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MANAGEMENTE & POLICY SECTION

Title

La Riabilitazione su Base Comunitaria: modelli dalla Salute Globale per la presa in carico sul territorio.

Author

C. Rosini.

Abstract

La revisione scientifica “La Riabilitazione su Base Comunitaria: modelli dalla Salute Globale per la presa in carico sul territorio.” si pone come obiettivo quello di analizzare la letteratura esistente in merito al modello di programmazione comunemente detto RBC, dalle origini ai più recenti studi, passando per le Linee Guida OMS. Lo studio approfondisce le caratteristiche dell’approccio, prendendone in considerazione la natura multidisciplinare e multilivello, specialmente nel settore della riabilitazione fisioterapica, andando ad approfondire punti di forza e criticità sia nei setting di origine (i paesi a basso-medio reddito) sia nei Paesi considerati ad alto reddito. L'approccio RBC abbraccia molte aree della vita della comunità, passando dalla riabilitazione, all’educazione, alla sfera lavorativa e sociale: l’interdisciplinarietà che si adatta alla complessità delle relazioni della vita di un individuo è la caratteristica dominante di questo tipo di programmazione. Si tratta di un modello che benesi adatta a territori vasti a bassa densità di popolazione, e che permette un approccio globale, orientato sul paziente e fortemente radicato all’interno della comunità di appartenenza, in quanto stimola la popolazione e gli stakeholders a una partecipazione attiva e continuativa con l’obiettivo di ridurre la disabilità percepita. Il rinforzo dei servizi esistenti di Assistenza primaria, già individuato all’interno del PNRR come obiettivo primario della Missione 6, passa attraverso politiche sanitarie volte alla promozione e alla prevenzione. L’operatore sanitario, adeguatamente formato, lavora su due livelli: mette al servizio della rete di assistenza la sua esperienza nell’organizzazione e nella pianificazione dei servizi, intessendo una rete professionale che facilita l’accesso a tutti i livelli dell’assistenza, e nel mentre si dedica al piano di trattamento del paziente, trattandolo ed educandolo alla gestione autonoma della propria limitazione funzionale. Le esperienze empiriche in nazioni come l’Afghanistan hanno dimostrato che l’approccio comunitario apporta risultati pari all’approccio tradizionale dal punto di vista clinico, aumentando di molto la partecipazione sociale del paziente e la sua soddisfazione. Tra i paesi ad alto reddito che hanno sperimentato positivamente l’esperienza dell’RBC è possibile annoverare il Giappone, che ha affiancato alla riabilitazione post-ictus una formazione approfondita della famiglia nella gestione del paziente partendo dalle attività della vita quotidiana fino alle attività di monitoraggio di complicanze secondarie, passando dalla gestione economica, dal training alle movimentazioni e dalla sorveglianza all'autotrattamento fisioterapico. Risulta molto complesso tuttavia definire in maniera standardizzata questo approccio a causa della sua complessità e della concatenazione di cause e conseguenze. Il processo non può e non deve essere predefinito in maniera vincolante, in quanto il successo di questo modello si basa sulla conoscenza e sull’adattamento alla comunità ospitante; tuttavia è possibile e doveroso misurare il rapporto costi-benefici e l’impatto di questa metodica sulla qualità della vita. Nonostante siano ancora presenti difficoltà nella definizione di misure di esito che possano dare indicazione precisa dell’efficacia, il modello RBC risulta estremamente interessante e facilmente applicabile alle esigenze della medicina territoriale sul territorio italiano, in rinforzo e non in sostituzione, per garantire una sanità equa ed inclusive.

Title

DM71 e spazi di autonomia: le variabili strategiche delle Aziende Sanitarie Locali per programmare i servizi territoriali.

Author

F. Guerra, A. Zazzera, F. Longo.

Abstract

Introduzione. Il Piano Nazionale di Ripresa e Resilienza (PNRR) insieme al decreto del Ministero della Salute sui "Modelli e standard per lo sviluppo dell'assistenza territoriale nel Servizio sanitario nazionale" (DM71) delineano le traiettorie di sviluppo per la riorganizzazione dell'assistenza territoriale, riformando profondamente alcuni aspetti della sanità regionale e imponendo un ripensamento dell'organizzazione dei servizi e dei modelli di offerta. Il DM71 definisce gli obiettivi, le funzioni e gli standard (tra cui personale, bacino di riferimento, servizi obbligatori e facoltativi) relativamente ad alcune nuove configurazioni dell'assistenza territoriale, che dovranno essere rispettati nello sviluppo della programmazione dei servizi. Tra questi citiamo la Casa della Comunità, l'Ospedale di Comunità, la Centrale Operativa Territoriale, l'Infermiere di Famiglia e di Comunità, le Unità di Continuità Assistenziale. Tuttavia, sia il PNRR che il DM71 lasciano ampi spazi di autonomia alle Regioni e alle Aziende Sanitarie Locali in merito ad alcune scelte strategiche e di policy puntuali. Si tratta di indeterminatezze fisiologiche legate alla vocazione dei servizi, ai target di pazienti, all'organizzazione delle interdipendenze e alle forme di integrazione da sviluppare, che variano a seconda della cultura e delle risorse disponibili nei diversi contesti.
Obiettivo. Il presente studio si pone l'obiettivo di condurre un'indagine critica del DM71, per definire in modo sistematico gli spazi di autonomia di cui i decisori regionali e aziendali si possono avvalere per pianificare, rafforzare e valorizzare i servizi territoriali. La ricerca mira inoltre ad individuare i trade-off decisionali che ne derivano, arrivando a definire alcune priorità strategiche su cui focalizzarsi e i nodi critici da sciogliere per attuare le indicazioni nazionali.
Metodologia. Nello sviluppo dell'elaborato è stata adottata una metodologia mista costituita da i) analisi desk di documenti (DM71; PNRR, in particolare la "Missione 6"; Manuale Operativo "Logiche e strumenti gestionali e digitali per la presa in carico della cronicità" rientrante nel progetto Agenas "Pon Gov Cronicità") e della letteratura disponibile sul tema dell'innovazione dei servizi di assistenza territoriale, finalizzata all'identificazione di una prima serie di tematiche che costituiscono gli spazi di autonomia per la programmazione locale; ii) validazione delle questioni emerse dall'analisi desk da parte di un gruppo di lavoro composto da key informant della Regione Emilia Romagna (direttori e dirigenti dalla Direzione Generale Cura della persona, Salute e Welfare e dell'Agenzia Sanitaria e Sociale); iii) organizzazione di tre focus group composti dalla direzione strategica (direttore generale, direttore sanitario, direttore amministrativo, direttore socio-sanitario, direttore assistenziale) di ciascuna delle 13 ASL e AO della Regione Emilia Romagna. Tali focus group hanno avuto l'obiettivo, a partire dal primo gruppo di tematiche individuate, di definire una prioritizzazione volta ad identificare una selezione più ristretta di questioni da considerarsi come più rilevanti.
Principali Risultati. L'analisi desk ha portato all'identificazione di 45 questioni di policy raggruppabili in nove macro categorie: i) utilizzo degli spazi territoriali esistenti e integrazione con il privato accreditato; ii) funzioni principali delle Centrali Operative Territoriali; iii) vocazioni e target della Casa della Comunità; iv) gestione della presa in carico della cronicità

attraverso il PAI; v) utilizzo di logiche di stratificazione della domanda; vi) vocazione degli Ospedali di Comunità; vii) target e gestione dell'Assistenza Domiciliare Integrata; viii) profilazione del ruolo degli Infermieri di Famiglia e di Comunità; ix) strategie di accesso e meccanismi di customer relationship management. In generale, le questioni principali che caratterizzano le nove aree tematiche riguardano lo skill mix change, il dimensionamento del personale e le vocazioni prevalenti. Infine, a partire dalle 45 questioni di policy, lo studio ha permesso di identificare le 10 questioni ritenute prioritarie, da considerarsi come un primo punto di partenza per l'attuazione delle indicazioni nazionali. Lo studio rappresenta un primo tentativo di mappatura e identificazione degli spazi di autonomia per la programmazione locale, ulteriori approfondimenti verticali potranno essere condotti relativamente a ciascun'area tematica, lasciando spazio ad ulteriori lavori di ricerca.

Title

Performance management, measurement and emerging technologies in the healthcare sector: a review of the literature.

Authors

C. Di Falco, G. Noto, C. Marisca, G. Barresi.

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 organizational 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 characterized 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 organizations and systems. Due to the novelty of many of these tools, a need to systematize 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 management” OR “performance measurement”) AND (LIMIT-TO (DOCTYPE, m"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 organizational 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 organizational and system level.

Title

Skill-mix change e flessibilità della forza lavoro: una leva per accompagnare la trasformazione dei servizi sanitari.

Authors

M. Del Vecchio, G. Giacomlli, R. Montanelli, M. Sartirana, F. Vidè.

Abstract

Il personale assunto durante l'emergenza Covid-19 ha replicato lo skill-mix esistente e la variazione nei comportamenti inter-aziendali è prevalentemente dovuta alla disponibilità del mercato del lavoro e alla differente capacità di attrazione (Del Vecchio et al., 2021). In questo senso, anche durante la pandemia il dibattito sul personale nel SSN ha osservato il problema della carenza di personale sanitario nella prospettiva dell'offerta, ovvero della capacità di incrementare il numero di professionisti sanitari e della loro disponibilità (Del Vecchio e Giacomelli, 2020), riproducendo la medesima composizione del personale del passato in una logica di path-dependancy (Pavolini e Kuhlmann, 2016).

Questa prospettiva tende a trascurare le opportunità offerte dallo skill-mix change (Buchan et al., 2001; Kroezen et al., 2019), ovvero da interventi sulla domanda che consentano di introdurre maggiore flessibilità nella composizione inter-professionale del personale delle aziende sanitarie e di rispondere in modo più efficace alla trasformazione dei servizi sanitari verso una dimensione territoriale. La stessa affermazione di una logica professionale e la costruzione di confini di ruolo riduce la flessibilità della forza lavoro nelle aziende sanitarie, limitando la possibilità di trasferire compiti e responsabilità tra diversi silos professionali (Nancarrow, 2015).

Sulla base del modello proposto da Atkinson (1984) e applicato all'interno del contesto sanitario (Nancarrow, 2015), il presente contributo mira a sistematizzare le pratiche introdotte dalle aziende sanitarie per incrementare la flessibilità della propria forza lavoro, in termini di flessibilità numerica interna ed esterna, flessibilità funzionale, flessibilità nella localizzazione del lavoro, flessibilità nei salari. Pertanto, l'articolo mira a rispondere alle seguenti domande di ricerca: Quali sono le forme di flessibilità della forza lavoro che sono state introdotte per gestire l'emergenza pandemica e l'evoluzione dei servizi territoriali delle aziende sanitarie? Quali di queste esperienze sono risultati efficaci e sono generalizzabili all'interno del SSN?

Per rispondere a queste domande di ricerca, l'articolo adotta una metodologia qualitativa attraverso: (i) lo svolgimento di un focus group con le aziende dell'Osservatorio "Politiche del personale" di FIASO per identificare le principali criticità nei processi di skill-mix change e flessibilità del personale sanitario; (ii) la realizzazione di interviste per l'elaborazione di casi studio su modalità innovative che hanno consentito di incrementare la flessibilità della forza lavoro ed accompagnare la trasformazione dei servizi territoriali; (iii) lo svolgimento di un focus group con le aziende dell'Osservatorio di FIASO per discutere le evidenze emerse al fine di definire un quadro interpretativo condiviso, proposte di management e di policy per il SSN.

Title

Non-Financial Disclosure in Healthcare: an empirical analysis on the adoption of Sustainability Reports in public and private healthcare organizations.

Authors

A. Prenestini, C. Vurro, S. Romito, A. Tschrepp.

Abstract

Sustainability, as the process by which organizations integrate social and environmental concerns in their ongoing operations and interactions with stakeholders, is mainstreaming across sectors, paired with the adoption of tools and the implementations of activities impacting dimensions which Elkington (1997) defined as the "Triple Bottom Line" (TBL), i.e. economic, social and environmental. Within the set of available tools, Sustainability Reporting (SR)–also referred to as Non-Financial reporting or Social Reporting -allows to convey disclosure of information to internal and external stakeholders on dimensions of performance other than financial, making organizations accountable for their decision-making, establishing legitimacy and aligning expectations (Marasca et al., 2020; Romito & Vurro, 2021). While regulators are increasingly forcing organizations indifferent sectors to disclose non-financial information, the adoption of disclosure for public and private NHS-accredited healthcare organizations (HO) is mostly voluntary. In the public context, the theme of legitimacy is distinctly relevant (Montesinos & Brusca, 2019), reinforcing the concept that healthcare would benefit from a complete range of Accountability initiatives, in consideration of: I. The mission and multidimensionality of the value produced; ii. The multiple interests of stakeholders, due to the nature of public but also private HO, which are mainly NHS-accredited in Italy. Moreover, the value conveyed through SR would enhance the transition towards a One Health approach to healthcare, as a response to the growing needs of citizens. The irdirect involvement in the determination of priorities allows for a socially sustainable healthcare system, indeed (Borgonovi & Compagni, 2013). Despite the relevance of the theme, research addressing SR within HO is still in its infancy, as also noted by Manes-Rossi, Nicolò & Argento (2020). Thus, evidence suggests that the study of how and to what extent Italian healthcare organizations are accountable towards their stakeholders, through the adoption of SR, could improve current understanding of the benefits related to sustainability integration. The main objective of this research is to analyze SR within a large, relevant subset of Italian public and private HO, by: i. unfolding the state of the art of SR integration within these entities, by identifying and content analyzing existing SRs (first phase); ii. Understanding barriers, drivers and benefits related to adoption, through a multiple case study of best practices (second phase).

To analyze the implementation of SRs we collected data on both public HO with at least one hospital and private hospitals (traced back to their controlling group) included in the datasets provided by the Ministry of Health. The total sample consistedof607 organizations, 419 of which are private and 188 public. The latest available SR for each organization, published between 2016and 2021, was analysed. The final sample was equal to 43 reports, 20 of which from private HO and 23 from public HO. The framework provided by the Global Reporting Initiative was adopted as the interrogation instrument to classify the content of the reports in categories. Best practices were identified according to the completeness of the published SR and analyzed through semi-structured interviews administered to the key actors involved in the development of SR. The results of the first phase of the research show that only 7,1% of the organizations considered have published and made available a SR between 2016 and 2021. In terms of information disclosed, our analysis revealed that private HO are more accurate in referring to a wider array of material

topics and groups of stakeholders as compared to public HO. It must be noticed, however, that public HO are required, by law, to disclose some of these information in documents other than SR (e.g., Performance Report, corruption prevention plan, etc.), without including it in their SR in some cases. Weal so found that 32,5% of disclosing organizations are Research Hospitals – IRCCS, which seem generally more prone to disclosure. Multiple case studies are therefore provided to investigate the role of SR within best-in-class organizations, the drivers which have led to the adoption and the related barriers, along with the benefits obtained. Our study contributes to the existing literature by unfolding the current level of awareness and disclosure priorities by HO. Moreover, the qualitative investigation unfolds the beneficial effects of SR adoption, providing insights for non-adopters and suggesting paths of improvement for those who are now approaching such disclosure. Eventually, not only implications for managerial practices, but also for policy-makers are discussed, together with insights for future developments of reserch in this area.

Title

Emerging organizational models for the management of a not yet recognized rare condition: the case of SBS - CIF in Italy.

Authors

Zazzera, E. Trinchero, V.D. Tozzi.

Abstract

Background. The Short Bowel Syndrome (SBS) is the clinical condition associated with the short intestine, that occurs mainly because of a surgery to remove a portion of the small intestine, that becomes necessary to treat intestinal diseases (like cancer or Chron's disease), injuries, or birth defects (Pironi, 2016). The SBS condition is the most frequent cause of the benign chronic intestinal failure (CIF) leading to the parenteral home-based nutrition (HPN) which is currently considered as the primary therapy (Pironi et al, 2015). In Europe, the prevalence of HPN for CIF due to benign disease has been estimated to range from 5 to 20 cases per million population (Pironi et al, 2012). The CIF associated with SBS (hereinafter, SBS – CIF) can be reversible, thanks to the intestinal adaptation process and/or intestinal rehabilitation programs based on a highly costly drug treatment and surgical procedures, thus allowing patients to be made independent from HPN (Pironi, 2016). Weaning from HPN can be achieved after 1-2 years in the 20-50% of adult patients (Pironi et al, 2012). CIF due to benign disease has been included in the 2013 Orphanet list of rare diseases (Orphanet, 2022). To treat the SBS – CIF condition, two clinical competences are needed: gastroenterological competences and clinical nutrition competences, thus making the integration and coordination of MDs a key element of patient care (Pironi, 2016).
The SBS – CIF condition in Italy is characterized by some critical aspects from an organizational point of view: the Italian NHS has not recognized the SBS – CIF as a rare disease yet, thus causing jeopardized dedicated policies at the regional level (only a few regions have identified the prescribing units). Therefore, there is a lack of shared patients' dataset, shared clinical pathways, and formal clinical networks that can foster the necessary multidisciplinary care. Furthermore, the high costs linked to the pharmacological treatment pose challenges for the identified prescribing units in terms of budget constraints. The Italian peculiar scenario leads us to consider SBS – CIF as a paradigmatic example of a chronic condition with low prevalence, high complexity, high linked costs, and a lack of a national policy.
Objectives. The paper aims at exploring the emerging organizational models for the management of such a peculiar condition. The paper discusses the consequences for patients in terms of access to care and equity of treatment deriving from the different organizational models that emerge in a scenario of a "non-managed" pathology.
Methodology. A mixed-methods methodology has been applied including: i) literature review on organizational models for SBS – CIF at an international level; ii) semi-structured interviews with key informants (e.g., clinicians, units' directors, patients' associations). The interviews have been analyzed for emerging themes (Gioia et al, 2013) using NVivo software (version 12). The interviews aimed at exploring mainly three dimensions: description of the unit (organizational dependence, dedicated team, etc.), description of the phases of the patient clinical pathway, relationship with other units/hospitals.
Results. Firstly, following the analysis of the key characteristics of the units dealing with the SBS – CIF, the following variables emerged: a) the responsibility on patient's clinical pathway and b) the prescribing power. According to these variables, three models can be identified: i) units that prescribe the treatment and are in charge of the patient's journey; ii) units that prescribe the

treatment but are not in charge of the patient's journey; iii) units that cannot prescribe the treatment but are in charge of the patient's journey.
Moreover, the study shows different ways to reach the necessary interdisciplinarity among MDs. We observed that interdisciplinarity can be reached through: i) the concentration of required competences (gastroenterological and clinical nutrition) in one clinician; ii) the integration of two different organizational units (gastroenterology and clinical nutrition) located within the same hospital, through multidisciplinary teams; iii) the integration of different organizational units located in different hospitals, creating informal professional networks, also supported by telemedicine tools.

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Title

Exploring the relationship between performance and technology adoption in healthcare: an organization-based view.

Authors

F. De Domenico, G. Noto, M.C. Cinici.

Abstract

Over the last two decades, scholars have devoted increasing attention to technology adoption in the healthcare sector (Shani et al., 2000; Lettieri, 2009, Davis et al., 2015), and some have focused on its impact on performance (Salge and Vera, 2009). Whereas few studies have found a positive relationship between technology adoption and financial performance (e.g., Menachemi et al., 2006), most of these researches have focused on the impact of specific technologies on the performance of organizational units or medical specialties (Adler-Milstein et al., 2015). Along this vein, Zengul et al. (2018) have proved the link between a larger breadth of high-tech services and total margin, but only among not-for-profit hospitals. The study performed by Laurenza et al. (2018) indicates that technologies could increase efficiency and, at the same time, allow for the delivery of better quality and reduced response times, with many benefits for several stakeholders, such as national health systems, clinicians and patients. Eventually, after analyzing data on health information technology adoption, Williams et al. (2016) have advised that prudent consideration of organizational characteristics and technology is needed before investing in innovative programs. Indeed, scholars have neglected to consider how the overall propensity to adopt technologies affects organizational performance. This research aims to fill this gap by investigating the relationship between technology adoption and organizational performance. It builds on the premise that as healthcare moves toward new patterns and models, it would be essential to disentangle this relationship to provide specific managerial and policy recommendations. Innovation can be an effective tool for improving health care quality. However, simply investing in new technology is not enough to add value to health organizations.
Specifically, data drawn from 85 Italian healthcare organizations were analyzed through Ordinary Least Squares (OLS) regressions on panel data from 2016 to 2019. To measure the organizational propensity to adopt technology, we built an indicator by comparing the expenses on active implantable medical devices and the total expense in medical goods. These devices are mainly used in surgical treatments. In some treatments, physicians choose whether to use a device or provide the service without its support; other treatments can be performed exclusively with these technologies. As such, this indicator measures the overall propensity to adopt health technologies at the organizational level and the ability to deliver treatments requiring the use of such devices.
As a performance measure, we adopted an indicator measuring the average bed days for surgical treatments (for the same kind of treatments over time). This is a decreasing indicator (i.e., lower values correspond to better performance) measuring the performance of health and organizational processes.
Results show a negative and significant relationship between technology adoption and the process performance indicator. As such, the greater the propensity to acquire medical devices, the better the result in terms of performance is. Other exciting insights are related to the impact that other structure variables, such as size and diversification, have on performance. In fact, we observe that the larger and more diversified a hospital is (measured in terms of employees), the worse its process performance is. On the other hand, the greater the number of hospitalizations and the day-hospital and surgery places are, the better the process performance is.

To the authors' knowledge, this is one of the first studies focusing on the link between technology adoption and the overall organizational performance. To do that, the article proposes an innovative solution to measure technology adoption at the organization level. This element, although representing one of the original features of the research, is also one of the key limits. Another limit is related to the fact that the research is conducted in Italy, therefore results may be influenced by the peculiarity of the Italian Health System. To overcome this limit, further researches may compare these results with those coming from other national health systems.

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Title
Applying Dynamic Business Modelling for Sustainability to Healthcare Sector Organizations.

Authors
F. Cosenz, G. Noto.

Abstract
Background. Healthcare sector organizations play a well-recognized crucial role in supporting the health of communities worldwide. They are conventionally structured as large-sized organizations with several central and peripheral branches aimed to satisfy a plurality of care needs by covering large spaces within a specific local area. In addition, these organizations articulate health services by involving other community players, both up and downstream, thus significantly impacting the sustainable development of the area. Given the scale and complexity of the healthcare sector, additional methodological efforts are required to provide managers with strategy design and performance management tools which may also include measures of the sustainable value (i.e., economic, social, and environmental) created in the long-term.
Objectives. Based on the above background, the paper aims to suggest the adoption of a Dynamic Business Modelling (DBM) approach to managing the performance of healthcare organizations according to a sustainable perspective. Such a perspective is oriented to consider not only output but also outcome measures related to the economic, social, and environmental value produced by these organizations. This DBM version relies on an adapted sustainable business model canvas boosted by a systemic approach to frame the causal relationships amongst the key performance variables.
Methodology. Pursuing the research objectives implies investigating how to adapt the DBM approach to the specific strategic and organizational attributes characterizing healthcare organizations' sustainable value generation processes (i.e., value creation, delivery, and capture). To this end, after examining the rationale of the DBM method and its working principles in healthcare organizations, the paper describes an illustrative application of its practical use, thus enabling an analysis of its potential implications in terms of advantages and limitations.
Main results. Healthcare management scholars have only recently proposed the use of business model constructs in healthcare organizations, thereby introducing a further managerial tool from private-sector practices. Drawing on this research stream, findings are expected to offer a critical exploration of a systemic sustainability-based approach to designing and implementing innovative organizational models and service formulas for advancing current healthcare settings and related performance.

Title

Implementing the balanced scorecard in professional bureaucracies: a longitudinal, in depth comparison of two case studies.

Authors

A. Prenestini, S. Calciolari.

Abstract

The New Public Management (NPM) wave profoundly affected the public sector at the global level, with different timing in different countries. Since the early 1990s, the Italian healthcare sector underwent a process of regional decentralization and corporatization; the latter resulted in a broadening of the organizations' degree of autonomy and accountability. Since mid-90s, the NPM affected the federal and local administrations in Switzerland, with different timing and paces, and in 2000 a cantonal law reformed the public hospitals of Ticino creating the public institution Ente Ospedaliero Cantonale (EOC), with clear traits of corporatization.

One cornerstone of these changes has been the widespread adoption of management control and budgeting systems. The most innovative healthcare organizations started to introduce integrated management control systems: Balanced Scorecard (BSC) model by Kaplan and Norton (1992) has been considered particularly relevant due to its multidimensionality of control perspectives. The BSC has been developed in Italian healthcare organizations approximately starting from the early 2000s and academic studies on empirical cases were published during that decade. This innovation process influenced also the EOC, with a first experiment in 2005 and more systematic attempt after 2010.

This study aims to empirically investigate the evolution the BSC in healthcare organizations. We want to explore whether it is still a valid and efficient control tool, or if management control systems have evolved towards new horizons. Furthermore, it has been deemed important to investigate the drivers and barriers behind the evolution of management control tools/approaches in healthcare organizations.

The methodology is based on two case studies that, currently, represent success stories (i.e., BSC is still adopted) in different contexts: the San Martino University Hospital in Genova (Italy) and the EOC in Bellinzona (Switzerland). The data collection relied on access to institutional documents and reports on the BSC (from its introduction to the current years), and on semi-structured interviews, administered to the main sponsors of the introduction and development of the control tool. The comparative logic is the one of the most different system design (Landman, 2008; Pennings et al. 1999): the two cases differ in all but few variables, while they are both success stories. Because the phenomenon investigated is present despite the differences in many other factors, researchers can argue that there is a relationship between such phenomenon and the few common factors. The argument is based on the in-depth longitudinal analysis of the case studies.

The discussion of the results is focused on: (a) the role and the technical features of BSC in healthcare organizations; (b) the role of the internal sponsor in the implementation and development of the BSC; (c) the information technology and the controller's professional skills deployed to deal with the increasing complexity of data management; (d) the cultural and organizational drivers and barriers to the introduction of BSC in professional bureaucracies such as the healthcare organizations. The implications of the "legacy" of the BSC are discussed, along with future developments of integrated management systems aiming to achieve an optimized management of internal and external data, helping to support strategy and operations.

Title

Telephysiotherapy for urinary incontinence prevention during COVID-19 pandemic: a prospective cohort study on self-reported outcomes rete.

