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EXECUTIVE SUMMARY

2019 OASI REPORT

*Observatory on Healthcare
Organizations and Policies in Italy*

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This summary offers a synthesis of the broader 2019 OASI Report for the international audience. After an overview of Italy and Italian Healthcare (page 3) , the document reports the index (p. 5) and the core findings (p. 6) of the Report.

Every year, the research carried out by OASI (Observatory on Healthcare Organizations and Policies in Italy) aims at offering a detailed analysis of the Italian healthcare system, outlining its future evolution.

The OASI Observatory is a CERGAS - SDA Bocconi initiative. CERGAS (Centre for Research on Health and Social Care Management) is part of the SDA Bocconi School of Management, the top School of Management in Italy and one of the highest-ranking in the world¹. CERGAS researchers apply principles, instruments and techniques from policy analysis and management to support public institutions, not-for-profit organizations and enterprises targeting collective needs for health and social care.

The contents of the OASI Reports from 2000 to 2019 are fully available in Italian on the CERGAS website: www.cergas.unibocconi.eu → Observatories → OASI.

¹ SDA Bocconi is ranked 3rd in Europe according to the Financial Times.



An overview of Italy and Italian Healthcare

Demographic profile

Italy is the fifth most populous country in Europe, with 60.4 million inhabitants in 2019². The population growth rate is slightly negative (-0.13% in 2016, -0.17% in 2017 and -0.21% in 2018), one of the worst in the EU. On one hand, with around 285,000 foreigners arriving in 2018, immigration plays a key role in maintaining the population decrease close to zero. On the other hand, the balance of the resident population is deeply negative, (-193,000 inhabitants during 2018), mainly due to a very low fertility rate (1.29 children per woman).

Socio-economic profile

After years of recession, Italy has seen a slight recovery since 2014, with annual GDP growth rates remaining below 1%. In addition to stagnation, public finances are constrained by the high levels of government debt (134,8% of the GDP in 2018)³ and tax evasion. Consequently, resources available for welfare expenditure are considerably lower than in other large European countries. According to Eurostat⁴, Italian expenditure on social protection, was about €8,100 per inhabitant in 2016, while Germany reached €11,000, France €10,800 and UK €7,800 at PPS⁵. Italy is a decentralized state composed of 20 administrative Regions, which are extremely varied in size, population and levels of socio-economic development, and which are responsible for managing a significant proportion of public expenditure. The well-known divide between Northern and Southern regions is still relevant. Italian per capita GDP is €25,900 overall, while North West regions reach €31,800 (+23% with respect to the national average) and €17,200 (-34%) in the South. According to EUROSTAT (2018)⁶, the Italian Gini Index is 33.4, slightly above the EU-28 value of 30.6 and many European countries: France is 28.5, Germany 31.1, while Spain registers 33.2. In addition to the Southern regions, socio-economic hardship disproportionately affects younger people and families with children, as the Welfare State largely focuses poverty reduction efforts towards retired people (ISTAT, 2018)⁷.

² The Source of the demographic data is the Italian National Institute of Statistics (ISTAT). Last access October 2019

³ Source: EUROSTAT, last access December 2019: <https://ec.europa.eu/eurostat/tgm/table.do?tab=table&init=1&language=en&pcode=teina225&plugin=1>

⁴ Please see the Eurostat newsreleases 191/2018 – 12.12.2018.

⁵ Parity purchase standard.

⁶ Please consult the EUROSTAT database: http://appsso.eurostat.ec.europa.eu/nui/show.do?lang=en&dataset=ilc_di12. Last access October 2019.

⁷ Please see the report "La redistribuzione del reddito in Italia", http://www.istat.it/it/files/2017/06/CS_-Redistribuzione-reddito-in-Italia_2016.pdf.



Healthcare System profile

The Italian National Health Service (INHS), a Beveridge-type tax-funded public healthcare system, covered about 74% of total healthcare expenditure in 2018 (please see the Appendix for more details on the governance of the INHS). Private, out-of-pocket (OOP) expenditure accounted for 23.5%, and the remaining 2% pertained to voluntary schemes like private insurance and mutual funds.

