EHMA
European Health Management Association

ABSTRACT BOOK

#EHMA2022

EHMA 2022

FROM PEOPLE TO SYSTEMS:
LEADERSHIP FOR A SUSTAINABLE FUTURE

15-17 June 2022
Brussels, Belgium

The EHMA 2022 Annual Conference

EHMA 2022 is the 27th Annual Conference of the European Health Management Association taking place in conjunction with the association's 40th anniversary. It brings together key healthcare stakeholders providing the latest evidence to guide the much-needed transformation of health systems. It supports managers and health systems to excel at a time where the complexity of the challenge ahead is immense.

The 2022 conference theme '*From people to systems: leadership for a sustainable future*' explores challenges and solutions to creating sustainable health systems and ways health managers can lead towards them.

One of EHMA's main areas of work has been maintaining a dialogue between policymakers, health managers and professionals, thereby facilitating policy refinement and change. The EHMA 2022 Annual Conference is an occasion for health managers and professionals to have their voices heard, to connect with decision-makers, and inform policymaking at the European level.

Every year, the EHMA Annual Conference attracts research from leading universities, creating space to exchange knowledge on excellent delivery of healthcare and showcase evidence-based practices at the country, systems and organisational level. The conference is abstract-driven and features research by leading experts on the most contemporary topics on health management. It is a place for all healthcare stakeholders to come together to exchange innovation and best practices.

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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Karolinska Medical Management Center (MMC) & EHMA Research Award

The EHMA 2022 Annual Conference hosts the 20th edition of the Karolinska Medical Management Centre (MMC) & EHMA Research Award, promoting high-quality research on health management.

The Award was created to stimulate early career researchers to engage in healthcare management research. Since its establishment in 2002, the award has attracted numerous doctoral researchers who have submitted their thesis. For many young professionals, the Karolinska Medical Management Centre (MMC) & EHMA Research Award represents a launching pad for a career in health management.

All submitted abstracts are assessed by an independent panel composed of representatives of Karolinska Medical Management Centre and members of the EHMA Abstract Review Committee. Only a few abstracts are shortlisted and invited to present at the EHMA Conference.

EHMA acknowledges the long-standing partnership with the Karolinska Medical Management Centre (MMC) for the creation of this Award. We also acknowledge the initiator of the Award, Prof Mats Brommels, former Director of Karolinska Medical Management Centre; the current Director, Prof Henna Hasson, also Head of Unit for Implementation and Evaluation at the Center for Epidemiology; and Dr Pamela Mazzocato, Co-leader of the Clinical Management Research Group at Karolinska Medical Management Centre for their continuous support.

Prevalence and predictors of care left undone among physicians in acute care hospitals across six European countries

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Abstract

Context

The phenomenon of missed nursing care (MNC) has been studied extensively and has been linked with rationing in healthcare systems; it is also considered an indicator of poor hospital care quality. The mediating effect of MNC as a process measure between systemic and organisational factors and patient outcomes is well established.[1–3] These findings have not been documented in other healthcare professionals (e.g. physicians) active within acute care hospitals. This study aims to estimate the prevalence of care left undone among physicians and explore the associations between the perceived quality of the work environment and care left undone.

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). Self-reported missed care is assessed using an instrument comprising 11 items, the instrument is conceptually derived from the Tasks Undone scale.[4] The organisational context of physicians is characterised using an instrument based on the Practice Environment Scale of the Nursing Work Index.[5] The instrument includes 9 items relating to concepts of interdisciplinary teamwork, leadership, staffing and autonomy. A logistic hierarchical linear model with a random intercept is used to evaluate the association between the organisational context and missed care among physicians.

Results

Across all 69 European hospitals, 2.167 physicians responded to the online survey in an average of 31 physician per hospital (varying between 6 and 117). The prevalence of care that is omitted varies both within and across countries. Overall, the education of colleagues and students (55.1%), comforting and talking with patients (50.8%) and documentation of care (38.5%) is reported as being left undone most frequently. Pain management (9.6%) and ward rounds with nurses and other team members (16.3%) were the two items that were reported to be least left undone by physicians. The mean composite score of care left undone is 3.1 (SD 1.0) leading to 28% activities undone (varying between 3% up to 48%). A work environment that is perceived as more positive, significantly decreases the odds of care being left undone by physicians. The perception of the quality of care delivered to patients by physicians is negatively correlated with the mean number of items left undone (-0.346, $p< 0.0001$).

Discussion

Missed care among physicians is prevalent; similar patterns as in previously established nursing research are identified. The predictive value of the work environment on the prevalence of care left undone is also observed in physicians. This finding further strengthens the earlier recommendations of the IOM to prioritise improving clinician work environment in acute care hospitals.

Performance evaluation within the Intensive Care Units of the "Casa Sollievo Della Sofferenza" hospital, before and after COVID-19

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Abstract

Context

Medical errors kill between 210,000 and 440,000 people annually, more than road accidents, breast cancer, or AIDS combined. Statistics show that preventable medical errors in hospitals account for 11% of deaths globally. In a society where the patient is at the heart of the healthcare system, developing and implementing techniques and actions to prevent possible adverse events is necessary. The results of this research project will help to enrich both the literature and the knowledge on risk assessment practices and, through operational recommendations, try to prevent possible risks.

Methods

The objective of the research activity is to evaluate how the clinical risk profile has changed, to date, within the Intensive Care Unit (ICU) following the outbreak of the health emergency.

The analysis was concentrated within the two Operative Units of "Anaesthesia and Resuscitation" of the "Casa Sollievo Della Sofferenza" hospital in San Giovanni Rotondo, Italy. The time frame considered is from January 2018 to December 2021.

The primary purpose of this research project is to analyse and compare the inevitable organisational change within the two ICUs both before (January 2018 to March 2020) and during and after (March 2020-December 2021) the COVID-19 pandemic within the health facility. Importantly, since June 2021, the IRCCS "Casa Sollievo Della Sofferenza" has not hospitalised patients suffering from SARS-CoV-2.

In order to illustrate the above, the most common diagnoses have been identified within the two ICUs.

Results

As mentioned in the Methods section, the entrance diagnoses to the two Intensive Care Units under analysis emerged from interviews and focus groups with clinical staff (doctors and nurses). As shown in the attachment, the patients' paths have been traced for the nine diagnoses. Three phases have been highlighted that distinguish the path, in general, of the patient within the two Operative Units.

The three phases were divided into sub-phases, that is, actions performed to complete a single phase. For all the sub-phases and, therefore, phases have been identified: the number of clinical staff (doctors and nurses) employed and the average time for the realisation of the single action and the times and the human resources employed for specialised visits, X-rays, and laboratory tests.

All the data have been collected, and comparing them with 34 indicators (previously identified) is proceeding with the analyses.

Discussion

As in the rest of the health facilities of the world, also for the "Casa Sollievo Della Sofferensa" hospital, the outbreak of the pandemic COVID-19 had substantial consequences on the organisation of the hospital, in particular, the two ICUs.

In order to identify the threshold of acceptability of the risk within the two Operational Units, it will be essential to analyse the following indicators: the organisational change of the work shifts, the change in workloads, and human resources.

After that, the critical processes and frequency of adverse events will be identified.

Qualitatively, the first results show that the COVID-19 pandemic has offered an opportunity to re-organise the health system at a global level. In addition, the clinical routine shows a greater interest in risk analysis methodologies much more than in the past.

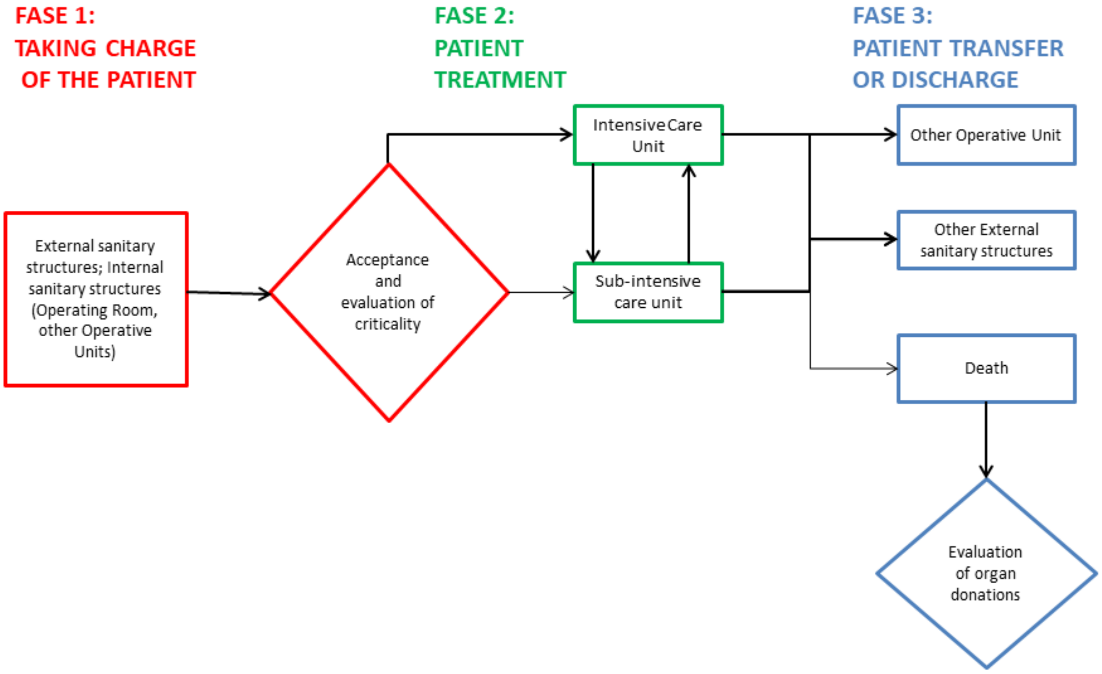

Figure 1: Clinical path within the Intensive Care Unit.

Cost-effectiveness analysis of proximal femoral nail and bipolar hemiarthroplasty in hip fracture surgery

Authors: Ms. Gamze KUTLU, Prof. Yasemin AKBULUT
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Abstract

Background

Musculoskeletal disorders account for about 30% of the global disease burden. Hip fractures are on the rise with aging, which bears down on healthcare systems. It is estimated that the number of hip fractures worldwide, which was 1.6 million in 1990, will hit over 6 million in 2050. Arthroplasty and internal fixation are often adopted as the golden standard in hip fracture surgery. Yet, it is often debated what surgical technique to choose for femoral neck fractures in older adults. Although previous research scrutinised the clinical efficacy of Bipolar Hemiarthroplasty (HA) and Proximal Femoral Nail (PFN), it seems to miss revealing the cost-effectiveness of the two surgical techniques. Thus, we attempted to perform a prospective cost-effectiveness analysis of HA and PFN used in hip fracture surgery in Turkey.

Method

We carried out the research in a state university hospital in Ankara between 10.20.2019 and 11.15.2020 with 145 voluntary patients (88 PFN, 57 HA) aged 60 and over. The hospital and the local ethics committee granted the relevant ethical approval to our study. We collected the data of effectiveness (EQ-5D-5L) and direct patient cost using a survey. In addition, we extracted the data of patients undergoing surgery (the surgery lists of orthopaedic clinics, patient files, and epicrisis) and surgery costs (patient invoices) from the hospital's information management system. We determined the cost-effectiveness of the two surgical techniques based on the decision tree model. We calculated the mean cost and QALY values of the surgical techniques and presented the findings as ICER. Besides, we utilised the GDP (1-3 times), recommended by WHO, to calculate the threshold. Finally, we performed one-way and probabilistic sensitivity analyses to reveal the cost-effectiveness of the procedures.

Findings

We calculated direct medical costs based on the tariff offered by the national social security institution. Accordingly, while direct medical cost was found to be TRY 573,071.87 for PFN, it was TRY 450,761.11 for HA. The costs arising from hospitalisation constituted the highest share within direct medical costs. On the other hand, we calculated non-medical costs based on the patient expenditures. Thus, we concluded the total non-medical costs to be TRY 30,561.00 for PFN and TRY 26,705.50 for HA. Meanwhile, we found the direct medical costs of 13 patients undergoing revision surgery to be TRY 39,350.63 TL for PFN and TRY 20,926.99 TL for HA.

The findings from the decision-tree model suggested that ICERs for HA were TRY 43,164.53 TL/QALY based on payer perspective and TRY 3,977.35 TL/QALY based on patient perspective. Compared to the calculated threshold of TRY 60.575 TL, we concluded HA to be a cost-effective. Moreover, all parameter changes yielded stable results on the one-way sensitivity analysis. When it comes to the probabilistic sensitivity analysis, HA with a threshold of TRY 50,000 was found to be cost-effective in all the comparisons.

Discussion

Overall, our findings showed HA as a cost-effective surgical technique at the calculated threshold in the population. The impacts of HA on patients' quality of life and costs are remarkable. The relevant literature also highlights the greater clinical effectiveness of HA. Besides, it should be noted that the costs of surgical techniques may differ by country. The findings may have valuable implications for the effective use of healthcare resources, identifying the impacts of alternative interventions on quality of life, and making evidence-based decisions.

Pharmacists in the strategic leadership of manufacturing pharmaceutical companies

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Abstract

Context

The World Health Organisation (WHO) urged pharmacists, globally, to ensure quality and access of medicines at all stages of healthcare. The pharmaceutical industry has seen criticism for inequalities towards access to pharmaceuticals, in the past and COVID-19 context. Pharmaceutical companies are conflicted as they must remain highly profitable while also meeting their public obligation, which is to generate effective medicines at affordable costs for a variety of diseases. The legislation in many countries allows for pharmacists to be held personally and professionally accountable in instances of inequality and accessibility. In effort to understand the limitations and inequalities in access to pharmaceuticals, an analysis of professional presence in strategic leadership of pharmaceutical companies was the perspective chosen for this study.

Methods

The objective of the study was to determine the presence of pharmacists, as the profession that is the custodian of medicines, in the strategic leadership of pharmaceutical companies that have operations in South Africa, although headquartered globally. A 4-phased, observational study was employed. Phases are inclusive of semi-structured interviews with existing strategic leaders, assessment of the professions in strategic leadership and development of a leadership competency assessment tool for pharmacists working in the manufacturing sector. The abstract is limited to the phase for assessment of professions in the strategic leadership. A list of 249 manufacturing companies registered with the South African Pharmacy Council was obtained. Of the 249, 49 companies were publicly traded on various stock exchanges around the world. The company websites and annual reports were studied to obtain information regarding their size, professional backgrounds of board members and executive leaders.

Results

The pharmaceutical companies had their headquarters in 11 countries, located in Asia (3), Africa (1), North America (1) and Europe (6). The average number of board and executive members in the companies was 11 (±3,7) and 12 (±6,2). Pharmacists were observed as board members and executive leaders in 6.8 % (n=49) and 3.2% (n=49). The prominent professional background represented as both board membership and executive leadership of the companies, was commerce-related with an average (SD) of 3,1(±1,5) and 2,6 (±1,6) respectively. While pharmacists were the least represented with an average (SD) of 1,2(±0,4) for board membership and 1,4 (±0,5) for executive positions. The correlation between presence of pharmacists as board members and executive leaders with the size of the company (revenue, countries of operation and number of employees) was statistically significant ($p < 0{,}05$).

Discussion

Persons in strategic leadership had qualifications from backgrounds inclusive of commerce and finance, engineering, pharmacy, medical, law, management sciences, information and marketing, social sciences and basic sciences. Pharmaceutical companies provide medicines to meet the healthcare needs of the world's population, thereby providing a healthcare service. The Board members and executive leaders are responsible for directing the strategic objectives of responsible sites or manufacturing sites, as defined by the Pharmaceutical Inspection Co-operation Scheme (PIC/S). The results are indicative of a limited presence of pharmacists in positions of leadership. Often, pharmacists are the authorised persons responsible for manufacturing sites. It has been found that such pharmacists possessed limited power and were excluded from decision–making processes that had dire consequences for the company and users of the company's products. The strategic objectives of these pharmacies are determined by other professionals with the subsequent absence of pharmacists who are the actual custodians of medicines.

Unwarranted between-hospital variation in the vital few patient outcomes mortality, readmission and prolonged length of stay as a trigger for setting quality priorities – The urology case study

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Abstract

Context

Unwarranted between-hospital variation is a persistent healthcare quality issue. While mortality, readmission and length-of-stay are often considered as the 'vital few' patient outcomes to be monitored, the evidence-base on variation in all three outcomes remains scarce and often limited to select patient groups. By tapping into the potential of administrative discharge datasets, we aimed to quantify between-hospital variation, allowing for priority setting for future quality improvement policies. As the level of between-hospital variation is unknown for urology patients, we set out to study a nationwide urology sample.

Methods

We used hierarchical mixed-effects logistic regression models to estimate hospital- and APR-DRG-specific risk-standardised rates for in-hospital mortality, 30-day readmission, and length-of-stay above the APR-DRG-specific 90th percentile. Between-hospital variation was assessed based on the estimated variance components. We studied 320,640 hospital admissions for urological pathologies, divided into 22 APR-DRGs, in 99 (98%) Belgian acute-care hospitals between 2016 and 2018.

Results

Our analysis revealed notable between-hospital variation in mortality, readmission and length-of-stay for urological hospital admissions in Belgium, in particular for medical diagnoses. Significant variation was shown in all three outcomes for kidney and urinary tract infections; other kidney and urinary tract diagnoses, signs, and symptoms; urinary stones and acquired upper urinary tract obstruction; and kidney and urinary tract procedures for non-malignancy. Lowering of mortality rates in upper-quartile hospitals to the median could potentially save 41.5% of deaths in these hospitals, with the largest absolute gain for kidney and urinary tract infections and kidney and urinary tract malignancy. The highest relative gain in potential lives saved could be observed for urinary stones & acquired upper urinary tract obstructions, with as many as 67.3% of deaths potentially being avoided in underperforming hospitals.

Discussion

Significant between-hospital variation in at least two of three measured outcomes was observed for seven out of nine medical and five out of 13 surgical APR-DRGs, suggesting larger inequalities in urological quality of care for medical than for surgical admissions. As past policies have primarily focused on surgical and oncological quality improvement initiatives, such as e.g. robotics and other technological advances or implementation of safe surgery checklists, this finding was in line with expectations. We recommend future policies to target medical diagnoses, with kidney & urinary tract infections (APR-DRG 463) in particular. Further investments and implementation of clinical guidelines and standardisation as well as systematic collation and benchmarking of outcomes and variation on national and international levels have proven valuable to ensure future focus on the right priorities.

Our findings have demonstrated that reducing variation in patient outcomes could be highly beneficial, at least for the urological patient population. The methods presented are easily transferrable to other disease groups besides urology, allowing for quality priority setting across the healthcare spectrum.

Healthcare activity and COVID-19 in the regional hospitals of Eastern Andalusia (Spain)

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Abstract

Context

The global health crisis caused by the acute respiratory syndrome coronavirus 2 (SARS-CoV-2) revealed a situation of extreme overload in the different public health systems, leading to a reduction in daily healthcare activity. The main objective of the study was to carry out a comparative evaluation of the healthcare activity in Hospitals in Eastern Andalusia.

Methods

This is a descriptive, multicentre and retrospective study designed to compare the healthcare activity between the Poniente Hospital and the High Guadalquivir Health Agency. Data collection comprises a 24-month period from 1 January 2019 to 31 December 2020. The variables evaluated were: number of patients seen in the Hospital Emergency Service; number of radiodiagnosis tests performed; patients cited in outpatient visits; interventions surgical procedures performed and patients enrolled in the Waiting List.

Results

The analysis of the variables studied shows that in 2020 the total number of patients treated in the Hospital Emergency Service was 32% (Poniente Hospital) and 35% (Alto Guadalquivir Health Agency) lower than that reached in the year prior to the pandemic (p <0.01). Surgical activity was significantly reduced in both health centres (Poniente Hospital = 31.22%; Alto Guadalquivir Health Agency = 24.67%). The number of patients referred to outpatient visits decreased significantly by 18% and 16%, respectively. The number of teleconsultations grew by almost 150% in the Poniente Hospital, while in the Alto Guadalquivir Health Agency it went from 0 to 232 appointments. The waiting list at Poniente Hospital decreased significantly by 15%, while at the Alto Guadalquivir Health Agency it only decreased by 4%.

Table 1. Intra-centre comparison: 2019 versus 2020

	Poniente Hospital				Alto Guadalquivir Health Agency			
	2019 (N=12)	2020 (N=12)	Difference (N=12)	P-value	2019 (N=12)	2020 (N=12)	Difference (N=12)	P-value
No. of external consultations cited*	24690,33 ± 4070,60	20218,17 ± 4189,12	-4472,17 ± 3498,28	<0,001	29270,42 ±4433,65	24560,33 ±5576,88	-4710,08 ±5766,78	< 0,001
No. of external consultations cited - not presented*	2642,17 ±456,87	1760,08 ±535,28	-882,08 ±471,99	<0,001	2899,67 ±402,60	1150,17 ±323,43	-1749,50 ±420,08	<0,001
No. Surgical Interventions*	1085,75 ±255,33	746,75 ±256,05	-339,00 ±230,92	<0,001	960,08 ±208,16	723,25 ±300,49	-236,83 ±313,50	<0,01
No. Diagnostic tests (not RX or Laboratory)*	2349,92 ±394,03	1915,25 ±480,53	-434,67 ±459,88	<0,01	1081,92 ±159,64	1414,08 ±489,00	332,17 ±485,34	<0,05
No. Emergencies*	14637,42 ±822,10	9964,67 ±4179,52	-4672,75 ±4046,89	<0,01	21835,08 ±2117,57	14246,17 ±5447,95	-7588,92 ±4548,63	<0,001
Number of external telephone inquiries*	40,42 ±22,26	5850,83 ±3409,88	5810,42 ±3404,99	<0,001	0,000 ±0,000	232,25 ±206,02	232,25 ±206,02	<0,01
No. Radiodiagnosis tests*	19032,33 ±1467,06	16261,33 ±3806,65	-2771,00 ±4442,76	0,054	23241,33 ±1787,42	19351,50 ±4520,03	-3889,83 ±4692,48	<0,05
No. of laboratory tests*	428910,58 ±52088,19	347075,00 ±79617,42	-81835,58 ±88169,37	<0,01	882306,67 ±1451828,23	558611,33 ±943747,59	-323695,33 ±523559,12	<0,001
No. patients on the waiting list*	4315,42 ±386,552	3656,33 ±190,58	-659,083 ±391,70	<0,001	16224,58 ±1522,70	15557,25 ±1784,66	-667,33 ±2921,43	0,446

* Mean ± Standard Deviation

Conclusions

The analysis carried out in this study shows that healthcare activity in both hospital centres decreased significantly during 2020 compared to the previous year.

CIV-MIL Integration in the transformation of the EU healthcare network: a dual-gain strategy

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Abstract

Background

Changing complex systems to improve single features implies some risk because even apparently minor modifications can have unpredictable effects. On the contrary, when the context changes deeply, systems must be readapted to the new conditions to sustain functions and operations. This process is called transformation, is driven by necessity and offers the unique opportunity to engage major challenges. The COVID-19 crisis triggered ongoing discussions on the requirements for shifting to a new model of care. In both military and civilian healthcare frameworks, similar topics are addressed such as leadership and governance, performance of the workforce, sustainability, preparedness, and quality of healthcare. Also, similar disruptive technologies are expected such as artificial intelligence, robotics, augmented/virtual reality, 3D printing and telemedicine.

Overview

Despite being very similar in relation to their perspectives for care, the two frameworks are still widely considered as two separate entities. In this period of transformation, it is time to rethink of their relationship and promote a structured partnership to continuously exchange information and experience.

Way ahead

The civilian and military healthcare organisations can be considered as two sub-systems of a single enterprise, where the medical mission for health is the same (i.e., best value) and is equally directed to the same strategic objectives (i.e., the quadruple aim). Simultaneously, individual attributes must be preserved to accomplish the different primary tasks independently: wellbeing of the population on one side and medical support to defence operations on the other side. Gains for the military regard an enhanced quality of clinical practice across multiple disciplines and sustained surgical skills, better awareness of evolving trends in medicine and constant rehearsal in peacetime healthcare administration methodologies. Gains for the civilian involve improved preparedness and readiness in response to crises, additional buffer resources for surges in care demand, exceptional deployable capabilities in contingencies and extended connections with an Allied multinational medical community.

Conclusion

A structured civ-mil interoperability across the EU will inevitably result in an augmented cross-border resilience of the healthcare services and may be considered an opportunity to sustain and distribute the best standards of care in the EU network of citizens, service members and veterans in both peacetime and crisis.

Digital transformation, business models, and strategies in management of public hospitals and healthcare organisations

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[1]Hadassah Academic College, Jerusalem, Israel. [2]University of Foggia, Foggia, Italy

Abstract

Context

Health organisations act in constantly changing environments. To survive the changes and the consequent pressures, health systems worldwide must adapt their medical, managerial, and business activity, especially by adopting the values and organisational culture of the business sector. But these are relatively foreign to the ethical, cultural-organisational, and management systems of health-service organisations. To resolve the problem, health organisations have adopted processes of digital change that generate competitive advantage and positioning and are suited to a dynamic and competitive market.

Methods

This qualitative study is based on 30 in-depth, unstructured interviews with doctors, managers, department heads, and key in hospitals and health organisations. Six of the large public hospitals in Israel were chosen on the basis of their size, location, number of beds, and ownership to achieve representation of the diversity of the country's hospitals. The interviews were recorded and transcribed along with field notes related to the interview, as is customary in qualitative interviews and analysis. The interviews were analysed with qualitative methods to construct categories and create a grounded theory regarding the patterns of activity, digital transformation collaborations, and competition in the health market as well as the challenges and obstacles to change, with an organisational view of the actors.

Results

Five main categories appeared in the analysis: development and implementation of strategies; implementation of digital transformation; becoming a customer-oriented organisation; marketing strategies; and developing hospital-related entrepreneurship. The main findings have shown that the health market and the hospitals are constantly making far-reaching changes in their strategic, business, and marketing behaviours to adapt to the demands of the changing ecosystem – daily and in times of crisis. This trend is manifested in the adoption of digital transformation, business patterns, and transformation of hospitals into customer-oriented and competitive organisations. The outbreak of the global COVID-19 pandemic has exacerbated the distress of hospitals in many ways, severely damaging their economic stability and reputations and forcing them to produce immediate and creative solutions, both medical and financial. Thus, the current crisis has intensified the digital transformation, the performance management, and, in general, the business and managerial activities of the public hospitals.

Discussion

This study examined the extent, components, and implementation of a business strategy and digital transformation as means of coping with a changing environment and achieving an edge in the ever-changing, competitive healthcare sector. This study makes an important contribution toward understanding health systems management worldwide. Deepening and expanding knowledge of this topic may help decision makers, including hospital directors and managers, make system-wide decisions regarding managing the system, guiding it, and making it more efficient. This understanding will make it possible to estimate future developments, examine problems in the system, and explore options and optimal scenarios for contending with change.

Integrating the needs of small medical specialities in future health workforce management: the case of rheumatology in Germany

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Abstract

Context

The COVID-19 pandemic revealed the importance of health workforce governance for health system resilience. However, small medical specialties remain a blind spot in pandemic preparedness and health workforce planning, thus creating new risks for chronically ill patients and the provision of care for non-communicable diseases (NCDs). This study aims to bring the needs of small medical specialities into health management, using rheumatology in Germany as a case study.

Methods.

An explorative multi-methods approach was applied, combining health labour market assessment of rheumatology physicians in Germany based on available public statistics 2000-2019 and a questionnaire-based online survey conducted in early 2021 (n=101 respondents). Target groups of the survey were all rheumatology physicians and residents; main areas of investigation included work hours, task-delegation and collaboration, workload and mental health issues, discrimination and sexual harassment experiences and the impact of COVID-19. Descriptive statistical analysis was performed for the standardised items and qualitative content analysis for the free-text information.

Results

Health labour market analysis showed an alarming demographic trend: between 2000 and 2019 the numbers of rheumatologists increased markedly in the groups aged +50 years, but only 9% in younger groups under 50 years; since 2010 the group 40-50 years even showed strong decreases. In 2019, the absolute numbers of rheumatologists working in healthcare after retirement-age exceeded those aged 40 and under. Since 2015 an expanding workforce trend overall flattened, but strongest in the hospital sector. Survey data revealed a strong mismatch between actual and desired work hours of both women and men. 81% rated their workload as high or very high; every sixth rheumatologist has suffered from stress or burnout syndromes at least once in the past. Experiences of gender discrimination and sexual harassment/violence were frequently reported, mostly by women. COVID-19 was an amplifier of stress with major stressors being digitalisation and increased demand for communication and patient education.

Discussion

Our health labour market assessment of German rheumatologists revealed decreasing health workforce capacities. Survey data added further concern, highlighting new threats to health workforce and service delivery that stretch beyond rheumatology. There is an urgent need for integrating small medical specialties into future health workforce policy and management. In-depth information of the experiences and perceptions of individual physicians may provide helpful guidance for healthcare managers to improve work conditions and environments, especially reducing stress and mental health risks and paying greater attention to gender equality and to the impact of COVID-19 in frontline healthcare workers.

Updating knowledge on costs and effectiveness of teledermatology services compared to conventional hospital-based dermatology consultations

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Abstract

Context

The aim of this systematic review is to compare the cost-effectiveness of two follow-up methods (conventional and telemedicine) used in dermatology in the last ten years.

Methods

A search was conducted in the databases PubMed, Medline, Scielo and Scopus, using the following keywords: “Cost-Benefit Analysis”, “Dermatology”, “Telemedicine”, “Primary Health Care”, as well as other search terms included and following the PICOS eligibility criteria.

Results

Three clinical trials and five observational studies were analysed, providing information for approximately 16,539 patients. They describe the follow-up procedures in each of the cases; measure the analysis of the direct and indirect costs and effectiveness. All the articles indicate that teledermatology lowers costs and proves satisfactory to both patients and professionals.

Conclusions

Although it has been found that follow-up via teledermatology can be more efficient than traditional hospital follow-up, more work remains to be done for the purpose of establishing evaluation protocols and procedures that measure key variables more equally and demonstrate the quality of the evidence of said studies.

Closing blind spots in pandemic hospital management: exploring healthcare workers' perceptions of COVID-19 pandemic risk and protection in Germany

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Abstract

Context

The COVID-19 pandemic highlighted the importance of health and care workers (HCWs) and the need to invest in the health workforce. Efforts have been undertaken to strengthen surveillance and improve protection especially in the hospital sector, yet very little knowledge exists on how HCWs perceive the situation. This study analyses HCWs' perceptions of risk, protection and preventive measures during the COVID-19 pandemic in a low risk/high prevention setting. We aim to explore a gap between medical risk indicators and physical protection ('objective' realities) and the individual perceptions of HCWs ('subjective' realities), thus closing a gap in hospital pandemic management and contributing new knowledge to the development of a more sustainable future health workforce.

Methods

A qualitative explorative approach and a 'best-practice' scenario of a high-income country with a very well-resourced hospital sector and low HCW infection rates were chosen. Survey data (n=1163 participants) collected as part of a large clinical study into SARS-CoV-2 serology testing at Hannover Medical School during the second wave of the pandemic (November 2020-February 2021) served our analysis. Major selected items include perceptions of risks, protection and preventive measures. Descriptive statistical analysis was undertaken and, additionally, single regression carried out to explore the impact of gender, profession, and COVID-19 patient care.

Results

More than half of the respondents (58%) estimated their risk >5%. The fast majority (68.4%) expressed 'some' to 'very strong' fear of infection at the workplace. Infection risk in the private sphere scores comparably lower (56.7%), but remained a very important concern. Individual protective behaviour was very strong; on average higher than required by law. The compliance with protective workplace measures was overall, but only about half of the respondents felt strongly protected by the employer; 12% scored their protection at the workplace low. Gender had no significant impact in risk perception and protection, but physicians scored lower than other HCWs for fear of infection risk. Interestingly, contact with COVID-19 patients, protected or not protected, has no significant effect on the estimations of infection risk and protective behaviour at the workplace.

Discussion

The research design provided a unique opportunity to analyse individual perceptions in relation to actual risks of HCWs. The latter ones were reported as similar to those of the general population (confirmed by a low infection rate and even lower rate of silent seroconversion; https://pubmed.ncbi.nlm.nih.gov/32886335/). The strong mismatches and higher risk perception bring workforce stressors and health threats of HCWs into view that may be preventable or reduced through better information management, risk communication and training and education. This suggests that effective medical protection is important but not enough during the pandemic. There is a need for new approaches, that take different existing 'realities' of individual perceptions and technical measurements/medical indicators into account. Implementing participatory health workforce governance approaches in hospital management may be an important investment in the future health workforce and system resilience.

From a view of the hospital as a system to a view of the suffering patient

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Abstract

Context

Hospitals aspire to provide patient-centred care but are far from achieving it. This qualitative mixed-methods study explored the capacity of hospital directors to shift from a hospital systemic-view to a suffering patient-view applying the Salutogenic theory. This central anchor of Salutogenics is the sense of coherence enabling medical directors to better deal with complexity. The sense of Coherence encompasses three dimensions: comprehensibility, the cognitive dimension; manageability, the behavioural dimension, and meaningfulness, the emotional dimension.

Methods

Following IRB, we conducted in-depth narrative interviews with six directors of the six Israeli academic tertiary public hospitals, focusing on their managerial role. In a second meeting, we conducted vignette interviews in which we presented each director with the same narrative of a suffering young patient who died at 33 due to medical misconduct, allowing self-introspection. Provisional coding was performed for data analysis to identify categories and themes by the three dimensions of the sense-of-coherence, an anchor of Salutogenics: comprehensibility, manageability, and meaningfulness.

Results

While at the system level, directors reported high comprehensibility and manageability in coping with complexity, at the patient level, when confronted with the vignette, directors acknowledged their poor comprehensibility of patients' needs and patients' experience during hospitalisations. They acknowledged their poor capacity to provide patient-centred care. Meaningfulness in the narrative interview focused on the system while meaningfulness in the vignette interview focused on providing patient care.

Discussion

The evident gaps between the system level and the patient level create a lack of coherence, hindering the ability to cope with complexity, and are barriers to providing patient-centred care. To improve the delivery of patient-centred care, we suggest ways to consolidate the views, enabling the shift from a systemic view to a patient-view.

Comparing the risk of early suicide versus late suicide among patients with cancer: driven by a potentially terminal illness or depression?

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Abstract

Context

It has been well documented that patients with cancer are likely to commit suicide. Taking into account that many types of cancer are eventually fatal and pain remains the primary concern for patients, it seems reasonable to propose that suicidal behaviour of patients with cancer is in effect reduced to a single question: driven by a potentially terminal illness or depression? The likelihood of depression, rather than cancer, is the relatively genuine driving force of suicidal behaviour of cancer patients merits more attention as the underlying rationales of committing suicide point to different types of intervention strategies concerning those patients.

Methods

A retrospective cohort study was conducted using data from Taiwan's National Health Insurance Research Database (NHIRD) and Death Certification Registry for the study period of years 2009-2019. The propensity score matching method was performed at a ratio of one cancer patient in the exposed cohort to four patients in the unexposed cohort group based on priori matching criteria of age and gender. Each qualified sample patient was followed-up within one year of the index date (early suicide) or after one year till December 31, 2019 (late suicide) to observe whether suicidal behaviour occurred. When a suicidal event was detected with some sample patient, that patient was then evaluated whether with the diagnosis of depression based on the NHIRD. Cox proportional hazards models with stratification of the propensity score deciles were carried out to compare the hazard ratios (HRs) of suicidal behaviour of the sample patients between the two study cohorts.

Results

A total of 153,931 new cancer patients were included in this analysis. Analytical results indicated that both cancer and depressive disorders constituted significant risk factors for suicide. Results also revealed that cancer patients with depression had higher suicide risk (adjusted HR = 5.72; 95% CI = 5.35-6.09) than their counterparts. Furthermore, we observed that depressive disorders developed some time after onset of cancer exacerbated the risk of suicide substantially (adjusted HR = 2.28; 95% CI = 2.10-2.40).

Discussion

Advancements in cancer treatment has led to a steadily increasing number of cancer survivors. Nevertheless, previous studies have identified increased suicide rates among patients with cancer. Hence, the connection between cancer and suicide merits to be further investigated from different aspects, such as the role played by depressive disorders. In conclusion, this investigation has asserted the impacts of depression on the odds of suicide among patients with cancer. It is hoped that research findings of this study could help health care providers and policy-makers find another angle to devise strategies as to protect against suicide attempts, and possibly protects against suicide, among patients with cancer.

Clinical audit as a quality improvement tool in measurements of lying and standing blood pressure for elderly patients admitted with a hip fracture

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Abstract

Background

Around one in three adults aged 65 years and over will have a fall at home within a one-year period. Falls are estimated to cost the NHS more than £2.3 billion per year. The National Institute for Health & Care Excellence (NICE) guidelines recommend older people who present for medical attention because of a fall, report recurrent falls in the past year, or demonstrate abnormalities of gait and/or balance should be offered a multifactorial falls risk assessment which includes a cardiovascular examination and review of medications. Orthostatic hypotension (OH) is a common cardiovascular disorder, independently associated with an increased risk of falls in the elderly.

Objectives

This study was carried out to assess improvement in lying and standing blood pressure (LSBP) measurement using clinical audit and staff education.

Study Design & Methods

An initial audit of patients over the age of 60, admitted with a hip fracture between the 14th of April and the 25th of May 2020 to assess measurement and accurate recording of LSBP. This cycle was followed by brainstorming, root cause analysis, teaching sessions for staff, and use of aide-memoires. A second audit cycle of patients was admitted with a hip fracture secondary to a fall between the 10th of August and the 21st of September 2020.

Results

Our initial audit results showed 68% of patients who met the criteria in the NICE guidelines on measurement of LSBP were not being assessed for OH. Following interventions, the second audit cycle showed significant improvement in compliance.

Conclusions

Measurement of lying systolic blood pressure is crucial in fall risk assessment in elderly patients presenting with hip fractures. Clinical Audits are powerful tools for improvement of quality of healthcare services provided to elderly patients.

Efficiency of fine scale and spatial regression in modelling associations between healthcare service spatial accessibility and their utilisation

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Abstract

Background

Healthcare accessibility, a key public health issue, includes potential (spatial accessibility) and realised access (healthcare utilisation) dimensions. Moreover, the assessment of healthcare service potential access and utilisation should take into account the care provided by primary and secondary services. Previous studies on the relationship between healthcare spatial accessibility and utilisation often used conventional statistical methods without addressing the scale effect and spatial processes. This study investigated the impact of spatial accessibility to primary and secondary healthcare services on length of hospital stay (LOS), and the efficiency of using a geospatial approach to model this relationship.

Methods

This study focused on the ≥75-year-old population of the Nord administrative region of France. Inpatient hospital spatial accessibility was computed with the E2SFCA method, and then the LOS was calculated from the French national hospital activity and patient discharge database. Ordinary least squares (OLS), spatial autoregressive (SAR), and geographically weighted regression (GWR) were used to analyse the relationship between LOS and spatial accessibility to inpatient hospital care and to three primary care service types (general practitioners, physiotherapists, and home-visiting nurses). Each model performance was assessed with measures of goodness of fit. Spatial statistical methods to reduce or eliminate spatial autocorrelation in the residuals were also explored.

Results

GWR performed best (highest R2 and lowest Akaike information criterion). Depending on global model (OLS and SAR), LOS was negatively associated with spatial accessibility to general practitioners and physiotherapists. GWR highlighted local patterns of spatial variation in LOS estimates. The distribution of areas in which LOS was positively or negatively associated with spatial accessibility varied when considering accessibility to general practitioners and physiotherapists.

Conclusions

Our findings suggest that spatial regressions could be useful for analysing the relationship between healthcare spatial accessibility and utilisation. In our case study, hospitalisation of elderly people was shorter in areas with better accessibility to general practitioners and physiotherapists. This may be related to the presence of effective community healthcare services. GWR performed better than LOS and SAR. The identification by GWR of how these relationships vary spatially could bring important information for public healthcare policies, hospital decision-making, and healthcare resource allocation.

Digital workflow of the breast cancer care by artificial intelligence and distributed ledger technology application to enhance patient centrism and data sovereignty - a model based on the regional breast cancer care network of a German university hospital

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Abstract

Content

In 2021, the German Association of Gynaecology and Obstetrics (DGGG) founded the "Commission for Digital Medicine", a devotion to accelerating the digitisation of gynaecological and obstetric care. The study poses a model for application of artificial intelligence and distributed ledger technology to develop a digital workflow for breast cancer care. It is based on a thorough analysis of the regional breast and ovarian cancer care network of Marburg University Hospital. The study identifies current and future challenges of breast cancer care and how patient centrism and data sovereignty can be enhanced by a digitised workflow.

Methods

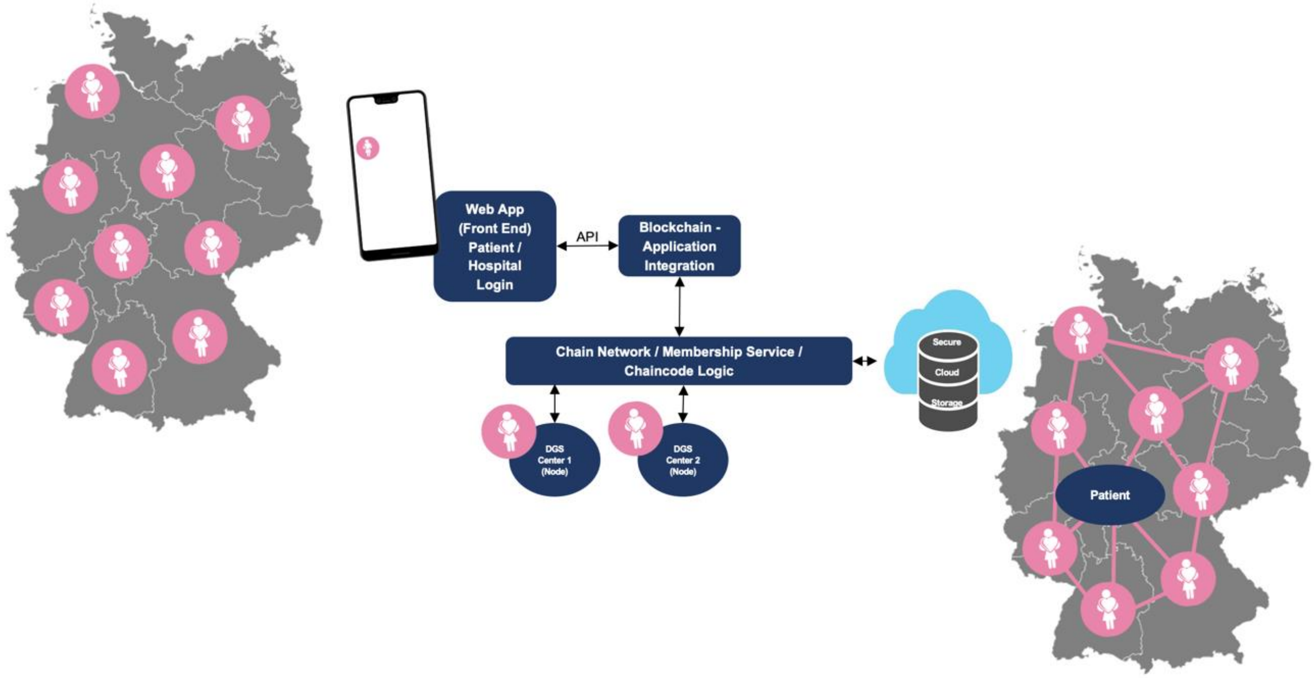
The study is based on a retrospective descriptive data analysis of all n=2,597 in-patient breast (C50) and ovarian cancer (C56) cases admitted the university hospital within the period of 2017 to 2021. A focus lies on the description of patient collective regarding age and gender distribution, the relative development of the overall yearly number of cases, the primary and secondary ICD-diagnoses, the case related DRG, the corresponding zip code based frequency and geographical distribution as well as basic economic parameters of revenue and cost accounting. According to the German breast cancer guideline, the workflow of breast cancer care was visualised and thereon the digitised workflow model was developed, premised on the state-of-the-art literature provided by a Boolean combination open search performed for {("Artificial Intelligence" OR "Machine Learning") AND (Medicine OR Oncology)} and {("Distributed Ledger" OR Blockchain) AND (Medicine OR Oncology)}.

Results:

The C50 patient collective presents a younger average age with lower case complexity, fewer procedures and secondary diagnoses coded in comparison to C56. 96% of all C50 patients originate from a city with direct geographical proximity. Estimated circumference and total catchment area of C56 care present 28.6% and 40% larger than for C50. A total of nDLT=15 and nAI=19 industry reports and white papers were selected by the Boolean operator literature search. The digitised breast cancer workflow integrates the application of algorithmic standardisation by artificial intelligence and decentralised data sharing by distributed ledger technology. A hybrid data management approach with metadata stored on-chain while actual sensitive patient data is encrypted and stored on an off-chain, privacy-compliant cloud-storage presents as the current state-of-the-art solution. Patient centrism and data sovereignty is realised equipping the patient with the private key token to allow the provider to tap into her personal off-chain health data.

Discussion

Invasive breast cancer as the leading type of female cancer disease presents to be a suitable use case for a digitised care workflow. Challenges of lacking interoperability, low privacy and data integrity standards, high process complexity in combination with rising documentation obligations, a shifting demographic and work environment as well as increased economic pressure prevail in breast cancer care. The proposed dualistic digital transformation model of artificial intelligence and distributed ledger technology, based on a hybrid data management approach of a permissioned private blockchain network and privacy-compliant cloud storage, presents great potential towards addressing these pain points. The digitised breast cancer workflow creates benefits for the patients, providers and entire health care system by leveraging the ease of use and interoperability, utilising upon multiple network effects and establishing a shared governance structure that equips the patient with data sovereignty and moves her in the centre of caregiving.



The effect of satisfaction with work-life balance on mental health and well-being of primary healthcare professionals in Oman

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Abstract

Context

Healthcare professionals (HCP) experience considerable physical and emotional strain, especially during situation of crises like the COVID-19 pandemic. In response to the increased health risks and workload pressures at work, HCP experience serious imbalances between work and life which further contributes to their stress and burnout, as well as negatively affect their performance and productivity. The objective of this national study was to assess the work-life balance of primary health workers in Oman along with the socio-demographic, professional, and mental factors associated with it.

