



Rethinking patient flows in a changing healthcare system: a unified approach

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Keywords

Hospital • Patient flows • Appropriateness

Summary

Introduction. *The management of chronic diseases poses a challenge to the National Health Service (NHS), but it can also offer an opportunity for a radical renovation of healthcare provision. To improve the appropriateness of healthcare settings, it is essential to adopt integrated approach in all healthcare settings.*

Methods. *This study was conducted at San Giovanni Bosco Hospital, in the area of the “Città di Torino” Local Health Authority, between June 2021 and December 2022. Its main goal was to manage hospital patient flows in an integrated manner in order to improve the efficiency of the entire healthcare system. The data were examined in terms of effectiveness in optimizing hospital flows.*

Results. *The data indicated that hospital outpatient activities can become more specialized by leveraging the greater technological*

potential that a hospital possesses. At San Giovanni Bosco Hospital, the hub of the “Città di Torino” Local Health Authority (ASL), differential patient pathways were established in order to enhance the efficiency of the entire system by deploying hospital staff in a community setting. Implementation of the Otorhinolaryngology pathway avoided the hospitalization of 249 patients, who would otherwise have added strain to the overall organization of the hub hospital, which is currently short of space.

Conclusions. *A significant effort is needed in order to build an integrated network that provides patients with reliable and stable references. The approach adopted at San Giovanni Bosco Hospital resulted in an improvement in the use of both hospital and territorial facilities.*

Introduction

Italy, like other developed countries, has an aging population [1, 2]. Moreover, in Northern Italy, the prevalence of people aged over 65 years is slightly higher than the national average. A similar trend can also be seen in the Piedmont Region [3]. This demographic evolution is expected to have an influence on morbidity, with an increase in the prevalence of chronic diseases and an impact on the National Health Service (NHS), which already faces significant challenges in treating chronic pathologies [4-7]. The growing complexity of chronic illnesses and their socio-economic implications emphasize the need to ensure continuity in care pathways and patient management. In this regard, a critical aspect is the accurate selection of the care setting and of the most suitable professionals, not only to ensure the efficiency of healthcare services but also to guarantee the overall quality of care and to improve the relationship between the healthcare service and those who receive medical treatments.

Haggerty et al. [8] have identified three forms of healthcare continuity: a) continuity of information, which involves the use of patient history to tailor treatments to specific needs; b) continuity of management, which involves adopting a consistent and appropriate approach to coping with disease in such a way as to meet evolving patient needs; c) relational continuity, which means fostering an uninterrupted therapeutic relationship between the

patient and one or more healthcare providers. The actual achievement of these objectives is challenging because, in addition to considerable personal contact with patients, it would require a substantial revision of how healthcare services are delivered and the adoption of strategies for both hospital and community care [9-11]. In order to implement an effective governance project in this context, it is essential to adopt a systemic and integrated approach by involving the stakeholders of the healthcare system and by requiring coordinated collaboration among all parties involved [12]. The Italian healthcare organization, despite its good intentions, is still predominantly “hospital-centered”. Diseases which require healthcare continuity are on the rise, while the current service organization struggles to efficiently manage early patient discharges.

To ensure economic efficiency and the overall quality of care, the accurate selection of the care setting and of professionals is fundamental, and must consider both professional expertise and access to technologies and services. Moreover, overcoming the traditional opposition between hospitals and community care facilities requires cultural, organizational and operational changes in order to promote a more integrated approach in all healthcare contexts.

However, in this scenario of demographic changes and healthcare challenges, opportunities arise from the Next Generation EU Program and the promotion of a “One Health” approach [13]. Indeed, within the framework of

Mission 6 Health in the National Recovery and Resilience Plan (PNRR), which is part of the next generation EU program, Component 1 (Proximity Networks, Facilities and Telemedicine for Territorial Healthcare) aims to establish proximity networks to enhance territorial healthcare, in accordance with a “One Health” approach. Planned initiatives already include various actions to create and/or enhance local healthcare facilities and establish new standards for territorial healthcare [14]. For example, new Community Houses will be built: places where citizens will have rapid and easy access to primary healthcare services or other basic clinical services (e.g. physiotherapy, dietology, radiology, blood tests). The planned initiatives also include Community Hospitals – facilities that play an intermediate role between home care and hospital admission – with the aim of avoiding unnecessary hospitalizations or facilitating safe discharge to places more suited to the patient’s clinical condition.

