poland

Context

Health management is one of the most important (for society as well as for the economy) and at the same time one of the most complex systems subject to more and more numerous contemporary challenges.

For example, the health care system in Poland struggles primarily with insufficient numbers of nursing and medical doctors, as well as insufficient funding. A relatively new challenge is to secure the health needs of refugees, whose number is increasing because of behind our eastern border, i.e. in Ukraine, is war.

This raises the question of the substantive preparation of the nursing and medical doctor to work in a culturally diverse environment. Did they have the opportunity to train in intercultural competences? How do they assess their own intercultural competences? Do they see challenges in contact with foreigners?

Therefore, the aim of this paper is to present a self-assessment of intercultural competences of medical doctors and nurses in Poland, in particular in the context of current refugee challenges.

Methods

In order to achieve the assumed goal, an own research form was created, and then a nationwide survey was conducted among a group of professionally active medical doctors and nurses.

Results

The results of the research, in addition to gaining valuable knowledge, were used to draw up specific recommendations for improving the continuing education of medical and nursing staff in the area of intercultural competences. Based on the research results, guidelines for better management in public health organisations were also created.

Discussion

This text may be of interest to researchers of management in public health care organisations, and in particular human resources management in health care institutions, as well as practitioners trying to deal with current problems of public health management.

A conceptual framework to evaluate the socioeconomic impact of in-silico models for implantable medical devices

Dr Thomas Czypionka[1,2], Mag. Siegfried Eisenberg[1], Dr. Kraus Kraus[1], Mag. Miriam Reiss[1], Mag. David Rösler[1]

[1]*Institute for Advanced Studies, Austria.* [2]*London School of Economics, United Kingdom*

Background, aim and scope

The use of in-silico technologies for implantable medical devices has gained importance in the last decade. From a medical perspective, the term ‘in-silico’ mainly refers to computer simulations of clinical trials based on virtual cohorts. So far, the focus has been on development, verification and validation of in-silico models but impacts on the economy and society have been hardly investigated. Further, there is a lack of a concept how the impact of in-silico models on socioeconomic factors can be evaluated. As part of the EU-funded project SIMCOR, we therefore developed a conceptual framework to describe the impact channels from primal effects along the product development cycle to numerous socioeconomic endpoints. We will also report on our current state of work to develop quantitative assessment models.

Methods

We applied an iterative process to build concepts from data (literature, interviews) and set them in relation to each other using the method described in Jabareen (2009). Initially, we conducted a comprehensive literature research on the topic of in-silico technologies and their impact on product development that will be published as a scoping review. Information from the literature were complemented with expert interviews from academia, companies and regulatory bodies. Repeated steps of literature work, exploratory interviews and frequent discussion sessions among the research team led to the presented framework. The resulting framework was validated through feedback from experts from the project consortium.

Results

The conceptual framework describes the whole chain of impacts from the technical changes brought about by the use of in-silico technologies (primal effects) along the product development cycle up until the socio-economic endpoints. These are allocated to four different levels, namely ‘Firm’, ‘Market’, ‘Health System’ and ‘Society’.

The conceptual framework indicates that in-silico methods could not only accelerate product development and reduce costs, but also patient safety is expected to be improved, innovations are supported and the price for a medical treatment might decrease. Underrepresented patient groups may also benefit from the use of the technology, as it expands the possibilities to augment the number of individuals in clinical trials and model rarer anatomical configurations.

Since the whole conceptual framework has multiple complex impact channels that create a kind of network, each impact channel is explained with its ramifications.

Conclusions

The conceptual framework serves as a basis for the quantification of the impacts of in-silico technologies on firm, market, health system, and society and, consequently, the potential benefits as well as disadvantages can be estimated and better classified from different perspectives. Therefore, as a next step in the SIMCOR project, the conceptual framework will be populated with empirical information and used to develop models to assess the actual impact that might arise from using in-silico technologies. The talk will therefore also present the state of model development at the time of the conference.

The development of a time-motion guide to cost clinical best practices for infection prevention and control in patient care

Prof Eric Tchouaket[1,2], Ms Stephanie Robins[1], Ms Katya Kruglova[1], Ms Suzanne Leroux[1], Ms. Fatima El-Mousawi[1], Ms Maripier Jubinville[1]

[1]Université de Québec en Outaouais, Canada. [2]Université de Montréal, Canada

Context

Healthcare associated infections are serious adverse events in hospitals and long-term care facilities that are mostly avoidable. To ensure patient safety, healthcare professionals use clinical best practices of infection prevention and control (IPC). These include hand hygiene, hygiene and sanitation, basic and additional precautions and screening carriers and infected patients. To understand the cost-benefit of investing in IPC resources, assessing IPC clinical best practice costs is a prerequisite, and must be obtained using a reliable instrument. The aim of this study is to develop and validate a time-motion guide to cost clinical best practices for IPC in patient care.

Methods

As part of a two-phased economic evaluation study, our team developed a time-motion guide to capture the costs of human and material resources used when applying IPC clinical best practices. An extensive literature review was performed, and an advisory expert team defined IPC categories and items to evaluate. The guide was validated by 18 experts using the Delphi approach. Validity and reliability were evaluated using the content validity index and Kruskal-Wallis test respectively. A built-in chronometer measured the time staff spent on IPC practices; cleaning products used were simultaneously itemised. Once adapted to a mobile platform, the guide was pilot tested in December 2018 in medical and surgical units of two tertiary care hospitals. An external observer followed nurses, nursing assistants, orderlies, and hygiene and sanitation staff for two hours. Human and material costs were calculated using time-driven activity-based costing techniques. Sensitivity analyses were performed.

Results

The final guide included eight dimensions: two for the institution and personnel; six were clinical best practice categories. The dimensions contained 176 items. After two rounds of Delphi review, content validity of all dimensions surpassed the threshold of 80% agreement. Reliability was acceptable for all dimensions except two; expert feedback informed the final adjustments. Pilot testing showed the guide was feasible in a hospital environment and acceptable to both observers and staff. A total of 1831 actions were recorded across 48 healthcare professionals. The median costs varied from 19.6 cents per action for hand hygiene to $4.13 per action for additional precautions. The median cost across all clinical best practices was 27.2 cents per action. Observations revealed compliance with IPC standards: for example, median hand washing times were inadequate for soap and water (22.2 seconds) but met standards when staff used pocket-size gel (27.8 seconds).

Discussion

Our research program developed, validated, and tested a time-motion guide that provides evidence-based information on clinical best practice costs in IPC. Our findings reveal these costs are remarkably low (around 27 cents per action) which should be of great interest to policy makers and stakeholders in healthcare. The guide will be adapted for use in long-term care facilities where IPC has come into sharp focus due to the COVID-19 pandemic. To increase accessibility, the guide is being transferred to a publicly available web-based platform that can be used on or off-line. Ongoing work includes integrating the guide into a large-scale study where IPC cost data will be matched to patient care expenses incurred from healthcare associated infections. There is an urgent need to understand that IPC programs are cost-effective. For this to occur, decision makers must be provided with accurate cost estimates that support IPC resource allocation.

Economic implications of Assisted Reproductive Technology: more complications or different practices?

