BMJ Open Changes in private health service utilisation and access to the Italian National Health Service between 2006 and 2019: a cross-sectional comparative study

Elisa Maietti, ¹ Francesco Sanmarchi , ¹ Federico Toth, ² Carlo de Pietro, ³ Maria Pia Fantini (10), 1 Davide Golinelli (10) 1,4,5

To cite: Maietti E. Sanmarchi F. Toth F. et al. Changes in private health service utilisation and access to the Italian National Health Service between 2006 and 2019: a cross-sectional comparative study. BMJ Open 2023;13:e070975. doi:10.1136/ bmjopen-2022-070975

Prepublication history and additional supplemental material for this paper are available online. To view these files, please visit the journal online (http://dx.doi.org/10.1136/ bmjopen-2022-070975).

Received 10 December 2022 Accepted 04 April 2023



@ Author(s) (or their employer(s)) 2023. Re-use permitted under CC BY-NC. No commercial re-use. See rights and permissions. Published by

For numbered affiliations see end of article.

Correspondence to

Dr Francesco Sanmarchi; francesco.sanmarchi@studio. unibo.it

ABSTRACT

Objectives Previous research highlighted that in the early 2000s a significant share of the Italian population used and paid out of pocket for private healthcare services even when they could potentially have received the same treatments from the National Health Service (NHS). The decrease in public investments in healthcare and the increase in health needs due to the population ageing may have modified the use of private health services and equity of access to the Italian NHS. This study aims to investigate the change in the prevalence of individuals who have fully paid out of pocket for accessing healthcare services in Italy between 2006 and 2019 and the main reasons behind this choice.

Design Cross-sectional comparative study. Participants and comparison Two representative samples of the Italian population were collected in 2006 and 2019.

Outcome measures Prevalence of access to fully paid out-of-pocket private health services; type of service of the last fully paid out-of-pocket access; main reasons for the last fully paid out-of-pocket access.

Results We found an increase in the prevalence of people who declared having fully paid out of pocket at least one access to health services during their lifetime from 79.0% in 2006 to 91.9% in 2019 (adjusted OR 2.66; 95% CI 1.98 to 3.58), 'To avoid waiting times' was the main reason and it was significantly more frequent in 2019 compared with 2006 (adjusted OR 1.75; 95% CI 1.45 to 2.11).

Conclusions This comparative study, conducted the year before the outbreak of the COVID-19 pandemic, highlighted an increase in the prevalence of Italian residents who have fully paid out of pocket for access to health services to overcome long waiting times. Our findings may indicate a reduced access and possible worsening of the equity of access to the public and universalistic Italian NHS between 2006 and 2019.

INTRODUCTION

The Italian National Health Service (NHS or Servizio Sanitario Nazionale (SSN)) is a public universalistic health system funded through

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This study compared two representative samples of the Italian population between 2006 and 2019.
- ⇒ A multiple logistic regression model was estimated to adjust for confounding factors (eg. differences in sociodemographics and health status).
- ⇒ This study used individual data and ad hoc collected
- ⇒ Due to the survey methodology (ie, online for the 2019 cohort), the maximum age was limited to 70
- ⇒ This survey does not investigate the specific type of services used (eg, specialty for medical examination or CT/MRI for diagnostic examinations).

general taxation¹² and built on the original postulate of providing equitable access to healthcare services, regardless of the residents' ability to pay. 3 4 The 20 Italian regional governments are responsible for providing 'essential levels of care' (Livelli Essenziali di Assistenza, LEAs) to the entire Italian population (60359546 in December 2019) through autonomous planning and delivery of healthcare services. 5-7 LEAs include most primary, outpatient specialist, hospital, emergency and preventive care services.

The Italian SSN is also characterised by a form of copayment, called 'ticket', through which citizens contribute to the cost of specific services they receive.8 The introduction of this copayment system (introduced in 1982) was intended by the policymaker as a barrier to access for potentially inappropriate specialist care.4

About two-thirds of the healthcare services financed by the SSN are provided by public providers (full public/directly provided public services), while a third is provided by agreed-upon private providers. Patients can



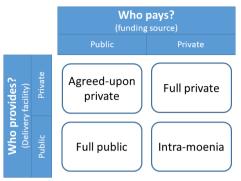


Figure 1 Italian healthcare delivering system according to the type of funding source and the type of delivery facility.

freely choose between public SSN providers and agreedupon private providers, without additional charges. These two options are part of the Italian healthcare delivering system that can be defined according to both the type of funding source (columns in the figure) and the type of delivery facility (rows in the figure) as depicted in figure 1.

