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Transformation of the Italian healthcare system

Abstract

The Italian healthcare system is based on the National Health Service (Servizio Sanitario Nazionale; SSN), which provides free healthcare mainly to citizens and legal foreigners. The decentralization of the Italian healthcare system has led to the argument that it is now undergoing a fundamental transformation that must be adequately reflected in the operation of the National Health Service (Servizio Sanitario Nazionale; SSN). The current fundamental transformation of the Italian healthcare system is also a consequence of the changes that scientific and technological progress is introducing into almost every activity of the National Health Service (Servizio Sanitario Nazionale; SSN).

Keywords: decentralization of the Italian healthcare system, scientific and technological progress in the Italian healthcare system, changes in the National Health Service (Servizio Sanitario Nazionale; SSN).

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INTRODUCTION

Interest in the Italian healthcare system is the result of recent changes in its organization, management, financing, resources, benefits and plans [1]. Italy based it on the National Health Service (Servizio Sanitario Nazionale; SSN), which was established in 1978 to provide free health care for all citizens and legal foreigners [1,2]. However, citizens of the European Union can also receive it since 2013, while "temporary guests" from outside the European Union have to pay for it. The main objectives of the National Health Service (Servizio Sanitario Nazionale; SSN) include: ensuring equal access to uniform levels of health services, regardless of income or residence; developing disease prevention programs; allowing public control in a democratic sense [2]. In this context, it is also worth mentioning three guiding principles implemented by the National Health Service (Servizio Sanitario Nazionale; SSN), such as: human dignity, health needs, solidarity [2]. The current shape of the National Health Service (Servizio Sanitario Nazionale; SSN) results from three financial reforms which: introduced elements of the internal market, gave greater power and autonomy to the regions in matters of public health, gave management autonomy to local public health authorities and public hospitals [2]. The statutory foundations of these reforms are also the foundations of the health care system, as there is neither a superior law on public health nor a law on a central public health agency [2]. Currently, the National Health Service (Servizio Sanitario Nazionale; SSN) is financed from corporate tax and value added tax collected by the central government and distributed to the regional level [3].

The Italian healthcare system is highly decentralized, being essentially regional in nature. However, the responsibility for the operation of this system is shared between the central government, nineteen regions and two autonomous provinces. Therefore, the National Health Service (Servizio Sanitario Nazionale; SSN) had to be organized at three levels: national, regional and local [1]. The national level steers the Italian healthcare system, setting general objectives, the national benefit package, per capita financing and basic principles. Through annual budget laws, the parliament and the central government agree on expenditures, revenue forecasts and target priority areas. The Minister of Health then directs healthcare planning by defining the national benefit package (Livelli essenziali di Assistenza; LEA), monitors healthcare performance, sets long-term objectives, aligns funding allocations and co-manages with the regions. In this respect, the Minister of Health is supported by a few advisory bodies and government agencies. The regional level, in turn, ensures the implementation of the national package of benefits (Livelli essenziali di Assistenza; LEA), since it organizes the networks of service providers, which include notably local public health authorities, trust funds, public hospitals and accredited private entities. The typical executive functions are then performed by the regional health departments, which may be additionally supported by regional health agencies. Finally, there is the local level, responsible for the organization and delivery of health services, specifically preventive medicine and public health services, primary health care services, including psychiatric care, family medicine and social services, and additional care. In principle, it is the local public health authorities that operate, which are always divided into districts with an assigned population of around 60,000 inhabitants.