Authors

A. Ferrari, M. Bonciani, I. Corazza, M. Vainieri.

Abstract

Background. The COVID-19 outbreak was detrimental for healthcare routine practice and delivery of health services. Pregnancy care and prevention activities were largely suspended during the phases of lockdown, with potential negative effects on postpartum recovery. However, given the benefits of pelvic-floor-muscle training (PMFT) during pregnancy for preventing urinary incontinence (UI), urogynecological physiotherapy and antenatal classes were maintained despite the pandemic, but they were conducted through online platforms because of large-scale social restrictions and physical distancing measures.
Objective. To explore how the COVID-19 pandemic influenced the self-reported occurrence and severity of pregnancy-related UI in the maternity pathways of Tuscany, Italy, considering that telephysiotherapy sessions and antenatal classes were organized online in response to social distancing measures.
Methods. We selected a pre-COVID-19 cohort (n=1,018) and a post-COVID-19 cohort (n=3,911) of women that completed all three surveys administered at three time-points from the first trimester of pregnancy until three-months postpartum. These surveys included a validated patient-reported outcome measure for UI (ICIQ-SF: International Consultation on Incontinence Questionnaire, Short Form) as well as several sociodemographic and clinical questions. The study period was from March 2019 to June 2021.
Data were obtained from the systematic and longitudinal online surveys carried out in Tuscany to catch and monitor pregnant women's experiences, outcomes, and satisfaction across the maternity pathways of Tuscany. Panel regression models were performed to explore how the risk of UI occurrence (in terms of presence of UI symptoms) and severity (in terms of higher ICIQ-SF scores) differed between groups.
We employed logistic regression for UI occurrence and linear regression for ICIQ-SF scores. We also ran stratified analyses for the type of UI and the PFMT regime, and interaction analyses between the variable for COVID-19 group and the other women's sociodemographic and clinical features.
Results. UI occurred less frequently (Odds Ratio = 0.83, 0.71 to 0.97) and less severely (Coefficient = -0.17, -0.28 to -0.06) in post-COVID-19 patients. Stratified analyses revealed that such "protective" effect was limited to women suffering from stress or mixed UI and women never performing PFMT. On the contrary, no difference emerged in women performing during-pregnancy PFMT. During the COVID-19 pandemic, obese women had a higher risk than before, while women undergoing operative delivery had a lower risk. The COVID-19 group reported more severe UI at the third trimester. However, women suffering from during-pregnancy UI and belonging to the post-COVID-19 group reported lower ICIQ-SF scores postpartum.
Conclusions. During the COVID-19 pandemic, women suffering from mixed or stress UI and women never performing PFMT reported less UI symptoms compared to the pre-COVID-19 period. Since the proportion of women never performing PFMT was higher during the pandemic, we hypothesize that the lockdown-related sedentariness and inactivity might have prevented women from noticing their symptomatology, especially if provoked by physical efforts. On the other side, the risk of UI occurrence and severity was not increased in women performing PFMT

during pregnancy despite the pandemic. Since the Local Health Authority and the health districts of Tuscany organized remote telephysiotherapy sessions and antenatal classes to face the lockdown-related difficulty in accessing antenatal care services, this evidence suggests that such initiatives were effective in protecting pregnant women from the risk of developing UI, showing resilience to the pandemic across the maternity care pathways of Tuscany. One possible limitation of the present study, but also an opportunity for further research, is to repeat the analyses by focusing on the health district rather than regional level. Indeed, telephysiotherapy and antenatal classes were promoted differently among the various health districts of the Tuscany Region, hence important variations in women self-reported outcomes may emerge at the sub-regional level.

Title

The role of new digital technologies in healthcare management: an explorative study.

Authors

M. Mauro, G. Noto, A. Prenestini, F. Sarto.

Abstract

Healthcare sector represents one of the most critical and fastest-growing industry in the World. This has been characterized by dramatic changes and significant challenges, also in the light of the recent COVID-19 pandemic (Secundo et al., 2021; Nambiar et al., 2013). Indeed, a number of tensions such as the increasing life expectancy and population needs (WHO, 2015) have enhanced healthcare costs, pushing these organizations to re-shape their structures and processes as well to develop new approaches to deliver services (Tortorella et al., 2020). In this circumstance, a pivotal role has been assumed by the emerging new digital technologies (Dts) such as big data, business intelligence systems, Artificial Intelligence (AI), machine learning, blockchain, and so on, raising new opportunities for organizations to improve their activity and foster their performance (Liao et al., 2015).

Overall, scholars have suggested that the integration within companies of these tools, also known as Industry 4.0 (I4.0) technologies, allows the customization of products, processes and services, driving firms to make more confident decisions and effective solutions with positive implications for several settings from manufacturing and logistics, to healthcare (Li, 2018; Guha and Kumar, 2018; Lasi et al., 2014; Dalenogare et al., 2018). The adoption of these I4.0 technologies in the healthcare sector has been referred to as Healthcare 4.0 (H4.0) (Thuemmler and Bai, 2017; Kumari et al., 2018; Aceto et al., 2020). Studies have pointed out that these emerging DTs can contribute to the improvement of healthcare decision making by allowing the collection, management and analysis of new and large sets of data (Kamble et al., 2018; Hasselgren et al., 2020; Secundo et al., 2021; Marrone and Hazelton, 2019). In this regard the WHO has suggested that fostering the adoption of DTs in the healthcare sector is related to their potential benefits in a broad range of activities such as stakeholder engagement, enhancement of health outcomes by creating more evidence-based knowledge, skills and competence for professionals and managers to support health care (WHO, 2021).

Concerning the area of application, Tortorella et al. (2020a) identified two main domains of application, that are ‘health treatments’ and ‘hospital supporting processes’. While the former refers to treatments and cares that patients may undergo, in terms of therapy, diagnosis and surgical practices (Wolf and Scholze 2017; Ciuti et al. 2016; Malik et al. 2015), the latter includes all managerial back-office processes that support the provision of cares, such as financial transactions (Alharbi et al. 2016), equipment maintenance (Gomez and Carnero 2011) and the management of drugs (Agha 2014).

With regards to the final users of such DTs, these not only allow the interaction and specialization of healthcare services for patients (Alloghani et al., 2018; Tortorella et al., 2020b), but they also enable a relevant analysis of data that is crucial for internal decisionmakers (Dalenogare et al., 2018). Scholars point out that such DTs can completely re-shape the decision-making processes of both clinicians and managers supporting the automation of data processes (Giones and Brem, 2017; Rippa and Secundo, 2019; Spanò et al., 2021). This is especially relevant in healthcare organizations where healthcare professionals and managers currently have access to a large amount and variety of information resulting from staff records, electronic patient records, clinical findings, diagnoses, prescription drugs, medical imaging procedures and mobile health. Therefore, the use of new DTs might support the process, the analysis and management of such

data in order to properly understand them and to take well-informed decisions (El Morr and Ali-Hassan, 2019; Ilangakoon et al., 2021).

While the topic seems promising and literature suggests that there has been implementation of H4.0 tools (e.g. Hopp et al., 2018; Wang et al., 2018), few studies have framed the contribution that DTs provide and may provide to decision-making, performance assessment and accountability in healthcare. Indeed, most articles explore the topic only providing conceptual analysis (Lehoux et al., 2017; Aceto et al., 2018) or assessing the evidence from a narrow perspective focusing on the introduction of specific technologies aimed at addressing clinical needs (Corny et al., 2020; Rolls et al., 2020). However, there is a lack of empirical studies holistically analyzing how the introduction of H4.0 technologies might support decision-making at each organizational level (Behkami and Daim, 2012).

With this in mind, this article aims to explore opportunities and challenges related to the DTs adoption in supporting administrative processes within Italian healthcare organizations, as well as to investigate the current digital needs of the Italian health organizations related to the administrative support.

To tackle the research objective, this work will undertakes a cross-sectional field study (Lillis and Mundy, 2005; Merchant and Manzoni, 1989) based on semi-structured interviews (Ahrens and Chapman, 2006) with key informants involved in the use of technologies - i.e. 3 top managers (CEO, clinical and administrative director), controllers, heads of ICTs units and any other responsible for the use and implementation of DTs in decision-making process at each level.

The interviews will last around 2 hours each and a follow-up with the interviewers will be conducted in case of uncertainty, missing data or just to confirm some of the information. Finally, and if necessary before analyzing data collected, the researchers will ask the respondents to revise the transcripts. Once all transcripts will be performed, the research team will discuss the data collected in order to build their analysis. The analysis will allow to identify not only the digitalization and technology adoption by Italian health organizations but also barriers and determinants of this adoption. This will enable to inform top managers and policy makers in supporting organizations in the achievement of the Global strategy on digital health 2020-2025 goals.

Title

Partecipare a progetti di telemedicina in un reparto di reumatologia: il punto di vista dei pazienti sul ruolo svolto dall'esperienza personalizzata.

Authors

L. Ferrara, E. Listorti, A. Adinolfi, M.C. Gerardi, N. Ughi, O.M. Epis, V.D. Tozzi.

Abstract

Introduzione. Con l'inizio della pandemia di Covid-19, molti reparti ospedalieri, compresi quelli di reumatologia, sono stati costretti a mettere in campo strategie di telemedicina. Le esperienze riportate sono state caratterizzate da grande varietà e livelli diversi di preparazione clinica e organizzativa (Hashiguchi, 2020). Alcuni professionisti avevano già familiarità con la telemedicina, come nel caso dell'Unità di Reumatologia dell'ASST Ospedale Niguarda di Milano, dove vengono attuati progetti di telemedicina da oltre un decennio con una progettazione strutturata e processi organizzati (Chevallard, 2021; Epis, 2016). Inoltre, nel reparto del Niguarda i pazienti possono sperimentare mix personalizzati di canali di telemedicina, tra cui e-mail e telefonate, questionari con Patient Reported Outcomes e consegna a domicilio dei farmaci. La combinazione di questi elementi rende questo un caso di studio paradigmatico, che consente di approfondire aspetti essenziali riguardanti il successo della telemedicina.
Obiettivi. Dato che l'ultima decisione sulla partecipazione ai progetti di telemedicina spetta ai pazienti (Eze, 2020), ci siamo posti l'obiettivo di approfondire il loro punto di vista. Ci siamo concentrati su tre aspetti principali: i) i benefici percepiti, ii) la volontà di partecipare a progetti futuri, iii) la preferenza sul mix di servizi tra contatti a distanza e visite di persona. In particolare, il nostro scopo è stato di esaminare le differenze esistenti nelle risposte dei pazienti sulla base del mix di servizi di telemedicina sperimentato.
Metodi. Abbiamo somministrato un questionario da novembre 2021 a gennaio 2022 ai pazienti che si sono recati presso il reparto di reumatologia. Il questionario è stato formulato partendo da questionari presenti in letteratura, come il TeleHealth Usability Questionnaire (Parmanto, 2016) e l'Intention to use telehealth services (Ghaddar, 2020), ma rivolgendosi contemporaneamente sia agli utilizzatori sia ai non utilizzatori di servizi di telemedicina. La nostra indagine comprendeva domande relative a informazioni personali, sociali, cliniche e competenze ICT, seguite dalle domande sulla telemedicina. Tutte le risposte sono state analizzate con statistiche descrittive e modelli di regressione multivariata.
Risulti. Una risposta completa è stata data da 400 pazienti: il 71% erano donne, il 59% aveva 40-64 anni, il 53% ha dichiarato di lavorare, e le malattie più rappresentate sono state l'Artrite Reumatoide (36%) e l'Osteoporosi/Artrosi (21%).
Il risultato principale dell'analisi riguarda la disponibilità a partecipare a progetti futuri e rivela che, nonostante il ruolo giocato dalle caratteristiche personali (es. essere un lavoratore è associato a una maggiore probabilità di adesione), ceteris paribus aver avuto un'esperienza più intensa di telemedicina aumenta le probabilità di voler partecipare nuovamente in futuro (OR= 3.1, 95% C.I. 1,04-9,25). Inoltre, è emerso che i non utilizzatori immaginano una più ampia gamma di benefici ricavabili dalla telemedicina, mentre la disponibilità a sostituire i contatti di persona con i contatti online è maggiore tanto più è stata fatta esperienza di telemedicina.
Conclusioni. Il nostro studio contribuisce a chiarire il ruolo cruciale svolto dall'esperienza di telemedicina nel determinare le preferenze dei pazienti.

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Title

Public value co-production in Italian Public Healthcare Organisations: evidence from a national survey.

Authors

C. Oppi, M. Panella, E. Vagnoni.

Abstract

Background. In recent years it has been shown that consumers and service providers in various sectors benefit from co-creating value (Vargo et al., 2017); there is, in fact, a growing need to involve patients and healthcare personnel in the development of new interventions to face the current challenges posed by the system's complexity, to make them relevant and applicable in practice (Grindell et al., 2020; Greenhalgh et al., 2016; Verde, 2009; Holmes et al., 2017). We are currently witnessing a managerial paradigm shift (Anderson and Funnell, 2005; Kjellström et al, 2019) that consists in an increasing adoption of new concepts such as 'public value' and 'public value co-creation' by public managers (D'amour and Oandasan, 2005; Bennington 2011; Gittell, 2011; Moore, 2013; Moore, 2014; Ambrosini 2019; Andersen, 2020). However, the international literature on public value co-creation does not provide many studies focusing on how this approach impacts the healthcare organisations' practice.
In a public value perspective, the ability to define actions that create public value for the citizens (Naranjo-Gil et al. 2016; Nuti et al., 2018) does not correspond to the volume of services provided, or the results achieved on patients in terms of health, but in the ability of the health system to help the neediest (Gray et al., 2017, Nuti et al., 2018).
For this reason, increasing attention is being given to methods for engaging citizens, or more generally, to involve stakeholders (Schillinger et al, 2013; Palumbo, 2017; Ambrosini, 2019) in re-designing services to answer the growing demand in health and social care (Barello et al., 2012; Palumbo, 2017) and in the provision of high-quality health services (Palumbo, 2017; Fusco et al, 2020). While the institutional policies (Fusco et al., 2020) and academia recognize the public value co-production approach as a potential response to current challenges, at the organizational level it has been given little attention to the feasibility in the practice and to how patients (Palumbo, 2016a) and other key stakeholders may be involved in the co-production of health services. There is therefore a clear need to develop an in-depth understanding of the extent, in which hospitals (and in what areas) public value co-production takes place.
Objectives. The purpose of the current work is to analyse the extent to which the co-production strategic approach is spread among the Italian public healthcare organisations. More in details, the paper aims at identifying the extent to what the strategy is well known among key players in the healthcare organisations and to investigate the tools adopted to support co-production.
Methodology. To achieve the above-mentioned aim, the survey method has been adopted to collect data from several different public healthcare organisations. This a questionnaire organised of 32 questions has been designed based on a previous literature analysis with the aim of capturing the perception of the respondents on the extent to what the main pillars of the co-production process were ongoing in the organisation. Thus, the questions aimed at collecting data about the involvement of patients/citizens to improve the quality of service and the patient safety; to reduce the access and treatments' inequalities; to re-define care pathways for chronically illness; and the better identification of the outcomes. Furthermore, the questionnaire allowed at collecting data on the use of technologies for gathering information and increase patients' involvement as well as on specific strategies adopted for the patients/citizens' involvement.

Based on a 5 points Likert scale answers the questionnaire was administered to 1289 directors of complex organisational units of hospital organisations and local health authorities' organisations in Northern Italian regions. The sampling method used was a sampling of probabilities, stratified (Yu et al., 1983) at the regional level but is not representative of the whole of Northern Italy. The regions were chosen for the accessibility of data and the presence of updated websites.
The directors of the complex organizational units were chosen as the participants considering their role in the operations management of the healthcare organisations and the specificity of each unit in terms of patients' relations. Through research on the institutional websites, all the available email addresses of directors of complex organisational units were collected (Tongco, 2007).
The questionnaire was tested in two phases before being distributed (Ricci et al. 2019): first with academic staff to ensure the validity of the measures, then with professionals to verify that the questions were understandable, and was subsequently modified based on the feedback received.
Italy has been chosen as a study setting given the paucity of the studies, which have mainly addressed Anglo-Saxons and Scandinavian countries. Furthermore, the healthcare sector has been neglected so far as a context of research on public value. The questionnaire has been administered online using Qualtrics platform in the timeframe December 2021-January 2022.
Main results. Considering the survey, 193 answers were collected (response rate: 15.0%). Data collected have been statistically analysed. Some of the results of the study includes:
A medium-high level of involvement of the patients/citizens to define improvements to increase the perceived quality of the service. To this regard the 27% of the respondents agreed on a high level of patients' involvement.
41% of the respondents have not implemented a strategy for patients/citizens' involvement to reduce the access and treatments' inequalities.
44% of the respondents have not (or limitedly) involved patients/citizens to define the care pathways.
The survey results provide evidence of an attempt that the organisations make to involve patients and citizens, nevertheless there are areas of involvement that can be enhanced to increase the public value co-creation. As the co-production strategies are not systematically adopted by the investigated healthcare organisations, the study allows at highlighting that there is still much room for using technologies as a means to share knowledge and information with patients and citizens and increase their involvement in.

Title

How to identify a multidisciplinary unit dedicated to the diagnosis and treatment of breast cancer?

Authors

F. Dalponte, L. Ferrara, A. Zazzera, V.D. Tozzi.

Abstract

Background. Over time, models of integrated management of specialised services on population targets have been adopted, generically called units or centres. Oncology is paradigmatic in this respect, as it offers examples of disease units that aggregate services of different disciplines in order to manage the outcome of a population target affected by a specific pathology (breast unit - hereafter BU -, lung unit, prostate unit, etc.). The reasons for this contribution to focus on the development and functioning of BUs as a paradigm of disease units include the numerosity of BUs due to the diffusion of breast cancer, their presence in all types of health care organisations, the wide debate around them and the pressure on their establishment coming also from the European level. Indeed, there are indications in some cases national, in others international on the promotion of models of organisation by pathology. However, a complex issue concerns the identification of the organisational conditions that make disease units effective in relation to health needs.

Objectives. The first objective of the research is to reconstruct the requirements and guidance for the identification of BUs, by comparing different sources at European and national level, while the second objective is to carry out a census of the BUs in Italy.

Methodology. The methodological approach that has been adopted includes:

- The reconstruction of requirements and guidance related to BUs at both European and national levels;
- The estimation of the number of BUs in Italy considering three databases: EuropaDonna census, the list of BUs registered in the SenoNetwork and the list of BUs with Eusoma (European Society of Breast Cancer Specialists) certification.

Main results. With respect to the reconstruction of BU indications, five sources have been analysed which define BUs, namely the Eusoma indications, the European Parliament resolutions (2003 and 2006), the guidelines on the organisational and care modalities of the breast centre network approved by the State-Regions Conference in December 2014, information derived from the SenoNetwork and that provided by EuropaDonna. The first result of the study is therefore the lack of a single source that univocally defines
what a BU is, but indications come from various sources, both institutional and from the world of associations.

The second result concerns how the BU is identified by the different sources considered. The Eusoma standards on Breast Centres (BC) require, among other things, the BC to treat at least 150 new cases of primary breast cancer per year. The multidisciplinarity of professionals is the pivotal element of the Eusoma standards, together with their specialist expertise and minimum standards of dedicated professionals. The resolutions of the European Parliament aim instead to give relevance to the topic of BUs by setting specific targets for the Member States, regarding screening and the qualification of the network dedicated to breast cancer. The ministerial document approved by the State-Regions Conference introduce the topic of functional coordination of the centre. SenoNetwork contributes to the definition of the BU by indicating its network membership requirements while EuropaDonna identifies two types of BUs: structural and functional ones. Differences exist between the various sources with respect to the indications on the professional figures involved: for example, while the ministerial document and the Eusoma

document always require the presence of at least 2 professionals per speciality, SenoNetwork lowers the minimum threshold to 1.
The third result regards the identification of the number of BUs active in Italy. Again, there is no single source that univocally identifies this number, but it is estimated from the reconciliation of three different databases. The EuropaDonna periodic census identifies 182 BUs, SenoNetwork has 135 BUs enrolled in the network, while Eusoma lists 20 BUs that have obtained the Breast Centre Certification. Finally, a comparison with the 2018 PNE data identifies 10 more structures with a breast cancer output of more than 150 cases per year. From the intersection of all the sources, it can be estimated that there are approximately 190 active BUs on the national territory, with a volume of activity >150 cases per year.
In conclusion, the analysis on the identification of the multidisciplinary unit dedicated to the diagnosis and treatment of breast cancer reveal four dimensions that shape the articulation of the BU and, more in general, of the disease units, namely the organisational responsibility, the level of specialisation of the professionals, the physical location of the treatment sites and the tools through which the centre operates, such as multidisciplinarity.

Title

Le Case della Comunità tra disegno e sfide dell'implementazione.

Authors

M. Del Vecchio, L. Giudice, L. Preti, V. Rappini.

Abstract

Background. Negli ultimi anni il nostro SSN è stato caratterizzato da una crescente attenzione alle forme di erogazione «fuori dall'ospedale» e in particolare al modello di erogazione della Casa della Salute (CdS) come fulcro dell'erogazione dei servizi territoriali.
Il potenziamento dell'assistenza territoriale è un'esigenza avvertita da lungo tempo, ma gli ultimi due anni caratterizzati dalla emergenza pandemica hanno generato una notevole pressione su tutti i servizi sanitari regionali affinché si realizzi un definitivo cambio di paradigma che veda nella prossimità e nella domiciliarità delle prestazioni due orientamenti strategici di fondo. A dimostrazione di questa rinnovata centralità, il governo italiano ha previsto, nell'ambito della Missione 6 del PNRR, che un'intera componente sia dedicata alle "reti di prossimità, strutture e telemedicina per l'assistenza sanitaria territoriale", nei cui obiettivi generali compaiono il potenziamento del SSN, "allineando i servizi ai bisogni delle comunità e dei pazienti" e il rafforzamento delle "strutture e i servizi sanitari di prossimità e i servizi domiciliari".
In questa nuova fase è rilevante il ruolo del livello nazionale nella programmazione e nella definizione degli standard del nuovo modello organizzativo della rete di assistenza territoriale contenenti requisiti strutturali, organizzativi e tecnologici. Assumendo dunque un punto di partenza progettuale uniforme, ricade sulle diverse realtà aziendali la sfida di declinare in maniera coerente ed efficace le linee guida nel proprio contesto territoriale di riferimento.
Obiettivi. Il lavoro intende contribuire al dibattito sulle sfide connesse all'implementazione del nuovo modello organizzativo dell'assistenza territoriale, e in particolare della Casa della Comunità (CDC), attraverso una ricostruzione esplorativa di approcci e attese delle aziende sanitarie. In particolare, la ricerca mira a produrre evidenze su come le aziende stiano lavorando alla progettazione della nuova rete dei servizi territoriali, come la riforma del modello di assistenza territoriale impatti sull'assetto pre-esistente e sui fattori critici di successo per una efficace implementazione.
Metodi. Gli obiettivi della ricerca sono stati perseguiti attraverso l'adozione di un approccio qualitativo mixed-methods che combina analisi desk, interviste semi-strutturate e focus group. L'analisi desk è finalizzata a ricostruire il quadro programmatorio a livello nazionale e regionale. Le interviste semi-strutturate consentono di ricostruire il percorso di declinazione e implementazione del modello CDC da un punto di vista manageriale. È previsto il coinvolgimento nelle interviste di circa 10 referenti di aziende sanitarie territoriali con l'obiettivo di raggiungere un discreto grado di variabilità rispetto a: a) area geografica di provenienza; b) contesto territoriale (urbano, rurale, metropolitano); c) struttura di governance del SSR; d) modelli di gestione dell'assistenza territoriale (e relativi gradi di maturità). La struttura delle interviste si sviluppa su tre macro-argomenti: (i) la ri-progettazione della rete dei servizi territoriali; (ii) l'impatto del nuovo modello organizzativo sulle configurazioni pre-esistenti; (iii) i fattori ostacolanti e abilitanti per un'efficace e sostenibile implementazione del nuovo modello. I due focus group hanno una funzione esplorativa delle variabili da indagare e confermativa rispetto alle evidenze raccolte.
Risultati. Per analizzare le evidenze raccolta viene proposta l'applicazione di un framework di Implementation Science (Consolidated Framework for Implementation Research). Il CFIR si sviluppa su cinque domini, tramite i quali i ricercatori propongono la reinterpretazione delle

evidenze raccolte: (i) le caratteristiche dell'intervento; (ii) l'ambiente esterno; (iii) il contesto interno; (iv) le caratteristiche delle persone coinvolte; (v) il processo di implementazione.
Dalle analisi preliminari emerge come l'introduzione del modello CDC rappresenti un'innovazione in termini di modalità di implementazione e ricalca quanto già fatto nel recente passato nell'ambito dell'assistenza ospedaliera (DM 70); in termini di contenuto, il modello sistematizza le esperienze di alcuni contesti regionali (CdS) che già prima della pandemia avevano iniziato a diffondersi sul territorio nazionale. Rimane ambiguo il grado di adattabilità del modello proposto a livello nazionale, rispetto alle specificità dei contesti locali, considerando la natura prescrittiva del provvedimento che lo introduce (che è tuttora oggetto di dibattito anche in ambito giuridico-formale). Gli intervistati sono concordi nell'affermare che tanto l'ambiente esterno, quanto il contesto interno avranno un ruolo determinante nella partita dell'implementazione, così come rimangono da sciogliere alcune questioni rilevanti per la declinazione del modello, come il trade-off concentrazione vs prossimità, quello sulla vocazione di questi luoghi nella scelta tra presidio generalista o specializzato, nonché sul ruolo e la funzione che gli sono affidati, che può essere di accesso e erogazione (con una forte connotazione fisica) o di erogazione e coordinamento (grazie ad un'interpretazione in chiave maggiormente digitale della CDC).
Tra i principali fattori critici da presidiare figurano il tema del finanziamento (e di come sostenere le spese nascenti in conto corrente), quello del personale (principalmente infermieristico) che sarà chiamato ad animare questi luoghi, quello del coinvolgimento dei MMG e dell'identificazione strategica del middle-management. Non mancano tra le sfide più citate anche quella della formazione e dell'integrazione di questi luoghi all'interno delle comunità e nelle più ampie reti dei servizi territoriali.

Title

Il prericovero centralizzato – centrale di programmazione chirurgica.

Authors

D. Giuffra, R. Bellini.

Abstract

Premessa. Il prericovero rappresenta una fase cruciale nel percorso del paziente ordinario chirurgico, in quanto consente di effettuare gli accertamenti a fini della valutazione del rischio anestesiologico e perioperatorio, necessari per l'intervento chirurgico.
Il governo di tale porzione di processo si rende necessaria per un'appropriata prescrizione degli esami necessari, un adeguato governo della domanda di prericoveri da parte dei reparti che sia in linea con la produzione delle sale operatorie e soprattutto in epoca Covid, una corretta gestione del percorso dei pazienti chirurgici. Inoltre tale attività ha un forte impatto sui reparti che gestiscono l'offerta delle prestazioni richieste in quanto operanti per l'intera Azienda e non dedicati al solo prericovero.
Nel corso del 2019 nell'Azienda Ospedaliera di Alessandria è stata effettuata un'analisi ed una riprogettazione del percorso ordinario chirurgico con focus sul prericovero e sulle fasi iniziali del processo chirurgico con lo scopo di reingegnerizzare il processo, centralizzare le attività, governare la domanda rendendo maggiormente efficiente l'offerta con lo scopo finale di migliorare il servizio offerto al paziente.
Metodi. Sono stati creati tre gruppi di lavoro (il gruppo strategico, il gruppo di programmazione e il gruppo operativo) organizzati su tre livelli decisionali crescenti, che coinvolgono i vari professionisti dell'Area Chirurgica, la Direzione, il Controllo di Gestione e la Gestione Operativa dell'Azienda, ognuno impegnato in diversa misura nel processo del paziente chirurgico.
Il progetto è stato strutturato in 4 fasi:

- I FASE – Identificazione del problema, analisi della situazione attuale e mappatura del processo, per determinare le inefficienze organizzative presenti;
- II FASE – Identificazione delle principali problematiche/tematiche da affrontare attraverso un severo programma di incontri bilaterali con i singoli reparti chirurgici e il gruppo di programmazione al fine di identificare contromisure efficaci alle problematiche sollevate;
- III FASE – Identificazione degli obiettivi e reingegnerizzazione del processo del Paziente ordinario Chirurgico nelle fasi di inserimento e governo delle liste di attesa, prospedalizzazione e scheduling delle sale operatorie secondo criteri condivisi.
- IV FASE – Organizzazione di incontri a frequenza programmata con il team per monitorare i risultati ottenuti e valutare nuove azioni correttive anche in conseguenza del mutare del contesto legato alla pandemia da Sars-Cov2.

