THE ITALIAN NHS: WHAT LESSONS TO DRAW FROM COVID-19?

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Introduction

Italy has been the first European country dramatically hit by the COVID-19 pandemic, recording the highest official number of victims in the world up to Easter. Of course, this catastrophic event has put under pressure the Italian National Health Service (INHS), a Beveridge-type health care system characterized by universal coverage.

Here, we first summarize the main characteristics of the INHS at institutional level, then we focus on the health services put under pressure during the pandemic – general practice, accident and emergency services, intensive care units. Finally, we try to draw some lessons from this epochal experience, envisaging changes potentially useful for improving the INHS performance, hopefully relevant to other European countries too.

Institutional framework

Italy has around 60 million inhabitants and a population density higher than that of most Western European countries, although unevenly distributed throughout its very extensive landmass which includes the two large islands of Sardinia and Sicily [1]. Italy is geographically divided in 20 regions governed by elected politicians, which vary a lot in terms of both size − from 3,261 (Aosta Valley) to 25,832 (Sicily) square kilometres − and population − from around 130,000 (Aosta Valley) to 10,000,000 inhabitants (Lombardy) (Figure 1).

Introduced in 1978, the INHS is a public service mainly funded by general taxation, which provides universal coverage and comprehensive healthcare free at the point of use [2]. Unlike the UK NHS, the system is highly decentralized and the twenty regions are legally responsible for planning services and allocating financial resources – health is by far the most important item of all regional budgets. In principle, local autonomy implies strong financial accountability, which allows regions to develop substantially different health strategies in practice − it is a common view among experts that Italy has twenty NHSs. Yet the central and regional tasks have been intertwined in the

very last decades on account of many piecemeal legislative measures issued by the quite numerous governments over time.

General Practice

Unlike in other Western countries, there are two kind of GPs in Italy, for adults and for children. Altogether there are around 52,000 GPs, fairly homogeneously distributed throughout the country areas (Figure 2). As yet there is no national academic specialty in general practice in Italy, but only three-year postgraduate training courses which vary substantially in content by region [3]. Similarly to the UK, GPs are self-employed physicians mainly paid on a capitation basis under national contracts, although (like in the UK) additional financial incentives and fees for service can be agreed at regional level. Unlike the majority of their British colleagues, many Italian GPs still work single-handed, somewhat isolated within the INHS [3], despite several regional experiences to incentivize financially group practices since the late 1990s [4]. Patients are still registered with one GP, which is a major obstacle to them working in group practice. As a consequence, the weekly access to GP practices is limited. According to a survey we conducted five years ago on 731 GPs in three big northern regions [5], the average opening hours to the public were 3.5 per weekday, confirming the disappointing results of a previous survey conducted a decade before throughout the country [6]. So, the political slogan '24-h. access target' of a recent reform – drawn from the British experience – proved unsurprisingly unrealistic [3]. Last but not least, since around half the Italian GPs are over 55 years old, an aging workforce is a further barrier to change in the culture of care.

In addition to GP practices, many other facilities provide primary care services in local health districts [5], i.e. the operational units of the local health authorities (the third tier of the INHS). Although their mix can vary a lot at the point of delivery even within the same region, the most important health services are: outpatient specialist consultations, infant vaccinations and population screenings, counseling for family planning and home care services. In general, this fragmentation makes primary care hard to manage, and its piecemeal delivery still disorients patients and their caregivers.

Accident and emergency services

Accident and emergency services (AEs) are the 'pillar' of emergency care in the INHS, like in the UK NHS [7]. Around 80% of public hospitals have AEs [1], which generate a high rate of trust by Italian people and are perceived as the most appropriate place to attend for receiving reliable emergency care. However, overcrowding has increasingly become a major issue for the Italian AEs in the new

millennium [8]. On account of the aforementioned weaknesses, GPs have big problems in playing their 'gate keeping' role in primary care, a crucial limitation in the aim of minimizing unjustified access to AEs for problems that could be potentially cared in community. According to a recent INHS survey [9], more than 70% of the total access to public AEs were inappropriate. Yet empty AEs after the outbreak (for the fear of contagion) may be considered indirect evidence of usual inappropriate access.

Another crucial issue for Italian AEs is that they are located in many public hospitals which are small-sized − around 30% with <120 beds, and only 15% with >600 beds [1]. Many efforts to make public hospital networks more rational have often failed, eventually leading to questionable reorganizations at local level [10]. For instance, the two AEs where the first and second outbreaks started in Lombardy are both placed in very small hospitals. Lacking alternatives in primary care, a widespread (justified) sentiment in people living outside big towns is that increasing the distance to acute hospital services undermines easy access to health care, especially to emergency care [5]. This feature has traditionally fostered the political resistance to closing AEs in local hospitals despite their limited spectrum of clinical competences and technological equipment.