The INHS was introduced in 1978 with Law No. 833/1978, which defined a universal healthcare system for Italian citizens and foreigners legally residing in Italy. Decree 502/1992 introduced managerial principles into the INHS and marked the start of concerted efforts to devolve healthcare powers to the Regions. The national government is in charge of setting general objectives and the fundamental principles of the INHS. Regions are responsible for ensuring the delivery of a package of services through a network of population-based “local health authorities” (LHAs) and public and private, accredited hospitals. The national government defines the national healthcare budget, which is allocated among regions according to their demographic profiles (mainly age structure and sex ratio). Regions can add to their share of the National Health Fund with their own additional resources. Regions are responsible for guaranteeing financial equilibrium, as well as minimum standards of care. Serious deficits can result in Recovery Plans (“Piani di Rientro”). This kind of compulsory administration entails an automatic increase in regional taxation, while key policy choices are placed under the strict monitoring of the national government. Today, 7 Regions are under Recovery Plan Schemes; which are mainly located in the south of the country⁸.

⁸<http://www.salute.gov.it/portale/pianiRientro/dettaglioNotiziePianiRientro.jsp?lingua=italiano&menu=notizie&p=dal ministero&id=3516>



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Please note that the OASI Report chapters and are available in Italian at www.cergas.unibocconi.eu.

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Core contents of the OASI Report 2019

Chapter 2 examines the Italian NHS with regards to its institutional arrangements, the infrastructure endowment, the use of healthcare resources and the overall patients' need satisfaction, illustrating the INHS in the international context.

With respect to the institutional arrangements, after major reorganizations occurred at the regional level between 2015 and 2017, no changes were observed over the following 24 months. At the end of 2019, there are 120 health authorities (including Lombardy's ASSTs), and 43 hospital organizations (Aziende Ospedaliere).

With reference to healthcare resources, a decrease in the number of hospital beds starting in the 1990's has led to an average of 2.9 beds per 1,000 inhabitants for acute care and another 0.6 beds for long-term care in 2017. These numbers are consistent with the target endowment identified by Decree 95/2012. In recent years, this decrease has been achieved both through closure of hospital wards (reduced by 795 units between 2012 and 2017, -5.6%) and through the cut in the average number of hospital beds in the remaining active wards (from 16.3 to 15.9 hospital beds). Similar trends occur at the international level, with a decrease in the number of hospital beds in the analyzed countries since 2005, and strong heterogeneity in the distribution between acute and long-term care beds. In terms of INHS physicians, 2017 experienced the first increase, albeit minor, since 2009 (+384 units). Hospital admissions show a significant decreasing trend between 2001 and 2017 (-31.4%), in line with the trend observed for healthcare resources. Furthermore, the national hospital discharge rate stays below the OECD average, with an average length of stay that is aligned with the main European countries. Compared to 2016, a significant reduction in the total number of hospital days for inpatient long-term care stands out (-17.5%), as a result of both the reduction of related hospital discharges (-5.4%) and the decrease of the average length of stay, which went from 27.6 to 24.1 days.

Lastly, the chapter analyzes satisfaction of patients' health needs, an element that is difficult to appreciate except through indirect measures. Rates of traveling for care appears to be stable. However, waiting times grew significantly in 2017 for all observed procedures, and are particularly longer for procedures and interventions that do not impact patient survival directly.

Chapter 3 presents data on financing, health expenditure and operating results of the Italian National Health System (INHS), considered within an international context and with regional insights.

Italy has a public health expenditure proportion in line with other European countries (73.9%), but in a slight decline. However, unlike most European comparator countries, the private component is



predominantly out-of-pocket (about 23% of total expenditure), while the use of complementary insurance is still marginal.

Nationally, the INHS expenditure increased by 1.2% in 2018, amounting to around €119.1 billion. The increase in total healthcare expenditure compared to the previous year was driven by the growth in purchases of goods and services (+1.9%), in contractual specialty care (+1.9%) and in other contractual assistance (+1.7%). As in recent years, in 2018 there was a tendency towards a balanced budget, with modest deficits (€149 million in 2018). This evidence, symptomatic of an apparently economically healthy system, takes on more critical connotations when considered in context of the economy as a whole. In fact, public health spending as a proportion of national GDP decreased in 2018; a trend uncompensated by secular movements in private spending.

This demonstrates the ability of the INHS to only inconsistently exceed the availability of overall resources, and it is also a dissonant signal with respect to the expectations one would have looking at the trends of the determinants of health needs.