Focus sugli strumenti. L'intero processo di revisione delle attività di preospedalizzazione e più in generale dell'intero percorso chirurgico, è stato portato avanti in conformità alle linee guida regionali emergenti che hanno posto l'accento sull'importanza del governo dei dati di input al prericovero, in particolare delle attività riguardanti l'inserimento dei pazienti chirurgici in lista di attesa e il governo di tali liste. Ci si è soffermati sulla definizione di uno schema di regole denominato il "DECALOGO DEL PERCORSO CHIRURGICO", che racchiude gli standard di gestione del percorso del paziente chirurgico in tutte le fasi del processo dall'inserimento in lista fino alle attività in sala operatoria. Un accento in particolare è da porsi all'introduzione dello score chirurgico all'interno delle liste di attesa, ossia un indicatore che fornisce al paziente un punteggio dinamico crescente in funzione della classe di priorità massima assegnata e del tempo

di permanenza in lista di attesa, che consente un approccio oggettivo alla schedulazione della lista di sala operatoria in funzione dei criteri di priorità definiti. Si tratta pertanto di uno strumento molto valido disponibile sia ai reparti a supporto della programmazione chirurgica, che ai gruppi di lavoro e alla direzione in fase di monitoraggio di quanto eseguito.

Risultati. La reingegnerizzazione del percorso del prericovero per il paziente chirurgica ha previsto una revisione globale dell'intero processo:

- Il paziente viene inserito in lista di attesa chirurgica informatizzata dal reparto secondo i criteri del decaologo;
- Lo scheduling di sala viene compilato sulla base del MSS e dello score chirurgico e inviato dai reparti alla Centrale di programmazione chirurgica con due/tre settimane di anticipo rispetto alla data di intervento;
- La Centrale di programmazione chirurgica programma gli accessi di prericovero dei pazienti nei 15-10 giorni successivi, secondo i vincoli di orario e di slot disponibili per consulenze previsti e definisce quotidianamente una lista di lavoro per il Prericovero Centralizzato;
- Il paziente effettua gli accessi di prericovero programmati al Prericovero Centralizzato e una volta concluso il percorso viene definito idoneo o meno all'intervento (i vari casi vengono gestiti congiuntamente tra Centrale di programmazione chirurgica, Prericovero Centralizzato e Reparti).

Title

Fostering the adoption and implementation of shared decision-making in breast cancer care: insights from a scoping review through the lens of the implementation science.

Authors

N. Oprea, V. Ardito, O. Ciani.

Abstract

Background. In the recent years, the growing attention for higher quality in cancer care has recognised the active engagement of patients as one important attribute of patient-centred care. Shared decision-making interventions, including patient decision aids, have been acknowledged as enabling patient's engagement in deciding the best course of treatment together with healthcare providers. Research has established the positive effect of using patient decision interventions on better patient knowledge and confidence with the choice made (Stacey et al. 2017). While the lion's share of studies was captured by evaluating patient decision aids and their efficacy, less attention was given to the introduction of different shared decision-making strategies/tools into clinical settings (Elwyn et al. 2013). If such interventions are to become standard and routine practice in breast cancer care, robust and systematic knowledge is needed to understand the conditions leading to their successful integration into organisations.
Objectives. The aim of this study was to analyse published scientific evidence on strategies or methods used for supporting shared decision-making and decision support tools adoption into routine clinical practice. The focus of the study is on breast cancer care because patients have different treatment options available and different professionals are engaged in teams treating breast cancer patients.
Methodology. As a first step, an electronic search, using the methodological guidance for scoping reviews, was conducted in three main databases (PubMed, Scopus and Web of Science) until November 2021. Other relevant studies were added in the second round of analysis by adopting snowballing techniques. The results of the review were then interpreted using the PRISM implementation science framework to yield factors determining the uptake of shared decisionmaking interventions in breast healthcare practice (Feldstein and Glasgow 2008). The PRISM framework, in addition to common models for implementation, provides for a fine-grained analysis of the developmental process of SDM interventions, as well as incorporating patients' and providers' perspectives when assessing the feasibility of implementing innovations around shared decision-making.
Results. Of the total of 82 full-text articles analysed, only 18 explicitly described or analysed a method or strategy of implementing shared decision-making into routine breast cancer care setting. Barriers and enablers of shared decision-making implementation were assessed under the 4 constructs of the PRISM framework: (1) intervention, (2) recipients, (3) external environment, (4) implementation and sustainability infrastructure. As for the intervention, both patients and physicians' involvement in the development of decision support tools is pivotal for later buyin. Decision aids are increasingly developed together with patients, following international quality standards (e.g., 32 studies followed the International Patient Decision Aids Standards (IPDAS) checklist). From patients' perspective, factors related to age, treatment choices, health literacy and socio-economic status, which can pose challenges to the process of decisionmaking, ought to be considered early in the developmental process. From the provider's perspective, decision aids were favourably received as tools that can support shared decisionmaking, communicate evidence-based information to patients and discuss risks and benefits of specific treatments. However, adaptation to clinician's consultation, including timing, integration into clinical

workflows and staff training were regarded as key pillars of the infrastructure that determine the adoption of SDM in daily practice.
Lastly, interest from health policymakers provided further support for the diffusion of SDM strategies in certain countries, such as, the US 2010 Affordable Care Act or the 2013 German Law on Patients' Rights. Concomitantly, the provision of standards and checklists (e.g. IPDAS, Ottawa Patient Decision Aid Research Group), and the emanation of clinical guidelines (e.g. UK National Institute for Health and Care Excellence, the American Society of Clinical Oncology) represent international resources that steer the direction of enhancing the quality of patientclinicians communication and ultimately health outcomes.
Conclusion. What emerges from this analysis is that a mere availability of patient decision support tools does not automatically translate into their use and adoption in a clinical context. Factors related to user-centred development, team attitude and experience, organisational support and reorganisation of clinical pathways influence the eagerness and levels of adopting shared decision-processes in clinical practice.

Title

Senza soluzione…di continuità.

Authors

M. Monaco, R. Roberta.

Abstract

Premessa. Nell'ambito del progetto di miglioramento dell'Area medica aziendale si è rilevato che uno dei fattori clinico organizzativi che impattavano sull'allungamento della DM nel Dipartimento internistico e di Urgenza era la dimissione difficile e in particolare l'attivazione di percorsi di continuità assistenziale a conclusione dei percorsi clinici (14 giorni dimissione ADI/CAVS vs 8,7 giorni dimissione a domicilio).
Una delle principali sfide di quest'epoca è sicuramente rappresentata da quella che viene definita "Integrazione Ospedale – Territorio". L'Azienda Ospedaliera è molto sensibile a tale tematica.
Le Criticità del processo derivavano dal rischio di degenze prolungate, tempi di richiesta reparto – nucleo di continuità (in fase inziale di 10 giorni), tempi di risposta del nucleo di continuità (in fase iniziale 5 giorni), irregolare compilazione delle richieste e delle valutazioni, gestione cartacea, impossibilità di conoscenza in real time dello stato della richiesta, assenza di dati e indicatori di monitoraggio di processo. Per tale ragione ha deciso di creare dei percorsi in grado di:

- facilitare le comunicazioni tra tutti coloro che prendono parte ai processi compresi caregivers e i pazienti;
- coordinare il processo di assistenza;
- includere la documentazione, il monitoraggio e la valutazione degli outcomes;
- identificare le risorse necessarie all'attuazione del percorso.

Per migliorare l'integrazione dei servizi sanitari con quelli sociali, è fondamentale fare affidamento ad un sistema informativo in grado di raccogliere le informazioni in modo celere e completo.
Metodologia. E' stato creato un gruppo di lavoro, sono stati individuati 4 reparti pilota, si è rilevato il processo esistente e si è proceduto a semplificarlo rispondendo alle necessità degli utilizzatori, si sono coinvolti altri servizi tra cui il Controllo di Gestione, l'ICT e il DPO aziendale e in parallelo è stato creato in collaborazione con SurgiQ srl un applicativo informatico che permette di snellire il percorso di dimissione e presa in carico da parte del Territorio di pazienti con patologie croniche o con problematiche sociali.
Obiettivo. L'obiettivo del progetto è stato quello di creare un modello organizzativo e di sperimentare un sistema informativo a supporto dell'attivazione del percorso di continuità Ospedale-Territorio presso Azienda Sanitaria Ospedaliera di Alessandria. La sperimentazione ha riguardato nello specifico i reparti maggiormente impattati dal processo (Geriatria, Ortopedia e Medicina) e coinvolgerà il Servizio Sociale dell'Azienda Ospedaliera di Alessandria.
Piano di implementazione e follow up. Il progetto si è articolato in 3 fasi:

- Studio del processo: rilevazione (AS-IS), condivisione dei documenti e delle schede di richiesta di attivazione assistenziale;
- Creazione ed implementazione nuova piattaforma: reingegnerizzazione del processo (TO-BE) e realizzazione dell'applicativo a supporto, individuazione delle specifiche tecniche necessarie all'implementazione e all'integrazione con gli altri applicativi aziendali;
- Presentazione dei risultati conseguiti: incontro di presentazione dell'applicativo prima dell'avvio della fase di sperimentazione e monitoraggio. La fase di sperimentazione ha

portato a una digitalizzazione della scheda di valutazione utilizzata del 100% per i reparti coinvolti con un notevole vantaggio in termini di tempo, di possibilità di errori e di condivisione in tempo reale delle informazioni.

Risultati.

- Riduzione della degenza media dei soggetti che accedono alla CA da 19 a 16 gg;
- Riduzione tempi di attivazione CA da 5 a 2 gg;
- % Pazienti con data di dimissione inserita a sistema da 0 a 100%;
- % Documenti digitalizzati da 0 a 100%;
- % Richieste gestite in piattaforma sul totale CA da 0 A 100%;

Dopo la fase si sperimentazione dell'applicativo stiamo lavorando per:

- adozione dell'applicativo in tutti i reparti ospedalieri;
- attivazione di riunioni settimanali sui ricoveri prolungati: con Direzione Medica di Presidio, Responsabili e Coordinatrici del Dipartimento Internistico, Assistenti sociali e referente del Nucleo di Continuità assistenziale. Con l'Obiettivo: analisi del percorso clinico e assistenziale del paziente, individuazione dei fattori bloccanti e ricerca congiunta di possibili soluzioni;
- Utilizzo congiunto dell'applicativo informatico ASO –AL con la ridefinizione delle modalità operative, profilazione dell'applicativo rispetto alle necessità di visualizzazione e di gestione delle fasi del processo ASO-ASL, completa digitalizzazione del processo dimissioni difficili.

Title

Digital transformation for service redesign and innovation in non-hospital settings.

Authors

P.R. Boscolo, F. Longo, C. Buongiorno Sottoriva, Massara.

Abstract

Background and objectives of the study. Digital transformation in health care certainty lags behind other sectors1, but the Covid-19 pandemic has made the system aware of the urgency to close this digitalization gap, increasing the investments in the technological infrastructure and promoting service integration. The Next Generation EU (NGEU) investment plan has clearly pointed to digitalization as one of the key assets for the European growth Similarly Italy, being among the first beneficiaries of the NGEU funds, has dedicated a large part of these resources to target digitalization. In the healthcare sector digitalization is expected to boost the efficiency and sustainability of the national health system, improving its capacity to satisfy citizens' needs, but designing an effective implementation strategy for digitalization appears quite challenging.
The Italian National Recovery and Resilience Plan (NRRP) blends two trajectories for innovation: the first one related to renovating the infrastructure (new or renovated settings, buildings, beds and technical equipment to be made available), the second one aimed at innovating services, enabling new care models especially in the domain of chronic disease management. Our work aims to develop a framework to support the digitalization' take off and to embrace the opportunity to improve care pathways especially for chronic and fragile patients. Italy is in fact the oldest country in Europe (22,8% of the population is over 65 years old2; demand for chronic care is escalating: more than 40% of the Italian population has a chronic disease and about half of them has more than one chronic condition, often requiring complex care pathways across different settings of care and the interaction of several professionals3. The current system's capacity is not sufficient to cope with the increasing demand and access to care appears to be often biased towards patient's cognitive and social capabilities rather than defined by policy prioritization. Within this context, digitalization can reduce unnecessary or redundant processes, increase transparency and guarantee stable information flows across different healthcare settings, thus cutting inefficiencies and improving accessibility to care and equity.
Methods. We adopted a Mixed-Method approach4, including both literature analysis and desk research as well as interaction with healthcare practitioners and policymakers. We conducted a literature review and a desk analysis to map recent policies and implementation experiences of managing chronic and fragile people' needs. This preliminary phase aimed at identifying best practices and the lessons learned from previous policy implementation and also informed the development of a new framework that could shape digital investments in primary and intermediate care. The framework is particularly suited to respond to the recent policy indications in Italy5, related to new organizational and infrastructural healthcare actors and settings (e.g., Community Hospitals, Homes of the community and Administrative Service Centers).
The framework was developed and tested through with structured and regular interactions with all Lombardy's LHAs general directors, health directors and social-health directors as well as with a sample of General Practitioners. First, we first presented an analysis of the key processes that could be redesigned or better connected with the support of digital tools, then we gradually adjusted the framework and structured a public validation process that is now being held in the largest region in Italy.

Preliminary description of the digitalization Framework. Currently the framework articulates around nine main steps that describe the whole journey of a patient, with focus on both back-office and front-office processes, from population health management and stratification to multi-channel access processes, evaluation and planning of comprehensive care and social care plans that are automatically screened and assessed in order to plan service delivery according to clear priorities. Thanks to the framework and its tools, prescribing, planning and monitoring processes and outcomes are all part of the same journey, reducing the burden for healthcare professionals,

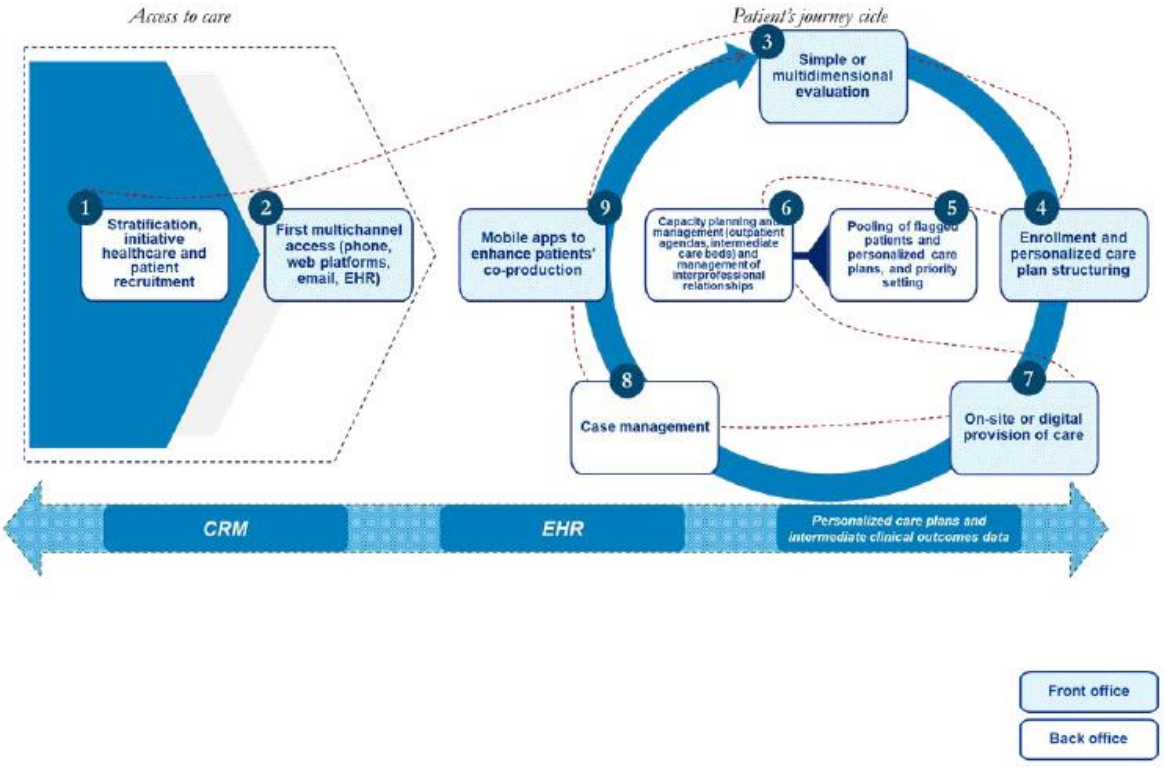

Figure 1 A framework for digitalization of non-hospital settings

patients and their families to organize long and often life-long lasting care pathways. Figure 1 gives an overview of the whole framework, and the full paper will discuss in detail the functionalities and tools that could be developed for each step.

Title

Workflow digitale per la cura del cancro al seno attraverso l'applicazione di tecnologia intelligenza artificiale e distributed ledger: Un modello basato sulla rete regionale di cura del cancro al seno di un ospedale universitario Tedesco.

Authors

S. Griewing, M. Lingenfelder, U. Wagner.

Abstract

Background. Nel corso dell'anno di 2021, l'Associazione tedesca di ginecologia e ostetricia (DGGG) ha fondato la "Commissione per la Medicina Digitale" con l'obiettivo di accelerare la digitalizzazione delle cure ginecologiche e ostetriche. Il gruppo di lavoro mira a promuovere lo sviluppo di una collaborazione interdisciplinare tra le discipline scientifiche della medicina, dell'economia e dell'informatica per affrontare le sfide presenti e future della cura. L'obiettivo è quello di promuovere la centralità e l'empowerment del paziente, migliorando al contempo l'efficienza dell'offerta di servizi medici per eliminare gli obblighi degli operatori coinvolti e liberare tempo di lavoro per una cura empatica e orientata al paziente attraverso l'integrazione delle moderne tecnologie informatiche. È stato scelto un punto di partenza con la modellazione scientifica e lo sviluppo di concetti per la cura del cancro al seno, per renderlo possibile a realizzare futuri casi d'uso e progetti di proof of concept.
Obiettivo. Lo studio presentato propone un modello di applicazione dell'intelligenza artificiale e della tecnologia distributed ledger per il workflow digitale della cura del cancro al seno. Pertanto, si basa su un'analisi approfondita della rete regionale di assistenza al cancro al seno dell'ospedale universitario di Marburgo per collegare il modello con i dati reali della cura. Per identificare le specificità dell'assistenza regionale per il cancro al seno, è stato realizzato un confronto con i dati identici della cura del cancro ovarico. I risultati hanno portato allo sviluppo di un modello tecnologico e al trasferimento del workflow dell cancro al seno. Lo studio mira all'identificazione scientifica delle sfide attuali e future dell'assistenza oncologica senologica come sottogruppo più importante della ginecologia e alla risposta su come l'attuale percorso del paziente possa essere modificato dall'intelligenza artificiale e dall'applicazione della tecnologia distributed ledger. Lo studio si conclude con la formulazione della lacuna scientifica che deve essere colmata da ulteriori sforzi di ricerca della commissione per lanciare un progetto pilota di successo nella cura senologica.
Metodologia. Lo studio si basa su un'analisi descrittiva retrospettiva di tutti i n=2.597 casi di cancro al seno (C50) e alle ovaie (C56) ricoverati presso l'ospedale universitario die Marburgo nel periodo 2017-2021. L'attenzione si concentra sulla descrizione del collettivo di pazienti per quanto riguarda la distribuzione dell'età e del sesso, lo sviluppo relativo del numero complessivo di casi, le diagnosi ICD primarie e secondarie, il DRG relativo al caso, la frequenza e la distribuzione geografica basata sul codice postale corrispondente, nonché i parametri economici di base della contabilità dei ricavi e dei costi. In base alle linee guida tedesche del trattamento del cancro al seno, è stato visualizzato il workflow della cura del cancro al seno e quindi è stato sviluppato il modello di workflow digitalizzato, basato sullo stato dell'arte della letteratura fornito da una ricerca aperta con combinazione booleana eseguita per {("Artificial Intelligence" OR "Machine Learning") AND (Medicine OR Oncology)} e {("Distributed Ledger" OR Blockchain) AND (Medicine OR Oncology)}.
Principali Risultati. Il collettivo di pazienti C50 presenta un'età media più giovane, una minore complessità del caso, un minor numero di procedure e di diagnosi secondarie codificate rispetto al

C56. Il 96% di tutti i pazienti C50 proviene da una città con una vicinanza geografica diretta. La circonferenza stimata e il bacino d'utenza totale della cura C56 sono più grandi del 28,6% e del 40% rispetto a C50. Un totale di nDLT=15 e nAI=19 rapporti di settore e white paper sono stati selezionati dalla ricerca bibliografica con operatore booleano. Il workflow digitalizzato per il tumore al seno integra l'applicazione della standardizzazione algoritmica da parte dell'intelligenza artificiale e la condivisione decentralizzata dei dati da parte della tecnologia distributed ledger. Un approccio ibrido alla gestione dei dati con metadati memorizzati sulla catena (on-chain), mentre i dati sensibili del paziente vengono crittografati e memorizzati su un cloudstorage fuori dalla catena (off-chain), conforme alla privacy, rappresenta l'attuale soluzione all'avanguardia. Il centrismo del paziente e la sovranità dei dati si realizzano dotando il paziente di un token con chiave privata per consentire al fornitore di accedere ai suoi dati sanitari personali fuori catena.
Il tumore al seno invasivo, in quanto principale tipo di malattia oncologica femminile, si presenta come un caso d'uso adatto per un workflow di cura digitalizzato. Le sfide legate alla mancanza di interoperabilità, ai bassi standard di privacy e integrità dei dati, all'elevata complessità dei processi in combinazione con i crescenti obblighi di documentazione, al cambiamento dell'ambiente demografico e lavorativo e all'aumento della pressione economica prevalgono nella cura del cancro al seno. Il modello di trasformazione digitale dualistico proposto, basato sulla tecnologia dell'intelligenza artificiale e del distributed ledger, e su un approccio ibrido alla gestione dei dati, che prevede una rete blockchain privata autorizzata e un cloud storage, conforme alla privacy, presenta un grande potenziale per affrontare questi punti critici. Il workflow digitalizzato per il cancro al seno crea benefici per i pazienti, i fornitori e l'intero sistema sanitario, sfruttando la facilità d'uso e l'interoperabilità, utilizzando i molteplici effetti di rete e stabilendo una struttura di governance condivisa che conferisce alla paziente la sovranità dei dati e la pone al centro della cura.

Title

Shared decision-making in breast cancer care: Insights from a survey across European breast cancer units.

Authors

V. Ardito, N. Oprea, O. Ciani.

Abstract

Background. With breast cancer increasingly considered as a chronic disease due to the advancements in breast cancer care, plenty of treatment options became available for patients. In this context, shared decisionmaking (SDM), defined as a process of collaboration between patients and clinicians to reach a joint decision about care involving multiple medically appropriate options, is acknowledged as a way to increase quality of cancer care. Patient decision aids (DAs) are tools that can facilitate SDM by making treatment decisions explicit, providing information about therapeutic options and associated benefits/harms, and clarifying the congruence between decisions and personal values.
Objectives. This study aims primarily at mapping the adoption and diffusion of SDM tools across Breast Centers in Europe using a cross-country survey.
Methodology. In order to design the survey, we first performed a scoping literature review. **Relevant articles** were searched in Pub Med, Web of Science and Scopus from 2006 to October 2021. The search strategy was defined with an iterative approach and used the following keywords string: [(shared decision making) OR (patient aid) OR (patient decision tool) OR (decision support)] AND (breast cancer). Data were extracted using an agreed-upon extraction form. Results were synthetized using mostly a narrative format. The studies selected informed the development of the survey to be administered to Breast Centers across Europe. It has less than 15 questions structured around 3 main sections, focused respectively on i) patient-clinician communication approaches, ii) the availability and use of patient DAs, as well as the perceived barriers and enablers, and iii) demographic information. The Ethical Committee of Bocconi University approved the study protocol. The survey draft was pilot tested with 9 clinicians from 7 countries to ensure its clarity among respondents with different nationalities or backgrounds. The survey was administered using the Qualtrics XM software and was disseminated with the support of several breast cancer networks, including EUSOMA, Breast Centers Network, Europa Donna, SenoNetwork.
Results. Our search retrieved 2.536 records overall. After removing the duplicates (N=939) and screening the remaining papers by title and abstract (N=1,597), 178 publications were selected for full-text reading, and 82 papers were included for data synthesis. Results show an increasing interest towards SDM in the field of breast cancer, as in the 2006-2021 timeframe more than half of the studies (N=44, 54%) were published from 2018.
SDM mostly appears as a non-European phenomenon, with 49 (59%) of the selected studies conducted in North America (USA and Canada). The Netherlands is only European country with a consistent number of studies on SDM (N=9, 11%). The majority of the DAs comes as digital tools (e.g., interactive web-based tools, websites, videos, apps). Paper-based solutions however remain relevant, either as standalone tools (e.g., booklets, option grids, question prompt lists) or in combination with digital channels (e.g., printable material from online platforms).
The survey is currently ongoing, with the field supposed to stay open until August 2022. Preliminary results based on N=113 valid responses (last update: mid-May) are encouraging, showing promising individual attitudes towards SDM and patient DAs. Roughly 50% of the respondents reports that DAs are available within their organization and/or country of practice.

Moreover, results show that, when DAs are available, the great majority (over 80%) of the respondents use them in the daily practice. To date, most respondents are surgeons and clinical oncologists with high seniority (i.e., over 20 years of clinical practice) from certified Breast Units.

Conclusions. The evidence from this survey will contribute to raise awareness on the importance of SDM, as well as to educate breast cancer specialists on the benefits of using DAs when communicating with patients.

The findings from this study will hopefully inform future updates of clinical guidelines in breast cancer care at the national and international level.

Title

Patient experience of in-center hemodialysis: advanced assessment toward more comprehensive and tailored care.

Authors

N. Spezia, C. Masella, M. Soncin.

Abstract

Background. Multidimensional and evidence-based measures of performance are increasingly required to assess and improve the quality of health care delivery [1]. One of the backbones of these measures should be the inclusion of the perspective of patients [1,2]. Among the different forms to elicit patients' perspectives, patient experience describes "patients' perceptions of the range of interactions they have with the health care system" [3]. These include several aspects that are highly important to patients, such as the provision of medical information or communication and relationships with health professionals. Patient experience provides an assessment of the quality of these different elements of health care delivery directly from the point of view of patients. Subsequently, this information can be used to stimulate quality improvement interventions in the areas in which poor experiences are reported. In this way, patient experience can move health performance measurement systems toward a person-centered approach [2,4], measuring and providing information to improve "what matters most" to patients besides appropriate medical treatments [5]. For these reasons, patient experience is increasingly recognized as a key indicator of health care quality [3,5].
Despite the growing interest and implementation of this measure, the actual use of patient experience to improve the quality of care and health services is limited [6–9]. Specifically, patient experience data —which are usually collected through surveys— remain often unused after collection [6]. This might be due to different elements of organizational, attitudinal, contextual, and cultural inertia [7–9]. However, there is also a need to enhance the interpretation of patient experience data [6], requiring the introduction of new techniques to extract more intelligible, meaningful, and actionable information from them. In this sense, a relevant role could be played by those methods creating linkages between different measures of health care quality and capable of segmenting patient samples [8]. Linking different quality measures enables data triangulation, allowing patient experience assessment to be used in more holistic quality improvement plans. Segmentation, instead, allows identifying what different patient subgroups need and value, which may account for significant differences and peculiarities. In this way, patient experience can provide valuable information to design and implement targeted interventions to address the specific needs and concerns of each subgroup. Therefore, patient experience assessment could be enhanced from a perspective of both more comprehensive and tailored care. This may be crucial to increase the use of patient experience in driving quality improvement in health care.
Setting. This study is carried out within the Interreg project "InterACTIVE–HD 2.0", which aims to improve the quality of life of patients undergoing in-center hemodialysis treatment along the Italian-Swiss border. Five public hospitals are involved in the project: ASST Lariana (Como), ASST Sette Laghi (Varese), ASST Valtellina e Alto Lario (Sondrio), Ente Ospedaliero Cantonale (Lugano), and Kantonsspital Graubünden (Chur).
Objective. This study aims to provide an advanced analysis of the patient experience of in-center hemodialysis. For this purpose, the specific experience profiles of different patient subgroups will be identified and associated with other measures of health care quality such as patient satisfaction with care.