In addition to their public practice, physicians employed by the NHS have the option of private practice. Such private practice may be carried out within the public facility where the physician is employed (in this case, private practice is referred to as '*intra-moenia*', ie, internal to one's own company), or in a private facility. Since patients who use private *intramoenia* services are required to pay the full price of the service, this type of activity—although it is performed by public employees within publicly owned facilities—must be considered private practice. ⁵

The right to access health services without any barrier (eg, economic, cultural, geographical) is considered a key determinant for health and a milestone in the road to social justice. ^{10–12} In accordance with these principles, numerous studies have analysed the patterns of use of publicly and privately financed health services, considering the ability to pay out of pocket for private services as a proxy of inequality in healthcare access. ^{13–16}

Previous research highlights how a significant share of the Italian population prefers to use and pay out of pocket for private healthcare services (even when they could receive the same treatments from the NHS) for the following reasons: 1 5 9 17-19 skip waiting lists (which in public facilities are usually much longer than in the private sector); choosing the individual health professional to be treated by (the NHS allows patients to choose the health facility, but not the doctor to be treated by); in some cases, private providers may have equipment and offer therapies that are not available in facilities financed by the SSN; private facilities may be closer or more convenient to reach; the greater ease of access to private providers (the latter are usually more user-friendly than the SSN in booking and payment methods); in some cases, the cost of a private consultation is comparable to the copayment charged by the NHS.

In 2006, Domenighetti et al carried out a survey to investigate out-of-pocket healthcare expenditure in Italy and the UK. The authors compared two countries with similar public, universalistic and free-of-charge healthcare systems to verify to what extent citizens paid for private services that they would be entitled to receive from their respective public health services. The authors highlighted a strong difference between the two countries, reporting a higher recourse to private out-of-pocket healthcare in Italy (78%) compared with the UK (20%). Domenighetti et al suggested that such differences could be the result of specific national policies addressing the problem of waiting lists for accessing SSN/NHS-provided health services. Of note, the long waiting lists for health services provided by the Italian SSN were the main issue for Italian citizens, according to national studies carried out on public perception of the Italian SSN.²²⁰

Thirteen years later (2019), the Italian national health system was in very different conditions. The 2008 financial crisis disrupted the global economy and, consequently, the financing of welfare systems in many Western countries, including Italy.^{2 21} In the time span between 2006 and 2019, public health spending in Italy went from 6.6% to 6.4% of gross domestic product (GDP). 22 23 Thus, one can speak of a decrease in public investment in healthcare, and a structural underfunding of the Italian NHS. Conversely, over the same period, private healthcare spending increased from 1.9% of GDP (year 2006) to 2.3% of GDP (year 2019). ²³ It is plausible that the increase in the private component stems largely from the reduction in the public component. Moreover, in the same time period, the number of staff employed by the SSN has reduced by more than 5%;²⁴ the number of copayments for public healthcare services has increased; 4 25 and the prevalence of private health insurance policies has tripled.²³

In addition to these transformations in the Italian healthcare system, it has been observed an increase in the general population health needs due to the ongoing population ageing.²⁶

These changes in the context may have determined a greater tendency of Italians to go private for healthcare services they should be able to obtain free of charge or at lower cost from SSN.

Building on this hypothesis, this study aims to investigate the change in the prevalence of individuals who have fully paid out of pocket for accessing healthcare services they could have obtained from SSN in Italy between 2006 and 2019. In addition, this study investigates the type of private service used and the reasons that led individuals to make this choice.

METHODS

Study design and participants

This cross-sectional study analyses two representative samples of the Italian population: one sample was originally included in the study conducted by Domenighetti



et al (cohort2006) and the other one was specifically collected for this study in 2019 (cohort2019). A professional panel provider with experience in market research and public opinion polls (Doxa) was hired to recruit participants and administer an online survey in July 2019. Sampling was conducted on a panel of 100000 Italian residents aged 18-70 years using a quota-based strategy to ensure representativeness of the Italian population by sociodemographics (ie, age, gender and educational level) and geographical distribution. Due to the survey methodology (ie, online), the maximum age was limited to 70 years old. The reason behind this choice was that older Italian people had limited access to the internet and digital tools, hence the sampling of people over 70 years of age could have been biased. For consistency, individuals aged <18 or >70 years were excluded from the cohort2006.

Consent to participate in this study was requested upon access to the questionnaire, if the interviewee denied consent, data were not collected and the questionnaire page closed. The Doxa data management was performed in accordance with the General Data Protection Regulation of the European Union. This study follows the Strengthening the Reporting of Observational Studies in Epidemiology reporting guidelines for observational study.²⁷

Patient and public involvement

The public was involved in the design of this research. During the questionnaire drafting stage, priority of the research questions and choice of item levels were informed by discussions with the public. Once the study has been published, participants will be informed of the results and will be sent details of the results in a study newsletter suitable for a non-specialist audience.