Methods

The study utilised a cross-sectional design to survey three cadres of HCP (nurses, physicians, and allied HCP) practicing at healthcare centres in Oman (n=324). Along with the socio-demographic information, the questionnaire included questions on the impact of COVID-19 on work/household environment, as well as questions on intention to quit. Netemeyer's work-family conflict scale and the Depression, Anxiety, and Stress scale (DASS-21) were also used to assess the work-life balance and mental well-being of participants, respectively. Descriptive statistics and simple and multiple logistic regression analyses were carried out.

Results

Participants had a moderate work-life balance (M=28.37±8.62), with respondents experiencing work to family conflicts (M=15.60±5.21) more than family to work conflicts (M=12.78±4.37). Most respondents indicated an increase in workload and time spent on parenting tasks, with no change in income and time spent on domestic tasks. Close to three out of each five respondents (58%) performed work-related tasks during personal time and had a conflict with partner during the pandemic. Study findings revealed that 34%, 30.4%, and 26.2% of the respondents experienced mild to extremely severe depressive, anxiety, and stress symptoms; respectively. According to multivariate analyses, age (OR=3.08; 95%CI [0.99-9.53]; p=.050), marital status (OR=2.81; 95%CI [1.16-6.82]; p=.022), DASS-21 score (OR=0.14; 95%CI [0.07-0.26]; p<0.001), intention to quit (OR=0.44; 95%CI [0.21-0.92]; p=.028), household income (OR=0.35; 95%CI [0.18-0.69]; p=.002), and conflict with partner (OR=0.43; 95%CI [0.23-0.80]; p=.008), were independent factors associated with work-life balance. Compared to other HCP, physicians and nurses were associated with lower work-life balance (OR=0.22; 95%CI [0.11-0.44]; p<.001) and (OR=0.32; 95%CI [0.13-0.78]; p=.012), respectively.

Discussion

The present study showed that work-life balance and the mental well-being of HCP were affected during the pandemic. The findings suggest that maintaining a work-life balance is important for the mental well-being of HCP and to protect them from depression, anxiety, and stress. Support programs need to prioritise younger and single physicians and nurses, as well as those with lower household income and higher intention to quit. Health managers should take measures to decrease HCPs' depression, anxiety, stress, as well as work-life imbalance such as regulating the working hours, organising training programs to help them manage their work and life responsibilities, and increasing support for family care needs. Such support programs would be essential to enhance the wellbeing, productivity and retention of the much needed healthcare professionals at all times, especially during a pandemic.

“The illusion of influence”: how mechanisms of exclusion can hinder nurses’ voice behaviour

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Abstract

Staff retention, which is essential to ensure the quality and sustainability of long-term care sectors around the globe, is enhanced when care workers experience their work as meaningful (Both-Nwabuwe, 2020). Whether employees experience their work as such, depends to a large extent on whether they have opportunities to engage in voice behaviour – defined as the voluntary communication of ideas, concerns, and perspectives by employees with the intent to bring about change and improvement for oneself and one’s team or organisation (Morrison, 2014). Employees may, for instance, come up with suggestions that aim to improve their working conditions. As such, by speaking up, care workers can initiate change and exert influence.

Nurses in the Netherlands for long lacked opportunities to engage in voice behaviour. However, change is on its way, and care organisations nowadays increasingly offer their nursing personnel opportunities to have a say in organisational decision-making processes. (Dutch Nurses Association, 2021). Nurses, for instance, can join advisory committees or participate in participatory bodies. Yet, such employee participation is often initiated by managers and given that managerial practices and worker experience may substantially differ (Delbridge & Sallaz, 2015), it is important to explore whether offering nurses opportunities to speak, is actually experienced as such by the nurses and results in enhanced voice behaviour.

In order to explore this, we conducted 17 interviews with auxiliary nurses who worked for one private, non-profit care organisation. Additionally, we conducted seven focus groups in which in total 25 auxiliary nurses participated who worked for 23 different organisations. The focus groups served on the one hand as a member check, and on the other hand, were a means to deepen the insights that emerged from the interviews.

Our results show that in many organisations an “illusion of influence” existed: although nurses had opportunities to speak up, this did not automatically mean that they actually did speak up, nor that their voice was influential in the sense that it was heard an/or acted upon by other organisational members, such as managers. Specifically, we discovered that a variety of exclusion mechanisms existed that prevented auxiliary nurses from speaking up altogether, such as a lack of information and being silenced and demarcated by other occupational groups.

The experienced lack of opportunities to actually make their voices heard, had made respondents suspicious. They wondered if the organisation’s management was really interested in their input, or whether participation was just for ‘show’. As a result, auxiliary nurses shared that their willingness to speak up had decreased. Thus, we show and add to the literature that initiatives that ostensibly aim to enhance nurses’ voice behaviour, may actually ‘backfire’ and could make employees refrain from speaking up altogether.

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Communicating research evidence to health and care boards

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Abstract

Context

Boards of health and care organisations play a key role in shaping governance, leadership, strategy and performance within health and care. Board members are expected to make decisions about diverse topics ranging from clinical care to financial sustainability, many of which can be informed by research evidence. While boards use diverse types of evidence to inform decisions, the extent to which they engage with research evidence specifically is less clear. In this context, we conducted a qualitative scoping study funded by THIS Institute to understand how health and care boards use research evidence and how this can be improved.

Methods

We conducted 17 semi-structured interviews between August-December 2020 with board members across seven health and care organisations in the English NHS, along with a literature review.

We considered the following questions:

1. What types of research evidence do boards and use?
2. What sources of evidence to boards find most relevant and trustworthy?
3. What formats of evidence do boards consult and which do they find most helpful?
4. What influences the use of research evidence by boards?
5. What could improve the use of research evidence by boards?
6. How are boards using research evidence during COVID-19, and what research might be needed in the future?

During the pandemic, health systems faced additional pressures, and boards needed to make decisions in environments with rapidly changing guidance and evidence. We focused specifically on decisions around personal protective equipment and remote care, although interviewees also discussed other COVID-related topics.

Results

While all boards use research evidence to some degree, there were diverse views on the extent to which it informs decision-making. Interviewees described sporadic and opportunistic use of research, rather than it being systematic or embedded into decision-making.

The use of research evidence depends on factors such as the nature of available research, external circumstances that impact decision-making and board structure and composition. On some boards, the use of research may rely on efforts of individual members, or research may be selectively used to support previously held beliefs about what decisions should be made.

Board members described an appetite to improve how research is used. Designated roles or subcommittees might help systematically incorporate research into decision-making, along with training to help boards ask the right questions to understand whether findings are relevant. Researchers can also improve how they communicate, for example by making the relevance of findings and recommendations clearer.

Discussion

The use of research evidence can improve board-level decision-making and therefore leadership and governance in health and care systems, but may be limited by board organisation and composition, the relevance of available research and how research is communicated.

Our study is modest in scope and focus. However, it points to important considerations for board members and researchers to ensure that research evidence is incorporated in decision-making. It also identifies areas

where more evidence is needed to better understand how research is used, how boards can be better equipped to consult research and how findings can be more relevant to decision-making.

Given the important role that boards of health and care organisations play in ensuring quality care and organisational sustainability, board-level decisions should be based on the best available evidence. This study contributes to the body of literature on evidence-based decision-making by presenting practical considerations and areas for future research.

sekTOR-HF – cross-sectional regional demand-oriented care of patients with Heart Failure and development of an alternative remuneration model

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Abstract

Heart failure (HF) is one of the most prevalent hospital admission diagnosis and causes of death in Germany. In the care of HF exist a lot of false incentive owing to quantity-base remuneration and separate remuneration models for inpatient and outpatient care. It is precisely this aspect that the research project „sekTOR-HF – cross-sectional regional demand-oriented care of patients with HF and development of an alternative remuneration model" ties in with. The project, which has been promoted by the German government's innovation fund (01NVF19006) with about 3.8m euros for 48 month, represents an innovative approach to ensuring a needs-based care for patients with HF.

With the help of a telemedical network and new incentives in remuneration such as bundled payments, the separation of care and culture that prevails in the health system should overcome. The consortium consists of nine partners, who represent the outpatient and inpatient sectors, big statutory health insurances, research, IT and patient organisations. The patients are between 18 and 85 years, live in selected regions in Bavaria and Hesse and are insured with a participating health insurance company. Furthermore, depending on the severity of the HF, the patients are directed to a guideline-compliant and suitable inpatient (NYHA III-IV) or outpatient (NYHA I-II) service process. The aim of sekTOR-HF is to include 500 patients, to reduce avoidable hospitals stays, prevent multiple examinations and PROM Indicators.

In case of a patient's agreement, an electronic patient file with all relevant personal and health data is created in the eHealth portal and the 12-month care phase starts. In sekTOR-HF, a coordinating network office (NWO) accompanies both patient groups throughout the entire project. A specialist doctor and HF nurses provide the care there by telemedicine or in the patient's home environment supported by digital tools (digital treatment as established third care sector).

Monitoring requires the collection, structuring and evaluation of all vital parameters and treatment-relevant data in the eHealth portal. In coordination with the doctors involved, the NWO ensures that the patients receives be cared for appropriately. Should a decompensation threatens to occur, the network office coordinates individual measures with the outpatient/inpatient doctors involved. This leads to a more effective use of resources as well as more needs-based care and patient care.

This project also explores bundled payments as a potential reimbursement mechanism for HF in the context of the German healthcare system by developing a simulation approach with using anonym real-world data from about 110.000 HF treatments. In addition, sekTOR-HF will be scientifically, independently evaluated, which uses quantitative data, experts and patients interviews to obtain a comprehensive picture of the effects of the project in the end of May 2024.

Patient-centred Medication Management: how to enhance patient safety and reduce work burden for medical staff by digitalised closed-loop cabinets

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Abstract

Background

In German hospitals between 19% and 35% of all failures causing harm to patients are attributable to medication errors. As a consequence estimated 15.000 patients die. Furthermore, about 14% of the average length of stay is referable to unplanned drug interactions. Independent from patient risks, health impairments and outcome deficits every non-fatal medication error leads to 3.000€ additional costs on average.

Especially nurses, typically suffering from work overload, are affected by an error-prone medication logistics. Between 26% and 44% of all failures occurring in the medication administration process emerge with activities nurses are considerably involved in.

Methods

By analysis of reports in literature the effects of electronic cabinets used as a backbone of the medication administration process have been identified. In addition, 59 decision-makers of German hospitals were surveyed in order to learn about the reasons for refusing steadfastly the implementation of electronic cabinets successfully used in hospitals outside Germany.

Based on these information a generic medication administration process was developed in order to provide a blueprint for a successful implementation of electronic cabinets as a backbone in a closed-loop medication administration system.

Results

International best-in-class hospitals which have implemented digital closed-loop medication administration systems based on electronic cabinets report that medication errors declined from 3,5 to 0,5 per 1.000 patients. Furthermore, electronic cabinets used in the process of providing the wards with controlled substances contributed to time-savings referring to ordering and inventory activities between 80 to 120 minutes per day on a ward serving 24 patients in average.

Despite these convincing results 56% of the decision-makers in German hospitals deny to peruse the potential of cabinet solutions and 84% criticise a lack of reliable cost-benefit-analyses.

Discussion

The generic process blueprint in combination with the best-in-class reports are expected to convince decision-makers of the positive effects electronic cabinets can contribute to more patient safety, reduction in workload of nursing staff and higher cost effectiveness.

But, experience shows that innovative technologies are associated with changes in workflow organisation and disruptions in interworking patterns. So, many employees fear fulfilling the requirements of the new work environment and assume there is a risk of being burdened by additional tasks and responsibilities.

Keeping this in mind, the successful implementation of electronic cabinets requires

- an effective change management organisation in order to support employees during the implementation process,
- a convincing and reliable cost-benefit-study,
- a detailed description of the reorganised cabinet-based workflow and
- a catalogue of advantages employees can expect for themselves from this new workflow.

The influence of funding and reimbursement on healthcare product innovation: a comparative case study

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Abstract

Context

Healthcare systems are facing major challenges, ranging from unsustainable cost pressures to aging populations and shortages of health workers. Innovative technologies are expected to help create more sustainable healthcare systems. However, the journey from promising idea to adopted reality is fraught with hurdles. The ways in which innovations are financed are known to influence innovation processes in healthcare, but how remains largely unknown. Therefore, we investigated the influence of funding and reimbursement mechanisms on the development to implementation process of innovative healthcare technologies, as experienced by innovators in practice.

Methods

We conducted a comparative case study of innovation projects in healthcare. Sampling of cases was performed in cooperation with the Medical Delta alliance, an initiative supporting the development of healthcare technology by connecting innovators in the South-Holland region of the Netherlands. Four projects were selected, two medical devices and two Health Information Technology (HIT) tools, which allowed us to compare findings between two different types of innovative products. The projects involved the idea generation, hardware development, and in some cases implementation in healthcare settings. A total of 20 semi-structured interviews with project members, including technical engineers, healthcare professionals and supporting staff, were conducted to gather in-depth insight in the process of development and implementation and the role of financial issues therein.

Results

The respondents describe financial incentives and issues they experienced throughout the innovation processes. Firstly, development funding is experienced to be sufficiently available, both for innovative devices and HIT, although acquiring the necessary multitude of short-term grants is a burden for innovators. Secondly, the large investments needed to translate prototypes into marketable commodities, mainly for devices, are not always available during the translation phase. Finally, the implementation phase is experienced to be riddled with financial hurdles, causing none of the studied innovations to be sustainably implemented. Hurdles include the unprofitability of business cases from products in the medical field, hesitation of healthcare insurers to cover innovations, and a lack of financial incentives for providers and hospitals to change. Finally, in all four projects two factors stand out as being perceived as the key to overcoming financial hurdles throughout the innovation process: dedication of innovators and support of healthcare providers.

Discussion

Current financing mechanisms in the Dutch healthcare system do not optimally support the adoption of healthcare innovations. This holds for both devices and HIT tools. Improvements in how innovations are funded and reimbursed are needed to help healthcare systems face the challenges lying ahead. Despite the promise of innovative technologies for more sustainable systems, financial hurdles still form an insurmountable barrier for many valuable innovations in healthcare. In the end, the four case studies show that whether some of these financial hurdles can be overcome depends on the personal dedication and perseverance of the people involved from academia, hospitals, and industry.

Environmental sustainability of hospital buildings – Literature review

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Abstract

Context

The present study intends to make an important contribution, with special acuity for the Portuguese case, which is still on a path of evolution in this area. The theme of sustainability emerged strongly in the 21st century, given the growing concerns of the international community with the environment, which is reflected in Health, Management and Accounting, and which produces effects, for what is currently relevant, in the construction of hospital buildings. The originality of our work consists, therefore, in this holistic and synergistic view of Health, Management, Accounting and even Engineering.

Methodology

A systematic review of the literature is presented, focusing on empirical studies, published in the period 2003-2020, on environmental sustainability in hospital buildings. In this sense, we defined an action protocol and raised a research question, gathering data from the Google of Scholar, ProQuest, B-on databases, along with bibliographic sources available in university libraries. The research was organised around 4 (four) central themes, which we defined through keywords: *environmental sustainability*, *hospital buildings*, *environmental accounting*, *hospital management*, *quality assessment in Health*, with their respective synonyms. After analysing the bibliographic sources and carrying out the inclusion/exclusion process, 21 bibliographic sources (monographs, scientific articles, published records of conferences, reports and doctoral theses), in Portuguese, English and Spanish, were selected for the systematic review of the literature.

Results

The results found in the analysis performed showed the answer to the research question initially formulated and the feasibility of the systematic literature review structure implemented.

Discussion

This literature review aims to identify and systematise the research published in the context of the sustainability of hospital buildings, namely, to know the literature that analyses the impact of the construction of sustainable hospital buildings on the environment, on operating costs (water, energy, gas and waste) and the well-being of patients and health professionals, and how the sustainability of buildings should be considered in the assessment of quality in Health.

Tumour boards and their quality of processes, structures and outcomes from the expert's perspective: a qualitative study

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Abstract

Context

In cancer research, multidisciplinary team meetings (MDTs or tumour boards) play an essential role in cancer treatment. MDTs provide treatment recommendations based on available information regarding medication and therapy using a high range of financial, human and time resources. In Austria, MDTs have become a standard practice for cancer patients, and they aim to deliver high-quality cancer care and, ultimately, improve survival. Nevertheless, evidence suggests that MDTs do not always work optimally in making clinical decisions and that not all MDT decisions get implemented into care. We investigated factors influencing the quality of structures, processes and outcomes in cancer MDTs.

Methods

We conducted semi-structured interviews with expert MDT members, including surgeons, oncologists, radiologists, histologists and research nurses for clinical trial recruitment of six MDTs with breast, head and neck, lymphoma, liver, and pancreatic tumours in an academic hospital in Austria. Our interview protocol assessed MDT experts' views on quality in structures and organisation, processes, outcome measurement and changes in procedures due to COVID-19 since March 2020. All interviews were audio-taped, transcribed verbatim and analysed using a standardised approach. Emergent themes were identified and categorised in aggregate dimensions.

Results

Thirty-eight participants participated in the study, and data collection achieved "saturation" (i.e., similar themes raised by different participants). Quality in structures and organisation included, i.e. the scheduling, preparation prior to meetings, the administration during meetings or post MDT meeting coordination, processes such as decision-making, documentation, communication, patient involvement, facilitators and barriers to reaching a decision and outcome measures such as assessment of patient outcomes or implementation of decided recommendations and changes in procedures due to COVID-19 since March 2020 (virtual meetings). Facilitators or barriers to clinical decision-making included, i.e. the quality of presented clinical information, lack of investigation results, non-attendance of key members or problems during the virtual meeting. Barriers to implementing MDT recommendations included the non-consideration of patients' choices or comorbidities.

Conclusion

There is an increasing drive to improve the quality and the clinical role of the MDT within cancer care. Our study shows the main subjects in planning and holding an MDT meeting and barriers that MDTs face in deciding on or implementing a tumour board recommendation. Furthermore, it revealed the critical function of MDTs in cancer care regarding different healthcare factors such as improved effectiveness, encouraging patient-centred care or quality of multidisciplinary decision-making. We will implement and design acceptable improvement strategies based on our results. Further research should evaluate our findings and their impact on the quality of MDTs and cancer treatment in the future in a quantitative way.

More haste, less speed? A brief history of electronic health records (EHRs) implementation in Germany to provide perspectives

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Abstract

Decisions taken in the last legislative period (2017-2021) enabled the roll-out of several digital health projects in Germany, which ultimately paved the way for the implementation of EHRs, ending the years of gridlock. After 17 years of the enforcement of the legislation to implement EHRs (SHI Modernisation Act from 2004), sickness funds have started offering their enrollees a downloadable application (ePA-App) in January 2021, with which patients could access their personal EHRs through an electronic device. This technology is intended to enable digital connectivity between patients and providers, both in in-patient and out-patient sectors. As of May 2022, after more than a year of the launch, the number of ePA-App users amount to little more than 470,000; this is not even 0.7% of the SHI insured persons in Germany. To increase this number, the coalition parties plan to introduce an opt-out policy for EHRs adoption in the new legislative period.

Recent events such as the change of the German government, Covid-19 pandemic as well as the response of Germany to the pandemic, which could not live up to expectations due to its lacking data integration and processing capacity, provided an opportunity for the relevant stakeholders to reinforce their (controversial) standpoints. Whereas the medical profession called for a moratorium on digital health projects, experts from academia and public health authorities urged the government to implement a system in which EHRs are used across the country and data are shared with the relevant authorities in real-time. If there is one thing that becomes clear from this controversy, it is that the EHRs deployment and health data integration are and will be a matter of governance, rooted in the tension between the self-governance of corporatist actors and the state administration. Best practices in health data management can hardly be implemented in Germany without acknowledging this conflict.

The main responsibility for implementing EHRs had lied with the self-governance in the health system until MoH became the majority shareholder of *gematik* in 2019. After this shift from self-governance to state-governance, a rather fast-track approach was followed for rolling out EHRs, resulting in a subpar performance within healthcare organisations due to the technical failures in telematics infrastructure. However, experiences within the *gematik* since the early 2000s suggest that unless the government intervenes, it is unlikely that the shareholders (self-governance of corporatist actors) find a common ground to prioritise patients' and citizens' interests in digital health projects.

Currently, the *gematik*, a Limited Liability Company of which the majority shareholder is MoH, practically imposes what self-governing bodies, namely quasi-public corporations representing the state authority, should do for the introduction, functionality and further development of the EHRs infrastructure. Disputes between those shareholders result not only in a perplexing situation from a governance perspective but also in rising explicit and opportunity costs; explicit because the project is funded by the sickness fund contributions of patients, implicit because with every passing year chances to use health data for better health service provision, research and health policies are missed. By shedding light on the developments within the *gematik* to this day, this study elaborates on the potential solutions to the governance challenges concerning EHRs deployment and data usage in the future.

Performance measurement in healthcare including the perspective of patients: a bibliometric literature review

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Abstract

Context

Given the growing need of healthcare facilities to understand the patient experience to align with a value-based and patient-centred paradigm, mystery patient methodology responds to the need to include the patient's vision in the objective measurement of performance, beyond the evaluation of patient satisfaction alone. The present study aims to analyse the trends in the literature on mystery patient methodology to investigate how patients' opinion is included in the measurement of performances in the healthcare context.

Methods

The method used for the review is the Systematic Literature Network Analysis (SLNA), a dynamic method that combines the Systematic Literature Review with the analysis of bibliographic networks. The methods applied are: the Citation Network Analysis to analyse the network of paper citations, the Co-Word Network Analysis (Keywords analysis) to group papers into communities based on their keywords, and the Burst Detection Analysis to identify the temporal trends of the use of the keywords. The analyses were jointly conducted to identify the backbone of the literature and highlight its trends.

Results

The SLNA highlighted four main literature topics in the use of mystery patient methodology: the assessment of the performance of health professionals, as support for training and education in healthcare, the evaluation of performance in pharmacies and the measurement of overall healthcare performance. The keyword analysis validated the trends identified in the literature. The analysed body of literature highlights two main active research streams: a first strand, rooted and mature, which explain the characteristics of the mystery patient methodology as a tool for evaluating the technical performance of healthcare professionals, and a second trend which address the application of the methodology to the measurement of the overall quality of the healthcare system.

Discussion

As emerged from the analysis, mystery patient methodology can be used as an interface between the healthcare services provider and the “customer”, and as a support for providers to evaluate healthcare performances through patients’ experience. Both theoretical foundations for implementing the method and empirical examples of application of mystery patient methodology are reported in literature, along with its advantages and criticalities. This analysis confirmed the value of including patients' perspective in the measurement of healthcare performance and paves the way for future research streams.

ANTI-SUPERBUGS PCP. A cross-border joint action to improve healthcare-associated infections' prevention and control systems

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Abstract

The EU-funded ANTI-SUPERBUGS PCP project (Grant Agreement nº:688878) started in September 2016 with the aim to mobilise public and private procurement organisations to jointly put in action a cross-border procurement procedure to tackle Antimicrobial Resistance (AMR). AMR occurs when bacteria, viruses, fungi and parasites change over time or no longer respond to available drugs or treatments, making infections harder to control and increasing the risk of disease spread, severe illness and death. Before the COVID-19 pandemic began, AMR was among the top priorities for global public health. Already a complex challenge, it has been evidenced that AMR needs to be addressed in a changing healthcare landscape.

A consolidated group of six procurement organisations across Europe (Spain, Italy, United Kingdom and Germany) committed themselves to jointly co-invest 2.848.450,41€ (VAT excluded) and collaboratively bridge the identified gap between scientific knowledge and market in the field of AMR through a Pre-Commercial Procurement (PCP) procedure, a procurement instrument in which public procurers buy R&D services from several competing suppliers in parallel to compare alternative solutions, identifying the best value-for-money innovations that the market can deliver to address their unmet needs. This procedure is composed of three phases: 1/ Solution Design; 2/ Prototyping and 3/ Pilot Testing.

Since June 2021, ANTI-SUPERBUGS PCP is facing last Phase 3 in which two finalists, both cross-border consortia composed of SMEs and technological centres (Spain, Italy and Ireland), are deploying their first set of prototypes, already validated in lab conditions in Phase 2, to test their ability to detect the presence of MROs in real context through a multicentre comparative study at the premises of Helios Klinikum (Germany), Provincia Autonoma di Trento (Italy) and Fundació Assistencial Mútua Terrassa (Spain). Phase 3 contracts termination and results' analysis are expected by March 2022.

Testing innovative technologies at a prototypical level in clinical settings poses several changes including the complexity of correctly classifying border line devices. Further complexity is added by the need of handling study approval and conduction within the tight timeline of a EU project. Within ANTI-SUPERBUGS PCP, a joined and coordinated effort was performed by suppliers, pilots sites, ethics committee, and National regulatory entities to guarantee the best study design for preserving patient safety and allowing the time-effective testing of rapidly evolving solutions.

ANTI-SUPERBUGS PCP represents a promising ambitious common demand-driven challenge that has revolutionised current state of the art by researching and developing novel solutions capable to non-invasively and non-intrusively detect the presence of MROs in hospital premises through high complex solutions comprising hardware for sampling, detection, analysis and software for traceability and notification and integrated into hospital information systems.

ANTI-SUPERBUGS PCP has ultimately increased the impact of public procurement, reinforcing that it can be used as a tool to foster innovation in areas of strong public interest, such as AMR. This has in turn encouraged innovative EU companies, in particular SMEs, to develop new solutions that will address societal challenges.

The development of solidarity in the Dutch health care system between 2013 and 2021: a repeated cross-sectional study

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Abstract

Context

In many European countries, including the Netherlands, the health care system is based upon solidarity. It is argued that solidarity-based health care systems are under pressure and that public support is declining. It can, therefore, be expected that health care solidarity has diminished over time. However, little research has been done on this. To fill this gap, we examine changes in health care solidarity in the Netherlands over time, both among the general population and among subgroups. This is important, since declining public support affects the legitimacy of solidarity-based health care systems, and with that, could threaten their continued existence.

Methods

Questionnaires were sent out to samples of 1.500 members of the Dutch Health Care Consumer Panel representative for the Dutch adult population in 2013, 2015, 2017, 2019, and 2021. The response rates varied between 42% (2015) and 56% (2021). The questionnaires included, among others, questions about solidarity, which was operationalised as the willingness to pay for the health care costs of others. We looked into both own willingness to pay and expected willingness to pay. First, descriptive analyses were performed to study own and expected willingness to pay for each year measured. After this, logistic regression models were used to examine how willingness to pay has developed among the general population over time. Besides, the development of willingness to pay among subgroups was investigated by studying interaction effects. We focused on differences in the development of own and expected willingness to pay by age, gender, educational level, and self-reported health.

Results

Preliminary results show an increase in own willingness to pay among the general population between 2013 (73%) and 2021 (78%). However, this was not observed in all subgroups. It was found that the increase in own willingness to pay only occurred among 40-64-year-olds, women, people with a middle or high educational level, and people who report their health as very good or excellent. Regarding expected willingness to pay, no change was observed among the general population over time (60% in 2013 and 61% in 2021). This effect did not differ by age, gender, and education level. We neither found an effect of year for people who report their health as bad or fair and good. However, an increase in expected willingness to pay was demonstrated among people who report their health as very good or excellent. Data are currently being further analysed.

Discussion

Although the increase in own willingness to pay was not observed in all subgroups and no increase in expected willingness to pay was found, it can be concluded that solidarity in the Netherlands is not in decline. People remain willing to contribute to the health care costs of others. This is notable considering the increasing pressure on solidarity-based health care systems. However, we do not know how much people are willing to pay. Considering the expected continued growth of health care expenditures in the Netherlands, it is possible that the limits of willingness to pay will be reached at some point. Nevertheless, our results seems promising for solidarity-based health care systems, especially since the call upon solidarity is expected to increase in the future due to an increase in lifestyle-related diseases and an aging population.

Multidisciplinary teams and quality of care: the experience of breast units during COVID-19

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Abstract

Context

In the last two years, health care organisations worldwide have faced many challenges due to the COVID-19 pandemic. In the area of breast cancer, multidisciplinary teams, involved in the management of breast cancer patients, suffered disruptions due to changes in work organisation and in membership composition. Moreover, the entire health care workforce – including Brest Unit team leaders – has been impacted by a high degree of stress. To understand how these challenges affected the perceived quality of care received by BU patients, the present study tested several research hypotheses collecting data from a sample of breast units.

Methods

We administered two surveys – one directed at patients and the other directed at breast unit team leaders – to compare and analyse two different perspectives on breast cancer management during the COVID-19 pandemic. Our final sample was composed of 366 patients belonging to 68 breast units. Both questionnaires were administered online through Google Moduli and took approximately 30 minutes to complete. We collected data retrospectively (April 2021), asking to respondents (both BU leaders and BU patients) to fulfil the survey referring to their experience during COVID-19 pandemic, specifically from March 2020 to December 2020. To test our hypotheses, we used STATA 14. Specifically, due to the binary nature of the dependent variable, we performed a logistic regression (Long and Freese, 2006).

Results

All three of our research hypotheses were confirmed by the collected data. As expected, the stress experienced by team leaders during the pandemic was positively correlated with the perceived quality of care reported by BU patients ($\beta = 1.35$, $p < .05$), thus confirming our first research hypothesis. Meanwhile, social distancing among team members during the COVID-19 pandemic negatively affected the perceived quality of care reported by BU patients ($\beta = -1.31$, $p < .01$), lending support to our second hypothesis. Finally, in accordance with our third research hypothesis, changes in team composition negatively affected perceived quality of care ($\beta = -0.91$, $p < .05$).

Discussion

Breast units (BUs), or multidisciplinary breast care centres, represent a focal point for the care and treatment of women affected by breast cancer. Teams working at these centres are composed of several professionals grouped into a core team and an enlarged team. During the COVID-19 pandemic, BUs have continued to provide care even in the face of unprecedented challenges. Health care organisations worldwide have been subject to stressful and confusing situations given the need to treat patients affected by the new virus. Moreover, the health care workforce has been depleted as an increasing number of workers are required to attend to emergency services and working conditions have also changed in an attempt to incorporate social distancing into the care process. Given these results, healthcare managers should: i) develop new training paths useful to help professionals to adapt to new ways of working; ii) ensure teams to develop repository tools to share knowledge and practices, to avoid the loss of these contents in the chance of team members changes.

Patient Reported Outcomes (PROs) - a tool to support clinical practice: an organisational change in an oncological public hospital

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Abstract

Cancer diagnosis, the disease itself, and its treatments have associated physical, psychological, and social implications that lead to a significant reduction in patients' quality of life (QoL). Nowadays, cancer is seen as a chronic illness, a context in which PROs play an important role in patient-centred care. The possibility of knowing concerns felt by the patient through QoL survey allows for intervention in real time and, if necessary, refer the patient to the most suitable specialty. However, to monitor patient status, many challenges exist in integrating PROs into clinical practice, ranging from administrative to technical issues.

IPO Porto is a Portuguese oncological public hospital that acknowledges the importance of innovation in cancer treatment. For cancer patients, QoL is fundamental, entailing the need to include it in patient assessment during the several stages of illness. IPO Porto's strategy to implement PROs was divided into four phases: (i)Electronic tool development; (ii)Implementation of a patient care office dedicated only to PRO's assessment; (iii)Training for professionals and patients; (iv)Availability of results in the electronic patient record (EPR).

Initially, the workflow started with the implementation of PROs for patients using innovative drugs. Although the QoL office was implemented during the pandemic period, patient adherence rate is approximately 75%. The aim is to scale this evaluation to all patients treated at IPO Porto, adapting the circuit to the different phases of treatment through mapping of the patient's path. A report to the clinician is automatically generated from QoL assessment, which displays the dimensions with significant improvements and declines. These results will be integrated into the EPR as support for clinical decisions. Monitoring PROs improves patient-clinician communication (often not voiced in appointments), symptom management, patient satisfaction, QoL and overall survival.

With the implementation of PRO's, there are also intangible gains that are, perhaps, the most to be expected, namely: directing interventions to areas where patients experience more problems; personalisation of treatment and increased centralisation of care around the patient; increasing empowerment of people in their health management. However, there are also tangible gains with reduction of indirect and direct costs, such as: reduction of absenteeism; optimised times of appointments; decreasing number of visits to the emergency room and request of imaging exams; decreasing number of readmissions; decreased consumption of medication.

This initiative is scalable to all areas of medicine. Although it is difficult to quantify the financial gains, considering its innovative nature, in a conservative perspective, we estimate 5% of IPO Porto's financial gains and 1% for NHS (once covered additional pathologies).

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The use of PROs in oncological clinical practice to assess QoL might improve healthcare provision by assessing relevant symptoms and burdens, allowing for gains in efficiency and improved health outcomes.

Implications for health system reform, workforce recovery and rebuilding: lessons from the great recession and COVID-19

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Abstract

Context

The health workforce is a fundamental building block within health systems with unprecedented measures taken to meet extra demand and facilitate surge capacity during the COVID-19 pandemic, on foot of a prolonged period of austerity following the 2008 financial crisis. This case study examines trends in Ireland's publicly funded health service workforce, from the beginning of the financial crisis, through the recovery period and into the COVID-19 pandemic - to understand health system resource allocation across community and acute settings. Specifically, this paper will uncover whether skill-mix and staff capacity are aligned with policy intent and the broader reform agenda.

Methods

Secondary analysis of anonymised aggregated national human resources (HR) data was conducted over a period of almost 14 years, from 2008 to August 2021. Individual roles were grouped into six overarching cadres, categorised by Health Service Executive (HSE) HR division: 1) Medical and Dental; 2) Nursing and Midwifery; 3) Health and Social Care Professionals; 4) Management and Administration; 5) General Support; and 6) Patient and Client Care. Comparative analysis was conducted, by professional cadre, across three keys periods: 'Recession period' 2008–2014; 'Recovery period' 2014-2019; and the 'COVID-19 period' 2019-Aug 2021. Data were collated and cleaned by the HSE HR division (data controllers), while analysis was independently conducted by researchers in Trinity College Dublin. Given the nuanced nature of the dataset, all interpretations were sense-checked with the data controllers to ensure accuracy, as well as knowledge users within the HSE and the Sláintecare reform programme in the Department of Health.

Results

During the Recession period there was an overall decrease of 8.1% (n=9,333) between 2008 and 2014, while the Recovery period saw the overall staff levels rebound and increase by 15.2% (n=16,789) between 2014 and 2019. These figures continued to grow, at an accelerated rate during the most recent COVID-19 period, increasing by a further 8.9% (n=10,716) in under two years. However, a notable shift occurred in 2013, when the number of staff in acute services surpassed those employed in community services (n=50,038 and 49,857, respectively). This gap continued to accelerate during the Recovery and COVID-19 phase. By August 2021, there were 13,645 more WTEs in acute settings compared to community, a complete reverse of the 2008 situation. This was consistent across all cadres. Despite limited data, the immediate and longer-term impact of workforce absence and redeployment are also considered within the context of the COVID-19 pandemic.

Discussion

Notwithstanding consistent policy recommendations to shift care from hospitals to community-based settings, this study clearly demonstrates an ever-growing gap between the number of community-based WTE staff, compared to those in acute settings. Over the past 14 years, health systems have experienced two major global shocks, presenting unprecedented challenges for the health workforce. While the shocks were undoubtedly very different, one fiscally driven while the other driven by a global pandemic, their impact on the current reform agenda reveals a conflict between policy intent and implementation on the ground – resulting in a growing hospital centric model of care. Both shocks demanded staff do more with less, the former driven by restrictive policies, the latter by unprecedented demand amid shock-specific staff shortages - both with lasting effects on staff well-being and morale. Care needs to be taken to protect all staff and to prioritise community care provision in line with national policy.

IoT for medical waste management: the case of a Swiss multisite hospital

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Abstract

Promising and disruptive technologies are transforming the healthcare sector significantly. In this research, we bring to light an innovative solution developed by the Swiss multisite hospital EOC, which has introduced the use of a pioneering medical waste tracking system in collaboration with the Università della Svizzera italiana (USI) and a local waste management firm (Valbenne SA).

The tracking of the containers used for the collection of this particular type of waste is based on Internet of Things (IoT) technology, in particular by equipping them with Radio-Frequency IDentification (RFID) transponders.

Furthermore, we point up the main key success factors of this project in order to provide the readers with useful generalisable prompts. Finally, we frame this innovative project into a model (BIOSF) that could be useful for the organisations that need to evaluate either the development or the adoption of new technologies.

Methods

After a literature review on the evolution and application of the internet of things (IoT) in healthcare, we present the solution adopted by the Swiss multisite hospital EOC, from its conception to its implementation. Indeed, we illustrate the usual process of waste management as it usually took place before the introduction of the new solution. Subsequently, we describe the new process that has been set up in collaboration with USI and Valbenne SA in its initial testing phase.

Results

Automated waste tracking allows not only to make operations more efficient and less subject to error, but also to build a data history that can support decision-making. The raw data describing the history of each container is aggregated based on different criteria (e.g. department, type of container, type of waste, etc.) providing an overview of the process and allowing trends, patterns as well as optimisation possibilities to be identified". The technology used allow operators to keep all phases of waste management under control, without a major impact on previously adopted working methods.

For the facilities where the new technology has already been introduced, EOC can now guarantee real-time and complete tracking of its hospital waste, starting from the delivery of the sterile containers, to their distribution among its hospitals in the region, and finally to the monitoring of the exact location of its waste delivered to Valbenne SA.

This new management system will enable EOC to be reactive and precise about the collection and disposal of medical waste at all times. The system will also allow to make targeted and precise statistics on quantities, comparisons between institutions and locations, and to keep a check on quantities and costs.

The BIOSF model has also been conceived as a practical tool for organisations to approach and evaluate new technologies by envisioning a wide range of possible implications and relevant factors.

Discussion

As it was pointed out, generalisable lessons could be drawn from this innovative project, such as the importance of the top management's commitment, communication, financial evaluation, regulatory framework and risk management.

Of course, nobody knows for sure how far technology may bring us, but what we know is that hospitals and all other stakeholders involved should be ready to embrace the change and adapt their operations; but most important, they should be able to translate new technologies into a real quality increase both for the organisation and for patients.

Human resource management in home care: managing people for safe care at the front-line of the pandemic

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Abstract

Context

HRM of healthcare organisations plays an important role in improving the continuity of care, managing staff, and ensuring patient safety. Since COVID-19, a growing number of HRM-related issues has emerged, and researchers have gained insight into the role of HRM in hospital settings in responding to the pandemic. Nevertheless, little research is focusing on home care despite the sector being one of the most affected by COVID-19. Therefore, this study aims to explore the emerging HRM issues that are associated with the patient safety in homecare, and how have homecare providers responded during the COVID-19 pandemic.

Methods

The research took an inductive approach using qualitative strategies. Data were collected by using semi-structured individual interviews and obtaining written materials such as personal notes, official documents, and records. Regarding interviews, 31 home care staff were selected by using opportunistic and snowball sampling methods. Informed consent was obtained. The interviews were conducted online and/or by phone. Each interview lasted between 45 and 60 minutes and were audio recorded then transcribed. In terms of documents and records, a range of background materials was collected and reviewed for context, include press reports, public articles, and notes from informal conversations. In this research, thematic analysis was used for analysing the data. The interviews were transcribed and identifying information were pseudonymised in this process. In this study, conventional content analysis was also used to analyse the written documents to answer the research questions.

Results

This research found several emerging HRM challenges during the pandemic: staff shortages, high turnover, ineffective communication, occupational stress for front-line carers, and lack of training on knowledge related to COVID-19. The data have shown how these issues can harmfully influence the safety of homecare patients in terms of reducing care hours, causing distress, and providing low-quality care. Furthermore, the study discovered how homecare organisations have responded to the difficulties through huge individual and collective efforts by (1) increasing care staff capacity through adopting ad-hoc opportunistic recruitment and selection, and redirecting staff from other areas, (2) embracing digital technologies for training and communication, and (3) allowing flexible work arrangements such as remote work, fewer shadowing shifts, and no in-person handovers. Nevertheless, there were still limitations in these approaches as homecare staff reported their frustrations and stress about the lack of support and having to adapt their work-life around the pandemic.

Discussion

Much research has found HRM challenges as one of the barriers to patient safety in healthcare. The COVID-19 pandemic has brought long-present challenges in HRM in home care to the fore, while adding a host of new ones. Home care providers and managers had to find ways of improvising approaches to communication, safety, and managing staff performance. Nevertheless, there were trade-offs in the approaches and some of the HRM challenges including staff shortages, training gaps, and lack of communication remain unresolved. Home care providers are still facing significant HRM challenges in recruitment, training, and performance management while having to protect the health and wellbeing of carers and ensure safe care for patients during the time of crisis.

Transfer and adoption of digitally enabled integrated person-centred care good practices: The JADECARE Joint Action

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Abstract

Context

The ageing population and the burden of chronic conditions is increasing the demand for more comprehensive, efficient and smarter healthcare. The EU funded Joint Action JADECARE (Joint Action on implementation of Digitally Enabled integrated person-centred CARE) intends to reinforce the capacity of health authorities to successfully address the health system transition to digitally enabled integrated person-centred care. It focuses on the transfer and adoption of four original Good Practices (oGPs) to the contexts of 21 Next Adopters (NA). The project started on October 1 2020 and ends on September 30 2023.

Methods

JADECARE involves 45 organisations from 16 different EU countries covering different funding systems (both Bismarck, Beveridge and mixed) holding different levels of penetration, adoption and maturity of integrated care.

The oGPs that are being transferred in JADECARE concern integrated care, chronic conditions, self-care, prevention and population health. They are: The Basque Health strategy in ageing and chronicity: integrated care (Spain), the Catalan open innovation hub on ICT-supported integrated care services for chronic patients (Spain), the OptiMedis Model-Population-based integrated care (Germany) and the Digital roadmap towards an integrated health care sector (Denmark).

The transfer strategy of JADECARE enables each NA to customise the parts of the oGPs that will be transferred and adapted to its local context, taking into account its needs, local strategies and implementation goals. The JADECARE three-step implementation strategy has been designed to be appropriate from the scientific point of view, applicable considering data availability and feasible according to project´s timeline and resources:

- Pre-implementation: definition of Local interventions and action plans
- Implementation: roll-out and operation, based on two Plan-Do-Study-Act cycles
- Post-implementation: result analysis, impact assessment, reporting.

Results

By the end of 2021, the pre-implementation phase has been completed. NAs have defined their interventions and action plans for implementation in JADECARE. 3 of the NAs are implementing interventions at national level, 14 at regional level and 4 at local level. Most of the NAs implement interventions related to digitally enabled integrated care (36), 11 are related to risk stratification and 9 to patient empowerment. The total target population to be reached is over 4 million people.

Discussion

JADECARE will impact on European health systems by implementing innovative digital integrated care solutions and helping to change the model of care provision. It will settle the basis to implement integrated care at large scale by generating evidence and a blueprint on how to transfer successful experiences on integrated care and to create innovative/tailored practices. This will have an impact on healthcare professionals, patients, caregivers, general population, health authorities and the industrial sector. The long-term effect of JADECARE will be supported by involving stakeholders participating in governance bodies at local, regional and national levels who can provide political support and commitment to sustained integrated care.

Nurses has left the building – Broken psychological contracts in health and social care among nursing professionals

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Abstract

In this study we are interested in the reasons why nurses leave their occupation as a nurse and what are reasons behind this decision. Our focus is in registered and auxiliary nurses working in all fields of health and social care. The research, which this abstract is based, investigates why nursing professionals have left their occupation and how the health care as working environment should be developed in order to secure enough enthusiastic professionals to the field. Theoretical background leans on the concept of psychological contract which we using to describe the relationship between employer and organisation referring to an individual´s beliefs about the terms and conditions of a mutual exchange agreement. We are interested especially point of psychological contract breach and violation.

Psychological contract exchange is based on the unspoken expectations and perceptions of employee and employer rather than what is explicitly and formally agreed. The studies of the psychological contract have emphasised to breach of the contract meaning the situation where another contract party has failed to fulfil the expectations and obligations of the other party. Psychological contract breach cause dissatisfaction towards to work, impairs commitment to the organisation and affects to the employee´s well-being and retention to work. In this study we examine situation where nurses have already leave work in health and social care and try to understand occurrence in the viewpoint of psychological contract breach. Research question is: What were nurse's expectations about the work and what are the reasons why they left their nursing position?

Our data consists of 310 stories wrote by registered and auxiliary nurses telling why they have left their nursing position and it was collected in Autumn 2021 via textual data collection tool "Penna" which is maintaining by Finnish Social Science Data Archive (FSD). Written request was intentionally very open and gave respondents freedom to describe their thoughts why they have left the nursing position Based on preliminary findings, it seems that psychological contract has breached and violated in many ways. For example, nurses were strongly disappointed to the leadership issues in the workplace and the actual working environment. They felt that workload was too heavy and there was lack of resources as well appreciation. They felt that their self-determination to their work and life was vanished.

This study highlighted that there are critical perspectives in health and social care working conditions, which based on preliminary findings breach psychological contract many ways. Study indicates that we need to recognise the factors that are breaching the psychological contracts in order to develop and plan health and social care as well as nursing profession. This should be considered in all levels: individual, leadership and management as well as policy.

Impact of system and information quality on user effectiveness and efficiency in pharmaceutical organisations

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Abstract

Any firm in the pharmaceutical industry requires efficient and effective management information systems (MIS) to support managerial functions. The aim of this study is to investigate the impact of information systems on user efficacy and efficiency in Iranian pharmaceutical companies. 345 reliable and validate questionnaires distributed among selected samples, through cluster method, to Information system users of eight leading Iranian pharmaceutical companies, based on likert scale. The proposed model of the article is based a model with combination of system quality and information quality, on user performance with definition of efficiency and effectiveness through mediation effects of perceived usefulness and ease of use. The results showed the importance of Information quality on user performance through in comparison with system quality. We concluded that pharmaceutical users of IS, utilising a system with a precise and intense observation on users demands, may make facilitation for them to design an exclusive IS framework.