Methods. Patient experiences of hemodialysis have been collected through a cross-sectional questionnaire composed of two sections: “nephrologists” and “dialysis nurses”. The survey included also two items (one for each survey section) measuring the overall satisfaction with care using a score ranging from 1 (worst satisfaction) to 10 (best satisfaction). The latent class analysis (LCA) statistical model will be employed to analyze survey data. This innovative technique has been recently implemented in the study of patient experience allowing the identification of distinctive subgroups with specific experience profiles, sociodemographic characteristics, and levels of overall satisfaction with care [10]. LCA is composed of three sequential steps: (1) independent subgroups (classes) definition using a stepwise procedure and statistical fit indexes, (2) classes’ characterization with sample’s descriptive variables through multinomial regressions, and (3) association and comparison of an outcome measure between classes using statistical hypothesis testing.

Title

Fabbisogni e modelli di servizio in trasformazione: il ruolo dei dipartimenti di salute mentale.

Authors

M. Del Vecchio, L. Giudice, F. Lecci, F. Longo, V. Rappini.

Abstract

Background. L'emergenza Covid-19 che stiamo vivendo ormai da più di due anni ha colpito duramente la nostra società e i sistemi sanitari anche sul fronte della salute mentale. Da un lato, i disturbi dell'umore, le psicosi, i disturbi d'ansia e i tentativi di suicidio sono aumentati ed è stato rilevato dalla Società Italiana di Psichiatria (SIP) un preoccupante aumento dell'aggressività in ambito ospedaliero e dei ricoveri in TSO (+8,6% dei casi).
Sul fronte della risposta al bisogno, d'altro canto, non sono mancate difficoltà con il numero dei posti letto dei Servizi Psichiatrici di Diagnosi e Cura (SPDC) sceso del 12% a causa della conversione in unità per pazienti Covid o per garantire un maggiore distanziamento. Inoltre, con riferimento specifico alla prima ondata pandemica, la SIP ha rilevato come i consulti psichiatrici ospedalieri siano calati del 30% e le psicoterapie individuali del 60%; anche le attività di monitoraggio dei pazienti in strutture residenziali e degli autori di reato affetti da disturbi mentali affidati ai Centri di Salute Mentale hanno subito una battuta d'arresto (con flessioni rispettivamente del 40% e 45%). Quanto descritto ha ulteriormente aggravato un quadro di criticità che ha sempre caratterizzato il rapporto tra psichiatria e aziende sanitarie. Nello specifico, l'ambiente offerto dalle dinamiche aziendali non è stato quello più coerente con la fisionomia dei servizi di tutela della salute mentale; analogamente questi servizi hanno fatto fatica a rendere evidente il loro contributo al complessivo soddisfacimento del fabbisogno, usando come prevalente elemento di interlocuzione con l'azienda il dimensionamento dei fattori produttivi a fronte di una faticosa esplicitazione degli output e degli esiti prodotti. Tuttavia la capacità dei servizi di misurarsi con i problemi reali e una attenzione del sistema ai temi del disagio psichico ci consegnano un quadro di partenza di pregio depotenziato da occasioni mancate, da coerenze che avrebbero potuto essere più attentamente ricercate e che avrebbero collocato i servizi legati alla salute mentale in una posizione meno defilata e meno difensiva rispetto a quella attuale.
Obiettivi. Il contributo intende, in primo luogo, produrre una sistematizzazione dei modelli organizzativi prevalenti ad oggi in ambito di salute mentale e ricostruire il quadro di offerta complessivamente disponibile sul territorio italiano, analizzando le formule di servizio prevalentemente adottate lungo la dimensione organizzativa, operativa, professionale e gestionale. Inoltre, la ricerca intende produrre un quadro di conoscenze relative all'assetto e al ruolo attuale dei Dipartimenti di Salute Mentale (DSM) che sia in grado di supportarne la definizione degli obiettivi futuri, anche in relazione alla ridefinizione della geografia di servizi in atto nel sistema, e l'elaborazione di un cruscotto multidimensionale di misurazione delle performance e di benchmarking.
Metodi. Da un punto di vista metodologico la ricerca si basa su un approccio multi-metodo che prevede, in primo luogo, un'analisi esplorativa della letteratura scientifica pubblicata sul tema dei modelli organizzativi prevalenti in ambito di salute mentale. Segue l'elaborazione di tre casi-studio aziendali, realizzati tramite l'esecuzione di interviste semi-strutturate rivolte alla Direzione e ai componenti del DSM, con l'obiettivo di mettere in evidenza elementi caratterizzanti e distintivi di diversi modelli organizzativi e di offerta.
È inoltre prevista l'analisi di dati raccolti tramite un questionario elettronico rivolto ai DSM di tutto il territorio nazionale, incentrata sui temi oggetto di analisi.

Infine, con l'obiettivo di discutere in forma semi-strutturata i risultati dell'analisi dei dati e quanto emerso dai casi studio, è prevista la realizzazione di due focus group che coinvolgano rispettivamente i direttori di DSM e direttori generali delle aziende rispondenti alla survey.

Risultati. I primi risultati emersi mostrano un'ampia eterogeneità negli approcci clinici e nei ruoli dominanti (dichiarati ed emergenti) che caratterizzano i DSM sul territorio e una significativa varietà nelle strutture e nei modelli organizzativi adottati.

Le attività svolte dal Dipartimento, tramite le diverse figure professionali che lavorano nei molteplici setting attivabili, si caratterizzano per una forte matrice multidisciplinare e per frequenti collegamenti e sinergie tra l'area sanitaria e quella sociale. Emerge inoltre come le attività svolte e le relative performance dei DSM siano raramente oggetto di un'efficace misurazione. Risulta pertanto complesso valutare l'efficacia delle azioni messe in campo, misurarne gli impatti e dunque comunicare efficacemente il ruolo e l'azione complessiva che i DSM promuovono, in tutta la loro complessità.

Infine, tra i risultati preliminari fin qui emersi, figura una diffusa consapevolezza circa alcune sfide che attendono l'area della Salute Mentale nei prossimi anni: (i) l'integrazione da ricercare con la nuova rete dell'assistenza territoriale e le modalità attraverso cui perseguirla, tra integrazione fisica, sfruttando la piattaforma di aggregazione multi-professionale offerta dalle Case della Comunità, e integrazione virtuale; (ii) l'emergere e l'acuirsi di bisogni a elevata prevalenza e incidenza come il disagio giovanile o i disturbi di ansia; (iii) la sfida delle risorse umane, dalla carenza di alcune figure professionali (ad es. gli psichiatri) alla comparsa di nuove forme e politiche di assistenza (psicologo di comunità o il bonus salute mentale).

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Title

The impact of visitor restrictions in hospital during covid-19 pandemic: the role of nurses and caregiver-reported experience.

Authors

E. Peruzzo, S. Caraffi, G. Tintori, S. De Rosis.

Abstract

Background. In response to the COVID-19 pandemic, from March 2020 Italian hospitals changed protocols and regulations and invoked visitation restrictions to protect health care workers, patients, and the public in the inpatient wards. These measures to contain the spread of the infection could have had an important impact on the experience with care of patients and their caregivers.
A bottom-up tquality improvement action was adopted in a Tuscan hospital: a group of nurses involved patients' families during the hospitalization and give them constant information via phone.
Objectives. The aim of this study is to investigate the impact of the above-mentioned bottom-up action promoted by exploring the caregivers' experience during the COVID-19 pandemic, and by analysing if the activities and cares implemented by nurses have made a difference during ordinary hospitalization.
Methodology. A comparative analysis was performed between an experimental group in one and a control group in another hospital that did not adopt the same practice, but serves a similar population, geographical area and has the same clinical manager. We defined and administered a survey to hospitalized patients' families. The questionnaire evaluates the caregiver's perception his/her experience with the family member or friend's hospitalization. The questionnaire consists of four sections: experience during hospitalization, discharge phase, overall assessment and sociodemographic features. We also include caregivers' needs and expectation with the service, and two open questions to collect more and in-depth information about hospital stay and caregiver's experience. Data collection from caregivers was performed between May 2021 and April 2022. The comparison between the two groups was tested by using a chi-square test. The analyses were made at a 95% confidence interval: a p value<0.05 was considered as statistically significant.
Main preliminary results. The survey respondents were 70 caregivers: 34 from the experimental hospital and 36 from the control hospital. Demographically, 34% of respondents is patient's partner or consort, 26% patient's son, 12.8% patient's grandson, 8.6% patient's brother or sister, 7.1% formal caregiver, 5.7% patient's son-in-law or daughter-in-law and remaining part declares to be friend or patient's mother. We highlight a prevalence of female caregivers: nearly 70% of the participants were female, 29.6% were male and 1.4% responds "other". These data confirm the "female declination" of the role of caregiver in our country. Most of caregivers are more than 65 years old (52.9%). According to Istat.it data, the elderly are more frequently caregivers of other elderly people who have greater health needs. The 93% of respondents are Italian and the 55.7% declares to have a low education. 34% of answerer assists patient from one to 4 years and more than 55% declares to care his/her dear for the whole week.
About inpatient, the 68.6% is elderly over 75, 47% is not self-sufficient, 23% represented person with a disability, 17% has degenerative diseases.
Almost all caregivers affirms that they don't have choice hospital, but patients arrive in hospital via emergency room service and/or because the hospital is closest to residence.

About hospital stay, we evaluated effects of the nurses' actions during patient's hospitalization. A significant difference for managing fears and anxieties by nurses (Pr = 0.002), communication and access to information (Pr = 0.000), clarity of information from nurses (Pr = 0.000), telephone contact between nurses and the patient's formal and informal caregivers (Pr = 0.000), discharge information about selfcare (Pr = 0.006), medicines (Pr = 0.014) and patient independence (Pr = 0.000). Generally, more than 70% of caregivers of patients admitted to the experimental hospital, declares a good experience during hospitalization (+18% than the control group) and this shows how a quality service provided to the elderly person exerts a positive effect on their caregivers. A significant difference also for willingness-to-recommend (Pr = 0.000). Additionally, in the open sections, formal and informal caregivers of patients discharged to the experimental hospital report thanks for professionals and highlight the presence of nurses during hospitalisation to create a family atmosphere. Caregivers reported the importance of involving during the hospital stay even from a distance, to know what happened in the hospital and patient's health status.
An improved experience of caregivers and patients is per se an improvement in the outcomes produced by healthcare organizations, as in the Donabedian model of care quality. However, further studies could investigate the economic consequences of the new practice of the nursing care, both in terms of increased time of care for the hospital, and in terms of decreased costs of caring for caregivers.

Title

A longitudinal assessment of chronic care pathways in real-life: self-care and outcomes of chronic heart failure patients in Tuscany.

Authors

E. Guidotti, F. Pennucci, S. De Rosis.

Abstract

Background. Worldwide healthcare systems face challenges in assessing and monitoring chronic care pathways and, even more, the value generated for patients. Chronic heart failure (CHF), among chronic diseases, require an alliance between settings of care, professionals, and the patients themselves. Therefore, it is important to develop measures that can monitor and evaluate the whole care pathway and to capture those elements that really atters to patients and impact on their quality of life and access to care. To integrate administrative datasets, patient-eeported outcomes measures (PROMs) represent a Real-World Evidence (RWE) source to fully assess health systems' performance in managing chronic care pathways. Aim: The overall aim of this case study consists in presenting the adoption of a longitudinal assessment tool as a chance for continuous monitoring patients' adherence to therapies and self-care behavior recommendations in clinical practice and as a chance to provide policy makers insights to improve chronic pathways adopting a patient perspective.
Methods. The focus for the analysis was on PROMs of CHF patients collected in the Gabriele Monasterio Tuscan Foundation (FTGM), a tertiary referral CHF centre in Pisa, Italy. During the hospital stay, CHF patients were enrolled and received a link (via SMS or email) to access to the first questionnaire. Follow-up questionnaires were sent 1, 7 and 12 months after the index hospitalisation. Quantitative and qualitative analyses were conducted, using Chi2, t-tests and regression models together with narrative evidence from free text responses.
Results. Professionals invited 200 patients to participate to PROMs surveys. 174 answers were digitally collected at baseline from 2018 to 2020. Both quantitative and qualitative results showed that FTGM patients declared to strongly adhere to the pharmacological therapy across the entire pathway, while seemed less careful to adhere to self-care behavior recommendations (e.g., physical activity). More in details, from the patient self-reported score, it emerged that on average CHF patients tend to augment their confidence level in self-managing over time, while their actual ability to adhere to self-care behaviors is more fluctuating. Better self-care scores are associated with better patient-reported outcomes over time both in terms of confidence and behavioral adherence. From the qualitative analysis, researchers could explore the role of family support for respondents' self-care. Indeed, patients declared to be supported by family members in managing their adherence for example: drug adherence, weight control, follow-up exams booking. Considering the professionals' role, patients reported that GPs are not always coordinated in supporting patients across the care pathway.
Discussion and conclusion. The continuous and longitudinal adherence monitoring enabled the collection of key information for the implementation of interventions aiming at improving patients' self-care. To improve patients' adherence to self-care behavior recommendations it could be useful to implement interventions which increase patients' awareness on the importance of adhering to recommendations to achieve better health outcomes. For example, behavioral economics interventions could be implemented to increase physical activity among CHF patients since proven successful in Tuscany. The evidence also suggests that when designing intervention to increase Self-Care Maintenance it is important to focus on the mediation/moderation effect of Self-Care Confidence. Specialist and GP's active follow up with patients is confirmed as

fundamental to support patients themselves in improving self-care adherence over time, leading to better outcomes. According to the qualitative results, strategies to increase primary care and support patients' caregivers in their daily activities to ensure patients' adherence should be further explored.

Title

Task Shifting nell'assistenza domiciliare: una revisione sistematica di letteratura per comprenderne le caratteristiche e il meccanismo.

Authors

M. Picco, E. Gheduzzi.

Abstract

Il desiderio di vivere nella propria casa il più a lungo possibile sta aumentando il numero di richieste di attivazione di cure domiciliari1, spostando la complessità di cura dall'ospedale al domicilio2. I professionisti che lavorano a casa del paziente hanno il solo supporto della rete informale di assistenza3 e limitate opportunità di condivisione con colleghi4. Inoltre, l'incremento di malati cronici e del tasso di anzianità ha aumentato l'interdipendenza dei percorsi assistenziali5 costringono i professionisti a lavorare ore extra, a prendere decisioni rapide6 e svolgere compiti che il loro ruolo non implica7. Poiché questi sforzi elevati non sono bilanciati da salari e contratti adeguati8, i professionisti dell'assistenza domiciliare sperimentano un alto livello di stress e decidono di spostarsi in ospedale9, aumentando la carenza di professionisti in questo ambito10.
Data la carenza di personale, è necessario ripensare e riorganizzazione i ruoli e le attività dei professionisti che operano nell'assistenza domiciliare11. La ridistribuzione dei compiti di tra i clinici, gli operatori sanitari e altri attori coinvolti nell'assistenza è chiamata task shifting (TS)12,13. Nonostante questa strategia sia stata largamente studiata nell'ultimo decennio, la sua concettualizzazione è frammentata14.
Obiettivi. Il presente lavoro riflette sul ruolo dei professionisti domiciliari attraverso la lente del TS. In particolare, si propone di studiare 'Quali sono le modalità di adozione della TS nell'assistenza domiciliare?'. Nel farlo, indaga 'Quali sono i ruoli e le attività che vengono coinvolte nel processo di TS?'.
È stata condotta una revisione sistematica di letteratura per chiarire le caratteristiche del TS15 con l'obiettivo di strutturare il concetto di TS.
La strategia di ricerca è stata sviluppata facendo riferimento ai concetti chiave delle domande di ricerca: "TS" e "assistenza domiciliare". A causa della scarsità di risultati, la stringa di ricerca è stata rivista ampliando il focus di analisi come mostrato in Tabella.

OR		OR		OR		OR
• "home care" • "homecare"	AND	• "role*" • "responsabil*"	AND	• "chang*" • "shift*" • "redistribut*" • "advance*" • "reshape*" • "redesign*"	AND	• "nurs*" • "home care assistant" • Physiotherapist • Pharmacist*

Tabella.1 - Stringa di ricerca

È stato scelto Scopus come database, selezionando tutti gli studi pubblicati dal 2008, anno della prima definizione di TS, al marzo 2022. La ricerca si è focalizzata sugli studi eseguiti in Paesi con un sistema sanitario pubblico per rendere i risultati comparabili.

La selezione degli studi è avvenuta attraverso lo screening del titolo e dell'abstract e, in seguito, la lettura del testo completo. Complessivamente, 173 articoli sono stati esclusi perché non si riferivano all'assistenza domiciliare, non coinvolgevano i professionisti sanitari o non discutevano di strategie riconducibili al TS. Il processo di screening è riassunto nel diagramma PRISMA (Figura.1).

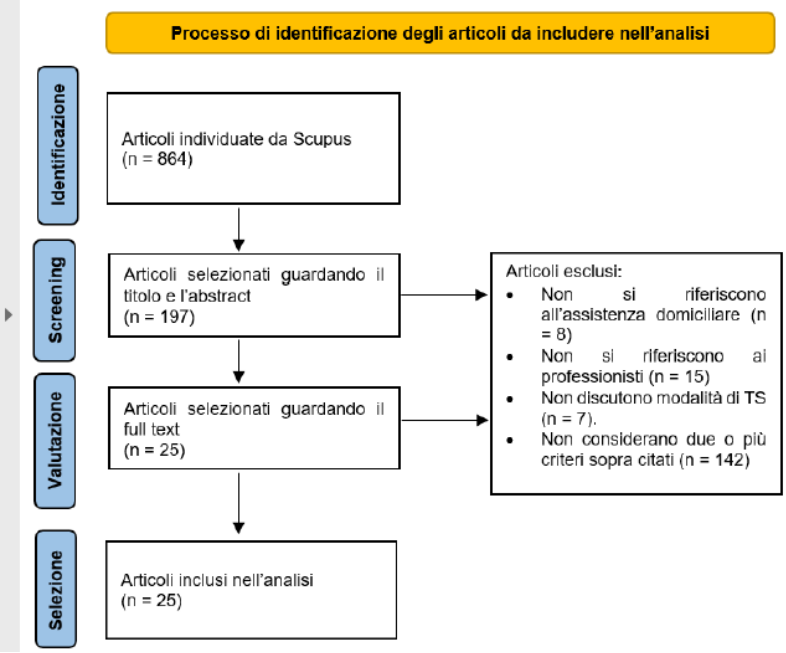

Figura.1 Preferred Reporting Items for Systematic Reviews and Meta-Analyses

I dati degli studi inclusi sono stati organizzati al fine di individuare le informazioni necessarie per rispondere alle domande della ricerca: le modalità di TS, i ruoli coinvolti e le tipologie di attività.
Principali risultati. La maggioranza degli studi è stata pubblicata negli ultimi cinque anni, a conferma del crescente interesse per questa strategia11, anche nel contesto di assistenza domiciliare.
Il numero di studi che adottano un metodo qualitativo è decisamente più elevato del numero di studi quantitativi. Inoltre, i contributi raccolti includono principalmente raccomandazioni e osservazioni, pochi forniscono valutazioni dell'implementazione del TS.
L'analisi rivela che la modalità di TS più diffusa è l'estensione del ruolo ampliando il numero di attività svolte dai professionisti. Oltre alle attività quotidianamente svolte, i professionisti per esempio gestiscono ferite complesse16 e garantiscono supporto emotivo ai pazienti17. La seconda modalità più diffusa è la delega di alcune attività, come il trasferimento di compiti normalmente svolte da infermieri agli operatori domiciliari (es. la cateterizzazione e la gestione delle colostomie18). La modalità meno ricorrente di TS è l'innovazione, ovvero la creazione di nuove figure professionali. Tra gli esempi individuati in letteratura c'è l'introduzione dei farmacisti per supportare i pazienti nella corretta gestione dei farmaci a casa19,20.
I professionisti domiciliari coinvolti nelle strategie di TS sono infermieri, operatori sanitari, psicologi e farmacisti. Mentre, i compiti che più spesso sono oggetto di riorganizzazione riguardano le attività assistenziali, come le attività di diagnosi e il trattamento farmacologico21.

Altri esempi di letteratura discutono la possibilità di ridistribuire le attività relazionali tra i professionisti, come l'ascolto e la gestione di conflitti tra pazienti e caregiver22. Meno ricorrenti sono i casi di TS che prevedono la riorganizzazione di attività amministrative che includono tutti i compiti organizzativi e gestionali, come l'attività di supervisione e controllo delle organizzazioni sanitarie e l'attività di partecipazione ai processi decisionali23. I compiti la cui riorganizzazione è stata meno discussa in letteratura riguardano le attività educative 24.
In conclusione, il TS può essere considerato una strategia utile a fronteggiare la carenza di personale sanitario nell'assistenza domiciliare. Molti esempi si sono focalizzati sulle attività sanitarie prevedendo un ampliamento del ruolo di professionista. Meno studiata ed interessante linea di ricerca futura è la riorganizzazione delle attività amministrative ed educative, la cui gestione potrebbe essere agevolata dall'utilizzo di nuove tecnologie digitali.

Title

Analisi dei processi di cura e micro-costing di 12 DRG pediatrici presso l'Istituto G. Gaslini.

Authors

F. Cavanenghi, C. Giuliano, S. Palmerino, F. Lecci, A. Furnari, A. Ricci, F. L. Zurlo.

Abstract

Background. Da più di un decennio, gli studiosi di management applicato alla sanità richiamano la necessità di cambiare l'approccio del calcolo dei costi. Assieme alla quantificazione dei costi dell'unità organizzativa, appare importante ricostruire il consumo di risorse riferibile al singolo paziente (Kaplan & Porter, 20111). Del resto, solo conoscendo i costi dei percorsi ospedalieri è possibile intervenire in senso migliorativo sulle attività e sui processi, migliorando sia la costo-efficacia dell'assistenza (secondo i paradigmi della Value Based Healthcare), sia l'efficienza delle unità organizzative. Salendo la struttura gerarchica, i livelli di costo sono un elemento conoscitivo importante per impostare e perseguire le strategie aziendali. Infine, rappresentano un tassello indispensabile per i regolatore e committente regionale, soprattutto in ottica di elaborazione delle tariffe.
In tale contesto, appare importante arricchire le evidenze disponibili sui costi dell'assistenza pediatrica che, non di rado, presenta profili di attività e livelli di costo differenti rispetto a quella erogata per pazienti adulti. Questo aspetto assume particolare rilevanza per strutture mono-specialistiche pediatriche ad alta specializzazione: la scarsità, o la limitata accuratezza, dei dati gestionali e di costo rende più difficile le scelte organizzative interne, ma anche l'esercizio della funzione di regolazione e committenza da parte delle autorità regionali.
Obiettivi. La ricerca è stata svolta all'interno dell'Istituto G. Gaslini di Genova, IRCCS pubblico mono-specialistico tra i punti di riferimento nazionali e internazionali per l'assistenza pediatrica. Con riferimento a 12 tra i principali DRG ospedalieri erogati dall'Istituto, è stata condotta un'analisi di e di costo per ottenere stime affidabili sia della quantità di risorse assorbite, sia dei relativi costi pieni. Più nel dettaglio, per ogni DRG analizzato, sono state determinate tre stime di costo pieno, corrispondenti ad una durata della degenza pari al primo, al secondo (mediana) e al terzo quartile della degenza osservata in Istituto. I valori ottenuti possono essere utilizzati internamente per la ricerca di sempre maggiori livelli di appropriatezza, efficienza e qualità, ma anche esternamente, come benchmark per altri ospedali a vocazione pediatrica o come elemento utile per le politiche di tariffazione dei DRG.
Metodologia. Sul versante del consumo di risorse, la letteratura internazionale indica più metodologie potenzialmente applicabili. Tra di esse, quella in grado di fornire il massimo livello di accuratezza informativa è l'approccio micro-costing, che ricostruisce i costi dei singoli fattori produttivi, coniugato con un criterio di allocazione dei costi bottom-up, che ricostruisce le risorse che confluiscono nei prodotti/processi attraverso la moltiplicazione dei costi unitari effettivi per le quantità impiegate (Tan et al., 2009)2. Tuttavia, il metodo sopra indicato appare oneroso in termini di rilevazione dati: alcuni autori (e.g. Drummond et al. 2015)3 suggeriscono di applicarlo solo alle componenti di costo più rilevanti, come, ad esempio, i minutaggi di assistenza da parte del personale.
Coerentemente con queste premesse, il lavoro, soprattutto per la ricostruzione del costo del personale, ha preso spunto dal metodo del Time-Driven Activity Based costing applicato al contesto sanitario (Kaplan e Anderson, 2007)4. Grazie alla conduzione di oltre 20 interviste con il personale medico e infermieristico e ai dati estratti dal Controllo di Gestione aziendale sono stati individuati i tempi di svolgimento delle attività relative alle principali fasi che caratterizzano i percorsi analizzati. Con modalità analoghe sono stati estratti anche i dati di riferimento per

terapie, esami diagnostici e consumi specifici dei diversi DRG. In alcuni casi, è stato necessario identificare due distinti percorsi del paziente all'interno del singolo DRG.
Per quanto riguarda, invece, i dati di costo generali di servizi e beni non direttamente attribuibili al singolo paziente, sono stati applicati i costi rilevati dai dati di contabilità analitica dell'ospedale, a loro volta assegnati al paziente secondo il criterio delle giornate di degenza trascorse in reparto, permettendo un significativo risparmio in termini di tempo e complessità, mantenendo allo stesso tempo un livello di dettaglio appropriato alla ricerca.
Principali risultati preliminari. In generale, il metodo applicato ha consentito di ottenere una stima affidabile e dettagliata dei costi di ciascuno dei percorsi analizzati, già utile, in alcuni casi, per suggerire alcune opportunità di miglioramento gestionale. Inoltre, comparando i risultati finali ottenuti con le tariffe riconosciute dalla regione di competenza (in questo caso la regione Liguria), è possibile notare come esse risultino, alle volte, adeguate alle prestazioni fornite dall'Istituto e, altre volte, inferiori al valore di rimborso riconosciuto. In questo contesto, il vantaggio del metodo applicato consiste ovviamente nella possibilità di valutarne l'appropriatezza in dettaglio, con effettivo riferimento all'assorbimento di risorse del singolo percorso.

Title

PNRR e modelli di servizio in trasformazione: esame di maturità per i sistemi di programmazione e controllo delle aziende del SSN.