Dr Elisabetta Listorti[1], Prof Aleksandra Torbica[1], Dr Giovanna Esposito[2], Dr Matteo Franchi[3,4], Prof Fabio Parazzini[2]

[1]CERGAS SDA Bocconi, Italy. [2]Department of Clinical Sciences and Community Health, University of Milan, Italy. [3]National Centre for Healthcare Research and Pharmacoepidemiology, University of Milano-Bicocca,, Italy. [4]Department of Statistics and Quantitative Methods, University of Milano-Bicocca, Italy

Context

Given the increasing spread of Assisted Reproductive Technology (ART), the design of health policies directed to pregnancy care would benefit from a complete picture of the resources invested in ART pregnancies, compared with spontaneous pregnancies. Our study delves into the sources of costs of ART, as seen by a National Healthcare System perspective, and aims to disentangle the costs that are attributable to ART into 1) the costs due to complications that are more frequent in ART pregnancies compared to spontaneous pregnancies, and, if present, 2) the costs that refer to consolidated clinical practices not necessarily supported by scientific evidence.

Methods

By using the healthcare informative system of Lombardy, a Region of Northern Italy, we collected information on different types of healthcare services provided such as drugs, specialistic visits, access to emergency departments, and hospital admissions, for a cohort of women that experienced either spontaneous pregnancies or pregnancies after ART from 2007 until 2020. We used a propensity score matching technique to match couples of ART/No ART women, based on selected confounders, such as personal characteristics of mothers and fathers (e.g., age, socio-demographic features, healthcare expenditure during the year before conception, presence of comorbidity, multiple pregnancy, etc.). We then applied statistical tests and linear regression models to identify the impact of ART on the reported cost differences or logistic regression models for the impact on the probability of incurring in specific categories of costs.

Results

Our results provide a snapshot of the healthcare expenditure from the conception to the end of the year after the delivery, revealing significant higher costs for ART pregnancies, especially in terms of hospital admissions and drug prescriptions occurring before delivery. The differences that can be observed at a general level, i.e., by looking at all the healthcare services, are confirmed by looking into the details of the services related to the pregnancy. Moreover, results on the probability of spending for services related to complications confirm the higher risk incurred by ART pregnancies. Nevertheless, ART is also associated to higher costs for two consolidated clinical practices not supported by scientific evidence (aspirin and progestogen drugs prescriptions). The sources of expenditure where the direction of results is the opposite (e.g., ART pregnancies correspond to lower specialistic visits before and after delivery), open the discussion on the possible differences in usage of private healthcare services.

Discussion

We propose an interpretation of our results along three main directions. A first set of considerations is mainly clinical: our results add the opportunity to quantify the expense required to the NHS linked to the increased risk of complications in ART compared to spontaneous pregnancies. A second stream of factors may be labelled as "psychological". The anecdotal evidence collected during our study has revealed the possible overuse of some clinical practices for emotional and psychological support, which may explain the inappropriate consumption of progestogen and aspirin. Eventually, organisational issues remain embedded in the mixed combination of private and public services used during pregnancies (Wu, 2014). Notwithstanding the limitations mainly related to the data used (i.e., no information about out-of-pocket expenditures and micro-costing), our study provides a wide snapshot of the magnitude of the expenditures due to healthcare services in ART and No ART pregnancies.

“It takes more than two to tango”: an exploratory case study of payment reform feasibility in a prostate cancer network

MSc Thomas Reindersma, Dr Isabelle Fabbricotti, Prof Dr. Kees Ahaus, Dr Sandra Sülz

Erasmus School of Health Policy & Management, Netherlands

Context

In the Netherlands calls to reform provider payment are pervasive, with the government stimulating outcome-based payment models that should reward value for patients. One specific area of care where payment reform can potentially contribute to care improvement and financial sustainability is oncology. Fuelled by technological progress and a rising disease burden, cancer expenditures will quadruple in the next decades, further underscoring the urgency for reform. However, empirical evidence on feasibility and implementation of payment reform in oncology is lacking in the Dutch setting. We studied hospital actors’ perspectives on payment reform for prostate cancer that aimed to incentivise improved care outcomes.

Methods

An embedded single-case design was employed to study the prostate cancer payment reform initiative. The case entails a network of hospitals that are involved in the project. We investigated the multi-level units of analysis (the hospital, medical specialist enterprise (MSE) and physician) within the case as we want to find out how each level acts when confronted with oncoming payment reform. Interviews were conducted with physicians and managers from several hospitals in the network, and field notes describe observations during project meetings. Interview topics included the organisation of hospitals, the relation to its MSEs, its sales departments, and participants’ quotidian work activities and their perspectives on payment reform. To analyse the data, we chose an abductive approach, alternating between inductive and deductive analyses, to compare within and between levels. Further, we used institutional logics ideal types of managerialism and medical professionalism as an analytical tool.

Results

Payment reform was initially conjured as so to stimulate the uptake of novel interventions in the prostate cancer care pathway. However, most network hospitals already transitioned to these novel interventions without having been financially incentivised. Hospital administrators saw no urgent need for payment reform and claimed it would interfere with traditional hospital–insurer negotiations. Further, the small volume of prostate cancer supposedly cannot justify payment reform. Managers of medical specialist enterprises were not directly involved in the project; they are however an important actor as they mediate the hospital-physician relationship. Financial incentives are ideally transmitted via the medical specialist enterprise, which is responsible for physician remuneration. However, MSEs would prefer to maintain autonomy in how remuneration is determined. Physicians identified problems in the current reimbursement of care and suggest tweaks to current physician remuneration but are dependent on the willingness of hospital administrators and the MSE to effectuate change.

Discussion

Our results indicate that every studied level of the hospital can act as a ‘buffer’ in the transmission of incentives from insurer to the actual physician. In the absence of a strict organisational hierarchy, where sub-ordinates can be told to comply with administrative orders, the actors (hospital, MSE, physician) cannot coerce each other into participating in payment reform nor making sure that incentives are transmitted from one level to the other. In a practical sense, payment reform should not only focus on the insurer–provider nexus but rather recognise the provider organisation as a constellation of actors with diverging interests and scrutinise how internal financial arrangements within the hospital can provide alternatives for complex payment reform. In conclusion, current payment and financing mechanisms (i.e., DRGs and global hospital budgets) are institutionalised practices that prove hard to change, especially when a sense of urgency is lacking, and parties have different problem definitions.

Cost-utility analysis of patient consultations via teledermatology units versus conventional face-to-face dermatology examinations at the hospital

Dr Antonio Lopez-Villegas[1], Dr Mercedes Perez-Heredia[2], Dr Rafael Jesus Bautista-Mesa[3], Dr Cesar Leal-Costa[4]

[1]Poniente University Hospital, Spain. [2]Primary Care District Poniente of Almería, Spain. [3]Alto Guadalquivir Hospital, Spain. [4]University of Murcia, Spain

Introduction

Studies on the efficiency of teledermatology (TD) units are limited. The main objective of this study was to conduct a cost-utility analysis of TD consultations compared to conventional face-to-face dermatology (F-F/D) consultations performed at the hospital.

Methods

This is a randomised, controlled, non-blinded, interlevel, and multicenter study. During the six months of follow-up, we collected data from 450 patients and included them in the final analysis (TD: 225 vs. F-F/D: 225). A cost-utility analysis was performed to assess whether TD units are cost-effective concerning the cost per quality-adjusted life years (QALYs), from the Spanish Public Health System (PHS) and patients perspectives.