Health management: evaluating the relationship between organisational factors, psychosocial risks at work, performance management and hospitals outcomes

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Abstract

Health System organisations' are complex and in constant dynamic interaction with multiple factors, including political, environmental, societal, legal, organisational, human resources, patients, and other stakeholders.

This research aimed to study three HS organisations and through them identify and characterise the factors of health organisations and factors related to professionals and understand their influence on economic and financial performance results as well as outcomes related to both professionals and patients.

A quantitative study was conducted where data were collected through questionnaires from various sources to better understand and characterise the factors in study related to health organisations, professionals, and patients (470 health professionals and 768 patients).

To test the Instrument and to study an integrated evaluation model of health organisations, path-analysis was used. The instrument for the Assessment of Global Management of Health Organizations (GMHO) consists of 39 items organised into 6 dimensions: The Organisational Culture dimension consists of 8 (α = 0.91), the Quality of Life by 5 items (α = 0.83), Psychosocial Work Environment related to work content and relationships with leadership has 11 items (α = 0.93), Psychosocial Risks at Work related to Well-being and Mental Health have 4 items (α = 0.83), Performance Management has 5 items (α = 0.91) and Professional Satisfaction has 6 items (α = 0.86) (Gaspar, 2019; Gaspar, 2021; Gaspar, et al., 2022).

A well-defined organisational culture has a positive influence on the results of the analysed health organisations of the public subsystem. The results confirm statistically significant correlations between the types of organisational culture and the outcomes under analysis (professionals job satisfaction, patient satisfaction and economic and financial performance results). Higher psychosocial risks at work are found to have a negative influence on organisational outcomes. A strong and statistically significant negative correlation was identified between psychosocial risks at work and job satisfaction. Effective performance management has a positive influence on the outcomes of the healthcare organisations studied, with a strong and statistically significant correlation between performance management and job satisfaction. A well-defined organisational culture is associated with higher health professionals' quality of life, fewer psychosocial risks at work and better performance management of health professionals.

As a product we have obtained a comprehensive diagnosis model and tool that integrate factors that influence the results in health organisations and an integrated evaluation tool that allows the regular evaluation and monitoring of HS health organisations, namely in case of implementation of improvement measures and consequently supporting an evidence-based governance process.

The model obtained can be understood in the light of the system and organisational theory, i.e. the interrelationship and influence between the variables allows identifying and understanding organisational, professional and outcome factors and their respective relationship that influence the quality of life of professionals, the performance and the results of the organisation

This study contributes to a deepen our knowledge of the factors that influence the quality of health organisations and their results. The following are the main recommendations for managers of HS health organisations: (a) To periodically assess and monitor the quality and performance of health organisations from a systemic and integrative perspective (integrating inputs, processes and outcomes); (b) Promote Healthy Workplaces by improving psychosocial working conditions, promoting physical, social and mental health of professionals, for instance by providing them with more availability for non-care activities such as management skills, research and training.

Healthy workplaces ecosystems and professionals stress management in pandemic COVID-19 context

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Abstract

The COVID-19 pandemic has brought global physical, psychological, social and occupational health challenges. Organisations to address the increase in psychosocial risks at work, namely related to work relationships, job insecurity, mental health, stress and burnout should make health and well-being in organisations a priority.

The main objective of this paper is to understand and characterise the healthy work environment of organisations during a COVID-19 pandemic and the relationship between core principles related to organisational culture, psychosocial work environment, physical environment, social responsibility environment and resources for occupational health and stress management as an adaptive process face challenges caused by the pandemic.

The study involved 460 participants, 231 (50.3%) were female. The workers' age ranged between 18 and 67 years, with a mean of 44 years and standard deviation of 11.36.

Was used the Healthy Work Environment Ecosystems Tool (EATS) (Gaspar et al, 2022) composed by 62 items organised into 9 dimensions based on the Healthy Workplaces model proposed by the World Health Organisation (Burton, 2010). The dimension Ethics and Values has 8 items, Commitment to Leadership has 6 items, Worker Involvement has 7 items, Psychosocial Risks of Work related to work content and relationships with leadership has 12 items, Psychosocial Risks of Work related to Well-being and Mental Health has 5 items, the Physical environment has 5 items, teleworking has 3 items, Community Involvement has 12 items, and Personal Health Resources has 4 items. All questions have a 5-point Likert-type scale. The Cronbach's alpha levels obtained for each factor show that they have adequate internal consistency (between .82 and .95)

Our results show that organisational culture, more specifically linked to values, policies and practices related to leadership and professional engagement, has a strong relationship with the other components of a healthy work environment, namely the psychosocial work environment, physical environment, social responsibility and community relations, and policies and practices for occupational health resources and stress management.

It is observed that the female participants obtained, significantly, higher scores in all the variables of the study, except in SM. The effect size was intermediate, except in PHR which was small.

When the sample was divided into age groups, the differences between the scores remained significant in most variables in favor of the younger sample. Participants aged 18 to 40 years were observed to score higher significantly and with small and intermediate effect size values in all variables except MS, which was higher in the group of participants over 40 years with a small effect size.

According to the educational level, male and female who had a high educational level perceived a better CO, as well as scored higher in the rest of the variables studied than those who had not passed these educational levels. The effect sizes took intermediate and large values in most cases and was small for SM.

Mediation model of the influence of Organisational Culture on Stress Management through the Core Principles (Burton, 2010) and its Invariance across sex, age and educational level shows excellent fit indices of the hypothesised mediation model (CFI = 0.976; RMSEA = 0.079; SRMR = 0.075; χ2/df = 3.83).

Management and administration of organisations can use this model and tool for systemic evaluation of organisations and monitoring of continuous improvement measures in the face of the global challenges translating into greater sustainability.

Factors influencing automated dispensing solutions for in-hospital medications: experiences, perceptions and economic evaluation in six European countries

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Abstract

Context

The dispensing automated systems for hospital drugs' logistics use is becoming an increasingly strategic asset: the possibility to track drugs, to reduce errors from prescription to administration, and to limit the use of expired drugs, are some of the main benefits concerning this technological implementation. However, these advantages are not always fully recognised by the different hospital stakeholders. According to this consideration, the present study aims to understand which are the most relevant key-factors that may influence the adoption of dispensing automated logistics systems, by defining all the hospital multidimensional advantages and the differences among countries and healthcare professionals' perceptions.

Methods

Health Technology Assessment (HTA) was adopted to assess the innovative solution. The EUnetHTA Core-Model suggests the assessment of effectiveness, safety, equity, social, legal, and organisational impacts, as well as a quantitative economic impact, being valid approaches for all the European Countries. Qualitative questionnaires (composed by several items, investigating the six previously defined domains, with a 7-item Likert scale) were administered in 2021 to different hospital stakeholders (pharmacists, clinicians, nurses, decision-makers, IT specialists and biomedical engineers), being current or potential dispensing automated solutions' users, and involving 129 professionals from Italy, UK, Germany, France, Belgium, and the Netherlands. In addition, process costs, cost-effectiveness and budget impact analyses were conducted. The assessment was conducted, considering a comparative approach among the following four scenarios: 1) Manual dispensing; 2) Hospital Pharmacy Centralised Automated Drug Dispensing; 3) Wards' decentralised Automated Drug Dispensing System; 4) Hospital Pharmacy and Wards' Automated Drug Dispensing Systems in an integrated solution.

Results

Stakeholders declared that automated drugs management was preferable to the manual ($p<0.001$). This emerged particularly for the safety (2.133vs.1.479vs.1.252vs.-1.319, respectively Scenario 4, 3, 2, 1; $p<0.001$), effectiveness (1.867vs.1.530vs.1.124vs.-0.844, respectively; $p<0.001$) and legal impacts (2.064vs.1.620vs.1.173vs.-1.338, respectively; $p<0.001$), while the social and equity dimension (1.141vs.0.793vs.0.610vs.-0.269, respectively; $p<0.003$) were not perceived as key-factors determining a technological switch. From an organisational perspective, while within in a 12-month time-horizon, automation implementation could lead to initial difficulties, due to a possible professionals' resistance to change and potential investment requirements (0.763vs.0.586vs.0.448vs.-0.356, respectively; $p<0.001$), in the long term (36 months) the superiority of automation over manual procedures was recognised, in particular given a potential overall process optimisation (1.414vs.1.228vs.0.923vs.-0.410, respectively; $p<0.001$). These results are common among all countries with no major differences. Thus, from an economic perspective, automation could bring a saving ranging from +62.44% to -2.69% (loss), depending on country, hospital dimension and volume of drug packages moved.

Discussion

The strategic relevance in adopting automated solutions in hospitals, is demonstrated also by important advantages in the improvement in the patient care process. In addition, overall organisational sustainability resulted in staff training costs ranging from 22.87€ to 41.61€, for each professional, depending on the level of automation to be implemented. To appreciate all the above benefits, it is important, for decision makers to carefully plan changes, demonstrating to stakeholders that perceived problems are not so impacting and that benefits exist also for their work; hospitals must develop differentiated communication strategies targeted on the needs and perspectives of professionals. In this view, the production of real-world evidence could be strategical to communicate the core elements of the automation technologies, based on specific needs and different professionals' perspectives, since literature is mainly focused on safety/effectiveness evidence.

Local treatment of breast cancer: an HTA analysis comparing IORT and EBRT in the Italian setting

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Abstract

Context

External Beam Radiotherapy (EBRT) represents the standard of care for breast cancer treatment and is recommended to suitable patients with early breast cancer. In the oncological setting, innovation plays a key-role with new emergent technologies, such as Intraoperative Radiation therapy (IORT): a targeted radiation therapy given, during surgery. Starting from such different approaches, the study aims at evaluating the incremental benefits concerning the implementation of IORT for the local treatment of breast cancer, within the Italian clinical practice, defining the comparative efficacy and safety profiles, as well as the potential economic and organisational advantages for hospitals and patients.

Methods

A Health Technology Assessment study was conducted in 2021, assuming the hospital perspective, to guarantee a positive value-based comparative impact of IORT and EBRT.

The nine EUnetHTA Core Model dimensions were deployed considering a multi-methods approach. Both qualitative and quantitative methods were used: i) a literature review for the definition of the comparative efficacy and safety data; ii) administration of qualitative questionnaires, completed by 9 healthcare professionals (according to 7-item Likert scale, ranging from -3 to +3); and iii) health-economics tools, useful for the economic evaluation of the clinical pathway and budget impact analysis, and for the definition of the organisational and accessibility advantages, in terms of time or procedures savings.

Results

Literature (Vaidya et al. 2020) reported IORT non-inferiority nature to EBRT, with respect to both the safety profile (albeit a lower toxicity occurrence rate), and the efficacy profile, in terms of local recurrence rate (IORT: 1.2% versus EBRT: 0.95%, p-value>0.05).

From an economic perspective, IORT required a lower resources' absorption (€5,404.28 versus €9,304.53) with an economic saving per patients equal to 41% and presented the best trade-off between cost sustained and efficacy gained. Budget Impact Analysis showed that, over a 36 month-horizon from IORT market penetration, hospitals would benefit from a significant economic saving ranging from -18% to -26%, strictly dependent on the number of patients treated with the innovative technology.

According to experts' opinions, lower perceptions on IORT emerged with regard to equity aspects (0.39 versus 0.64, p-value>0.05), whereas it would improve both individuals (1.78 versus 1.00, p-value=0.043) and caregivers' quality of life (-0.11 versus 1.44, p-value=0.021).

Discussion

The present study revealed that concentrating all suitable women within the EBRT regimen is unlikely to represent a sustainable and effective strategy. Indeed, significant economic advantages would be achieved with IORT introduction within the Italian clinical practice, stratifying women considering clinical factors and the disease level or progression. From an organisational perspective, although IORT is related to an increase in the operating room occupancy time (+2%), its implementation would consequently reduce the radiotherapy occupancy hours by 44% on average, thus allowing the hospital to taking in charge a greater number of oncological patients requiring EBRT, for the treatment of any other cancer diseases.

In conclusion, the results have demonstrated the strategic relevance related to IORT introduction, its economic sustainability and feasibility, as well as the potentialities in process improvement.

Technostress: a review in healthcare

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Abstract

Background

The COVID-19 outbreak has considerably accelerated the digitalisation process in the healthcare sector. Indeed, after the first weeks of health emergency there was an increment of initiatives to COVID patients, to patients suffering from other chronic pathologies and/or subject to long-term treatments and to non-COVID patients ("ALTEMS Instant Report) throughout the national territory. So, increased use of digital technology poses challenges related to the capabilities and to the possible complications concerning the advent of numerous technologies. In particular, among the possible challenges we focused our attention on technostress (Board, 1984; Rosen and Weil, 1997; Tarafdar et al., 2007; Farrish and Edwards; 2019). According to Tarafdar and colleagues (2007) there is a relationship between technology and organisational roles, which focus on the possible organisational strategies and managerial approaches useful to implement the adoption of ICTs.

Methodology

The aim of this paper is to understand the digitalisation process limits, with a specific focus on how to manage the technostress. In particular, the objectives are to analyse technostress in order to identify its determinants in healthcare sector and more properly in healthcare middle managers and presents the technostress triggering factors and its determinants in healthcare, thus improving the model of Agogo and Hessb (2018). So, we performed a systematic review of literature. The primary source of articles has been identified through Web of science and PubMed. The analysis of the returned articles highlighted a specific model useful to underline and to analyse the antecedent elements of technostress (Agogo and Hessb, 2018), which will be applied in the healthcare context.

Main results

Some antecedents of technostress have been identified using the Agogo and Hessb model. These antecedents can be classified into three different categories: technological characteristics, organisational characteristics and individual characteristics. With regard to the technological characteristics we have been highlighted the complexity connected to the use of the technologies, the reliability of the technology adopted and the pace to whom the workers adapt to technological changes. About organisational characteristics we identified as antecedents: technical support, literacy development, the engagement. Finally, in terms of individual characteristics we detected that age, gender and attitude may impact differently on manage technostress.

Discussion

We analysed the change of this sector and the limits to manage in professional operators. In particular, we studied the impact on the behaviour of the middle manager to cause of the digitalisation process, with a specific focus on to manage of technostress. Indeed, in this contribute are synthetised the determinants of the technostress of healthcare sector. According to Agogo and Hessb (2018) the big problems of technostress manage are relative technological characteristics, organisational characteristics and individual characteristics also in this sector. Thus, the real problem was identified like not ready at this change of the middle managers, in particular didn't have the skills to promptly response at the new challenges of the healthcare system.

INTREPID: Artificial Intelligence in disasters, the future is already here

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Abstract

Disasters, both natural and man-made, are becoming one of the problems of the 21st century is not alien to any of us. Climate change, social inequalities, lack of foresight and lack of training of societies to cope with major disasters mean that a significant number of human lives are lost every year.

For this and other reasons projects such as INTREPID, a 3-year project funded by the European Commission's H2020 Programme (Grant Agreement 883345), faces as main challenge develop technologies able to improve the safety and effectiveness, including introducing AI to reduce the time for First Responders to find victims during search and rescue operations.

The main objective of the INTREPID project is to build and validate an easy-to-deploy and secure platform to improve the speed, range and safety of exploration and assessment of complex and hazardous areas, based on three main pillars

- Exploring: cybernetics assistants collaborate to scout and assess disaster zones.
- Understanding: eXtended Reality and Artificial Intelligence provide clear situational awareness.
- Deciding: Intelligence Amplification technologies provide guidance, alerts and decision support.

INTREPID aims to create a unique platform, integrating Intelligence Amplification and eXtended Reality concepts, with unprecedented Smart Cybernetic Assistants and innovative deep indoor Networking and Positioning capabilities, to improve and accelerate the exploration and assessment of disaster zones.

Methodology and results

Develop an intelligent AI-driven system that exploits user input, lessons learned, protocols and procedures in emergencies and disasters, as well as information gathered on the ground according to different situations and requirements, to assist the user.

The INTREPID Mobile System (INMOS) that connects to the INTREPID network and receives all the information collected by sensors, the position of units, as well as any support requests, reports or commands which are intended for the users.

The Artificial Intelligence that will handle and analyse the information that will be dumped in the Coordinating Centre will feed the different technologies developed in the Project such as:

- Central digital twin-based Hypervision and Operation Management system.
- Features a 3D Common Operational Picture.
- eXtended Reality module for on-the-site assistance.
- Intelligence Amplification module for decision support according to a doctrine model and multiple information sources.
- Path planning module for assistance to First Responders and cyber-assistants.
- Smart Unmanned Ground Vehicles with arm and 5DoF wheels adapted to obstacle and stairs climbing.
- Smart Unmanned Aerial Vehicles for global area mapping and precise cluttered environment exploration.
- Tools and algorithms for Symbiotic Operation Control between assistants
- Automatic Real-Time 3D Mapping of inner and outer spaces and alignment with existing geospatial dataset
- Aggregation and Fusion of all collected information for object and people detection.
- Real-Time Positioning Module for FR and cyber-assistants with seamless indoor/outdoor accurate positioning.

- Communications « bubbles »
- Transparent connection to 4G/LTE/5G, private/public networks.
- Several kind of devices depending on the carrier

  1. Cyber-assistant
  2. FR
  3. Vehicle
- Secured and resilient communication.

Both the different technologies and IMNOS will be developed and evaluated in three pilots that will take place during the three years of the project

Pilot 1 – Stockholm Metro Station (November, 2021)

Scenario: Flooding/leak in the metro.

Pilot 2 – Marseille industrial site (Oct, 2022)

Scenario: Industrial accident; toxic smoke, explosive gas leaks, damaged and standing structures.

Pilot 3 – Madrid Hospital(June, 2023)

Scenario: Manmade explosión and Chemical risks

Professionals' perceptions on interprofessional collaboration in value-based healthcare teams: a mixed-method study

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Abstract

Context

Interprofessional collaboration is an important component of Value-Based Healthcare (VBHC), but there is limited knowledge of how collaboration is perceived by healthcare professionals in VBHC teams. Team membership in interprofessional collaboration is often implicitly assumed, while team membership can be differently perceived by different professional groups. The (mis)alignment in team perception between professional groups may impact the perceived quality of interprofessional collaboration. Therefore, we aimed to provide insight into how the composition of VBHC teams and the collaboration in these teams is perceived by team members from diverse professional backgrounds. Also, this study tried to understand which factors may cause differences in team perception and collaboration.

Methods

A mixed-method study was conducted in which a survey was followed by semi-structured interviews. The survey was administered to different professional groups (physicians, nurses, paramedics and administrative employees) working in VBHC teams in two Dutch academic hospitals. To measure team perception, participants were asked to indicate the size of their VBHC team and which professional groups were part of their team. The survey also captured the relational dynamics of coordinating work (Relational Coordination, RC), by which interprofessional collaboration within and between functions was measured on a scale from 1 to 5. Next, semi-structured interviews were conducted with different professionals to gain deeper understanding of the perceived team perception and interprofessional collaboration in VBHC teams. Interview transcripts were coded verbatim and analysed in Atlas.ti using deductive thematic coding, with continuous comparison and discussion by two researchers.

Results

In all professional groups, the perceived team size was larger than the formal team size. Physicians and nurses were most often considered part of the VBHC team and share high scores of RC. Paramedics were least often considered part of the team by physicians (62.7%), nurses (35.0%) and administrative employees (16.7%). All report the lowest RC scores with paramedics: physicians 2.95, nurses 2.96 and administrative employees 1.50. Administrative employees report with 4.40 the highest RC score with nurses, whereas vice versa this is only 3.21. Qualitative analysis indicated factors that may cause these differences in team perception in VBHC teams: 1) receiving appreciation and recognition from team members, 2) perceiving a team member as necessary for the treatment and 3) experiencing physical or psychological distance. Mechanisms that were found to be influencing the differing levels of RC were: a) perceived equality between team members and b) trust in each other's expertise and task interdependencies.

Discussion

Starting from the assumption that misalignment in team perception influences the quality of interprofessional collaboration, this study tried to understand team perception and interprofessional collaboration in VBHC teams. The current study shows that misalignment exists regarding which professional groups are seen as part of the VBHC team. This may be due to a lack of recognition, knowledge about each other's work activities or a perceived physical or psychological distance. Misalignment in team perception in this study seems to resemble to the level of RC. Acknowledging and working on underlying factors that cause differences in perceived team perception and RC is important for improving interprofessional collaboration in VBHC teams. In conclusion, since interprofessional collaboration in VBHC teams is at the core of VBHC, achieving a shared understanding of team membership and interprofessional collaboration between different professional groups is needed in order to effectively deliver VBHC.

Eliciting and evaluating an initial program theory for a health policy intervention: realist evaluation approach

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Abstract

Context

Our study is set in the context of the Finnish dental care market that has the attribute of what we describe as dual healthcare market, being split between two actors: the regulated and affordable public sector and the less regulated, more expensive, yet still publicly subsidised private sector. Two policy interventions were directed at the sector, when these subsidies were reduced in both 2015 and 2016 leading to a complex chain of events. No proper analysis of the possible consequences was conducted. These complex interventions could have been modelled to provide evidence for the possible outcomes.

Methods

Realist evaluation is a theory-driven approach originally developed for the evaluation of social programs. It aims to answer the questions “how”, “for whom” and “in which circumstances” an intervention produces certain outcomes in order to create knowledge on the social context of the intervention. We use the specific application of realist evaluation, the Context-Intervention-Mechanism-Outcome (CIMO) -configuration to elicit an Initial Program Theory (IPT) for the policy interventions in the Finnish dental care market context. We use this IPT to construct testable hypotheses so that we can evaluate the outcomes of the policy intervention. For the evaluation of the interventions, we use a dataset of 17 million dental operations in the major Finnish cities of Helsinki, Espoo, and Oulu in both public and private sectors and conduct statistical analysis.

Results

We observe that the construction of an IPT allows for a complex system and an intervention targeting it to be reduced to their main components, making them complicated rather than complex and allowing us to better understand the underlying mechanisms. Utilising IPT’s proved to be a good way of studying the chain of events started by the interventions and could be used as a way of clearly communicate to decision makers the changes in a complex system. Our evaluation shows that while in 2015, the public sector was able to react appropriately and receive a heavy inflow of new patients, this was not the case in 2016, leading to negative, unexpected outcomes and possibly a higher price tag for the public sector for health produced.

Discussion

Initial Program Theories are a promising way of conducting context-intelligent analysis of possible outcomes of policies and social programs. In addition to providing a model to study the interventions in that specific context, the analysis produces knowledge of what parts of the interventions may be appropriate to be used elsewhere as well. If an IPT would have been elicited before the implementation of the interventions, policy makers could have concluded that they were not appropriate for reducing costs in the public sector. Visualisations of IPT’s could also be a good way of communicating between professionals, acting as boundary objects, when analysing the possible effects of interventions.

Identifying medical deserts in Europe: a new working definition from the AHEAD consortium

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Abstract

Context

Several regions in EU Member States are facing the issue of ‘medical deserts’. This phenomenon results in certain areas having reduced access to medical services and ultimately poorer health outcomes of the affected population. A clear working definition, with a set of functional indicators is needed to identify medical deserts and the reasons behind their existence, in order to propose potential solutions. An EU-funded consortium project called Action for Health and Equity: Addressing medical Deserts (AHEAD) has conducted a literature review to develop a new working definition and a list of indicators that can be used to measure medical desertification.

Methods

The inclusion criteria of the literature was as follows: (1) recent (last 10 years), (2) published in top-level databases e.g. Pubmed or Cochrane Library (3) includes a set of mesh terms and free text relevant for the topic of medical desertification, such ‘medical deserts’, ‘physician density’, ‘distance to health emergency health services or GP’, and others. In addition, local literature, including grey literature from the five consortium countries was considered, translated and analysed.

Data was extracted using a dedicated extraction template and was checked by two reviewers. To analyse the results a narrative synthesis was performed. The results of the literature review were analysed and used to draft the new definition of a "medical desert". It has been then compared with the conceptual framework developed by the European Commission (2021): Improving Access To Healthcare Through More Powerful Measurement Tools. This allowed to define a more multidimensional definition.

Results

A total of 109 articles matched the inclusion criteria and were reviewed.

The term “medical deserts” is used in the literature inconsistently, is often measured depending on the availability of data and overlaps with other terms. Overlapping terms include rurality, rural/urban inequalities of access and isolated communities. Important aspects that determine whether an area is considered to be a medical desert were low density of health services in certain areas and long travel time to medical facilities. Indicators were collected from the literature, which were then applied to the conceptual framework. The new definition: *‘’Medical deserts imply the inability of a given population to access health services; or the state of isolation in relation to receiving health services, based on quantitative and qualitative barriers, which are interrelated and dependent on each other, in varying degrees and modalities. These barriers are: (1) physical access; (2) social barriers; (3) policy barriers.’’*

Discussion

This is one of the first attempts at providing a more comprehensive definition for identification of medical deserts in Europe, establishing the starting point for future studies in the field. The literature revealed that, to identify a medical desert, holistic evaluation of various types of indicators is needed. Contextual factors that fuel desertification need to be considered as well.

AHEAD’s consortium, following this working definition, is conducting additional research, including applying consensus building methodology in the affected areas, with the isolated communities, relevant stakeholders and decision makers. The findings from this research feeds into to the development of a publicly accessible tool, by the end of the project. This tool maps a combination of specific indicators that assess the barriers defining the areas’ level of desertification. The tool can be used by policy makers, to address inequality in access to health services, and improve health outcomes.

Effective use of data for clinical and business leadership: an international comparative study in Europe, US and Canada

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Abstract

Context

Effective use of performance data is widely identified as an opportunity to fundamentally improve provision of health care. Managing healthcare organisations requires a delicate combination of strategic and operational management, involving clinical and other support processes. Performance data provide the evidence necessary to monitor, evaluate, communicate and act - ultimately improving individual and population-level outcomes. Previous research has looked at different aspects of working with performance data but has rarely compared cohorts of healthcare managers in different countries. Aim of this study was to improve our understanding of organisational effectiveness worldwide in using performance data to support managerial work in healthcare.

Methods

We reused publicly available questions and responses from the New England Journal of Medicine Catalyst project survey, conducted in the United States (N=566) and surveyed a comparable cohort of healthcare managers in Europe (N=125) and Canada (N=229) on the use of performance data for decision-making in their managerial work. In the European survey, respondents were the participants to the European Hospital and Healthcare Federation's Exchange Programme from 30 European countries, while in Canada these were the members of the Ontario Hospital Association. Respondents in all of the surveys presented managerial staff working with care processes and support for care processes as well as managing strategies and plans for entire organisations. Identical questions in all three surveys explored respondents' opinions on the effectiveness of their organisations' use of performance data for guiding clinical and business leadership, population health efforts and supporting care decision for individual patients. All surveys were conducted between October 2018 and December 2019.

Results

Respondents in all three surveys rated their organisations' effectiveness in using data for supporting business and clinical leadership higher than that for supporting care decisions for individual patients and guiding population health efforts (Figures 1 – 4). Majority of respondents found their organisations' abilities to support business and clinical leadership by using data as "effective" (including "extremely effective" and "very effective"). The perception of effectiveness was lower when asked about using data to guide population health efforts and support care decisions for individual patients. In general, the perception of organisations' effectiveness was consistently highest among the Canadian respondents, followed by the European cohort and lowest among US healthcare managers. The only exception was perception of the effectiveness of using data for guiding population health efforts where there was no significant difference between European and US respondents.

Discussion

This work aimed to advance our understanding of the perception of healthcare managers on the effectiveness of using performance data to support managerial work. We identified significant differences and found that, compared to their US counterparts, Canadian and European healthcare managers felt that their organisations were more effective in using data for different managerial purposes. Arguably, performance data, and the effectiveness of its use, are the key in healthcare's transformation from data-collecting accountability-focused organisations towards data-driven learning organisations. Admittedly, the healthcare systems, in countries of research, have different approaches to management, decision-making and accountability, on all levels - system, organisations and individuals. Hence, we strongly suggest further examining, contextualising and interpreting these findings, especially in the context of the COVID-19 pandemic and its effects on the use of data in clinical and managerial work.

Fresh insights into the work of community (home care) nurses using labour process theory

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Abstract

Context

I use labour process theory (LPT) to analyse the work of a group of community nurses. LPT is a well-established theoretical framework, conceived in the 1970s and used to analyse and illuminate the labour process of workers. Initially, LPT was used as an analytical tool of traditional, manufacturing work; but in recent decades has been utilised in the analysis of service work, including care-giving labour. In this study, I use LPT to illuminate the work of community nurses and provide fresh insights into the nature of their work and the suitability of LPT as an analytical tool for care-giving labour.

Methods

My study 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 spread over 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 and behaviours of the nurses, without distractions. The data was produced from detailed field observations of the nurses and verbatim interview transcripts. The data was analysed thematically and inductively, supported by the use of qualitative data analysis software (NVivo).

Results

My study highlights the sometimes unusual skills required of community nurses and also exposes how they may, on occasion, be professionally vulnerable, due to the generally solitary nature of their day-to-day nursing work. LPT is used to illuminate the nature of the nurses' relationships with their patients and the impact of these relationships on the nurses themselves. This study explores the range of emotions that these nurses felt towards their patients; great joy in spending time with patients that they came to know well; sometimes sorrow, when they must bound the extent of their care because of resource limitations, or the completion of their patient's treatment. The relationship between nurse and patient also raises some theoretical challenge around worker agency and motivation.

Discussion

I draw on LPT to analyse the nature of the work of a group of community nurses and also use the theory to provide new insights into the nurses' relationships with their patients. I illuminate the impact of the nurses' work on them as individuals and draw conclusions and fresh insights for employers and managers. I also suggest theoretical limitations of LPT in this context, which relate to the distinctive relationship between a nurse and their patient. Notwithstanding these limitations, I argue that with LPT, researchers have available to them, an under-used, analytical tool which can provide valuable insights as to the nature of care-giving and public-serving labour. In the current environment, where health systems are under significant stress (due to the ongoing consequences of a global pandemic), LPT is well placed to produce fresh analysis on healthcare work and healthcare workers.

The impacts on the daily life of the person with Type 2 Diabetes Mellitus (T2DM) - a comparative analysis between the perceptions of health professionals and people living with T2DM

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Abstract

Context

A person-centred care and an effective communication approach are essential in chronic disease management and care. Type 2 Diabetes Mellitus (T2DM) is a multidimensional disease and Patients daily life decisions may impact their quality of life and care. Understanding the real impacts that people living with T2DM (PT2DM) perceive is crucial to discuss the best options and to contribute to shared decision-making. This study aims to compare the perception of these impacts from the perspective of PT2DM and health care professionals (HCP).

Methods

Quantitative, observational, and cross-sectional study, conducted through two online surveys directed at: (i) adults with T2DM, residents and healthcare consumers in Portugal (N=464); and (ii) HCP (physicians and nurses) that assist people with T2DM and provide healthcare in Portugal (N=181). Seven dimensions of impacts were evaluated – social, employment, family life, mental health, body consciousness, physical well-being, and quality of life – in a scale of three items – negative, none and positive impact. Statistical analysis and chi-square test were performed in SPSS® v28. The study was approved by APDP Ethics Committee.

Results

Regarding the difference in perspectives (PT2DM vs HCP) about the real impacts of T2DM on patients' daily life, the "social impact" (n=548) proved to be the most uneven, in which 78.0% of HCP think that T2DM has a negative impact and only 31.5% of PT2DM reports it. Concerning the impact on "employment" (n=537), 69.1% of HCP identified a "negative impact" and 64.4% of PT2DM reveal no impact in their lives. Similar results were found in "family life" (n=605) with 60.9% and 45.5%, respectively. Regarding the impact on "mental health" (n=606), "body consciousness" (n=609), "physical well-being" (n=621) and "quality of life" (n=614) presented a similar profile with negative impact mostly: 57.8%, 54.4%, 68.8% and 62.9% for PT2DM and 75.4%, 75.1%, 84.4% and 69.7% for HCP, respectively. The analysis was statistically significant in all parameters analysed ($p>0.01$), except for "quality of life" ($p=0.146$).

Discussion

Placing the person as the centre of heath care and facilitating the communication between the HCP and PT2DM has become essential to meet people's real needs and to promote quality of care. To this end, it is important that both HCP and PT2DM are aligned, in order to contribute to improve chronic disease management. The results of this study show that overall perception of impacts and the perception in specific dimensions of daily life, from the point of view of HCP and PT2DM, are divergent. The impacts on "quality of life" were the only analised category, which proved negatively convergent in both perspectives. This finding may be associated with the burden of T2DM on people's daily lives. In general, the negative impact of disease was more referred by HCP than PT2DM. Conversely, PT2DM reported positive impacts of the disease on daily life, not valued by HCP.

Distance from a reference centre on complex cancer diseases: a proxy for poor outcomes? A mixed-methods study based on Catalonia (Spain)

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Abstract

Context

In Catalonia (Spain), the implementation of the centralisation policy began in 2012 for 20 cancer diseases. For many patients, this situation entailed increased distances from home to reference centres (RCs) as well as many county and general hospitals having to refer their patients therein. Of the 64 public-funded hospitals, the surgery for rectal and pancreatic cancer was centralised in 29 and 11 RCs, respectively. We aimed at assessing whether increased distances led to differences in the quality of care that patients receive, and exploring qualitatively the connections between RCs and non-RCs at managerial and clinical level.

Methods

We used a mixed-methods approach based on an explanatory sequential design, first collecting and analysing quantitative data on distances' impact on clinical outcomes (A) and then performing a qualitative analysis to gain insight into the reasons for potential hospital-based differences. The quantitative analysis was based on pancreatic and rectal cancer patients and included the combination of three data sources: (1) distances from patients' residences to RCs in km; (2) data from quality of curative-intent surgeries originated in population-based cohort studies (2011-15 period) that were resumed in a high-quality care synthetic indicator (TBO –textbook outcomes-, e.g., 30-days post-surgical mortality); (3) adjustment sociodemographic variables, e.g., patients' income, age, comorbidities and intermediate (referring) centre. The quantitative differences per hospital were then analysed qualitatively through 25 semi-structured interviews with a representative sample of hospital directors and heads of surgical departments from RCs and non-RCs (provinces of Barcelona, Girona, Tarragona and Lleida).

Results

A total of 2062 patients were included (table 1). Most of the patients lived less than 10km from the RC where they were operated, and the farthest 10% were at a distance of 89.14km and 29.7km (or more) in rectal cancer and pancreatic, respectively. In more than half of both groups (63,6% and 66%) there was no conformity to TBO. Very low patients' income was a risk factor for poorer outcomes (worse TBO, including survival). The multilevel analysis showed no causal relationship between patients' distance to RCs and higher conformity to TBO. However, in a descriptive analysis, the conformity to TBO between patients of RCs' catchment area and patients referred was worse among the latter. The qualitative analysis revealed good practices in interhospital connections concerning instruments (e.g., IT-arrangements to avoid tests' duplication) and decision-making frameworks (e.g., multi-centric tumour boards), but also lack of collaboration, which might partly explain these differences.

Discussion

In the present study, the hypothesis that longer distances to RCs could lead to worse health outcomes was not verified. The centralisation of highly-complex cancer diseases did not imply equity-related problems despite longer distances and delays (highlighted in the qualitative study) in the case of patients referred by intermediate hospitals to RCs. Distance is a relative concept as it includes not only metres and time, but also indirect and invisible costs for many patients with impairments, comorbidities and/or lack of social support. While the centralisation policy contributed to ensure a high-quality care for all rectal and pancreatic cancer patients treated with curative-intent, there is room for improvement in facilitating patients' transition from/to RCs. Interhospital connections in the form of network approaches should be developed as a policy target as much as the need for having reference centres.

Artificial intelligence transforms human liquid biopsies analysis

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Abstract

The treatment of cardiovascular diseases and cancer are among the most important topics of our time. Successful and sustainable results in this area can be achieved through coordinated action between scientists, medical teams, academia and all stakeholders, including patients. This paper presents a combination of approaches and perspectives in this field and gives incentives for policies for the development of applied research and concepts in Bulgaria, Eastern Europe and beyond. The scientific part of this paper is related to nucleosomes, They are composed of histones and DNA, are the basic repeating units of chromatin. They govern cellular responses translating in changes in gene expression, during health and in pathological settings. Nucleosomes, histone complexes and DNA fragments are released from cells undergoing apoptosis into the bloodstream, for instance in cancer patients. Chromatin specimens freely circulating in the blood are innovative “liquid biopsies“, a not invasive technology used in tailored oncology. A current major limitation of liquid biopsies, such as cell free DNA fragments, is the need for genetic differences, in order to discern between tissues of origin. Pathologies such as cardio-metabolic conditions and sepsis correlate also with augmented cell free chromatin fragments. While this is potentially due to tissue damage, the phenomenon is hard to detect because they are “self”. Here, we dissected how physiologically finely tuned release of histone complexes and intact nucleosomes into the blood stream may mirror health or frequent diseases. We propose to the community to change the current concept from a “DNA-centric” to a “histone-centric” methodology. We developed an innovative imaging technology based on multispectral / imaging flow cytometer coupled to high resolution microscopy, to assess circulating histone complexes in the bloodstream. These approaches were coupled to setting up a pipeline that employs open-source software and machine learning algorithms, a systems approach to the quantitative image high throughput analysis of circulating histone complexes. The machine learning approach that we propose consists in 3 steps, developed and implemented at Harvard and MIT, designed to address question such as cell count, cell size, and organelle shape or protein/DNA subcellular patterns. In parallel, we used intelligence-activated cell sorting (IACS), integrating cell microscopy, flow cytometry and circulating histone complexes sorting on a hybrid machine learning-hardware data-management infrastructure, enabling automated operation for data acquisition and data processing [1-3]. This innovative methodology together with a deep biological understanding of the assembly and turnover of nucleosomes allow deciphering human cell free nucleosome or histone complexes composition in health, in common cardiovascular risks and cancer.

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Digital transformation in the era of COVID-19: the case of Greece

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Abstract

Although the pandemic's impact on our world has amplified many of the negative aspects of the lingering bureaucratic sector, at the same, it motivated countries to improve their essential services towards their people. One such improvement has been the acceleration of the processes for the transition of Greece to the era of digital governance.

In the 2020 edition of the Digital Economy and Society Index (DESI Index), Greece ranked 27th out of 27 EU Member States. The pandemic propelled Greece's government to create and achieve a series of key modern applications which would seem distant, difficult and unachievable to implement before the pandemic and resulted in a slight growth of 2 positions in the DESI Index for 2021 (25th out of 27 EU).

In this paper we will outline in general terms the robust planning and important innovations implemented by the (Greek) Ministry of Digital Governance in response to the pandemic.

During the first months of the pandemic in early 2020, the Ministry of Digital Governance successfully streamlined and simplified the decision-making process by deploying horizontal and targeted technological solutions.

To alleviate the pandemic's negative impact on society, the Ministry set three major goals for its healthcare system:

- To save as many lives as possible,
- To maintain business continuity for the government, and
- To support and empower citizens by deploying technology solutions.

By building upon existing European directives and Greek law, during the December of 2020, the Ministry launched the government's first standardised API which shares all government open data from the data.gov.gr portal. Existing datasets were opened up together with new ones which were "battle-tested" in helping pilot a data-driven decision-making process against the COVID-19 pandemic such as live traffic in urban centres, toll passthroughs, and more.

The most important services being provided from the Central Government in relation to COVID-19 were:

- The creation of a digital vaccination platform,
- The launch of the European Digital COVID Certificate
- The creation of a COVID certification wallet, and
- The creation of a license during lockdown, which enabled people to travel if it was required by their work

At the end of this presentation, we will analyse some crucial factors that actuated these impressive results by the Greek Ministry of Digital Governance and resulted in various versatile innovations impelled by the pandemic.

Task shifting in practice – Case study of the digital pathology in Hungary

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Abstract

Initiatives on task shifting contribute to more effective organisation of care and workforce management at different levels, so committing to improve efficient and sustainable health systems in innovative ways. Task shifting can increase the efforts of moving towards more integrated healthcare, and has a key role in achieving a well-functioning health system, but it is also posing challenges related to the consequent change in current practises and organisation of care. In the pathology workforce, digitalisation might mitigate the high risk of outflows - absence or emigration - and ensure elevated retention potential, optimised workload and performance.

The aim of the present qualitative research was to explore the development of the workflow in the field of pathology, and reveal the benefits of digitalisation in the context of task shifting. Semi-structured interviews were conducted with key informants at the pathology clinics in Budapest in 2021, and participatory observation was carried out to observe the workflows and the impact of digitalisation on-site.

The findings of the research showed that the field of pathology is among the most relevant fields for digitalisation. Firstly, the utilisation of online platforms (e.g. hospital information system for electronic requesting of tests, local laboratory workflow management systems, sample tracking) is very common in pathology, therefore easing the administrative load of health professionals is rather significant. The second benefit of the digitalisation, that is, the rapid communication regarding second opinions and e-consilium was emphasised by the pathologists. During the COVID pandemic, digital workflow enabled teleworking full- or part-time at the clinics without causing difficulties in performance. Thirdly, the clinics use digital scanned samples and piloted AI-supported annotation - automated image interpretation, therefore experienced the digital task shifting to machines.

Evidence showed improved efficiency, financial and time savings in the pathology sample registration, shortened diagnosis and validation via e-consilium, and optimised workflows in telepathology. Scanning as a new task requires extra workload for laboratory assistants, still seems to be a cost-effective solution. Digital task shifting and utilisation of digital require the development of digital skills and competencies of the workforce, which is not yet taught systematically in pathology education. Ongoing development of the training modules for pathology resident doctors enables including digital content into their curriculum. However, in pathology diagnostics, human intuition cannot be substituted by machines. Further benefits were highlighted in quality assurance of safe sample tracking and monitoring, while among the challenges data storage due to the enhanced data quantity and GDPR were mentioned. In summary, with the support of digital solutions, productivity can be optimised and professionals can be empowered, however automation will not replace human resources.

Costing in value-based healthcare – science or fiction? A systematic review

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Abstract

Context

The past decade has seen a rise Value-Based Healthcare studies, mostly assessing its outcomes. On the other hand, the cost side of the value equation remains relatively understudied. While many authors suggest the use of time-driven activity-based costing (TDABC), we know little about current methods used to measure costs in healthcare research and practice. We explore which costing methods are currently being used (RQ1) and we assess the value-based benefits they deliver (RQ2). To provide practical recommendations we also explore how these cost measurements were executed and distinguish best practices. This is aimed to further management steering and decision-making in VBHC implementations.

Methods

We performed a systematic literature review with qualitative synthesis to answer two research questions. We rigorously search PubMed/MEDLINE, Embase, EBSCOhost and Web of Science. We screen with two reviewers following PRISMA guidelines, including studies up to January 1st, 2022. Our criteria require studies to measure costs of an intervention, treatment, or care path, and to label the study as 'value-based'.

We categorise included studies based on the costing method used (following management accounting literature) and the characteristics of the costing method, such as costing a full care path.

Subsequently, we assess which value-based consequences these costing methods facilitated. For example, whether the method enabled value-based care path improvements. This information would enable managers and medical staff to make value-based decisions. Lastly, we assess the way in which costing systems were set up. For example, we review whether studies used expert input when measuring costs.

Results

We find 1930 unique studies, of which we exclude 1256 based on titles and abstracts with high inter-rater reliability. 459 are excluded during the full text read. We include 215 studies to answer RQ1, and a subset (50) to answer RQ2.

Most studies are conducted in the US (83%), many published recently (46% in the past 2 years), and many measure costs for surgical care paths or partial care paths. We find that half of all studies estimate costs using reimbursements (49%) while 51% measure hospital costs.

We show that more refined costing methods, such as TDABC and the more generic activity-based costing (ABC) can provide valuable managerial information. These can facilitate care path adjustments, cost measurement comparison across treatments/patients/providers, the identification of cost drivers, and tacit measurement of cost savings. We identify characteristics important to the success of implementation, such as process mapping and expert input.

Discussion

Our findings have practical and academic implications. While TDABC is prized as the best method of measuring patient level costs, its value to VBHC depends on many factors such as length of care path costed, use of process mapping and expert input. Costing very short or partial care paths and surgical episodes produces accurate cost information but limits the management information produced.

Our review suggests that other costing methods can also produce information that facilitates VBHC, but that TDABC or ABC are desirable. Complete care path costing is rare but valuable and deserves further pursuing, as it can deliver specific care path improvement suggestions, frequently relating to how care is organised, and without the need to alter the clinical treatment. The choice of costing method, and implementation thereof, depends on the goals desired by practitioners. Our study concludes with recommendations for research and practice to further the value agenda.

Task sharing among healthcare professionals for sustainable health systems

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Abstract

Context

Health systems around the world are under tremendous pressure. Demand is increasing and resources are shrinking. Thus, decision makers are looking for ways to do more with the available resources, i.e., to devise more efficient and sustainable health systems. One way that has been proposed is to make better use of the skills of the various healthcare professionals. The objectives of this study were to document the perceptions of key stakeholders regarding the types of tasks that could be shared among healthcare professionals, the obstacles and facilitators of task sharing and the pros and cons of such task sharing.

Methods

This study is based on a qualitative exploratory research design. Data was collected through individual semi-structured interviews with key stakeholders working in the healthcare system in the province of Quebec, Canada. Ten interviews were conducted with decision-makers and managers involved at the provincial level (ministry of health, professional orders, unions) and medical, nursing, and clinical managers from different local healthcare organisations. Twenty-three interviews were conducted with physicians (5), nurse practitioners (4), registered nurses (7), nursing assistants (3), and care attendants (4) working in various healthcare settings (hospitals, long-term care facilities, community healthcare centres, and primary care medical clinics) in the metropolitan area of Montreal. An interview scheme was used to cover the study objectives mentioned above. Interviews were audio recorded, transcribed, and analysed using a directed content analysis strategy. Ethics approval was obtained from the Health Research Ethics Committee of the University of Montreal.

Results

Specific tasks that could be shared between each pair of professions (physicians and nurse practitioners or registered nurses or nursing assistants; nurse practitioners and registered nurses; registered nurses and nursing assistants; nursing assistants and care attendants) were identified but may vary by healthcare setting. Respondents also named tasks that should not be shared with another profession.