Authors

A. Dossi, A. Furnari, F. Lecci, M. Morelli, E. Santoli

Abstract

Background. In un contesto di crescenti fabbisogni di salute riconducibili all'invecchiamento demografico, all'aumento dell'incidenza e prevalenza delle cronicità e alla rapidità dell'innovazione tecnologica, il sistema sanitario italiano è stato investito, nell'ultimo ventennio, da un complesso quadro di dinamiche sistemiche e, più recentemente, da un'importante crisi dovuta alla pandemia da Covid-19.
Con riferimento a quest'ultima, è apparso evidente come i tradizionali meccanismi operativi, pensati in logica di articolazione organizzativa, abbiano impedito o rallentato la presa in carico complessiva dei pazienti (Covid e no-Covid). Con riferimento alle dinamiche di sistema, invece, le aziende hanno storicamente tentato di adattarsi ai mutamenti cercando di sviluppare metodologie e logiche finalizzate al miglioramento di qualità dei servizi e di utilizzo delle risorse (Elefanti et al. 2001). Nel farlo, l'approccio utilizzato è stato, tuttavia, orientato al mantenimento di una certa frammentazione interna legata a una lettura «verticale» delle organizzazioni.
Recentemente, la stagione di contenimento delle risorse del settore e le accresciute dimensioni delle aziende successive agli interventi di ingegneria istituzionale avviati da diversi SSR hanno esteso il perimetro di azione e aumentato complessità gestionale e organizzativa aziendale. In questo quadro, autori internazionali (Porter e Lee, 2013) e nazionali (Ferrara et al, 2017; Furnari et al, 2020) suggeriscono di ripensare le logiche retrostanti gli assetti e i meccanismi operativi delle aziende, adottando un approccio trasversale e integrato al tema delle piattaforme produttive per l'erogazione dei servizi sanitari e ai modelli interpretativi delle organizzazioni. Adottare tale prospettiva significa per le aziende riprogettare la propria struttura organizzativa interna nell'ottica di un maggiore orientamento all'integrazione ospedale-territorio, anche alla luce delle recenti riforme introdotte nel sistema (es. cd. DM71) e di una focalizzazione sui percorsi e sui processi assistenziali in logica integrata, tra unità organizzative dentro le aziende e setting ed erogatori fuori. L'adozione di tale prospettiva implica di spostare il focus su un "nuovo oggetto" aggregante, e cioè il processo, di fatto "l'unica dimensione in grado di legare tra loro misure di risultato con misure che rappresentino lo sforzo prodotto per il suo perseguimento" (Dossi, 2002). L'analisi dei processi e la pianificazione della capacità produttiva aiutano, infatti, a snellire procedure cliniche e amministrative (Jones e Mitchell, 2006), aumentare l'efficienza nell'erogazione dei servizi (Lecci e Morelli, 2014) e sposano le esigenze specifiche di un settore, quello sanitario, che endemicamente richiede un approccio più profondo nella misurazione di cicli programmatori di risorse, azioni e risultati (Bergamaschi e Lecci, 2008).
Tali dimensioni possono essere approfondite e studiate guardando alle modalità di applicazione e ampiezza d'uso dei sistemi di programmazione e controllo (P&C) aziendali, dato il ruolo che idealmente la funzione riveste nel contribuire a guidare e governare un'organizzazione e nel supportare processi di cambiamento e di miglioramento delle performance (Lawson et al., 2003, De Bruijn, 2002). In aggiunta, la crisi Covid-19 ha ulteriormente contribuito a rendere necessario questo tipo di processo, anche a supporto del più ampio approccio olistico alla presa in carico dei pazienti ribattezzato One Health. L'introduzione di questi nuovi paradigmi richiede, quindi, un'evoluzione radicale dei sistemi di programmazione e controllo di gestione, ma l'evidenza

spesso osservata è che tali sistemi sono difficili da trasformare, nonostante l'influenza e le necessità dettate dalle significative pressioni al cambiamento (Granlund, 2001).

Obiettivi. L'applicazione e l'estensione dei sistemi di programmazione e controllo hanno una funzione rilevante nel guidare un'organizzazione e supportare i processi di cambiamento e miglioramento delle prestazioni aziendali. Utilizzando lo stato dell'arte e la prospettiva dei sistemi di programmazione e controllo come proxy, il contributo mira a rispondere alle seguenti domande di ricerca: (i) i sistemi di P&C delle aziende sanitarie pubbliche sono pronte a incorporare le innovazioni derivanti dalle attuali dinamiche di settore?; (ii) ci sono cambiamenti sostanziali nella progettazione e nell'utilizzo degli strumenti di P&C (ad es. collegamento tra budget e pianificazione strategica; budget, budgeting e negoziazione; reporting; collegamento con i meccanismi di incentivazione) che possono supportare l'implementazione di logiche coerenti con l'approccio One Health?

Metodo. La progettualità prevede di adottare un approccio metodologico misto e prevede i seguenti step metodologici:

- Analisi desk della letteratura scientifica sul tema dei sistemi di programmazione e controllo in ambito sanitario, orientamento ai processi aziendali e ai fattori critici di successo e/o ostativi già indagati;
- Somministrazione di un questionario elettronico ai responsabili del controllo di gestione delle aziende sanitarie pubbliche, suddiviso in sette sezioni per un totale di 42 domande;
- Realizzazione di un focus group che coinvolga direttori generali di aziende incluse nel gruppo delle rispondenti alla survey. Selezione e numerosità saranno valutati durante la realizzazione del lavoro di ricerca. Nel corso del focus group verranno presentati e discussi in forma semi-strutturata i risultati emersi dall'analisi dei dati della survey e dai casi studio.

Risultati attesi. Le dinamiche di contesto rappresentano un elemento di pressione rilevante per le aziende sanitarie e per i sistemi di P&C nel supportare al meglio i processi decisionali in una logica olistica e di valore. Esse rappresentano un'opportunità per introdurre innovazione nella progettazione e negli strumenti di P&C, al fine di "misurare le cose giuste" e contestualmente "misurarle nel modo giusto". Dai risultati dello studio ci si attende di verificare che i sistemi di controllo direzionale in uso nelle strutture sanitarie pubbliche italiane non presentano un livello di sviluppo adeguato per condurre la transizione verso logiche e principi più sofisticati o caratterizzati da un elevato grado di innovazione. Nello specifico ci si attende di verificare che i sistemi di P&C:

- Orientano e allineano i comportamenti dei centri di responsabilità di primo livello, in modo tradizionale;
- Mancano di oggetti di costo innovativi (come processi o pazienti);
- PROMs e PREMs sono genericamente sottovalutati;
- I sistemi informativi di supporto non sono in grado di produrre integrazione informativa per supportare livelli di analisi più profondi.

Ci si attende inoltre di verificare che le innovazioni sono ritenute necessarie dai controller e dai DG, dato che gli attuali sistemi non soddisfano le esigenze di supporto decisionale emergente, sebbene si ritenga di dover rimandare l'adozione di queste innovazioni finché non saranno stati sviluppati strumenti e competenze tecniche adeguate per guidare la transizione (focalizzate sulle attività assistenziali centrate sul paziente).

Title

Methods and models adopted to conduct economic evaluations of health service interventions targeting
patients with multimorbidities? A scoping literature review.

Authors

L. Ferrara, V. Ardito, V.D Tozzi, R. Tarricone.

Abstract

Background and objectives. Patients with multiple morbidities have grown significantly due to population ageing, which translates in an equally exponential increase in healthcare costs and new patterns of resource utilization. Nevertheless, while methods to conduct economic evaluations (EEs) of drugs and medical devices are well established, to date economic evaluations focused on health services interventions designed for multimorbid patients have not received comparable attention. This is mainly because assessing health service interventions targeting chronic multimorbid patients poses several challenges (e.g., difficulties in capturing all relevant data on costs and impact). This work is aimed at identifying recent economic evaluations of service interventions that target multimorbid patients, with the goal to either identify methods and models adopted or to highlight methodological gaps in available publications.
Methods. We conducted a scoping literature review of EEs of service interventions targeting patients with at least two chronic conditions and delivered through multiple care settings. We searched for articles ublished in English language between January 2010 and June 2021 on four databases, MedLine, Science Direct, EconLit and Web Of Science, according to the following search strategy: [(service intervention) OR (care pathway) OR (patient journey) OR (care program)] AND [(multimorbidity OR multimorbid OR comorbidity OR comorbid OR (chronic disease)] AND [(economic evaluation) OR methods OR (cost-effectiveness) OR (cost-utility) OR (costbenefit)].
Data extraction included the study overview, information about the intervention (e.g., target patients, care setting, number and types of morbidities, HCPs involved), and details from the EEs, including their type (e.g., CEA, CUA, CBA), outcome and cost measures, perspective of the analysis (e.g., healthcare
system, societal), or if sensitivity analyses were performed.
Results. Our search retrieved 803 records. After duplicate removal, title/abstract screening and full-text reading a total of 29 relevant articles were included for data synthesis. The EEs of service interventions currently available mainly refer to diabetes, cardiovascular diseases, or depressive disorders. There is limited evidence on EEs on service interventions in oncology. Following the classification by Smith et al. (2016), the interventions were categorized as “organizational-type” or “patient-oriented”, and it was showcased that these health interventions serve simultaneously multiple purposes. On the outcome side, the majority of the studies assess outcomes on life impact, such as quality of life, delivery of care, perceived health status andphysical functioning, either with generic or disease-specific metrics. Physiological/clinical outcomes are alsocommonly observed. However, patient experience did not receive comparable attention. On the cost side, costs of healthcare utilization are analyzed in over 90% of the studies, including hospital costs, medications, home care, etc. Intervention costs are considered in almost 50% of the cases. Societal costs (e.g., productivity losses, caregiver time) are less frequently measured.
Conclusions. Despite the growing number of published economic evaluations of health interventions targeting multimorbid patients, our work showed that economic evaluations of

interventions for patients with multiple conditions are still typically conducted as the combination of different health conditions, rather than as an omni-comprehensive status. This makes it difficult to extensively map and measure the resource use and related costs sustained in every step of the care pathway, therefore making it harsh to estimate the overall cost of care for the health system or different pools of stakeholders. Second, patients' experience with respect to the intervention is rarely measured and the experiences with digital health tools are mainly isolated.

Title

How to implement telemedicine services? Lessons learned from the experience of the rheumatology unit of Niguarda Hospital.

Authors

L. Ferrara, E. Listorti, A. Adinolfi, M. C. Gerardi, N. Ughi, O. M.Epis, V. D. Tozzi.

Abstract

Background. Over the last two years, there has been an increasing debate around the use of telemedicine, with many hospital units forced to implement telemedicine strategies due to the Covid-19 pandemic.
Despite the growing attention toward telemedicine, there is still a low adoption rate of telemedicine services. In fact, according to a recent scoping review, this may be due to a lack of understanding of how to plan, manage and reinforce change when implementing telemedicine service1. One of the clinical areas that have been profoundly transformed by telemedicine is rheumatology. In fact, in the field of rheumatology, the validity and effectiveness of telemonitoring and patient reported outcomes (PROs) data, in addition to the standard clinical practice for the intensive care of the patients, is well documented.
A virtuous example of the implementation of telemedicine and telemonitoring services can be found within the rheumatology unit of Niguarda Hospital in Milan (Italy). In fact, since 2010, the rheumatology unit has introduced an App (iArPlus) for the collection and management of clinical data during the examinations of patients with Rheumatoid Arthritis (RA), Psoriatic arthritis (PsA) and Ankylosing spondylitis (AS)1 and the remote monitoring of patient conditions. In 2019 the project consolidated and added the home delivery of biological drugs for stable patients. While, during the first wave of the Covid-19 pandemic, given the lockdown and increasingly distressed healthcare situation in northern Italy, from March 1, 2020 to May 31, 2020, the project was further enhanced, and all patients with RA, PsA, and AS being treated at the Unit with biological drugs were followed remotely2. The project was characterized by three elements: remote monitoring through the iArPlus App, triage through telephone calls by a rheumatologist and home delivery of medication.
After more than one decade since the beginning of the project, what can we learn from this experience? Which management practices successfully plan, manage, and reinforce change?
Objectives. This study aimed to highlight what we could learn from this implementation experience, what were the distinctive and successful elements, and which managerial implications we could derive for future implementations.
Methods. We adopted a realist evaluation approach3 to identify what worked, for whom, in which circumstances and what were the underlying generative mechanisms that explain ‘how’ the outcomes were caused and the influence of context. We therefore conducted eight semi-structured interviews with the unit director and the staff members involved in the various phases of the project (i.e., clinicians, nurses, and administrative staff). The sample size of the interviews was evidenced as sufficient when additional interviews did not result in the emergence of new concepts (i.e., when data saturation was achieved). The interviews aimed to describe the project and the change management practices adopted. The interviews were recorded and analyzed through an ad-hoc framework4 for the analysis of change management practices. This framework identifies 10 change steps divided into 13 strategic practices and 6 operational practices that are important during the preparatory phase of the change process, for managing the change, and to sustain and reinforce long-term change.

Results. Our study identified the most relevant actions put in place by the rheumatology unit during the three major steps of preparing for change, managing change, and reinforcing change. The most relevant strategic practices were establishing a plan, identify the champions, engage with partners, and develop and articulate a clear vision (during the preparatory phase); communicate changes, gain stakeholder trust and acceptance, and facilitate ownership of the service through daily emails (while managing change); and continue to engage partners and stakeholders (during the reinforcing phase).
The most relevant operational practices were adopted during the preparatory phase (e.g., they conducted a need assessment, developed telemedicine equipment and application, assigned coordinating roles, and ensured adequate resources) and while managing change (e.g., they provided training and education and developed new work processes, protocols, and procedures).
The analysis highlighted four main lessons learned: first, the characteristics of the context and a strong managerial structure are a prerequisite for success. Second, patients should be involved as central actors in the definition of the care pathway. Third, the relevant stakeholders should be involved since the co-design of the app. Finally, change should be incremental. The Rheumatic unit introduced one change at a time, and this brought to constant improvements.
Conclusions. The framework adopted can be used either to retrospectively analyze the experiences developed but may also act as a tool to guide future telemedicine service implementation and research. As well as the lessons learned can guide the implementation of future telemedicine experiences.

Title

The third sector associations as mediator in the primary care system in Italy: identifying barriers and facilitating factors for integration.

Authors

F. De Luca, G. Costa, E. Gheduzzi, C. Masella.

Abstract

Background. Informal care is essential to compensate for the need for care that the health system cannot cover. Although it is unevenly present in different countries, as it differs by historical and cultural context, informal care is evident in any European Long-Term Care (LTC) program (Del Pozo-Rubio et al., 2020). For a long time, informal care has been an insufficiently socially and economically recognized resource (Triantafillou et al., 2010). It is often perceived as a cost-effective way of preventing institutionalization and allowing people to remain at home. Still, informal care is not cost-free either to individuals or society, but it is necessary to consider the indirect costs, which manifest in detrimental health and psychological effects on caregivers, decreased labor supply, and deteriorating family finances (Jimenez-Martin/Vilaplana, 2008). Outside the individual caregivers there are also forms of patients' associations or volunteers whose role is fundamental in clinical support such as information and prevention, but also in social support for both patients and caregivers. Factors such as demographic and social changes exacerbated by the Covid-19 pandemic are changing social perceptions toward this economically and organizationally valuable resource (Social Protection Committee & European Commission, 2021). In this landscape, the Italian Health System does not adequately recognise the support offered by associations to mitigate the risk of re-hospitalisation, population risk mapping, patients' engagement and in the provision of logistics and health promotion services. Therefore, integration between health and social services inclusive of associations is fragmented and depends on the context. Patient and voluntary associations are a fundamental pillar of informal care, but their support and how they influence integration is still unclear. Within this dichotomy, for models to be implemented more efficiently, it becomes relevant to understand the role of patients' and volunteers' associations in providing care. The aim of this study is to identify how some factors represent barriers to integration and how others have a facilitating effect on improving coordination and continuity of care.
Methods. This qualitative study focuses on an Italian case study related to the "Case della Salute" (CdS) of Piacenza, 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 barriers of integration are. Four semi-structured interviews have been conducted with two managers responsible for planning social services, one primary care director and a voluntary association. 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.
Preliminary Results. The primary findings reveal that associations play a key role in engaging the population at risk and in monitoring the health and social conditions of patients and their families. Patient and volunteer associations organise various prevention and health promotion activities, often without the support or interaction of health institutions. The organisation of screening activities in public spaces requires financial support from the associations for the

involvement of non-voluntary doctors and specialists. At present, this activity, valuable for mapping and engaging new potential patients, is not fully integrated with the local health organizations. Furthermore, these activities have a predominantly awareness-raising function, which means that critical data are not transmitted to health professionals. Some associations have requested spaces, also on a weekly rotation, within hospital departments and CdS centers to support - mainly psychologically – patients and their caregivers. For some specialities, such as diabetes, this integration is more frequent and is aimed at facilitating therapeutic adherence and overcoming the initial phases of acceptance of the disease. Other associations dealing with neurodegenerative pathologies do not receive adequate considering the psycho-social health effects that this type of conditions have on the patient's caregivers, who are often also chronic patients. Failure to recognise informal support risks fuelling feelings of frustration in both caregivers and associations, compromising their willingness to interact with institutions and strengthen relationships of trust that are indispensable for creating a sense of community. Furthermore, the integration of psychological support figures by the associations for patients involved in their activities is strongly called for. On the other hand, health promotion activities within schools are structured and implemented. Co-creation practices involving several actors from different levels of the formal and informal care led to mutual adjustments and continuous changes. These processes have directly influenced the implementation of health and social services, which are based on the needs, expectations, and experiences of patient associations. Associations are assuming the role of mediators, interacting with other actors in the system. However, uneven levels of integration in the management of services between formal and informal resources, create the need to coordinate on tools, timeframes, pathways of care, services already in place. The lack of an ecosystem perspective of the available resources, which are already difficult to find, draws attention to the creation of organisational synthesis and mediation tools for the common instances of the diversity of actors to strengthen the integration of care.

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Title
Sustainable development and SDGs in healthcare between policy and practice: a scoping review.

Authors
L. Del Bene, G. Leoni, C. Vermiglio, V. Zarone.

Abstract
In recent decades, the concept of sustainable development has been extensively analyzed by policy makers (Sneddon et al., 2006), under the aegis of the United Nations 2030 Agenda for sustainable development.
The healthcare sector plays a fundamental role in achieving the improvement of human well-being and, in general, of economic, social and environmental development. In fact, although the achievement of the SDGs is assessed at national level, the sector in which the organizations operate represents one of the main critical success factors for their achievement (Sachs, 2012). A full understanding of the contribution of the healthcare sector to sustainable development requires consideration of the various factors that influence the behavior of organizations (which allow or limit change), such as non-financial regulation, and the internal and external environment (Pizzi et al., 2020; Fiondella et al., 2016; Farneti and Guthrie 2009).
Existing and emerging challenges pushed several authors to encourage the development of new studies related to the SDGs based on a managerial perspective (Bebbington and Unerman, 2018; Guthrie et al., 2019). These studies highlighted SDGs reported as a means to support organizations in planning, implementing, measuring and communicating their efforts towards the SDGs.
For these reasons, the aim of the paper is to understand the differences between “reforming and talking” (policy) and “activating and walking” (management) about sustainable development and SDGs in the healthcare sector. Therefore, this article aims to answer the following research questions: RQ1) Which perspective prevails within the scientific literature on sustainable development and SDGs in healthcare? Political or managerial? RQ2) What are the sustainable development and SDG themes and topics most dealt with in the health sector?
To this end, the work adopts a methodological approach based on scoping review of the literature on the subject. The preliminary results show the slight prevalence of contributions adopting the managerial perspective. However, even though these perspectives seem to be almost equivalent, it is possible to state that the integration of sustainable development and SDGs into managerial systems or functions are often lacking. Our study aims to carry out an analysis of the state of the art in this field in order to define a research agenda. It has the further aim of laying the foundations for the development of study paths that have an empirical characterization and are able to highlight the hindering and facilitating factors for the adoption of the SDGs in the planning and control process of healthcare organizations.

Title

Time driven activity based costing for capturing the complexity of healthcare processes: the case of management of patients with deep vein thrombosis and leg ulcers.

Authors

C. Rognoni, A. Furnari, M. Lugli, O. Maleti, A. Greco, R. Tarricone

Abstract

Background. The framework "value-based healthcare" considers "health outcomes achieved per unit cost expended over the entire care delivery value chain". Time driven activity-based costing (TDABC) represents the best way to capture the complexity of healthcare processes and translate them into costs.
The aim of the study was to apply TDABC methodology for the management of patients with deep vein thrombosis (DVT) and leg ulcers from the societal perspective in Italy. Two options were analyzed: venous endovascular stenting and standard of care (SOC) consisting in compression devices and anticoagulants.
Methods. Implementing TDABC requires to identify the steps of the investigated event. A process mapping of surgery for stenting procedure has been performed through patient observation at Hesperia Hospital (Modena, Italy) to assess all time and resources absorbed. Interviews with clinicians allowed to refine data collection also for the follow-up (ulcer healing process and recurrences). The capacity cost rate has been then calculated for each capacity resource, allowing to determine the full cost of care cycle.
Results. The process mapping for stenting identified 9 macro-phases, from patient hospital access to discharge, detailed in 36 micro-phases and 76 activities accounting for a total of 3,072 minutes. Total costs for personnel and healthcare resources were 1,220€ (24%) and 3,862€ (76%), respectively, leading to an overall cost of the procedure of 5,082€. For SOC, the cost for the initial management (first visit/treatments) was 243.86€, the monthly cost for the ulcer management was 444.83€, while the final cost in case of ulcer healing was 313.45€; considering a healing time of 3 months this leads to a total cost of 1,892€, of which 302€ (16%) sustained by the patient for purchasing drugs/compression stockings.
Conclusion. The hospital cost for stenting (5,082€) is higher than the DRG reimbursement (DRG 479=4,742€); moreover, the analysis did not consider the general costs, so the total cost of the procedure may be underestimated. Concerning SOC, the different ambulatory activities, for a patient with an ulcer healing in 3 months, correspond to a reimbursement of about 1,132€, which is lower than the real cost for the management of these patients TDABC methodology applied to stenting and SOC showed that reimbursement rates may not cover the real costs of hospitals/clinical centers. Moreover, the cost for the management of leg ulcers is partially sustained by the patients themselves. However, the study underlines how this approach allows to support managing complex costing of hospital settings to create value in health care. In a health economics perspective, it permits to overcome the difference between "costs" and "public expenditure".
A more efficient policy for covering the real costs may be beneficial for both clinical centers and patients.

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Title

Does reducing inequality in physical activity equal to reducing inequality in health?

Authors

P. Candio, F. Salustri.

Abstract

Reducing unfair and unjust health inequalities is a primary objective of public health policy. Strong evidence exists for a socio-economic gradient in health in many countries around the world, with those from the most affluent backgrounds expecting to live up to ten years longer and in good health than those from disadvantaged backgrounds. In England, local governments are responsible for public health and to address health inequity have funded proportionate universal, population-level actions to promote healthy behaviours, such as physical activity. Examples of these interventions include building cycleways, renovating public parks and offering free access to public leisure centre-based exercise sessions in deprived city areas. Notwithstanding the potential for these interventions to lead to positive distributional intervention effects, whether health inequity gaps will be reduced as a result depends on the relative improvements in health by the socio-economic groups impacted by the intervention and how these effects are modelled.

To model how health equity changes as a result of positive distributional intervention effects, we develop a theoretical model where individual health status is a function of individual physical activity, relative deprivation of the neighbourhood, and other individual socio-economic characteristics. Then, we classify different public interventions aimed at improving physical activity inequality depending on their effect on health inequality. Lastly, we calibrate our model using data from the Leeds Let us Get Active programme, implemented in Leeds, United Kingdom, between 2013 and 2016.

Our results show that a reduction in physical activity inequality does not necessarily lead to a reduction in health inequality. More specifically, while an intervention on physical activity is progressive, the associated consequences for health may be progressive, flat, or regressive. Assumptions regarding the decay in and generalisability of intervention effects showed to play key roles in determining the direction of health equity impacts. In planning interventions to reduce health inequities, public health policymakers should carefully consider what distributional effects to target to avoid widening the existing health inequities across socio- economic groups.

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Title

Don’t look up: trust and COVID-19 immunization choices.

Authors

V. Carrieri, S. Guthmuller, A. Wübker.

Abstract

Objectives. High levels of vaccination coverage in populations are necessary to end the coronavirus pandemic. However, many countries in the World and, especially in Europe exhibit high vaccine hesitancy levels. In consequence, the WHO has recommended governments to take efforts to reduce vaccine hesitancy. There is much anecdotal evidence but a lack of scientific evidence that trust in its various dimension – e.g. into public institutions, science, media, social media - plays a major role in covid-19 vaccine hesitancy in Europe. This paper aims at better understanding the role of trust in its various dimensions on vaccine hesitancy and the determinants of trust in the covid-19 vaccine.
Methods. We use novel European survey data including rich information on different trust dimensions, covid-19 immunization intentions and take-up as well as socioeconomic, demographic and health information from EU countries covering more than 40,000 individuals interviewed during the first quarter of 2021, including information on the day of the interview. We combine these data with daily and weekly data on COVID-19 cases and policy measures provided by public sources. In a first step, we use multivariate regression methods to assess the determinants of covid-19 vaccination hesitancy focusing on different trust dimensions. In a second step, we look at the effect of individual-level socioeconomic, political, demographic, and health characteristics on trust dimensions to better understand the main determinants of trust formation. To this scope, we also consider the impact of decisions of public health authorities (e.g. different lock- down measures or the suspension of Astra Zeneca vaccine in March 2021) on the different trust dimensions and we investigate how the trust dimensions correspond to different channels of information gathering (e.g. traditional TV and newspaper vs. social media).
Preliminary results. We find that higher trust in science, government and other public institutions is strongly and negatively correlated, whereas higher trust in social media is positively correlated with covid-19 vaccination hesitancy. Moreover, people who trust social media were less likely to obtain information about the pandemic from traditional and official sources. Decisions from public health authorities during the pandemic, e.g. the Astra Zeneca suspension had a different impact on the different trust dimensions; the suspension, for instance, decreased trust in science but increased trust in social media.
Discussion. Vaccination hesitancy is mainly but differently affected by different trust dimensions. Health policy should evaluate alternative policy measures to reach groups of individuals that are isolated and that gather information within their own groups only.

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Title

Cost-utility of NEphron Saring Treatment (NEST) for small renal masses in the UK.

Authors

E. Pizzo, H. Warren, M. Tran.

Abstract

Background. Over 12,000 patients are diagnosed with renal cancer in the UK every year and the incidence is increasing.
Small renal masses (SMR) represent two-thirds of new diagnoses of kidney cancer, the majority of which are incidental findings because they are asymptomatic. Treatment options for SMRs include active surveillance, cryoablation or surgical incision (nephrectomy). Partial nephrectomy is recommended to preserve kidney function while providing good long-term oncological control, but it is complex, expensive and associated with a higher major complication rate. An alternative treatment option that also preserves renal function for SRMs is cryoablation which is now almost exclusively performed percutaneously under CT guidance. However, there is an unmet need for high-quality evidence on non-surgical management options and a head-to-head comparison with standard of care is lacking. A single- centre prospective cohort study of adults diagnosed with SRM (n=200) with an open label embedded interventional RCT comparing nephron sparing interventions has been conducted in the UK.
Objectives. Main aim of the study is to compare costs and outcomes associated with alternative treatment options for SRMs.
Methodology. A within trial analysis was performed using data from the trial. from the NHS and PSS perspective. The outcome measure was quality-adjusted life years (QALYs), which combine length of life and quality of life, and is consistent with the National Institute for Health and Care Excellence (NICE) recommendations. The base case analysis took a UK National Health Service (NHS) and personal social services (PSS) perspective. We also adopted a more broader perspective and included productivity losses for patients. Resource use data were included from all participating centres and UK unit costs were applied. Costs were calculated in 2021 UK GBP using unit cost data from published sources (NHS tariffs, British National Formulary, PSSRU) and inflated when necessary. The time horizon was 1 year, reflecting the main outcomes follow-up in the trial, and was the longest time period over which data were collected for all participants; 1 year was long enough to reflect all important differences in costs or outcomes between the two treatments. Given the time horizon discounting was not applied to costs or outcomes.
The cost effectiveness of NEST has been assessed using an incremental approach using the incremental cost-effectiveness ratio: the ratio between the difference in costs and the difference in effects (outcomes-QALYs) of the intervention and the traditional surgery.
A budget impact analysis (BIA) has been performed to estimate the financial impact of implementing the new testing at national level.
Expected Results. The preliminary results of this study demonstrate that the cryotherapy is more expensive compared to nephrectomy and there is no statistically significant difference in QALYs

Title

Economic impact of the SARS-CoV-2 pandemic at the hospital level: evidence from a cohort of patients hospitalized in Milan area.