Chapter 4 examines the role of private entities that provide healthcare services on behalf of the Italian NHS (“accredited” providers). In 2018, the overall expenditure for assistance provided by accredited private entities amounted to €392 per capita, 20.3% of the total INHS expenditure. This level has risen slightly compared to the previous year (€392 per capita, 18.8% of the INHS expenditure), and exhibits pronounced inter-regional differences. Overall, private hospitals provide 31.3% of INHS beds. This is mainly concentrated in accredited clinics (64.9% of accredited beds). The proportion of accredited private providers is lower than public providers in acute care (23.5% of total INHS beds), balanced in the inpatient long-term care sector (51.7%) and dominant in the rehabilitation sector (72.9%).

Admissions to private hospitals represent about 26.5% of the total INHS admissions, with a regional maximum observed in Lazio Region (51.4%). Private facilities are characterised by an average stay lower than in the public acute care segment (5.6 vs. 7.4 days). Private facilities are slightly higher for rehabilitation (25.8 vs. 24.8 days). On the territorial side, the accredited private sector manages 59% of outpatient clinics, 82% of residential facilities and 68% of semi-residential facilities, with the usual significant interregional variability.

Analysing the most important economic, financial and management indicators of the top 10 accredited private healthcare groups for the period 2014-17, all providers revenues increased, but to different extents, both in terms of size and the determinants of growth (acquisitions and/or development of the paid market). The groups with the highest growth (Humanitas, Villa Maria and Synlab) experienced the highest employee growth. The profitability of many profit groups is good or excellent, with some exceptions. Debt is almost always very low.



This overview, together with the epidemiological and demographic dynamics and the fragmentation of the sector, arouses the interest of institutional investors and foreign health groups. It is likely that the dynamics of investment and concentration of the sector will continue. New opportunities arise for the NHS, such as the circulation of clinical and managerial best practices, especially for Southern regions. Another opportunity related to concentration is a better regulation of healthcare services funded by private resources.

Chapter 5 provides an updated picture of social care and long-term care sectors in Italy for frail elderly. Data about public interventions are presented together with a mapping of available public services, and an estimate of the total number of citizens in need that could potentially benefit from such services. The analysis shows that the overall public efforts in social care and long-term care are insufficient relative to the potential need of the population, and public services are very different in terms of need coverage capacity. The Chapter then provides an overview of Regional offers for frail elderly, including the overall mix of public care services and informal care. Evidence shows wide differences among territories, and associated differences in distribution of care burden between actors: the family, when money transfer and informal care are the most common services; the NHS, when hospitalisation prevails; and the social and healthcare sector, when public home care or residential care prevail. The second part of the Chapter analyses the phenomenon of hospitalizations regarding elderly patients. Together with suggestions emerging from a focus group conducted with eight transitional care professionals, these results led to the identification of critical junctions of transition from one care setting to the other, namely: Emergency Room, the Medicine Ward, sanitary and long-term care rehabilitation centres, territorial services, the house. The Chapter ends delving into two case studies that tried to cope with two of the above-mentioned critical junctions, namely Emergency Room and territorial services.

Chapter 6 provides an overview of recent trends and drivers of private healthcare consumption (PHC) in Italy. PHC play a relevant role in universal healthcare systems, both in terms of resources involved and also for what they represent in the increasingly complex consumption processes experienced by users. Healthcare consumption and healthcare systems are merging and the conceptual schemes distinguishing public from private spheres are becoming less meaningful. Private healthcare expenditure makes up 26% of total health expenditure in Italy, mainly in the form of out-of-pocket (OOP) payments (23%). When comparing public per capita expenditure and private voluntary insurance (PVI) per capita expenditure, Italy shows values significantly lower than other European countries. On the other hand, per capita out of pocket expenditure appears to be in line with other European countries. Official estimates from national and international institutions show



that annual private health expenditure amounts to about €40 billion, unevenly distributed between goods (35%) and services (65%). The former component is mostly related to the purchase of pharmaceutical products (€8.4 billion) while the latter includes a basket of items, including dental care (€8.4 billion), outpatient services (€12 billion) and hospital services (€2.2 billion). Across regions, annual household healthcare expenditure shows notable variation. Per capita values range from less than €400 in Campania to more than €750 in Lombardy. This pattern confirms that there is a positive association between per capita healthcare expenditure and per capita income. It also suggests that regional spending may be positively associated with the quality of regional systems: low-spending regions are also at the bottom of regional public healthcare rankings and vice versa. Specific focus has been devoted to three topics which are particularly relevant in the Italian policy debate, with the aim of providing further elements for discussion: tax expenditures for private healthcare consumption; the co-payment of users for the purchase of public goods and services; and the system of voluntary health insurance and funds.