Study variables

Among other variables, the survey included the same items explored in the work by Domenighetti $et\ a\ell$: (1) the prevalence of access to fully paid out-of-pocket private health services in place of public ones during lifetime (at least one access, between one and five, more than five times) and in the latest 2 years (at least one access); (2) the type of service of the last fully paid out-of-pocket access; (3) the main reason for the last fully paid out-of-pocket access; and (4) the degree of tolerance towards waiting lists for health services. In *cohort2019*, we also investigated the prevalence of use of *intramoenia* services in the last year. The specific questions included in both the surveys are reported in the online supplemental file.

The following socioeconomic characteristics were collected in both cohorts: age, sex, educational level (elementary, middle school, high school, university degree), household income (low, medium, high), employment status (employed, unemployed, retired, student, housewife or other), marital status (single, married/in a domestic partnership, separated/divorced, widower), presence of children (≤14 years), number of

family members and geographical area of residence (North-West, North-East, Centre, South, Islands). The 2006 survey's household income variable was divided into three classes. In the 2019 survey, we derived the same classes using 2006 cut-offs (in euro) adjusting for inflation. Ownership of private health insurance and perceived health status were also gathered.

Statistical analysis

Categorical data were summarised as relative frequencies, continuous data (ie, age) were described using mean and SD. The Pearson's χ^2 test was used to compare the two cohorts with respect to categorical variables and the Student's t-test was used to compare mean age. *Cohort2019* and *cohort2006* were compared with respect to sociodemographic characteristics and other survey items.

Based on the survey questions, the following dichotomous dependent variables were defined: private access (yes/no), private access for medical examination by a specialist (yes/no), private access for diagnostic tests (yes/no), private access to have the medical service as quickly as possible (yes/no), private access to choose the physician or hospital (yes/no) and waiting lists perceived as an important problem (yes/no). The answer 'did not remember' was coded as 'No'. For each dependent variable a univariate logistic regression model ('simple model') was estimated to determine the unadjusted odds of cohort2019 compared with cohort2006. A multiple model was then estimated adjusting for confounding factors (ie, sociodemographics, perceived health status, owning a private health insurance). The multiple model was simplified using the backward stepwise variable selection method. Results from logistic regression analyses are reported as ORs and 95% CI.

A sensitivity analysis was carried out considering the answer 'did not remember' as missing and excluding missing observations from the analysis. Consistency between main results and sensitivity analysis results were considered indicative of robustness of findings.

Statistical analysis was performed using Stata V.15 (StataCorp. 2017. Stata Statistical Software: Release 15. College Station, Texas: StataCorp), statistical significance was set as p<0.05.

RESULTS

Study populations

The study sample includes 1006 individuals from *cohort2019* and 879 individuals from *cohort2006*. The two cohorts were significantly different except for gender (p=0.229) and geographical area distribution (p=0.928). Both mean age (45.8±13.1 and 44.1±15.1 years, respectively; p=0.011) and the number of people with a university degree (33.2% vs 14.0%; p<0.001) were higher in *cohort2019* than *cohort2006*. The perceived health status was also significantly different (p<0.001), with 7.6% reporting 'very good' health conditions in 2019 compared with 20.8% in 2006. The prevalence of private

health insurance was higher in *cohort2019* than *cohort2006* (25.3% vs 19.0%; p<0.001). The complete comparison between the two cohorts with respect to sociodemographic characteristics is reported in table 1.

Survey items and logistic regression analysis

During their lifetime, 91.9% of *cohort2019* have declared having fully paid out of pocket at least one access for health services they could have obtained free of charge or at a lower cost from the SSN, while this percentage was 79.0% in *cohort2006* (adjusted OR 2.66; 95% CI 1.98 to 3.58). Considering only the 2 years before completing the survey, 88.1% of *cohort2019* had at least one private out-of-pocket access to healthcare versus 78.8% in *cohort2006*.

In addition, in *cohort2019*, 21.4% of people reported to have used an *intramoenia* service (ie, out-of-pocket services provided by the NHS staff).

The request to perform a diagnostic test in 2019 (41.3%) was significantly higher than in 2006 (33.1%) (adjusted OR 1.79; 95% CI 1.47 to 2.20). On the other hand, the prevalence of fully privately paid medical examinations by a specialist was not statistically different in *cohort2019* compared with *cohort2006* (OR 0.87; 95% CI 0.72 to 1.05). In addition, in both the cohorts the percentage of private surgical intervention was very low at <3%.

According to the reasons for purchasing out-of-pocket services, the most prevalent in 2019 (68.5%) and 2006 (63.1%) was to avoid waiting times. This proportion was significantly higher in 2019 compared with 2006 (adjusted OR 1.75; 95% CI 1.45 to 2.11). Differently, in *cohort2019* the prevalence of individuals purchasing out-of-pocket services to be able to choose a particular doctor or hospital was lower than in *cohort2006* (17.3% vs 25.7%; adjusted OR 0.73; 95% CI 0.58 to 0.93).