Authors

F. Trentini, O. Ciani, E. Vanni, S. Ghislandi, A. Torbica, A. Melegaro

Abstract

Introduction. Italy was the first country in Europe to be hit by the Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2). To date, Lombardy remains the worst affected region in the country, with a total of >2,4 million confirmed cases of Coronavirus Disease 19 (COVID-19) and >39.000 deaths reported since the start of the pandemic. Almost a third of confirmed SARS-CoV-2 cases occurred in Lombardy's capital, Milan. The emergence of the pandemic exerted an enormous pressure on the Italian healthcare system leading to a considerable reduction in its capacity of care and a significant increase in excess mortality from other causes as well. Compared to the first pandemic wave, which caused a high burden of morbidity and mortality, subsequent waves were associated with a significant decrease in illness severity and mortality, despite a higher incidence of infection in the community. In contrast to the large amount of studies focusing on pathogen transmission and disease epidemiology, little research has been conducted to understand the potential economic impact at the hospital level of providing care for SARS-CoV2 positive or negative patients during the pandemic.
Objective. This study aims to investigate the full economic costs of the COVID-19 pandemic at the hospital level. More specifically, we aim to quantify the incremental costs and resource consumption for each episode of hospitalization associated to 1) being hospitalized before vs after the first case of SARS-CoV-2 was notified in Italy, 2) being hospitalized with vs without a SARS-CoV-2 positive test during the pandemic.
Methods. We conducted a cross-sectional cohort study on 6,396 hospitalized patients at Humanitas Research Hospital discharged between January 1, 2018 and February 21, 2020, and between February 22, 2020 and December 31, 2021. We selected the following Diagnosis Related Groups (DRGs) of interest: respiratory infections and inflammations with (079) or without (080) complication or comorbidity (CC), simple pneumonia and pleurisy with (089) and without (090) CC, pulmonary edema and respiratory failure (087), respiratory system diagnosis with ventilator support >=96 (565) or <96 hours (566), Intracranial Hemorrhage or Cerebral Infarction (014) and kidney and urinary tract infections with CC (320). Through the cost accounting system in place at Humanitas Hospital, we were able to associate direct resources consumption to each hospitalization episode, classified as diagnostics, drugs, personnel, surgery and intensive care, personal protective equipment (PPE) and medical gas, other. Through log-linear regression models performed on all hospitalization episodes with the same DRG code we quantified any potential disparity in resources allocated to patients with or without a SARS-CoV-2 positive test during their hospital stay, for patients discharged both during the pandemic or before the pandemic, adjusting for age, type of admission (emergency room or elective), length of stay in hospital, admission to surgery room, ICU and UCC, and the type of discharge (death, transfer to another hospital or ordinary discharge).
Results. Overall, 2191 (34.3%) hospitalizations occurred before 21st February 2020 and 4205 (65.7%) after. Of the latter, 2347 (55.8%) were SARAS-CoV-2 positive (vs 1858 negative). Patients who tested positive for SARS-CoV-2 were slightly younger than those who tested negative and those discharged before the beginning of the pandemic in Italy (median age 70 vs 75). Respectively 156 (2.4%), 309 (4.8%) and 30 (0.5%) hospitalizations required surgery,

admission to an ICU or admission to an UCC. The rate of hospitalized patients admitted to ICU decreased from 6.5% before the pandemic to around 4% in patients discharged during the pandemic, and the median length of stay in ICU reached a peak of 10 days (IQR: 6-17) among patients who tested positive for SARS-CoV-2. The median overall costs for an hospitalization were 2410 EUR (IQR: 1588-3828) before the start of the pandemic, 2645 EUR (IQR: 1885-4028) for patients who tested negative and 3834 EUR (IQR: 2463-6413) for patients who tested positive for SARS-CoV-2 in the period after pandemic outbreak.

Patients hospitalized and discharged during the pandemic for intracranial hemorrhage or cerebral infarction, kidney and urinary tract infections with CC and pulmonary edema and respiratory failure the sustained median costs were roughly twice for those with a SARS-COV2 diagnosis, respectively 4814.9 (IQR: 2674.3 -10700.5) vs 2386.2 (IQR: 1852.7 -3526.1), 4651.9 (IQR: 2975.8 -7867.5) vs 2395.5 (IQR: 1780 -3663.7), and 5350.9 (IQR: 3735.6 -7697.5) vs 2707.4 (IQR: 1863.3 - 4046.5).

According to logistic regressions' results, the comparison between patients discharged during the pandemic with or without a SARS-CoV-2 positive test shows a 30% increase in the average costs sustained for SARS-Cov-2 positive patients with a diagnosis of intracranial hemorrhage or cerebral infarction, kidney and urinary tract infections with CC and pulmonary edema and respiratory failure, between 15% and 25% for SARS-Cov-2 positive patients with a diagnosis of simple pneumonia and pleurisy with and without CC and less than 10% for positive patients with a diagnosis of respiratory infections and inflammations with or without CC. Among patients with a diagnosis of respiratory system diagnosis with ventilator support <96 hours, non-significant differences were found for patients with and without a SARS-CoV-2 positive test.

The average costs sustained for patients discharged before the pandemic are found to significantly decrease with respect to negative patients discharged during the pandemic, except for those with a respiratory system diagnosis who required ventilator support. Generally, increases in costs sustained for negative patients discharged during the pandemic are more homogeneous and vary between 10.46% and 21.99%, respectively for patients with kidney and urinary tract infections with CC and for those with respiratory infections and inflammations without CC.

This is the first study to estimate the full healthcare costs associated with Covid-19 pandemic at individual level. Our findings shed light on significant increase in hospital costs associated with SARS- Cov-2 infection. These results contribute to the managerial debate around the transparent definition of tariffs for hospital admissions and, overall, to the ongoing policy debate around the sustainability of the Italian healthcare system.

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Title

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

Authors

M. Bobini, A. Cicchetti.

Abstract

Institutional background. Goodland R. (1997) provided a definition of environmental sustainability (ES) partly by sharply distinguishing it from social sustainability and, to a lesser extent, from economic sustainability. In particular, while overlap exists among the three, economic sustainability and environmental sustainability have especially strong linkages. The widely accepted Hickisian definition of economic sustainability "maintenance of capital" that mainly considers income from sole focus on human-made capital and its surrogate (money), it now needs to embrace the other three forms of capital: natural, social and human. Economics has rarely been concerned with natural capital (e.g., intact forests, healthy air) because until relatively recently it had not been scarce. This new scarcity, that of natural capital, arose because the scale of the human economic subsystem has now grown large relative to its supporting ecosystem. ES means natural capital must be maintained, both as a provider of inputs ("sources"), and as a "sink" for wastes. Although ES is needed by humans and originated because of social concerns, ES itself seeks to improve human welfare by protecting the sources of raw materials used for human needs and ensuring that the sinks for human wastes are not exceeded, in order to prevent harm to humans. Humanity must learn to live within the limitations of the biophysical environment. This means holding the scale of the human economic subsystem to within the biophysical limits of the overall ecosystem on which it depends.
The current unprecedented economic and social context requires the different countries to identify and implement a new strategic vision that is sustainable over time and able to anticipate the future risks. The key to this new model of economic development on a global scale is recognized across the board in Sustainability and Green Transition. The Covid-19 pandemic has had the effect of accelerating the shift towards a cultural paradigm that promotes the pursuit of sustainability at global, national and local levels. Environmental sustainability is nowadays becoming the central theme on the agendas of governments, companies, banks, investors and business schools, becoming the common pivot of the international political and economic agenda for the next decade, as also demonstrated by the most recent agreements such as UN Agenda 2030, EU New Green Deal, Next Generation EU and consequently also numerous national policies.
This research is aimed to investigate how to integrate a "green" dimension in multidimensional assessments applied in the healthcare sector.
Objectives and Methodology. This research is aimed to investigate how to integrate a "green" dimension in multidimensional assessments applied in the healthcare sector. In particular, our research objectives are two:

- to provide an overview of the progress achieved by different HTA agencies around the world with respect to the integration of an environmental sustainability dimension;
- to explore possible approach and methods in order to integrate environmental sustainability into HTA.

The following methodology is provided in order to achieve the above objectives:

- A literature review in major databases and a focused gray literature search. The main search concepts were HTA and environmental impact/sustainability in order to identify emerging approach and methods to integrate environmental sustainability into HTA;

- A structured survey submitted to the world's leading HTA agencies in order to assess the maturity in environmental sustainability integration into HTA (e.g. Is integrating ES into HTA a formal strategic objective? What action have been taken at organizational level?). The second part of the survey is focused on identifying possible trajectories in order to integrate environmental sustainability (e.g. How likelihood to adopt alternative strategies? how to measure the environmental impact? Which hindering factors?),
- A Consensus Conference with principal experts in HTA in order to discuss, integrate and validate the results from the previous two phases.

Preliminary finding. In the healthcare sector, there is growing awareness of the impact of human activity on the climate and the need to stem this impact both because environmental changes could directly affect people's health and policy decision makers have broad mandates and objectives extending beyond health care.

Public health care decision makers from few countries have started examining environmental impacts when assessing new technologies. Different studies (Polisena 2018, Marsh 2016, Marsh 2017) suggest emerging approaches in order to integrate ES into HTA. Life cycle assessment (LCA) considers the environmental impact of a health technology during the entire life cycle of that technology: from acquisition of raw material, manufacturing process to distribution and the use of the product on the management of disease, environmentally extended input-output analysis (EEIOA) estimates the carbon emissions generated by each unit of output in a sector (e.g. NHS has an ongoing project to estimate its carbon footprint). Process analysis technique involves a detailed analysis of the environmental impacts across the life cycle, including the use of raw materials and energy consumption but It would require significant effort to collect for all the resource use associated with a single treatment pathway. However, each method presents some limitation and despite the increasing regard given to environmental impacts, there has been little in the way of formal incorporation of such factors into a key area of decision making as HTA (Marsh, 2016).

We are currently collecting data from the survey. Further results will be available by the end of July.

Title

Analisi di impatto sul budget SSN dei Test Multigenici Prognostici (TMP) nel tumore al seno alla luce del DM 18 maggio 2021.

Authors

O. Ciani, C. Federici, D. Generali, A. Zambelli, R. Tarricone.

Abstract

Introduzione. Negli ultimi anni l'innovazione in ambito biomedico ha portato allo sviluppo e progressiva diffusione di "Test Multigenici Prognostici" (TMP), soprattutto in ambito oncologico. Per test multigenico prognostico si intende un esame basato sull'analisi di espressione di diversi geni il cui risultato dà informazioni sull'evoluzione della malattia in pazienti non trattati o trattati con terapie standard. Per i carcinomi della mammella esistono ad oggi sul mercato diverse opzioni di TMP, tuttavia questi non sono inseriti tra i Livelli Essenziali di Assistenza (LEA) in Italia. In alcuni casi, il medico può informare la paziente della possibilità di richiedere un test molecolare come ausilio alla corretta scelta terapeutica al di fuori del SSN. Infatti, i TMP restituiscono una categoria di rischio per la paziente che può informare la raccomandazione del "gruppo oncologico multidisciplinare" circa l'indicazione al trattamento più appropriato. In particolare, per le pazienti con carcinoma mammario questi test potrebbero indirizzare la scelta tra trattamento combinato di chemioterapia e ormonoterapia verso la sola ormonoterapia in quei soggetti per i quali caratteristiche biologiche e marcatori di prognosi rendessero incerta la scelta tra i due trattamenti. Alcune Regioni hanno reso questi test disponibili per le pazienti affette da carcinoma mammario invasivo tramite copertura con fondi del SSN, creando inaccettabili diseguaglianze nell'offerta sanitaria per le pazienti sul territorio nazionale. A questo proposito, il Decreto 18 maggio 2021 del Ministero della Salute ha stabilito le modalità di riparto e requisiti di utilizzo di un fondo istituito per i test genomici per patologia mammaria neoplastica ormonoresponsiva in stadio precoce istologicamente diagnosticata. Questo studio ha l'obiettivo di analizzare l'impatto sul budget del SSN dei TMP nel carcinoma mammario per improntare eventuali decisioni di politica sanitaria ai principi di economicità ed efficienza e supportarne l'implementazione alla luce delle evidenze disponibili in ambito non solo clinico ma anche economico.

Metodi. L'analisi assume la prospettiva del SSN italiano e valuta l'impatto sul budget dell'adozione dei TMP (Oncotype Dx®) nel carcinoma mammario precoce su un orizzonte temporale a 5 anni vs la pratica standard. La popolazione di riferimento per questa analisi è quella delle pazienti affette da tumore mammario in stadio precoce (I-IIIa) ormono-positivi HER2-negativi (ER+/HER2-) con linfonodi positivi da 0 a 3 e giudicato a rischio intermedio. Il modello per l'analisi è un ibrido albero- decisionale/Markov model. I benefici della terapia chemioterapica aggiuntiva sono stimati usando un rischio relativo (RR) di sviluppare metastasi a distanza in ciascuna categoria di rischio definita dal TMP. L'impatto del TMP è quindi catturato nel modello solo sulla base del beneficio prognostico, e cioè cambiando la probabilità che i pazienti in ciascuna categoria di rischio definita dal TMP ricevano la chemioterapia adiuvante. Il modello è alimentato con fonti di dati diverse: dati individuali a livello di paziente, opportunamente anonimizzati, dello studio multicentrico, osservazionale, prospettico BondX, dati di letteratura, e costi unitari provenienti da nomenclatore tarifario, determine AIFA, DGR Regione Lombardia. Le stime sull'impatto del budget per il TMP sulla pratica clinical corrente sono basate utilizzando i valori attesi delle medie. L'incertezza è stata valutata usando l'analisi di sensitività probabilistica (PSA) e l'analisi di sensitività deterministica (DSA).

Risultati. Nello scenario senza TMP, i costi annuali per chemioterapia variano da 20.1 a 22.66 milioni di Euro su un arco di 5 anni. Il modello rivela un costo atteso per paziente a seguito dell'erogazione del TMP, al netto del risparmio in CT non appropriate, pari a €1,496 ± €192, con un risparmio in CT pari a circa €504 per paziente. Cumulativamente, il risparmio annuale in chemioterapia va da 7.4 a 8.3 milioni di Euro su un arco di 5 anni. A questo risparmio, plausibilmente, non si associa nessuna differenza riscontrata nel costo relativo alla terapia ormonale ed alla gestione delle metastasi a distanza tra i due scenari con e senza TMP. Nell'analisi di sensitività, il risparmio totale in chemioterapie evitate nell'orizzonte temporale di 5 anni è pari a 43.6 milioni di Euro, 0.7 milioni in più rispetto al caso base. Se il test venisse fatto solo sulle pazienti con una raccomandazione di chemioterapia, l'impatto sul budget totale varierebbe notevolmente. Questa pratica porterebbe infatti a un risparmio medio nei 5 anni di circa 10.7 milioni per anno, a fronte di un costo per i TMP ridotto a 7.6 milioni di Euro e pertanto un risparmio netto di circa 3.11 milioni.

Discussione. L'uso di evidenze economiche per informare scelte di politica sanitaria va incoraggiato per promuovere l'efficienza di decisioni che hanno rilevanza per l'intero SSN. Complessivamente, l'analisi stima un aumento di spesa di circa 22 milioni di Euro all'anno per i prossimi 5 anni assumendo una erogazione del test al 100% delle pazienti eleggibili sulla base dei criteri ministeriali stabiliti nel Decreto 18 Maggio 2021. L'impatto sul budget è previsto negativo, invece, nel caso in cui il test fosse erogato solo a donne indirizzate alla chemioterapia, con risparmi annuali di circa 3 milioni di Euro. Questa scelta però andrebbe contrastata con il rischio di undertreatment per le pazienti (3% - 7%) che a seguito del TMP, avrebbero potuto ricevere chemioterapia adiuvante in combinazione con ormonoterapia.

Title

An econometric analysis on oncology patients' Health-Related Quality of Life (HRQoL) determinants in Bulgaria.

Authors

S. Djambazov, M. D. Giammanco, L. Gitto.

Abstract

Background. Chronic, long term and multi-morbid illnesses greatly diminish patients' Health Related Quality of Life (HRQoL), influencing not only the physiological but also the psychological and emotional sphere [1-2]. Hence, any approach to care for chronic and long-term diseases should address the needs and requirements of the patients as a whole.
In such a perspective, focusing on the subjective well-being, the notion of HRQoL assumes a great relevance and becomes a major topic for researchers and social policy makers, who should develop programs aimed at improving patients' health conditions together with their satisfaction [3]. HRQoL tools have the potential to identify specific and general health needs [4]: moreover, measuring HRQoL provides outstanding insights towards approaches that may lead to improved quality of care. The assessment of HRQoL became imperative for oncology patients, for which the illness state is often accompanied by changes in lifestyle that may be difficult to manage and whose personal health- related experiences and expectations are crucial factors for a qualitatively adequate assistance [5].
Objectives. The present study investigates on the determinants of oncology patients' Health-Related Quality of Life (HRQoL) in Bulgaria, focusing on the impact of diverse factors: patients' demographics, time from disease onset, pain, anxiety/depression, feeling of participation, and the impact of uncertainty in illness.
Methods. A questionnaire aimed at collecting information on HRQoL, Uncertainty in Illness and patients experience with the hospital treatment has been administered to 306 oncology patients at four oncology centres in Bulgaria.
Data collected has then been employed in the estimation of a Tobit model: the dependent variable selected has been the variation in the VAS score. The econometric model keeps into account the characteristics of censoring in the dependent variable.
Results. Overall, the coefficients estimated and the same regression showed a good level of significance. Some dimensions of EQ-5D as pain or anxiety/depression have a highly significant impact on HRQoL, as well as some features of Uncertainty in Illness, as Unpredictability and Complexity. As expected, the longer the time elapsed from the diagnosis, the higher the reported HRQoL; the value of the information provided to the patients by the nurses other than the information provided by the physicians are also relevant. Conclusions The present study presents an analysis on the impact of subjective and objective factors on oncological patients' HRQoL, which increases the scanty evidence referring to the Bulgarian hospital setting. Further deepenings might concern a wider sample, including data collected at other medical centers and/or in other geographical areas, both in Bulgaria and in other European countries.

Title

The Coronavirus Pandemic and the evolution of socioeconomic inequalities in heath and healthcare utilization in Italian regions.

Authors

M. Giannoni, M. Vainieri, I. M. Bosa, A. Castelli, M. Castelli, O. Ciani, S. Ghislandi, G. Marini, S. Nuti.

Abstract

Background-Italy was the first, hard-hit country in Europe by the SARS-CoV-2 virus pandemic, and its initial response to the daily increasing numbers of cases and then deaths brought it to the international media and government arena (De Maria, 2020; Pisano et al., 2020). Italy has also a long history of large disparities in wealth, health and socio-economic development between the Northern and the Central/Southern regions (Putnam, 1994). The “southern problem" is still considered the biggest unresolved issue in Italy and, despite the great development and specific policies addressed to find a solution to it, the economic and social differences between North and South have persisted or even increased in recent years (Pescosolido, 2019; Davies, 2015). A better understanding the complex and far-reaching effects of the COVID-19 pandemic and Italy’s response to the emergency on both health and socio-economic inequalities is therefore needed.
Aims- We present the impact of the COVID-19 pandemic on socioeconomic inequalities in health status and health care access and utilisation in Italian regions.
Methodology-After a review of pre-COVID socio-economic inequalities in health and healthcare access and utilisation at the regional level, we report on the main published evidence of the impact of the pandemic on socio-economic inequalities and on health and access to healthcare. Similarly, to the work of Blundell et al. (2020) we relate these to some other existing dimensions of inequality, namely, geography (region of residence), socio-economic status (income), age, gender and migrant status. The main interventions introduced by the Italian government to mitigate the impact of the pandemic on the economy and individual households are reported, with a focus on the impact of lockdowns, occupational inequalities and on how the health risks of COVID-19 were distributed. Following Wilkinson and Pickett (2010), we then compare regional inequalities in health and healthcare access and use in Italian regions considering regional variations in hospitalizations experienced in the months after the initial pandemic outbreak with regional inequalities in absolute levels of income and wealth, and also in terms of relative inequality within regions.
Results- Although the COVID-19 outbreak was higher in the richest areas of the North of Italy, the whole country suffered from increasing socio-economic and health inequalities. Italy’s structural challenge - the socioeconomic divide across regions on age, gender and productivity have been aggravated by the COVID-19 crisis. The pandemic exacerbated already existing health inequalities: mortality rates were higher for men than for women, widening the life expectancy gap between these two groups. Before the pandemic, Italy was a country with a growing elderly population, and that experienced higher equity in access to healthcare than the younger generations. However, COVID-related mortality and prevalence rates were higher among the elderly population, and access to care was difficult, particularly among those living in care homes. Conversely, the incidence of mental health conditions, such as anxiety and depression, and thus the demand for mental healthcare, is increasing particularly among the younger generations, which was met by the substantial lack of public policies supporting access to mental healthcare such as psychological support services. The COVID-19 pandemic did have a negative

impact on access to healthcare, especially for some types of services. Regions with a higher per capita income and lower income inequality were those with the lowest reductions in access to specialised services. However, regarding scheduled hospitalizations and preventive care, we found no clear-cut evidence of a North-South divide, thus deserving further investigations. We found some evidence of the worsening of inequalities in both health and access to healthcare for some fragile population groups, such as the elderly and the migrants. Vaccination campaigns were effective in reaching high levels of coverage of the population. However, this coupled with variations among regions in attitudes towards vaccination without a clear North-South pattern.
Conclusions- The crisis has highlighted the urgent need to address both pre-existing and newly emerging forms of socioeconomic heath and access and use of healthcare inequality. After years of public cost- containment policies, the next generation European Union funds and the linked national recovery and resilience public investment plan has been targeted to foster economic growth and overcome the structural geographic, socio-economic and health divide. This is a concrete chance to reduce inequalities, at various levels, in the future. This will also crucially depend on the effectiveness of the measures that will be introduced within the National Recovery and Resilience Plan, and on the capacity of improving public investment governance, particularly in terms of coordination and implementation across the different levels of government. However, much of the effects of the pandemic crisis on inequalities will also ultimately depend on the post-pandemic growth the country will experience which, in turn, depends on the evolution of both the pandemic and of the global geopolitical scenario.

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Title

Assessing quality of hospital care with the "Benefit of the Doubt". An application to Italian hospitals.

Authors

C. Guccio, G. Pignataro, F. Vidoli.

Abstract

Introduction. The provision of quality in healthcare is a central issue in a large number of studies, among which the ones that explore its relationship with relevant features of healthcare systems, such as competition and efficiency. It is also a policy and managerial relevant issue, because of its role in attracting demand or as a relevant dimension in the measurement of performance of providers. A critical aspect is related to the measurement of quality, given its multidimensional nature, not only when one considers very different dimensions of the provision of healthcare (like, following Donobedian, outcome, process and structure) but also when the focus is on just one of these dimensions, like the outcome of healthcare. These problems are often, if not always, overcome by simply focusing on simple and partial indicators of quality, like the outcome measures related to specific conditions. This approach is a severe limitation in the measurement of quality provision by complex providers like hospitals, and it may probably explain why the empirical literature on the role of quality in the provision of healthcare has not reached conclusive evidence, like, for instance, for the relationship between quality and competition.
Objectives. The objective of our study is to provide a measurement of the overall quality of healthcare provision by hospitals, using composite indicators, referred to the so-called Benefit of the Doubt (BoD) methodology, characterized by an endogenous determination of the weights attached to the individual indicators, with an application to the Italian hospitals. The composite indicators will be based on a large number of outcome measures, related to different clinical areas, as developed and implemented by a public agency of the Italian National Health Service, AGENAS.
Methodology. Using data, related to more than 20 outcome measures in different clinical areas (cardiovascular, cerebrovascular, pediatric, oncological, etc.), collected for a sample of over 700 Italian hospitals in the year 2020, we will compute a composite indicator of quality, in terms of outcomes, with different techniques, all related to the BoD approach. Some of them are based on an assumption of compensability of performance among the different simple indicators, like the variance weighted BoD and the robust BoD; some others operate without this assumption, like the directional BoD and the directional robust BoD.
Results. The results of the application of the different BoD techniques will be comparatively appreciated in terms of how these techniques deal with the different problems related to the aggregation and weighting of the individual indicators, and of how they impact on the measurement of the composite indicator. The results will also be discussed as for their relevance and implications for the use of quality measures in the empirical analysis of the relationship between quality of healthcare and relevant aspects of the organization and provision of services.

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Title

A review on the approaches to estimating indirect costs in healthcare: motivations for choice.

Authors

F. S. Mennini, L. Gitto.

Abstract

When performing health economic evaluations, all costs and expected benefits (in terms of clinical effectiveness, utility, monetary benefits) should be considered. Costs are direct and indirect: concerning the latter, two main methods to measure them have been developed in the literature. The Human Capital Approach (HCA) considers the gross salary in the days of absence from work due to a disease; the method based on the Friction Costs (FC), instead, is more recent and considers equally the value of productivity: the losses are, however, limited to the period of illness when it is necessary to replace the absent worker.
The present analysis carries out a review of the literature contributions for European countries published in the last 15 years and aims at identifying common trends within geographical areas. The geographical areas considered include: Eastern Europe, Western European countries, Northern Europe (United Kingdom, Finland and Sweden), Mediterranean countries (Italy, Spain and Portugal) Estimation of indirect costs in different European areas may reflect the real cost of health services across countries and schematize the conditions under which a certain method should be preferred to obtain a more complete evaluation.
Overall, cost analyses applying HCA are the most frequent, while studies based on FC are more common in the Netherlands, where this method has been developed. With the exception of the Netherlands and some other scattered studies, the prevalence of use of HCA compared to FC is unequivocal. From the methodological point of view, HCA is more robust since it has its roots in general economic theory and allow a more comprehensive analysis. Then, HCA is certainly preferable to FC for those countries where the labour market is characterized by rigid regulations. Hence, the reasons to apply HCA or FC may depend on the institutional context, for example the flexibility in the job market, and the epidemiologic environment.

Title

Il ruolo degli esiti riferiti dal paziente nelle decisioni di approvazione e rimborso dei farmaci.