Chapter 7 provides an overview of the main health outcomes indicators and measures of performance for Italy, using data from national and international sources, taking into account the complex and multidimensional network of health status determinants. In virtually all countries around the globe, national healthcare systems are under strain due to growth of demand for services outstripping funding growth. Within this challenging context, the main objective of NHSs remains that of improving the health of the population, also through the provision of essential levels of care (“Livelli Essenziali di Assistenza”, LEAs - in the Italian NHS). Overall, the cross-country comparison of main health indicators is reassuring for Italy, especially for what concerns premature deaths due to non-communicable diseases. However, within the national boundaries, clearly a strong inter-regional gap persists, with the North of Italy reporting better outcomes for many indicators (i.e. spread between life expectancy and healthy life expectancy goes from 29.9 years in Calabria – a Southern region - and 13.4 years in Bolzano – a Northern region). The chapter also discusses the degree of adherence to outcome thresholds set by the ministerial decree MD 70/2015 across six procedures. On average, adherence to these standards improved between 2010 and 2017 for most Regions, with compliance level $\geq 65\%$ at the national level in 2017. The most critical situations remain in some Southern areas of the country, for specific medical procedures (e.g. primary C-sections) and with respect to increased intra-regional variability across healthcare organizations. In the last section, the chapter investigates the relationship between outcome measures (i.e. mortality rate) and performance assessment of the regional healthcare systems, as measured by the “LEAs grid”. A low but statistically significant correlation between the two variables emerges: a 10 points increase in the LEA score results in a decrease in overall mortality of about 0.05 per 10.000 people. Since the



composition of the LEA score grid is periodically updated, this result supports the idea that an overhaul of indicators through an evidence-based approach is needed, in order to maximize the impact in terms of health outcomes.

Chapter 8 focuses on the job of the CEOs of Italian public healthcare organizations, exploring role interpretation and daily activities. The methodology adopts quantitative tools (two questionnaires that collected data on the agenda of the DGs in March 2019) completing them with qualitative interviews with a selection of DGs. The picture emerges DGs use most of their time building relationships: with a weekly overall workload of 52.7 working hours, 56% of the agenda is dedicated to meetings, in particular with internal stakeholders (professionals, other members of the strategic direction and administrative staff). Overall, the CEOs believe that the most strategic time is dedicated to meetings with the Regional Health Authority and with the strategic direction, while more than 50% of the time dedicated to professionals and staff is considered to be of an operational nature. CEOs use specific strategies to effectively manage relationships: sharing strategy with the Region, building the top management team, steering administrative staff, involving professionals, and encouraging alliances with external stakeholders. Although each CEO interprets their role differently, it is possible to identify some common features, with particular reference to the phases of the CEO mandate. Playmaking and the management of equivocality, that is the ability to build networks and manage ambiguity in the definition of objectives, are key in the months that immediately follow the appointment. Later on, enabling (i.e. supporting middle managers) and compromising (i.e. the ability to understand and manage resistance) acquire importance. At the end of the mandate, aligning becomes important to assess the work.

Chapter 9 reviews the role and the profile of middle managers (MMs) in public healthcare organizations, meaning district and department directors. We investigate: 1) their profile (i.e. their numerosness, as well as their personal, academic and professional records); and (2) their degree of empowerment (i.e. concerning the budget cycle, staff management and activity coordination). This second step of analysis has focused on, Department Directors, accounting for 80% of the Italian MMs. The census of MMs was carried out by analysing organizations' official websites. To investigate empowerment, semi-structural interviews with middle and top managers were conducted. Given the substantial increase in organizational size and managerial complexity, the empowerment of intermediate roles between the top management and line units appears to be crucial insofar as MM roles are called to assure the spread of organizational strategies throughout the chain of command. The national census shows that the average middle manager is 63 years old; they are mainly males and have a Medical degree; generally, they hold one specialization. In most cases, MMs have always worked in a single region and in a single organization, and they have never