Results

During the six months of follow-up, from the perspective of the PHS, the patients in the TD group gained 0.05 QALYs more than the patients included in the F-F/D group. Additionally, TD reduced costs by 53.04% (€86.31 versus €183.81, respectively; $p < 0.001$) per participant. In-person visits decreased by 72.43% in the TD group. For the patients, TD reduced costs by 77.59% (€6.41 versus €28.60, respectively; $p < 0.001$). The cost per QALY was 63.34% higher for the patients in the F-F/D group than for those in the TD group. Finally, patients in the TD group saved 56.34% of the costs compared to the patients in the conventional follow-up group at the hospital (€92.73 versus €212.41; $p < 0.001$).

Conclusion

The results of this cost-utility analysis showed that the implementation of TD units was associated with significant cost savings from the perspective of the PHS and patients. Therefore, TD units are a significant cost-effective alternative to conventional hospital follow-ups.

The use of hospital care is decreasing in older people – Individual care needs versus health care policy

Dr Johanna Edgren, Dr Jokke Häsä, Dr Mari Aaltonen

Finnish Institute for Health and Welfare, Finland

Context

The number of people needing hospital treatment typically increases with age, comorbidities, and approaching death. However, the proportion of older people who use hospital services has decreased across Europe in the last decade. The decrease has begun already before the COVID-19 epidemic, which temporarily limited access to health care services. The aging population and the scarcity of health care resources affect countries worldwide. Identifying factors that can, for example, reduce avoidable hospitalisations, or situations where health care does not meet the needs of older population, is crucial. In addition, failure to offer proper hospital care can cause extra costs. We investigate to what extent the decrease in hospital utilisation over time is due to changes in the needs of older people and to what extent the changes can be attributed to changes in health care policy.

Methods

We focus on the change in hospitalisation rates in 2010–2019 among people aged 65 and older, also including home care (HC) and long-term care (LTC) clients. We explore cross-sectional data based on hospital discharge registers and the Resident Assessment Instrument (RAI), which is used to assess health, functioning, and service needs. The data include individual determinants of care use such as age, sex, living arrangements, difficulties in activities of daily living (ADL), cognition, dementia, and depressive mood. Research years refer to the periods of time during which changes have taken place in health care policy. A logistic regression model is used to explore how different individual factors and research years are associated with hospitalisations among HC clients. In addition, we use the Cox proportional hazard model to examine which factors are associated with hospital admissions among those living at home and those living in LTC care, and how those change over time.

Results

Among the general older population and those who receive HC or live in an LTC unit, the prevalence of hospitalisations has turned to decline in the years 2010–2014 and even to a sharper decline in 2015–2019 (figure 1). The phenomenon is seen among 65+, 75+, and 85+ years old. Firstly, hospitalisation rates have decreased in all regions in Finland. Secondly, there are differences in the reductions of hospitalisation rates between the regions in almost every year during 2010–2019. In a preliminary analysis, including only HC clients, higher age, living arrangements, ADL difficulties, and depressive symptoms increased hospital use. Instead, female sex, dementia, or severe cognitive decline decreased hospital use.

Discussion

The decrease in the hospitalisation rates of older people is present in both the entire population as well as the older people who receive HC or LTC. Especially the latter two groups typically suffer from functional decline, multimorbidity, and are nearing the end of their lives, and as expected, use many health care services. In Finland, access to health care services should not be dependent on the area of residence. Hence it is crucial to study the regional differences in depth and assess the potential differences in older people's morbidity and the organisation of health care services. Next, we will consider the changes in the factors describing individual care needs and reflect them on the changes in hospitalisations over the study period. This knowledge will help in planning and organising health care services and may affect political decision-making.

Critical approaches to medical desert in Europe

Ms Véronique Lucas-Gabrielli[1], Ms Marie Bonal[1,2], Ms Fei Gao[2], Mr Guillaume Chevillard[1], Ms Cindy Padilla[2]

[1]Institute for Research and Information in Health Economics (IRDES), France. [2]The French School of Public Health (EHESP), France

Context

The expression of medical desert is commonly used in the public and mediatic field referring to several situations or areas where people have difficulties accessing care (e.g. increased waiting times, doctor's registration difficulties, long distances to hospitals or care providers...). The identification of medical deserts is a major question given the difficulty in translating the concept of accessibility into operational indicators for policy makers. By taking advantage of the latest technical and methodological advances in geography, the issue is to address medical desert definition considering specificities of countries.

Methods

Beyond this difficulty linked to the polymorphic nature of the notion of accessibility (spatial, temporal, financial, social and cultural) the way to qualify it also depends on the configuration of the health care system, indicators, and tools available in each country. Aware of that, we assume there are several ways to qualify medical deserts, but we identify two complementary approaches that seem particularly relevant: (1) developing an accurate index of accessibility based on density, distance and XSFCA method which cross-reference density and distance indicators and (2) describe places with several indicators through multiple component analysis and classifications including other dimensions than healthcare accessibility like population characteristics and spatial attractiveness. Such work is required to better qualify medical desert but also to calibrate the answer to medical desert according to territorial specificities. These methods have been shared and used by seven European countries participating in the OASES project funded by the European Commission (https://oasesproject.eu/).

Results

Many countries focus on primary care to define the scope of medical desert which refers from a general point of view to the organisation of health systems based on the foundation of primary health care as "the first level of contact of individuals with the national health system" (WHO 1978, 2018) as opposed to specialised, secondary or tertiary care. The number of services is sometimes larger by including the hospital domain. In that case, the production of knowledge on territorial disparities is a view by indicators/professions that is promoted rather than an overall view of disparities. Some countries have proposed an atlas, composite index or typology as a solution. Concerning indicators, both densities, distance and XSFCA indicators are used according to type of services concerned and the availability of data in countries. These last ones are more complex but better specify the measure of supply, demand and their interaction.

Discussion

This work aims to represent a source of knowledge on European medical deserts on methods applicable and adaptable to various country contexts. Scenarios, established by the OASES countries, will make it possible to progress in the definition and identification of medical deserts. Each country will define the possible ways of improvement. Although the definition is highly constrained by the organisation and availability of data and tools in the countries, important experiences can be collected on the utilisation and applicability of the measurement instruments. All countries in the European Union and beyond will benefit from the lessons learnt, due to the diversity of country situations.

Understanding revealed preferences for pharmaceutical and non-pharmaceutical management strategies: evidence from a global study

Mr Marcello Antonini[1], Dr Mesfin Genie[2], Prof Arthur Attema[3], Prof Aleksandra Torbica[4], Prof Alessia Melegaro[4], Dr Ana Rita Sequeira[5], Prof Terje Hagen[6], Prof Brian Kelly[1], Prof Carole James[1], Prof Francesco Paolucci[1,7]

[1]University of Newcastle, Australia. [2]Auburn University, USA. [3]Erasmus University Rotterdam, Netherlands. [4]Bocconi University, Italy. [5]Murdoch University, Australia. [6]Oslo University, Norway. [7]University of Bologna, Italy

The transition from the pandemic to the COVID-19 endemic phase requires individuals to boost their vaccination coverage on a cyclical basis. Hesitancy, reduced uptake and refusal can threaten this transition and favour virus transmission and the potential emergence of new variants. To increase uptake and protect the population, governments might be forced to periodically implement forms of societal restrictions or vaccination mandates. Vaccine and policy restrictions features have been shown to influence acceptance. Understanding the trade-offs between vaccine and policy restrictions features in vaccination decisions may help governments to strategically design vaccination campaigns and facilitate the transition to the endemic phase.