Obstacles to task sharing included: complexity of laws and regulations of the healthcare system, restricted field of practice for each professional title, unfavourable characteristics of healthcare organisations (lack of resources, lack of openness to alternatives, deficient management style) and lack of competencies to take on new tasks. Facilitators included: pressure to address new patient needs, mutual understanding and recognition of competencies of each profession, good communication and information sharing among all professionals which is promoted by small team size, and leadership and support from management.

Respondents also identified benefits and disadvantages of task sharing.

Discussion

Demand for healthcare is increasing as population is aging and chronic diseases are growing. Human resource supply is shrinking as healthcare personnel is retiring or simply quitting because they do not feel that they can exert their full scope of practice. While there are signs that resources are not used optimally, pumping more money into the health systems does not appear socially acceptable nor financially sustainable. Since about 80% of any healthcare budget is devoted to human resources, more efficient use of these resources seems warranted to meet the increasing needs of the population. This study showed that much can still be done to share, transfer or delegate tasks among healthcare professionals and key stakeholders are open to do so under certain conditions. Better task sharing among professionals is one solution to make health systems more efficient and sustainable on the long run.

Pursuing digital health transformation and telehealth integration into the standard of care in a hospital setting

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Abstract

During the SARS-COV-2 pandemic, digital health transformation became a higher priority for the Portuguese National Health System. This succinctly details the steps followed by our Hospital, Centro Hospitalar Universitário do Porto, during 2021, to implement post-pandemic telehealth services and integrate them in conventional healthcare practice.

A Telehealth team was assembled, including a telehealth promoter (clinician), digital health systems (bioengineering) and health administrator (health management). National and European relevant legislation (telehealth, informed consent, general data protection regulation (GDRP) was reviewed and rulebook templates for several telehealth services were created (teleconsultation, telemonitoring, telerehabilitation). These rulebooks included clinical inclusion and exclusion criteria, technical requirements, logistical roadmap for implementation, step-by-step practice instructions, expected challenges and parameters for success monitoring. All clinical departments were surveyed and those actively already seeking new telehealth initiatives were selected first. Using the templates developed, the telehealth team worked with each clinical department to craft and integrate a telehealth solution into their standard of care workflows. The telehealth team also worked as a mediator for the clinical departments, directly interacting with hospital central structures such as the digital health systems management, budgets and acquisitions, data protection officer, and the board of directors, as well as with other hospitals and primary care institutions, and with national health system structures such as the National TeleHealth Center and the Serviços Partilhados do Ministério da Saúde (SPMS)(the digital health management centre for the Portuguese National Health System). The team's knowledge of the bureaucratic procedures in place was crucial to expedite all interactions related to these projects.

Other wide-targeting initiatives such as paper dematerialisation (health medical records, internal and external medication prescriptions, medical exams prescriptions, hospital-patient communication), secure internal digital communication, a smartphone / tablet App development, and telehealth education for health professionals have been pursued.

At the beginning of 2021, our Hospital had 2 non-pandemic related telehealth services, both a teleconsultation/screening collaboration with primary health care systems (Dermatology and Nephrology). At the end of 2021, 4 more telehealth services had been implemented (telemonitoring in chronic cardiac insufficiency; interhospital teleconsultation between paediatrics and paediatric surgery; interhospital teleconsultation between endocrinology, vascular surgery and general surgery for diabetic foot disease; and doctor-patient teleconsultation for medical genetics) and 16 telehealth services are in development, spanning different modalities (telerehabilitation, telemonitoring and teleconsultation), different partnerships (peripheral hospitals and primary care institutions), different clinical areas (Anaesthesiology, Cardiology, Endocrinology, Immuno-allergology, Internal Medicine, Neurosurgery, Neurology, Obstetrics, Oncology, Paediatrics, Urology, Vascular Surgery) and different medical health professionals (medical doctors, nurses, cardio pneumologists and physiotherapists).

A framework of digital health medical records, prescriptions and communication, education on telehealth services, a multidisciplinary telehealth team, and an assisted bottoms-up model of project creation have been key drivers for telehealth integration among our health professionals and patients.

Using personal genomic data within primary care: a bioinformatics approach to pharmacogenomics

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Abstract

Personalised medicine is a term used for tailoring medication to the person, it involves the physician considering, among other things, pharmacogenetics in the daily practice. Access to this information would enable doctors to better define the nature of a disease and find the most effective treatment for a particular patient, in order to avoid ineffectiveness and unexpected side effects. With the help of pharmacogenetic studies, physicians will be able to administer treatment regimens that are personalised and adapted to each person's genetic makeup. Furthermore, they will be able to pre-symptomatically diagnose and discuss personalised treatment plans.

The genomic or genetic data is needed to provide medical care or perform research, but the data is directly correlated to a person and therefore falls under the General Data Protection Regulation (GDPR). Of particular interest is the concept of the "Personal Health Train", where FAIR-data principles at source enable data to be visited on site for analysis, not moved. Applied to Personal Genetic Lockers (PGL), a place for the person - controlled by the person - to store their genomic and genetic data, this means that lockers are visited with an analysis request and the sensitive data does not have to be moved. Access restrictions described in FAIR metadata are subsequently assessed to negotiate access, and then the analysis takes place inside a safe environment in or associated with the locker. Only anonymous results can subsequently "leave" the locker. Multiple lockers can be visited for federated analysis in this manner.

Although the added benefits of genetic and pharmacogenetic information about a person are generally acknowledged, the full implementation of a widely distributed system for primary care professionals is currently absent. This is in part due to the many obstacles encountered upon implementation of such a system, both on a technological as regulatory and governance level. The PGL project is laying a foundation on how to interact with genomic and genetic data outside of an institute.

One of the main focus points for such an architecture is a solid ethical foundation on which it is built. Not one single organisation or one single group of people may be the only ones to discuss the ethical perspective. The GDPR by the European Union has provided a foundation for the ethical handling of personal information, and the Patients' Rights bill of the European Union describes the general rights of the patient. These and many more ethical standpoints from the perspective of a European citizen need to be discussed in a transparent manner.

The Societal Impact for Genetic Science (SENSE) project is focused on bringing this architecture and the ethical discussions to the Dutch Healthcare system, so that a new way of prescribing medication can be implemented.

Towards a framework for organising care around patients, drawing on stories from the frontline of the NHS in England

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Abstract

Context

A large gap remains between the rhetoric and the reality of patient-centred care. Why does this happen, what does it feel like when it goes wrong, and, most importantly, what can be done? And what is it like when care is well organised around patients? This study stimulates reflections on these questions by listening to experiences of patients and carers, from giving birth to care at the end of life. The approach embraces the concept of 'serious storytelling' in which the power of narrative to convey experience, triggering emotional responses and reshaping understandings, is used to achieve serious goals.

Methods

First, we drew upon a selective review of the policy and research literature to present an understanding of patient-centred care. We assess why this is important and offer a brief history of developments in the UK and internationally. Second, we sourced 25 accounts from experiences of the NHS in England across the life course and from people with as wide a range of backgrounds as possible. We used a variant of the biographic narrative method to encourage people to tell their story in their way. The interviews, conducted between 2017 and 2020, were face to face or over the phone, and were recorded and transcribed in full.

The stories are curated across six separate chapters in a monograph: pregnancy and childbirth, children and young people, managing a long term health condition, adult acute care and cancer, mental health and mental illness, and older age and end of life.

Results

Some tales were fragmented, unvarnished or impressionistic; others were polished narratives. We realised that all the stories contained learning, regardless of the communication skills of the interviewee. The stories invited reflection on a number of issues, such as actively managing expectations, continuity of care, communicating complex information and the mental toll of long-term physical conditions. They also touched on themes such as racism and ageism, patient experiences of power hierarchies between professions, the importance for mental health of being in work, and the pros and cons of labels and diagnoses.

The jargon around integrated care does not mean much to patients. They do plead for care that is joined up for them and for their loved ones. This could be a great starting point for those charged with making a success of the integrated care systems that are being established this year in England.

Discussion

Through immersion in sourcing, curating and analysing these stories we have identified a framework with five key principles for organising care around patients:

- The first is kindness and compassion, so hard to practise amid organisational chaos, especially in the throes of the COVID-19 pandemic.
- The second principle is attentiveness. This is about listening and observing closely, and seeing the whole person as well as the illness.
- The third principle is empowerment. These stories contain many examples of a power imbalance between clinician and patient which can be redressed when going with the grain of self-help efforts.
- The fourth principle is professional competence. These stories indicate that competence is deeply important to patients, including correct diagnoses, timely referrals, and appropriate treatment.

Organisation competence is key to enabling the other four principles. It involves excellence in scheduling, logistics, responsiveness and continuity of care. Only then can the other four principles can flourish.

Implementing patient-reported indicators: first experiences with the international survey of people living with chronic conditions (PaRIS survey)

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Abstract

Context

Responding to the needs of people living with chronic conditions is one of the key challenges of health systems around the globe. Yet, information on the extent to which health systems succeed in meeting this challenge is scarce and the information that is available rarely takes the perspective of patients themselves as the starting point. The OECD PaRIS Survey of People Living with Chronic Conditions (PaRIS survey) aims to change that, by developing and implementing a standardised way to measure experiences and outcomes from the perspective of patients.

Methods

The PaRIS-SUR Consortium supports the development and implementation of the PaRIS survey under the leadership of OECD's participating member states. The consortium works in close collaboration with national project managers in participating countries and the OECD Secretariat, and regularly consults patients and patient representatives as well as technical experts including care providers. . To prepare instruments, guidelines, procedures and infrastructures, the consortium undertook a variety of activities including but not limited to: literature review, expert and patient consultation (including delphi rounds), translations of source questionnaires, building on and adapting of tried and tested infrastructures and procedures for data collection.

Results

The consortium produced: (1) a conceptual framework, (2) a questionnaire for patients with Patient Reported Experience Measures (PREMs) and Patient Reported Outcome Measures (PROMs) at its core, (3) a questionnaire for primary care providers to collect characteristics of their service delivery, (4) sampling guidelines for sampling providers and patients, (5) a survey platform and various documents and procedures to support data collection. At present, 21 countries are participating. Countries have translated the questionnaires and developed country roadmaps that detail the study design and implementation plans in their respective countries. Currently, countries are preparing Field Trial data collection to test instruments, infrastructures and procedures. Subsequently, lessons learned will inform the approach to the Main Survey (2023) on the basis of which countries will engage in within and across-country learning.

Discussion

The commitment of countries in the PaRIS survey illustrates a strong appetite to improve the people-centredness of health systems. Since it is difficult to improve what is not measured, the collection of sound, robust and internationally comparable patient-reported indicators is an important step in this direction. The next challenge will be to ensure that the results of the survey achieve the policy impact that they could potentially have. This poses several requirements to data quality and analysis, but also requires that stakeholders and decision makers are sufficiently involved and value the results of the survey within the context of their health care system. Ideally, this interpretation of results is a collaborative effort, combining relevant perspectives of patients, care providers and policy makers in each country.

The pandemic as initiator for change: findings from the conceptual phase of a user experience pilot in a university hospital

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Abstract

Context

The disruptive nature of the COVID-19 pandemic is expected to bring change, of different kinds, to healthcare systems. The literature examines the expected changes; however, few investigate the circumstances through which change happens. This study presents the findings of the conceptual phase of a User Experience (UX) pilot study, which involves staff testing equipment prior to procurement, in a university hospital in Belgium. The aim is to disentangle the circumstances for this UX pilot to emerge, to better understand how the pandemic situation led to change and how an interprofessional shared decision-making process is conceptualised.

Methods

Overall, the single longitudinal case study will consist of four data collection points over a two-year period to follow the pilot project from its conception stage to the final outcome. The aim of this first phase of data collection was to understand why and how this UX pilot had come into existence at this particular point in time. Therefore, semi-structured in-depth interviews were conducted with the persons (n=5) responsible and/or associated in the conceptual phase of the user experience pilot. The personnel interviewed included the hospital managing director, the deputy managing director, the head of the public procurement service, the quality and provider logistician and the senior head nurse. The interviews transcripts were coded and analysed in Maxqda software using an inductive thematic analysis approach (Braun & Clarke, 2012).

Results

Our findings show that the UX pilot materialised as a side effect of a collaboration the pandemic brought about between the logistician and the senior head nurse. The collaboration happened as a result of the equipment shortage of the first wave and continues until this day. It allowed for knowledge and information transfer between the medical and logistical departments, which also brought to the fore the distance between the logistical processes and the healthcare workers. The UX pilot is seen as a means to include staff in the decisions concerning the equipment purchases, to give them a sense of responsibility and of involvement. However, it is not clear how much weight the results of the tests will have on the overall decision-making process, nor how hospital staff will respond to such tests.

Discussion

The pandemic has exposed difficulties within healthcare systems and struggles faced by healthcare workers. Change is expected to happen, but it is important to study these transformations from their initiation to comprehend the underlying thought processes and understand the sense of the change and the potential impact. In the university hospital, the pandemic led to a new collaboration between two departments and through this collaboration, and the lived experience of the pandemic, the UX pilot was put into action. The idea of UX testing was not new, yet it had never been put into action prior to the pandemic. As such, the findings offer an insight into how change came into effect through the pandemic, what was transformed by the pandemic, and it gives the possibility to think about change in a broader organisational sense.

Knowledge, skills and competency required for task shifting: the TaSHI project

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Abstract

Context

Efficient care management is essential to ensure optimised care pathways, health workforces and sustainable health services. Many EU member states face shortages of health workforce and pressure on access to care. Task-shifting can improve the health workforce and access to care. Task shifting includes task delegation and (re)sharing roles within health professions, between health professions, and shifts from professionals to patients or machines. However, to mitigate the negative impact and maximise the benefits of task shifting, well-structured concepts, guidelines and supporting tools are vital. This study aims to explore the required content of a curriculum in task shifting.

Methods

The study is part of the project “Empowering EU health policies on Task SHIfting” (TaSHI) co-funded by the 3rd Health Programme of the EU and applies a mixed-methods approach exploring recent literature and good practices on task shifting. By desk research, we reviewed EU projects and scientific literature related to task shifting and education in healthcare, searching EU-portals, academic research websites and the indexed databases Medline, Embase, Cochrane, Cinahl and Web of Science from 2000. Next, to validate and extend the insights from the review of the academic literature and EU projects, we interviewed an international group of stakeholders using a Delphi approach, including a questionnaire and an online thematic workshop. The Delphi questions covered five themes: i) task shifting in general, ii) life-long learning and continuous education, ii) digital education, iv) automatisation of healthcare and v) promoting task shifting.

Results

The desk research identified and described a set of pre-requisites and four foundations for task-shifting. The pre-requisites include suitable leadership, necessary resources, appropriate patient referral system, patient records, evidence-based guidelines, communication skills and record-keeping. The four foundations extracted for task shifting are (1) interdisciplinary training and collaborative practice, (2) transversal skills, (3) disruptive change and resilience, and (4) cultural sensitivity, flexibility and readiness. The Delphi exercise and stakeholder interviews supported and extended these findings. The stakeholders identified multidisciplinary training, seeing the bigger picture, teamwork, leadership, knowledge about the professions and scope of professions skills, innovation and digital transformation as the most relevant content for the task-shifting curriculum.

Discussion

Models for collaborative learning across disciplines, as a foundation for task shifting, need further research. This also applies to transversal skills as an added value for task shifting. Good communication between teams, relevant and timely access to specialist services, coordinated patient care with continuous support, and organisational climate and management support provide opportunities to integrate the required skills needed for task shifting. However, education alone may be insufficient to actually change a culture, and training should address attitudes and clarify roles and responsibilities. The TaSHI-project will explore this over the next two years. Based on the current knowledge and the need for collaborative learning models, we will develop a curriculum and a flexible, digital learning model. This will be piloted as learning material for task shifting in five European countries, including different professions and contexts of health care. We plan to complete the learning model, curriculum, and learning materials in 2023.

OPEN public hospitals' eyes to INNOVATION

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Abstract

Centro Hospitalar e Universitário de Coimbra (CHUC) is a public university hospital located in the central area of Portugal, serving 1.8 million inhabitants — nearly 25% is over 65 years old. Like many health care providers, it faces incredibly complex challenges characterised by rising demand, increasing costs, and fiscal constraints. Care models need to be flexible to cope with these challenges. This can only be achieved through innovation.

CHUC is on the Portuguese vanguard of health innovation and is implementing an open innovation model taking advantage of the close connection to the University and start-ups' incubators and accelerators. The purpose of this project is to take advantage of this auspicious microenvironment by stimulating CHUC's collaborators to pay attention to the challenges they face and look for solutions. It consists of on following ten-step framework:

1. Define areas of priority within the hospital;
2. Identify challenges;
3. Develop the innovation infrastructure;
4. Establish expected results; 5. Identify potential solutions;
5. Evaluate the solution;
6. Execute the pilot;
7. Measure final results and mark conclusions;
8. Expand to more services;
9. Implement in the structure of the organisation.

The strategic plan comprehends substantial investment in communication. Clear communication to engage professionals to adhere and communication along the whole process, about the results – the failures, and the benefits. This way, it will add value to the organisation and the entire region, improving patients' quality of life. We believe the most significant barrier is the cultural paradigm since people feel reluctant to change, including arriving there. Yet, innovation is the critical feature that organisations must incorporate to offer sustainable and efficient solutions. We will study the implementation process and describe implementation barriers and facilitators.

Hospital economic burden of COVID-19 critically ill in the first year of pandemic – clinical, therapeutic and demographic cost correlated factors

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Abstract

Context

COVID-19 pandemic shaped social organisation, had tremendous human cost, and forced a quick response from healthcare providers. Despite all scientific progress, the managerial consequences and financial burden at healthcare system data is still lacking. It is crucial for future planning that we learn from COVID-19 extraordinary response. At first year of pandemic, intensive care became even more crucial and needed to re-adapt and expand, in order not to become overburden. This study quantifies economic costs associated to critically ill COVID-19 inpatients at a General Teaching Hospital and identifies clinical, therapeutic and demographic factors most correlated with cost per patient.

Methods

We analysed all CHUPorto inpatient data coded as COVID-19 at SIMH database (Hospitals Morbidity Information System), with admission on ICU during first pandemic year. We collected demographic data, length of stay, comorbidities, case severity index, case mortality risk index and mechanical ventilation use from DRG-APR inpatient characterisation (SIMH database). Specific clinical severity scores SAPS II and SOFA at admission collected from ICU registries. For cost estimation of each inpatient medicines consumption, average price cost used; each inpatient diagnostic and therapeutic procedures valuated by legal price fixed; specific techniques such as dialysis costed by TDABC approach; indirect and human resources cost allocated by average cost, according to the number of days of hospitalisation. Pearson correlation coefficient calculated on IBM SPSS statistics version 26.

Results

Study considers 266 COVID-19 adult inpatients admitted to ICU, which represented 11,5% of total, at first pandemic year. 59% of inpatients were 30-59 aged. 67% were men, 75% were Oporto district inhabitants. Average hospital LOS 26,9, average ICU LOS 12,3. 53% of inpatients had mechanical invasive ventilation, 23,3% had non-invasive mechanical ventilation, 23,7% had no mechanical ventilation. 55% of inpatients were SAPS II scored as 21-40. Median SOFA at admission score was 4. Most frequent comorbidities registered were hypertension (46% of inpatients), cardiovascular diseases (45%), obesity (37%) and diabetes (29%). ICU COVID-19 mortality rate was 45%. Average cost/case was 18.658 € (s.d. 20.044€). Average cost for cases with IMV was 25.393€ (s.d. 21.169€). Most cost-correlated categories found were nr days with dialysis (0,961), ICU length of stay (0,910), diagnostic techniques (0,910) and days of invasive mechanical ventilation (0,749). Total economic burden was 4.965.352€.

Discussion

The treatment demands of COVID-19 inpatients lead to a fast and forced expansion of critical care facilities and the number of ICU beds, a limited resource. These patients have longer stays at the ICU, further reducing availability and therefore, despite of expansion, there was a reduction in total number of all inpatients. To assure preparedness in the future, there is the need to rethink the ratios of critical care beds/1000 inhabitants. Study found that the intensive care reorganisation and care delivery for critically ill COVID–19 inpatients, determined a burden of 4.965.352€ on 2020. Revenues due to COVID-19 critically ill inpatients, in 2020, were 782.508€ calculated by budgetary rules for 2020. Due to extreme severity (70% of cases), hospital hopes to have an impact on complexity factor applied to budgetary rules beyond 2023. That shows that complexity factor, linked to APR-DRGs, appears to be aligned with real cost of cases.

From community empowerment to better primary healthcare. Implementation of community empowerment and engagement framework at primary health care facility in rural Kazakhstan

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Abstract

Context

After introducing healthcare reform and accepting Astana Declaration in 2018 Kazakhstan has started rethinking and reforming primary healthcare (PHC). In 2020 Kazakhstan also introduced new national mandatory social health insurance (MSHI) which included results-driven payment mechanisms and incentives for PHC services. This created need to better understanding of local needs. National association of PHC, health department and mayor office of Zhambyl region and experts from Kazakh National University together created a framework for incorporating centres of PHC excellence at rural and urban facilities of Zhambyl region. As a part of this program starting October 2021 we started implementing community engagement and empowerment framework developed in accordance with WHO European framework of integrated healthcare service delivery at Merke regional hospital.

Methods

This framework was developed and piloted by National association of PHC at 17 health facilities in Kazakhstan under World Bank and Kazakhstan Ministry of Health project for implementing MSHI in 2020, which we called MIOMOS. We implemented focus group discussions with different local population groups for engagement. Each month we gather 5-10 people at primary healthcare conference hall and discuss issues and barriers to health, as well as suggestions for improvement after we have focus group discussion with PHC teams that serve this population. In order to empower local community, we created a committee which includes local activists, hospital administration and patients. In Merke regional hospital this committee consist of 9 people. Each 2 months we have round table discussions with committee to create action plan on suggestions and issues indicated during focus group discussions. We plan to measure success by the number of complaints.

Results

Starting October 2021 we have held 6 focus group discussions with local population groups and PHC teams, and 2 round tables with committee. Focus group discussions resulted in identification of 30 suggestions for improvement of hospital services, rehabilitation services, infrastructure, understanding of MSHI, drug supply and healthcare workforce shortage. 8 action points on hospital services and infrastructure were implemented during 3 months of 2021, 22 action points are in progress under committee monitoring.

Discussion

Introducing community engagement and empowerment framework will help build trust for primary healthcare and public health which was not in place because of different reforms during 30 years of independency of Kazakhstan . Since Kazakhstan is developing a model of socially oriented primary healthcare and is shifting focus on health and people centred model having local community empowered to take actions towards community health and having clear pathways is important for achieving highest attainable standard of health in local communities.

Virtual Action Learning in healthcare leadership development programmes

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Abstract

Context

Action Learning (AL) is a powerful and effective leadership development approach, where set members learn together by bringing real-life work-based issues, benefit from insightful curiosity and develop impactful actions for themselves. It has been utilised over years in healthcare leadership programmes (Chambers et al., 2013).

During the pandemic we transferred AL to a virtual setting for a long running leadership programme in the NHS and established virtual action learning (VAL) for another course. The rationale for this study was to understand the value of undertaking AL virtually, both for participants and facilitators, and to contrast experiences within the two programmes.

Methods

A mixed methods study, utilising surveys and semi structured interviews (SSI) was undertaken, using convenience sampling. Participant information and a consent form, along with a link to the survey was sent via email to all participants and tutors, on the 2 healthcare leadership development programmes which had incorporated virtual action learning during March 2020 – May 2021. Within this invitation, individuals were asked to respond if they would be willing to take part in interviews. Appropriate ethics approval was secured.

Survey responses collated and interviews recorded and transcribed. The transcripts were analysed, coded and themed using a reflective thematic analysis approach (Braun & Clark, 2021), to develop understanding of the tutor and participant experiences of VAL.

No of survey response - 58
No of interviews (tutor) - 10
No of interviews (participant) - 11

Results

Findings were obtained from participants, and tutors, who have been involved in face to face and virtual, and those who have only participated in virtual action learning sets. The survey data and interview data has been coded and themed into 5 main areas for both participants and tutors:

1. What facilitates great action learning; clear process, facilitation, safety, openness to challenge, and ability to challenge,
2. What constitutes effective tutor facilitation: role modelling is really important
3. Top tips – clear ground rules, presence, technology
4. Some difference between face to face and online – presence, allowing silence (difficult on virtual) concern about interrupting (rules important).
5. The differences highlighted between tutor and self facilitated groups where the learning from facilitated sessions is important.

The study findings indicate the value of continuing with VAL, either on its own or as a part of a blended approach for leadership development in healthcare.

Discussion

The study suggests that VAL adds value in leadership development programmes through improving skills for the workplace, such as coaching, insightful questioning, active listening and engaging with teams in a more collaborative way, thereby bringing teams/staff with them. A key opportunity was the ability to maintain AL through COVID-19, developing relationships, networks and confidence. Opportunities around environmental sustainability of utilising the technology effectively for VAL was highlighted specifically with reduced travel and potential for attendance by those who, for example, had carer responsibilities. Challenges of VAL identified by tutors and participants, include; reduced 'flow' of conversation impacting on the 'richness' gained in face to face; depth of challenge and impact was perceived to be less in virtual settings; a perception of people being less engaged;

participants would leave for an important meeting (that wouldn't happen in face to face). VAL complements knowledge based/experiential elements of leadership development programmes.

Healthcare job satisfaction during pandemic period – Hungarian hospital case

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Abstract

Context

The healthcare system is burdened with pandemic. There is no general, fully accepted definition of job satisfaction, but it is basically a positive or negative emotional attitude toward work. Job satisfaction can be defined as a positive effect on employment and is arguably a stable assessment of how work meets an employee's needs or expectations. Research on the relationship between employee satisfaction and the quality of care appears in health research, the results show that nurses' job satisfaction influences patient satisfaction and the quality of patient care (Martins - Proensa, 2012, Aiken et al., 1994; Aiken et al., 1997).

Methods

Mainly due to its reliability, the Minnesota Questionnaire is one of the most popular questionnaires for measuring employee satisfaction, developed by Weiss et al. (1966). The short (20-question) version of the questionnaire summarises the internal (intrinsic) and external (extrinsic) factors of satisfaction.. We validated the named questionnaire among Hungarian service providers and recorded the date in one of the largest state-maintained public hospitals. At the end of the questionnaire, participants can share their experiences, highlight areas for improvement, and suggest solutions to help management remedy problems. Also examined the relationship between job satisfaction and leadership style, the structure, size and mode of operation of the organisation.

Results

The research identifies areas that hospital staff (physicians, nurses, other professionals, and support staff) are satisfied with or have shortcomings with. In part of the validation process we identified the same factor structure as the original questionnaire, with the following scales: internal factors include skills utilisation, performance, work activity, creativity, independence, responsibility, security, social status and co-workers, while external factors such as progress, development, corporate policies and practices, compensation, recognition, human relations and working conditions. Also find connection between job satisfaction and perceived leadership style of the organisation's management.

Discussion

No similar survey has been published in Hungary, but the results can be compared with the results of previous surveys (Portuguese, Polish) and outstanding or lagging areas can be identified. Based on the response, the hospital management can take measures according to the satisfaction of the different groups of employees and can improve the work experience and performance of the employees and, last but not least, reduce or prevent the phenomenon of burnout and exit.

Managing the performance of value based healthcare: insights and recommendations

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Abstract

Value Based Healthcare (VBHC), which can be viewed as a strategy to organise and improve healthcare services, has far-reaching organisational and managerial consequences. It is common managerial practice to support the execution of a strategy by monitoring the ensuing activities. Such monitoring provides feedback and guidance on the execution of these activities to the management of an organisation and help to realise organisational strategies. Monitoring of activities is commonly done by performance management systems. Given the rising attention in literature and practice for VBHC, we ask to what extent VBHC is supported by performance management systems in current practice. We examine this question by a scoping review, which helps us to assess how far this link is present in the literature. We identified 1.267 unique papers in our systematic search of Embase, Medline OVID and Web of Science. After the title and abstract screening, 398 full-text articles were assessed for eligibility.

Despite the popularity of VBHC in practice, our review reveals only eleven papers discussing the integration of VBHC and performance management systems to some degree. Almost all featured applications in these papers focus on a specific project or medical specialty. Only one paper exemplifies how VBHC has been integrated with the performance management system of a medical institution, and no paper provides a clear link with strategy execution. Similarly, no paper discusses the adoption of VBHC across the healthcare value chain (what the VBHC literature suggests is necessary if VHBC is seen as a strategy). We concur that one of the reasons for the absence of such papers, apart from full-blown VHBC implementations being limited, despite the concept's popularity, is formed by tensions that exists between doctors, patients, managers and administrators when implementing VBHC. Doctors and patients strive for "the best care" or for providing "all care that is viably possible" and managers and administrators, dealing with scarce resources and external pressures (for instance from insurance companies) to balance costs and outputs, try to manage doctors towards exhibiting greater efficiency. These tensions may have to be alleviated for VBHC implementations to become more inclusive. Consequently, we argue that tensions need to be brought into the fore for VBHC to keep its promise of an important organisational strategy that may contain healthcare expenses whilst realising greater value for patients across the healthcare value chain. Our findings and recommendations have implications for both researchers in their study of VBHC implementations as a strategy that is embedded in the organisational structure, as well as for practitioners seeking to further the value-agenda.

Digital transformation for increased access and improved management of diabetes and its complications

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Abstract

The effective management of diabetes and its complications is one of the most important and challenging missions of the governments of various countries. It represents significant socio-economic problems in the world. Hence the strict regulations and lock-downs imposed in countries, during the ongoing COVID-19 pandemic as a means of infection control, that the management of diabetes and its complications have been decreased by nearly half, (49 percent) worldwide. Consequently, the disruption in diabetes management, as well as care for other chronic diseases, the need for digital technology has been pushed to the forefront in public health discussions and healthcare management delivery.

The purpose of this research is to evaluate the potential role and impact of digital technologies in the management of diabetes and its complications on the example of the country of Georgia. Based upon the overall research goals a combination of mixed-research methods has been applied. Initially, a focused literature review was performed. At the second stage, qualitative study - in-depth interviews with stakeholders were conducted. A total of 25 in-depth interviews were conducted. The recordings were transcribed and analysed using N-Vivo software.

At the third stage, quantitative research was performed. More specifically, an online survey of adult patients - having type 1 or type 2 diabetes was conducted, using a structured questionnaire. Furthermore, an additional online survey of parents whose children have diabetes, was conducted, also using a structured questionnaire. The results were then analysed using SPSS software.

The results of the research demonstrated serious problems with regard to accessibility to high-quality medical services (especially in remote areas) and lack of therapeutic education among patients having diabetes, as well as parents of the children with type I diabetes and other caregivers. Moreover, the lack of multidisciplinary teams and unavailability of specialists, such as, psychologists, nutritionists make self-care and behaviour change even more challenging for patients and families. Another problem hindering effective management of diabetes is fragmentation of information and discontinuity of care between various levels and institutions of healthcare. The vast majority of interviewed patients and parents expressed openness and readiness to use digital technologies, such as, telemedicine and online education. However, the third of doctors participating in the research were rather sceptical, even though they agree that utilisation of digital technologies can have significantly beneficial impact for the management of diabetes and its complications.

One of the possible solutions in addressing these problems is to leverage digital technologies. More specifically, the development of an electronic platform (content to be offered in the native language) and buttressed with broader adoption of telemedicine practices. The purpose of the online platform is to increase access to medical services, to provide an opportunity for patients and the parents of diabetic children to receive online consultations from endocrinologists, psychologists, nutritionists, and other specialists. Moreover, the platform should enable integration of information received from patients (sore-and-forward type of telemedicine) for the monitoring purposes. Concurrently, the online platform should be utilised for webinars, online meetings, for the posting of up-to-date information (articles and other literature) translated into native language, and to provide a platform for video lectures and to give answers to frequently asked questions by patients and for stakeholders to interact. However, the digital transformation should be accomplished using change management principles to ensure proper engagement and buy-in of medical professionals.

Biosimilars for the treatment of dermatological, rheumatological and gastroenterological diseases: patterns of use and economic advantages

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Abstract

Context

Biosimilar medicines have improved the management of chronic diseases, including dermatological, rheumatological and gastroenterological ones, with a super-imposable safety and efficacy profile than biological/originator drugs. Despite the growing number of biosimilars approved, clinicians' comfort in prescribing originators against biosimilars, patient caution, and hesitation to switch from an originator to a biosimilar, are major factors responsible for biosimilar current low utilisation. This study aimed to investigate biosimilar and originator drugs' utilisation and prescribing practices within the dermatological, rheumatological and gastroenterological settings, providing real-world evidence, regarding their patterns of use and the biosimilars' potentialities in generating economic savings stratified for specific pathology.

Methods

In the years 2021-2022, a retrospective observational and multi-centres study, based on data from pharmacy databases, was conducted in northern Italy. All treatment-naïve patients, diagnosed for a dermatological, rheumatological or gastroenterological disease from 01/01/2018 to 06/30/2019, and who received an originator or a biosimilar drug, were eligible for inclusion. A 24-month follow-up was assumed. Information about the typology of administered drugs, number of drugs prescribed, diagnoses and related treatment costs were collected, for whom frequencies and descriptive statistics were assessed. The analysis included also the technological switches occurred. Benchmarking approach was also implemented to define and compare the different prescription and economic absorption performance. These analyses could be useful to hypothesise and forecast all the possible economic savings deriving from different prescription behaviours, potentially generable thanks to a technological switch from an originator to its biosimilar, providing clinicians with different configurations deriving from the overall decision-making prescribing process.

Results

302 patients were diagnosed for a dermatological, rheumatological or gastroenterological disease, requiring an originator or a biosimilar drug, 84% of whom received treatment up to 24 months. In both the gastroenterological and the rheumatological settings, patients were predominantly treated with an originator, representing respectively the 55% and 83% of the population. In the dermatological setting, 54% of patients were treated with a biosimilar medication.

From an economic perspective, considering the drugs' acquisition hospital costs, patients treated with a biosimilar require lower economic resources, with a benefit per patient ranging from 51% to 82%, strictly dependent from the diagnosed disease and the follow-up time-period. Furthermore, if a therapeutical switch would have been applied from the originators to their biosimilars, thus hypothesising a higher use of biosimilars than the current situation, hospitals would benefit from a significant economic saving equal to -0.12%, -7.19% or -3.74% within the three previously defined settings, respectively.

Discussion

Preliminary results demonstrated a low biosimilar utilisation in Italy than in other countries, specifically due to AIFA position paper. However, if their use would become greater, significant economic hospital savings emerged, with a disease-specific treatment costs optimisation.

Results would play a double role: firstly, they could be used in educating key-stakeholders to ensure the safe, effective, and cost-effective use of biosimilars in clinical practice, in the current Italian situation where while biosimilars are mostly used for the treatment of naïve patients, their administration within a technological switch has occurred slowly, being based on the clinical choice and patients' conditions.

Secondly, due to the nature of the information collected that will be further explored, results could support the adequate understanding of the drugs' regional/national flows, that are always presented in an integrated manner and did not provide important information, as diagnosis, specific pathology, technological switch and follow-up period.

Re-design elderly care across the full cycle of care: evidence from an Italian benchmarking study

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Abstract

Context

In the last decades, the average life expectancy has significantly increased in almost all the developed countries. This demographic trend represents a challenge for the sustainability of welfare systems: the lengthening of life does not always correspond to an effective improvement in quality and very often elderly and frail patients are "victims" of care fragmentation between hospital and primary care. The goal of the present study is to analyse the actual pathways of elderly patients along the full cycle of care (emergency department, hospital and primary care) to identify common trends, critical areas and possible best practices.

Methods

The sample studied included all assisted persons of legal age from seven Italian healthcare organisations. Particularly, the age clusters analysed were (i) under 65; (ii) over 65; (iii) over 75 and (iv) over 85 years of age. The design of the benchmarking study had two main characteristics:

1. a perspective full cycle of care, by including four different settings: (i) emergency department, (ii) hospital wards, (iii) home care, and (iv) residential care;
2. a multidimensional approach, by including in the analysis both clinical (effectiveness and appropriateness) and operational indicators;
3. the benchmarking analysis was developed by calculating a set of indicators on health administrative data, specifically: (i) hospital discharge data, (ii) Emergency Department (ED), (iii) home care, and (iv) residential care databases

All data referred to the year 2018 or 2019.

Results

Among the population seeking medical assistance at ED, the share of elderly patients (aged 65 years and over) was almost 40%, and that of very-elderly population (aged 85 and over) was about 10%. Elderly users often had statistically different paths compared to non-elderly adult users, with specifically: higher hospitalisation rates, more frequent attribution of severe priority codes, less frequent number of accesses lasting less than four hours in all organisations, and higher prevalence of frequent ED users in five organisations. During the hospitalisation phase, elderly patients had, compared to non-elderly inpatients, longer average stays in many departments (general medicine, emergency medicine, orthopaedics) and more frequent cases staying longer than 30 days, in all companies. In the primary care setting, emerged a variety of scenarios and organisational contexts: results were influenced by regional affiliations and specificities, and indicators did not show clear patterns of difference between elderly and non-elderly users.

Discussion

The present study sets itself the challenge of using an integrated and multidimensional vision to analyse the full cycle of care pathway of the elderly patient through four care settings (emergency department, hospitalisation, residential care, and home care). In the hospital setting, the elderly and frail patient needs different organisational and logistical elements. Potential approaches may be hard solutions (e.g., physical area dedicated to those patients) with an impact on the organisation structure; or soft solutions such as the identification of at risk elderly patients through the introduction of a fragility score. On the other hand, the primary care framework is more complex and less standardised than the hospital setting, and therefore there is a greater need to assess good practices considering local and regional specificities. Both systemic governance of the network and involvement of professionals are essential to guarantee continuity of care.

Challenges for structurally achieving value-based healthcare: a multi-method case study in a setting with ‘perfect’ preconditions

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Abstract

Context

Value-based healthcare (VBHC) stresses the importance of integrated care delivery, supported by financial incentives (Porter, 2006). Various VBHC initiatives show promising outcomes, yet lack widespread and sustainable implementation despite clinical and financial agreements between providers, purchasers and medical device suppliers (Cattel, 2019). Thus, patients still face fragmented care delivery in practice, affecting care access and quality. In this multi-method case study, we seek to understand how market pressures affect stakeholder responsibilities on care provision, payment and device supply and thereby the coordination, waiting time and costs of medical mobility devices, in a setting of a single chain-wide care provider.

Methods

We conducted a case study on the purchasing, logistics and use of medical mobility devices within a provider of hospital, rehabilitation, home and nursing care in a region in the Netherlands. The provider was the first to receive an acclaimed chain-wide accreditation by an independent international commission, hence providing the right circumstances for achieving integrated care delivery.

The unit of analysis was the use and delivery of medical mobility devices within the entire patient pathway. We assessed the delivery and purchasing process from the perspective of the provider, device suppliers, municipalities and health insurers.

Stocktaking on care locations and analysis of rental data gave insight into medical device volumes and rental time. Site visits and 30 interviews with care professionals, team leaders, location and logistics managers, and municipality and insurer purchasers aimed to understand the supply process and potential room for improving delivery speed, patient and care professional satisfaction and reducing costs.

Results

Limited pooling of medical mobility devices between locations caused high stocks and little sharing of devices between locations in case of patient transfers (31/2830 rented devices in 2018), causing unnecessary device switching and subsequent cleaning, setup, ordering and delivery time and costs.

When patients transferred between locations, stakeholder responsibilities shifted. Purchasing was done by the care provider, municipality or health insurer in case of rehabilitation, home and nursing care, respectively. Depending on the location, devices were supplied by three different suppliers. The only constant factor was the chain-wide care provider.

Despite the trans-disciplinary position of the provider, market pressures prevented overcoming budgetary segmentation. Medical device suppliers specialise themselves in specific care disciplines to simplify their product portfolio. Subsequently, the care provider faces high coordination costs to make sure devices follow patients. Finally, competing (insurers) or regionally separated (municipalities) purchasers have little influence to align suppliers’ strategic interests.

Discussion

Supply chain management and VBHC principles prescribe and even foresee the development of care chains in which care delivery, goods and transactions are organised around the patient. This not only requires integration at the level of care delivery but also at the level of (financial) transactions and the supply of goods. Our case study showed that coordination issues are unlikely to be resolved within a market system shaped by segmented care budgets and competing device suppliers and care purchasers. We posit that in such a market-based, segmented care system, care providers should be given the responsibility of being the single point of contact for patients. This responsibility enables the provider to be in control of the entire purchasing and supply chain management process, involving specification, supplier selection, contracting, ordering, expediting, follow-up and evaluation (Van Weele, 2010). This provider position seems a necessary precondition for structurally achieving VBHC goals.

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

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Abstract

Context

Epilepsy is a complex chronic disease that requires a multidisciplinary approach. It is 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. It is also recognised as a social disease that involves psychological and emotional aspects (Hills, 2007).

The aim of the study is to understand whether a comprehensive organisational model of care perceived as "integrated" by people with epilepsy has an impact on their satisfaction, an important outcome measure of patient care experiences and patient involvement.

Methods

The sample consisted of 474 adults over 18 years of age with epilepsy, treated at six Italian specialised centres. After informed consent, all participants filled out the anonymous questionnaire, that collects information on personal data and state of health, course of treatment and the organisational methods for taking charge, direct and indirect costs of the overall care, and personal satisfaction. The overall satisfaction with own epilepsy management experience was measured by a 7-points Likert scale.

We built an "integrated care approach" binary index based on answers to questions investigating whether the patients report that they use multidisciplinary services at the epilepsy centre and whether they perceive their care management by the centre as "comprehensive".

After descriptive statistical methods, we conducted a multiple logistic regression analysis to study the "integrated care approach" as predictor of personal satisfaction, by including in the model other variables potentially implicated.

Results

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 their conditions of: frequency of epileptic crisis, number of accesses at the centre, need for a caregiver support, anxious state, recent change of therapy or centre.

Discussion

Patient satisfaction and patients' involvement (co-production) are widely considered a promising tool for dealing with current challenges in the health sector, where resources are being significantly reduced (Voorberg et al., 2015; McMullin et al., 2018; Marsilio et al., 2021). Also, in the case of Epilepsy, these elements (satisfaction and co-production) have proven to be fundamental in the redesign and execution of the care pathway.

The presence of an integrated and comprehensive care, able to network with the different actors who play a role in the management of Epilepsy, improves patient satisfaction and reduces the accesses to the Emergency Room and hospitalisations. In this perspective, it is useful to focus on a Diagnostic Therapeutic Care Pathway to identify and codify activities and medical professionals that are appropriate and needed along the various phases of Epilepsy management.

Factors affecting the end-of-life care and palliative care use among people aged 50 and older in Europe before and during the COVID-19 pandemic

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Abstract

Background

Economic research to inform policy and health care management practice is relatively limited for people with serious illness. Evidence palliative population and the aged care demand settings is scarce. This study aims at identifying how the end-of-life care and palliative care demands of patients aged 50+ in Europe would be influenced by the COVID-19 Pandemic. This is a comparative analyses of risk factors affecting end-of-life care and palliative care needs before and during the COVID-19 Pandemic, using the Survey of Health, Ageing and Retirement in Europe (SHARE Survey) before the COVID-19 Pandemic, and the SHARE Corona dataset collected during the Pandemic.

Methods

The Survey of Health, Ageing and Retirement in Europe (SHARE) is a multidisciplinary, cross-national, and longitudinal survey, which is the largest pan European social science panel study people aged 50+. This paper will employ the SHARE end-of-life module conducted in the case of a participant's death, which are pooled from SHARE Waves 7 (2017) before the Pandemic, plus the SHARE Corona Survey (SCS) between June and August 2020 (1st SCS) and between June and August 2021 (2nd SCS). The target population comprises 9,054 adults aged ≥50 years, to whom end-of-life interviews are conducted.

Binary logistic regression models are estimated for all waves to examine the association between palliative care use and different socio-economic, health and psychological aspects. Modification of baseline model is used to show whether socioeconomic status affect palliative care use across European countries. Multivariate regression analyses show risk factors for not receiving palliative or hospice care before the end-of-life.

Expected results

The COVID-19 Pandemic may relevantly impact patients' preferences, care access and quality of life during palliative and hospice care, in particularly for patients with low Socioeconomic status.

Discussion

The results may inform research and policy in practice. There may be necessity for the health care systems to ensure access to palliative and end-of-life care. The findings may highlight a lack of healthcare support for patients with serious multimorbidity and demonstrate the need for integrated and palliative care approaches in Europe.

Use it or lose it? Exploring reasons for the low uptake of formal psychosocial support during a crisis

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Abstract

Context

Many hospital workers experience mental health problems regularly and the high work pressure of COVID-19 pandemic has only worsened this. Formal psychosocial support is an important approach for addressing these issues, ensuring staff well-being, and reducing absenteeism and burnout. Even amidst the COVID-19 pandemic however, hospital staff rarely uses the psychosocial support provided by their employer. Given the high prevalence of mental health problems among hospital staff and the labour shortages of healthcare systems across the globe, it is essential to understand why the use psychosocial support is low and how staff can best be supported.

Methods

This abstract reports on an exploratory case study among hospital staff in a heavily hit COVID-19 region in the Netherlands. The study consists of semi-structured interviews with 36 hospital staff from different occupational groups (i.e., managers, medical specialists, residents, nurses, and support staff), working in four different hospitals. Interviews revolved around participants' experiences of working during the COVID-19 pandemic in general and receiving organisational support in particular. An interpretive grounded theory approach to data analysis was used, analysing interview transcripts to define emergent themes from the data.

Results

When discussing their experiences with psychosocial support, we identified six reasons for not using formal psychosocial support. The first constitutes the lack of active promotion of psychosocial support, with staff experiencing a threshold for contacting psychosocial support themselves. Second, employees not involved in COVID-19 care feel disregarded by the organisation; participants who were not involved in the crisis response indicated that they felt that psychosocial support was not meant for them. The third and fourth reason for not using psychosocial support are that the team(leader) and support from family and friends were considered to be better suited by respondents. Fifth, some staff members are unaware of their own needs, with participants signalling that they should have made use of psychosocial support in hindsight. Sixth, participants indicated that they believed others need support more urgently, with staff from different functions and departments pointing towards each other as needing psychosocial support most.