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MATERIALS AND METHODS

From this perspective, it seems an inspiring insight into the recent changes in the health care system in Italy. Of course, the Italian health care system should then be understood traditionally, as a system focused on providing health care. Therefore, it can now be assumed that the Italian health care system must always be treated as a coherent whole, whose numerous and interconnected parts, interacting together, influence the provision of health care [4]. Of course, remembering in addition that the health care system analyzed encompasses all institutions responsible for providing health care within the territory of Italy and under its jurisdiction [5]. A special role should then be assigned to the practice of health care in Italy, because it gives a definitive shape to its health care system. From the point of view of the changes in the Italian health care system, it is also worth recalling that Italy has a long tradition of organizing health care, which was initiated by the law on hygiene, health protection and public health of 1888 [2]. This law was developed and signed by Luigi Pagliani, who was the first professor of hygiene and at the same time the founder of the Italian Society of Hygiene, Preventive Medicine and Public Health (Società Italiana di Igiene, Medicina Preventiva e Sanità Pubblica; S.It.l) in 1878 [2]. Moreover, it is now essential to recall the definition of public health that was prepared by the Italian Societies of Hygiene, Preventive Medicine and Public Health (Società Italiana di Igiene, Medicina Preventiva e Sanità Pubblica; S.It.l) in 1988, with the following content: the science and art of preventing disease, prolonging life and promoting health through the organized efforts of society [2]. Therefore, presenting the changes in the Italian health care system requires the use of the system analysis method, as it considers the concept of a system and its analysis as key to understanding all the social phenomena occurring here. Consequently, it must be accompanied by a system methodology, which aims to map the system and systemic thinking, as the ability to draw systemic conclusions. This approach requires the development of statistical data, which are generally available in the literature on the subject, after the creation of the National Health Service (Servizio Sanitario Nazionale; SSN).

RESULTS

Trends in the changes in the Italian healthcare system are revealed first in the financial aspect, when we make a meaningful analysis of them before the Covid-19 pandemic period in the years 2000-2019 [1]. First of all, it should be emphasized now that current healthcare expenditure amounted to 154.8 billion euros in 2019, of which 114.8 billion euros came from public funds, and the remaining 40 billion euros were borne by private entities. As a result, healthcare expenditure accounted for 8.7% of GDP. The share of healthcare expenditure in GDP steadily increased from 7.6% in 2000 to 8.9% in 2010, and then fell to 8.7% in 2019. During the period under review, public healthcare expenditure fluctuated, growing by an average annual rate of 4.1% from 2000 to 2010, and then falling to just 0.9% from 2011 to 2019, while private expenditure showed a stable average annual growth of 2.1% throughout the period. Ultimately, public healthcare financing accounted for 73.9% of all expenditure, so the rest had to be financed privately, mainly from "out-of-pocket" expenditure of 23.3%, because voluntary health insurance covered only 2.1% of expenditure. Hence, healthcare expenditure per capita was US$3,998 in 2019, which is above the average for the WHO European Region. Following the implementation of the €16.1 billion Recovery and Resilience Plan (PNRR) as a key pillar of the EU response to the Covid-19 pandemic, a set of investments and reforms has been set to improve the accessibility, efficiency and sustainability of the National Health Service (Servizio Sanitario Nazionale; SSN) by 2026.

The slow changes in the Italian healthcare system also affect the infrastructure of healthcare facilities, which have a clearly dual status according to data from 2017, as we have 51.8% of public healthcare facilities and 48.2% of accredited private healthcare facilities [1]. Such changes result from the ongoing reorganization of healthcare facilities, which mainly concerns hospital networks, in response to growing financial constraints and the search for more effective solutions. The infrastructure of healthcare facilities in 2019 included: 995 hospitals, 8,801 outpatient facilities, 1,145 rehabilitation facilities and 16,270 stationary, 24-hour and day facilities. As for hospitals and outpatient facilities, they most often have a public status – 51.8% and 97%, respectively, while 24-hour stationary facilities, daytime stationary facilities and rehabilitation facilities most often obtain private status [1]. Italian hospitals, unfortunately, have an average age of 70 years and vary in size: 39% have fewer than 120 beds, while only 13% have more than 600 beds. The largest hospitals, with over 1,500 beds, are located in major metropolitan areas such as Rome and Milan. The hospital network in Italy has been classified since 2015, hence there are essentially 43 highly specialized central hospitals (hub) with more than 802 beds and a wide range of influence and 112 peripheral hospitals (spoke) with 382 to 802 beds as secondary facilities with fewer specialties.