attended management courses other than mandatory training. From the interviews, it emerges that Director of Departments tend to represent requests by the operating units to the top management. Moreover, the appointment of MMs is usually a “lifetime achievement award”. The involvement of middle managers on performance measurement systems is often limited to operative management. Different professionals interpret the role of MM differently, resulting in heterogeneous expectations of the top managers regarding their managerial attitude. Therefore, by looking at the examined cases, there is no widespread record of actual managerial empowerment for middle managers. The research suggests the following organizational changes. First, to suspend or reduce the clinical activity during the mandate. Second, to establish a managing director with operational accountability and/or a team supporting the Director of Department. Third, to launch new organizational settings dedicated to human and technological resources management (e.g. surgical areas, patient journey centres), leaving to Departments only knowledge development activities.

Chapter 10 discusses how the institutional, organizational and operational change of the Italian NHS require the development of new coordination mechanisms and strategies in order to guarantee: 1) appropriate levels of job specialization and professional skills and, consequently, greater safety performance; and 2) adequate levels of diffusion of services in the different locations (hub & spoke). The chapter aims to analyse the strategic choices and decisions on the specialization of work and the dissemination of services in 4 Italian Local Health Authorities: ATS Sardegna, AUSL Toscana Centro, AUSL of Reggio Emilia and Azienda ULSS 8 Berica. During the last years, all the cases analysed have initiated several reorganization processes aimed at restructuring the interdependencies between hospital establishments, particularly with respect to surgical services. These processes were driven either by exogenous (national standards, technological innovations, epidemiological needs) and endogenous factors (medical doctor shortage, clinical competence, volumes). The main logic and strategies adopted to reorganize the interdependencies were: 1) to distribute the patient journey along the network across locations and facilities; 2) to concentrate the competences and the activities in a limited number of establishments, based on the volume, activity type and level of specialization; and 3) to create itinerant teams of professionals that travel between different establishments. The cases analysed give an account of a very advanced process: if the mix of who (skills), where (places) and what (problems to address) was previously under the control of the operating units, now the elements of the mix gradually become variables of a complex equation on which the organization is called to decide. The adoption and implementation of new strategies and decisions about restructuring or concentrating clinical services implies that pressures for change have been able to prevail over factors of inertia. In order to do so, fundamental assets are the



availability of an adequate operational management function and the role of the top and middle management in order to develop and guide the process of change.

Chapter 11 aims at presenting the evolution of primary care, focusing on General Practitioners' (GPs) role within the evolution of services led by institutional and organizational changes across several Italian regions. The chapter explores these dynamics using a mixed methodology involving four perspectives of analysis. First, the analysis of the national policy and of the General Practitioners National Collective Agreements shows a continuity between many areas of recent innovation, such as organizational models and outpatient multidisciplinary, and the propositions of 20 years ago. Second, the analysis of the Regional Supplementary Agreements allows us to study the main management tools implemented by the regions with GPs. A heterogeneous regional framework emerges, where local contexts show different levels of adherence to national indications and different maturity in the implementation of managerial tools. Third, the survey distributed to all the GPs taking part with FIMMG examines the real adoption of GPs' associative and aggregative models and photographs the activities of GPs' agenda. Among the 900+ respondents, a minority take part in GPs' aggregative models such as AFT and UCCP. Moreover, integration with specialists is often considered scarce and specific agendas for chronic patients' access are not very diffused. Finally, the chapter analyses two exemplary cases of GPs' organizational models transformation: the Lombardy case and the Veneto case. The two regions give different interpretation to the role of GPs in the outpatient service chain. Through the case analysis it is possible to observe two main trends characterizing the relationship between GPs and local health authorities' systems. In the Lombardy case a push towards externalization of GPs emerges, through the exploitation of GPs' entrepreneurship, who are led to activate exchange networks with services dispensers. On the other hand, the Veneto case shows how the region leverages physical settings and managerial tools to strengthen GPs' integration, with the Health District having a strong intermediation role.