In addition, in both the cohorts a high percentage of individuals perceived waiting times as an important problem (83.6% and 87.7% in *cohort2006* and *cohort2019*, respectively), with a significant difference (adjusted OR 1.33; 95% CI 1.02 to 1.75).

The complete list of survey items, the respective answers and crude and adjusted ORs are reported in tables 2 and 3. See online supplemental tables S1–S6 for further details on initial full and final simplified multiple regression models. Results of sensitivity analysis were consistent with these (see online supplemental table S7).

DISCUSSION

In this study, we compared the prevalence of Italian residents who paid out of pocket for health services, their reasons and the type of service used in 2019 and 2006. Specifically, this study aimed to evaluate whether and how the share of Italian residents who decided to pay out of pocket for health services which they could have obtained free of charge or at a lower cost from the SSN changed between the two time points.

The study sample reflects the demographic and epidemiological transition that the Italian population

Table 1 Sociodemographic characteristics of the 2006 and 2019 samples

2019 sample	S			
		ITA 2006 (n=879) %	ITA 2019 (n=1006) %	P value
Gender	Men	46.5	49.3	0.229
	Women	53.5	50.7	
Age (years)	Mean±SD	44.1±15.1	45.8±13.1	0.011
Age in	≤24	11.6	8.5	0.007
classes (years)	25–34	19.3	16.2	
(years)	35–44	21.1	20.5	
	45–54	18.8	24.5	
	≥55	29.2	30.3	
Educational level	University degree or higher	14.0	33.2	<0.001
	High school	51.3	52.7	
	Middle school	26.4	30.3	
	Elementary	8.3	0.6	
Marital status	Single	28.9	24.2	<0.001
	Married/in a domestic relationship	64.4	68.5	
	Widower	4.3	1.9	
	Separated/ divorced	2.4	5.4	
Family	1	8.9	10.2	< 0.001
members (n)	2	20.6	29.0	
	3	25.1	28.9	
	4	34.6	25.7	
	≥5	10.8	6.2	
Presence of	Yes	46.3	29.0	<0.001
years)	No	53.7	71.0	
	Low	14.6	24.1	<0.001
children (≤14 years) Household income	Medium	36.6	39.9	
	High	21.6	18.1	
	Refuse to respond	27.2	18.0	
Occupation	Employed	50.1	64.0	<0.001
	Housewife	15.4	9.8	
	Retired	19.0	10.9	
	Unemployed	4.8	7.2	
	Student	10.8	8.1	
Area of residence	North-West	26.7	25.4	0.928
residence	North-East	19.2	18.5	
	Centre	19.1	20.2	
	South	24.0	25.0	
	Islands	10.9	10.9	
			(Continued

Continued



Table 1 Co	ntinued			
		ITA 2006 (n=879) %	ITA 2019 (n=1006) %	P value
Perceived	Very good	20.8	7.6	< 0.001
health status	Good	47.5	49.9	
	Discrete	26.6	33.6	
	Not good	3.6	7.8	
	Bad	1.5	1.1	
Private health	Yes	19.0	25.3	0.001
insurance	No	81.0	74.7	
ITA, Italy.				

underwent in the last decades.²⁶ 29 Indeed, we registered an ageing and a worsening of the perceived health status of the Italian population between 2006 and 2019. In addition, our data show a significant increase in the population's educational level as confirmed by Eurostat.³⁰

The most important finding of our study is the significant increase between 2006 and 2019 in the proportion of residents who, during their lifetime, have fully paid out of pocket for a medical care they could have obtained from the SSN that reached 91.2% in 2019. This finding is also confirmed in the multivariate analysis, net of confounding factors influencing private spending on healthcare, such as sociodemographic characteristics, perceived health status and owning private health insurance.

Furthermore, our results show a partial change in the type of healthcare services for which residents decided to pay fully out of pocket. In fact, in 2006, 59.0% of respondents declared that they purchased out-of-pocket 'medical examination by a specialist', while in 2019 this value dropped to 48.5%. Conversely, in 2019, there was a clearer and more significant increase in spending for 'diagnostic tests' (from 34.1% to 41.8%), confirmed