Noticeable changes in the Italian healthcare system also affect human resources when we consider the reinforcement of the flexibility of the health workforce after 2015, since it was possible to modify annually the "3-year needs assessment plans" developed obligatorily by the National Health Service (Servizio Sanitario Nazionale; SSN) providers based on their potential, organizational models, volumes and performance targets [1]. The National Health Service (Servizio Sanitario Nazionale; SSN) employed over 600,000 employees in 2018, which is almost 50,000 fewer than in 2010, of which 72% were medical workers, 17.4% technicians, 10.4% administrative workers and 0.2% other health workers. In any case, there were 4.1 practicing doctors per 100,000 inhabitants in 2021 – a figure comparable to the EU average and an increase from 3.8 practicing doctors per 100,000 inhabitants in 2010, and 6.2 nurses per 100,000 inhabitants – a figure a quarter below the EU average. However, it must be also emphasized that more than half of the doctors working in the public system are over 55 years old, which implies one of the highest figures in the EU. In addition, the number of doctors in public hospitals and family doctors is currently decreasing, which could lead to noticeable shortages in the future. As for other medical staff, according to the 2021 data, the number of practicing dentists was 86 per 100,000 inhabitants, up from 78 in 2013, while the number of practicing pharmacists was 124 per 100,000 inhabitants, also up from 114 in 2013.

It is worth noting further changes from the point of key parameters that define the Italian healthcare system today [6]. First, it must be noted that the average life expectancy in Italy was 82.6 years in 2022, making it the third highest in the EU

and exceeding the EU average by 2.3 years. Throughout the decade preceding the Covid-19 pandemic, the average life expectancy in Italy increased at a rate comparable to the EU average. It is true that in 2020, Italy recorded an above-average decrease in life expectancy of 1.3 years, which was due to the large number of deaths due to the Covid-19 pandemic. About one third of all deaths in Italy should be attributed to behavioral risk factors before the Covid-19 pandemic based on data from 2019, such as: smoking, poor diet, excessive alcohol consumption and low physical activity. Because smoking caused 96,000 deaths in 2019, accounting for 15% of all deaths at that time – although this share is lower than the EU average. Meanwhile, poor diet was responsible for 87,000 deaths in 2019, due to low fruit and vegetable consumption and high sugar and salt consumption, therefore accounting for 14% of the listed deaths. In turn, 30,000 deaths were attributed to excessive alcohol consumption in 2019, while 18,000 deaths were related to low physical activity also in 2019, hence they accounted for 3% and 2% of the deaths listed here, respectively.

DISCUSSION

The starting point for the discussion on the Italian healthcare system should of course be the range of health services that are offered as standard within the national package of benefits (Livelli essenziali di Assistenza; LEA) [3]. In general, they usually include free: preventive medicine, in-patient care, outpatient specialist care, perinatal care, home care, primary health care, hospital care, pharmaceutical products. In addition, it should now be emphasized that regions can additionally offer other health services, but they must finance them themselves. Then it is appropriate to refer to pharmaceutical products, which are divided into three levels depending on clinical effectiveness and payment: level 1 includes life-saving drugs and treatment of chronic diseases – free of charge, level 2 includes drugs for all other diseases – paid, level 3 includes drugs administered exclusively in hospitals – free of charge. Unfortunately, dental care is usually not included, except for children up to 16 years of age, particularly vulnerable groups and people in a difficult economic situation or requiring urgent intervention [7]. When it comes to visits and procedures with specialists, it should also be added, according to data from 2020, that unfortunately they turn out to be additionally paid from 12.91 euros for a check-up visit to 20.66 euros for the first visit and for each assigned procedure up to the limit set by law at that time at 36.15 euros. It should also be noted with surprise that even certain outpatient medicines are subject to fees. On the other hand, the inability of service providers to raise fees above the thresholds included in contracts with the National Health Service (Servizio Sanitario Nazionale; SSN) deserves recognition.