To implement this strategy, it is necessary to establish a suitable institutional and organizational framework, the main goal being to integrate the National Health Service into a broader context of well-being, as per the European standards. In this regard, a promising strategy is to establish dedicated outpatient clinics. Indeed, adopting integrated organizational approaches among different care settings can significantly improve the appropriateness of care by directing hospital outpatient activities towards specialized functions and by fully leveraging the technological potential of hospital facilities [14]. This solution is essential to creating integrated care pathways between the community and the hospital, offers a variety of care settings and reduces hospital overcrowding.

To move beyond the dual hospital-community structure of care, it is necessary to effect cultural, organizational and operational changes. What has been done at San Giovanni Bosco Hospital, the hub of the “*Città di Torino*” Local Health Authority (ASL), is aimed at designing targeted pathways, in order to streamline hospital flows and ensure optimal patient management at the territorial level. A further aim is to enable hospital personnel to work within community houses and with healthcare professionals who operate in this setting, thus promoting greater cohesion between the hospital and community care.

Methods

This study was conducted at San Giovanni Bosco Hospital, in the “*Città di Torino*” Local Health Authority. Its main goal was to design and manage patient flows in an integrated manner, so as to improve the efficiency of the entire healthcare system by focusing on the hospital and the community.

Several healthcare pathways were created in order to reduce patient flows in the hospital: the establishment of outpatient clinics for the Continuity of Oncological Care, Cardio-oncology, Hematology (2 clinics), Endo-

metriosis, managed by a hospital gynecologist, Clinical Psychology, Audio-Vestibology and Otorhinolaryngology (ENT).

To assess the impact of these healthcare pathways, we analyzed the access records of patients with a diagnosis of neoplasia and the number of examinations and diagnostic tests performed. These data were examined in terms of effectiveness in optimizing hospital flows and ensuring better patient care.

Results

The main goal was to design and manage patient flows in such a way as to optimize the overall efficiency of the healthcare system through the involvement of the hospital staff at a territorial level.

The healthcare pathways under study necessitated the establishment of several outpatient clinics:

a Continuity of Oncological Care clinic, managed by a hospital oncology specialist and a psycho-oncologist; a Cardio-oncology clinic, which focuses on monitoring cardiotoxicity induced by chemotherapy: patients requiring routine checks for this specific issue are managed in this outpatient context; two Hematology clinics: one is dedicated to chronic patients with a priority class of P or D, indicating that treatment is to be provided within 120 and 30 days, respectively, while the other is reserved for patients with a priority class of B or U, indicating treatment to be administered within 10 days and within 72 hours, respectively; an Endometriosis clinic managed by a hospital gynecologist; a Clinical Psychology clinic, which provides a service both for oncology patients already followed up and supported during hospitalization and for grieving caregivers; an Audio-Vestibology clinic for the care and follow-up of patients and for the surveillance of the most vulnerable subjects, with patients being referred to second-level hospital audiology when necessary; and an ENT clinic managed by hospital staff, for the follow-up of oncology patients.

The ENT Outpatient Clinic emerged as the most successful, in that a third of oncology patients were involved were redirected to a community care facility. Specifically, one third of the patients with an ENT oncological disease diagnosed in San Giovanni Bosco Hospital were examined in the community outpatient facilities, which had been established to improve patient flows and the efficiency of the healthcare system by deploying hospital staff in a community setting. Starting from June 9, 2021, 249 examinations involved patients diagnosed with neoplasia who underwent follow-up visits and related diagnostic tests, such as laryngoscopy, at the outpatient clinics of the North-West District of the Local Health Authority of the City of Turin. This initiative helped to significantly reduce the number of patient admissions to the hospital, thereby improving its overall organization, especially since this hub hospital has space limitations. The experience terminated on December 21, 2022, in order to allow refurbishment work in the community clinics to enhance their capacity

to accommodate a growing number of patients. In January 2024, the new outpatient clinic dedicated to oncology patients became available and is managed by the medical staff of San Giovanni Bosco Hospital.