Few private hospitals (less than 10%) have AEs in Italy [1], just like in other European countries [11]. This is not surprising, since private hospitals concentrate on profitable services, a real challenge for AEs, which are very expensive services where many health professionals have to be full-time available regardless of daily demand.

Intensive care units

Intensive care units (ICUs) are historically relatively recent departments placed in acute hospitals for critical care [12], based on dedicated teams and equipment specialized in treating very vulnerable patients. The ICU major goals are monitoring and supporting vital functions in critically ill patients, who may present very different pathologies but share the potential reversibility from their life-threatening failure conditions [13] − a very exciting challenge for the ICU health professionals, as highlighted by the media during the COVID-19 pandemic.

The density of ICU beds is quite homogeneous throughout Italy (Figure 3). The majority of beds are in public hospitals (92%), with an occupancy rate of around 50% − slightly lower than that in private hospitals (around 60%). Similarly to AEs, the reason of the overwhelming public proportion seems to be the low profitability of ICU beds, characterized by high cost for both personnel and equipment [14].

It is hard to compare the supply of ICU beds between different countries [15]. Since the demand for ICUs is highly affected by the organization of the other hospital services, such as the high dependency beds as an interim facility, the density of ICU beds can vary a lot from a country to another, and an international standard is difficult to establish [16]. According to the last European survey [17], the variation of ICU beds is really substantial between countries. Limiting the analysis to the density in the main Western countries, the lowest figures were recorded in Sweden (5.8 beds per 100,000 population) and the UK (6.2 beds), the highest in Austria (21.8 beds) and Germany (29.2). Since both the former countries have a low density of total acute care beds too (respectively, 278 and 237 beds), whereas both the latter a high one (respectively, 635 and 575 beds), this supports the idea that the number of ICU beds is tightly related to the domestic planning and funding of the other acute hospital services [14], with the likelihood that countries with fewer ICU beds may reserve their use to the most severely ill patients (e.g. with sepsis) [18].

Future prospects

In line with our analysis, we think it is time to radically address the major INHS issues scathingly highlighted by the COVID-19 pandemic in a very near future.

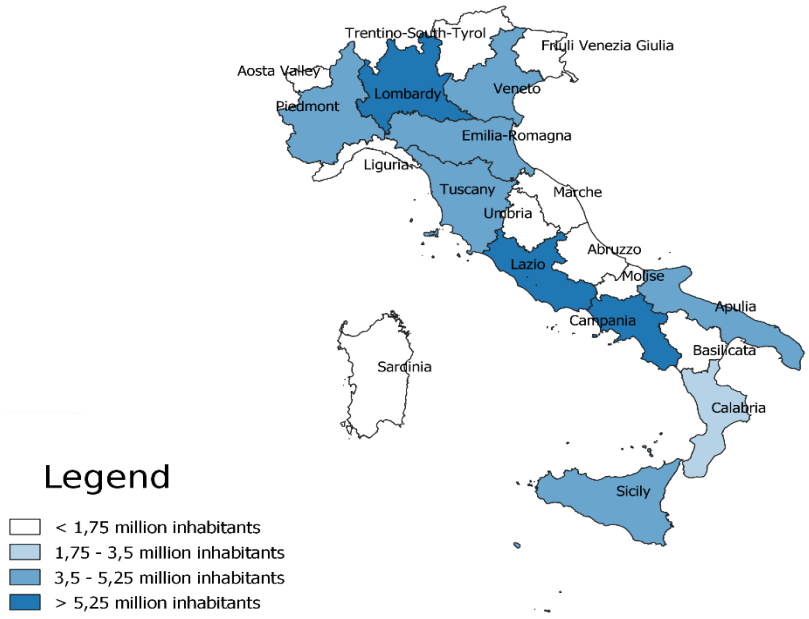
The first issue is institutional and needs a political reform, since Italy can no longer afford to have twenty regions. Regions are too many and heterogeneous, with populations varying from a average-sized European country down to a modest county. This makes it impossible for all of them to be equally organized for managing and providing the same kinds of health services. Moreover, the regional institutional autonomy makes the INHS too open to local political influence, undermining its technical governance [19]. In practice, regions can launch local policies without national endorsement. Besides working out a few but clear-cut 'rules of the game' at central level to coordinate regional health authorities, the first bold and inevitable step to harmonize the INHS is to drastically reduce their number. For instance, assuming a minimum threshold of 5,000,000 inhabitants and taking account of the Italian geography, the number of regional health authorities could be easily halved or even reduced further –two each for Northern (West and East), Central and Southern Italy in addition to Lombardy (by far the most populated) and the two major islands (isolated by definition). Although politically challenging, this reform cannot be considered an insurmountable hurdle to overcome, especially after such a catastrophic event. For instance, Denmark achieved this kind of reform thirteen years ago − from thirteen counties to five (new) regions – despite tough political resistance [20]. The management of the Danish health service has benefited a lot from this reduction.