Chapter 12 focuses on the financial recovery plans (Rp), a public policy through which the national government, starting from 2005, intervenes to guarantee the economic sustainability and the quality of health services. This chapter develops two lines of investigation. Firstly, it analyses the trends (2005-2016) of selected indicators of the quality of hospital care services. The aim is to observe the evolution in quality of care and to investigate the relationship between the recovery plans and quality of care. The results show an overall improvement of quality of hospital care. However, the gap among levels of assistance between regions with Rp and those without Rp diminishes only for some indicators (IMA and laparoscopic cholecystectomy). Furthermore, there is a strong heterogeneity within the two groups of regions. Secondly, the characteristics of the Rp governance system are analysed. Five key messages emerged: 1) the exit conditions from the



commissariats are not clear, while those from the financial recovery plans have never been regulated; 2) the commissariats have represented mainly a sanctioning mechanism, while they did not enable the development of health services through the intervention of external technical figures; 3) the incentive system and the verification and monitoring process were oriented mainly to the pursuit of the economic and financial balance; 4) the support related to the developed of health services was lower than expected; and 5) the griglia LEA does not appear to be an effective tool, neither to regulate the exit of regions by the commissariats, nor as element for the quarterly monitoring process.

Chapter 13 presents a financial statement analysis aimed at: 1) describing and examining the financial performance of Public Independent Italian Hospitals over the period 2015-17; 2) identifying Hospitals which improved their performance during the same period; and 3) discussing the main drivers of performance improvements. Financial statement analysis was carried out from balance sheet and operating statement data, according to Ministerial schemes, using both profitability, liquidity and capital structure ratios.

Overall, hospitals' profitability shows a general improvement in economic results, with a progressive reduction in the number of hospitals reporting negative net income during the analysis period. However, the analysis downturns in operating profitability, highlighting that the NHS financing system may conceal hospitals inability to link operating costs with corresponding operating revenues in line with sustainable profitability. First, the fact that totals margins are usually higher than operating margins reveals the significant impact of non-operating revenues. Second, focusing on the breakdown of operating revenues, non-earmarked fundings from Regions prove to play a key role in hospitals performance improvement.

Considering operating costs, the analysis reveals a general reduction in the incidence of goods and services and personnel expenses. Focusing on financial and capital performance, Italian hospitals improved debt ratios and did not show critical issues in maintaining liquidity. On the other hand, the average age of hospitals' fixed assets (and more specifically medical facilities and equipment) is particularly worrying, being highly obsolete. Focusing on Hospitals showing a trend of improvement of net operating income, this phenomenon is found to be more evident for those characterized by particularly negative performance situations (ROS <-10%). Although financial statement analysis does not give enough information to completely understand how the performance improvement has been achieved, the ratios analysis shows that these Hospitals worked on the incidence of goods, services and personnel expenses and the improvement of debt ratio, age of fixed assets together with liquidity and obsolescence levels.



Chapter 14 highlights the strategic value of technology-driven innovation for the Italian National Health System and its organizations. Although not specifically developed for healthcare contexts, the technologies analyzed could generate profound changes in healthcare service models – with impact on patients, professionals and organizational models. The research offers a first overview of current innovation processes, identifying at least five areas in which technology-driven innovations are translating into new service delivery approaches. The first relates to booking and communication systems, for which digital technologies, already available in other sectors, are only recently translating into new value propositions for healthcare users. The second regards relatively mature technologies, purposefully configured to enable new models of care. The third focuses on more recent technologies based on artificial intelligence (AI) to support clinical decision-making processes, diagnosis and treatment choices, with promising applications in primary care. The fourth examines technologies, such as robotics or virtual and augmented reality, that are modifying the available care options and for which the expected developments, especially in the field of rehabilitation, are remarkable. The fifth, named "intelligent environments", focuses on the application of technologies already available in the market, recombined in original ways, responding to escalating health and social care needs. Each of these five areas, considered with several examples, presents different development trajectories, with some common trends: e.g. the tendency to disintermediate in consumer processes, which displaces professionals' traditional roles; the structural challenges faced by public healthcare providers when pursuing innovation trajectories - resulting in slower paths compared to the "more radical" ones developed by private healthcare providers; the importance of top management in consolidating and transmitting to the wider organization the need to assimilate innovation by translating it into operational processes.