Undoubtedly, the scope of healthcare services is increasingly determined by artificial intelligence in the Italian healthcare system, which is seen as a science that deals with the theory and development of computer systems and algorithms capable of performing tasks that usually require human intelligence [8,9,10]. In recent years, artificial intelligence and medicine have crossed paths, triggering a wave of technological innovations that have revolutionized various aspects of healthcare delivery. These aspects are broadly defined, from disease diagnosis and treatment methods to improved treatment and public health to ensure the effectiveness of healthcare. For example, we can point to the effective use of artificial intelligence in: anesthesiology, dermatology, endocrinology. In anesthesiology, artificial intelligence technologies have a profound impact on all stages of perioperative care, from preoperative planning and pre-anesthetic assessment to intraoperative monitoring and postoperative management, enabling improved quality of care and better outcomes. Similarly, AI technologies have begun to prove their worth in dermatology, by providing more accurate diagnoses, creating personalized treatment plans, and comprehensive patient care, for example through the use of the advanced ChatGPT language model, which is currently the most advanced application for natural language processing. AI is also a promising technology in endocrinology, given its potential to improve screening, disease diagnosis, risk assessment, outcome prediction, and medical research.

CONCLUSIONS

The discussed changes in the Italian healthcare system lead to the thesis that it has been undergoing a fundamental transformation in recent times, which must ultimately be reflected in the operation of the National Health Service (Servizio Sanitario Nazionale; SSN). Warnings about the ongoing decentralization of the Italian healthcare system are coming from almost all sides [1,11]. Especially considering that it promotes inequalities in access to healthcare services, which usually has an economic basis. In this context, worse results are indicated in terms of overall life expectancy, healthy life expectancy and infant mortality between the rich northern regions and the poor southern regions. At the same time, it is also emphasized that the concentration of hospital care in a smaller number of facilities with a large number of patients has increased transregional patient mobility and limited access to care for populations living in decentralized areas. If the centrally imposed ceiling on expenditure on the employment of medical staff no longer applies, the autonomous regions will be able to offer salaries themselves, thus shifting the possibility of filling medical staff positions ideally to the richest of them. However, it must be honestly admitted that the efficiency of healthcare service provision is high, as it is generally efficient and able to provide good access, while maintaining high quality and low costs, although there are regional differences. However, it should also be noted with satisfaction that the centralization of certain competences is also emerging in order to reduce costs and increase transparency, for example in the procurement of medical products.

The fundamental transformation of the Italian healthcare system is also the result of the changes that scientific and technological progress is currently forcing in the operation of the National Health Service (Servizio Sanitario Nazionale; SSN). In terms of scientific progress, one can point to public health genomics, which aims to integrate advances in genomic sciences with healthcare for the benefit of society [12]. Public health genomics is an attempt to responsibly and effectively translate the rapid growth of genome-based knowledge and technologies to obtain additional benefits for public health. Recent declines in sequencing costs and significant advances in data science create numerous opportunities to incorporate genomic information into new strategies for clinical practice and public health. Next, we can mention newborn screening, a unique public health program which identifies presymptomatic conditions shortly after birth, as they may affect the child's

long-term health or survival [13]. Early detection, diagnosis and intervention can then prevent death, disability or alleviate clinical symptoms of diseases, allowing children to reach their potential in terms of health. As for technological progress, it is worth mentioning, for example, the mandatory notification system, which is an important public health tool for continuous monitoring of infectious diseases, and its importance has been highlighted by the recent Covid-19 pandemic [14]. The same applies to telemedicine, because it reduces the risk of infection by eliminating direct medical contacts, at the same time increasing access to medical services and ensuring their better quality, especially in the case of the elderly and chronically ill [15,16].

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