A preference-based survey was administered to 51,600 respondents from 21 countries on six continents between July 2022 and January 2023 to explore preferences and trade-offs between vaccine features and social restrictions and predicted uptake of vaccination against COVID-19. Each respondent answered 12 choice tasks. A follow-up question with an opt-out option was also included. Each option had seven attributes (five vaccine features and two policy restrictions). A mixed multinomial logit model was used to explore preference heterogeneity within and across countries and calculate willingness to accept risk.

Respondents preferred a vaccine with higher effectiveness (b=1.27, 95%CI=1.24,1.30), a lower side effect (b=−0.03, 95%CI=−0.03,-0.03), a longer duration of immunity (b=-0.01, 95%CI=0.01,0.01), and a longer time to market approval (b=<0.00, 95%CI=<0.00,<0.00). Social restrictions negatively influenced preferences (b=-0.31, 95%CI=-0.29,-0.32). We found significant heterogeneity across countries. Some countries (e.g., Croatia, France, Russia and the US) considered the origin of the vaccine to be the most important attribute. Respondents were willing to accept a 0.04% increase in the risk of severe side effects to obtain a locally manufactured vaccine. In some countries vaccine mandates positively influenced preferences.

This is the first preference-based survey that considers vaccine characteristics and policy restriction features concomitantly in a large multicounty setting. Adopting a global perspective is essential to improve coordination among countries and adopt best practices for controlling the pandemic and managing economic and social spill overs from other countries. Vaccine characteristics appear to be more important than social restrictions. Investing in the development of more effective vaccines whilst imposing some forms of restrictions proportional to the underlying epidemiological situation could be a successful long-term strategy for mitigating the effects of the pandemic.

Barriers and facilitators to the implementation of digital technologies in mental health systems: a qualitative systematic review to inform a policy framework

Ms Chiara Berardi[1], Mr Marcello Antonini[1], Ms Zephanie Jordan[1], Dr Heidi Wechtler[1], Prof Francesco Paolucci[1,2], Dr Madeleine Hinwood[1]

[1]University of Newcastle, Australia. [2]University of Bologna, Italy

Background

Despite the potential for improved population mental health and wellbeing, the integration of mental health digital interventions has been difficult to achieve. In this qualitative systematic review, we aimed to identify barriers and facilitators to the implementation of digital technologies in mental healthcare systems, and map these to an implementation framework to inform policy development.

Methods

We searched Medline, Embase, Scopus, PsycInfo, Web of Science, and Google Scholar for primary research articles published between January 2010 and 2022. Studies were considered eligible if they reported barriers and/or facilitators to the integration of any digital mental healthcare technologies. Data were extracted using EPPI-Reviewer Web and analysed thematically via inductive and deductive cycles.

Results

Of 12,525 references identified initially, 81 studies were included in the final analysis. Barriers and facilitators were grouped within an implementation (evidence-practice gap) framework across six domains, organised by four levels of mental healthcare systems. Broadly, implementation was hindered by the perception of digital technologies as impersonal tools that add additional burden of care onto both providers and patients, and change relational power asymmetries; an absence of resources; and regulatory complexities that impede access to universal coverage. Facilitators included person-cantered approaches that consider patients' intersectional features e.g., gender, class, disability, illness severity; evidence-based training for providers; collaboration among colleagues; appropriate investment in human and financial resources; and policy reforms that tackle universal access to digital health.

Conclusion

It is important to consider the complex and interrelated nature of barriers across different domains and levels of the mental health system. To facilitate the equitable, sustainable, and long-term digital transition of mental health systems, policymakers should consider a systemic approach to collaboration between public and private sectors to inform evidence-based planning and strengthen mental health systems.

Taking a health systems approach to building a bespoke Readiness Assessment Framework for lung cancer screening implementation

Dr Suzanne Wait, Ms Helena Wilcox, Ms Eleanor Wheeler

The Health Policy Partnership, United Kingdom

Recognising decades of robust evidence demonstrating that screening for lung cancer using low dose computed tomography (LDCT) reduces mortality by at least 20%, several countries are now exploring the feasibility of implementing large-scale lung cancer screening programmes. Implementation of any screening programme is complex and requires systems thinking to anticipate how best to organise the screening programme and adapt all relevant aspects of the health system to accommodate it. It follows that ensuring careful system preparedness will be vital to ensure countries are equipped to implement screening in such a way that it can deliver the expected impact and make best use of available resources.

To date there has been no comprehensive implementation readiness assessment framework developed that could translate the lessons learnt from lung cancer screening implementation research into a tool to support those involved in the planning and delivery of implementation. The Lung Cancer Policy Network, a multistakeholder group of patient, clinical and research leaders in lung cancer from around the world, have developed a bespoke readiness assessment framework to support country-level implementation of LDCT screening for lung cancer.

This new framework aims to inform planning decisions, enable more effective prioritisation of resources and improve the efficiency and impact of screening. It will also help countries identify and address any existing system barriers that may hamper the success and long-term feasibility of a screening programme.

The framework consists of a series of metrics organised into seven overarching domains and takes a structured approach to assessing how 'ready' a given health system is to implement LDCT screening. Each domain includes technical guidance and other resources to support best practice implementation.

The seven domains are:

1. Legal and governance framework
2. Workforce and technical capacity
3. Financial planning
4. Eligibility and recruitment
5. LDCT screening delivery
6. Data monitoring and evaluation
7. Integration into the lung cancer care pathway

The framework was tested and refined based on application to five countries (Canada, Poland, South Korea, the UK and the US) where implementation has already taken place, using a combination of structured literature reviews and expert interviews. These combined findings led to a finalised framework, which have been built into an online toolkit for implementation, including infographics, 'how to' videos and a hub of useful templates, checklists and resources.

LDCT screening can shift the stage of detection of lung cancer earlier, allowing more people to be treated, and more lives saved. It is our hope that this framework can serve as a valuable resource to accelerate progress in screening implementation, helping those involved in the planning to clearly assess the health system workforce, technical capacity and other requirements needed to deliver high quality programmes across Europe, and globally.