Discussion

Our findings suggest that hospital staff, while acknowledging the usefulness, tend to experience barriers to seek formal psychosocial support. Given that staff might not contact psychosocial support themselves, hospitals need to engage in active outreach to ensure that they actively promote psychosocial support that is tailored to the diverse needs of staff. Moreover, hospitals should be attentive to those not involved in crisis care, as these staff are also at risk but can be left feeling that the support is not for them. Given that staff tend to underestimate their mental issues and think problems are more severe for others, it seems to be important to create awareness among staff on the commonness of mental health issues and the usefulness of psychosocial support for anyone. Stimulating staff to seek out a broad array of support, including that of social networks, can help further address mental health problems.

Technology and innovation adoption in healthcare and management literature: a shared or different vision?

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Abstract

Context

As the healthcare industry has grown in size and complexity, management and organisational theory scholars have devoted increasing attention to. Given its size and articulation, healthcare most requires the development and implementation of technological transformations that can simplify processes, decrease costs and enhance performance.

The COVID-19 pandemic has made clear how the vulnerability of health systems might have profound implications for the health of citizens (OECD, 2020), emphasising the fundamental role of IT, as telemedicine, video consultations, EHR, and new medical devices that, thanks to the IoT and AI, might raise the efficiency of health systems.

Methods

We gathered data from Isi Web of Science by entering as author keywords “innovat* OR technolog*” with a time span from 2000 to 2021. Based on CABS ranking, we selected only the papers published by the most critical journals. We obtained a sample of 269 papers.

Firstly, we analysed the bibliographic network through the Vosviewer software. Specifically, we used different techniques (co-citation, bibliographic coupling, and keyword co-occurrence) and noted that most of the manuscripts were concerned with the “adopting innovation” theme.

Secondly, through a rigorous analysis of titles, abstracts and keywords, we selected only those papers that analysed the technology adoption, thus obtaining a final selection of 86 articles out of 269.

Thirdly, we analysed the issues related to the adoption of innovation in healthcare within the management literature. To avoid having repeated papers, we excluded the journals included in the previous search, obtaining a final sample of 394.

Results

Our preliminary findings suggest that while management journals are focused mainly on developing generalisable innovation theories, research published in health care journals is primarily focused on solving contextualised problems of health care organisations.

More specifically, the bibliographic analysis reveals that several author keywords appear in both pieces of literature, but they are linked with different groups of keywords.

Differences also exist among the theoretical roots upon which the two pieces of literature have developed. The healthcare literature has adopted the DOI model, focusing on the organisational factors that determine or inhibit technology adoption, while management literature revolves around Rogers’ Diffusion of Innovation (DOI), which has the organisation as the unit of analysis, and Davis’s Technology Acceptance Model (TAM), which has the individual as unit of analysis.

Discussion

The debate concerning the innovation adoption and implementation within the healthcare industry has interested both health-related and generic management journals. Based on these premises, this paper aims to understand the development of innovation studies in the two streams of literature through a bibliometric analysis. Our final intention is to compare and integrate them to provide researchers who wish to contribute to this scientific field with coalescent findings.

The concept and the determinants of clinical engagement in healthcare organisations: a scoping review

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Abstract

Healthcare systems are strongly committed to improve their performance levels in terms of effectiveness, efficiency, and appropriateness. The development of effective ways to direct professional behaviours towards these objectives represents one of the most significant issues of health policies. Over recent years academics and policymakers have focused on the issue of clinical engagement, that is the willingness of clinicians to actively participate in management of their healthcare organisation, also taking direct responsibility in the decision-making processes.

Our work stems from the following research question: How is the concept of clinical engagement defined and what do we know about a) its favouring and hindering factors, b) its relationship with performance, quality, and safety of health care?

We choose a specific methodological approach to analyse the literature: the scoping review. The method of scoping reviews appears to be justified by the fact that we need to face this research question not punctually defined in its connotation but could be interpreted differently and have different forms of contextualisation according to the contexts in which it was drawn up.

Studies identified searching in different academic databases and published until 2020 were included for analysis. No limitation of years was considered. Searches will be limited to papers written in English, without any further restriction (i.e. publication date, type of article, etc.).

We started from a total of over 16.000 articles (after removal of duplicates). Selection and exclusion criteria were developed also post hoc, through an iterative process of discussion between authors at every stage of scoping review. Through the analysis of titles and abstracts we selected 296 papers; after the exclusion of not available papers and other duplicates, we proceeded with full text analysis of 266 papers, with the definitive inclusion of a total of 188 papers.

A data collection form was applied to each article included in the review. Our original research question will be disentangled in the following areas and quantitative and qualitative analysis were performed:

a) definitions of the concept of "clinical engagement", in terms of dimensions (e.g. characteristics of health professionals and of the organisations, etc.), rationale, and reasons for which it is considered important;
b) description of: 1) how the concept has been translated in operational terms; 2) how it can be measured and assessed the level clinical engagement within an organisation; 3) its relationship with quality and safety of care, efficiency and appropriateness has been evaluated;
c) how clinical engagement can be enhanced and which factors promote its achievement.

Management and health policy implications were discussed, along with the future development of academic research on this topic.

WOW - a step towards domiciliary hospitalisation

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Abstract

Context

WoW is the acronym of Wireless biOmonitoring stickers and smart bed architecture: toWards Untethered Patients. The project foresees novel material and Information and communications technology architecture implementation. For the first time, it allows simultaneous monitoring of multiple patients through wireless and untethered thin-film biomonitoring stickers via centralised data collection, processing, and transmission to Globalcare — a proprietary Hospital Information System developed by Glintt. The potential economic impact of shifting parts of the care from the inpatient to the outpatient setting is vast. The WOW solution is expected to be cost-effective, as it allows an early discharge without compromising patients' health outcomes since the patient is still monitored after leaving the hospital.

Methods

The research strategy begins with the analysis of user needs and requirements and the functional specification of the project, laying the foundation for a successful implementation that meets the expectations of end-users. We planned and started the development of the BioStickers early in the project, obtaining different working prototypes of the patient biomonitoring stickers. This strategy will facilitate and enable the exploratory research on wireless energy and data communication for the BioStickers, the smart bed IoT infrastructure, and Glintt's software adaptation, widely used Health Information System. The development of the above-mentioned procedures is accompanied by continuous integration, test, and experimental validation, leading to two experimental trials that end-users will validate.

Results

This is an ongoing project, and at this stage, one first step of system evaluation has been completed. For this evaluation, we performed a pilot with healthy volunteers. The pilot understood improvement needs, receiving excellent feedback from the individuals wearing the device and the hospital staff. The respiration sensor and algorithm need upgrading, likewise temperature sensor connections – the connection was frequently lost. Additionally, adhesive material could also be replaced by an alternative less painful to remove.

Discussion

In conclusion, Biosticker had better outcomes than the chest strap – it is more straightforward and practical and has better algorithms and connectivity. Our use-case scenario simultaneously monitors up to 5 patients that can move for up to 5 meters from their bed. We are focused on having a user-centred design and development, believing that it will bring significant benefits to the patient and healthcare systems. We will ensure that stakeholders fully understand and collaborate in the solution throughout the project, unlocking its full potential. The following steps will encompass a cost-benefit analysis, including patient experience and healthcare staff usability measurements.

Exploring barriers and determinants of technology adoption in the health sector

Authors: Dr Guido Noto, Ms Francesca De Domenico, Prof Carlo Vermiglio
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Abstract

Hospitals are complex organisations delivering inpatient and outpatient care through the skills and competence of a wide set of professionals (Noto et al., 2021) – e.g. physicians, pharmacists, nurses, etc.

The advancement of digital and health technologies is allowing the implementation of new solutions and tools supporting hospitals both in terms of better outcomes and in terms of improved efficiency (Goldstein et al., 2002; Chaudhry et al., 2006; WHO, 2021).

However, the adoption of these technologies by health professionals should not be taken for granted (Herzlinger, 2006; Gagnon et al., 2012; Silven et al., 2022). Health professionals are indeed specialists in the delivery of care but do not necessarily trust new technologies (Montague et al., 2010; Hennemann et al., 2017; Owusu Kwateng et al., 2021) – especially when their adoption implies a change in the processes and activities they are called to perform. This may slow down the adoption of certain technologies which may substantially contribute to the delivery of better care and to the management of complex hospital organisations (Herzlinger, 2006).

In the last years, much research has focussed on clinical decision support systems based on AI and machine learning (McCoy et al., 2014; Segal et al., 2019; Corny et al., 2020). However, to the authors' knowledge, few studies have been addressed at understanding professionals acceptance of these emerging technologies.

Based on these premises, this research aims at investigating which are the barriers and determinants of technology adoption from health professionals.

To do that, the authors conducted multiple semi-structured interviews with hospital pharmacists operating in Italian private and public hospitals. In particular, these interviews were aimed at understanding the decision-making processes that drives health professionals in the adoption and the acceptance of new disruptive AI technology. This technology aims at supporting hospital pharmacists to limit iatrogenic risk by crosschecking patients' discharge data with a wide set of information; this allows professionals to identify pharmaceutical products that better suites the patients' conditions thus improving patient safety.

As a result, the research outlines a set of barriers and determinants that decision-makers should cope with when fostering the implementation of new technology.

The optimised patient treatment initiative: a proof of concept from immunology for a sustainable healthcare system

Authors: Ms Sarah Alulis[1], Ms Fareen Hassan[2], Ms Jennifer Lee[1]

[1]Janssen-Cilag, Birkerød, Denmark. [2]Janssen-Cilag, High Wycombe, United Kingdom

Abstract

Context

As the world recovers from the COVID-19 pandemic, healthcare systems will be tempted to focus on short-term savings and cost cutting. Our healthcare systems should instead evolve their focus to the longer-term, towards being sustainable, self-sustaining, and fit for the future. Shifting to a true value-based healthcare approach, with improvement in patient outcomes at the heart of each system, is of critical importance and decision makers will need oversight and guidance to execute this. A current example of this is within the immunology space, where there is increased pressure for early biosimilar use without considering the consequential impact on patient outcomes.

Methods

The full landscape of immune-mediated disorders includes gastrointestinal, dermatological and rheumatological diseases. Patients with these chronic conditions require treatment for prolonged periods and choosing the most effective treatment sequences during their disease course can be challenging. Whilst new and effective treatments are available, uncertainty remains around which should be used first and the optimal order of treatments; furthermore, the promise of short-term savings from biosimilars may confound treatment selections that would otherwise only consider patient outcomes. The Optimised Patient Treatment Initiative (OPT-In) was developed to demonstrate that adopting a "best treatment first" prescribing policy based on published relative efficacy and persistency data, instead of a "cheapest treatment first" policy, would result in healthcare system sustainability and improved patient outcomes. Seven immune-meditated disorders were considered within OPT-In and all treatments with a European Medicines Agency marketing authorisation in those disease areas at the end of 2020 were included in the analyses.

Results

OPT-In considers a three-year time horizon and outcomes are presented in various ways to meet the needs of decision-makers. OPT-In demonstrates variability in patient outcomes across all possible treatment sequences and, based on current market share data in a given country, it illustrates whether current prescribing practice can be improved to gain better patient outcomes. Furthermore, OPT-In quantifies reduction in average number of treatment failures experienced by patients if prescribing does shift to a 'best treatment first' policy; results can additionally be displayed as total cumulative number of treatment failures avoided. Unsurprisingly, in all countries where OPT-In has been assessed, patient failures decrease if 'cheapest treatment first' polices are replaced by 'best treatment first' policies. Interestingly and importantly, OPT-In also demonstrates that the improvement in patient outcomes can be achieved through budget re-allocation.

Discussion

The intention of OPT-In was to provide the proof of concept that sustainability in the healthcare system can be achieved through a self-sustaining cycle where there is a place in therapy for all treatment classes. Our work thus far suggests that providing clinicians with the ability to prescribe more efficacious treatments earlier in the course of therapy provides a greater opportunity to minimise treatment failures, maximise patient outcomes, and more efficiently allocate healthcare expenditure to contribute to a more sustainable healthcare system overall.

A phased approach to the implementation of a new digital communication tool, Alertive®, to replace the common 'bleep' system at a district general hospital in the UK #purgethepager

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Abstract

Introduced in the 1950's, the pager continues to play a key role in hospital clinical communication. Affectionately known in the UK as 'bleeps', they were highlighted by the former UK health secretary as an inefficient and unreliable method of non-urgent communication; sparking a movement to '#purgethepager' via social media. Much academic study has focussed on the challenges of implementing electronic healthcare records (EHR), however clinical communication is as crucial to patient safety; yet literature is sparse. We present our experience of digital transformation to a cloud-based instant messaging solution, offering a mobile alternative to the bleep system (Alertive®).

Our baseline data of alerts with bleeps indicated that the clear majority, 79.1%, were sent via nursing staff; highlighting its importance as a doctor-nurse communication tool. 18.9% of those sent related to a deteriorating patient and 24.4% interrupted a critical clinical task. In addition to this, 11.2% interrupted break/teaching time and 26% of bleeps were sent to the inappropriate bleep holder. Our quantitative data demonstrated the burden of disruption using bleeps is high and the current system carries inherent patient risks with a large scope for improvement.

We present a successful phased approach to retiring the bleep system starting with Junior Doctors and progressing to implementation for nursing staff and allied health professionals. There was a 6-month period of design and testing, followed by a soft go live lasting 11 weeks, before relevant bleep numbers were deactivated. Since launch, we have seen 1,170 users sign up to Alertive®, plus a rapid increase in the usage of the application as it becomes more established in the trust; with over 7,500 messages and alerts sent. Issues and concerns raised prior to go live included the reliability of the local Wi-Fi network, resistance to using personal mobile phones, level of training required, and clinical concerns of risks to patients. Actions required prior to go live included a Wi-Fi Survey and upgrade, development of a 'Bring Your Own Device' policy, and availability of the application on multiple devices including smartphones, iPads and desktop. A collaborative approach with the solution provider resolved issues raised by stakeholders including extending the time between entry of passwords, ability for a sender to see "message received" and self-management for temporary and locum staff. For implementation of EHR systems a big bang approach has delivered success reliably, however, for communication technology we found a phased transfer to digital clinical communication safe and successful in an acute hospital.

As digital communication tools are adopted our study considers the balance that must be made in appreciating the barriers to digital health implementation whilst enforcing an alternative to the ingrained unreliable communication tool of 'the bleep'.

Hospitals’ usage of social media before and after the COVID-19 pandemic: a content analysis

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Abstract

Context

The most important factor in preventing the spread of any disease is to empower the population with the right information. Effective communication is important in increasing public awareness about a disease and facilitating acceptance of behavioral changes. Digital communication has become an effective, essential and strategic tool for many organisations in presenting their products or services, strengthening and maintaining the corporate reputation and sharing up-to-date information. Just like many organisations use social media to reach the population, public and private hospitals also acknowledge the importance of building relationships with the population by providing a functional online environment.

Methods

The purpose of this study is to see how the digital communication strategies of hospitals changed during the pandemic. The population of the study consists of 23 public and 25 private hospitals located in Izmir, a city located in the Western part of Turkey. The list of the hospitals was provided from the Ministry of Health website. Social media shares of public and private hospitals in Izmir were examined by content analysis method for the dates of 01.01.2019-31.01.2019 and the dates of 01.01.2022-31.01.2022. The social media shares of the hospitals were examined according to 6 predetermined criteria (health-related information, news, activities, social responsibility, promotion). The data was reported by frequency and percentage values.

Results

The private hospitals shared more posts than the public hospitals shared. When the content of social media shares of public hospitals between 01-31 January 2019 and 01-31 January 2022 is compared, it is seen that in 2019 the most shared content was on health-related information (30.19%), while in 2022 the most shared content was about the news (29.55%). On the other hand, the private hospitals were mostly sharing promotions (37.23%) in 2019 and in 2022 they mostly shared health-related information (45.03%). In terms of before the COVID-19 pandemic social media shares of hospitals and during COVID-19 pandemic, it is seen that although there are posts related to COVID-19 and the measures that can be taken (use of masks, vaccination, hand hygiene, etc.) as the content of posts, the number of posts surprisingly decreased in public hospitals and increased slightly in private hospitals.

Discussion

The private hospitals shared more posts than the public hospitals shared. When the content of social media shares of public hospitals between 01-31 January 2019 and 01-31 January 2022 is compared, it is seen that in 2019 the most shared content was on health-related information (30.19%), while in 2022 the most shared content was about the news (29.55%). On the other hand, the private hospitals were mostly sharing promotions (37.23%) in 2019 and in 2022 they mostly shared health-related information (45.03%). In terms of before the COVID-19 pandemic social media shares of hospitals and during COVID-19 pandemic, it is seen that although there are posts related to COVID-19 and the measures that can be taken (use of masks, vaccination, hand hygiene, etc.) as the content of posts, the number of posts surprisingly decreased in public hospitals and increased slightly in private hospitals.

The contribution of emerging technologies on performance management and measurement in the health care sector: a systematic review of the literature

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Abstract

According to a definition widely shared in the literature, Performance Management and Measurement (PMM) defines an area of scientific and application interest that aims at the design and implementation of tools suitable for the measurement, monitoring and assessment of organisational results (i.e. outputs and outcomes) and the underlying methods (i.e. means) used to achieve these results (Anthony, 1965; Otley, 1980; Lebas, 1995; Bititci et al., 2012; Bianchi, 2016).

The health care sector has not escaped the introduction of PMM systems aimed at supporting decision-makers at various levels toward the achievement of desired objectives (Nuti et al., 2018; Vainieri et al., 2020).

PMM systems are closely linked with ICT and information systems since they define 'what' should be measured and 'how' to use the information outcoming from measurement (Lebas, 1995).

The last decades have been characterised by the introduction of new emerging technologies (ET) aimed at improving processes, data collection, analysis and management (Laurenza et al., 2018). Consequently, many scholars started focusing on the contribution that this kind of technology is having on PMM in health care organisations and systems.

Due to the novelty of many of these tools, a need to systematise and frame the contribution that each of these technologies may provide to the measurement and management of health care performance is required. As such, this study develops a systematic literature review aimed at investigating this topic.

As a data source, we used Scopus and ISI Web of Science, including academic journal articles within the business, management, and accounting categories. Research criteria were the following:

TITLE-ABS-KEY (technolog* AND healthcare OR "health care" AND performance AND management OR measurement) AND (LIMIT-TO (DOCTYPE, "ar")) AND (LIMIT-TO (SUBJAREA, "BUSI")) AND (LIMIT-TO (LANGUAGE, "English"))

Selected articles are processed through a bibliometric analysis using VosViewer.

The results and implications for theory and practice are then discussed taking into account the environmental, institutional and organisational context. In particular, the research identifies and frames key trends and contributions of emerging technologies to the management and measurement of performance in the health sector at the organisational and system level.

A novel innovation in provision of public health services: a primary care joint venture enabling better access to care with a new digital services platform and 24/7 digital clinic

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Abstract

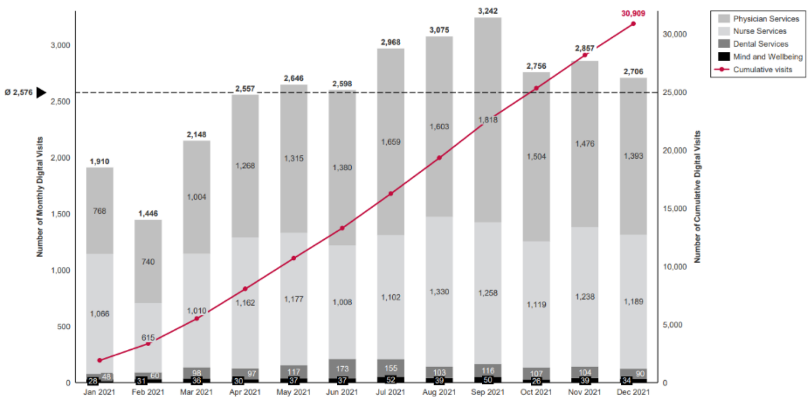
Päijät-Sote, an integrated regional provider of public social and healthcare services in Päijät-Häme region in Southern Finland has faced increase of aged population along with suboptimal operating models leading to rising costs and poor access to primary care. In 2021, after public tendering process, a Joint Venture “Harjun terveys” with a private healthcare provider Mehiläinen was started to provide primary care services of >130 000 citizens. Main targets for the Joint Venture are rapid access to cost-effective and high-quality care, introduction of digital services and high patient satisfaction. We evaluated the success of introduction of the digital services.

Easy-to-use digital care services including a chat-based 24/7 Digital Clinic and multi-professional care team service model were introduced. Patients can access digital services via mobile or web application. Evaluation of the successfulness of the Joint Venture and digital services was conducted by measurement of selected key metrics. Access to physical appointment was monitored as median time for third next available appointment (T3) for each healthcare professional. For Digital Clinic, average waiting time and the percentage of solved cases for physician appointments were the key metrics. Customer satisfaction was monitored by Net Promoter Score (NPS). A modified Patient Enablement Instrument (PEI) questionnaire was piloted in Q4/2021 to evaluate patient reported outcomes. NPS and PEI were requested via SMS from random 20% after a digital or physical visit. Coverage of digital services was monitored with cumulative count of digital clinic users and percentage of application downloads among total population in the region.

The Joint Venture reached several key targets already in its first operating year. In H2/2021, after full deployment of new service models and digital platform, the weekly average T3 times were 0.3 days for doctors and 0.4 days for nurses, while in H2/2020 they were 24 days and 5.4 days, respectively. The average waiting time to Digital Clinic for the entire 2021 was 7 minutes. 51570 patients in the region (39% of population) downloaded the mobile application. 30900 visits by 7100 unique patients were registered in the Digital Clinic. 15900 (52%) of the visits were provided by physicians, and 77% of these cases were resolved during the first contact. NPS of the Digital Clinic was 65 (n=709) while the overall NPS was 73 in all care services (n=23000). 79% of the patients (n=151) felt being able to cope with their illness the same or better (PEI) after Digital Clinic visit.

Our results indicate that novel innovations between public and private organisations can contribute to significant breakthroughs within primary care services. New digital services and Digital Clinic are well received throughout population, also among elderly people. Overall costs for healthcare services have remained the same. High coverage of digital service is the backbone for operational and health benefits from them. Coverage has been reached via customer focused service development and targeted public awareness actions from the Joint Venture. As the first contact to care, the Digital Clinic provides good level of care given and faster access to the care services. One facilitator to reach this result is channelling contacts to an optimal service process within the Joint Venture and seamless transfer from digital to traditional clinics when required. Further analysis is needed to determine whether contacts to Digital Clinic actually replace

Figure: Monthly and cumulative visits to Digital Clinic by profession in 2021



physical visits or merely increase the total demand of care.

Jointed innovation procurement to reduce healthcare and social barriers

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Abstract

Care transition from inpatient to community and social services is challenging, creating discontinuity of care between providers and settings. PROCURA is an Interreg SUDOE Programme funded project — headed by the Castile and Leon Department of Social Services, and six partners from Spain, France, and Portugal, namely the INTRAS Foundation, AQUAS, Autonom'Lab, the Pedro Nunes Institute, and Coimbra University Hospital Centre. The PROCURA project's main goal was the minimise the existing barriers within the scope of active aging and personal independence, using public procurement for innovation (PPI) to implement new technologies.

Despite its excellent potential, PPI is underused in healthcare, particularly social and healthcare. Driving innovation from consumer needs helps shorten time-to-market for innovative products or services. Moreover, the power of public procurement has the potential to open up market/sales opportunities for innovative firms in Europe, in particular SMEs and start-ups.

The PROCURA project used PPI to identify the needs of the different players and parties involved in care transition and ask the market for solutions. Public procurers and private entities were able to develop and tailor products to the patients' identified needs: 1) smart walker and a 2) toilet equipped with technical aids. Smart walkers evolved to support walking activity and assess the user's health state — biomechanical and spatiotemporal parameters — the user's intentions of movement, and the environmental constraints, avoiding the user's falls. The product was developed to approach the user's position and prevent falls. The aim was to achieve a prototype of a versatile and multipurpose walker with the possible integration of sensor technologies that offer other optional features. The toilet equipped with technical aids is a modular solution tailored for the older person. It supports autonomous and risk-free use by aiding seating and standing up.

Understanding the main challenges, motivations, expectations, evaluations, particularly from a person-centred care perspective, were the main guarantee of the success of the Innovative Public Procurement project.

Breaking perceptions: how to effectively support health professionals to participate in research projects

Authors: MSc Liliana Sousa[1,2,3,4], Prof Carla Oliveira[3,4,5], Prof Ana Carvalho[1,2]

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Abstract

Context

The community of health professionals (HP) performing research in Portugal and Europe, has been growing over the last years. HP engagement and active participation in research brings a clinical and practical perspective to basic-research. These professionals are in a privileged context, due to their proximity to patients and opportunity to tackle clinically driven research questions. Despite the evidence demonstrating the benefits of having HP participating/leading research projects, their engagement remains sub-optimal. To successfully assess the path towards the increase of HP research engagement, it's important to understand what are the main barriers/enablers that HP face, when engaging in research.

Methods

We conducted a systematic literature review on enablers and barriers that health professionals face when participating in research projects. Through Pubmed, Scopus and Web of Science searching, 98 studies were identified as eligible, after applying the exclusion criteria and removing duplicates. Next, a set of preliminary interviews took place to understand and provide real-world examples of HP participating in research projects in Portugal and validate the literature. This is relevant since most studies have been developed in UK/USA, and the specificities of other countries such as Portugal, with a unique national health system and career development system of health professionals, were never considered. The target population under study includes medical doctors, nurses, and diagnostic and therapeutic technicians, working in public organisations from north to south of Portugal, specifically focused on clinically active health professionals that may or may not be involved in healthcare research, within their health organisation.

Results

The systematic literature review allowed us to identify more than 30 enablers and barriers for the involvement of these health professionals in research, the most prominent of which are: time, recognition and awards, organisational support, accessible funding, consideration of research in career appraisal, training, and organisational culture. Important considerations can be drawn from this literature review.

The interviews allowed us to have real-world examples and will be used for the selection of the main enablers and barriers to be included in a questionnaire survey, addressed to health professionals in public health organisations from north to south of Portugal. In these interviews, we also explored cases of health professionals who were never involved in any type of research, demonstrating that in some cases, the reason was lack of opportunity, lack of interest or "I never thought about this possibility".

Discussion

This study is part of a larger ongoing project to provide a better understanding of the impact that perceived organisational support (POS) have in health professionals' research engagement, and how to effectively support them within their clinical context. Throughout the questionnaire survey mentioned above we are validating some theoretical assumptions associated with: a) barriers and enablers that health professionals face to participate in research; b) measuring the perception of organisational support of health professionals in the organisation where they perform their activity; and c) assessing how this influences their research engagement. Ultimately, and according to the results obtained, it is important to dissect the potential enhancing function of the Human Resource Managements practices to strategically reinforce research engagement in healthcare organisations.

The juggling boundary work of social community teams to stay legitimate in a multi-stakeholder context

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Abstract

In an increasingly complex health context Social Community Teams (SCTs) must adapt to changing and competing stakeholder demands to maintain and enhance their teams' legitimacy. This is strategically important for organisations to survive. SCTs need to reinforce their team identity, and cross various socially demarked boundaries to obtain resources and to corporate with stakeholders to stay legitimate in the eyes of, for example, vulnerable citizens or funding partners. This study aims to address the question: "How does the interplay of team boundary work and team identity work of SCTs cohere with various boundaries to stay legitimate in a multi-stakeholder context?"

We conducted a multiple-case study in three SCTs that participated in an action-research project for eighteen months. Each team consisted of three to five members with a variety of professional backgrounds. They defined their own team goals per relevant internal and external stakeholders (i.e., other SCTs or sport clubs) and experimented with innovative ways of working for and with them. In pursuing these goals, the SCTs showed ample boundary and identity work.

We collected data by using bi-weekly questionnaires and recordings of the meetings of the team members; researchers' observations of the team meetings; and recordings of (focus) interviews of the relevant stakeholders. The qualitative data were open and inductively coded according to the Gioia's grounded theory approach. We aimed to show the process of the interplay between the STCs' with boundary and identity work in coherence with a variety of boundaries in a multi-stakeholder context evolves over time.

Findings in this study suggest a differentiation of boundaries and a hierarchy in their enhancement to achieve the teams' goals. The privacy law is in this study an example of a boundary that hinders goal achievement. The more team members focus on hindering boundaries like this to achieve the team goals, the more they build their team identity ("now we feel as a team"). Whereas overlap between the diverse professional backgrounds of team members or the volunteer (blurry boundaries), play an enhancing role providing opportunities to achieve the team goals. Consequently, the team members show boundary play by experimenting with this stakeholder with new ways of services.

This study shows that the teams tend to enact more identity work ("what are we here for") by reinforcing internal boundaries when goals are too fuzzy or bulky. More specific goals elicit SCTs' boundary play with stakeholders to improve or extend their services.

This study provides a better understanding of the different characteristics of boundaries and their enhancing or hindering role in the SCTs' interplay of boundary and identity work. Our study also contributes to insights in boundary play in this process. The role of team goals emerged and enabled us to obtain insights about their influence on the interplay of SCTs' boundary and identity work.

This study holds lessons for practice and management both concerning the variety of boundaries SCTs need to juggle with to stay relevant and trustworthy in their multi-stakeholder context and concerning the relationship with goalsetting.

We focused on the interplay between the teams' boundary and identity work and the role of different boundaries. Involving the differences between internal and external stakeholders and the relationship with the SCTs' legitimacy would improve our understanding of this process. Future research could also contribute to extending this knowledge to other organisational contexts.

Conceptualising leadership development as a complex intervention: developing a theory of change as part of an evaluability assessment

Authors: Dr Katherine Perryman, Professor Ann Mahon
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Abstract

Context

Leadership development in healthcare is big business with most healthcare systems investing significant resources in leadership development programmes and on-the-job training. However, the evidence base relating to what works in leadership development is far less developed than our understanding and application of healthcare leadership and management theory. Conceptualising leadership development as a complex intervention requires a systematic approach to evaluation that involves the development of a programme theory of change. This paper presents the development of a theory of change constructed to underpin an evaluability assessment of a leadership development programme for NHS middle managers in England.

Methods

18 key stakeholders involved in a national MSc in Healthcare Leadership (the Anderson programme) participated in a total of 9 online theory of change development meetings (3 individual and 6 group meetings) in November/December 2021. Stakeholders included programme commissioners (NHS), university faculty and associates and programme participants. Four key topics were explored: programme purpose and aims; learning objectives; the process of learning and development; and actual and intended programme outcomes and impact. Meetings were recorded with consent, imported into NVivo 12™ and coded into a topic based coding framework. Data was analysed under themes representing theory of change constructs: problem, solution, what and how to change, measuring change, barriers to change and contextual factors. A visual and narrative representation of the theory of change was devised in a series of meetings with the evaluation team, subject to review and revision from key stakeholders.

Results

The theory of change development meetings were an effective approach to data collection. Stakeholders were highly motivated to contribute and discussions yielded in depth information about how the programme develops healthcare leaders. Findings relating to the theory of change constructs included agreement on the purpose of the programme and how it aimed to address the serious failings in healthcare in relation to leadership as identified in the Francis report. Perceptions of the learning objectives and the pedagogy of the course reflected the original design of the programme and useful information pertaining to how the programme is implemented was obtained. This included contextual factors that influence programme delivery and change in practice, including the impact of COVID-19. Participants' views on the outcomes of the programme and how it leads to impact will inform the evaluability assessment of the programme, including identification of appropriate data sources, outcomes and impact on the system.

Discussion

Involving stakeholders in a collaborative approach to developing a programme theory of change is an important first step in identifying the complexities of leadership development programmes. It makes explicit many aspects of leadership development that are often implicit. It provides a systematic basis upon which to develop an evaluability assessment leading on to the design of a rigorous and robust programme evaluation. The next steps in the evaluability assessment of the MSc in Healthcare Leadership is to identify existing evidence and gaps in the evidence base regarding the impact of the programme. The theory of change will also inform possible data sources and the development and appraisal of evaluation options. This will include what methodology we can employ that will address the significant 'problem of attribution' that characterises the evaluation of complex leadership development interventions.

Improving access to the school medicine network in Romania: drawbacks and promises

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Abstract

Context

During the COVID-19 pandemic, school doctors and nurses have played an essential role in the safe reopening of schools in Romania. Their involvement included testing, triage, scenario implementing and general monitoring of the confirmed cases in the schools they cover. In addition, a long-awaited Ministerial Order aimed at enhancing this component of paediatric primary care was passed during the same period.

Methods

This paper uses official secondary data to create a snapshot of the school medicine network in Romania and offers recommendations for the field's future development. Drawing on statistics of school medical offices, number of physicians and nurses, country-wide surveillance data on pupils compiled by County Health Authorities and total school population reported by County School Authorities, the inquiry seeks to map the current situation of school medicine and its progress for the past two decades. Scrutinising past and current legislation on school medicine organisation and delivery, it locates these transformations in the broader context of changes that transferred a consistent part of decision-making and funding from the central government to local/county authorities.

Results

Latest data from 2019 shows that Romania had around 3.5 million school children, 1281 school doctors, and 3577 school nurses. As revealed by compiling county ratios of children served by medical offices, coverage with school health services in different country areas and within counties are marked by significant inequities (i.e. 299 school doctors in one county versus one school doctor in other counties). Existing inequities reinforce these health disparities in the availability of trained healthcare workforce, adequate equipment of school medicine offices, shortage of offices in rural schools, and underfunding within the existing yearly framework contracts. The paper thus questions the effectiveness of the double subordination of school doctors/ offices to local/ county councils and County Public Health Authorities in the absence of more explicit legislation on funding mechanisms that guarantee minimum standards of medical school operation throughout the country.

Discussion

An increased interest in research, policy and regulation of school medicine has the potential to improve this component of primary care to become more relevant, especially for its capacity to develop and implement prevention programs (nutrition and healthy lifestyles, vaccination, reproductive health). Receiving the required human and financial resources for its effective functioning, school medical offices can develop into stable avenues for reliable data collection and monitoring of school children's health indicators. Further professionalisation of school doctors and nurses can lead to reallocating tasks from the secondary and tertiary healthcare levels, allowing for more consistent evidence-based public health policy and programs, and improved access to services. Finally, a strengthened school medicine network would provide opportunities for analysing disease on sub-groups by including social determinants of health, thus gaining a more comprehensive image of health outcomes for children and adolescents in Romania, especially for vulnerable populations.

Implementation of eHealth solutions in municipal healthcare and hospital settings through a new structured approach to the implementation process. What works for whom, in which circumstances, and why? A realist evaluation

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Abstract

Context

Adoption and uptake of eHealth solutions among health care professionals require increased digital skills and innovation readiness, as well as decreased resistance to change. This project evaluated the use of a new structured approach to digital innovations implementation processes in Danish and Norwegian health care settings. The new structured approach consists of 1) a co-creative planning framework that fosters multidisciplinary collaboration, innovative attitudes, and team learning, 2) a work-based training framework oriented towards the achievement of concrete knowledge, skills, and competencies, and 3) a model to assess and acknowledge the digital and innovation skills within health care professionals.

Methods

Data sources comprised 11 semi-structured individual interviews and focus group interviews with 28 participants (health care professionals, leaders, and policymakers) across 4 cases. Audio recordings were transcribed verbatim. Data were analysed thematically and theorised using the realist evaluation framework that provides an explanatory model that links the context, mechanisms, and outcome patterns. We used the context (C) + mechanism (M) = outcome (O) configurations (CMOcs) heuristic to explain under what contexts, for whom, how, and why various eHealth solutions are adopted and used or not through the new structured approach to digital innovations implementation processes.

Results

Overall, there was a variation between policymakers, leaders, and health care professionals' perceptions on the adoption of eHealth solutions in their contexts. The new structured approach to digital innovations implementation processes was used differently across the Norwegian and Danish context, and also across the contexts within the countries, which resulted in different outcomes. An enabling mechanism in one context could be a hindering mechanism in another context.

Discussion

The co-creative planning framework triggered mechanisms such as stakeholder involvement and sense-making which were prominent mechanisms to adopt eHealth solutions. Failure to trigger these mechanisms resulted in resistance. Top-down, externally led implementation and lack of adjustments to the context served as potential pitfalls. Lack of time, resources, and focus triggered mechanisms that had both a hindering and enabling effect on the outcome of the work-based training. The model to assess and acknowledge digital and innovation skills did not trigger mechanisms that enabled the adoption of eHealth solutions, and should therefore be revised.

Shaping and sustaining the NHS clinical workforce of tomorrow: facilitating recruitment and optimising retention of International Medical Graduates (IMGs) through support strategy development

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Abstract

Context

The United Kingdom's National Health Service (NHS) faces a significant workforce shortfall in the near future. Potentially insufficient clinician numbers threaten the sustainability of adequate service provision, essential in order to meet the rapidly rising demand upon modern healthcare. In the 2019 'Interim NHS People Plan', focus is upon facilitating a sustainable supply of doctors through both enhanced staff recruitment and retention, in order to address this impending shortfall, with International Medical Graduates (IMGs) being proposed as a potentially promising clinical workforce source. The long-term effectiveness of this solution will be reflected in prospective retention figures, highlighting the fundamental importance of establishing early robust professional initiatives to support induction and integration of this workforce group.

Methods

The University Hospitals of Leicester NHS Trust has adopted a proactive and structured approach to IMG recruitment for several years. Consequently, the Trust employs a substantial number from this group, as demonstrated by the junior doctor workforce numbers within the Emergency & Specialist Medicine (ESM) directorate, with up to 50% having trained internationally. Novel strategies focusing upon providing pastoral support and professional development of newly recruited IMGs have been trialled and embedded within the Specialist Medicine branch. Trust Induction is facilitated through the 'Buddy System', a collaborative support network which links each newly starting international doctor with an individual mentor, with the ultimate goal being enhancement of the overall experience of working in a new healthcare system. Education and training needs have been addressed through the development of a dedicated peer-led teaching programme, a unique concept providing active teaching opportunities.

Results

Results for these aforementioned interventions can be divided into short and long term. Since its inception in early 2019, the 'Buddy System' pilot has provided mentorship for 42 internationally trained doctors new to both the NHS and the Trust. Informal individual feedback has been positive overall; formal feedback has been undertaken guiding optimisation of this pilot initiative. The peer-led teaching programme commenced in April 2019 has had a variety of medical topics presented. Future presenters volunteered months in advance, with sustained high attendance numbers and encouraging feedback, demonstrating successful embedding of the initiative.

Discussion

Within the NHS workforce infrastructure, IMGs are key players, comprising 28% of current primary and secondary care doctors. Identification of a forthcoming clinician shortfall has prompted urgent interventions to be devised in order to maintain service delivery. Development of strategies directed towards this group promotes integration and nurtures professional growth, thereby optimising the work environment. Such educational and support initiatives are postulated to have a widespread long-term benefit for the industry, through amelioration of clinical ability, improved workforce retention and an enhanced recruitment profile. A wealth of potential exists for advancement of such integration and development projects. Future work must focus on further initiative design and optimising current strategies, with subsequent interprofessional and transnational expansion, in order to engender sustainability within the healthcare environment.

Health service management training in Romania - current status and options for the future

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Abstract

Context

Training in health service management in Romania has been a relatively new field for the past decades. With the adoption of Law no. 95/2006, it has become mandatory for anyone who wanted to pursue a career in the management of health services. However, health service management training is largely overlooked when analyses for improvement in the health care sector are performed. Thus, this paper aims at providing an overview of the areas in need of improvement in order to increase the quality of health service management in Romania and, with that, the performance of the national health care system.

Methods

Given the scarcity of data and previous research on the selected topic, we relied on policy document analysis to achieve the aim of our paper. We analysed current regulations which apply to health service management training, in connection also with regulations applying to those who want to occupy management positions in public institutions which are part of the national health care system. While doing this, we have used the health labour market framework for universal health coverage developed by the World Health Organization.

Results

Health service management training in Romania is provided mainly by academic institutions, most of them Universities of Medicine and Pharmacy, and the National School of Public Health and Management. According to current legal provisions, they are offered either as short-term programs or master degrees. Our analysis shows that there are no guidelines regarding the curriculum which should be followed or competencies which need to be develop among the trainees. Master degrees are mostly offered by Medical Universities, but there are cases in which they are delivered together with training programs in social services management. In order for someone to compete for a hospital management position, such a training is mandatory.

Discussion

Health service management training in Romania is delivered in a non-systematic manner, with little preoccupation for the knowledge and skills which need to be delivered and developed. However, the delivery of high-quality programs is essential for improving operations in the public institutions which are part of the national health care system. In conclusion, we advocate that more effort is dedicated to developing quality standards for such programs, as well as ensuring oversight of the programs preparing the staff who will provide health service management in the Romanian national health system.

Digital transformation in health: what words do we use?

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Abstract

The Digital Transformation in Health has been substantially pushed forward by the SARS-COV-2 Pandemic. To channel a vision for the guidance of developments taking place, the Portuguese Association of Hospital Administrators developed and published a book collecting contributions from several experts in the field. To get a simple picture of the key concepts most mentioned by experts we conducted a text analysis on their written contributions. This work tries to explore the words that experts use to discuss digital transformation in health and it may tell us about the trend concepts being used.

We have grouped written contributions from experts into 6 categories: (i) “Stakeholders’ Views”, for contributions from experts representing professional and patient groups; (ii) “Regulation”, for contributions addressing matters of regulation, privacy and safety; (iii) “Technology”, for contributions addressing matters of data management and technologies; (iv) “Implementation”, for contributions regarding managing and implementing digital health initiatives; (v) “Vision”, for contributions addressing the future of digital health; and (vi) “General Aspects”, for the remaining contributions. We counted each word used in each group of texts. Then the most frequent words in all texts (above 14 mentions and with meaning to the topic of digital health) were identified and clustered into aggregated concepts (singular/plural, verb/noun, female/male, and synonyms). The final analysis considered the number of times a given concept was referenced in each of the categories, its frequency of use in the given category and in the overall contributions.

We used 76 contributions from a total of 84 experts. The experts came from many different stakeholder groups. The contributions amounted to about 50.000 words, in total, with more than 8.000 individual words.

The most frequent key-concepts in all contributions were Health (3,02% of all words used), Digital (1,17%), and patients (1,14%). The frequency of these words varied within each of the categories and in some categories the top words included instead: technology (“General Aspects”), doctors (“Implementation”), data (“Regulation”, and “Technology”) and treatment (“Regulation”), and national (“Vision”).

We could also find a predominance of certain concepts among some of the categories. For example, economical and flexibility concepts were mentioned mainly in the implementation and technology categories, while concepts of equality were more prevalent in the category of “Regulation” and “Stakeholders’ Views”.

We have identified varying predominance of words according to the main categories being addressed. Even though there might be a natural tendency to talk about technology in the field of digital health, we have found that among the experts consulted, a clear focus continues to be patients.

Our work has several limitations. The analysis is done only on words individually and not on expressions and not considering the context they are used in. Future work in this field might include doing a more elaborated content analysis to explore further what aspects of the discussion about digital health could be improved.

Establishment of an innovation centre within an Irish acute hospital

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Abstract

Healthcare innovation is deemed essential in order to evolve to meet patient expectations and provide cost-effective and timely care. Tallaght University Hospital (TUH), Dublin, is one of the largest teaching hospitals in Ireland and has a strong reputation and long history of undertaking patient orientated innovation. Innovation was identified as a key priority area in TUH's strategy for 2019-2024, with a vision of establishing a culture of innovation in everything we do. We have some of the best staff in the world right here who come up with brilliant ideas every day. We, however, needed a dedicated centre, a 'one stop shop', in order to support the translation of digital innovation ideas, engage with academia and industry, and help patients today and in the future. We have a pressing need to innovate around what we do traditionally but also to look at new avenues that we can explore. It all comes back to providing the best care for patients and for that reason we have established an on-site dedicated Innovation Centre. We are excited to share our journey over the last 6 months as the Centre is in itself innovative in an Irish healthcare setting.

To drive the establishment of the Centre, the hospital appointed a Head of Innovation and an Innovation Registrar. The development of the maturity level of Innovation has focused on five main workstreams; Governance, Capacity, Partnerships, Branding and Awareness, and Operations. An 'Innovation hub' established in the main atrium of the hospital is a centrally located dedicated physical space; signalling the central focus on innovation within the organisation. To promote staff engagement we commenced 'Idea clinics' in the Hub for staff to bring forward ideas. These have proved extremely valuable with 25 proposals at ideation stage within 5 months. The Innovation Centre also provides a service to all staff for innovation projects e.g. project management, support with funding calls.

The Innovation Centre at TUH now has a pivotal role in bringing forward a constant flow of targeted digital innovations and putting them through an effective but streamlined evaluation process so they are adopted at pace and scale. Internally we are aligned with Quality Improvement (QI), Research, Patient liaison, IT, and Clinical Engineering. We are leveraging this with a combinatory approach to innovation, to ensure that all new technology is aligned with clinical processes. Externally we have established working partnerships with a number of National Innovation bodies e.g. HSE Digital Transformation, and have already engaged with industry both nationally and internationally.

The next steps for the Innovation Centre will be to realise its full potential and build on this established foundation.

RITMOCORE - Creating value in patient centred care by aligning the supply chain with service provision

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Abstract

An ageing European population translates in a steady growth in the demand for pacemakers. Budgetary constraints in healthcare systems call for innovative solutions to meet this rising demand while safeguarding the quality of care. The current approach generally consists in reducing the price per device by aggregating purchases, but this means that the pacemakers purchased by healthcare systems are of the lower range, and that suppliers, to make up for the discount, cut back on services they offer. Meanwhile, the newer, higher range pacemaker models offer possibilities such as remote monitoring. This means clinicians, already overworked, do not have access to technologies that could significantly decrease the time resources required per patient in the follow-up stages of the care pathway. Patients, on the other hand, receive lower quality follow-up in a care pathway that is already fragmented, and where general practitioners lack the necessary information to provide them with a comprehensive care.