	Cohort2006 (n=879)		Cohort201: (n=1006)	9	P value	
Excluding medicines and dental care, have you ever fully paid out of pocket for your medical care that you could have obtained free of charge or at a lower cost within the SSN?						
Yes	694	79.0%	925	91.9%		
No	174	19.8%	50	5.0%		
Did not remember	11	1.2%	31	3.1%		
And was any of these medical care within the last 2 years?*					< 0.001	
Yes	547	78.8%	815	88.1%		
No	139	20.0%	80	8.7%		
Did not remember	8	1.2%	30	3.2%		
Last time you fully paid out of pocket for private medical care, which of the following did you pay for?*					<0.001	
Diagnostic test	230	33.1%	382	41.3%		
Medical examination by a specialist	398	57.3%	443	47.9%		
Surgical intervention	16	2.3%	26	2.8%		
Other service	30	4.3%	62	6.7%		
Did not remember	20	2.9%	12	1.3%		
ast time you fully paid out of pocket for private med	dical care, what v	vas the main reas	on you decided to	pay?*	<0.001	
To have the medical care as quickly as possible	438	63.1%	634	68.5%		
To be able to choose the specialist or the hospital	178	25.7%	160	17.3%		
I was not aware that the NHS could provide the same service free or at a lower cost	16	2.3%	26	2.8%		
Other reason	62	8.9%	92	10.0%		
Did not remember	0	0%	13	1.4%		
Generally speaking, what do you think about the wai	iting list problem	of the SSN?			0.013	
It's very important	735	83.6%	882	87.7%		
It's acceptable	109	12.4%	104	10.3%		
It almost does not exist	16	1.8%	13	1.3%		
Don't know	19	2.2%	7	0.7%		

^{*}Percentages are calculated among those people who reported to have fully paid out of pocket for a medical service they could have obtained free of charge or at a lower cost within the SSN (answer 'Yes' to first question). NHS, National Health Service; SSN, Servizio Sanitario Nazionale (National Health Service).

 Table 3
 Logistic regressions models

	Simple model		Multiple model	
	OR (95% CI)	P value	Adj OR (95% CI)	P value
Private access	3.04 (2.30 to 4.02)	<0.001	2.66 (1.98 to 3.58)	< 0.001
Private access for diagnostic tests	1.73 (1.42 to 2.10)	<0.001	1.79 (1.47 to 2.20)	< 0.001
Private access for medical examination by a specialist	0.95 (0.79 to 1.14)	0.588	0.87 (0.72 to 1. 05)	0.150
Private access to have the medical service as quickly as possible	1.72 (1.43 to 2.06)	<0.001	1.75 (1.45 to 2.11)	<0.001
Private access to be able to choose the physician or the hospital	0.74 (0.59 to 0.94)	0.014	0.73 (0.58 to 0.93)	0.011
Waiting lists perceived as an important problem	1.39 (1.08 to 1.81)	0.012	1.33 (1.02 to 1.75)	0.037

also after adjustment for possible confounders. In Italy, public-provided CT, MRI, Rx and laboratory tests often have long waiting times, usually much longer than those for specialist visits.³¹ The increased demand for privateprovided diagnostic tests probably reflects on the one hand the long waiting lists for public health services, and on the other hand the willingness to obtain a quicker response to a suspected diagnosis. This interpretation is supported by the results concerning the main reason behind the choice of turning to the private sector. Indeed, the proportion of people who made their choice based on 'waiting time' increased while 'being able to choose the specialist' reduced. The 'waiting time' issue has been probably exacerbated by the fact that the Italian public healthcare spending has failed to keep pace with the increased population needs determined by the demographic, epidemiological and technological evolution. This interpretation is consistent with the public healthcare spending reduction, in terms of share of Italian GDP, observed in the study period.²²

To reinforce our findings regarding the increase towards the use of private health services, it is important to underline that the proportion of residents who reported having private health insurance increased significantly between 2006 and 2019, thus probably favouring the switch from public to private. As a matter of fact, in the period between 2006 and 2019, the prevalence of private health insurance policies has greatly increased. One study³² estimates that in 2004, 4.9 million Italians had a private health insurance policy. In 2019, Italians with supplementary private health insurance are no less than 14.7 million.³³ Thus, the number of Italians with private health insurance has tripled since 2006. Such an impetuous expansion of private health insurance is also confirmed by the Organisation for Economic Co-operation and Development:²³ in 2006, spending on private health insurance (€21 of expenditure per capita) accounted for 0.9% of total health expenditure, while in 2019 it corresponded to (€73 of expenditure per capita) 2.8% of total health expenditure. This increase in health insurance coverage is probably linked to the growing ability of insurance companies to penetrate the Italian market due to a series of incentives promoted by various Italian governments between 2008 and 2017.³⁴

Two Ministry Decrees (31 March 2008 and 27 October 2009) provided for a tax benefit for insurance funds and mutual aid societies that offered substitutive health coverage and established their national registry. Later, the 2016 and 2017 Finance Acts made it possible to transform, for employers and employees, the job-related performance bonuses into contributions to supplementary healthcare insurance plans without the application of any tax. 35

All this considered, the concomitant spread of private health insurance and the increased demand for health services may have contributed to the reinforcement of a 'parallel private health system' in Italy.

Moreover, the organisational framework of the Italian SSN leaves some room for fully paid out-of-pocket services. In fact, the increase in patient copayment ^{4 25} has pushed private providers to lower the economic threshold of some services, in particular of diagnostic tests, which almost have prices equal to or slightly higher than the copayment requested by the public NHS/SSN. This competition, which has led to greater accessibility of private services, has probably contributed to the increase in their use.