The socioeconomic impact of informal elderly long-term care and its gender distribution. a systematic review

MSc (WU) Barbara Gösenbauer, Dr Alexander Braun

IMC University of Applied Sciences Krems, Austria

According to the third UN Sustainable Development Goal, healthy lives and wellbeing must be promoted at all ages (United Nations, 2015) – including quality elder care. But formal or professional care is a scarce good: Due to demographic developments of an ageing society, the demand for care services is rising – while the supply cannot keep up. Consequently, care is often provided by relatives, spouses or friends to complement or substitute professional services (European Union, 2021; Statistik Austria, 2021). This informal long-term care (iLTC) – unpaid care work performed by non-professionals on patients with a need for (professional) care (Barrett et al., 2014; Lindqvist et al., 2004) – is necessary to ensure sufficient care supply and often the preferred mode of care by care-recipients as well as caregivers. However, providing iLTC is burdensome (emotionally, psychologically, physically and socioeconomically (Bom et al., 2018; Dowling, 2021; Estrada Fernández et al., 2019; Folbre, 2018)) and contributes to inequality within society. Professional care services might, for example, not be used due to financial reasons (Luppa et al., 2010; Van Houtven & Norton, 2004) – forcing already economically troubled caregivers to reduce working hours and lose income. Since iLTC is mostly provided by women (Estrada Fernández et al., 2019; European Union, 2021), women are quantitatively discriminated (as a societal group) – while caregiving men are likely to face qualitative discrimination within their tasks due to role expectations and gender norms (Greenwood & Smith, 2015). According to Gidden's Theory of Structuration societal conditions – such as gender norms – are on the one hand shaping, on the other hand (re)produced by human action (Giddens, 1984; Turner, 1986) – including gender relations and identities, which are (re)negotiated within care situations (Zygouri et al., 2021).

To work towards ensuring care supply in a socially sustainable way (Reisch & Schmidt, 2017) and mitigate (gendered) socioeconomic discrimination of informal caregivers, we address the question "What are societal outcomes of the gender-unequal distribution of the provision of informal long-term elderly care towards female caregivers in Europe?" with a systematic review conducted in the databases PubMed and EBSCO CINAHL, where we screened 7,385 abstracts, proceeded to 157 full papers, and found 19 papers fitting the inclusion criteria. With a qualitative evidence synthesis (Booth et al., 2012), gendered socioeconomic outcomes of empirical studies are analysed and categorised into themes tangible by policy measures: 1) informal caregivers' labour market participation, 2) economic costs of iLTC, 3) family interaction and cohesion, and 4) social experiences and norms. Novel insights emerge from embedding fragmented empirical findings into a holistic societal perspective, opening possibilities for addressing (adverse) outcomes together on a policy level. The findings will be of interest for policy makers developing measures to ensure sufficient care supply whilst taking action against gender inequality.

Recommendations for the adoption of telemedicine services to access hospital specialty consultations in a pandemic context

Dr Ana S. Cunha[1],[2], Prof Ana R. Pedro[2],[3], Prof João V. Cordeiro[2],[3],[4]

[1]NOVA National School of Public Health, Portugal. [2]Public Health Research Center, Portugal. [3]Comprehensive Health Research Center, Portugal. [4]Interdisciplinary Center of Social Sciences, Portugal

Context

The COVID-19 pandemic has furthered the use of remote medical care to reduce face-to-face contacts and protect professionals and patients. In Portugal, the number of telemedicine consultations to access hospital care increased significantly. However, since the pandemic began, the rapid implementation of telemedicine may have also exacerbated inequalities in healthcare access. The purpose of this study was to generate consensus on recommendations to address the main difficulties in adopting telemedicine to access hospital consultations during the COVID-19 pandemic.

Methods

A Nominal Group Technique (NGT) was conducted with a multidisciplinary panel of 10 experts: three medical specialists, a health economist, two hospital managers, an hospital administrator in charge of data protection, an academic specialist in telemedicine, and two experts in digital health systems. The NGT experts panel was asked about "What recommendations would you propose to address the main difficulties experienced in adopting telemedicine services to access hospital consultations?". Following the identification of these recommendations, individual, independent and confidential voting took place using an online form, based on a Likert scale from 1 ("Not relevant") to 4 ("Very relevant"), which allowed ranking in order of relevance in a score of 10 ("Less relevant") to 40 ("More relevant").

Results

Twenty-two recommendations were generated. Recommendations classified as more relevant were the following: higher investment from healthcare institutions (37 points); creation of clear guidelines to ensure the safety and quality of telemedicine practices, including those related to data (34 points); training of professionals and patients to acquire digital literacy skills (34 points); inclusion of telemedicine in the curricula of health professions (34 points); development of local implementation models that consider the needs of stakeholders and the surrounding context (33 points); assessment of patients real needs regarding telemedicine aspects (33 points); integration of new technologies within the adopted ecosystem (33 points).

Discussion

The recommendations identified in this study highlighted the need for investment in health institutions, including professional training, technological equipment, human resources, and systems interoperability. Successful operationalisation of telemedicine should involve all stakeholders (health professionals, health managers and patients) in a collective and integrated manner. According to the World Health Organisation, digital health will only be adopted and add value if it is equitably and universally accessible, during and after an epidemic or pandemic situation. Furthermore, health systems must respect the privacy and security of health information. The recommendations generated by this study are in line with different national and international strategic lines of action recently created to ensure telemedicine adoption.

Amortisation of granted medical rehabilitation measures depending on the income status of German pension insurance scheme (DRV) insurees

MSc Robert Gutu, Ms Kerstin Ulbrich, Prof Dr Maria Weyermann

Niederrhein University of Applied Sciences, Germany

Context

In order to avoid early retirement (ER) the German statutory pension insurance fund covers the cost of rehabilitation treatment for employees whose working capacity is endangered due to health problems (principle of "rehabilitation over retirement"). However, according to section 13 of the Social Security Code VI (SGB VI) the granting of medical rehabilitation must adhere to the principles of economic efficiency and frugality. We aimed to describe the use of medical rehabilitation among insured persons received a disability pension between 2001 and 2020 with special consideration of potential sociodemographic determinants. Furthermore, amortisation of rehabilitation was estimated stratified according to different income groups.

Methods

Analysis based on 20% random samples of administrative pension records from the Research Data Centre of the German Federal Pension Insurance, which include all new cases of ER from 2001 to 2020 (DRV FDZ 2022). We estimated risks of non-utilisation of medical rehabilitation using logistic regression models. Age, gender, marital status, nationality, place of residence, education, level of employment, annual income (sum of the last three years before ER) as well as pension payment amount were considered as potential risk factors. Risks were further adjusted for diagnosis group and year. We calculated the amortisation of rehabilitation according to Schneider (1989). Therefore, we divided the insurants into quartiles of annual income. Within these groups, monthly pension insurance contribution was estimated from mean annual incomes, avoided EM pension payments was estimated form mean pension payment amounts. The average costs of inpatient medical rehabilitation are determined to be €5000.

Results

Among 575, 984 persons aged 25 to 64 years 288,871 (50.2%) did not receive medical rehabilitation in the five years before ER pension. Risk factors for not utilisation of medical rehabilitation prior to the granting of the ER pension are higher age, male gender, living on their own, foreign nationality, place of residence abroad, low or unknown education, low or unknown job requirement profile, low income as well as low pension payment amount. For example, adjusted risk (Odds Ratio [95%-Confidence Interval]) among persons with low income (1st quartile vs. 4th quartile), was 3.6 [3.5;3.6]. Using pension payment amount instead of income in multiple logistic regression model showed similar pattern. The length of employment after successful rehabilitation for amortisation the costs of rehabilitation increases with decreasing income (upper income quartile: four months, 3rd quartile: five months, 2nd quartile: eight months, lowest quartile of income: 18 months).

Discussion

The results show that low-income insurees are significantly less likely to take advantage of a medical rehabilitation measure before being granted an ER pension. Due to the lower contribution and EM pension payments, a considerably longer period of employment is necessary in this group of insured persons to amortise the rehabilitation costs after claiming the rehabilitation measure. One reason for the social inequality in the implementation of the principle "rehabilitation before pension" could be the difficulty of complying with the economic efficiency and frugality requirement when granting medical rehabilitation measures for low-income insured persons.