RITMOCORE, a Public Procurement of Innovation (PPI) project funded by the European Union under Horizon2020, was set up in 2016 to transform the care pathway of patients suffering from bradycardias and implanted with a pacemaker. The model proposed by RITMOCORE posits a shift from purchasing devices to purchasing services, where payments are outcome based (thus distributing the risk between the parties), and where services are supported by advanced ICT systems that make remote monitoring possible. Following-up patients by remote monitoring means identifying problems earlier, preventing comorbidities, and reducing costs of transportation for patients and time demands on clinicians. RITMOCORE's model uses the ICT platforms that support remote monitoring to help coordinate care by making the data available to all clinicians involved in a patient's care pathway and informing patients. By continuously collecting data on patients' status and activating alerts only when necessary, the model reduces the need to contact specialists for routine visits, facilitating transfer of follow-up activities towards primary care and saving considerable resources. The model also helps empower patients to assume greater responsibilities in their own care, paving the way towards the implementation of resource-efficient models of self-care.

RITMOCORE's model is currently being implemented in Hospital de la Santa Creu i Sant Pau and Hospital Universitari Bellvitge, both in Cataluña, where 937 patients are being remotely monitored. The implementation is expected to validate the model and generate evidence of its advantages in view of future scale-ups. During a first year of progressive implementation, its effectiveness is already being demonstrated: quality objectives have been met and the alert algorithms have been fine-tuned allowing proactive intervention in a number of dangerous situations for patients. We are looking forward to presenting the data on these milestones at EHMA2022.

Better care using a disruptive artificial intelligence tool

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Abstract

Context

Hospitals accumulate a lot of data, through electronic health record (EHR), where records with the patient's characterisation and their history, in most cases, are made in "free text", i.e., without any semantic annotation, the inexistence of a structured registry that does not facilitate the decision-making process. We believe that, by reaching the necessary predictor variables that may be important in a physician's decision making, we can create a decision-making support system that effectively fulfils its true purpose of simplifying, supporting or even interfering with their clinical decision-making. In order to allow the use of this wealth of data, which provides high clinical value, *Gentil – Text mining* emerged.

Method

For the development of the clinical decision-making support model, it was necessary to extract all the clinical information contained in the records in a structured way. Then, algorithms of Artificial Intelligence were used, with techniques such as Text Mining (TM) and natural language processing (NLP) were employed, through their classification, quantification, and organisation, with the objective of making the information available in a categorised and standardised way, thus enabling the construction of a structured summary to assist the clinician in decision making. In the TM application, several models were used, one based on rules without any training, with data extracted using the Unified Medical Language System (UMLS), a semi-supervised, with automatic pre-annotation of UMLS, for which only three categories were defined (“Procedures”, “Disorders” and “Drugs”) and supervised with notes taken by human annotators. In all models, a qualitative analysis of the results was performed by a senior physician.

Results

The project resulted in the development and implementation of a tool that uses AI and TM to extract, aggregate and systematise information about the EHR of patients, available through a dashboard, in which it is possible to consult the information considered most critical, namely patient demographics, diagnosis (with the various classifications related to the pathology), biometrics (with the possibility of comparing its evolution over time), medication, interventions and exams, defined action plan, including the stage at which the patient you are currently in, as well as the summary timeline. It is also possible to access a statistical area in which it is possible to obtain information on the number of patients per pathology, clinical evolution, survival rates, comparison of treatment effectiveness, etc. These data make it possible to understand the path of patients according to the therapies used, allowing the associated costs and effectiveness of treatments to be measured.

Discussion

Despite some obstacles observed, for example, the availability and organisation of data, since, regarding electronic clinical files, many disorganised texts were found, not respecting punctuation rules, spelling errors and frequent use of unofficial or unrecognised abbreviations. These clinical decision support systems, which use AI, ML and NLP, have shown increasing potential in reducing the workload of clinicians, with reductions in access times to information, diagnosis and medication identification. The introduction of this platform at the IPO Porto, with increasing use, due to the ease of information, with the possibility of validation through access to primary data, will increase confidence in the system, allow reducing the time of consultations with cancer patients, reducing the time spent in the elaboration of the diagnosis and will also help to compare the cost-effectiveness of different therapeutic options, as well as allow the implementation of pharmacovigilance mechanisms.

Breast unit safety during COVID-19 pandemic: difference among coordinators and patients' perceptions

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Abstract

Introduction

The spread of Sars-COV-2 has generated worldwide a health, social and economic emergency. The impact of the pandemic has also been evident on other diseases, often causing delays in the care and management of breast cancer patients. The latter is the most frequently diagnosed cancer in women in Italy. Nowadays thanks to new possibilities of treatment (i.e., breast units), the survival of patients with breast cancer has considerably increased. During the pandemic healthcare organisations made great efforts to continue to achieve the standard of excellence in patient care and contextually maintaining safety. Patients' quality and safety perception is of fundamental importance to maintain patients' engagement. On the other side healthcare workers need to perceive the workplace as safe both for them and for their patients. Our aim is to analyse the antecedents that caused the discrepancy between BU patients' safety perception and those estimated by the BU coordinators.

Method

We analysed the presence of a separation between the patients' and coordinator' safety perceptions using the correlation analysis, and then measuring the influence of all factors using a t.test. Based on the findings, we used a distinct model for coordinators in the inferential analysis. We employ a linear log model as well as a spatial regression model. The second model allows to determine whether the perception of safety is influenced not only by the individual characteristics of patients and structures, but also by a geographical influence caused by both the local impact of the pandemic and the organisational networks of the structures in the area.

Results

There is no association between safety perceptions of patients and coordinators. Analyses reveal that coordinators perception of safety is lower in presence of COVID-19 infections, no team members replacement and high level of stress. The nearby structures also have a huge impact on this perception: according to spatial regression, the safety improves by 76% for every improvement reported by the five nearest structures. Furthermore, if no visits have been postponed, safety rises by 7%, drops by 5% if stress is reported and by 6% for longer waiting lists. The impact on the two waves is different: a contagion in the team during the first wave impacts by +3%, whilst there are no changes during the second. Even the change in team composition has a favourable influence on perception during the first wave (+13%) but a negative effect during the second wave (-21%).

Discussion

COVID-19 pandemic influences the perception of safety of both patient and professionals. Health care workers regularly deal with traumatic patient experiences and the unexpected loss of family, friends, and colleagues, all of which contribute to psychological distress. In that context, healthcare facilities played an important role, saving lives and providing healthcare services. Healthcare facilities are expected to stay fully functional during and immediately after the disaster strikes. In the last years, there was the spreading of many initiatives driving patient engagement as a patient safety strategy leading to more involvement and loyalty to the hospital. Considering the provider perspective, patient safety has been demonstrated to be linked to the creation of an atmosphere of trust and openness. In fact, studies show that when healthcare providers are worried about error reporting or feel that this reporting could impact their reputation, it is impossible for the organisation to learn and develop safer practice.

Proposals on education and working conditions of management of health care institutions in the Republic of Croatia

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Abstract

Croatian Health Employers' Association (CHEA) has made proposals on working conditions and proposals to amend the legislation on education of health care management in Croatia.

The number of employees in health care institutions in June 2021 was 71.548 and the budget for health care for 2022 is 32 billion HRK.

Important factors that affect the position of the management of health care institutions are business conditions, management tools, status, and education. The management holds no sway over the prices of health services paid by the national insurer. The ability to manage human resources according to the abilities are limited by the provisions of the Labour Act. Wages in the health care system are determined by laws and collective agreements, and do not depend on performance. The management of health institutions can be changed depending on political options.

To strengthen the role and tools of health care management and thus improve the operation of health care institutions and the quality of health care, we present several suggestions: professionalisation of management of health institutions; education in health management; depoliticisation of health management of health institutions; objective and transparent performance evaluation system. In order to have a greater impact on the revenues, it is necessary to enable health institutions to negotiate with the national health insurance fund on the terms of the contractual relationship.

Regarding the conditions required for a person to be the director of a health institution, the Health Care Act stipulates that the director of a health institution may be a person with a university degree and 5 years of work experience in the profession, along with other conditions prescribed by the statute of health institution.

It is necessary to educate the management of health institutions on the basics of different professions and leadership techniques. Therefore, we propose an amendment to the Act, so that, in addition to the already prescribed conditions, the director of a health institution established by the Republic of Croatia must have completed a specialist study in health management for 1 year, and directors of other public health institutions and all deputy and assistant directors must have completed this education or training program for managers in health systems approved by the ministry responsible for science and education for 195 hours.

The National Health Development Plan from 2021 to 2017 states that professional and responsible management is the key to sustainable hospital performance, and that there is a need for additional education and professionalisation of public administration in health care. The upcoming reform of the health care system of the Republic of Croatia is an opportunity to implement positive ideas and ongoing work towards a sustainable and quality health care system.

Educational interventions to reduce prescription and dispensing of antibiotics in primary care: a protocol for a systematic review of economic impact

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Abstract

Context

Antibiotic resistance is an important public health issue, resulting in harmful risks for individuals, with limited or no clinical benefit. No doubt exists on the association between excessive antibiotics consumption and antimicrobial resistance, yet the worldwide level of antibiotic use continues to rise. Most antibiotics are prescribed in primary care, but evidence on interventions to tackle this concern considering its economic impact still is scarce in this setting. Therefore, this study aimed to identify and synthesise available evidence on the economic impact of educational interventions to reduce prescription and dispensing of antibiotics among physicians and pharmacists of primary care.

Methods

This systematic review will be conducted and reported according to the PRISMA guidelines. The review protocol will be submitted to the International Prospective Register of Systematic Reviews for approval. An electronic search in PubMed, Scopus, Web of Science and EMBASE was conducted until February 1, 2020. Automatic updates from the databases and hand-search of the references list of included studies will complement the search. Two authors will screen studies, first by title and abstract, and then looking at full texts. Disagreements will be resolved by a third author. The inclusion and exclusion criteria were defined à priori and will be applied throughout all stages of the selection process. Articles maintained after full article screening will undergo risk of bias assessment and data will be extracted. The main findings will be summarised qualitatively and quantitively, using a meta-analysis, depending on the nature of the data and its heterogeneity.

Results

A total of 4199 papers were identified in the electronic search, 1339 from PubMed, 1044 from Scopus, 733 from Web of Science, and 1083 from EMBASE. From these, 972 duplicates were removed automatically. So far, by reviewing the title and abstract, a total of 767 papers were excluded.

Discussion

This study will provide a high-quality synthesis of the existent evidence on the economic impact of educational interventions to reduce prescription and dispensing of antibiotics in physicians and pharmacists of primary care. This information will be crucial to guide Public Health policies to restrict the unnecessary use of antibiotics and consequently improve health at a population level, with a significant reduction in health costs.

Efficiency of environmental measures in reducing energy and water consumption and waste production using Stochastic Frontier Analysis – the reality of Portuguese healthcare institutions

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Abstract

The efficient and intelligent management of a healthcare institution ensures the success of the organisation. Nowadays, with attention focused on the environmental impact of human activities, it is essential to review management processes in order to apply measures that increase the environmental sustainability of healthcare providers.

The aim of the study was to evaluate the efficiency of environmental sustainability metrics of various healthcare institutions in Portugal's National Health Service (SNS) in reducing water and energy consumption and waste production recurring to a Stochastic Frontier Analysis, allowing to analyse the institutions and comparing with each other. The target population comprised the health institutions that are part of the SNS and that provide healthcare services, including primary and secondary care.

On average, the 24 selected institutions are not energy efficient (mean = 0.56, max = 0.99) even with the measures applied, with a big margin for improvement to reach the optimal measures. Regarding water consumption, healthcare institutions showed a high consumption but with evidence of good measures implemented (mean = 0.99; max = 0.99). For the overall waste production, hospitals were moderately efficient managing it, with a mean = 0.52 and a max = 1. When disaggregating this data according to specific healthcare waste (groups III and IV), the waste from group III (mean = 0.99; max = 0.99) showed to be generally well managed with the current measures, whereas waste production from group IV showed technical inefficiency with measures implemented (mean = 0.35, max = 0.70).

While there were differences between primary and secondary care, this study showed there is a big margin for improvement, especially regarding energy management and waste management.

A journey towards a value-based health care (VBHC) funding model for lung cancer: the FAROL ("lighthouse") project

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Abstract

Context

The FAROL project was born within the 3F ("Financing – Formula for the Future") initiative, led by APAH (Portuguese Association of Hospital Managers) in collaboration with Roche and IQVIA. It is a pilot project implemented at Portuguese Oncology Institute of Porto (IPO-Porto), aiming to develop an alternative funding model for lung cancer, that rewards both better outcomes and efficiency in healthcare delivery. By doing so, it overcomes the inefficiencies of the Portuguese hospital funding, highly focused on volume, moving towards a model based on outcomes and disease management. Aligning reimbursement with value is an essential element of a true VBHC system.

Methods

FAROL followed a stepwise approach: (1) patient's pathway mapping, (2) disease treatment cost assessment, and (3) outcomes measurement. In step 1, twelve qualitative interviews were conducted, that enabled the process mapping with the relevant procedures and phases of the patient journey (diagnosis, treatment, and follow-up). Areas of improvement and best practices were also identified. For the pathway cost assessment, a mixed costing methodology was applied, combining a Time-Driven Activity-Based Costing (TDABC) approach with the use of the Portuguese NHS list price. The costs were calculated for patients diagnosed with lung cancer between July 2016 and June 2017 (N=358 patients), with a follow-up period of 2 years. For step 3, the starting point was the VBHC outcome measurement hierarchy, which comprises three tiers: health status achieved or retained, process of recovery, and sustainability of health. For this, both ICHOM standard set and IPO-Porto available data were considered.

Results

The pathway mapping was a crucial tool to critically analyse, with the care team, the patient journey within IPO-Porto. The key areas for improvement identified were related with referral, imaging, and nuclear medicine activities/processes.

TDABC was used to obtain 73% of the costs. Monthly average treatment cost in the first and second year was 1,312€ and 1,213€, with drugs representing 38% and 74%, respectively. There was also considerable variation in costs by clinical and demographic patient characteristics and unbalances with the price currently set by payer.

Six outcome indicators were identified and computed from patient-level data: 1-year (45.3%) and 2-year (32.7%) survival rate, average time between diagnosis and treatment initiation (45.8 days), share of patients under pharmacological treatment (last 30 days of life: 25.0%), median number of days spent in the hospital (last 30 days of life: 6), share of unplanned hospitalisations (78%), and share of unplanned appointments (8%).

Discussion

FAROL allowed for a better understanding of the real costs of lung cancer treatment, highlighted some major unbalances with the amount hospitals receive, and also demonstrated the existence of improvement opportunities in the patient care pathway. The work developed showed the feasibility of measuring costs and outcomes at patient-level, requiring however a strong commitment of all involved in the care pathway and hospital management. The use of these tools must be encouraged by National Authorities, through the

definition of new funding models that rewards institutions with better outcomes at lower costs and penalise hospitals for delivering inferior value to patients. Moreover, this new funding model could be leveraged by benchmarking healthcare institutions. FAROL sets the foundation for the development of an alternative funding model for lung cancer that could be applied to other diseases and healthcare providers.

The leadership attitudes and beliefs of healthcare management students: what Gen Z and millennials think about leadership and organisations

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Abstract

Context

Healthcare involves effective leadership to adapt to changes in social ecology, cope with increasing volume of information, improve patient outcomes and achieve organisational goals. Thus, the fundamental goal of the healthcare management departments is to contribute to the workforce of the future health managers and leaders.

Purpose

This study is being conducted to evaluate the health management students' and graduates' thinking about leadership and organisations.

Method

The quantitative data was collected via the Leadership Attitudes and Beliefs Survey (Wielkiewicz, 1999). Participants were 168 sophomores, the third and the senior year students of foundation and state universities in Turkey. Additionally, 36 graduates of the foundation university have been given the survey. In-depth interviews with 4 managers in the Health Group have also been conducted.

Results

The data has been evaluated to reveal the participants' hierarchical and systemic thinking about leadership and organisations. The researchers have been trying to determine what students, Gen Z, and graduates, Millennials, think about leadership processes, how they expect leaders to function and if there is change in their beliefs during their education and when they become a part of the healthcare workforce. What Gen X leaders and managers think about Gen Z who are next to enter the workforce has also been evaluated.

Discussion

This study discusses the implications of the results and potential takeaways for the consideration of healthcare program coordinators and curriculum designers.

European medical devices regulation – analysis of regulatory aspects, barriers, and recommendations

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Abstract

Context

The sector of medical devices is at the forefront of innovation in healthcare, becoming progressively more relevant for both the European and global economies. To increase safety, transparency, and sustainability, the European regulatory framework was revised with the publication of Regulation (EU) 2017/745 on medical devices (MDR). The MDR new requirements include a stricter regime for clinical evaluation and clinical research with medical devices, a new database (Eudamed), an identification system based on a unique device identifier, and an implant card to improve devices' traceability.

Methods

A literature review was performed to (1) determine the regulatory aspects most mentioned in the literature, (2) evaluate the barriers to MDR implementation, and (3) identify the recommendations for a harmonised implementation of the MDR. The database MEDLINE Pubmed was searched using the query "(medical devices) AND (regulation) AND (Europe)" and excluding articles published prior to January 1st, 2017. By reading the title and abstract (screening phase), were excluded articles non-related to European regulation of medical devices and articles not written in English, Portuguese, or Spanish. From the articles eligible for full-text reading, were excluded those related to regulation on clinical practice, data protection, patents and selling, articles non-related with MDR, and articles without any appreciation other than a direct description of the MDR.

Results

The search retrieved 369 articles from which 311 were excluded in the screening phase and 31 were excluded after full-text reading. 27 articles were included in the final analysis. Prosthesis/implants are reported in 52% of the included articles and software in 33%. Class III medical devices are described in 63% of the included articles, class IIb in 44%, class IIa in 37%, and class I in 33%. The MDR regulatory aspects most mentioned in the included studies are: Eudamed platform (63%), unique device identifier system (44%), post-market monitoring (33%), and increased requirements for clinical evidence (30%). The most identified barrier was the difficulty in designing studies capable of generating sufficient clinical evidence (19%). The growing complexity of software, difficulty in classifying borderline medical devices, and the reduced number of notified bodies were mentioned in 4 papers each (15%). Communication between stakeholders (15%) and increase clinical research capability (11%) were the recommendations most mentioned.

Discussion

The inherent risks, the impact on health, and the technological complexity of the devices are preponderant factors for their literature notoriety, with medical devices of higher classes captivating most of the interest. The Eudamed platform and the implementation of a unique device identifier system are two priorities for the European Commission, establishing as the regulatory aspects most mentioned in the literature.

As the regulatory framework becomes stricter, it is necessary to balance the new requirements with the manufacturer's capability to introduce new devices in the market. Stringent regulations can provide better protection of public health and patient safety but can also discourage manufacturers, and deprive citizens of its benefits.

Evaluating sustainability in operating hospitals – a comparative case study in Germany

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Abstract

Healthcare is of systematic relevance for society at large, simultaneously ranking among the most carbon-intensive service sectors in the industrialised world. Hospitals are an essential part of healthcare provision, making the assessment of their sustainability pivotal. Most existing evaluation tools aiming to assess sustainability and quality are inadequate, as they lack a holistic and validated approach, while predominantly excluding the built environment. The novel Italian hospital evaluation tool SustHealth v2 addresses the shortcoming of existing applications through its structured and more integrated approach. In testing SustHealth in Germany on 14 hospitals, this thesis provides an in-depth sustainability assessment of German hospitals while identifying further insights based on patterns in ownership and the number of patient beds. SustHealth contains a questionnaire with closed questions, measuring sustainability via Social, Environmental, and Organisational Quality. Findings show, that across German hospitals sustainability is high in Social Quality, while comparatively lower in Environmental and Organisational Quality. What is more, private hospitals slightly outperform both public and non-profit clinics. Interestingly, the evidence presented in this thesis suggests a non-linear relationship between sustainability and hospital size as very small and large clinics scored highest overall. In Germany, hospitals perform particularly well in the sustainability dimensions of health promotion, waste management, and patient safety. By contrast, scores are low in categories such as energy management, facility management, and technological innovation. As demonstrated by this thesis, SustHealth is a reliable and easily scalable tool for the evaluation of hospitals in Germany. By further adapting SustHealth to the particularities of hospital systems in high-income countries, the tool potentially offers a cost-effective course of action for enhancing sustainability in healthcare.

Epidemiology and management of heart failure in 10 European countries

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Abstract

Context

Heart failure (HF) is a complex clinical syndrome characterised by the reduced ability of the heart to pump and/or fill with blood. HF symptoms can develop gradually (chronic HF) or suddenly (acute HF), the latter often resulting from an exacerbation of chronic HF and requiring immediate medical attention.

Recent reports suggest that the overall number of people living with HF is increasing due to sizable surges in predisposing comorbidities (e.g. diabetes, obesity and hypertension) and due to the aging population.

Aim of the research was to understand the burden of HF and map available resources for its management across several European countries.

Methods

A literature review was carried out to identify studies published between 2015 and 2021 on the epidemiology of HF in European countries. Other sources of information consulted were: the European Core Health Indicators (ECHI data tool from the European Commission), EuroStat, the OECD Health Statistics and reports from the Heart Failure Policy Network.

The most comprehensive sources of information for our research were publications emanating from the Global Burden of Disease (GBD) and the European Society of Cardiology (ESC) statistics on national cardiovascular infrastructure and procedures derived from a survey of the National Heart Failure Societies (NHFS).

Data of the latest comparable year were taken into consideration.

Ten countries were included in the analysis: Belgium, France, Germany, Italy, Poland, Portugal, Spain, Sweden, The Netherlands, and UK.

Results

The crude annual incidence of HF per 1000 person-years ranges from 1.99 in Italy to 6.55 in Germany. In terms of prevalence, the number of patients per 1000 persons with a diagnosis of heart failure fluctuates from 12 in Spain and 39 in Germany, whilst the 2017 age-standardised rate for 1000 inhabitants is the lowest in Portugal (6.141) and the highest in Poland (11.300).

In terms of etiology, ischemic heart disease accounts for the highest proportion in all countries.

The median number of HF hospitalisations per million people amounts to 996 in UK and 6616 Germany. The median length of stay among patients hospitalised for HF is 8.50 days ranging from 4.8 in Denmark to 11.5 days in Belgium.

All countries have hospitals with HF-dedicated centres, but the HF specialist nurse role is formally accredited only in England and Germany. Spain is the only country with an active HF screening programme.

Conclusions

Heart failure is a serious clinical and public health problem as the total number of patients living with heart failure is increasing, reflecting the chronic course of the disease as well as population growth and aging.

Data shows variability in amongst European countries. Policymakers should be made aware of this heterogeneity and encouraged to facilitate, measure, and, ideally, resource more consistent implantation of best practice.

In search of a better health system funding model

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Abstract

Society has unlimited health needs that cannot be fully met as resources are scarce, decisively affecting health policies that can be implemented at a global level. This scarcity of resources means that health financing becomes an increasingly relevant issue for policymakers and health organisations management, showing that the support provided by science and researchers is fundamental, especially at a time of high pressure in health systems, associated with COVID-19 pandemic crisis, the European demographic aging and the need to invest in technological innovation, bringing the opportunity of a longer life with quality.

This study is intended to bring solutions to this problem, proposing a new NHS funding model. To this end, we analysed the mathematical correlations between health expenditure indicators with the respective GDPs of OECD countries, as well as health system financing indicators, over time. We correlated these indicators with others of global health of the respective population, which reflect the result of health systems, in relation to their funding and expenditure profile. In the end, we defined a mathematical model for the optimisation of the economic and financial health policy, associated with greater health gains.

After fitting linear regression models for several years, the same pattern was observed. For YLL, we have an association with % of total expenditure, public expenditure, and long-term care expenses; for life expectancy, in addition to the previous variables, there was an association with current voluntary health payment schemes expenditure % GDP. Regarding self-perception of health status, an association was found with all variables, except household out-of-pocket payments.

We sought not only to highlight the differences between countries with different levels of wealth, but also to actively contribute to the sustainability of public health services, and to the encouragement of the ambitious and difficult equity in health, particularly at the European level.

Speedy but effective conversion to online learning: tales from UK universities

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Abstract

Despite e-learning being globally well established in 2020, it was still not the teaching model of choice in many UK universities and other educational and training institutions. As the COVID-19 pandemic swept through the globe, educational and training establishments realised the pressing need to introduce virtual education to their students if they were to maintain their businesses.

This paper documents the speedy but successful development of a fully virtual Master of Science (MSc) degree in Healthcare Leadership from a blended learning degree, in five months duration. The programme under discussion is the Elizabeth Garrett Anderson (Anderson) programme delivered jointly by the Universities of Birmingham and Manchester and commissioned by the UK National Health Service. Prior to conversion to virtual delivery, the programme consisted of 2/3 online delivery via a virtual campus, and 1/3 face-to-face delivery via residential workshops and action learning set meetings.

The virtual programme was evaluated after delivery to several cohorts and this paper discusses the evaluation of the workshop component, previously a major part of face-to-face delivery.

The Anderson programme workshops were re-designed to be suitable for online delivery during April to September 2020 and due to the COVID-19 pandemic. The learning outcomes of the sessions remained unchanged and the challenge for designers was to deliver the same intent and purpose with minimal content alteration, but for this to be suitable to a virtual environment using good e-learning pedagogy. This was enabled by a mixture of pre-recorded videos and readings, alongside online synchronous delivery, whilst also being aware of the need for embodiment pedagogy, which purports that attention to the whole body, is required in order for effective learning to take place. This was incorporated by timetabling regular breaks away from the screen, physical stretching and yoga exercises to relieve muscle tension, mindfulness and meditation exercises to maintain concentration, and socialisation built into the timetable to allow participants to bond or reconnect with each other.

The evaluations relate to e-residentials delivered from commencement in September 2020 through to January 2021. During this period 16 e-residentials were delivered which consisted of 46 training days and 656 participants in total, through a mix of cohorts comprising of Graduate Management Training Scheme (GMTS) and Standard Anderson participants.

The conclusion and resulting recommendations were drawn from analysis of the five data sets, thus combining the evaluations into a coherent whole. By bringing these four groups and five data sets together for analysis, an holistic and 360 degree picture emerged which clearly demonstrated the parallel efficacy of e-residentials compared with face-to-face - both from design through to delivery and the myriad of phases involved in this.

Expert Consensus on Value-Based HealthCare in the Consultation Room: a Delphi Study

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Abstract

Introduction

As part of the transition to Value-Based HealthCare (VBHC), hospitals aim to optimize value in the consultation room. By encouraging Shared Decision Making (SDM) and incorporating Patient Reported Outcome Measures (PROMs), hospitals increasingly facilitate the tailoring of care towards what matter the most to patients. However, ambiguity prevails regarding what a value-based patient encounter in the consultation room ideally entails. Consequently, support for, and evaluation of, VBHC is hampered. This study seeks consensus on activities that are important for an ideal value-based patient encounter in the consultation room.

Method

A consensus study, utilizing the modified Delphi technique, is conducted to study what activities of the patient and/or healthcare professional are important for a value-based consultation in a Dutch university hospital. Activities are formulated based on input from a wide range of stakeholders. An expert panel consisting of nineteen healthcare professionals with substantial first-hand experience with value-based consultations participates in a two-round survey in which they rate the activities on their importance for a value-based consultation.

Results

The consensus study provides an overview of 60 activities that the expert panel agrees upon to be important for a value-based consultation. These range from working with patients in personalized goal setting to efforts of healthcare professionals to prevent consumerism. The experts attach several conditions to these activities due to their efforts to personalize care and prompted by practical constraints that they face.

Discussion

Results suggest that the expert panel works from an understanding of Person-Centered, Value-Based HealthCare (PCVBHC). They combine characteristics of Person-Centered Care with the value equation, i.e. optimizing patient outcomes while caring for sustainable use of resources. The results indicate that VBHC is situational and requires tailoring of activities. There seems to be tension between the structures and resources that value-enhancing activities necessitate and the present circumstances, consequently making an appeal to the healthcare system to adapt.

Health workforce for future: actions to strengthening the capacity of the health workforce in era of climate crisis

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Abstract

We are the witnesses of huge changes and health sector disorder due to COVID-19 pandemic crisis. Such real-life scenarios only showed us how fragile the health workforce is and how much action we need to undertake for any adaptation to future climate changes and related disruptions. For two years, the whole health workforce was in an emergency state. Burnouts, mental and physical pressure are everyday sights among health care workers and we only foresee the top of the iceberg. It is clear that we need preparedness for the crisis happening now and those to come. Building stronger health preparedness and climate-smart healthcare is essential. Preparedness for a chronic long term climate crisis we are already facing the consequences that need to come as a synergistic response to the COVID-19 and climate crises.

Health community supported global leaders at COP26 with a "Healthy climate prescription" and underlined, above all, the importance of strengthening health system capacity and resilience, leadership/governance and health workforce in climate change and health issues. COP26 was an opportunity to highlight the unique role of all health professionals and evaluate health system contributions to climate change, focusing on hospital carbon footprints, emissions reduction and insisting on consideration of both adaptation and mitigation strategies. It produced recommendations with the aim of improving the evidence-based policies to protect health from climate change.

WHO produced in 2020 guidance for climate resilient and environmentally sustainable healthcare facilities. This document aims to guide professionals working in healthcare settings to understand and effectively prepare for the additional health risks posed by climate change; monitor, anticipate, manage and adapt to the health risks associated with climate change. It is a guide for healthcare facility officials: to work with health-determining sectors (water and sanitation, energy, transportation, food, urban planning, environment), to prepare for additional health risks posed by climate change through a resilience approach, and to promote environmentally sustainable practices in providing these services. It provides tools to assist healthcare facility officials assess their resilience to climate change threats, and their environmental sustainability based upon the appropriate use of resources (water, energy, sustainable procurement), and release of hazards, to the surrounding environment. It is a roadmap for climate resilient and environmentally sustainable healthcare facilities, it promotes actions to ensure that healthcare facilities are constantly and increasingly strengthened and continue to be efficient and responsive to improve health and contribute to reducing inequities and vulnerability within their communities.

All these interventions require knowledge, skills and significant changes in the process of educating the health workforce for the future. Evaluation and advocating for increased climate change education for health professionals is essential. Intensifying changes in the process of educating the health workforce is a condition in shaping sustainable systems for achieving the goals for Climate-smart Health Care.

Status of the health information system in Ireland and its fitness to support health system performance assessment: a multimethod assessment based on stakeholder involvement

Authors: Mr Damir Ivanković[1], Dr Tessa Jansen[2], Ms Erica Barbazza[1], Mr Oscar Brito Fernandes[1], Prof Niek Klazinga[1], Dr Dionne Kringos[1]

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Abstract

Context

A major 10-year health reform, called Sláintecare, was launched in Ireland in 2017 with aims of improving health system performance, governance and accountability, while achieving universal health coverage. To support the implementation of the reform, the Irish Department of Health requested technical support from the European Union in developing a health system performance assessment (HSPA) framework. An external team of researchers was contracted to work in close collaboration with the Irish health authorities on the "Performance accountability for the Irish health system" project. Between September 2019 and March 2021, a pilot HSPA framework for Ireland was developed (Figure 1) and officially launched in September 2021. Routinely collected health data are used to populate indicators in the HSPA framework. Considering the pivotal role of data, in the scope of the broader project, an assessment of the health information system (HIS) in Ireland and its fitness to support the implementation of an HSPA framework was conducted, involving a broad range of stakeholders.

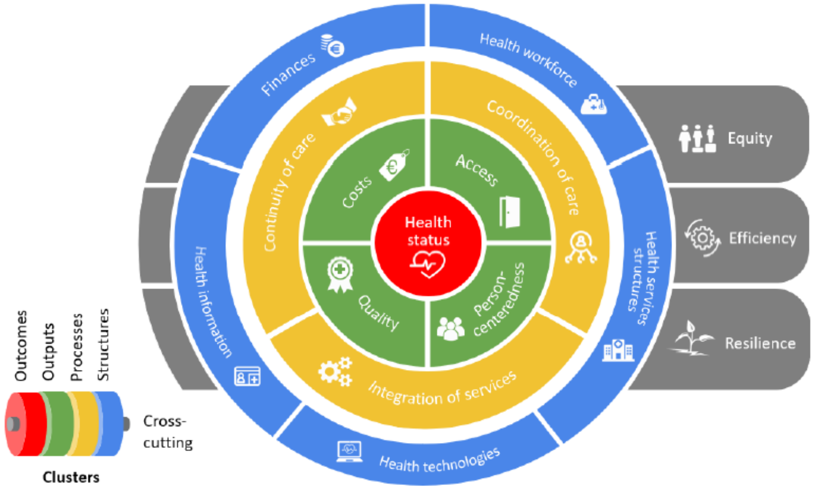


Figure 1 - Graphical display of indicator clusters and domains in the proposed Irish HSPA framework (2021)

Methods

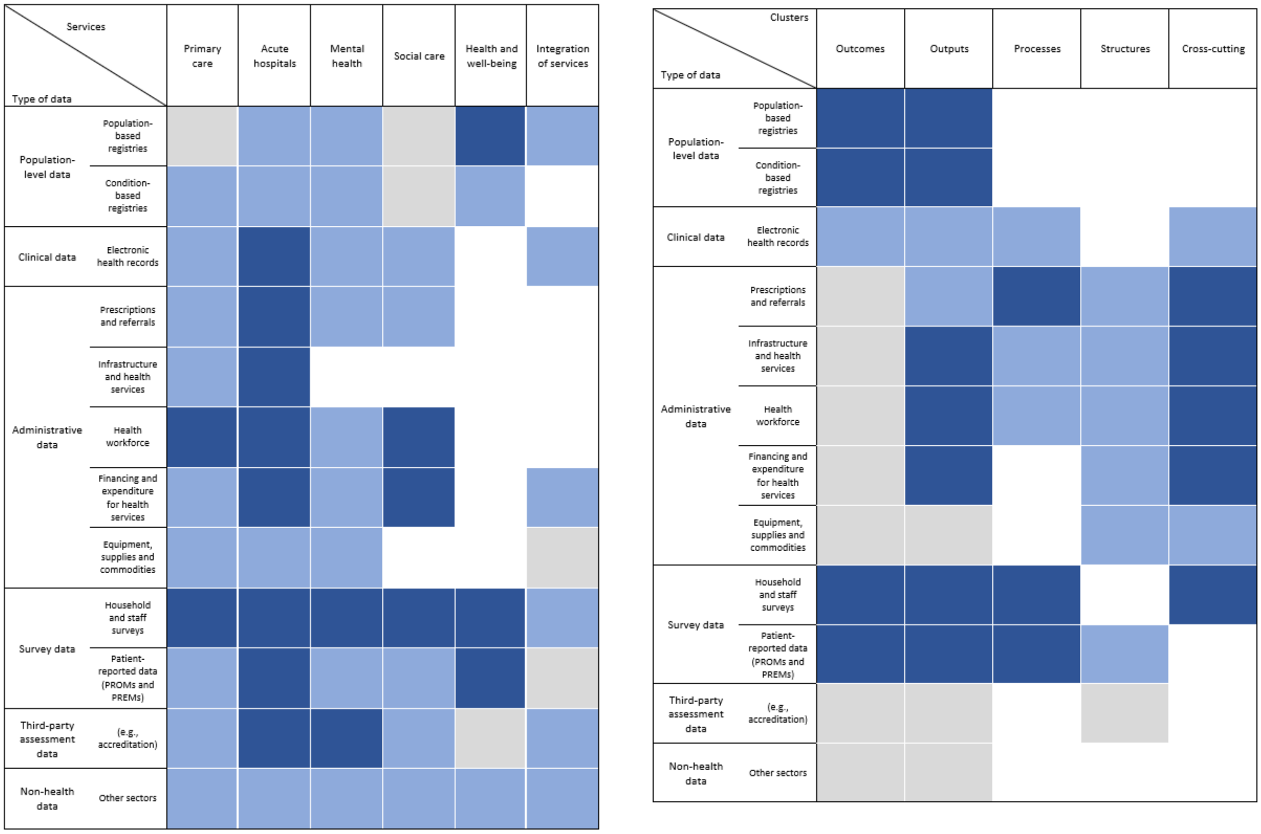
Between May and November 2020, over 50 informants were engaged in key informant interviews and multi-stakeholder consultation workshops as part of the HIS assessment and the broader HSPA project. Descriptive themes and data availability heatmaps (Figure 2) were derived from interview data using thematic analysis. Indicator "passports" for the HSPA framework were populated during stakeholder consultation workshops.

Results

The findings revealed a national HIS capable of providing relevant data of high perceived quality for acute care services provided in public sector, mostly sourced from administrative, survey and registry data and focusing on structure, process and output measures. Shortcomings and areas for improvement predominantly related to significant data availability gaps, most notably from primary care, private hospitals and community care. Availability of electronic health records and people-reported data were suboptimal, as were the data on outcome measures. At the time of this assessment, linking data across data custodians, data sources and types of data were limited. Therefore, inhibiting care pathway mapping and better integration of care, additionally enhancing the potential secondary use of data. COVID-19 pandemic further emphasised some of the identified shortcomings but also reveals system's potential to rapidly innovate and improve.

Discussion / Conclusion

Assessment of the HIS contributed to the development of a national HSPA framework but also created a momentum to further strengthen data infrastructure and data governance in Ireland. Such efforts, especially in the disruptive, and potentially innovative, circumstances of the Sláintecare reform and the COVID-19 pandemic, present a window of opportunity for further advancements needed to effectively work towards a more data-driven and person-centred health care system in Ireland.



Type of data / Services		Primary care	Acute hospitals	Mental health	Social care	Health and well-being	Integration of services
Population-level data	Population-based registries	░	▨	▨	░	■	▨
	Condition-based registries	▨	▨	▨	░	▨	
Clinical data	Electronic health records	▨	■	▨	▨		▨
Administrative data	Prescriptions and referrals	▨	■	▨	▨		
	Infrastructure and health services	▨	■				
	Health workforce	■	■	▨	■		
	Financing and expenditure for health services	▨	■	▨	■		▨
	Equipment, supplies and commodities	▨	▨	▨			░
Survey data	Household and staff surveys	■	■	■	■	■	▨
	Patient-reported data (PROMs and PREMs)	▨	■	▨	▨	■	░
Third-party assessment data	(e.g., accreditation)	▨	■	■	▨	░	▨
Non-health data	Other sectors	▨	▨	▨	▨	▨	▨

Type of data / Clusters		Outcomes	Outputs	Processes	Structures	Cross-cutting
Population-level data	Population-based registries	■	■			
	Condition-based registries	■	■			
Clinical data	Electronic health records	▨	▨	▨		▨
Administrative data	Prescriptions and referrals	░	▨	■	▨	■
	Infrastructure and health services	░	■	▨	▨	■
	Health workforce	░	■	▨	▨	■
	Financing and expenditure for health services	░	■		▨	■
	Equipment, supplies and commodities	░	░		▨	▨
Survey data	Household and staff surveys	■	■	■		■
	Patient-reported data (PROMs and PREMs)	■	■	■	▨	
Third-party assessment data	(e.g., accreditation)	░	░		░	
Non-health data	Other sectors	░	░			

Figure 2 - Data availability heatmaps produced during the HIS assessment (2020)

The evolving impact on healthcare professionals during three COVID-19 waves. A study in the Flemish healthcare workforce

Authors: Prof Kris Vanhaecht[1,2], Dr Bart Peeters[3], Dr. Kris Doggen[4], Dr Deborah Seys[1]

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Abstract

Context

Healthcare professionals take care with heart and soul. At the beginning of the COVID-19 pandemic, it was clear that COVID-19 has a severe impact on the resilience for everybody who works in care and well-being or as caregivers. Belgium's leaders worried about the wellbeing of the healthcare professionals and a multi-stakeholder consortium was launched to support them with an evidence-based resilience plan, including several online measurements. This study determines the effect of COVID-19 on different reactions of negative and positive mental health and professional reactions of healthcare professionals, based on these online measurements.

Methods

A cross-sectional study was conducted between April and October 2020 (4 waves), which led to a convenience sample of 9360 responses of healthcare professionals working in Flanders (Belgium). This was part of the De ZorgSamen, which is a multi-stakeholder consortium. Participants who had worked during the past week reported on reactions of negative and positive mental health and professional reactions, and how frequently they experienced these reactions before and during the COVID-19 pandemic. The measured reactions were acute reactions (fear, hypervigilance and flashback), chronic reactions (fatigue, stress and difficulty sleeping) and professional reactions (considering leaving your profession and doubting your knowledge and skills). The response categories were set between 0 (never) and 10 (always). Only for the first three waves (April, May and June 2020) the reactions 'in normal circumstances' were included in the score for before COVID-19.

Results

The 9360 healthcare professionals came from paramedics (38%), nurses (35%), management (15%) and doctors (12%) with about three in four in hospitals (35%), primary care practices (17%) or residential care facilities (19%). In April 2020, compared to before COVID-19, all eight measured personal (acute and chronic reactions) and professional reactions were significantly increased ($P<0.001$). Around 65% of respondents had a score of ≥7 for hypervigilance and stress, while the slope of fear was the steepest in April 2020 compared to before COVID-19. In the period April 2020 until October 2020, the acute reactions decreased while the chronic reactions stayed high. For the professional reactions, October 2020, more than 1 out of 5 respondents had a score of ≥ 7 for considering leaving profession and doubting knowledge and skills. For doubting knowledge and skills there was a decrease over time while for considering leaving profession there was an increase in score.

Discussion

This study is the largest to date to correlate the COVID-19 pandemic with healthcare professionals increasing struggle with reactions of negative mental health. Our data show that the impact of COVID-19 on healthcare professionals should not be underestimated and is evolving over time. The involved clinicians, managers and policy makers should be aware that, although acute reactions decrease, the chronic reactions remain high. Moreover, the continuous increase of the number of healthcare professionals who want to leave the profession is alarming. Sustained follow-up on the organisation and system level is therefore essential.

As the COVID-19 pandemic is reaching its two-year anniversary, we need to start finding ways to deal with this "new normal". Besides the negative personal and professional reactions, and risk for post-traumatic stress disorder, COVID-19 can also be a trigger for developing posttraumatic growth as it is disruptive enough to affect the individual's values and perspectives.

Transdisciplinary training as a lever for organisational change in the health sector: towards a sustainable healthcare leadership

Authors: PhD Laurie Marrauld[1], MD Marine Sarfati[2], Assistant Professor Estelle Baurès[3], Professor Alessia Lefébure[4], Assistant Professor Cyrille Harpet[3]

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Abstract

Context

“Climate change is the biggest global health threat of the 21st century”, according to the Lancet (2006). A warming of 2 is expected by 2050, due to the carbon dioxide already emitted and the inertia of our socio-technical systems. The current climate change and environmental modifications will have very multiple and diverse consequences on our environments and societies. However, we are generally less aware that the health system has a significant impact on the environment and the climate. The Health Sector represents 4.4% of global emissions and up to 8% (in the USA) of emissions attributable to the health system per country. A recent carbon footprint assessment says French Health Sector represents around 8% of the total national carbon emissions (The Shift project, 2021). Responding to the climate challenge requires training for all professionals, including health professionals, in order to understand the changes that need to be implemented to mitigate the environmental impact of our lifestyles, as well as how to adapt them to the upheavals to come.

Methods

The communication is based on a study conducted in 2021 on the training of health students on climate change issues. It includes a quantitative component involving 193 higher education institutions in the health sector and 3384 respondents. This survey was supplemented by six qualitative interviews with a broad range of healthcare and non-healthcare professionals in France.

Results

The major finding is that health-training programs that integrate Training over the Environmental and Climate Issues (T.E.C.I.) are rare. On the 193 institutions identified, 60 (31%) offer a health T.E.C.I. However, when provided, the mean share of the duration of the T.E.C.I. in the total duration of the whole training represents 0.4%. Public health training courses seldom integrate this topic (Orhan et al., 2021). Moreover, course on climate are often optional, with no direct link to the management of institutions, financial profitability or resilience in the event of crises. 96% of student’s respondents believe that climate change is one of the major issues of the 21st century. 84% believe that climate change issues should be fully part of the health core curriculum. Asking for more transdisciplinarity, 78% of the students surveyed would like to see shared teaching units on this topic across specialisations. Only 21% of the students acknowledge they have been taught about climate and environmental issues during their studies. Qualitative interviews confirmed healthcare sustainability competencies are an urgent issue for health professionals.

Discussion

The WHO has declared healthcare resilience a priority for the coming years. Sustainability is a way to ensure this resilience by guaranteeing the continuation of care « into the distant future without overwhelming finances, damaging ecosystems or exhausting natural resources ». Our study finds a significant lack of knowledge of ecological and climate issues in health training. Health professionals and students ask for a combination of scientific skills and health management skills within a transdisciplinary ecological approach. In order to prepare the future Health Sector leadership, there is a clear need for understanding systemic issues in a general way, as ecological sciences naturally integrate the logic of looping and sustainability of eco-systems.

How can task shifting elevate European health systems?

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Abstract

Health workforce planning (HWF) at the national level, and human resources for health management at the organisational level, are applied in many countries to shape the future workforce by ensuring effective and sustainable solutions. Various HWF tools, methods and practices exist that can contribute to more effective organisation and management, as well as improved governance. Agile leadership also contributes to innovative ways in order to rationalise and optimise performance and institutional operations in HWF policies.

Task shifting appears to be one of the HWF strategies that can reduce and redistribute workload of health workers, support overcoming workforce shortages and institutionalise new roles and responsibilities. The TaSHI project entitled 'Empowering EU health policies on task shifting' aims to understand the different types of task shifting (e.g. among health professionals, towards patients or machines), as well as provide novel understanding on task shifting practices in 5 European countries. Specific aims cover mapping practices (e.g. by desk research, Delphi exercise) and developing tools, particularly providing recommendations on training and upskilling to support task shifting. Within the TaSHI project country practices in several fields are studied, e.g. ophthalmology, mental health nursing, primary care and telemedicine.

The project covers 5 European countries that implement pilot studies during the three years' project duration. The pilot implementations in Estonia, Italy - Lombardia, Lithuania, Norway and the Netherlands following a stepwise approach. The needs analysis phase contains a service and task analysis, and a competency identification will define the set of skills and supporting systems needed to implement task shifting by new ways of working and new roles. The training phase will ensure sustainability and summarise the core mindset for better interprofessional collaboration, and overcoming workforce challenges with the help of task shifting.