Authors

F. Malandrini, M. Meregaglia, C. Borroni, O. Ciani.

Abstract

Introduzione. Negli ultimi anni l'attenzione nei confronti degli esiti riferiti dai pazienti (patient-reported outcomes, PROs) è progressivamente aumentata, sulla scia della trasformazione verso un approccio patient-centred del processo di sviluppo dei farmaci e dell'erogazione dei servizi sanitari. La misurazione dei PROs avviene attraverso strumenti, scale e questionari (patient-reported outcome measures, PROMs) che, combinati con i dati clinici, forniscono un quadro più completo dello stato di salute del paziente per informare scelte condivise, cure personalizzate e decisioni di approvazione e rimborso di nuove terapie.
Obiettivi. Nell'ambito del progetto di ricerca PRO4ALL, questo lavoro mira ad indagare l'uso dei PROs e delle misure ad essi correlate (PROMs) in due contesti specifici: nel processo decisionale per l'approvazione di nuovi farmaci da parte dell'Agenzia Europea dei Medicinali (EMA), e nel contesto della negoziazione con l'Agenzia Italiana del Farmaco (AIFA) per l'ammissione alla rimborsabilità e il riconoscimento dell'innovatività.
Metodi. A partire dall'elenco degli European Public Assessment Reports (EPAR), disponibile sul sito di EMA, sono stati individuati tutti i farmaci autorizzati nel quinquennio 2017-2021, escludendo i farmaci veterinari e quelli successivamente ritirati. Per ciascun farmaco, sono stati analizzati i corrispondenti EPAR, che sono rapporti completi di valutazione scientifica di medicinali autorizzati nell'UE. È stata creata una griglia in Excel per registrare sistematicamente l'uso di PROs e/o PROMs per ogni EPAR e altre informazioni rilevanti sulle loro caratteristiche (es. endpoint primario o secondario, misura generica o specifica) e su quelle del medicinale (es. area terapeutica, generico/biosimilare, stato di orfano, data di autorizzazione). Il modulo di estrazione dei dati è stato testato inizialmente su un campione di venti report da tre revisori indipendentemente. Inoltre, è stata eseguita una regressione logistica multivariata per identificare le variabili che hanno influito sull'uso dei PROs/PROMs. Il campione dei farmaci è stato poi confrontato con l'elenco dei farmaci di fascia A e H e con l'elenco dei farmaci innovativi, disponibili sul sito di AIFA, che sono stati posti in relazione all'uso dei PROs/PROMs negli EPAR. Inoltre, sono state analizzate le schede di innovatività di AIFA per valutare la considerazione dei PROs/PROMs nell'assegnazione del valore terapeutico aggiunto. Il test del chi-2 è stato eseguito per individuare differenze statisticamente significative nell'uso dei PROs/PROMs tra gruppi di farmaci. Le analisi statistiche sono state eseguite con il supporto di Stata.
Risultati. Dei 1.866 farmaci valutati da EMA alla fine del 2021, 1.465 sono stati esclusi per diversi motivi: uso veterinario (278), ritirati (282), non autorizzati (50) o autorizzati prima del 2017 (856). Nell'analisi sono state inclusi 403 EPAR; di questi, 197 (48,9%) hanno riportato l'uso di PROs/PROMs, per un totale di 661 diadi PROs/PROMs individuate nei documenti. La presenza di PROs/PROMs era più comune in alcune aree terapeutiche (es. reumatologia: 94,4%) che in altre (es. malattie infettive: 18,5%) e per i farmaci orfani (66,7%) rispetto ai non orfani (44,8%). L'utilizzo di PROs/PROMs è aumentato nel tempo (dal 45,9% nel 2017 al 55,0% nel 2021). In oltre due terzi dei casi i PROs erano endpoint secondari o esplorativi. L'esito (PRO) più frequentemente indicato era la qualità della vita (30,7%). Tra i PROMs, 167 (25,3%) erano generici e i restanti specifici per la malattia. EQ-5D (9,5%), SF-36 (6,1%) e EORTC QLQ-C30 (5,1%) sono stati i tre questionari più utilizzati. Il numero medio di PROMs per ciascuna valutazione era pari a 1,6 (range: 0-14). La probabilità di utilizzare un PRO e/o un PROM negli

EPAR è stata influenzata negativamente dallo status di farmaco generico (OR=0,01, p<0,00) e biosimilare (OR=0,46, p=0,02). Dei farmaci individuati tramite gli EPAR, 229 (56,8%) risultavano in commercio in Italia al momento dell'analisi, nello specifico 81 (35,4%) in classe A, 130 (56,7%) in classe H e 18 (7,9%) in classe C. Il test del chi-2 ha rivelato un'associazione statisticamente non significativa tra l'uso dei PROs/PROMs negli EPAR e la rimborsabilità (p= 0,587) ma significativa rispetto all'innovatività (p=0,002). Tuttavia, dei 46 farmaci innovativi, soltanto 9 (19,6%) riportavano espressamente l'utilizzo di PROs/PROMs nelle schede di innovatività. La visione strategica per rafforzare la rilevanza del paziente nella generazione di prove di efficacia, lanciata da EMA nel 2020, richiede la promozione della misurazione dei PROs nella valutazione dei farmaci ai fini dell'autorizzazione alla commercializzazione. Questi risultati dimostrano un ruolo ancora limitato per questo tipo di misure, anche rispetto a decisioni di rimborsabilità e innovatività a livello nazionale, nonché la necessità di un'armonizzazione della scelta dei PROMs e lo sviluppo di un consenso sugli strumenti più indicati per misurare gli esiti in ciascuna area terapeutica.

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Title

La gestione del diabete nei migranti irregolari in Italia: il ruolo chiave degli enti caritatevoli.

Authors

E. Listorti, A. Torbica, S. Cella, G. Fiorini, G. Corrao, M. Franchi.

Abstract

Introduzione. L'aumento del numero di migranti regolari e irregolari richiede crescente attenzione sul tema dei loro bisogni di salute (Onarheim, 2018). In particolare, le malattie croniche come il diabete rappresentano un'area cruciale in cui la salute dei pazienti è influenzata dalla loro aderenza ai percorsi assistenziali. La letteratura recente ha riportato un'allarmante bassa percentuale di persone che rispettano le raccomandazioni degli operatori sanitari (Gast, 2019; Corrao, 2018), nonostante sia stata documentata una associazione positiva tra alti livelli di aderenza e un miglior stato di salute. Nel caso dei migranti irregolari, ostacoli come i problemi linguistici e le barriere organizzative (Alzubaidi, 2015; Baglio, 2017) potrebbero essere superati grazie anche alla presenza di enti caritatevoli che forniscono servizi sanitari (Silvestrini, 2017).
Obiettivi. In questo studio il nostro obiettivo è confrontare la gestione, e in particolare i livelli di aderenza, di migranti regolari e irregolari affetti da diabete che hanno ricevuto servizi sanitari a Milano (Italia), da parte del servizio sanitario nazionale (SSN) o di un ente caritatevole (Opera San Francesco) tra il 2014 e il 2018.
Metodi. Il nostro è uno studio di coorte in cui la coorte è composta da due gruppi di pazienti diabetici di cittadinanza straniera appena presi in cura: i) migranti regolari che ricevono servizi sanitari dal SSN; ii) migranti irregolari che ricevono prestazioni sanitarie dall'Opera San Francesco di Milano. Ci concentriamo sull'aderenza alla visita diabetologica entro 12 mesi dalla presa in carico. La probabilità di essere aderenti è stata confrontata tra i due gruppi utilizzando una regressione multivariata log binomiale, considerando un insieme di caratteristiche personali che possono influire sui comportamenti sanitari, come età, sesso, nazionalità e tipo di trattamento farmacologico. Sono inoltre state svolte analisi stratificate per sesso.
Risultati. La coorte comprende 6429 soggetti, 274 migranti irregolari e 6155 migranti regolari. La percentuale di pazienti visitati da un diabetologo nell'anno successivo alla diagnosi è del 52% tra i migranti regolari, mentre sale al 74% per gli irregolari. I risultati della regressione log binomiale multivariata confermano questa differenza, mostrando che ceteris paribus i migranti irregolari che si rivolgono a un ente caritatevole hanno una maggiore probabilità di essere aderenti di 1.19 volte (IC 95%: 1.12-1.26) rispetto a quelli regolari. L'analisi stratificata per sesso mostra una differenza significativa (p=0.002) nel coefficiente tra uomini (RR= 1.38, IC 95% 1.24-1.54) e donne (RR= 1.11, IC 95% 1.03-1.1).
Conclusioni. Il nostro studio mette in luce il ruolo chiave che gli enti caritatevoli possono svolgere nel fornire ai migranti irregolari le cure garantite dalla legge italiana, grazie anche al disegno di percorsi personalizzati che includono l'assistenza di interpreti e mediatori culturali che supportano i pazienti nell'integrazione e nel processo di empowerment.

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Title

Analisi dei costi a carico del Sistema Sanitario Nazionale relativi al percorso nascita: gravidanze spontanee e gravidanze da procreazione medicalmente assistita a confronto.

Authors

E. Listorti, A. Torbica, G. Esposito, M. Franchi, F. Parazzini.

Abstract

Background. In Europa negli ultimi trenta anni si è osservato un costante aumento del numero di trattamenti di Procreazione Medicalmente Assistita (PMA), per un totale di oltre 2 milioni di nascite (De Geyter, 2018; ESHRE, 2021). Diversi studi hanno documentato nei concepimenti da PMA una maggiore probabilità di incorrere in gravidanze multiple, che sono associate a un maggior rischio di esiti clinici avversi quali parto pretermine e basso peso alla nascita (Rydhstroem, 2001; Rujiwetpongstorn, 2014). Allo stesso tempo, è noto che gli avanzamenti nella tecnica hanno permesso di aumentare il numero di gravidanze singole (Bergh, 2020; De Geyter, 2021). Tuttavia, poca attenzione è stata data alla valutazione dei costi a cui vanno incontro le donne che ricorrono alla PMA rispetto alle donne che concepiscono spontaneamente e a come questi costi siano cambiati nel tempo; ancor meno se si considera l'intero percorso nascita dal momento del concepimento sino dopo il parto (Chambers, 2014). A fronte dell'incremento di utilizzo della PMA, la valutazione di quali e di quanto siano aumentate le diverse voci di spesa può essere di supporto per decisioni volte a diminuire eventuali prassi inappropriate e approfondire la differenza di presa in carico tra le due casistiche.
Obiettivi. Quantificare le differenze esistenti nella spesa sanitaria relativa al percorso nascita a carico del Sistema Sanitario Nazionale (SSN) tra le donne che si sono sottoposte a PMA e quelle che hanno concepito spontaneamente per diverse tipologie di prestazioni sanitarie (farmaceutica, ambulatoriale, ricoveri, accessi in pronto soccorso), al netto delle differenze che dipendono dalle caratteristiche pregresse della donna. Per il percorso nascita è stato considerato tutto il periodo compreso tra il concepimento e il termine dell'anno successivo al parto.
Metodologia. Abbiamo identificato una coorte di donne primipare residenti in Lombardia che hanno partorito tra il 2007 e il 2020, di età compresa tra i 17 e i 46 anni. Di queste donne abbiamo ricostruito il percorso clinico dal momento del concepimento fino all'anno successivo al parto, raccogliendo informazioni sulle prestazioni ricevute in ambito farmacologico, ospedaliero, specialistico e del pronto soccorso. Utilizzando la tecnica del propensity score matching, ciascuna donna che ha avuto un parto dopo aver ricorso a PMA è stata appaiata ad una che ha avuto un concepimento naturale simile per caratteristiche socio-demografiche e cliniche e tipologia della gravidanza (età, nazionalità, titolo di studio e occupazione, titolo di studio e occupazione del padre, stato civile, tipologia di comune di residenza, comorbidità, poliabortività, gravidanza gemellare). Attraverso delle statistiche descrittive e metodi di regressione abbiamo valutato le differenze di costo esistenti tra i due gruppi di trattate con PMA e controlli. Ulteriori approfondimenti sono stati svolti studiando il rapporto tra la differenza di costo per donne da PMA e il costo base per la tipologia di prestazioni considerate, di modo da valutare dalla prospettiva del SSN su quali voce di spesa vi siano delle differenze più rilevanti. Infine, le analisi sono state ripetute per sottoinsiemi di prestazioni ascrivibili specificatamente alla gravidanza.
Risultati. La coorte risultante dal matching è composta da 44724 donne. Le statistiche descrittive rivelano costi medi e mediani più elevati per numerose delle voci di spesa considerate per le donne che si sono sottoposte a PMA. Tuttavia, si osserva come nelle spese ambulatoriali le donne che hanno avuto una gravidanza spontanea abbiano costi più elevati. Le regressioni effettuate confermano questi risultati. In particolare, le donne con gravidanza da PMA hanno uno

scostamento medio nella spesa farmaceutica che oscilla negli anni considerati tra 200 e 300 euro, un maggiore costo per ricoveri durante la gravidanza che si attesta negli ultimi anni intorno a 2000 euro, e un costo del ricovero per il parto superiore di 2000 euro. Al contrario, le donne con gravidanza da PMA hanno costi inferiori nelle prestazioni ambulatoriali sia durante la gravidanza che nel follow up, e costi inferiori per accessi in pronto soccorso e ricoveri post gravidanza. Non si osservano differenze significative per le spese legate agli accessi al pronto soccorso durante la gravidanza. Rapportando le differenze di costo alla spesa media per ciascuna tipologia di prestazione, si osserva che le differenze principali emergono nell'ambito farmacologico durante la gravidanza. Inoltre, le analisi ripetute per alcune specifiche categorie di farmaci e di diagnosi di ricoveri permettono di individuare con maggiore precisione le fonti delle differenze di spesa.

Conclusioni. A parità di caratteristiche cliniche e socio-demografiche delle donne che intraprendono una gravidanza, si osservano delle differenze nei costi sostenuti dal SSN per donne con gravidanze da PMA. Quantificare le differenze esistenti nella presa in carico delle due casistiche ed esplorare se le differenze osservate siano ascrivibili a eventi avversi o a prassi cliniche diverse permette di migliorarne la gestione da parte del SSN.

Title

Access to General practitioners and Specialists in Italy. Does private insurance matter?

Authors

E. Brenna.

Abstract

Background. In Italy a North-South gradient is shown for the frequency of access to either General practitioners (GPs)or Specialists. Specifically, southern regions present a higher rate of access to GPs compared to northern and central regions, while the latter show a higher use of specialists' visits. Furthermore, a higher percentage of people holding private health insurance is found in the North and Center of Italy compared to southern regions. This evidence suggests that there might be determinants related to both supplier induced demand phenomena and specialists' visits price, able to modulate the demand of primary and secondary care across Italian regions.
Objectives. In this paper I aim to investigate the determinants of the access to both GPs and specialists care across Italian regions. Specifically, I want to disentangle the role of inducement due to an interregional heterogeneous pattern in the supply of medical personnel, from the role of price as a deterrent to the access for specialists visits. On the latter point, whereas GPs are exclusively financed by the Italian NHS, specialists care can be provided either by the NHS, after the disbursement of a copayment rate, or privately through the payment of the full price. Accessing specialist care through the NHS requires a GP's prescription, often implies long waiting times and does not guarantee the choice of the specialist. On the contrary, private access is much faster and patients can choose the specialist they prefer. To this extent, holding a private health insurance may favor moral hazard phenomena and increase the frequency of access to specialists. Equity issues may arise on whether waiting times in the public sector are detrimental to health outcomes of patients accessing specialist care through the NHS. Data and model: I use data from the 2019 European Health Interview Survey; a cross sectional dataset representative of Italian population with over 45,000 observations related to healthcare access, health and socioeconomic variables. For the supply of personnel at regional level, I use the dataset Health for All, which provides the average rate of healthcare personnel for each region. I run two separate models, one investigating the frequency of access to GPs in the last four weeks preceding the interview and the other one investigating the frequency of access to specialists' visits in the same period. As a specification I use probit and logit models and I test for misspecification via RESET test. The main regressors are represented by the density of respectively GPs and specialists at regional level and the presence of a private health insurance at individual level, detected by a binary variable.
Results. Findings are twofold; first, the presence of supplier induced demand phenomena is shown for both categories of physicians, second, holding a private insurance is positively correlated to the probability of accessing specialist care at least twice in the four weeks preceding the interview, while it does not impact on GPs' access, corroborating the hypothesis that price may represents a deterrent in the choice of accessing specialists' visits. Policy implications address both resources planning and equity issues. For inducement pushes, a more homogeneous distribution of both categories of practitioners across geographical areas could help in avoiding interregional disparities in healthcare access. The higher probability of accessing specialist care by patients holding a private insurance raise a concern on the possible substitution effect among GPs and specialists for patients in low socioeconomic conditions. Although this paper addresses a number of concerns, the question whether the higher access to specialist care driven by private

health insurance represents an unmet need or can be included among moral hazard effects remains unclear and deserves more investigation.

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Title

Cost-effectiveness of pressured-controlled intermittent coronary sinus occlusion in elective percutaneous coronary intervention: a thereshold analysis on the cost of the device.

Authors

C. Rognoni, G. Segantin, F. Costa, P. Armeni.

Abstract

Background. Cardiovascular diseases still represent the leading cause of mortality in Italy (44% of all deaths), and amongst these diseases, acute myocardial infarction is responsible for most of the deaths and disabilities. Timely restoration of epicardial blood flow through primary percutaneous coronary intervention (PPCI) is the gold standard in the treatment of ST-segment elevation myocardial infarction (STEMI).

However, despite optimized stenting techniques, improvements in imaging and in adjuvant pharmacological therapies, the one-year mortality rate after STEMI has plateaued at 14% and heart failure occurs in approximately 13% of patients at 30 days and 20–30% at 1 year after discharge.

The PiCSO (Pressure-controlled Intermittent Coronary Sinus Occlusion) Impulse System is an innovative medical technology intended to reduce infarct size by intermittently occluding the coronary sinus outflow in patients undergoing PPCI. Treatment with the PiCSO Impulse System enhances redistribution of venous blood-flow towards the peri-infarct area, clearing microvascular obstruction and potentially leading to myocardial protection. Beyond salvage, augmentation of molecular regenerative networks suggests a second mechanism of PiCSO involving the activation of vascular cells in cardiac veins, thus enhancing structural integrity and recovery.

Clinical data from non-randomized, matched pair control studies, suggests that the use of PiCSO may be associated with reductions of up to 34% in hospitalization for heart failure and a 25% reduction in mortality in the first year after the PPCI procedure. As PiCSO is not yet used routinely in Italian clinical practice, evidence on its clinical and economic value may be useful to policymakers to support the assessment and appraisal activities on the device.

OBJECTIVES: The aim of the study was to evaluate the cost-effectiveness of primary percutaneous coronary intervention (PPCI) combined with PiCSO compared to PPCI alone for the treatment of patients with STEMI from the National Healthcare Service (NHS) perspective in Italy.

METHODOLOGY: A Markov model was developed to estimate quality-adjusted life years (QALYs) and costs associated with PPCI+PiCSO and PPCI alone in an adult population with STEMI. In this model, adult patients with STEMI undergoing PPCI, with or without PiCSO, enter in the “post-MI” health state; they may remain in the “post-MI” state or experiment subsequent events such as heart failure, reinfarction, stroke or death. Transition probabilities and costs for the management of events were derived from published literature. A discount rate of 3% was considered for both costs and QALYs, and the cycle length was established to be one month. A lifetime horizon was applied for the baseline analysis. As in Italy the cost of PiCSO technology is not currently covered by DRGs, one-way sensitivity analyses were performed on the cost of the medical device according to different willingness-to-pay (WTP) thresholds: 50,000€, 30,000€ and 15,000€.

MAIN RESULTS: Over a lifetime horizon, PPCI+PiCSO may lead to 15.87 life years and 12.16 QALYs, compared to values that were 15.37 and 11.74 for PCI alone, respectively. Considering a WTP threshold of 50,000€, PPCI+PiCSO showed to be a cost-effective strategy compared to PCI alone when assigning a cost lower than 21,700€ to the medical device; assuming WTP thresholds

of 30,000€ and 15,000€, PPCI+PiCSO appeared to be a cost- effective option versus PCI alone considering a cost for the medical device lower than 13,400€ and 7,100€, respectively.
The present analysis suggests that a cost lower than 21,700€ may be good value for money for PiCSO, a technology that may avoid cardiac events and improve patients' life expectancy and quality of life.

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Title
Perception of telemedicine among patients with osteoporosis: a retrospective study.

Authors
B. Pongiglione, A. Compagni, G. Mazziotti, F. Carrone.

Abstract
The COVID-19 pandemic has caused profound disruption to the delivery of healthcare services, globally. This has affected the management of many long-term conditions as resources have been diverted to cover urgent care and elective care delayed. As a consequence, the development and use of telemedicine (TM) has increased at an unprecedented pace. In this study, we assess how TM was perceived by patients suffering from osteoporosis, treated at Humanitas Metabolic Bone Diseases and Osteoporosis Section and shifted to TM since the onset of the pandemic. We explore whether patient characteristics determine heterogeneous perceptions on different aspects implied in the use of TM.
80 patients were recruited to answer an online questionnaire on TM. Acceptability of TM was measured using a modified version of the Service User Technology Acceptability Questionnaire (SUTAQ). Questions were clustered in the 5 main domains previously identified in literature applying confirmatory factor analysis. The mean score of each domain was then correlated to patient's socio demographic and clinical characteristics using univariate linear regression model.
General satisfaction with TM emerged as well as a substantial lack of association with individual characteristics, with few exceptions, such as males were less concerned on privacy issues, patients with longer experience of TM expressed lower dissatisfaction with privacy and discomfort and concerns with care and personnel increased with years of treatment.
The fact that individual socio demographic and clinical characteristics do not (or only very limitedly) affect acceptance of TM may depend on the observation period in which the study was performed, as during the COVID-19 pandemic patients' perception of TM may be disproportionately positive and more homogeneous common across different sociodemographic and clinical groups. Further research needs to be done to explore whether TM will be evaluated in a similar way also after the pandemic and a fatigue effect will not change patients' perceptions.

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Title

Literature Review on Eliciting preferences for novel health technology through DCE.

Authors

M. Nogueira.

Abstract

Background. Involvement of public and, specifically, patients in decision making is a growing tendency when health related issues are concerned (Clark et al., 2014; Soekhai et al., 2018). Such involvement can take place on many levels from including patients' preferences in evaluations of new technologies, to patient participation on policy making expert panels. A range of methods has been outlined to elicit stated preferences for healthcare, both qualitative, quantitative and mixed (Mahieu et al., 2017; Soekhai et al., 2018). Among these, Discrete choice experiments (DCEs) become more and more frequently used in health economics to explore public, patients' or professionals' preferences for a variety of policy-making challenges related to healthcare and evaluation of health technology (Soekhai et al., 2019). DCEs is a quantitative technique for eliciting patients´ preferences (Angelis et al., 2016; Soekhai et al., 2019), where participants are required to make a choice between combinations of different levels of selected attributes (choice sets). Data collected through DCEs allows estimation of the trade-offs between attributes, thus providing information on their relative importance for respondents. Including a monetary attribute allows to indirectly obtain the participants´ willingness- to-pay for alternative healthcare or a specific change in other attributes (Ryan and Watson, 2009). DCEs can be applied to evaluate new technologies or treatment types, thus contributing to the process of economic valuation and providing insights into the associated costs and benefits, helping decision makers allocate scarce resources to healthcare (Cookson et al., 2009). The Food and Drug Administration US have been including patients' perspectives in review divisions and expert patient advocacy committees for better understanding of their challenges and barriers to treatment (GPO, 2017). Inadequate representation of patients' and health professionals' preferences is not only an ethical concern (Wale et al., 2017), but also results in the development of health technologies or treatment used less than expected (Ostermann et al., 2017; Huls et al., 2019). Thus, DCEs are extremely useful to quantitatively estimate "health outcomes", reflecting patients' preferences, utility and willingness to pay (WTP), enabling more informed reimbursement and coverage decisions and improving patients' satisfaction and adherence to treatment (Tinelli et al., 2016; Huls et al., 2019). However, to provide a solid ground for policy and decision-making regarding introduction of new technologies and treatments, DCEs must ensure that the experiment's setup is adequately reported and the patients' sample is representative. Furthermore, the variety of design setups and lack of widely accepted methodology obscures the transparency of decision making (Huls et al., 2019; Marsh et al., 2021).

Objective. The aim of this study is to provide a state of the art review of the methodology and applications of DCEs in health economics to elicit patients' and healthcare professionals' preferences for the evaluation of health technology.

Methods. To evaluate the state of the art on the application of DCE in health economics we conducted a systematic search using the databases: PubMed/MEDLINE, EMBASE, EconLit, Web of Science, Scopus; Science Direct and Google Scholar. The search included the articles published up to May 2022 and used a proximity-based search strategy. Definition of keywords was based on previous reviews of DCEs in health economics (Clark et al., 2014; Soekhai et al., 2019).

To include only relevant articles, we have filtered the search results applying the following criteria: the article reported a choice-based study; it analyzed peoples' preferences within the healthcare context; it must contain data of an original DCEs experiment, not relate to another already included study; and the full text of the article must be published in English. In this paper we present a summary of the most significant papers. At a later stage, all articles will be reviewed.

Results. In general, DCE in health economics are increasing popular and complex. Furthermore, the use of qualitative methods continues to grow (in particular for selection of attributes and levels), as well as the diversity of the outcome measures. Also, the last years, show growing attention to attribute non-attendance in analysis as well as focusing on the target audience, not adequately considered before, such as patients' parents or caregivers, adolescent and healthcare professionals.

Regarding the use of DCEs for evaluation of health technology a growing number of studies shows an increasing recognition that eliciting patients' preferences is important to improve the patients' satisfaction and adherence to the treatment. This is also supported by a number of studies, which directly investigated the opinions of patients and caregivers as well as healthcare and health technology assessment professionals and policy makers regarding the wider use of patients' preferences in evaluation of new health technologies or treatment types. A growing number of studies investigate the use of patients' preferences in this context both theoretically in general sense as well as applied for particular conditions. In the latter case, long term and chronic diseases are the most popular subjects of study and quantitative methods of eliciting health technology more frequently used.

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Title

Screening and new drugs may not be enough to eradicate HCV: an analysis of patients that do not get treated.

Authors

F. Ansaldi, M. Giachello, L. Leporatti, R. Levaggi, M. Montefiori.

Abstract

Background. Hepatitis C still has a relevant burden in epidemiological and economic terms. In Italy, thanks to the introduction in 2015 of the new direct-acting antivirals (DAA), HCV eradication is now possible. The new generation of Direct-acting antivirals (DAA) revolutionized the HCV approach to therapy with a higher Sustained Virological Response (SVR) rate and sensible reduction in side effects. Compared to the therapy with Interferon, which has many side effects, the new DAAs showed significant efficacy and a mortality decrease in patients with HCV and Hepatocellular carcinoma and complete recovery in 95% of less severe cases. Moreover, the new DAAs reduce hospitalizations, especially those related to liver diseases in patients with hepatic cirrhosis, leading to lower costs for the NHS.
Consistently with this new scenario, the World Health Organization set the goal of eradicating Hepatitis C by 2030 and national screening programs have been promoted to find undiagnosed cases. However, mass screening and availability of 2nd generation DAAs are not enough to eradicate HCV. Indeed, several patients already diagnosed with HCV have not yet undergo drug therapy. This decision has considerable consequences for personal health and relevant cost to the national health system since this may lead to several health status complications. Not treating HCV can lead to cirrhosis (20%-50%) and hepatocellular carcinoma (11%-19%) (Schwartz & Birnkrant, 2021). In some cases, the only possible therapy consists of a liver transplant, with high costs for the health system. However, the so-called Extra Hepatic Manifestations (EHMs) can also arise. Finally, if neglected, HCV can lead to death.
Objective. This study analyzes the main socioeconomics and health status drivers that induce people with a diagnosis not to be treated. In other words what drive this decision though there is the possibility of recovery? We argue that some economic benefits (e.g. cash transfers and in-kind benefits addressed to people with disability) could encourage people not to be treated and create a distortion effect that can lead to an "illness trap".
Methods. We analyzed data for the Ligurian population from 2013 to 2020. We used an integrated administrative database combining different patient information. In particular, the dataset includes details about patients' demographic and socio-economic characteristics, exemptions for economic or disability reasons, drug purchases, and the utilization of health care services (such as hospital admission and access to emergency departments). The dataset allows links information from several databases through a unique anonymized id-code referring to the patient. We select patients with a HCV diagnosis during hospitalization or access to an emergency department and those with purchases of anti- HCV drugs. We considered HCV patients still alive in 2015 (the year of DAAs introduction). We compared patients with HCV diagnosis but untreated with those treated with DAA employing different econometrics models like Coarsened Exact Matching (CEM) and logistic regressions to compare the two groups and find the main drivers leading to no treatment choice.
Results. We find that the age at diagnosis and the number of comorbidities, especially diabetes, cirrhosis, and malignant neoplastic and respiratory failure, influence the choice of whether undergo treatment or not. Also, an HCV diagnosis before DAA introduction discourages the patient from treatment. Interestingly, economic incentives for disabilities (cash transfers and in-

kind benefits) risk discouraging poor patients from healing, presumably not to lose these economic benefits.