Discussion

Ongoing demographic changes in Italy are profoundly reshaping the national healthcare system, which is upon to cope with a notable increase in the prevalence of chronic diseases. Consequently, the National Health Service is faced with an increasingly heavy burden. To alleviate this burden, greater efforts should be made to improve the healthcare system's ability to manage certain patient categories. Moreover, the recent COVID-19 pandemic acted as a catalyst, impacting on the organization of both hospital and territorial healthcare [15-18]. Indeed, it is well documented that hospital admissions and examinations, also for oncological patients, decreased, especially during the first pandemic wave [26-30]. Despite the gradual post-COVID improvements, many challenges persist, and the current healthcare scenario remains far below pre-pandemic levels.

Moreover, general underfunding of the National Health Service is contributing to its progressive deterioration, which makes it difficult to ensure essential services. Indeed, waiting lists are getting longer, while emergency rooms are increasingly crowded and there is often a delay in providing timely assistance. The increased admission rate during the post-pandemic period, which has resulted in an increased patient flow in hospital facilities, could be partially offset by focusing on territorial care [2, 19]. In San Giovanni Bosco Hospital, we have tried both to redirect the growing patient flow resulting from efforts to tackle the backlog of services not performed during the pandemic and to respond to new health needs. This has involved the use of facilities other than hospital ones, albeit with the deployment of hospital staff.

Managing complex patients within a continuum of care requires a transitional approach that includes a set of actions aimed at ensuring continuity of care when patients are transferred from one location to another, or moved through different levels of care within the same setting [20]. The Ministry of Health has strongly supported the need to identify organizational models for managing patients in chronic rehabilitative phases by using alternative healthcare settings and not just dedicated facilities [21]. In addition to demographic changes and the increase in the elderly population, there has been a clear transformation in healthcare demand. Local settings must therefore ensure sufficient care for all patients, especially those who are chronic, disabled or elderly, and must in turn seek to strengthen primary care systems [22, 23]. New, highly integrated services have therefore emerged, in order to avoid excessive hospital admissions and to take care of patients by providing the best support to meet their needs [9, 14].

In this scenario, particularly within San Giovanni Bosco Hospital, a more holistic approach to healthcare has

been adopted, which overcomes the traditional hospital-community care dichotomy. Certain strategies can be implemented in order to reduce hospital overcrowding, shorten waiting times in specific subgroups, minimize the possibility of errors and improve the perceived quality of assistance [24, 25]. A key goal of hospital-territory integration is to provide specialized outpatient care, which must be organized within a perspective of unity and continuity.

The positive experience of the ENT clinic can serve as an example of successful management, as a third of oncology patients were effectively involved in a territorial care program. The implementation of dedicated clinics supported by hospital staff improved the appropriateness of care settings, reduced hospital overcrowding and ensured better patient care. However, building an integrated network within which the patient has reliable and stable references requires considerable effort and clear criteria regarding who should be taken care of, by whom, and in which facilities. Indeed, through the integration of hospital specialists into territorial healthcare, patients who do not necessarily need hospital treatment can receive appropriate care. Moreover, this approach ensures the professional quality of specialists outside hospital facilities, which will, in turn, promote greater cohesion between the hospital and the territory. The hospital physician who interacts with the territorial network and with professionals in the field will contribute to the much-needed pooling of skills and resources.

A possible limitation of this study is that the data concerned a specific hospital context and may not be generalizable to all healthcare settings.

Conclusions

The positive result obtained at the ENT outpatient clinic is likely to serve as the foundation for future expansions, and even more effective and systematic patients care is envisioned. This goal will be achieved through the introduction of a multidisciplinary team in outpatient activities, for instance through the integration of the upcoming Community House.

These results indicate that the creation of outpatient care pathways in the community care setting can improve the management of hospital resources, increase access to healthcare services and ensure more comprehensive care for oncology patients. Another important element is patients' perception that territorial facilities can provide the quality of care that is normally available in a hospital, and therefore that they do not need to go to the hospital. Furthermore, by working in territorial facilities, the hospital specialist can experience the territorial reality and collaborate with local professionals, such as the general practitioner (GP), and other non-medical healthcare personnel. In sum, this approach promotes greater cohesion between the hospital environment and the territory, and contributes to a more integrated and patient-centered healthcare system.

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Conflict of interest statement

The authors declare no conflict of interest.

Authors' contributions

MS, FB and MM: conceptualization. MS, FB and MM: methodology. MS, MG, FB and MM: writing-original draft preparation. MS, MM, and MG: writing-review and editing. MS, FB and MM: supervision. MS, MG, FB and MM share last authorship: project administration. All authors have read and agreed to the published version of the manuscript.

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