Based on the pilot results and achievements, we conclude how task shifting can increase the efforts of moving towards a more integrated and patient centred health care. Task shifting has a key role in achieving a well-functioning health system, but it is also posing challenges related to the continuous change in current practices and organisation of care. It is highly important to understand the barriers and benefits of task shifting to effectively promote task shifting as a useful strategy, and to raise the awareness of workforce planners, leaders and managers to recognise the potential of task shifting. This includes new ways to enhance the openness and willingness for increased flexibility and trust, and to foster integration of HWF planning by linking it to health policy.

Shared Decision-Making (SDM) during a pandemic – Evidence from Cyprus

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Abstract

Conventionally the doctor-patient relationship used to have an “authoritarian” character, in which the doctor was making all the decisions on behalf of the patient. Nevertheless, in the recent years, there has been a clear turn to a patient-focused approach, where the patient is substantially better informed, more authorised, and independent to decide on their treatment plan. The question, though, is, whether it could be possible to follow these new consultation and Shared Decision-Making (SDM)standards under the pressure of critical circumstances, the COVID-19 pandemic? The delivery of SDM could be challenging during a pandemic. It will be very interesting to see whether the processes of SDM have been followed in the treatment of COVID-19 patients to date. Relevant new data, indicate that COVID-19 may lead to severe respiratory problems, some of which may even remain in the long-run after patients have been treat from COVID-19. Recent literature underlined that SMD is becoming an increasingly important tool in daily medical practice. Furthermore, the outbreak of the pandemic has highlighted in several instances the challenges almost all healthcare systems around the world had to deal with due to the unexpected and rapidly changing circumstances in the delivery of care. On many occasions it became apparent that there is a distinct need for encouraging the participation in more SDM processes. The importance of actions such as continuous clinical assessment, discussion with the patient and informed consent should not be underestimated even during critical times like the “mode of war” of a pandemic.

Initially, a focus group of front-line clinicians is invited to come to a body and give us feedback on the COVID-19 departments in various hospitals in Cyprus. With their input a new tool will be designed, and shared online with clinicians that have treated and/or are still treating COVID-19 patients in reference hospitals. This questionnaire will be addressing the Shared Decision Making (SDM) processes, which have been followed, by examining to what extent these were applied. Statistical analysis will highlight the factors that allowed or prevented the appropriate delivery of SDM to the patients. Any variables correlated with the adoption of SDM processes will also be investigated. Our results will be showing an enhanced external validity, since they could be applied in almost every other healthcare system in the Western World.

This research effort does not only aim at capturing the current approach in a patient-centred delivery of care within the framework of a pandemic, but will also try to access any future strategies needed, for hospital management approaches in the delivery of care to be more prepared and of higher quality. In addition, it will highlight whether the invaluable help of the nursing staff could potentially play a vital role in the SDM processes as the nursing personnel delivers basic, but vital, information to the patient. A further point in the delivery of well-structured and well-optimised SDM is the training needed for medical staff. Dedicated communication skills training could be in place to maximise the skills of the clinicians and the nurses in the establishment of solid rapport with the patient, showing greater empathy and being able to explicitly explain without the use of any medical jargon the treatment option, while at the same time they can stimulate the interest of the patient towards his/her condition and potential outcome.

Reducing GHG emissions, waste and costs by remanufacturing single-use medical devices

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Abstract

Hospitals are a major cause of greenhouse gas emissions. If it were a country, the health sector would be the fifth largest emitter on earth -- and its CO2 emissions are more than twice those of the entire airline industry. Research finds that the majority of greenhouse gas emissions from the health sector come from the supply chain.

COVID-19 has exacerbated the need to readdress the healthcare supply chain to build resiliency, lower emissions and waste, and lower costs. Fortunately, with the passage of the EU Medical Device Regulation, a new avenue exists to promote a circular economy in healthcare, specifically addressing the supply chain.

Now regulated, “single-use” device (SUD) remanufacturing is a safe, circular solution that can immediately help to reduce greenhouse gas emissions from the healthcare supply chain, improve supply chain resiliency and reduce healthcare waste and costs. Thousands of hospitals already use at least some remanufactured SUDs, but only a small fraction of those that can be reprocessed are. Urgent action is needed at the Member State level to counter the wasteful, linear consumption model and usher in more sustainable medical device usage by using medical device remanufacturing programs.

It is also incumbent on the medical device industry to develop more sustainable solutions. Dan Vukelich, on behalf of the regulated, professional medical device remanufacturing industry will speak to the lessons learned over 20 years of experience in the commercial reprocessing business in the US and now Europe. What the future holds is greater focus on circular solutions, including the total life cycle of medical devices, to improve supply chain resilience, reduce waste, emissions and cost, and achieve the same patient safety outcomes.

Measuring the outcomes of physical rehabilitation in early-stage Alzheimer’s patients: a feasibility study

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Abstract

Context

Rehabilitation of the elderly is an often-underused intervention that has potential to improve functioning and thus delay the need for more intensive services. We are conducting a feasibility study for the measurement of patient outcomes in rehabilitation of elderly patients with early-stage Alzheimer’s disease. The inclusion and exclusion criteria have been designed to include patients with a mild cognitive impairment and an amount of physical functioning which enables living at home with home care.

Methods

This is a qualitative feasibility study. The patients are at least 65 years of age, retired from work, have a diagnosis of Alzheimer’s disease (G30.1, G30.9), and must be able to walk (independently or with a mobility aid) for 10 meters. Exclusion criteria consist of other reasons for dementia – such as Parkinson’s, Lewy bodies, and head trauma – and early-onset Alzheimer’s (G30.0). We aim to recruit 30-50 patients, who will receive a 3-month rehabilitation intervention. We have designed a set of metrics that includes patient-reported, clinician-reported, and objective clinical measures, including Goal Attainment Scaling (GAS), PROMIS Global Health (PROMIS-10), Patient Acceptable Symptom Stage (PASS), Global Rate of Change (GRC), Activities of Daily Living (ADL, IADL), Short Physical Performance Battery (SPPB), grip strength, and service use. Measurements will be done at the beginning and end of rehabilitation.

Results

Patient recruitment and interventions have commenced. We expect to have interventions completed by June 2022, after which we will analyse the data. Our primary aim is to prove the feasibility of a system for measuring outcomes. Thus, we hope to see changes in some of the metrics – the size of the change is also interesting, as it can show the effectiveness of the rehabilitation intervention, but it is secondary in our study. Once we have analysed the data, we will see which metrics are useful in this setting, and hope to be able to trim down the set of metrics further.

Discussion

We are aiming to prove the feasibility of a system for measuring patient outcomes. A feasible system of measuring patient outcomes of rehabilitations would be a step towards assessing the cost-effectiveness of rehabilitation, which in turn could be utilised to optimise rehabilitation use in order to achieve better quality of life for elderly patients, and lower total cost for the commissioner. It would also provide for outcomes-based procurement of rehabilitation services.

The needs and expectations of occasional users of primary care services – which patients stand to gain health benefits?

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Abstract

Context

Occasional users of public primary care services are an elusive group in terms of outcomes measurement, as traditional questionnaires of health-related quality of life are seldom usable. Furthermore, one of the functions of primary care is to act as a gatekeeper for specialised care and diagnostic examinations. Thus, many patients present with needs and expectations that are mostly bureaucratic in nature: a referral is unlikely to produce a health outcome for the patient, necessary as it may be. We therefore set out to study the needs and expectations of primary care patients to establish which patients are likely to benefit in terms of health outcomes.

Methods

This is a quantitative study utilising registers and questionnaires. The study will take place in the Kalasatama Health and Wellbeing Centre in Helsinki, Finland. We aim to recruit 200 patients. Patients will be eligible for the study if they have a non-urgent appointment for a physician, are at least 18 years of age, and do not suffer from any chronic condition for which they receive regular treatment. The patients will fill in a questionnaire before their appointment as well as after it. Questionnaire data will be complemented by register data from the patient information system (PIS), including patient age, sex, diagnoses etc. The questionnaire beforehand surveys the expectations the patient has regarding the outcomes of their upcoming appointment, such as referrals, examinations, prescriptions, discussion, support, etc. The questionnaire afterwards surveys what the outcomes were and whether they patient was satisfied with the outcome.

Results

Patient recruitment will commence in Spring 2022 and is expected to last about five days. After that, data of the same patients will be gathered from PIS, and coupled with the questionnaire data. The data will be analysed to establish 1) which patient groups have needs that enable the achievement of health outcomes during the appointment, 2) whether patient expectations correlate with outcomes. We hypothesise that this patient segment can be further divided into two subsegments: one for whom health outcomes can be achieved, and one for whom outcomes are bound to be more bureaucratic in nature.

Discussion

Within the segment of occasional users of primary care services, we expect to be able to identify subsegments in terms of outcomes that can be achieved. This information can then be utilised when choosing outcome metrics for this patient segment. It seems necessary that the outcome metrics be different for these subsegments. In the next study, we will pilot using different outcome metrics in order to establish which metrics could be useful in measuring outcomes for each subsegment. This will enable development of primary care services to better fit the needs of this segment, which is often overlooked in service development.

New approaches to manage the digital health transformation and boost the innovation adoption in healthcare settings

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Abstract

Context

Innovation has to do with uncertainty. Especially in health, uncertainty originates from complex problems with multiple interdependent layers, making it difficult to discern causalities. Healthcare organisations need to drive innovation from the demand and in co-creation, a skill that has not permeated to most organisations. Emerging digital health innovations demand a different approach for successful implementation, requiring a common education ground for multidisciplinary teams (IT manager, head of service….). There is already a high demand for professionals trained in health management with the necessary skills to lead organisations with excellence. Still, interest in this type of training has increased as a response to the international health crisis.

Methods

The iRAISE course, led by UPV, is covering this unmet need, providing a toolkit that increases their skills and know-how to boost feasible, sustainable and scalable demand-driven innovation on digital solutions to be rapidly adopted in their daily practice. Addressed not to individuals but to multidisciplinary teams of healthcare organisations, the pedagogical model is learning-by-doing to design, create & validate a framework for problem definition in the real teams' environments. Every TEAM is trained in the design of demand-based procurement, quality assurance & best practice of emergent digital technologies by learning how to FRAME the problem paying attention to the roots causes, DESIGN a solution that covers all the stakeholder issues and IDENTIFY the funding mechanism to address such unmet need.

Results

After two years' edition courses, 14 multidisciplinary teams of four people in average from different countries have attended the course, bringing an unmet need from their organisation. iRAISE Programme focuses on skills related to Innovation and Health System awareness and provides insights regarding Digital & Data Literacy, Inter-professional & Multidisciplinary Skills and Critical Thinking.

The programme offers tools to assess the problem and the needs, to evaluate whether they are unmet, and improve the requirements definition to better frame the vehicle that will eventually lead to the adoption of the innovative solution. A preliminary analysis of the impact and value of the system is required so that creative technological solutions be adapted to the organisation. Evidence-based decision-making is a crucial to identifying the vehicles that will enable a healthcare organisation to implement innovation that addresses its own unmet needs.

Discussion

After the course, all the teams recognised the usefulness of the course and how their minds were hacked, being forced to change their paradigms with positive and unexpected results and accelerating the deployment and the sustainability of the solution to their unmet need. Therefore, learning by doing in multidisciplinary teams facing their own challenge is the best approach to boost innovation adoption in healthcare settings. The program achieves an open mind to other ways of performing innovation and improves and boost the innovation implementation in healthcare.

Managing polypharmacy in patients with chronic diseases using innovative solutions (Gatekeeper project)

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Abstract

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 quality independent living for patients; and ensure sustainable healthcare and social care systems. Information and Communication Technologies (ICT) and their applications in healthcare practice are emerging as an alternative to tackle this challenge. The project Gatekeeper (H2020, n. 857223) will develop an open, European-wide, standards-based, interoperable and secure platform, offering digital solutions on the IoT, Big Data or AI, for early detection and personalised interventions for ageing populations.

Methods

Within Gatekeeper, the Basque Country region is carrying out “management of people with chronic diseases and polypharmacy" use case. The main objective is to assess the effectiveness and experience of using a mobile application (My Treatment) to improve adherence, and using of a web platform (CheckTheMeds) to optimise pharmacological prescription. This quasi-experimental study (non-randomised, concurrent and controlled study) has deployed in 11 Integrated Health Organisations of Osakidetza Basque Health Service. More than 225 professionals (doctors, nurses and pharmacy staff) from Primary Care centres are involved in the intervention. Their goal is to recruit 1,000 elderly people (500 in the intervention group and 500 in the control group) who meet the inclusion criteria (65 age or older, with 2 or more chronic diseases and 9 or more chronic or on-demand medicines prescribed). The piloting will last until October 2022. The evaluation will be conducted using a mixed methods approach, integrating quantitative and qualitative techniques.

Results

This study aims to show how the use of computerised polypharmacy management tools/applications helps to adapt treatment: greater therapeutic adherence leads to more effective and safer treatments, avoiding health complications, and therefore a more efficient use of healthcare resources and an increase in the quality of life of these patients. The new model of polypharmacy management can be included in Osakidetza's corporate route for complex chronic patients. GATEKEEPER will design and demonstrate the real-life effects of a digital ecosystem innovative platform for personalised treatments and therapies based on early detection and risk avoidance in a large scale pilot across eight European health references.

Discussion

An improved appropriate polypharmacy, together with the adherence to prescribed medication, will result in more effective treatments with fewer PRMs and health complications, and therefore, in improved efficiency in the use of healthcare resources. As a consequence, a better use of resources, increasing the coordination among all the key stakeholders of care and improving working conditions of professionals will improve the efficiency in 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. The project aims to demonstrate that ICT supported Gatekeeper integrated care model is flexible and can be deployed and replicated at large scale in different environments and can be trusted in regard to data access, protection and sharing.

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The coordinated patient pathway in the French military health system: example and challenges of an integrated health system

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Abstract

Context

The efficient organisation of the care pathway is a major challenge for healthcare systems. Placing the patient at the centre of this pathway requires the organisation of effective coordination. Yet, the care pathway involves other actors than health care providers: family members, social workers or employers. These partners are highly interdependent, but do not coordinate with each other, as they generally have little or no functional link between them. Our objective is to describe a unique integrated system of care in France, which includes the social and work rehabilitation of patients: the French military health system.

Methods

The primary objective was to describe the coordinated pathway of the military patient. Secondary objectives included the description of coordination practices of the actors and the identification of coordination problems.

During training and overseas operations, young military personnel may be suddenly injured. They then require complex and chronic care, including intensive care, prosthesis placement, physical and functional rehabilitation, and post-traumatic psychologic care. We interviewed personnel involved in the care pathway of those military patients. We used the theoretical perspective of the three levels of coordination: micro, caregivers close to the patient; meso, actors involved in the organisation of the care pathway at the level of a health facility; and macro, actors at the strategic or political level. The interviews were recorded, transcribed, and coded. They were presented in the form of an illustrated description of the coordinated care pathway, using the micro, meso and macro perspectives of coordination.

Results

Fifteen professionals were interviewed. The interviews lasted an average of one hour and forty-five minutes. The evidence-based description of the care pathway was achieved and included stages ranging from emergency care to chronic coordinated care between multiple actors, but also the patient's administrative and social rehabilitation pathway. These interviews revealed different perceptions of critical points of the pathway, depending on the individual and their level.

Concerning the coordination of the care pathway and its problems, these interviews revealed common coordination practices to all actors and specific coordination practices. The importance of information sharing was central to coordination, and consequently the importance of digital patient records and means of communication. In addition, the influence of the macro level on the meso and micro level, and of the meso level on the micro level, could be described.

Discussion

The originality of this model of integrated health system allowed us to describe the care pathway, from injury or illness to the re-establishment of a social or professional activity. The patient was placed at the centre of the research by systematically describing the pathway around them, which permitted to describe several sets of pathways. A certain level of saturation was observed in the description of the pathway. However, each actor described different priorities and original coordination practices. These practices highlighted the essential role of relational coordination mechanisms between actors in the pathway for effective coordination. Digital patient records and means of communication were considered crucial to coordination. The originality of the research was also the description of the impact of the macro level (presence or absence of national directives and political choices), observed at the micro level. We described how siloed organisations were a stumbling block to care coordination.

How standardised are the care processes for acute ischemic stroke in Flemish hospitals?

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Abstract

Context

Acute ischemic stroke is one of the leading causes of mortality and disability worldwide. Evidence demonstrates variations in the care processes for acute ischemic stroke patients, as well as variations in the adherence to evidence-based guidelines. Nevertheless, a positive relationship can be observed between the use of evidence-based care and stroke outcomes. The implementation of effective strategies in stroke management and treatment can reduce mortality and disability. The aim of this study was to map variation in care for acute ischemic stroke patients admitted to Flemish hospitals.

Methods

An observational, cross-sectional retrospective multicentre study was performed in 29 Belgian hospitals. The hospitals were recruited through the Belgian-Dutch Care Pathway Network and/or the Flemish Hospital Network KU Leuven. Each participating hospital analysed the patient records of the last 30 consecutive patients of 2019 discharged after being diagnosed with an acute ischemic stroke. The collection of the data from the patient record was performed by a local study coordinator in each hospital, using a standardised questionnaire. The questionnaire was approved by all participating centres and local study coordinators received instructions during an online meeting about collecting the data. The questionnaire focused on patient characteristics, structure, process and outcome variables, regarding the course of hospitalisation for stroke patients from emergency admission to discharge from neuro-related department. Data not retrievable in the patient record were reported as "no information in the record". Descriptive statistics were performed on the hospital level.

Results

In total, 870 patient records from 29 hospitals were analysed. Results show large variations in documentation and performance for various indicators, both between and within hospitals (figure). At the hospital level, 82.9% [0%-100%] patients were admitted to a stroke unit after receiving brain imaging (99.7%, [96.7%-100.0%]) and were started on antithrombotic drugs (92.5% [58.8%-100.0%]). Other indicators revealed moderate adherence to current evidence. Despite the fact that screening of swallowing function is an important indicator, since its association with pneumonia, it was only performed in 52.9% of the patients. Four other indicators lacked adequate adherence: timely measurement of body temperature (15.1%, [0.0%-60.0%]) and glycaemia (82.3%, [26.7%-100.0%]), screening of activities of daily living (51.1%, [0.0%-100%] and depression (20.2%, [0.0%-100%]). In order to measure the effect of care pathways outcome (modified Rankin Scale) needs to be recorded at 90 days after stroke, this was only documented in 24.7% [0.0%-83.3%].

Discussion

We observed large variation both within and between hospitals for various process and quality indicators. High adherence to guidelines was observed for quality indicators based on well- and long-established evidence, such as first brain imaging and administration of antithrombotic drugs. Reduced adherence was shown particularly for elements from more recent guidelines, which is the case for e.g. screening of activities of daily living and screening of depression. For these indicators increased variation between hospital was also demonstrated. Further research should mainly focus on improving the more recent indicators, for which it was shown here that the adherence rate is still too low. In addition, more attention should be paid on the documentation of outcome indicators, such as the modified Rankin Scale. In this way we want to improve both the adherence to the guidelines as well as the outcomes for patients with acute ischemic stroke.

Leadership and change management training for nurse managers

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Abstract

Context

As the largest group of health professionals, nurses play a key role in health care. Dealing with human resource challenges and organising nursing work is a continuous task for senior professionals in management positions. In addition to intuitive problem solving based on their everyday experience, they often do not have the opportunity to improve their leadership and management skills.

Methods

At the initiative of National Healthcare Service Center, Semmelweis University Health Services Management Training Centre organised a three-day training program for 40 nurse middle-managers from 13 state hospitals. A group of 3-4 participants represented each hospital and these teams were working on institutional change management projects parallel to the training. Trainers provided weekly consultations to support institutional projects. A complex evaluation package based on Kirkpatrick's training evaluation model was associated to the training, including needs assessments, pre- and post-training knowledge assessment, daily and overall participant feedback and interviews with the superiors of the participants. Participants presented the results of their projects in the last day of the program in the presence of directors and nursing directors of the participating hospitals.

Results

The program was organised around three tracks: leadership skills development, project management and planning institutional change-management projects. Highlighted topics also included organisational models, motivation of employees, organisational culture, leading change and patient safety. Hospital teams were working on self-initiated project ideas or projects based on the request of hospital senior managements. Change projects were mainly organised around the topics of human resource management, infection control, introduction of innovative nursing services, process organisation, communication, patient safety and improving patient- and employee satisfaction. Participant evaluation showed a positive picture of the training, as the presentations and project work were rated as "good" or "excellent" by the vast majority of the evaluators. For the whole program, the professional content of the training and the applied teaching methodology were rated as excellent by more than 70%, the training atmosphere was rated as excellent by 95% and the training by 100%. The post-training knowledge questionnaire also showed a significant improvement in terms of knowledge growth compared to the pre-training situation. The extent to which institutional projects can be put into practice depends to a large extent on the post-training activity of institutional teams and the commitment of institutional management to the improvements.

Discussion

The experience of the training confirms the need for training of senior nursing professionals. Based on the feedback, the effect of the training consists of not only increased knowledge and skills, but participating nurse middle-managers also strengthened their professional commitment during the training and gained further inspiration for innovation and performing leadership. The program can be continued and expanded in several directions: follow-up training for participating hospitals, launching similar programs to specific hospitals facing organisational challenges or organising leadership trainings for managers from different disciplines (e.g. nurses, doctors, finance).

Co-creation roadmap towards sustainable quality of care: a multi-method study

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Abstract

Context

Hospitals demonstrated increased efforts into quality improvement over the past years. Their growing commitment to quality combined with a heterogeneity in perceptions among healthcare stakeholders caused concerns on the sustainable incorporation of quality into the daily workflow. In the past year, ten Flemish hospitals announced their intention to leave hospital-wide accreditation. Questions are raised on the drivers for a sustainable hospital quality policy, but the lack of evidence shows a real literature gap. We aimed to identify drivers and incorporate them into a new, unique roadmap towards sustainable quality of care in hospitals.

Methods

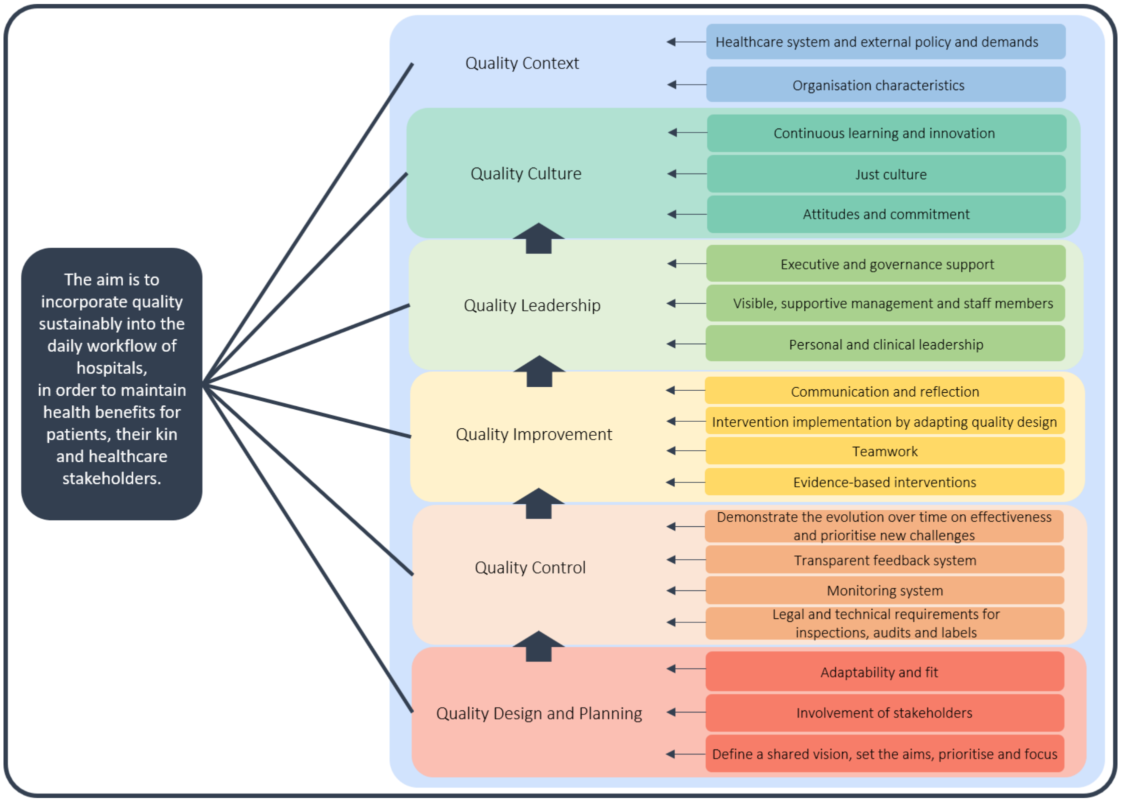
A multi-method design guided by Jabareen's eight stage approach to develop a conceptual framework consists of multiple, iterative phases of data collection, synthesis and validation. The approach started with a narrative review and was followed by including feedback of national and international healthcare stakeholders. A qualitative in-depth analysis of included papers was conducted in NVivo 12 to identify, deconstruct and categorise concepts and subsequently synthesise and resynthesise them in an integrated framework. The conceptual framework was refined and validated by including feedback from multidisciplinary healthcare stakeholders, including clinicians, managers, policy makers and patient representatives.

Results

The narrative review included 59 relevant papers focusing on quality improvement and the sustainability of these improved quality results. By synthesising, re-synthesising and integrating concepts during thematic and content analysis, the narrative review evolved to an integrated, co-creation roadmap. The roadmap was presented to a healthcare stakeholder group (n=33) and to hospitals board members and clinicians from one small regional hospital and one large academic medical centre. Based on their feedback, the roadmap was rethought. The final roadmap (Figure 1) is presented as a driver diagram that features six primary drivers for a sustainable quality policy: (1) Quality Design and Planning, (2) Quality Control, (3) Quality Improvement, (4) Quality Leadership, (5) Quality Culture and (6) Quality Context. The latter one is an overarching driver, that has an influence on the other five drivers. The six primary drivers are described in 19 building blocks (secondary drivers) and 104 evidence-based action fields.

Discussion

Our research describes the development of a Flanders Quality Model (FlaQuM) as a new roadmap towards a holistic, integrated approach to sustainable quality management. The roadmap suggests that a manageable number of drivers, building blocks and action fields may support the sustainable incorporation of quality into the daily workflow. By integrating these quality concepts into one roadmap, we put attention to the complexity of sustainability and its holistic approach. By focusing on co-creating quality with patients, kin and all relevant stakeholders, we aim to regain commitment, ownership and engagement to quality as growing concerns about sustainability of the current hospital quality policies raised. Therefore, FlaQuM can serve as a useful roadmap for future sustainable quality policies in hospitals and for future empirical and theoretical work in sustainable quality management.


The aim is to incorporate quality sustainably into the daily workflow of hospitals, in order to maintain health benefits for patients, their kin and healthcare stakeholders.
Quality Context
Healthcare system and external policy and demands
Organisation characteristics
Quality Culture
Continuous learning and innovation
Just culture
Attitudes and commitment
Quality Leadership
Executive and governance support
Visible, supportive management and staff members
Personal and clinical leadership
Quality Improvement
Communication and reflection
Intervention implementation by adapting quality design
Teamwork
Evidence-based interventions
Quality Control
Demonstrate the evolution over time on effectiveness and prioritise new challenges
Transparent feedback system
Monitoring system
Legal and technical requirements for inspections, audits and labels
Quality Design and Planning
Adaptability and fit
Involvement of stakeholders
Define a shared vision, set the aims, prioritise and focus

Impact of an improvement collaborative on adherence to an ERAS protocol in elective colonic cancer surgery: a multicentre study

Authors: Dr. Ellen Coeckelberghs[1], Prof. Kris Vanhaecht[1], Dr. Deborah Seys[1], Dr. Bianca Cox[1], Dr. Gabriele Bislenghi[2], Prof. Albert Wolthuis[2], Prof. André D'Hoore[2]

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Abstract

Context

Enhanced Recovery After Surgery (ERAS) pathways provide a framework to standardise care processes and improve postoperative outcomes. Despite growing evidence of effectiveness, adherence to these guidelines remains challenging. The aim of this multi-centre study is to assess 1) the effect of an improvement collaborative on ERAS protocol adherence; and 2) the relation between protocol adherence and patient outcomes in the setting of elective colectomy for cancer.

Methods

This prospective, multicentre collaborative throughout 11 hospitals in Flanders was initiated to standardise care and improve clinical outcomes in elective colectomy patients. A structured audit tool was used to study patient outcomes and adherence to 12 ERAS components, as predefined by the collaborative. Three retrospective audits were performed; respectively in 2017, 2019, and 2021.

Results

Overall, a total of 740 patients were included. Overall adherence increased from 42.8% in 2017 to 58.4% in 2019 and 69.2% in 2021. Near full and full ERAS adherence (8 or more components adhered to) increased from 16.0% to 68.8%. Mean (SD) LOS decreased from 9.4 (7.4) days in the first period to 6.3 (5.2) days in the third period. Complication and readmission rates differed not significantly between periods. Across periods, LOS and postoperative complications decreased significantly with increasing adherence. Compared to low adherence, LOS was reduced by 1.3 days (95% CI, 0.0; 2.5), 3.6 days (95% CI, 2.2; 4.9), and even 4.4 days (95% CI, 2.7; 6.1) for partial, near full, and full adherence, respectively. This reduced hospital stay did not lead to an increase in 30-day readmission.

Discussion

A peer constructed improvement collaborative effectively increases adherence to an ERAS protocol in individual hospitals. The fact that all hospitals adhere to a same health financial system corroborates these findings. A significant dose-response relationship between ERAS adherence and LOS and postoperative complications was demonstrated. This underscores the importance of the ERAS bundle rather than implementation of a limited number of interventions.

Does nursing leader's collectivistic orientation contribute to team members' patient safety behaviours - a multilevel model

Author: Dr. Sarit Rashkovits
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Abstract

Context

Patient safety is a major concern in healthcare organisations and the efforts to promote it during the last two decades still have not achieved the desired results, and there is a need in further expanding the knowledge regarding the drives, and inhibitions of safety behaviours. Research shows that cultural orientations such as individualism and collectivism have a fundamental effect on human behaviour but there is still little research on their possible relationship with patient safety behaviours. Attending this gap, we suggest that nurse team leader's collectivism, the tendency to value group welfare more than one's own, may reinforce nursing team qualities that are possibly important for different patient safety behaviours: 1) Team affective commitment - emotional attachment, identification, and involvement with the team. 2) Team psychological safety- the belief that one is able to express oneself in the team without fear of negative consequences. These qualities, in their turn, may reinforce different patient safety behaviours at the individual and the tam level.

Methods

745 participants: 650 nursing team members from 95 nursing teams from different healthcare settings, and their 95 nursing team leaders responded voluntarily and confidentially to validated scales. The nurse leaders assessed their own collectivistic orientation. The nurses assessed their team affective commitment, team psychological safety, and safety behaviours. Individual safety behaviours included safety compliance, safety participation and voice, and team level behaviour included team learning, i.e. an ongoing process of reflection and action that is important for gaining insights and improvements by analysing adverse events. Team level assessments for team affective commitment, team psychological safety, and team learning were achieved by aggregation of individual team member responses to the team level following rwg(j), ICC1 and ICC2 indicators.

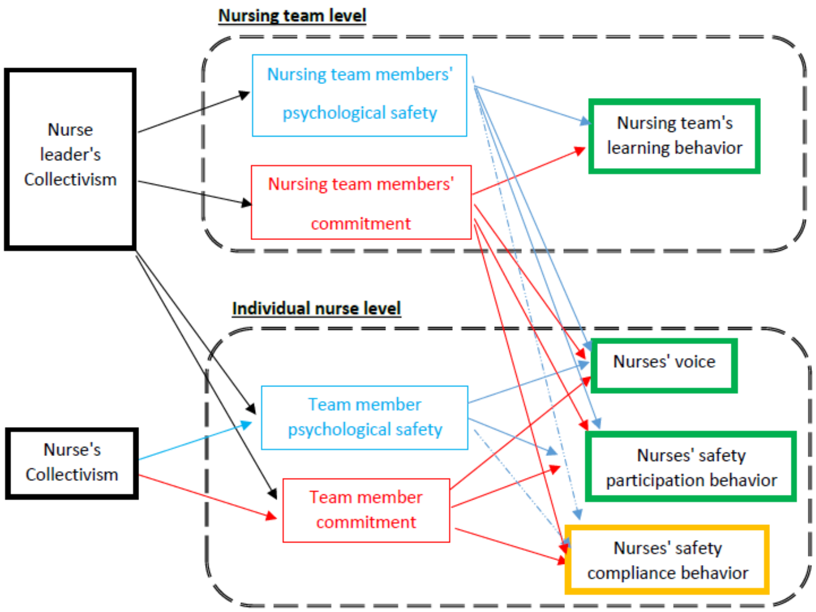

Figure 1 - The research model

Results

We conducted a multilevel SEM (MSEM) analyses by M-plus for testing the research model and hypotheses. As was expected, first, the nursing team leader's collectivist orientation was significantly related to team level affective commitment and psychological safety. Further, the team level affective commitment was significantly related to all types of safety behaviours, while team psychological safety was significantly related to the proactive safety behaviours i.e., voice, and to team learning. Furthermore, the nursing team leader's collectivist orientation had significant indirect contribution to the safety behaviours mediated by these two team level qualities. In addition, the individual nurse collectivistic orientation had significant indirect contribution to individual safety behaviours mediated by the individual nurse's affective commitment and psychological safety.

Discussion

Collectivistic orientation of nursing team leaders is important for cultivating the nursing team qualities of team affective commitment and team psychological safety that are important for individual, and team level safety behaviours. As team commitment motivate the team members to demonstrate the different safety behaviours, psychological safety is especially important for the proactive safety behaviours of voice and team learning that involve challenging the existing way of conduct, and initiating change. Therefore, nursing team leaders need to be aware to the importance of their collectivistic orientation and its development. Additionally, the individual nurse collectivistic orientation is also related to these team qualities. However, research with longitudinal design is warned.

Health service ecosystem perspective in primary care: identifying barriers and facilitation for factors of formal and informal carers integration

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Abstract

Context

The health care sector across Europe is moving toward a patient-centred model. Challenges to this transformation include the burden of healthcare spending on national budgets and the inability of healthcare organisations to meet the special needs of patients effectively. The health service ecosystem is formed by several actors linked together in a dense network of relationships, be they internal or external to the formal organisations of the system. This study uses an ecosystem perspective to study the interaction between multiple actors and to understand better "how" actors influence each other and if and to what extent they can cooperate, giving birth to better services or not.

Methods

This qualitative study focuses on an Italian case study related to the “Case della Salute” (CdS) of Piacensa, located in Emilia-Romagna. CdS are a team-based health care delivery model intended to provide comprehensive and continuous medical care to patients within a local community. The interviews investigated the existing integration between local health authorities and the voluntary associations in a multi-dimensional taking charge of the patient, how the interaction between formal and informal careers occurs, and where the main critical points of integration are. Four semi-structured interviews have been conducted with two managers responsible for planning social services and voluntary associations outside the organisation that interface with the CdS and assisted patients. One focus group was conducted with eight local associations using service design methods. The data analysis coded the information using Nvivo software based on an abductive approach from verbal transcriptions.

Results

The results reveal that co-creation practices involving multiple actors belonging to different levels of the formal and informal ecosystem led to mutual adjustments and continuous changes. These processes have been modestly influenced by patient associations' needs, expectations, and experiences. Associations are slowly taking on the role of "co-creators" of socio-health outcomes, interacting with other actors in the ecosystem (e.g., clinicians, institutions, NGOs, health managers, etc.). However, uneven levels of integration in service management between formal and informal resources, create the need to coordinate tools, timeframes, paths of taking charge, existing services, and the creation of new ones. The lack of an ecosystemic perspective of available resources, which are already challenging to find, calls attention to the development and implementation of tools, for an organisational synthesis and for different actors' instances of mediation, crucial to strengthen care integration.

Discussion

In this study, we were able to show how health services ecosystems arise on actor-actor interactions trying to create organisational logics that support service provision and value co-creation. Outcomes clearly show that despite the richness and complexity of the health ecosystem in Piacenza, service providers and associations are difficulties sharing and integrating their resources as well as creating value for the system itself. Health service ecosystems conceptually represent a participatory architecture, leading to a better understanding of the internal collaborative nature of value co-creation. The research showed that an ecosystem perspective can, if properly interpreted, overcome barriers to services and resources integration and, at the same time, it showed the factors that prevent it to occur. Guidelines for ecosystem boosting are discussed and presented in detail, embedding them in the research-specific context.

The future of hospital quality of care policy: a multi-stakeholder discrete choice experiment in Flanders, Belgium

Authors: PhD candidate Jonas Brouwers[1], Dr. Bianca Cox[1], PhD candidate Astrid Van Wilder[1], PhD candidate Fien Claessens[1], Dr. Luk Bruyneel[1], Prof. Dirk De Ridder[1], Prof. Kristof Eeckloo[2], Prof. Kris Vanhaecht[1]

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Abstract

Context

Collaboration between policymakers, patients and healthcare workers in hospital quality of care policy setting can improve the integration of new initiatives. The aim of this study was to quantify preferences for various characteristics of a future quality policy in a broad group of stakeholders.

Methods

450 policymakers, clinicians, nurses, patient representatives and hospital board members in Flanders (Belgium) participated in five discrete choice experiments (DCE) on quality control, quality improvement, inspection, patient incidents and transparency. For each DCE, various attributes and levels were defined from a literature review and interviews with 12 international quality and patient safety experts. Results are presented as the mean zero-centred part-worth utilities across respondents and can be interpreted as the attractiveness of each level within the attribute. We also estimated the mean importance of attributes across respondents, reflecting the effect (importance) of the attribute in the choice decision. In a secondary analysis, we obtained mean part-worth utilities and importance by profession groups.

Results

For the attributes with the highest relative importance, participants exhibited a strong preference for quality control by an independent national organisation and coordination of quality improvement initiatives at the level of hospital networks. The individual hospital was chosen over the government for setting up an action plan following patient complaints. Respondents also strongly preferred mandatory reporting of severe patient incidents and transparency by publicly reporting quality indicators at the hospital level.

Discussion

A future quality model should focus on a multicomponent approach with external quality control, improvement actions on hospital network level and public transparency. DCEs provide an opportunity to incorporate the attitudes and views for individual components of a new policy recommendation. The choice for future quality of care initiatives is an important challenge to tackle and policymakers should consider stakeholders' preferences to ensure support in the field. DCEs can therefore aid in the search for a common denominator for future policy implementations.

The cost of a first and second hospital-wide accreditation in Flanders, Belgium

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Abstract

Background

Hospital accreditation is a popular and widely used quality control and improvement instrument. Despite potential benefits, questions are raised whether it constitutes appropriate use of hospitals' limited financial resources. This study aims to calculate the cost of preparing for and undergoing a first and second accreditation by the Joint Commission International or Qualicor Europe in acute-care hospitals.

Methods

All (n=53) acute-care hospitals in Flanders (Belgium) were invited to participate and report on the costs in preparing for and undergoing a first and/or second accreditation cycle. To measure costs, a questionnaire with six domains and 90 questions was developed based on literature review, policy documents and a multidisciplinary expert group. All costs were recalculated to 2020 EUR to correct for inflation and reported as medians with interquartile range (IQR).

Results

Twenty-five hospitals (47%) participated in the study. Additional investments and direct operational costs for a first accreditation cycle amounted to 879.45 EUR (IQR:794.81) per bed and 3.8 FTE per hospital additional new staff members were recruited for coordination and implementation of the trajectory. A second accreditation survey costed remarkably less with a total cost of extra investments and direct operational cost of 222.88 EUR (IQR: 244.04) per bed and less investment in additional staff (1.50 FTE). Most of the costs were situated in consulting costs and investments in infrastructure. The median total extra cost (direct operational cost and additional investments) amounted to 0.2% of the hospital's operating income for a first accreditation cycle and 0.05% for a second cycle.

Conclusion

A first accreditation cycle requires a strong financial commitment of hospitals, as many costs result from the preparation in the years prior to an accreditation survey. A second survey is less expensive for hospitals, but still requires a considerable effort in terms of budget and staff. Policy makers should be aware of these significant costs as hospitals are operating with public resources and budget is scarce. The identification of these costs is a necessary building block to evaluate cost-effectiveness of accreditation versus other quality improvement systems and the continuation of these accreditation systems and their costs needs further study and a thorough debate.

A community-first framework for social value: a realist review

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Abstract

Context

There is significant health inequality in the UK, due, in part, to policies that promote exclusion of specific groups. The history and role of social enterprises that deliver health services in the UK suggest that they could help fight inequality through better decisions and behaviour. The aim of this study is to help decision-makers place the diverse needs of their stakeholders at the heart of their services. Specifically, our research seeks to understand how social enterprises can ensure that the value they create, and the way it is measured and understood, is informed by the communities that will experience it.

Methods

Our research is based on the scientific realist approach (Pawson, 2013). We conducted a rapid review of literature on diversity, equality and inclusion within social enterprises, to understand how social enterprises become inclusive. We discussed themes from this literature with representatives of disadvantaged communities and applied their feedback to refine the literature search and review and to isolate resources that could lead to more inclusive organisational behaviour. We applied the resources to develop nine theories about how organisations can be more inclusive. We tested the theories with stakeholders of social enterprises. We use the tested theories to direct a further search and review of the literature to refine the theories and to develop a self-assessment tool that identifies inclusion in social enterprises.

Results

We isolated nine resources that can help place communities at the heart of decision-making. They are (1) language; (2) policies; (3) theory of change; (4) advocacy; (5) evaluation; (6) stakeholder engagement; (7) diversity management; (8) work integration, and (9) system support. The resources are interlinked and can affect each other. For instance, while stakeholder engagement is an effective resource for inclusion, it can be enhanced through internal advocacy, having the right policies to promote it and promoting diversity management to help embed by integrating the stakeholder contributions into policy. The resources were applied to develop a self-assessment tool with 36 questions that indicate how social enterprises have committed, implemented or are embedding inclusion. Additional work is required to identify mechanisms related to the resources. Mechanisms explain how resources lead to inclusive outcomes, why they work, and how they could lead to unexpected outcomes or have unintended consequences.

Discussion

The list of resources helps identify gaps in organisational behaviour and suggests behaviours that they should promote to place communities at the heart of their decision-making. Identifying mechanisms can move the language, policies and other resources, from representing a deficit in organisations to being assets that can unlock inclusive behaviour. Mechanisms can inform both the content and practices around resources and how they are applied in the self-assessment tool. The self-assessment tool may have implications for leaders of social enterprises and their funders in motivating a strategy for promoting inclusion.

Health policy implementation: how do private providers and health workers adapt or enact policy in practice?

Authors: Dr Sarah Willis, Dr Jayne Astbury, Dr Ali Hindi, Dr Sally Jacobs, Dr Imelda Mcdermott, Dr Liz Seston, Professor Ellen Schafheutle

University of Manchester, Manchester, United Kingdom

Abstract

Context

Healthcare in England is delivered using private and public providers. Within this mixed economy are for-profit community pharmacies delivering services under contract for the publicly-funded National Health Service. A recent policy mechanism to incentivise practice change was funding training for community pharmacists in providing more patient-centred clinical work. Implementing this policy to achieve system-wide change requires frontline service providers (pharmacists), their managers and employers, to translate policy into practice while meeting organisational priorities and expectations about how healthcare should and can be delivered. This paper considers how actors and organisations in the private sector negotiate public sector policy intentions.

Methods

Two groups of stakeholders relevant to understanding the ways that power is exercised in health policy implementation within private sector organisations participated in telephone interviews: community pharmacists who took part in training to expand the scope of their practice to undertake more clinical work (n=24) and the employers of community pharmacists (n=12). Employers were managers or owners of community pharmacies representing a range of organisations including small chains and large multiple businesses. Interviews covered stakeholders' perspectives on the policy vision to divert clinical work to community pharmacy as well as the mechanism through which this was being enacted (the workforce transformation funding), and any challenges or benefits to implementing this public policy while meeting the for-profit demands of community pharmacy practice. Interviews were audio-recorded with consent, transcribed verbatim and anonymised before being analysed using a modified framework approach.

Results

Findings indicate policy implementation is a complex social process that involves working with and through people and organisations. Being a private provider of publicly funded healthcare shaped the values and attitudes of many managers/owners and influenced their response to the policy vision. Some employers used discretionary power to contradict policy goals – for example, by drawing on the different economic and social forces of the private sector, they talked of the business cost of investing in workforce transformation not directly related to providing a remunerated service. They further exerted authority by not always supporting their workforce to take up training opportunities. Yet community pharmacists themselves constructed different policy meanings, which in turn shaped their behaviour and resulted in intended policy outcomes of practice change. However, lack of contracted services where an enhanced scope of practice was needed meant that the extent to which change was possible was constrained.

Discussion

Variation in priorities and interpretations of policy intentions can be seen between different actors and organisations in the community pharmacy setting when responding to a public sector policy agenda for systems change. The question of how to secure buy-in and establish a common agenda when divergent interests are at play is important to address. Without a shared vision for both the policy and its implementation mechanisms, as well as resources to support change, alignment between community pharmacy organisations' business needs and priorities are likely to remain at odds with public health goals to address societal health needs. Health policy makers need to manage outside the public sector if they are to work with private providers, who see themselves as bearing the costs of policy change, to drive implementation change.

Locum doctors and patient and carer experiences of access and continuity of care

Authors: Dr Jane Ferguson, Dr Gemma Stringer, Professor Kieran Walshe, Dr Thomas Allen, Dr Christos Grigoroglou, Professor Darren Ashcroft, Professor Evan Kontopantelis

University of Manchester, Manchester, United Kingdom

Abstract

Context

Temporary doctors, known as locums, represent a significant and growing proportion of the medical profession internationally, despite this, there is scant evidence relating to the quality and safety of locum doctors and even less about how patient and carers experience care when it they are seen by a locum doctor. Recent studies suggest continuity of care in England is declining. Continuity is associated with improved patient outcomes and satisfaction, however we know very little about how locum working might impact continuity of care for patients and carers.