Chapter 15 presents the main results produced by MASAN, the Cergas/SDA Bocconi observatory on public procurement in the Italian healthcare system during its second year of research. Savings generated by centralized procuring authorities continue to represent the main indicator for policy makers to assess the process of centralization. Even though it was the main rationale beyond the introduction of centralized procurement, it can't be the only one to evaluate its performances and above all it can't represent a mid-term policy goal. The chapter analyzes some effects produced by centralized procurement with reference to economies of specialization, use of below-the-European Union threshold tenders by local health authorities, increase in the litigation between procuring authorities and economic operators, market concentration and capacity of buying innovation and value for money. Some of these effects represent a reaction of the system to centralized procurement; this is the case of increase in litigation, even though the rate of faulty tenders was very low, and the slight increase of under-the-EU threshold contracts. The other effects



are structural; in particular it is critical for centralized procuring authorities to achieve economies of specializations and, as a consequence of this, to be able to design and implement a procurement process to achieve more value for money and increase innovation.

Chapter 16 discusses the feminization of managerial roles in health care. The limited number of women in managerial roles in healthcare is only partly explained by the fact that the feminization of doctors is a relatively recent phenomenon. In fact, one cannot deny the presence of cultural resistance within organizations, as well as the difficulties of many female doctors willing to undertake ambitious career paths.

The Chapter delves into the topic by focusing on middle management (the directors of operational units, once defined as primary) and on CEOs of public healthcare organizations, integrating quantitative and qualitative approaches. The study shows that, although women represent 44% of the overall medical workforce, only 16% of unit chiefs are women, with a significant variation across Regions, ranging from 24% in Emilia Romagna to 10% in Veneto. Furthermore, the differences between the different disciplines are relevant: if women are 69% among hospital pharmacy directors, figures are comprised between 10 and 20% in medical disciplines, and fall below 10% in surgical specialties, reaching zero in orthopedics or cardiac surgery. While women are 26% of the officially eligible candidates for the role of CEO of public healthcare organizations, women actually holding CEO positions are only 17%. Analyzing the data related to selection processes in three Regions (Piedmont, Sicily and Lombardy) we found that that the gap is due not only to the low number of women applying for the role, but also to the selection process itself. However, it is not clear whether this is due to prejudices or to a poor ability of women showcasing their value during interviews.

Thanks to interviews with a sample of women CEOs, we found that quotas for women are considered an ineffective solution. Rather, other women-friendly strategies should be put in place to transform working environments and organizational cultures. The chapter ends discussing the managerial solutions that can reduce gender gap in managerial roles, a topic which - for demographic and cultural reasons - will increasingly step into the agendas of politics and management in healthcare.

Chapter 17 presents an overview of the medical device (MD) sector at global level, and of the economic dynamics and performance of MD companies in Italy. The analyses are based on an *ad hoc* database created from the AIDA (Analisi Informatizzata delle Aziende - Italian company information) platform, the Ministry of Health National Database and Repertoire of MDs (Banca Dati e Repertorio) and the national data flow on consumption of MDs (Flusso Consumi). From a supply-side perspective, the analysis was articulated around four main dimensions, with annual



measurements from 2011 to 2017: 1) size of the companies and market structure; 2) cost structure and efficiency; 3) profitability; and 4) stability and financial status of firms. Market concentration in 2014-2017 was analysed also from a demand-side perspective. The MD sector is globally characterised by a high level of innovation thanks to substantial investments in R&D. In the next years, the market will be heavily affected by the new European Regulation on MD, which will enter into force in May 2020. The number of firms operating in the DM market in Italy, especially micro, small and medium-sized firms, increased by 24% from 2008 to 2016, up to 4,406 firms. The firms with the highest degree of diversification are the large-sized, integrated and the small and medium-sized distributors. Market concentration is medium to low in all the therapeutic areas. In the last few years, the average increase in the revenues has slowed down (with decreases in some case). The number of workers is substantially stable, despite some fluctuations. Nevertheless, also due to increased efficiency (e.g., reduction in the period gap), profitability has maintained a high level, especially for production companies.

Selected data sources for the Italian Healthcare System

- Italian Ministry of Health, Open Database
http://www.salute.gov.it/portale/documentazione/p6_2_8.jsp?lingua=italiano
- Italian Ministry of Health, Report on Hospital Admissions (Rapporto SDO)
http://www.salute.gov.it/portale/temi/p2_6.jsp?lingua=italiano&id=1237&area=ricoveriOs pedalieri&menu=vuoto
- Italian Ministry of Health & National Agency for Regional Health Systems, National Outcomes Program
<https://pne.agenas.it/>
- Italian National Institute of Statistics, Health statistics,
<https://www.istat.it/it/salute-e-sanit%C3%A0>