The second issue is mainly organizational and concerns the 'upstream' piecemeal situation of primary care in community and the 'downstream' (partly consequential) overcrowded access to emergency care in hospitals. Improving the consistency of non-hospital healthcare services at local level is vital, starting from general practice. A first rational step should be to merge all the existing sites providing different services in districts into single 'health services' open 12 hours per weekday at least [3]. These single facilities should bring together all the health professionals who work in primary care, GPs included, who should become employees of the INHS such as their colleagues in hospitals. Much easier to plan and supervise, these organizations would extend daily access to services in community and appropriately filter minor injuries to AEs in hospitals. A co-location would enhance also the provision of home services for elderly people unable to travel, besides facilitating their informal care-givers (e.g. relatives) who are workers. More, this should help people appreciate that the INHS does not consist only of hospitals, the hitherto easily identifiable health facilities to which they often inappropriately relate as a consequence. Not by chance, low levels of AEs crowding are reported in countries with strong outpatient healthcare services such as the Scandinavian ones [8]. Last but not least, this should help politicians close small and inefficient acute hospitals, as the above mentioned Danish reform confirms [20], and similarly to the closure of cottage hospitals many years ago in the UK.

The third and final issue concerns critical care, the most exposed to pandemics, which should be easier to tackle once the two previous ones are addressed. The outfit of ICUs in public hospitals is rather homogeneous throughout Italy and their average occupancy rate is acceptable in normal times, so an increase of public beds could lead to long-term inefficiencies. Conversely, the sudden influx caused by a pandemic like COVID-19 quickly puts under strain any critical care capacity. Therefore, the best strategy in such circumstances is an emergency national plan, which should allow to prompt central intervention, and to coordinate regions, involving the national network of civil volunteers and the army for building up new ICU beds if necessary. Finally, it seems obvious to recommend assigning the management of pandemics to a special unit of a national health authority charged with ensuring national preparedness. This has not been the case for COVID-19.

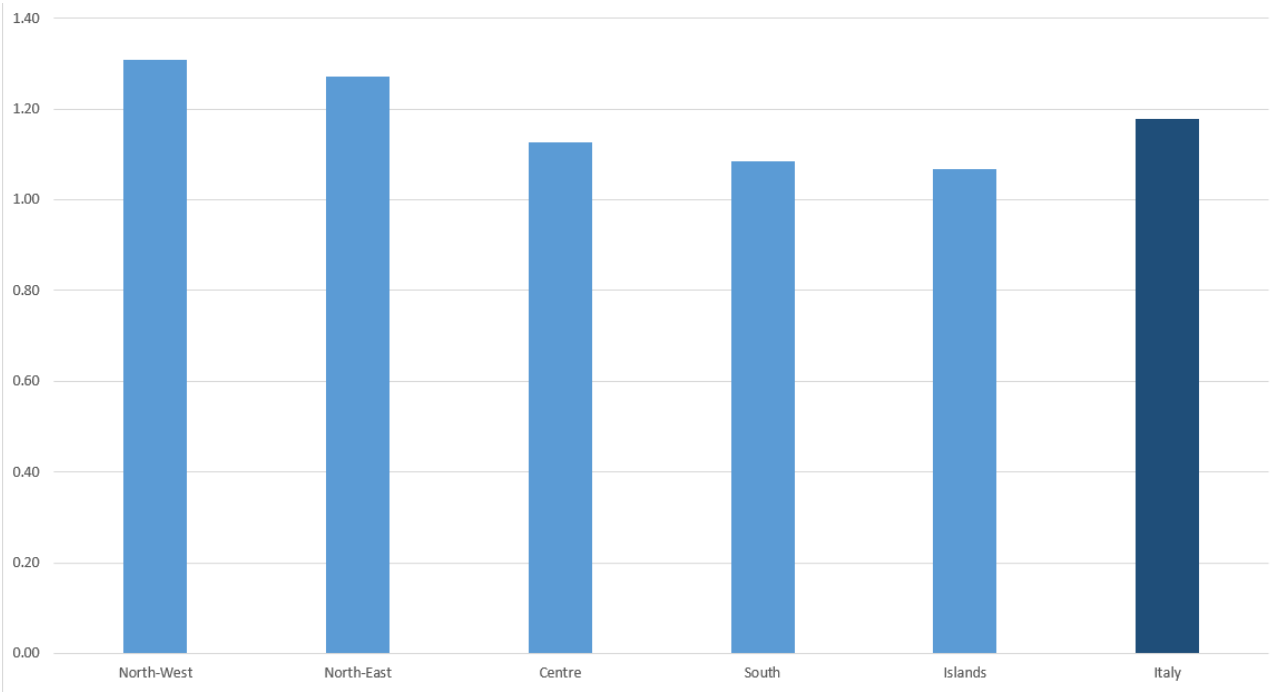
In conclusion, COVID-19 has tested the fabric of the INHS and highlighted the importance of rational planning and coherent national and regional strategy. These findings may not be surprising, but other countries may learn from them.

