

# Socioeconomic Status and Waiting Times for Health Services: Current Evidences and Next Area of Research

Health Services Insights  
Volume 12: 1–3  
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DOI: 10.1177/1178632919871295



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**ABSTRACT:** Waiting times are an issue in many countries, excessive waiting for treatments may deteriorate patient's health status and reduce treatment effectiveness potentially, becoming a barrier in the access to health care services. Waiting time to be equitable should be related only to the health need, people with the same health need have to wait the same time, without any difference due to socioeconomic status. In the commentary, the results of the extensive literature review and policy implications are discussed.

**KEYWORDS:** Health equity, health services accessibility, socioeconomic factors

**RECEIVED:** July 25, 2019. **ACCEPTED:** July 28, 2019.

**TYPE:** Commentary

**FUNDING:** The author(s) received no financial support for the research, authorship, and/or publication of this article.

**DECLARATION OF CONFLICTING INTERESTS:** The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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**COMMENT ON:** Landi S, Ivaldi E, Testi A. Socioeconomic status and waiting times for health services: An international literature review and evidence from the Italian National Health System. *Health Policy*. 2018;122(4):334-351. doi: 10.1016/j.healthpol.2018.01.003. PubMed PMID: 29373188. <https://www.ncbi.nlm.nih.gov/pubmed/29373188>

## Results of Literature Review

Many health systems have a limited use of prices to give access to health services at the widest share of citizen possible. However, in a world with resource constraints on the supply side, this appreciable aim leads to an excess of demand. Waiting time becomes an implicit nonmonetary rationing instrument to maintain equilibrium for supply and demand for health care services. Waiting times are an issue in many countries,<sup>1</sup> excessive waiting for treatments may deteriorate patient's health status and reduce treatment effectiveness potentially, becoming a barrier in the access to health care services.

Landi, Ivaldi, Testi 2018 run an extensive literature review on the topic.<sup>2</sup> The review were conducted from 2002 to 2017. Twenty-eight over 612 articles identified met the criteria (see the criteria in the original article<sup>2</sup>). More than half of the studies were published after 2012 highlighting the growing interest on research about socioeconomic disparities in waiting times.

Waiting time inequalities are of interest for several professional figures: doctors, politicians, economists, and sociologists. Different journals and authors from different research field have studied the topic. As shown in Figure 1, medical journal collected 14 studies, economics 7, and sociopolitical 6. Therefore, we have half articles in social science journals and half in medical journals.

Furthermore, it is interesting to note the type of health services studied. Elective surgeries are the most analyzed service with 19 papers, that is the main attention have been devoted to this type of health service (see Figure 2). Specialist visit with 4 articles is the second type of service. Among surgeries, the main focus has been on Orthopedic surgeries (9 studies; see Figure 3), in particular knee and hip replacement (5 over 9). Surgeries in Oncology, Ophthalmology, and pediatrics were

explored with 2 studies each. Then there are studies that put together a wide range of elective surgery types studying them as a unique sample.

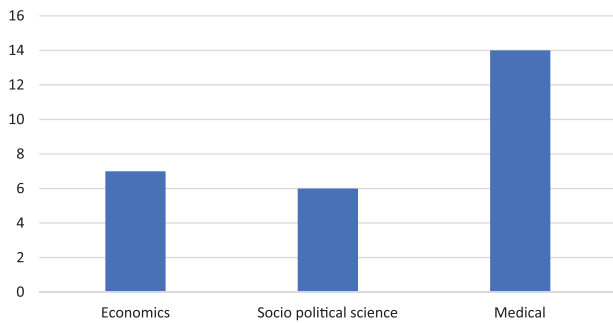
Waiting time to be equitable should be related only to the health need, people with the same health need have to wait the same time, without any difference due to socioeconomic status. The literature review showed the existence of a relationship between waiting time and socioeconomic status.<sup>2-10</sup> Only 7 of 27 works did not find a relationship between the 2 domains.

## Definitions of Waiting Time

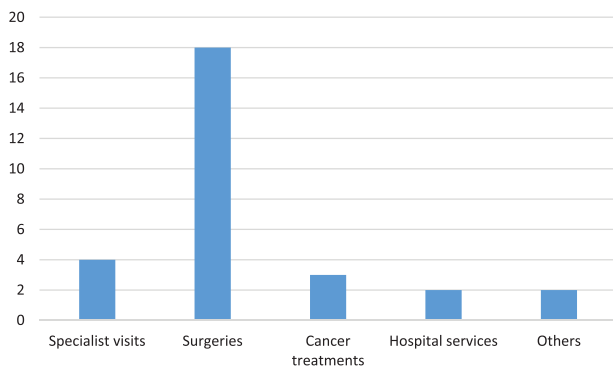
The concept of waiting time can be measured in different ways. Usually it is the time (number of days, weeks, or months) before receiving the service according on the start and end point chosen or available (ie, *out-patient waiting time* = time elapsed from the date of general practitioner (GP) referral to the date of specialist assessment; *in-patient waiting time* = time elapsed from the specialist addition in the list to treatment or the sum of the 2 above that is *referral-to-treatment* waiting time, that is, the time elapsed between family doctor referral to treatment).