Utilisation of second medical opinions as a function of the payment track: population base study in Israel

Dr Liora Shmueli

Bar-Ilan, Israel

Background

The health system in Israel is based on a National Health Insurance Law. This is compulsory public-insurance that covers 100% of Israel's residents. The responsibility for providing the services has been placed on the 4 Health Funds (HMOs). The law allows the funds to also offer a voluntary health insurance program, which includes, among others, the right to receive a second opinion (SO) from experts. The service requires user-payment whether as a co-payment paid to the provider upon receipt of the service or as a reimbursement after the insured has paid the full price to the provider. In 2015, a reform was introduced on this issue, under which the option of reimbursement was abolished.

Objective

To analyse SO utilisation by two payment tracks: “financial reimbursement track” and “The network track” before and following a regulatory change in the national health insurance.

Study setting

Retrospective analysis of an electronic medical records of 18-months data (1.4 million patients per year), including secondary care visits data from Clalit Health Services, Israel’s largest not-for-profit insurer and provider serving 4.5 million members and claims data from the health-fund’s supplementary insurance.

Study design

Cross-sectional observational study.

Data extraction methods

An algorithm was developed to identify SO instances by payment method in a dataset using visits derived from Clalit’s central data warehouse and claims data from Clalit's supplementary insurance warehouse, based on data from electronic medical records. Multivariate logistic regression was used to identify characteristics of SO seekers by their payment method.

Principal findings

82% of the study population have a supplementary insurance, 13% of them consumed a SO (once), of which 75% preferred to receive the service as part of the basic basket. There was an increase of 45% in the demand of patients seeking SO consultations via the “network track” of the supplementary insurance during 2011-2017. Patients from the Arab sector, low socio-economic groups, immigrants and residents of central geographical areas tended to seek SO via the “network track” rather than the financial reimbursement track. Whereas patients from peripheral areas and Jewish Orthodox tended to seek SOs via the financial reimbursement track.

Conclusions

Before the regulatory change particular patient profiles, as patients from peripheral areas and Jewish Orthodox tended to seek SOs via the financial reimbursement track, despite the high co-payment. This phenomenon highlights the need of enhancing the accessibility of "network track" physicians among these populations. Analysing utilisation patterns will improve the ability to track consequences of this regulation due to their implications on expenditure, policy, clinical outcomes, and patient satisfaction.

Prioritisation of surgical patients during the COVID-19 pandemic and beyond: a qualitative exploration of patients' perspectives

Anouk van Alphen, MD[1], Dr Sandra Sülz[2], Dr Hester Lingsma[3], Dr Rob Baatenburg de Jong, MD[1]

[1]Department of Otorhinolaryngology, Erasmus University Medical Center, Netherlands. [2]Erasmus School of Health Policy & Management, Erasmus University Rotterdam, Netherlands. [3]Department of Public Health, Erasmus University Medical Center, Netherlands

Context

During the COVID-19 pandemic, prioritising certain surgical patients became inevitable due to limited surgical capacity. This study aims to identify which factors patients value in priority setting, and to evaluate their perspective on a decision model for surgical prioritisation.

Methods

We enacted a qualitative exploratory study and conducted semi-structured interviews with N=15 patients. Vignettes were used as guidance. The interviews were transcribed and iteratively analysed using thematic analysis.

Results

We unravelled three themes: 1) general attitude towards surgical prioritisation: patients showed understanding for the difficult decisions to be made, but demanded greater transparency and objectivity; 2) patient-related factors that some participants considered should, or should not, influence the prioritisation: age, physical functioning, cognitive functioning, behaviour, waiting time, impact on survival and quality of life, emotional consequences, and resource usage; and 3) patients' perspective on a decision model: usage of such a model for prioritisation decisions is favourable if the model is simple, uses trustworthy data, and its output is supervised by physicians. The model could also be used as a communication tool to explain prioritisation dilemmas to patients.

Discussion

Support for the various factors and use of a decision model varied among patients. Therefore, it seems unrealistic to immediately incorporate these factors in decision models. Instead, this study calls for more research to identify feasible avenues and seek consensus.

National Recovery and Resilience Plan: a mission to reform territorial health network by 2026

Dr Alice Borghini, MD, MSc RN Maddalena Iodice, Ms Mimma Cosentino, Dr Domenico Mantoan, MD

Agenzia Nazionale per i Servizi Sanitari Regionali, Italy

Context

The COVID-19 pandemic has highlighted the need to strengthen the capacity of the Italian National Health Service (NHS) to provide community-based health services, integrated with social services. In this context, Mission 6 "Health" Component 1 (M6C1) of the National Recovery and Resilience Plan (NRRP) was adopted. The interventions of M6C1 join a strategic reform aimed at redesigning the territorial health network by ensuring proactive, personalised, multidisciplinary and proximity care, which enable to enhance home as a privileged place of care for people with chronic diseases also through digital health tools.

Methods

Italy issued Ministerial Decree No. 77/2022, ratifying the reform planned by M6C1 of NRRP, which defines organisational, technological and structural models and standards for the development and innovation of territorial healthcare in the NHS. M6C1 has provided an investment measure of €7 bln financed with European funds and tied to the achievement of milestones and targets according to deadlines defined by a timetable articulated over the period 2021-2026. Three lines of intervention belong to M6C1, whose analytical breakdown of resources is as follows: (1) Community Health House (CHH) to improve territorial health assistance - €2 bln; (2) Home as the first place of care and telemedicine - €4 bln; (3) Strengthening Intermediate Healthcare and its facilities, Community Hospital (CH) - €1 bln. Starting from the socio-health needs and orographic conditions of the Country, the reform defines the services offered, operating hours, staff involved, and catchment area, also considering the ecological and digital transition.

Results

By 2026, M6C1 investments and related reform will provide: (1) 1,350 CHH. It is planned 1 Hub CHH each 40,000-50,000 inhabitants, open 7 days/week, 24 hours/day, with 1 Primary Care Physician, 7-11 Family or Community Nurses (FCNs), 5-8 support staff units, 1 social worker; (2) 600 Territorial Coordination Centers (TCC). It is planned 1 TCC each 100,000 inhabitants, with 4-6 FCNs, 1-2 support staff; (3) 400 CH. It is planned 1 CH (20 beds) each 100,000 inhabitants, operating 7 days/week, with 7-9 FCNs, 4-6 social health workers, 1-2 other health personnel, 1 physician 4.5 hours/die 6 days/week; (4) Increase the number of people over-65 treated in home care by at least 800,000 by 2026 to reach 10% of the over-65 population (1,500,000 people estimated in 2026); (5) Consolidate digital health to improve health outcomes and equity, reaching at least 200,000 people assisted with telemedicine tools by 2026.

Discussion

Italy, pursuing better health outcomes for the population across the Country, is investing in strengthening public primary care services through a health care reform, which is part of the European NRRP. This new strategy wants to enhance health of the population and decrease health inequalities, while reducing geographic variations and promoting the best experiences that emerged during the pandemic. The reform also devotes great attention to the issue of staff involved in outreach services, setting minimum standards for their needs. To ensure the full implementation of the requirements, a semestral monitoring is planned by Italian NHS authorities until the full implementation of the model, by 2026, to verify the effective reception and application of the standards in every region of the Country. This will help policymakers to guide the organisation of future staff training and recruitment plans.