In addition, a population increasingly conditioned by the speed of daily life claims to have a rapid diagnostic response to specific health needs. This may determine the individual's choice to obtain that diagnostic service as quickly as possible by paying privately. Of note, many private providers, agreed upon with health insurance companies, offer advantageous health service packages, such as comprehensive check-ups, cardiovascular risk profiles, etc. The consequences of these types of offers are to favour both self-management and potentially inappropriate demand, which ultimately can lead to healthcare overconsumption. ³⁶

The continuous increase in out-of-pocket spending, mainly due to waiting lists, should be considered as a red flag for an SSN whose original postulate was to provide equitable access to healthcare services, regardless of the citizens' ability to pay. As reported above, the Italian SSN in recent years has undergone constant underfunding and budget reallocations, mainly due to political choices and the double impact of the economic crisis in 2008 and 2011, ³⁷⁻⁴¹ which influenced the quality and quantity of health services provided by the Italian SSN. ⁴²



All the above can be clearly framed as a problem of equity of access, ability to pay or possibly inappropriate requests. Our results show that the possibility to have medical care as quickly as possible has been identified as the main reason the citizens decided to pay out of pocket for private medical care both in 2019 and in 2006. Moreover, the SSN waiting list issue was considered as a priority by both the cohorts. This confirms that the main driver for individuals to pay out of pocket for private medical care is to avoid long waiting times. Therefore, people value the higher availability, convenience, speed and flexibility of private services.

Limitations

Our study has several limitations. (1) Despite the representativeness of the sample, the results cannot be generalised to the entirety of the Italian population because the age range was limited to 18–70 years. (2) The proportion of service type and reason for private access cannot be interpreted as population prevalence because they refer to the last time the participant fully paid out of pocket for a health service. (3) The survey did not investigate the specific type of service fully paid out of pocket, both for diagnostic examinations (eg, MRI and CT) and medical examination specialty (eg, cardiology, ophthalmology and pulmonology). (4) When talking about equity of access to care, it is important to consider that people can forego a visit or a diagnostic examination for economic reasons. However, this element was not investigated in the original survey and, consequently, in this study. (5) The questionnaire's content could be considered a limitation by itself as it does not consider every possible reason for shift towards the use of private healthcare services. Moreover, the questionnaire did not allow to fully determine the true prevalence of out-of-pocket healthcare services utilisation since it only focused on the access to private health services in place of public ones. Further studies are needed to investigate this phenomenon.

CONCLUSIONS

This comparative study, conducted the year before the outbreak of the COVID-19 pandemic, highlighted an increase in the prevalence of Italian residents who have fully paid out of pocket for access to health services. Our findings indicate an increase in private health service utilisation and a reduced access to the public and universalistic Italian NHS between 2006 and 2019. The main reason associated with this phenomenon is to overcome long waiting times. This increased use of private providers may indicate a possible worsening of the equity of access to the public and universalistic Italian SSN between 2006 and 2019.

Given that inequalities in access to care and consequently in health outcomes were exacerbated during the COVID-19 pandemic, when regular services were paused for several weeks, resulting in a backlog of services not regularly provided to citizens, we advocate the need to

further investigate whether these aspects persist or have worsened in recent years, even in comparison with other high-income countries.

Author affiliations

¹Department of Biomedical and Neuromotor Sciences, Alma Mater Studiorum Università di Bologna, Bologna, Italy

²Department of Political and Social Sciences, Alma Mater Studiorum Università di Bologna, Bologna, Italy

³Department of Business Economics, Health and Social Affairs, University of Applied Sciences and Arts of Southern Switzerland, Manno, Switzerland

⁴Department of Molecular and Developmental Medicine, University of Siena, Siena, Italy

⁵Health Services Research, Evaluation and Policy Unit, Local Health Authority of Romagna, Ravenna, Italy

Acknowledgements In loving memory of Dr Elisa Maietti, our first author for this manuscript. She was a cherished colleague, exceptional statistician and devoted researcher who played a crucial role in shaping this article. Her intellect, passion and steadfast dedication to scientific rigour have left a lasting impression on our work and approach to science. We are deeply grateful for her contributions and honoured to have had the opportunity to collaborate with her. Dr Maietti's presence will be profoundly missed in our academic community, but her spirit will live on through her enduring impact on the field. She is the first author here, in the last article she worked on. Rest in peace, dear Elisa: Angelo Capodici; Davide Golinelli; Francesco Sanmarchi; all the authors and Unibo friends and colleagues.

Contributors EM was responsible for conceptualisation, data acquisition, analysis, interpretation, writing—original draft, review and editing. FS was responsible for conceptualisation, interpretation, writing—original draft, review and editing. FT was responsible for constant coordination, writing—critical review and editing. CdP was responsible for constant coordination, data acquisition, writing—critical review and editing. MPF was responsible for supervision, writing—critical review and editing. DG was responsible for conceptualisation, interpretation, writing—original draft, supervision, review, editing and is the guarantor of the overall content.