Title

Educating patients with type 1 and type 2 diabetes mellitus: recommendations from a pan-European study.

Authors

L. Borsoi, C. Falivena, G. Callea.

Abstract

Background. Diabetes mellitus (DM) represents one of the most impelling and fastest growing global health emergencies of the 21st century. In Europe, DM affects more than 61 million, with an estimated prevalence of 9.2% in adults aged 20–79 (IDF Diabetes Atlas, 2021). These figures are projected to increase substantially in the next few years, reaching the impressive estimate of 69 million people affected by DM in 2045 (13% increase in prevalence). Appropriate management of DM is key to preventing or delaying complications and reducing the clinical and economic burden of the disease. One of the main drivers for successful management of DM is diabetes education, which enhances patients' ability to perform daily - and often complex - care activities and make effective self-management decisions. Although the importance of diabetes education is stressed by scientific associations worldwide, evidence about the characteristics, availability and effectiveness of diabetes education programs across European countries is sparse and fragmented.
Objectives. The objective of this study was twofold: 1) to get an overview of the state-of-the-art of education programs for both type 1 (T1) and type 2 (T2) diabetic patients in Europe; 2) to provide recommendations on best practices for effective implementation of education programs for T1DM and T2DM patients. We specifically focused on structured education programs, which, according to the National Institute for Health and Care Excellence, are defined as evidence-based programs with a structured and written-down curriculum, delivered by trained educators with educational knowledge and skills consistent to the age and needs of the person, and entailing a measurement of education impact on clinical outcomes, patients' quality of life, patients' behavior, etc.
Methodology. The research involved 7 European countries: France, Germany, Italy, Spain, Sweden, The Netherlands, UK. To reach the objectives stated above, we carried out three different but complementary methodological steps. First, we performed a systematic literature review. The search was conducted on four databases (PubMed, ScienceDirect, Scopus, Web of Science) using pre-defined search strings; only studies published in English were considered. We also searched for grey literature on relevant stakeholders' websites (e.g., scientific and patient associations). For each country, we identified a restricted sample of healthcare professionals (e.g., clinicians, nurses, psychologists) who are recognized experts in the education of diabetic patients (e.g., authors of peer-reviewed publications). Healthcare professionals were involved in two tasks: an online survey and an online focus group. The online survey was developed on the Qualtrics platform, according to the evidence collected from the literature review. It aimed at collecting additional evidence on structured education programs as they are delivered in the current clinical practice. Focus groups were carried out separately for each country with the identified healthcare professionals in order to further discuss: i) the characteristics of structured diabetes education programs they have been involved in; ii) the effects of such programs (on patients' health outcomes, quality of life and healthcare resource consumption); iii) experts' opinions about the key elements that can further enhance the role of education in improving diabetic patients' outcomes. Each focus group lasted approximately 2 hours and was performed

online using Microsoft Teams. Focus groups were recorded with the consent of participants, verbatim transcribed and analyzed through a standard thematic analysis.

Main results. The literature review revealed a substantial discrepancy in the number of published studies on structured education programs across the countries considered, with some countries devoting considerably more attention to education topics on diabetes (e.g., UK, Germany, The Netherlands). This first finding suggests that the collection of robust evidence on the impact of education programs is not perceived equally important by different countries; only some countries, in fact, envisage the provision of evidence as mandatory before implementing an education program into clinical practice. The review also showed that the characteristics of programs, including target population (e.g., T1DM vs T2DM, individual vs group, etc), health professionals delivering education, topics addressed, format (e.g., face-to-face, online, etc) are very heterogeneous both across and within countries. Finally, the focus groups revealed that, especially for some countries with regionalized/decentralized healthcare systems (e.g. Italy, Spain), education in clinical practice does not necessarily reflect published experiences, and widely varies within the national contexts. Overall, some relevant recommendations emerged from the focus groups. In particular, recommendations pertain to the following thematic areas: 1) definition of structured education in diabetes; 2) characteristics of structured education programs; 3) characteristics of professionals delivering education; 4) financial incentives for education programs; 5) collection of evidence and link with incentives; 6) sharing of best practices on diabetes education.

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Title

The Socioeconomic Status Gradient in Pain: A Cross-Country Analysis.

Author

E. Croda.

Abstract

Chronic pain has an important impact on peoples' lives and is a fundamental dimension of well-being. Pain is one of the most common reasons people seek medical care and take medications. It also complicates the treatment of other diseases and limits one's ability to work and function in the society. At the individual level, it is associated with a series of negative outcomes, including depression, job loss, reduced quality of life, impairment of function and disability. At the societal level, it imposes considerable costs on the health care system and the economy. Taking into account both the direct costs of medical treatment, and the indirect costs associated to the loss in productivity, the Institute of Medicine has recently estimated that chronic pain affect approximately 100 million U.S. adults at a cost of $560 - 635 billion every year. These figures are greater than the annual costs of heart disease, cancer, or diabetes (IOM, 2011).
Our current understanding of people's pain experiences has been largely limited by data availability. Most research so far has focused on the US, where chronic pain has been deeply intertwined with the opioid crisis (Case and Deaton, 2015, 2017, 2021), but little is still known about pain in Europe.
In this paper, I investigate the existence of sex disparities in chronic pain and the extent to which chronic pain is associated with socioeconomic status in mid-life in fourteen European countries (Luxembourg, Switzerland, the Netherlands, Austria, Denmark, Sweden, Germany, Belgium, France, Italy, Spain, Czech Republic, Slovenia, and Estonia) and the United States. Specifically, I exploit newly available data from SHARE and HRS to study whether (i) sex-based differences in pain are relatively similar across countries, (ii) country- specific characteristics matter the most for people in the bottom of the income distribution (Chetty et al., 2016), and (iii) greater use of pain medication reduces aggregate pain (Krebs et al., 2018).
HRS has been asking questions about pain since its first wave, while SHARE started in wave 5. Therefore, I use the four available waves of SHARE (wave 5 through 8) and the corresponding HRS waves. To measure chronic pain, I rely on two questions. Both surveys ask respondents whether they are troubled with pain, and if they are, the questionnaires then ask how bad the pain is most of the time (and give the options: mild, moderate or severe). I consider respondents answering "yes" to the initial question as individuals experiencing chronic pain and I combine responses to both questions to create a 4-category "pain intensity" variable for each survey: no pain, mild pain, moderate pain, and severe pain.
In the preliminary analysis conducted so far, I find that pain is part of life for two out of five midlife individuals, with wide heterogeneity across countries, from 23% of Swiss to 53% of French. (Perhaps surprisingly, given the widespread use of opioids and the "death of despair" in the US, the prevalence of pain in the US seem to be in line with the prevalence in other European countries (38%).
In every country, more women are bothered by pain than men, with noticeable differences in the gender gap across countries: in Slovenia and the Mediterranean countries (Italy and Spain) the gender gap is quite large, compared to the US and some other countries. While reporting styles may explain some of these differences, some patterns are consistent across countries and the disparities are fairly large. That markers of socioeconomic status, such as education and income, are associated to health outcomes is by now quite well established (e.g. Cutler and Lleras-Muney,

2008). The association between socioeconomic status and pain, however, has only been recently receiving attention among researchers, and so far, the focus has been mostly on education in the US (e.g. Atlas and Skinner, 2010, and Case and Deaton, 2017, 2021). SHARE and HRS allow me to go beyond education and consider additional dimensions of socioeconomic status, such as income and occupation.I first document the existence of dramatic differences in the prevalence of pain by educational attainments in Europe as well as in the US: In every country, individuals with less than high school are much more likely to be troubled by pain than those that have completed secondary education, and these two categories are more likely to report pain than those who have higher educational attainments. Next, I provide evidence that the reporting of pain shows a strong gradient also according to income quintiles, across all the countries in the sample. Arguably more importantly, I find that that there is more country-level variation in the lowest income quintile as well as in the lowest education group, suggesting that country-specific characteristics matter the most for people at the bottom of the income distribution. This finding is similar to Chetty et al. (2016)'s results for the association between income and life expectancy. Not only the less educated are more likely to be in pain, they are also more likely to experience more severe pain levels than the rest of the population. What can explain this strong association between pain and socioeconomic status and the observed disparities? A possible explanation for these differences is that people with lower socioeconomic status are more likely to have worked in manual jobs, or to suffer from poor health. In the multivariate analysis, I plan to control for such differences using controls for occupation and industry and for several dimensions of health status, that may be associated with pain at older ages. I estimate probit regressions for the prevalence of pain and ordered probits for the intensity of pain.

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Title

And Breathe Normally: The Low Emission Zone impacts on health and well-being in England.

Authors

H. Beshir, E. Fichera.

Abstract

Air pollution is a global concern for its negative externalities on the climate, but also on the healthcare sector and human capital accumulation. Yet, there is scant evidence on the effectiveness of clean air transport policies. In this study we investigate the effects of London's Low Emission Zone (LEZ) and Ultra-Low Emission Zone (ULEZ) on health and well-being. We exploit the temporal and spatial variation of these policies, implemented in Greater London (LEZ) and Central London (ULEZ) in 2008 and 2019, respectively. Using a difference-in-differences approach and linked survey and administrative data, we find LEZ has significantly reduced PM_{10} by 12% of the baseline mean and ULEZ has reduced both NO_2 by 12.4% and PM_{10} by 27%. We also show improvements in health with LEZ reducing limiting health problems by 7%, COPD by 14.5% and sick leave by 17%; and ULEZ reducing number of health conditions by 22.5%, anxiety by 6.5%, and sick leave by 18%. A back of the envelope cost-benefit analysis indicates savings for £963.7M for the overall population.

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Title

The substitution effect between primary care and emergency secondary care in individuals with chronic conditions.

Authors

M. Laudicella, P. Li Donni.

Abstract

We examine the substitution between primary and secondary care in patients with chronic conditions by using a dynamic structural model for longitudinal count data. By using a hidden Markov chain approach, the model allows for disentangling unobservable time-varying heterogeneity from the dynamic effect of utilization of primary and secondary care. We also allow unobserved heterogeneity to depend on observable individual characteristics. We find a noticeable substitution effect with an additional primary care visit reducing utilisation of emergency care. Results indicate that the substitution effect decreases with age with diminishing marginal increments, and it is much larger in individuals with a heavy-user profile than in other individuals.

Title

La qualità percepita dei ricoveri nei Dipartimenti ad Attività Integrata del Policlinico di Messina.

Authors

A. Alibrandi, L. Gitto, M. Limosani, P. Mustica.

Abstract

Background. Air La qualità ha ricevuto diverse definizioni a seconda del contesto di riferimento e, soprattutto, riguardo all'ambito sanitario. Tra tutte le definizioni che sono state fornite, risalta in modo particolare la dimensione della qualità percepita, che necessita di un attento monitoraggio. È, infatti, dalla percezione che il cliente/utente ha del prodotto/servizio consumato che dipenderà il suo livello complessivo di soddisfazione e, conseguentemente, le sue decisioni di consumo futuro.
Infatti, la sanità è un experience good: il paziente tornerà in un ospedale nel momento in cui sarà soddisfatto del servizio ottenuto, cioè nella misura in cui avrà percepito il servizio come qualitativamente adeguato.
Obiettivi. La finalità del presente studio è duplice. Innanzitutto, si vuole fornire un framework teorico esauriente del fattore chiave, la qualità dell'assistenza sanitaria, che influenza la soddisfazione del paziente. Il secondo obiettivo di questo lavoro è realizzare un'analisi su un caso reale, valutando la qualità percepita dei servizi di ricovero.
Dati e metodi. L'analisi ha riguardato i ricoveri effettuati nel 2019 presso il Policlinico Universitario di Messina. Si è proceduto con un'analisi econometrica impiegando il modello logit. Il giudizio complessivo dei pazienti sui servizi ricevuti durante il periodo di degenza è stato rilevato tramite un questionario, realizzato dalla Regione Siciliana, somministrato telefonicamente qualche giorno dopo il ricovero: tale giudizio è stato impiegato come variabile dipendente in un modello econometrico logit. Le altre variabili impiegate nel modello finale, cui si è giunti tramite la procedura stepwise, hanno riguardato l'appartenenza o meno a uno specifico Dipartimento ad Attività Integrata, la pulizia degli ambienti e il giudizio sui medici.
Risultati. Dai risultati emerge come il paziente presti particolare attenzione tanto a fattori contestuali ambientali (pulizia degli ambienti, p-value: 0,013), quanto a fattori umano-relazionali (giudizio sui medici, pvalue: 0,026).
Ulteriori approfondimenti dell'analisi potrebbero riguardare altre strutture sanitarie oltre il Policlinico universitario di Messina, attraverso l'impiego degli stessi strumenti di rilevazione della qualità percepita, comparando la qualità percepita nelle strutture ospedaliere, sia pubbliche che private.

Title

The influence of bio-psycho-social frailty on health services utilization among elderly Europeans: a cross-national, longitudinal analysis.

Authors

S. Calciolari, C. Luini.

Abstract

Background. Frailty represents an emerging challenge for Europe and has major implications for clinical practice, public health and the sustainability of health systems. It is a geriatric condition, related to but distinct from disability and multimorbidity, and defined as state of vulnerability resulting from physiological declines in reserve capacity and fitness across multiple organs. Notably, such condition results in increased adverse outcomes in older people. More recently, however, it has been argued that the concept of frailty should be widened to embrace a multidimensional and integrated approach, including both biologic and psycho-social aspects. In this respect, Gobbens and colleagues (2010) define frailty as "a dynamic state affecting an individual who experiences losses in one or more domains of human functioning (physical, psychological, social) that are caused by the influence of a range of variables, and which increase the risk of adverse outcomes".
Objectives. The analysis aims to provide evidence on the importance of taking a broader approach in defining the condition of frailty, by investigating the role of its physical, social and psychological subdomains in predicting healthcare consumption in elderly Europeans. The outcome variables considered are hospital admission and number of doctor visits.
Data and Methods. The study uses the Survey of Health, Ageing and Retirement in Europe (SHARE), a multidisciplinary and cross-national panel database of micro data on health, socio-economic status and social and family networks. The analysis is based on the information from twelve European countries, with a total number of observations equal to 185,169 and collected in 2011 for wave 4 (n=47,469), 2013 for wave 5 (n=56,886), 2015 for wave 6 (n=52,994) and 2019-20 for wave 8 (n=27,820). The physical frailty index is built following the phenotype definition by Fried et al. (2001), while psychological and social frailty are constructed to proxy the Tilburg Frailty Index: the Cronbach Alphas confirm the reliability of the three frailty indexes, coherently with previous studies. We investigate the relationship between the three dimensions of frailty on two aspects: 1) the likelihood of being hospitalized; 2) the number of doctor visits. The problem of missing values due to item non-response is addressed using Fully Conditional Specification multivariate imputation. The study uses two regression models (logit and poisson, according to the nature of the outcome variable) exploiting the longitudinal structure of the data to control for time-fixed unobserved characteristics and including regressors to correct for demand-side factors (health status; socio-economic status; and behavioral risk) as well as for country-specific characteristics (country binary variables).
Main Results. Prevalence of physical frailty increases with age (42%% vs. 8%, respectively, in 80+ and 50-60-years old people) and is highest among respondents with multi-morbidities (80% vs. 20%, in people with and without, respectively). Similarly, prevalence of social and psychological frailty is highest in presence of multi-morbidity (60% vs. 40% and 74% vs. 26%, respectively). After controlling for the main correlates and for unobserved individual effects, the study shows that physical frailty, in line with previous findings,
increases the likelihood of hospitalization and doctor visits. Social frailty, instead, is negatively associated with both outcomes, suggesting potential health access inequalities. Finally,

psychological frailty increases the likelihood of visiting a doctor and of being hospitalized, albeit weakly.

In conclusion, the study suggests that taking a multidimensional approach to frailty has the potential to better predict complex needs of the elderly and shed a light on the need to further investigate the role of psycho-social frailty in predicting healthcare utilization in the elderly.

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Title

The impact of centralised procurement on health outcomes: the case of hip replacement surgery in the Italian NHS.

Authors

H. Bank, G. Callea, C. Mauro.

Abstract

Background. In response to increasing health care cost pressures, governments and healthcare organisations are experimenting with various cost containment policies, including the use of public procurement through tenders for healthcare goods and services. Moreover, organisations have attempted to capture economies of scale through volume bundling and standardization of goods and service categories, and economies of process by replacing individual purchases with centralised tenders. Evidence from the literature has suggested that centralised procurement can be an effective cost-saving measure with advantages such as reduction of acquisition price, decrease in total healthcare expenditure, lower administrative burden, reduction of passive waste (inefficiency) and active waste (corruption), and accumulation of experience and best practices. However, the critical role played by public procurement in generating savings through public tenders also has the potential to lower product quality and thus negatively affect patient outcomes. Little or no studies have empirically examined the effects of public procurement on patient outcomes.

Objectives. To fill this gap, we aimed to investigate determinants of patient outcomes after hip replacement surgery using administrative databases from the Italian NHS – including whether and how the presence and characteristics of centralized tenders affects outcomes, namely hospital readmissions and revisions after primary hip implants. In Italy, the process of increasing centralization of procurement started at the beginning of the 2000s, driven by the need to improve efficiency, generate savings and enhance transparency. Starting from 2016, medical device (MD) components for hip replacement are purchased through centralised procurement by Soggetti Aggregatori, regional contracting authorities in charge of purchasing certain categories of goods and services defined by the Italian national law. Moreover, the Italian National Outcomes Program (Programma Nazionale Esiti - PNE) routinely computes two standardized outcome indicators for hip replacement: readmissions within 30 days and revisions within two years of incident hip replacement surgery. Therefore, hip replacement surgery was an ideal candidate to investigate determinants of patient outcomes.

Methods. Given the absence of structured databases allowing for the analyses, we designed and implemented an ad hoc, integrated database, fed with data collected from numerous sources, mainly hospital discharge records, hospital expenditure for hip replacement components derived from Flusso Consumi, and information regarding tenders from Soggetti Aggregatori websites. We linked records from the years 2013 to 2019 at the hospital, LHA and regional levels and performed statistical and regression analyses on several models to study the impact of procurement variables on patient health outcomes, controlling for confounders. We measured the patient characteristics and outcomes in the hospital discharge database using the PNE indicator methodology. Publicly-available data on MDs associated with hip replacement was downloaded from the Italian Ministry of Health website. This data tracks expenditure at the local health authority or independent trust level to monitor consumption of MDs. Finally, data on regional tenders was collected separately and added as a dummy variable for the region and year that the centralised tender purchase was initiated. The analysis was conducted at the hospital level.

Dependent variables were readmission and revision. Independent variables included hospital level measures, such as hospital expertise, teaching status, and individual patient demographics (percentage of patients 75 years and above, percent male, patient comorbidities, average length of stay). Variables associated with the MDs and procurement included the number of different product types, suppliers, classes of MDs purchased, and the concentration of the market (four-firm concentration ratio and Herfindahl-Hirschman Index), along with the dummy variable for the regional centralized tenders.

Main Results. Health outcomes were positively affected (i.e., lower readmission rate) by the expertise developed by the hospital (i.e., high number of interventions) and by a higher differentiation of MD products by CND. The factors that most negatively affect the average readmission rate in a hospital included a high percentage of patients with >=75 years and residence in a specific region. The presence of a regional tender results in a slightly increased readmission rate. However, when regional dummies were introduced, the coefficient lost significance. Further analysis to aggregate hospitals at LHA level examine patient-level regressions and add in other variables (e.g., rehabilitation), are ongoing to try to better examine the effects of centralised procurement.

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Title

Restrictions to the Number of Pharmacies and Hospitalizations.

Authors

A. Cintolesi, A. Riganti.

Abstract

Background/Objectives. The literature generally holds that a more widespread distribution of clinics and medical centres reduce emergency rooms admissions by draining unnecessary visits, suggesting that some hospital services may be replaced with a capillary health network. Similarly, pharmacies play a crucial role as a primary medical assistance unit, which provide medicine and information to treat a large number of diseases and guarantee coverage every day of the year at any time without the need for an appointment. In many Western countries, the coverage of pharmacies is hindered by strong limitations to the number of pharmacies allowed to operate. There are different reasons to suppose that a more widespread distribution of pharmacies, which reduce to cost of the visit and increases the accesses, may affect hospitalizations. First of all, pharmacies may direct some patients to hospital when they were not thinking to go or suggest them to not go to the hospital as they were planning (information effect). In addition, patients may decide to go to pharmacies before going to the hospital as they would do otherwise, eventually avoiding hospitalizations thanks to the services received at pharmacy (substitutability effect). Lastly, pharmacies may promptly provide drugs and advice to patients with very mild diseases that would have waited otherwise, preventing the worsening of their present condition and the need of a future and costly hospitalization (prevention effect).
Methodology/Data. We study the impact of legal restrictions to the licenses for pharmacies on hospitalizations. We use a reform approved in 2012 in Italy that increased of 8% the number of pharmacies allowed to operate in the national territory. We identify the impact of limitations to the number of pharmacies on hospitalization related expenditures and their rate using a reform that increased the number of pharmacies allowed operating in Italy. We use the Italian National Archive of Hospital Discharges provided by the Ministry of Health and we set up a regression discontinuity design exploiting monthly data on hospitalizations from Italian provinces. In particular, as the reform mandated a sudden increase in the number of pharmacies of about 8%, which took place at different times in each region between 2015 and 2019, we use monthly data on the universe of hospital discharges happened between 2010 and 2019 in any public or private structure within the national territory. After having normalized the month of opening of the new pharmacies across Italian provinces, we set up a regression-in-time discontinuity design (RDiT). We separately focus on two types of hospitalizations: the medical hospitalizations, which did not need "significant" surgical procedures and which due to their characteristics are the most likely to be treatable in pharmacies, and the surgical hospitalizations which are unlikely to be affected by pharmacies as a control group.
Main results. We find that an increase of 8% in the number of pharmacies lowered medical hospitalizations of 1.1% and the related expenditure of 1.3%. We find that the increase in the number of pharmacies reduces public expenditure for medical hospitalizations of 1.3%, about 1.6 euros per capita less every year, and we do not find any effect on expenditure for the control group of surgical admissions. On average, one new pharmacy prevents 17 hospitalizations every year: as expected, the average impact of a single pharmacy is rather small, but the overall effect adds up to a significant amount when many new pharmacies are opened. We do not find any impact on a control group of surgical hospitalizations and we validate the results with a battery of placebo tests and with additional analysis. First, we set up a battery of placebo tests in which we

suppose that the treatment would have taken place in other months before and after the reform; the results are close to zero and not significant, showing that our results are most likely attributable to the reform. Then, we use the ISTAT survey on daily aspect of life to compute the regional before/after variation in ease of access to pharmacies, we split the regions in two groups according to their variation respect to the median and we run the RDiT model on the two separated samples. We find that the effect is driven by areas in which the ease of access to pharmacies increases more, vouching for the fact that the effect is triggered by the improve in accessibility to pharmacies generated by the reform.

Title

Return on Investment (ROI) di tre programmi vaccinali in Italia: la vaccinazione contro l'HPV a 12 anni, l'Herpes Zoster nell'adulto e l'influenza negli anziani.

Authors

M. Barbieri, S. Boccalini.

Abstract

Background. Il calcolo del Return on Investment (ROI) permette di apprezzare il costo-opportunità di una serie di interventi e può aiutare, quindi, ad effettuare delle scelte allocative. Nel valutare il valore dei programmi di vaccinazione i metodi delle valutazioni economiche classiche, utilizzate per altri interventi sanitari, potrebbero non tenere conto di tutti gli aspetti rilevanti per tali programmi. L'analisi qui proposta prende spunto metodologicamente dai recenti lavori dell'Office of Health Economics britannico (OHE) e dalle più recenti riflessioni metodologiche sugli 'shortcomings' dell'applicazione delle metodologie classiche dell'HTA al panorama vaccinale.
Obiettivo. L'obiettivo di questo studio è quello di stimare il ROI di tre vaccinazioni (HPV per gli adolescenti, HZ per gli adulti, e influenza per l'anziano) nel contesto italiano, considerando l'impatto dell'aumento della copertura vaccinale in base agli obiettivi target del Piano Nazionale Prevenzione Vaccinale (PNPV) 2017-2019 e sottolineando le differenti peculiarità di ciascuna vaccinazione.
Metodologia. Si sono costruiti tre distinti modelli di coorte statici a partire dai dati Istat del 2019, includendo le età di eleggibilità alla vaccinazione in esame previste nel PNPV 2017-2019 e seguendole sino a morte (orizzonte lifetime) oppure sino al waning vaccinale. Ogni modello confronta il livello di investimento a coperture attuali (scenario coperture reali) e quello a coperture target rispetto alla non vaccinazione. Il calcolo del ROI è stato eseguito secondo la seguente formula:
ROI=(Δ COSTI DIRETTI E INDIRETTI DOVUTI ALLA MALATTIA)/(Δ COSTO VACCINAZIONE) Un valore di ROI superiore a 1 indica una situazione nella quale i risparmi in termini di costi diretti e indiretti di una strategia di vaccinazione sono superiori al costo del programma vaccinale; in altre parole, il risparmio è superiore all'investimento in vaccinazione. Un valore inferiore a 1, invece, suggerisce che i risparmi sono inferiori ai costi dell'investimento (che potrebbe comunque essere raccomandabile in termini di costo-efficacia, seppur non dominante).
Risultati. Il ROI per la vaccinazione contro l'HPV è risultato il più alto tra i programmi comparati e stabilmente superiore al valore 1 (range: 1,4-3,58), mentre valori più bassi si sono stimati per la vaccinazione antinfluenzale nell'anziano (range 0,48-0,53) e contro l'HZ (range: 0,09-0,27). I costi indiretti hanno rappresentato una parte rilevante dei risparmi della vaccinazione, specialmente per l'HZ. La nostra analisi ha mostrato che una parte significativa del risparmio generato dai programmi di vaccinazione matura al di fuori della prospettiva del Servizio Sanitario Nazionale ed è spesso non stimata con altre forme di valutazione economica. In conclusione, il nostro studio vuole essere un esercizio che mette a confronto il ROI di diversi programmi vaccinali nel contesto italiano ed ha l'obiettivo di offrire un terreno di discussione e di valorizzazione del 'paniere' vaccinale all'interno della spesa per prevenzione evidenziando le differenti peculiarità di alcune strategie vaccinali di cui bisogna tener conto in ambito decisionale. L'utilizzo di tale metodologia permette di considerare l'impatto economico sull'intera società e non solo sui costi diretti del SSN, come viene normalmente valutato nelle analisi di costo-efficacia classiche sui programmi vaccinali.