Developing transferable theories to understand the interplay between standardisation and individualisation of care: a realist evaluation and synthesis of on-the-day surgery cancellations

Mr Buddhika Samaraisinghe, Dr Ross Millar

University of Birmingham, United Kingdom

Context

Globally, standardisation continued to dominate care delivery, but individualisation of care is key to delivering high-quality care. A strong evidence base indicated that an unacceptable prevalence of undesired outcomes (e.g., On the Day of Surgery Cancellations (OTDSCs), delayed hospital discharges and medication errors) were significant quality problems in Healthcare Delivery Systems (HDSs) all over the world. The study aims to understand the interplay between standardisation and individualisation of care influence undesired outcomes in HDSs. To achieve this aim, the study investigates a highly standardised system (i.e., surgical care) and a widely reported undesired outcome (i.e., OTDSCs).

Method

The study design is based on pre-registered protocol and consists of five phases that use mixed methods. The data was collected from National Health Service (NHS) hospitals in England. The study used the realist methodology and comprised a realist synthesis and evaluation. The theorising is completed using a purposeful literature sample related to OTDSC, two Patient and Public Involvement events, and eight structured interviews. Using a wide range of surgical and OTDS cancellation literature, the realist synthesis developed a series of causal explanations consisting of Context–Mechanism–Outcome Configurations (CMOCs) to minimise OTDS cancellations. The realist evaluation analysed around 90,000 patient-level data, and data from 28 semi-structured interviews conducted among healthcare actors presented a series of CMOCs related to OTDSCs. The review process was guided by the quality and publication standards for realist synthesis (Wong et al., 2013) and evaluation (Wong et al., 2016).

Results

OTDSCs are a complex and significant challenge in NHS in England, but they are mostly preventable. Around one in ten patients reported OTDSCs. The iterative analysis identified OTDSCs depend on a wide range of interconnected variables such as NHS policy (i.e., austerity measures), organisational contexts (i.e., high workloads, interruptions due to high emergency admission), and perceptions of healthcare professionals and patients. The high level of OTDSCs appears to result from the failure to manage the tension between standardisation and individualisation of care in NHS hospitals. Bringing all the CMOCs from the realist synthesis and evaluation suggested how various NHS contexts limit the clinical autonomy of Pre-Operative Nurse (PONs) practice, leading to increased OTDSCs. Consequently, an inadequate level of clinical autonomy of PONs is likely to influence behavioural mechanisms among PONs negatively – self-efficacy, situational awareness and compassion – leading to different aspects of individualised care, providing critical contexts to increase different types of OTDSCs.

Discussion

The study makes several novel and transferable theoretical advancements to improve HDSs. Globally, the surgical care systems are under extreme pressure to reduce undesired outcomes and improve waiting lists. The study developed taxonomies, and conceptualised a framework explaining how, why and what contexts minimise OTDSCs. The study produced a theoretical framework clarifying how and why, in what contexts, standardisation and individualisation of care can work together to minimise undesired outcomes in any HDSs. The study found that creating favourable organisational contexts likely improves the clinical autonomy of the healthcare actors. Consequently, promote self-efficacy, situational awareness and compassion in health care professionals to increase individualisation of care that minimises undesired outcomes and improves quality. In some contexts, standardisation contributes to OTDSCs and other undesired outcomes. The study cautioned policymakers globally to over-relying on standardisation, instead of creating favourable organisational contexts that provide sufficient clinical autonomy to increase individualisation of care to minimise undesired outcomes.

The implementation of the role of Operations Management in the healthcare sector.

Ms Rossella Pellegrino

Università Cattolica del Sacro Cuore, Italy

Context

The term Operations Management (OM) refers to the set of tools, roles and procedures that characterise the functioning of an organisation's processes to ensure efficient (waste-free) and effective production of the final output (Davies and Walley 2000, Langabeer II 2008). While there has been an evolution and standardisation of the discipline of OM in the manufacturing and service sectors, can we say the same for the healthcare sector? The present study tries to understand the state of the art of the OM function within healthcare facilities.

Methods

First, we developed a questionnaire: the constructs of interest were defined after a literature review and validated by a panel of experts in the field. The administered questionnaire was structured around six main sections: (i) hospital characteristics; (ii) tools and projects; (iii) organisational structure; (iv) planning and control; (v) human resource management; and (vi) barriers. The questions used a five-point Likert scale. The study included companies located in the Lombardy region that met one of the following criteria (i) public healthcare organisations (hospitals or ASLs), (ii) hospitals and private organisations (such as nursing homes) with more than 400 beds. In 2016, the Lombardy region initiated the social health care reform through Resolution No. X/5513 of 2 August, which also included a reference to the establishment of an operational management function in health care organisations. In this phase, we conducted a pilot test with on 26 healthcare facilities.

Results

The preliminary results of the pilot test show that 69% of the health facilities have an OM office, staffed mainly by nurses and administrative personnel. Except for three facilities where the office has full responsibility, its main task is to plan outpatient activities. In most cases (44%), the office reports to the General Manager. In the absence of the office, all decisions are taken by the Medical Director.

None of the OM's own tools seems to be used throughout the hospital: process mapping (mean=3.68) with subsequent re-organisation by process (mean=3.13) seems to be used moderately. In general, logistical approaches are underdeveloped on average. Furthermore, the main barrier to the implementation of the OM function is the resistance of doctors (mean=3.84). A significant difference (p-value=0.026976143) was found between public and private healthcare facilities: public organisations perceive patient flow management problems as less important.

Discussion

Although this was a pilot test, the analysis of the survey results provided some interesting insights. There was no standardised process for implementing the OM function. Therefore, the OM function should have a specific role within the organisational chart, have clear and comprehensive responsibilities, and use a multidisciplinary team (doctors, nurses, managers, engineers, statisticians), as shown in the literature. In addition, it is necessary to share knowledge and skills acquired in the field of OM, also drawing on lessons learnt from industry. There are not an infinite number of ways to optimise an operating theatre or to deal with bed management. It is a technical function based on management tools and techniques that should be implemented at both regional and national levels. The next steps in the research are to expand the survey sample and test/verify the relationship between the OM function and quality of care indicators.

Financial performance of Local Health Authorities in Italy: measurement and predictors

MSc BA Peter Perger[1], Prof Dr Achim Hecker[1,2]

[1]Private University for Health Sciences and Health Technology, Austria. [2]Digital Business University of Applied Sciences, Germany

Context

Hospitals are by far the most important Healthcare providers, and their costs are expected to continue to rise. The financial performance measurement of healthcare providers is less developed in Europe compared to other countries, especially when providers are publicly financed. Existing literature mostly focuses on varying financial key performance indicators (KPIs). Adopting such an approach makes it impossible to rank different KPIs in terms of importance or predictive power, and by their very nature, single KPIs only capture a single dimension of financial performance (markers of revenues, liquidity, and capital structure).