Funding This work was supported by the CARISBO Foundation, Bologna, Italy, 'Valutazione dell'accesso ai servizi sanitari nella Città Metropolitana di Bologna'.

Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Consent obtained directly from patient(s).

Ethics approval This study involves human participants but no advice from the ethical committee was requested, as all the data were collected anonymously and analysed as aggregated data.

Provenance and peer review Not commissioned; externally peer reviewed.

Data availability statement Data are available upon reasonable request. The data sets generated and/or analysed during the current study are available from the corresponding author on reasonable request.

Supplemental material This content has been supplied by the author(s). It has not been vetted by BMJ Publishing Group Limited (BMJ) and may not have been peer-reviewed. Any opinions or recommendations discussed are solely those of the author(s) and are not endorsed by BMJ. BMJ disclaims all liability and responsibility arising from any reliance placed on the content. Where the content includes any translated material, BMJ does not warrant the accuracy and reliability of the translations (including but not limited to local regulations, clinical guidelines, terminology, drug names and drug dosages), and is not responsible for any error and/or omissions arising from translation and adaptation or otherwise.

Open access This is an open access article distributed in accordance with the Creative Commons Attribution Non Commercial (CC BY-NC 4.0) license, which permits others to distribute, remix, adapt, build upon this work non-commercially, and license their derivative works on different terms, provided the original work is properly cited, appropriate credit is given, any changes made indicated, and the use is non-commercial. See: http://creativecommons.org/licenses/by-nc/4.0/.

ORCID iDs

Francesco Sanmarchi http://orcid.org/0000-0001-8288-0563



Maria Pia Fantini http://orcid.org/0000-0002-3257-6552 Davide Golinelli http://orcid.org/0000-0001-7331-9520

REFERENCES

- 1 Toth F. The Italian NHS, the public/private sector mix and the disparities in access to Healthcare. *Glob Soc Welf* 2016;3:171–8.
- 2 Signorelli C, Odone A, Oradini-Alacreu A, et al. Universal health coverage in Italy: lights and shades of the Italian national health service which celebrated its 40th anniversary. *Health Policy* 2020;124:69–74.
- 3 France G, Taroni F, Donatini A. The Italian health-care system. Health Econ 2005:14:S187–202.
- 4 Ferre F, de Belvis AG, Valerio L, et al. Italy: health system review. Health Syst Transit 2014;16:1–168.
- 5 Pianori D, Maietti E, Lenzi J, et al. Sociodemographic and health service organizational factors associated with the choice of the private versus public sector for specialty visits: evidence from a national survey in Italy. PLoS One 2020;15:e0232827.
- 6 OECD, European Observatory on Health Systems and Policies. Italy: country health profile 2021. In: Italy: Country health profile 2021, State of Health in the EU. Paris: OECD Publishing, 2021.
- 7 Ricciardi W, Tarricone R. The evolution of the Italian national health service. *Lancet* 2021;398:2193–206.
- 8 Ministero della salute. Tiket Ed Esenzioni. n.d. Available: https://www.salute.gov.it/portale/esenzioni/dettaglioContenutiEsenzioni.jsp?area=esenzioni&id=4674&lingua=italiano&menu=vuoto#:~:text=II%20ticket,prestazioni%20sanitarie%20di%20cui%20usufruiscono. Accessed
- 9 Domenighetti G, Vineis P, De Pietro C, et al. Ability to pay and equity in access to Italian and British national health services. Eur J Public Health 2010:20:500–3.
- 10 Winkleby MA, Jatulis DE, Frank E, et al. Socioeconomic status and health: how education, income, and occupation contribute to risk factors for cardiovascular disease. Am J Public Health 1992;82:816–20.
- 11 Adler NE, Ostrove JM. Socioeconomic status and health: what we know and what we don't. Ann N Y Acad Sci 1999;896:3–15.
- 12 Chen E, Miller GE. Socioeconomic status and health: mediating and moderating factors. *Annu Rev Clin Psychol* 2013;9:723–49.
- 13 Golinelli D, Toscano F, Bucci A, et al. Health expenditure and all-cause mortality in the 'Galaxy' of Italian regional Healthcare systems: A 15-year panel data analysis. Appl Health Econ Health Policy 2017;15:773–83.
- 14 Yu CP, Whynes DK, Sach TH. Assessing Progressivity of out-of-pocket payment: with illustration to Malaysia. *Int J Health Plann Manage* 2006:21:193–210.
- 15 Carpenter A, Islam MM, Yen L, et al. Affordability of out-of-pocket health care expenses among older Australians. Health Policy 2015;119:907–14.
- 16 Sanwald A, Theurl E. Out-of-pocket payments in the Austrian Healthcare system – a Distributional analysis. Int J Equity Health 2015;14:94
- 17 Istat. Condizioni di salute, fattori di rischio e ricorso ai servizi sanitari. Rome: Istituto Nazionale di Statistica. 2007.
- 18 Fabbri D, Monfardini C. Rationing the public provision of Healthcare in the presence of private supplements: evidence from the Italian NHS. J Health Econ 2009;28:290–304.
- 19 Glorioso V, Subramanian SV. Equity in access to health care services in Italy. Health Serv Res 2014;49:950–70.