Methods

In this qualitative study, we sought to understand patient and carer views of locum doctors and experiences of locum doctor working. Data collection materials were co-designed with our Patient and Public Involvement (PPI) forum who also co-facilitated focus groups and collaborated in data analysis. Five focus groups were carried out including twenty nine participants. We also carried out twelve one-to-one interviews with patients and carers. Interviews were thematically coded and analysed using an abductive approach.

Results

Participants described a lack of choice when accessing a General Practitioner (GP); seeing someone rather than no one meant that access rather than continuity was a priority. Traditional notions of relational continuity and a family GP were recognised as a thing of the past and participants perceived locum working as contributing to this discontinuity. Participants recognised that continuity was no longer held by an individual doctor but in a computer system maintained by multiple doctors. Given that relational continuity was no longer the norm, informational continuity was regarded as essential. However, there were concerns about inconsistencies in terms of recording and sharing information when locum doctors were working and a perception that understanding of technological infrastructure was not robust enough to ensure continuity of information. This meant a lack of continuity both relationally and managerially.

Discussion

Continuity of care, while impractical in modern healthcare, is a core principle of primary care and the impact of temporary working on continuity should be considered. Locum doctors face distinct disadvantages in comparison to permanently employed doctors when they are unfamiliar with both the practice and the patients. Practices could consider how they triage patients and perhaps, encourage patients with chronic or complex conditions to consult a specific GP. Practices should also consider improving their induction processes for locums to increase familiarity with the local population and the organisation's IT systems to reduce administrative errors. Practices should also consider including locums in team meetings to enhance information sharing as locums were regarded as particularly disadvantaged if they had no previous experience of a patient and the practice.

Digital therapies access in Italy: is it a problem of cost or literacy?

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Abstract

Background

Digital Therapeutics (DTx) are “evidence-based therapeutic interventions driven by high-quality software programs to prevent, manage, or treat a medical disorder or disease” (Digital Therapeutics Alliance). The clinical application of DTx can be alone or with drugs, medical devices, and other therapies to optimise the patient journey and treatment (Recchia et al., 2020) and to manage a chronic disease such as neurological disorders and psychosis, which in general require long care and or rehabilitation paths, but also AIDS and sexual transmitted illness, which normally stigmatise and leave the patient isolated (Chung, 2019).

Methods

The paper presents a systematic review of the patient journey and the solution applied related to diabetes in Italy to value the cost of the implementation of a digital therapy. By the data obtained, it presents a logistic regression to describe the percentage of adherence considering the professional’s literacy and expertise.

First, it was carried out a literature review considering only studies in which were described the diabetes patient journey to represent the general scheme applied in Italy. A second review carried out collecting data from an international background to value the cost of the implementation of a digital therapeutic in the target pathway. It was considerate only the studies that reported evidenced by the application of DTx on diabetes patients.

Secondly, the logistic regression values if the application of the technology is related only by cost or by undirected factors such as professional’s literacy.

Results

The study represents the general pathway of patients with diabetes. Starting from that, it values the cost to introduce a digital therapy in an Italian pathway, considering the Italian legal framework. Based on the evidence recovered from the international literature, the paper describes the effects that digital therapies related to diabetes could have on an Italian pathway. On a second hand, the paper reflects if is the cost the main obstacle to introduce an innovative technology or if there is a correlation with professional's literacy.

The paper doesn’t aim to impose the application of those new kind of therapies, but desire to understand the effects in a contest that, by laws, doesn’t consider the application of those new technologies.

Discussion

This work presents the scenario in case it would be introduced a Digital Therapeutic in the Italian pathway to manage a pathological illness, in this case it was considered diabetes. Other of analysis in terms of costs and the potential of to solve problems of scalability and reach of resource utilisation, DTx have an impact also on health coverage by the possibility to multiple physician control (Ramakrishnan et al., 2021). Because in Italy, due to the legal framework digital therapies are considered medical devices, the paper has extracted data from an international scenario to quantify the impact of the implementation of digital therapies in the Italian scenario. The results provided raise questions undirected connected to the main costs, such as professionals literacy and patients communication.

Designing an IT system for a Case Management Program

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Abstract

Context

The Case Management Program developed in a healthcare organisation in Portugal, emerged as a response to the excessive use of the hospital emergency department by patients with multimorbidity. It is an innovative project in this country, which aims to provide close monitoring of the patient throughout the health-disease process, through the assignment of a multidisciplinary team that supports the patient and family in self-management of their health, defining and monitoring compliance with the individual care plan and enhancing the articulation between the different health and social structures. The program contributed to reducing readmissions and visits to the emergency department, with an improvement in the quality of life of patients. However, the lack of a solution that provides monitoring and reminders to promote self-care, associated with a lack of integration of the information, which requires case managers to search information from different sources, were identified as constraints to the program.

Methods

To reduce the constraints identified, it was designed an IT system for the case management program, based on a process of co-creation, which aims to address two major dimensions: improving the integration, quality and efficiency of care processes within and between care providers; and promoting self-care. We performed a set of interviews with case managers (3), users and/or family members (2) and partners (2) to identify, from the perspective of each stakeholder, the necessary information to be included in the information system, as well as the alerts considered necessary to improve the management of the clinical condition per patient and the performance indicators to be included, and how to present this information. Semi-structured exploratory interview guides were developed for each group (case managers, users and/or family members and partners).

Results

Through the interviews carried out, it was possible to identify the information needed for each of the main stakeholders – case managers, patients/family and partners, in each of the stages of the process, which is, from the referral for admission to the case management program to the discharge of the program. The interviews made evident the need for a single IT system that integrates information from primary health care units, hospital units, community units and information collected and reported by the patient/family. Notwithstanding, stakeholders show different information needs. While patients are interested in understanding the evolution of their clinical condition and the achievement of established goals, for case managers, in addition to information per patient, there is also a need for aggregated information with indicators that allow monitoring the performance of the case management program itself, such as the rate of emergency department visits.

Discussion

Monitoring patients with multimorbidity is complex, as different health professionals in different health and social institutions follow them up. In most cases, there is a lot of information that comes from different sources, however, it is usually fragmented and isolated in the place where it is generated, existing the need to integrate all the information in a single IT system that presents information in different views, responding to specific needs of the each group of stakeholders. The design and implementation of this IT system will

allow improving the flow of information contributing to the integrated response of health and social services to patients with multimorbidity, as well as the promotion of self-management of their health.

Exploring the reporting and monitoring of adverse health events in Romania: current progress and future development

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Abstract

Context

Patient safety has become a matter of increased concern in the Romanian health care system during the past years, reflecting international trends. As such, regulations and procedures for the evaluation and accreditation of health care providers (hospital and ambulatory care) in Romania have been updated, to promote patient safety and high-quality health care services. One component that received special attention recently is the monitoring of adverse events. The aim of this exploratory paper is to provide an overview of the current efforts in reporting and monitoring adverse events in the Romanian health care system and offer perspectives for further improvement.

Methods

For this exploratory study, we made use of the policy and regulatory framework in the area of adverse events monitoring in Romania, as well as the data currently available - public data and data from the National Authority for Quality Management in Health Care. We have analysed the information available mainly focusing on the system-wide factors which are related to such events. In this process, we followed the definition of adverse events according to Romanian legislation, as events which are preventable, and which lead to affecting a patient's health in an unintentional, unwanted and avoidable manner, leading to illness, temporary or permanent disability, or even death.

Results

In 2020, Romania has promoted new legislation to support the monitoring process for health care quality management. Adverse health events are being reported based on a methodology which is common for all public and private health care facilities in the Romanian health system. The electronic application supporting reporting (CaPeSaRo) maintains a registry where facilities voluntarily report adverse events. The numbers of adverse events reported increased from 2017 (2,273 events) to 2018 (5,072 events) and 2019 (6,358 events). However, the trend reversed in 2020 (4,799 events), most likely due to the COVID-19 pandemic. The main reported causes of adverse events did not change significantly over the years, and include non-compliance with preventive measures for health care associated infections, errors in medicine utilisation and falls. The least frequent causes were surgical errors, patient misidentification and errors in blood transfusion. The majority of health events reported had no major consequences on patients.

Discussion

Reporting and monitoring of adverse health events in Romania have progressed significantly in the period we analysed, supported by improvements in the policy and regulatory framework, such as the development of the National Registry of Adverse Events and the establishment of the National Commission on Patient Safety. However, we identified areas for further development. They include improvements in the reporting platform, better communication with health care facilities and opportunities for training health care professionals and other categories of professionals involved in reporting and monitoring. Moreover, efforts should be directed to overcome barriers to accurate reporting, such as fear of self-incrimination, double reporting, and discerning between other causes of adverse events (such as immunosuppressed patients with infections with germs similar to health care associated infections or falls in patients with a significant health risk).

Medical workforce planning of the future: trends from Junior Doctor's eyes after the pandemic

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European Junior Doctors, Brussels, Belgium

Abstract

Context

For decades, medical workforce planning (MWFP) has been a central item in the healthcare management agenda due to the shortcomings caused by MWFP absence - namely lack of personnel and underemployment. The future projections point towards a physician deficit in the upcoming years. However, COVID-19 pandemic and the challenge it has posed towards healthcare systems and professionals may have changed those projections and created emerging problems.

Methods

The European Junior Doctors Association (EJD) held a meeting during its November 2021 General Assembly which aimed at elucidating the way in which the pandemic had affected MWFP and understanding the evolution of physician unemployment, underemployment and other emerging trends such as physician resignations.

Results

Every member organisation stated that traditionally MWFP had been mainly controlled in their countries through numerus clauses (increasing or decreasing the number of graduates) and the overall trend had been an increase in graduates because of the prediction that there was going to be a lack of doctors from 2010 onwards. Some countries reported an overall lack of specialists (Sweden, Norway, Finland, Denmark, Germany, Spain) which was not evenly distributed through all specialties and regions. Many countries reported medical unemployment in the form of a bottleneck between graduation and the access to Postgraduate Training (PGT) systems (Spain, Portugal, Sweden, Latvia, Greece, Italy) and a mismatch between the number of medical graduates and the PGT positions. Nearly all countries were dissatisfied with MWFP systems in their countries. Many countries described the proliferation of private medical schools, with Spain being the most notable example with 20 schools opened in the last two decades. Some countries manifested an increase in physicians' resignations due to the worsening of working conditions and personal and patient safety during the pandemic.

Discussion

Last decade's forecast predicted a decline in the workforce after the retirement of many physicians from the baby boom generation. However, an increase in the number of graduates has created a mismatch between graduates and PGT positions in many countries, creating bottlenecks and medical unemployment / underemployment - especially with a rising number of non-specialised and non-differentiated healthcare professionals working in an increasingly differentiated environment. The pandemic, as an unforeseeable event, has altered MWFP and needs to be taken into account when accurately predicting future workforce needs. Working conditions must be improved across Europe to prevent junior doctors' absence due to stress and burnout and to ultimately retain doctors in the medical workforce. All in all, more data needs to be gathered at the European and national levels to analyse how the pandemic has impacted MWFP and to be the basis for a MWFP which can allow for a better and effective distribution of the health workforce, while creating positive environments which allow for an increase on professionals satisfaction and the retention of doctors in the healthcare systems

The impact of COVID-19 on postgraduate training for European Junior Doctors

Authors: Dr Shruti Sharma, Dr Ellen McCourt, Mr Mathias Korner
European Junior Doctors Association, Brussels, Belgium

Abstract

Context

COVID-19 disrupted and altered everyday life across the globe; healthcare systems had to change the way they worked. Hospital leaders had to reallocate resources to be able to care for COVID-19 patients and reduce planned activity. Junior doctors, the specialist workforce of the future across Europe, experienced significant disruptions to their postgraduate training (PGT).

Excellent PGT is indivisible from excellent healthcare. It is essential that the COVID-19 pandemic does not create a deficit in PGT for coming generations of doctors; a sustainable, predictable medical workforce is essential for high quality healthcare and should be a priority for healthcare leaders.

Methods

The European Junior Doctors Association represents 300,000 junior doctors across Europe. At the beginning of the pandemic junior doctors reported disruptions to post-graduate training. EJD surveyed its member organisations between 2020 and 2022 to establish the impact of the pandemic on training, the impact as the pandemic evolved and progressed, and to identify recurrent themes and mitigating factors that protected postgraduate training.

Results

Sixteen European nations were represented in the EJD survey. 88% reported at the onset of the pandemic that COVID-19 had a negative impact on PGT, although after a year only 6 delegations reported that training in its entirety was postponed. 87% of nations reported that junior doctors had been redeployed from their usual place of work to care for COVID patients; 50% of delegations reported working beyond their rostered hours and beyond EWTD. Delegations reported delays to allocation of specialism, postponement of exit exams, and cancelling of mandatory courses or being converted to online courses.

Discussion

The level of disruption to PGT caused by the response to the COVID-19 pandemic varied across European nations, and where disruption occurred the response by healthcare leaders and managers, educators and employers was inconsistent. Although a number of European nations have examples of focused individualised solutions to missed training, this was by no mean universal and, despite multiple waves of the pandemic, some junior doctors still had no access to services to address lost training and were keen for these best practices to be shared and replicated across Europe. The increased use of digital and online meetings, courses and classes have proved somewhat effective, but will not in its entirety be able to replace physical events in terms of the learning experience. Whilst Europe is approaching a return to “normal service”, healthcare leaders and managers will have an ongoing challenge and responsibility to facilitate postgraduate medical training that mitigates for the impact of the pandemic.

Evaluation of hybrid managerial roles in social and health care organisations

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Abstract

Public services provided by social and healthcare sectors are constantly in focus due to a lack of human resources. Social and healthcare organisations face the problem of less workforce and growing turnover. As the boundaries between public and private services are blurred, individuals can find more suitable working conditions and infrastructure in private institutions. However, public institutions can provide more attractive professional challenges. In ensuring effective organisational operation, more attention is being paid to the role of management, and public managers have to meet more and more expectations. Managers of health and social service providers frequently are health or social care professionals themselves and face challenges to meet expectations towards hybrid roles between occupational and managerial domains.

Professionals with strong occupational identities are usually appointed with managerial roles in health care and social sector organisations. On the one hand, a professional background can add important perspectives to management, while it also can be an obstacle on the other hand. However, we know little about how public managers perceive this hybridity and what they think about their own role. Literature about the hybrid roles and identities of social care managers is particularly scarce. Health and social care sectors are interrelated (many institutions provide integrated service), but the cultural aspects of the two professions show differences. Comparing the perceived managerial roles in the two sectors are also subject to interest.

The research question: What expectations do public managers in social and health care organisations perceive for their work? Our research method is based on individual interviews with managers on different levels of institutional hierarchies in social and healthcare organisations. The result of the research is a deeper understanding of the identities and roles of public managers in the social and health care sectors. We identify factors that shape managerial role perceptions and motivation in their own leadership situation. Moreover, we compare the social and healthcare sectors and identify the two sectors' leadership thinking characteristics.

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Creating sustainable working environments: working hours of Junior Doctors during the COVID-19 pandemic

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Abstract

Context

Junior doctors' (JDs) working conditions have been linked to have an effect on physician's wellbeing, training outcomes and patient safety. Reducing working hours where there is excess has proven to improve patient's safety while not impacting postgraduate training (PGT) negatively.

Methods

We present a summary of the compliance with the European Working Time Directive (EWTD) gathered by the European Junior Doctors (EJD) member countries during the COVID-19 pandemic, alongside with a review of the relevant literature regarding working hours and workforce sustainability.

Results

Our results show that during the COVID-19 pandemic (2020-2022) working conditions have deteriorated, particularly regarding excessive working hours. Moreover, a trend was observed in the exacerbation of pre-existing violations of the EWTD occurs due to the fact that many healthcare institutions were already, previously to the pandemic, understaffed and underprepared for the increase in demand. The majority of the surveyed member organisations (83%) reported that during the COVID-19 pandemic JDs exceeded the maximum hours set by the European directive. (ie.75% of Spanish residents worked over 48 hours per week and saw an increase in their on-call shifts during that period of time) The French JD organisation ISNI has pointed to excessive working hours as one of the factors behind seven suicides of JDs in 2020 and 2021 in France, where working times amount to up to 58h/week on average and up to 70h/week in surgical specialties. Despite the fact that many countries reported the existence of monitoring systems for working hours, only a few reported (12%) a penalty system in case of transgressions/non-compliance.

Discussion

Excessive working hours beyond the limits set by the EWTD and the absence of adequate resting times and facilities pose a serious threat to JDs wellbeing. Available literature shows that physicians with high burnout rates, high hourly loads, long hours and working extended night-shifts have a strong negative impact on patient safety. Evidence suggests that reducing working hours from long or continuous shifts and ensuring appropriate rest is linked to fewer medical errors and fewer accidents. Moreover, reducing working hours where there is excess does not negatively impact PGT or patient outcomes.

More data needs to be gathered on EWTD/working hours compliance in JDs and monitoring systems must be implemented, along with penalty systems in case of non-compliance. Reducing working hours and ensuring adequate rest time has proven to be a beneficial measure to improve JDs wellbeing and patient safety while not negatively impact PGT.

Junior Doctors’ wellbeing during the COVID-19 pandemic: a view from across Europe

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Abstract

Background

Junior Doctor’s wellbeing is inextricably linked to competence, productivity and longevity. Despite current junior doctors across Europe being the specialist workforce of the future, burnout (and subsequent absences from the workforce and even resignations) in Junior doctors has increased during the COVID-19 pandemic; for example in the 2021 survey from the UK General Medical Council 1/3 of trainees said they felt burnt out to a high or very high degree because of their work, compared to around 1/4 in previous years.

Method

The European Junior Doctors Association (EJD) gathered data from member organisations 2020-2022 to establish the factors impacting wellbeing and burnout during the pandemic and to identify similarities and differences in the services available to address these.

Results

Workplace safety, the provision of personal protective equipment, the protection of clinically vulnerable doctors and the extension of working hours beyond safety limits were all raised as contributing factors. Loss of control of working time, responsibilities, and environment were reported.

When asked about the provision of services to address burnout delegations reported services aimed at the individual. In 2020 50% of nations reported no services available. Although there were notable exceptions, a year into the pandemic ⅓ of delegations continued to report that there were no services at a national or local level.

Discussion and Conclusion

Burnout is a major concern in terms of both the professional and personal needs of doctors and the care they can provide to patients. Lack of resource, loss of safeguards and overwork are known to impact wellbeing; a lack of workplace autonomy is a driver of burnout.

This data demonstrates how the risk factors for burnout in junior doctors have been exacerbated and yet the solutions, remain focussed on the individual rather than institutions/governments. European junior doctors require a continental shift in the understanding of burnout and a commitment from medical leaders across Europe to solutions at an organisational and governmental level.

Patient experiences library

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Abstract

Patients trust doctors with their health. But how doctors communicate with the patients and how patients feel when at the “doctors office” impacts the patient journey in different ways. With our ongoing project, we are aiming to provide platform of a video library of stories and experiences in the ”doctors’ office”, designed to empower both patients and health professionals and to enable experience-based knowledge.

Method

As a first step towards developing the video library, we asked individuals on Social Media to share 3 words when thinking about their medical consultation. Based on the social media campaign, we developed a set of questions as an interview guide for interviews.

Results

The Social Media campaign provided us insights into the feelings of patients when being at the doctors office. The common words about how people across the world feel when visiting a doctor can be summarised into confused, frustrated, no shown empathy, anxious and intimidated. But also heard, relieved, supported.

Conclusion

The interactive library will allow patients from across the globe to search for interviews based on what their peers have been experiencing at that time, exploring stories and lessons shared by someone who has been in a similar situation. This will bring experience based learning and empowering the patients via other patient stories.

Disruptive effects of COVID-19: an exploration of EU country responses and lessons for workforce mobilisation

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Abstract

Context

The health workforces of countries', across the globe, have been placed under significant pressure from the COVID-19 pandemic. However, the data about what countries did to react to the pandemic and its waves of infections is dispersed and not easy to compare, particularly for workforce policies to ensure people were treated, services remained functional, and preparations could be implemented. Understanding what worked and why; can provide lessons for countries to be able to develop more resilient health systems and workforce planning. In addition, these lessons may also reveal how the measures may influence training, new roles, workforce skill-mixes and future workforce configurations.

Methods

This study is based on a content analysis to assess and compare 27 EU countries policy and workforce responses to COVID-19. From the EU Country Health Profiles 2021, section 5.3 "System Resilience" data related to COVID-19 responses were extracted. These data were inductively coded into 15 themes, from which theme, country frequencies and an efficacy indicator were calculated. Workforce specific responses were also deductively analysed using 6 further thematic codes derived from recent COVID policy response literature such as the COVID-19 Health System Response Monitor (HSRM). All coding was subjected to reliability measures based on inter-rater testing and codebook development to enhance result confidence. Based on these themes, the cross-country variations in COVID-19 response efficacy were analysed by relating these to data compiled from the ECDC database to identify possible country characteristics.

Results

The results provide a set of exploratory indicators. The most common themes extracted from EU Country Health Profiles 2021 were "measures", "testing" and "vaccination", with "tracing", "ICU", "shortages", and "data or information" related policy themes the next most frequent. The efficacy indicator enabled theme and country ranks and groups by their theme and COVID-19 policy response score. These groupings reveal the themes of "testing", "vaccination" and "shortages" to have high positivity scores, while "tracing" was found to be problematic. Visual analysis of the countries' positive-negative scores suggests countries fall into four groups: one whose policy efficacy can be considered as high, two middle-scoring sub-groups, and a group with low efficacy scores. The four country groupings appear to indicate a relation to ECDC case per 100,000 data, where a high policy efficacy indicator relates to lower country 14-day COVID-19 case rates.

Discussion

The results are useful to indicate actions which have contributed to effective COVID-19 policy responses in Europe. The analysis points to a combination of policies that, when achieving the desired effect, enabled some countries to respond better than others. While many countries may have instituted the same policies or actions (for instance contact tracing), there were more negative codes assigned to this theme than positive outcomes expressed by the data. However, the opposite was found for vaccination, a policy response that many health systems had implemented. Likewise, the methodology and timing of a policy combination seem critical for performance achievement. The benefit of this type of exploratory and content analysis of comparative country reporting is to identify clusters of both policies and countries, leading to more precise questioning and deeper studies to help policy makers and managers to assess, select and resource system and workforce policy mixes in the future.

Some organisational conditions for developing third sector contributions to health systems: evidence from England

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Abstract

Context

Voluntary, community and social enterprises (VCSEs) contribute to health systems as service providers, payers (e.g. social insurers), and contributors to health policy. What governance structures and management methods facilitate or impede these collaborations, and how, at regional and sub-regional level remains poorly understood. This study therefore examined what factors help or hinder public bodies in commissioning VCSEs as service providers and strategic planning and policy partners; with what managerial and governance implications for both parties, especially the strategic planning of services and user voice in planning; and what absorptive capacities healthcare commissioners and VCSEs therefore require.

Methods

Mixed methods research design applying realist methodology but in a two-sided way: from the public commissioner standpoint and from the VCSE standpoint. This dual approach is a methodological innovation. Methods included:

1. Systematic comparison of 6 case studies of VCSE-commissioner interactions in localities sampled to cover all four quartiles of CCG in terms of proportion of their spending on VCSEs.
2. Across and within case studies, three tracer services: end-of-life care, learning difficulty services, social prescribing.
3. In each case study site, recruitment of co-researchers to join a national action learning set, and develop local research capacity, and assess absorptive capacity of their organisations.

To combine and synthesise the data we use an analytic framework structured according to the different media of control, and combinations of them, that commissioners bring to bear on VCSEs, and vice-versa.

Results

1. Commissioners and VCSEs alike treated VCSEs' advocacy (user representation), strategic (policy formation), and service provision roles as practically inseparable.
2. Inter-organisational networks arose to coordinate the multiple commissioning organisations, numerous and varied VCSEs in each locality.
3. To interact with and influence VCSEs, commissioners relied mainly on managerial techniques (planning, evaluation); persuasion (including evidential), and relationship-building. Financial incentives and provider competition had some counter-productive effects. Contractual and regulatory control were less relevant.
4. Conversely VCSEs relied mainly on persuasion (more normative than scientific), and relationship-building. They had less scope for using managerial techniques (e.g. formal evaluations of their activity). Contractual or regulatory influence were less relevant, financial incentives and competition not relevant.
5. Both sides found counterproductive market-style procurement systems counterproductive and devised work-arounds.
6. Smaller VCSEs faced greater risk of marginalisation and disadvantage.

Discussion

On the basis of this evidence from England, public bodies require different modes of commissioning (combinations of media of control) when interacting with VCSEs than when commissioning, say, hospitals. Interactions between commissioners and VCSEs appear to require relational, persuasive and negotiative modes of commissioning rather than contestable, incentivised or commodified ones. Such modes of commissioning depend on, among other things, VCSEs and commissioners developing their absorptive capacities (especially assimilation and transformation) so as to bridge the culture gaps between them, and methods for evaluating VCSE activity in evidence-based ways. In England at least, ways of meeting these requirements remain underdeveloped. How far these findings and implications apply to other health systems, especially those where the main payers are themselves VCSEs, requires further research.

What does the future hold for the Romanian health workforce? Insight from current national data

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Abstract

The health workforce (HWF) represents one of the building blocks of any health system and a vital component for the delivery of high-quality services. Health workers are essential for reaching universal health coverage and for attaining highest standard of health and care.

The pandemic clearly showed the importance of a well-prepared HWF and the need for sufficient supplies of human resources with the right skill mix. For a sustainable future, the HWF needs attentive planning in the close future.

The objective of this study is to analyse the HWF in Romania by making use of available data, in light of the health labour market framework.

In order to reach the aim of the study, we used secondary data from the annual report on the Activity of Healthcare Units in Romania for the period between 2010 and 2020, which we analysed using descriptive statistics in Excel.

The data analysed showed an unsteady trend at the level of the HWF. For the age group of health workers under 25 years old, there have been high variations in numbers, without following a specific trend. For the age group 25-34 there was a steady increase over the 10 years analysed. However, in the older two age groups analysed (65-74 years group and 74 years and above), a sudden decrease was noticed, especially in the age group 65-74 years. In the year 2014 an abrupt shrinkage in the supply was recorded, a decrease of 85% for the 65-74 years group and of 97% in the 74 years and above group. This dip is to be slightly recovered in the following years, but never to its initial number.

Fortunately, a steady increase in the number of young physicians is observed. In the 10 years analysed, an increase of 42% was documented, with an amplified pace of growth beginning in 2018.

The results of the analysis are highlighting an upright result. The pandemic has shown, once again, the importance of the HWF and of a steady supply of workers. From the analysed data, Romania is constantly increasing its health workers' stock. The boosted growth from 2018 onwards is indicating the successful implementation of the remuneration incentivisation, motivating the young physicians to practice in Romania.

However, the matter needs more in-depth analyses as it is a very complex topic and the planning of the HWF needs sound data and evidence. In the end, it is not only about numbers. When talking about HWF, we must include in the conversation their distribution, their skills, catchment area for each physicians and people’s need for care in the area. Digitalisation is another factor to be brought in the discussion as the future is going digital.

In spite of the growth in young physicians, shortages in the HWF still exist and these numbers ought to continually increase to prevent the apparition of medical deserts.

Towards achieving full potential for community health care in Romania – an analysis of current evidence

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Abstract

Current international evidence show that community health care is highly effective at shifting the locus of care from health facilities to communities, thus contributing greatly to people-centred health services.

Community health workers (CHWs) offer care to the most vulnerable and in need strata of the population. Beyond their health-related role, CHWs map communities and their needs, creating bridges between people and institutions, monitoring, informing and educating the communities.

The aim of this paper is to explore the evolution of the services delivered by CHWs in the past three years at the national level in Romania.

For this exploratory study, we employed a mixed-method approach, combining secondary quantitative data with primary qualitative data, in order to test three hypotheses: the number of community health workers in the past three years impacted the number of services delivered at the regional level; the pandemic influenced the number of services delivered by community health workers; there is a direct link between the number of CHWs in a county and the volume of services delivered to the community.

We conducted semi-structured in-depth interviews with Romanian experts in community health care, and analysed quantitative data gathered at central level by the Ministry of Health on the services delivered by CHWs.

The quantitative analysis highlighted that the number of CHWs are directly connected with the number of health services delivered at regional level for the years 2018 and 2019, while in 2020 it was not. However, the COVID-19 pandemic induced an increase in the number of services provided by CHWs of 114%, a more than two-fold increase.

It has been proved with strong statistical significance that the number of CHWs positively predict the delivery of health services at county level for the years 2018 and 2019, while in 2020 a lack of statistical significance was identified.

The qualitative analysis raised questions about the robustness of the reporting and its quality. It confirmed that the pandemic has drastically influenced the services delivered by CHWs and emphasised a lack of epidemiological and public health training together with a deficiency of awareness regarding the profession among the health workers in training.

Based on our findings, the number of CHWs influenced the number of services delivered at the county and regional level both in 2018 and in 2019, but not in 2020. Moreover, the influence of the pandemic over community health services was considerable.

Both the experts interviewed and the quantitative data analysed have highlighted the untapped potential of CHWs, who are often overlooked. Thus, more efforts are needed in developing well-planned and interconnected community health networks.

The understanding and awareness of the authorities and the potential beneficiaries must be increased as CHWs are instrumental for healthy populations. Also, the future healthcare professionals, should have increased awareness about the possibility of working as a CHW.

Towards resilient health systems: a youth perspective to impulse the wellbeing of healthcare workers

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Abstract

Heavy clinical loads, excessive bureaucratic tasks, a diminishing sense of professional autonomy, paradoxical injunctions, and constant demands for healthcare, among other factors, have increasingly put health professionals at risk of negative mental and physical health outcomes. This situation has worsened with the COVID-19 crisis, which has increased health's risk and placed extraordinary physical and mental demands on the health and care workforce. Current estimates have found that between 80 000 and 180 000 health workers have died worldwide from coronavirus between January 2020 and May 2021. Levels of anxiety, depression and burnout have also increased. Research shows that as many as 43% of frontline workers have experienced significant levels of anxiety, which is more than the general population. Additional factors aggravate the negative health and mental health effects experienced by healthcare workers - extensive working hours, less time to rest, inadequate nutrition and reduced physical activity.

This is a compound challenge. The threats to the wellbeing of the health work force produce impacts beyond the individual; they also pose important risks on the ability to provide effective and compassionate care to patients and service users; and risk to aggravate an already existing major staffing shortfall in healthcare, currently projected to reach 18 million by 2030. For these reasons, the wellbeing and quality of life of healthcare workers are key to the sustainability and efficiency of health and care systems in Europe, and worldwide.

Long-term solutions are urgently needed to address the wellbeing of the healthcare workforce, avoid burnout and other mental and physical ill health outcomes for care workers, and ensure a fit for purpose workforce. Aligning with shared values of equity and inclusivity, the development of such solutions must include all stakeholders.

The European Health Parliament (EHP) is a multi stakeholder initiative of youth health leaders representing healthcare professionals, policy, the private and public sectors, and patients' organisations. The aim of the platform is to gather a diverse group to tackle some of the most pressing health challenges, and elaborate effective policy solutions for a better health system in Europe, and beyond.

This year, the EHP features a theme on the Wellbeing of Healthcare Workers, whose aim is to propose actionable policy solutions to safeguard the wellbeing of the health workforce. Over the course of 9 months, the appointed committee identified three actionable areas 1) Working Conditions & Youth Empowerment, 2) Value and Recognition of Healthcare Workers, 3) Mental Health and Self-Care Education, to guide the groups' forthcoming (end of June 2022) actionable policy recommendations. The committee worked in an inclusive, transgenerational and transformational manner to tackle this question, by largely involving and consulting with members of the healthcare workforce, mental health professionals and organisations, patient entities, other relevant health stakeholders, and policy makers. In the presentation, we would like to elucidate good practices and essential steps needed to create such an inclusive and intersectional way of work, and to develop some of the solutions that were formulated by youth to contribute to a sustainable health workforce in Europe.

Status of nursing and midwifery in the WHO European Region

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Abstract

Context

Strengthening nursing and midwifery to achieve the 2030 agenda is key to the successful delivery of the European Programme of Work – 'United Action for Better Health', which was endorsed at the 70th session of the Regional Committee in September 2020. Although a lot of data were collected through the National Health Accounts (NHA), some relevant information for strengthening nursing and midwifery is not available and should be collected through a supplementary survey.

Method

The study was planned to explore current conditions of strengthening nursing and midwifery in the WHO for European Region/ nursing and midwifery workforce, education and training, talent pool, working conditions, work environment and evidence-based health practices in WHO/Europe member states. The cross-sectional and observational study was conducted from December 2020 until June 2021. Data-analysis was mainly descriptive and content analyses was done for open-ended questions.

Results

Answers for the survey were obtained from 29 member states of WHO-Europe. 26 (90%) have a bachelor programme in nursing. Three countries are offering a vocational nursing programme and no bachelor programme. Both vocational and bachelor programmes are offered by 13 countries. 22 (76%) are offering a master programme and 19 (66%) member states are offering a doctoral program. For midwifery, 24 (76%) member states offer at least a bachelor's degree in midwifery of which Iceland and Portugal offer a master degree as entry-degree for midwifery. Armenia, Israel, Kyrgyzstan, Kazakhstan, and Tajikistan offer vocational midwifery training. In five states, both vocational and bachelor training are offered in midwifery. 17 (59%) are offering a master programme in midwifery and 12 (41%) are offering a doctoral programme. In 26 (90%) of member states, midwifery education is separate from nursing education exception for doctoral education in UK, Portugal, and Sweden.

Discussion

The study showed minimal education level for midwifery and nursing professionals. It is important that nurses and midwives contribute to improving the quality of healthcare and patient safety (ESDNM, 2016-2020). The findings of the study also provide that in most countries, it is the case for all educational levels (VET, BA, MA, PhD). Besides, different education policies regarding PhD level in some of countries can be evaluated in terms of advantages and disadvantages.

The complexity of co-designing a transmural care pathway for patients treated with oral anticancer drugs: a qualitative study

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Abstract

Context

Using oral anticancer drugs (OACD) requires an adequate level of self-management, as patients are responsible themselves for the correct intake and monitoring of their treatment at home. Consequently, changes in traditional roles and responsibilities of healthcare professionals (HCPs) in oncology, and re-organisation of current care processes, is needed. Co-designing and implementing a transmural patient-centred care pathway can be a strategy to structure and standardise care for patients on OACD. Such co-design and implementation process can be challenging. This study aimed to understand the co-design process as experienced by involved stakeholders.

Methods

A qualitative process-evaluation was set up in ten Belgian hospitals participating in the Collaborative Network to take Responsibility for Oral Anticancer Therapy (CONTACT)2-project, in which a transmural care pathway for patients on OACD was co-designed and implemented. The co-design process was meant to be mainly self-directed by the hospitals, supported by the CONTACT-toolkit that has been developed based on prior experiences of the research team and international guidelines on the implementation of care pathways/complex interventions. Semi-structured interviews were performed with the local coordinators who guided the co-design processes and with members of the local interdisciplinary project team - including representatives of clinical and management staff and of primary care. In total, 29 interviews (12 coordinators and 17 members of the local project team) were conducted. Interviews were audio-taped and transcribed verbatim. A thematic framework analysis was applied.

Results

Building an adequate supporting context through a motivated interdisciplinary project team of clinical staff, guided by a competent coordinator, seemed crucial for a successful co-design. Leadership of local coordinators, who also have prior experience in quality improvement projects, was an important facilitator. Coordinators active in clinical practice struggled with a lack of time and limited leadership competencies. Support of management staff and physicians was crucial to successfully launch the project and make high-impact decisions. Besides that, the role of hospital management and physicians throughout the co-design process was rather limited. In only three hospitals, stakeholders of primary care were invited to participate in the co-design, as hospitals mainly focused on in hospital re-organisation. The supporting tools that were provided by the research team to build an evidence-based care pathway, were perceived helpful and contributed to scientific substantiation. However, the CONTACT-Toolkit was insufficiently supportive for a self-directed co-design.

Discussion

Based on the results, prerequisites and recommendations for a successful co-design can be defined. Prior investigation of incentives and motivation for change of all involved stakeholders is crucial. When appointing a coordinator, project-managing competencies and leadership must be considered, and dedicated project time must be scheduled. Support of physicians and management staff, at the start and for structural or financial decisions, is essential to obtain change in care. As building transmural care does only seem feasible after in hospital re-organisation, a phased approach, involving primary care in a second phase, seems appropriate.

Despite the supporting tools, there was still a strong need for external coaching. This might suggest that applying a self-directed co-design methodology is too burdensome for the hospitals. Providing hospitals with concrete proposals on the design of the care pathway, that only need limited tailoring to the specific hospital context, might be more efficient.

International comparison of professional competency frameworks for nurses: a document analysis

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Abstract

Context

Nursing is not a static profession; it is constantly evolving by internal and external influences. Consequently, professional competence frameworks for nurses need to be adapted and expanded on a frequent basis. For example, because of task reallocation between doctors and nurses, and more focus on outside-of-hospital-care. In addition, there is an ongoing development of new classification systems or frameworks in nursing. Therefore, it can be expected that internal and external influences on the nursing profession are reflected in the professional competency frameworks for nurses.

Methods

Document analysis of professional competency frameworks was conducted for frameworks for registered nurses (RNs) and advanced practice nurses (APNs), which were published after 2011. Frameworks were selected as authorised/published by a professional organisation of nurses in The Netherlands, Belgium, the United Kingdom, Canada, and the United States of America. These countries were selected due to their strong position in nursing science (UK, Canada, and the US) and language (written in English or Dutch). To identify the countries' professional competency frameworks, websites of the relevant professional organisations were studied. Additionally, for each competency framework, we have checked whether the correct documents were retrieved by contacting experts from the professional nursing associations and professors in Nursing. Data from the professional competency frameworks was extracted and synthesised narratively. To increase the validity of the analysis, the results were verified by the experts from the respective countries. Different versions of the competency frameworks were also compared over time to enable longitudinal analyses.

Results

Eleven professional competency frameworks were analysed that met the inclusion criteria. All professional competency frameworks embodied a model, theory, or framework as a foundation to describe the competencies RNs and APNs should master. All professional competency frameworks used the CanMEDS-model (Canadian Medical Educational Directives for Specialists), although not all frameworks stated the name of this model. Competencies for RNs were globally categorised according to the CanMEDS-model into Medical Expert (the integrating role), Communicator, Collaborator, Leader, Health Advocate, Scholar, Professional. For APNs there was an additional focus on Clinical/Direct Care Expert, Leadership and Collaborative Practice, Improving Quality and Developing Practice, and Developing Self and Others. Not all competency frameworks specifically described tasks, but only competencies. Compared to the penultimate professional competency frameworks in the specific countries, we see that the focus shifted more to leadership and collaboration role for the RNs, where the frameworks for the APNs became more extensive.

Discussion

The CanMEDS-model was used in all professional competency frameworks in its original form or as an adapted version. Our document analysis showed that professional competency frameworks for RNs and APNs include models and theories as a foundation for the competencies described. There seems to be congruence between nursing educators and nursing bodies making policy on integrating competencies based on models or theories not only in education but also in the workplace. This is in line with the recently published roadmap of the WHO for nursing and midwifery in Europe. It is expected that the competencies as mentioned in the CanMEDS-model are becoming increasingly important in the future as the role of nurses will be more aligned with the increase of high aged persons with multimorbidity and complex care needs.

Towards zero waste: environmentally sustainable waste management solutions for hospitals - An innovative procurement approach

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Abstract

University Hospitals Bristol and Weston NHS Foundation Trust (UHBW) and North Bristol NHS Trust (NBT) are changing how they look at waste. Both Trusts have ambitious sustainability strategies that aim to end their contribution to the climate and biodiversity emergencies. They aim to be leaders in delivering improved patient outcomes that decouple the impact that healthcare has on the environment.

Waste management is financially and environmentally costly. It is also complex - from the number of different waste streams produced in hospitals to logistical issues such as storage, collection, and transportation, as well as legislative compliance. In order to transition towards zero waste, we need new innovative technology, business models, ways of working and collaboration.

In a joint project between the Trusts and EcoQUIP+, they have engaged in an innovation procurement exercise to seek and engage solutions from across the supply chain that will deliver environmentally sustainable waste management solutions that address both the urgent need to minimise waste and enable a transition to circular management.

The aim of the project is to open the dialogue with the supply chain, to explore how the transition can be realised and over what timeframe. It is formed of various engagement opportunities including:

- Market Sounding
- Prior Information Notice
- Market Response Forms
- Supplier Engagement Day
- Bilateral Interviews

The feedback from these events will then inform the Trusts tender strategy for its new sustainable waste management arrangements.

This approach has allowed the Trusts to engage with a wide range of suppliers in the market. Encouragingly this has included Small and Medium Sized Enterprises (SMEs) as well as the larger suppliers in the market. It has also opened a dialogue with suppliers in the local area that were previously unknown to the Trusts.

We have noted in the process that whilst there is a willingness to work together on solutions, there is a reticence amongst suppliers to share their strategies and approaches. This reticence may dissipate over time as the industry realises the benefits of collaborative approaches as they strive to meet the sustainability ambitions of their potential customers. Indeed, there has been significant interest in the project and its collaborative approach from other Trusts across NHS England.

The results show there are many innovative solutions that already exist and are being developed. This is the start of a journey that will evolve over time as more solutions and approaches are brought to the market.

The innovation procurement process has been invaluable to help the Trusts understand current market solutions to help them meet their zero waste aims. The increased understanding and views of the marketplace will be key to informing the Trusts strategy for tendering in September 2022.

Reduced waiting times for primary care appointments: situation analysis in Lithuania

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Abstract

Context

The efficiency of the primary healthcare system is directly linked to availability and accessibility, and these are the most important factors defining healthcare provision effectiveness. Primary care in Lithuania is well recognized by society as the first contact point in the healthcare system. Although expenditure on outpatient care in Lithuania is 17.3% of total expenditure on health (OECD), which brings Lithuania to second place in the whole EU, demand for family-based primary care puts tremendous pressure on the whole system. Increased waiting times, shortage of physicians, and insufficient focus on task shifting surge existing demand.

Methods

Multiple databases were searched, including the Health Information Centre under the Institute of Hygiene and the National Health Insurance Fund under the Ministry of Health to identify the number of visits to family physicians. In addition, an analysis of waiting times was conducted to explore admission intervals at general practitioners and psychologists.

Results

Results indicated that there are 2309 family physicians in Lithuania, and in 2020 there were 12.2 million consultations performed (4,8 visits per person in population). Data analysis also revealed that there were 2 521 593 visits to primary care centers (88.0% of the population). Furthermore, waiting time analysis showed that 84% of patients were admitted to a family physician within seven days, up to 10% of patients were admitted within 8-14 days, and 6% of the patients had to wait more than 15 days. Examination of waiting times for psychology consultation indicated that 63% were admitted within seven days, while 22% and 15% of patients had to wait respectfully 8- 14 days and more than 15 days.

Discussion

Raised waiting times could be a risk factor for patient dissatisfaction. There is a significant need for further analysis to identify the correlation between waiting time and patient satisfaction. Besides, the possibility to reduce waiting times should also be scouted.

Loss of empathy in primary care professionals after covid pandemic

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Abstract

Context

Catalonia Primary Care Teams are integrated by clinical assistants, nurses, nurse aids and family doctors and responsible for health prevention, promotion and care. Daily activities have been interrupted by Covid pandemic and follow up of chronic patients has diminished to care for covid suspected cases. Family doctors have been also overrun by an excess of administrative workload related mainly to patients' sick leaves. Care for new cases and acute situations has not been discontinued but the whole situation has created a gap between doctors and patients, reducing the face-to-face visits, shifting care to phone calls or virtual consultations. We feel this has changed doctors' attitude, with less empathy towards patients, a reduction in listening and an increase both test and drugs prescription. The objective of this study is to analyze whether family doctors have lost empathy during the pandemic.

Methods

We apply psychometric evaluation (Jefferson scale) to measure doctors' empathy capacity: measuring three empathy dimensions (cognitive, emotional, putting oneself in patients' shoes). We compare results with those appeared in literature. We also consider diminished empathy and workload pressure makes doctor prescribe diagnostic tests and drugs in higher amount than expected. We compare data from last 4 years: number of x-ray imaging, benzodiacepines or specific blood tests prescription. Those data are taken from primary care information system (SISAP).

Results

Year	Attended patients	Spine Xray	Unnecesary PSA	Unnecesary IBP	Unnecesary statines
2018	54.347	345	11,04	39.7	/
2019	49.996	360	7,93	38.16	0,26
2020	20.765	295	11.14	38,95	0,46
2021	14.211	440	18,79	45,52	13,27

There's a clear increase of the amount (in percentage of attended patients and total figures) of spine x-ray, prostate antigen test and excess of prescription of proton bomb inhibitors and statins.

Year	Patients>75ys with inadequate prescription	Patients>18ys with opioids and benzodiacepines	Patients with dementia treatment and antipsycotics for >6 months
2018	62	/	27
2019	367	40	82
2020	360	48	77
2021	384	74	122

24 people (30% of the team) answered questionnaires (still receiving answers).

Family doctors' mean	111,121197
Nurses' mean	111,1846254
Clinical assistants' mean	111,200483
Nurses aids' mean	112,4336283
Male mean	109,1071311
Female mean	112,6814238

Discussion

Covid pandemic has affected both population and health service providers. Our data show a 10 point reduction in Jefferson scale compared to literature (usually over 120), being "putting oneself in patients' shoes" dimension the most affected one. As some chronic situations have been set aside, doctors may have reacted demanding more tests substituting proper relation with patients.

We'll proceed in different working lines. First, facilitating more interview time between patients and doctors for those with new or chronic illnesses. Secondly, trying to change this prescription habits following guidelines. At the same time, facilitating some resources such as anti stress sessions for the professionals. New evaluation will be done in six months.

Missed care among physicians is prevalent; similar patterns as in previously established nursing research are identified. The predictive value of the work environment on the prevalence of care left undone is also observed in physicians. This finding further strengthens the earlier recommendations of the IOM to prioritise improving clinician work environment in acute care hospitals.