Methods

This study is a retrospective analysis of all Local Health Authorities (LHAs) in Italy over a 3-year period (2018-2020) based on publicly available secondary data. We construct a multidimensional common factor measure of financial performance and use a PLS-SEM model to establish its validity and reliability. We then use this measure to analyse the influence of different predictor variables, such as environmental factors (e.g., umbrella institutions' financial performance, population age, public market share), a structural factor (e.g. size), and an operational factor (e.g., complexity of treatment).

Results

Results of the structural model show that the environmental factors umbrella institutions' financial performance (e.g., financial recovery plans; path coefficient: -0.229), population age (path coefficient: -0.341) and public market share (path coefficient: -0.327), as well as the operational factor "complexity of treatment" (path coefficient: -0.348) all influence the financial performance of LHA in significantly negative ways. In contrast, the influence of the structural factor "size" (path coefficient: 0.175) is significantly favourable. The coefficient of determination (R2 value) for the overall model is 0.425 showing a good predictive accuracy as compared to other studies in the field.

Discussion

The study's results firstly establish a multidimensional common factor measure as a useful tool for LHAs (and healthcare providers more generally), but also policymakers, supervisory bodies, and researchers to measure, analyse, predict and manage the financial performance of healthcare providers. Our results also contribute to the understanding of how current policies and incentives affect healthcare providers' financial performance and help gain insight into potential solutions to improve current conditions. In consideration of the results of the study, for instance, reimbursement for population age and the complexity of treatment should be increased. Since the results show that size matters, the trend of LHA enlargement should continue, coupled with a certain amount of competition among public providers, in order to improve their financial performance.

Tipping the scale of resources - De-implementation of low-value care from an operant perspective

Mrs Sara Ingvarsson

Karolinska Institutet, Stockholm, Sweden

Background

Implementation science has traditionally focused on generating knowledge to bridge the gap between research and practice by implementing evidence-based practices. Lately the importance of working with the "opposite," i.e., de-implementation of low-value care (LVC) has been recognised.

So far, it is not known what factors influence use and de-implementation of LVC. It is also not known if the same theories, models, and frameworks are relevant for de-implementation as for implementation or what de-implementation strategies are effective. Applied behaviour analysis (ABA) is the only theory within psychology and sociology that discriminates between processes for increasing and decreasing behaviour. Something that could be important to understand factors influencing use of LVC and to design de-implementation strategies.

The overarching aim of the thesis was to generate new knowledge and insights concerning use and de-implementation of LVC. To achieve this aim, four studies were conducted with the following objectives:

- To identify factors that influence the use and de-implementation of LVC (Study I).
- To understand why physicians in primary care use LVC (Study II).
- To understand which management strategies are being used to de-implement LVC and possible mechanisms for those strategies using concepts from applied behaviour analysis (Study III).
- To demonstrate how applied behaviour analysis can be used to understand contingencies related to use of LVC and how de-implementation strategies can be developed by arranging alternative contingencies (Study IV).

Method

One scoping review, one qualitative study with physicians within primary care, using a grounded theory approach, one qualitative study with managers and key stakeholders within primary care on management strategies for de-implementation, and one intervention study were conducted.

Results

The scoping review showed factors influencing the use and de-implementation of LVC related to both the outer and the inner context, the professionals, the LVC itself, the process of de-implementation, and the patients and their relatives. The qualitative study showed three factors that influenced use of LVC: uncertainty and disagreement about what not to do, perceived pressure from others, and a desire to do something for the patients. The qualitative study on management strategies showed eight different management strategies: financial systems, scorecards, quality assurance systems, guidelines, lectures, local process strategies, discussions about guidelines, and local lectures. The intervention study provided an analysis of factors influencing use of one example of LVC. Based on the analysis, two strategies were developed and evaluated. Both strategies were perceived as helpful by the physicians participating in the study.

Conclusion

This thesis has provided knowledge about factors that influenced use of LVC as well as an understanding of how strategies for de-implementation can be developed. Factors external to the health care organisations seem to create a demand for LVC, mostly inadvertently through financial conditions that provide payment or reduce costs in relation to LVC. Factors within health care organisations, such as lack of continuity and standard ordering sets for laboratory tests, can also influence use of LVC, as can factors in the immediate environment of the individual health care professionals, such as problems with guidelines, pressure from others, and a desire to do something for patients. Strategies developed at a local level seem to have the greatest potential to influence use of LVC since they can be adapted to contextual factors. However, strategies targeting factors within and external to the organisations could also be necessary.

Tinkering with tensions: boundary work and collaborative governance

Dr. Sarah van Duijn

Vrije Universiteit Amsterdam, Netherlands

Context

Policies promoting and problems in achieving collaborative governance surrounding (health)care are commonplace across Europe. In the Netherlands, January 2015 marked one of the largest transformations of domestic governance to date: care tasks that previously had been centrally organised, became the responsibility of healthcare insurers and municipalities. These unacquainted stakeholders were required to collaborate to ensure integrated care for citizens. Using a boundary work perspective, this dissertation shows how decentral-level actors (i.e. healthcare insurers and municipal actors) and central-level actors (i.e. central government) 'tinker' with tensions as they collaborate to reform the Dutch long-term care system.

Method

Understanding healthcare reforms requires both zooming in on the everyday actions of actors implementing policies, and zooming out to wider societal dynamics surrounding a reform. I therefore took a novel approach in this research, drawing on both ethnographic field work and critical discourse analysis. Between 2015-2017 I 'followed' the micro-dynamics of how actors construct collaboration. I complemented my ethnographic work with a critical discourse analysis of policy and media narratives (from 2014-2015) to also understand societal dynamics.

Results

Tension 1. Epic vs tragic tales in healthcare reform

To show how central level actors shape competitive and collaborative relationships across the healthcare system, I analysed policy and media narratives. This analysis revealed that both epic and tragic tales have a function in reforming healthcare systems. Epic tales create support and inspiration as well as help legitimate decisions. Tragic tales, however, are also necessary. These show the reality of reforms and problems in their implementation. Although they may seem disruptive, they help policy makers think through practical consequences of reforms.

Tension 2. Integration vs differentiation in healthcare collaboration

Although the fact that healthcare providers think from their own perspectives is often stated with disdain, I demonstrate that differentiation is essential to collaborative endeavours. The value of collaboration is in bringing together different forms of expertise and ideas. Still, integration is required to find common ground and pursue joint objectives. This makes collaboration situational: visions may align on one topic and clash on another. Collaboration therefore requires actors to continuously navigate between competitive and collaborative boundary work.

Tension 3. Central vs decentral organisation of care

Pursuing integrated care often goes hand in hand with decentralisation. Local actors then become key stakeholders in governing healthcare. Based on my findings, I argue that it is important to keep the tension between centralisation and decentralisation intact: central governments may take on a coaching and facilitating role, while decentral actors can offer the central government feedback regarding how central policy ideas align to decentral situations in practice. Also, I show that decentral actors are not powerless and creatively resist centrally-mandated tasks that do not suit them.

Discussion

Strategies that target one tension in a healthcare reform may simultaneously impact another tension. Unintended consequences need to be considered when designing instruments to target the dynamics of decentralisation and collaboration. This does not mean tensions should be avoided or erased. Tensions serve a purpose: they make the system dynamic and adaptive. I argue for tinkering with tensions on a smaller spectrum, rather than having the pendulum swing from one extreme to another. Perhaps this would also make change initiatives in public sectors less invasive and costly, and more manageable for the stakeholders involved.