- 20 Toth F. Reducing waiting times in the Italian NHS: the case of Emilia-Romagna. Soc Policy Adm 2020;54:1110–22. 10.1111/spol.12588 Available: https://onlinelibrary.wiley.com/toc/14679515/54/7
- 21 de Belvis AG, Ferrè F, Specchia ML, et al. The financial crisis in Italy: implications for the Healthcare sector. Health Policy 2012;106:10–6.
- 22 Golinelli D, Bucci A, Toscano F, et al. Real and predicted mortality under health spending constraints in Italy: a time trend analysis through artificial neural networks. BMC Health Serv Res 2018;18:671.
- 23 OECD. Health expenditure and financing. OECD Statistics (database). 2022. Available: https://stats.oecd.org/
- 24 Ministero dell'Economia e delle Finanze. Conto Annuale Dello Stato, Roma, Ragioneria Generale Dello Stato. 2022. Available: https:// contoannuale.rgs.mef.gov.it
- 25 Taroni F. Two converging crises. In: Health and healthcare policy in Italy since 1861. Cham: Palgrave Macmillan, 2021.
- 26 Istat. Report Anziani 2019. n.d. Available: https://www.istat.it/it/files/ 2021/07/Report-anziani-2019.pdf
- 27 vonE, Altman DG, Egger M, et al. n.d. The strengthening the reporting of observational studies in epidemiology (STROBE) statement: guidelines for reporting observational studies.
- 28 Inflation Calculator Italy. n.d. Available: https://www.rivaluta.it/calcolatore-inflazione.asp
- 29 Istat. Indicatori Demografici, Roma: Istituto Nazionale Di Statistica. 2022. Available: https://esploradati.istat.it/databrowser/#/it/dw/categories/IT1,POP,1.0/POP_POPULATION/DCIS_INDDEMOG1
- 30 Eurostat. Education attainment level. Luxembourg: Eurostat, 2022. Available: https://ec.europa.eu/eurostat/en
- 31 OECD. Waiting times for health services. In: Waiting times for health services: next in line, OECD health policy studies. Paris: OECD Publishing, 28 May 2020.
- 32 Labate G, Tardiola A. La Sanità Integrativa in Italia. In: Vincenti CD, Ghersi RF, Tardiola A, eds. La sanità in Italia. Organizzazione, governo, regolazione, mercato. Bologna: il Mulino, 2011: 461–79.
- 33 Ministero della Salute. 2° Reporting System. Anagrafe dei fondi sanitari. Roma: Ministero della Salute, 2021. Available: https://www.salute.gov.it/imgs/C_17_pubblicazioni_3215_allegato.pdf
- 34 Ministero della salute. Fondi Sanitari Integrativi. n.d. Available: https://www.salute.gov.it/portale/temi/p2_6.jsp?area=programmazio neSanitariaLea&id=1570&menu=vuoto
- 35 Report Osservatorio GIMBE 1/2019. La Sanità Integrativa. n.d. Available: http://www.quotidianosanita.it/allegati/allegato3343406. pdf
- 36 van Dijk W, Faber MJ, Tanke MAC, et al. Medicalisation and Overdiagnosis: what society does to medicine. Int J Health Policy Manag 2016;5:619–22.
- 37 Catalano R, Goldman-Mellor S, Saxton K, et al. The health effects of economic decline. Annu Rev Public Health 2011;32:431–50.
- 38 Karanikolos M, Rechel B, Stuckler D, et al. Financial crisis, austerity, and health in Europe - authors' reply. Lancet 2013;382:S0140-6736(13)61665-7.
- 39 Ruhm CJ. Recessions, healthy no more. *J Health Econ* 2015;42:17–28.
- 40 Budhdeo S, Watkins J, Atun R, et al. Changes in government spending on Healthcare and population mortality in the European Union, 1995–2010: a cross-sectional ecological study. J R Soc Med 2015:108:490–8.
- 41 Parmar D, Stavropoulou C, Ioannidis JPA. Health outcomes during the 2008 financial crisis in Europe: systematic literature review. BMJ 2016;354:i4588.
- 42 Reeves A, McKee M, Basu S, *et al*. The political economy of austerity and Healthcare: cross-national analysis of expenditure changes in 27 European nations 1995–2011. *Health Policy* 2014;115:1–8.