Figure 1. Population of Italian regions (2017).



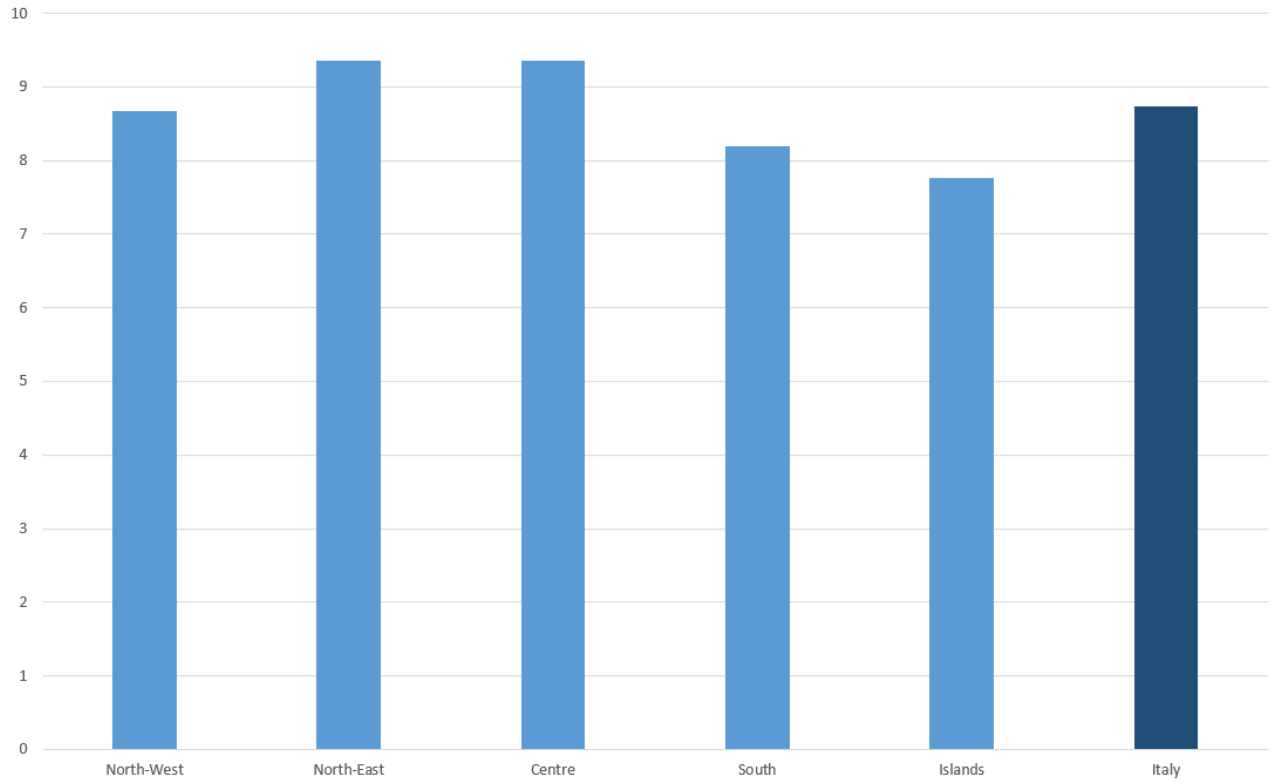
Source: Ministry of Health. Annuario Statistico del Servizio Sanitario Nazionale. 2017. Rome, Italy.

Figure 2. Density of Italian GPs per 1,000 inhabitants (2017).



Source: Ministry of Health. Annuario Statistico del Servizio Sanitario Nazionale. 2017. Rome, Italy.

Figure 3. Density of ICU beds per 100,000 inhabitants (2017).



Source: Ministry of Health. Annuario Statistico del Servizio Sanitario Nazionale. 2017. Rome, Italy.

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