In authors' opinion, it is interesting to include in the debate a different approach, that is, the notion of excessive waiting time with respect to patient's need. The approach starts from the fact that having a certain amount of waiting time is physiological, what is negative is excessive waiting time where patient's health start to be at risk of deterioration. Waiting times should be compared with a fixed time threshold based on clinical urgency criteria within which it is necessary to be cured to avoid a heavy deterioration in health. In these cases, waiting times are measured as the number waited over the clinical threshold identified or the percentage of people treated beyond the threshold of being at risk.





**Figure 1.** Number of studies per journal scientific area.



**Figure 2.** Publication for type of health service analyzed.

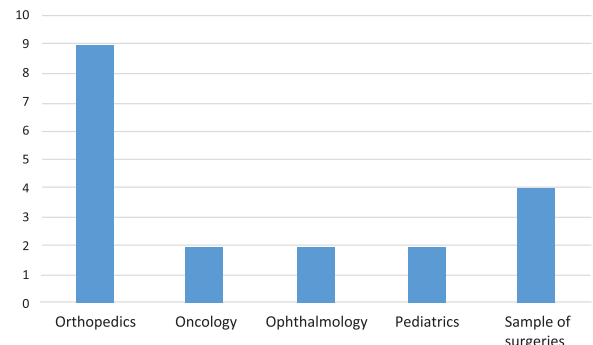
### The Italian Case Study Results

Besides the literature review, the authors developed an empirical analysis on 3 different health services in Italy: specialist visits, diagnostic tests, and elective surgeries.<sup>2</sup>

The contribution of this study to the literature resides in the simultaneous analysis of 3 different health services. It is important to evaluate disparities in service of different levels of severity (ie, primary care and secondary care) in the same set of space and time. In the case study, the authors found higher disparities in primary care services in particular specialist visits and diagnostic tests, whereas for elective surgeries they were minimal. The results for primary care showed the presence of a socioeconomic gradient over the risk to experience excessive waiting times; education and economic resources are the 2 main variables that affect waiting times. It was not the case for elective surgeries where significant disparities were not detected.

On one hand, the result is a good achievement because it can indicate the ability of the health system to avoid socioeconomic inequalities for high relevant health interventions, as surgeries, which impact relevantly patient's health status. On the other hand, we need to consider the complete patient pathway; in fact before deciding for a surgery, a patient usually requires specialist visits and diagnostic tests. Inequalities could amass during the clinical pathways; therefore, although in the literature the main focus was on elective surgeries, the results suggest to investigate also primary services as diagnostic tests and doctor visits.

Another point of interest is the relative importance of education and economic resources in affecting waiting time disparities.



**Figure 3.** Publications per type of surgery.

Using both logistic regression model and classification trees, the empirical results suggest that education has a role beyond income. In decision trees analysis, people within the same economic resources segment but with a better education seem to have a lower risk of suffering excessive waiting times. The result is in line with other works that underlined the role of both income and education.<sup>6,8</sup>

### The Italian Case Study Results

There is no clear reason on the mechanism producing disparities. Socioeconomic gradient can be due to a sort of “power” of advocacy, made up of abilities due to a better education or higher economic resources. Resuming hypothesis stated in the literature, well-educated and affluent people achieve lower waiting times because they are able (1) to keep up with health organizations; (2) to explain better their personal health situation to the doctor, getting the right priority; (3) to compliance with the systems going to the appointments, they may have a lower probability of missing scheduled appointments (which would increase the waiting time);<sup>6,8</sup> (4) to interact with the system in an active way getting more information; (5) to exercise pressure in case of undue delay; and (6) to use private service when public sector are not able to satisfy their needs. Another potential reason is that unobserved factors correlated with income and education have an influence on waiting time. For instance, individuals with higher socioeconomic status may have lower search costs because of better informed networks and use them to have higher priority.<sup>8</sup>

### Potential Policy Interventions

In this context, policy interventions should face 2 main domain. (1) First, from an economic and policy viewpoint, waiting times not only depend on resources devoted to health care but also on those assigned to economic and education. Improving general socioeconomic conditions could affect positively waiting times and therefore health status of citizens. (2) Second, it is necessary to implement practical interventions able to have effects in the short time. Starting from the hypothesis presented above, the interaction between patient and the system is a key point. There is a sort of co-production between these 2 actors.

It is an intrinsic process of interaction between any service organization and its service users at the point of delivery of a service. Co-production challenges the assumption that health service users are passive recipients of care. The user's contribution as a co-producer it is unavoidable and moreover it is crucial to the performance of a service. In healthcare services the relationship between clinicians and patients is crucial.

The clinician has knowledge of diagnosis, treatment options and prognosis and the client knows about the experience of illness, social circumstances, and personal preferences. The contribution of each participant is important. Organizational changes need to enhance this relationship giving at the clinicians the tools to build the doctor-patient relationship, open the discussion, understand better the patient's perspective. Patient's ability to coproduce is a function both of their own capacities (depending on socioeconomic status) and the relative complexity of the task. Implementing practical interventions mean to face the second point, trying to enhance patient's ability to keep up with the health system lowering the relative complexity of the task. More on these topics need to be studied.

### Conclusions and Recommendations

In conclusion, in a system with no or limited price, waiting times are not avoidable. The key point is to have the right waiting time according to patient need. Individuals with the same problem or health status should wait the same regardless of their education or economic resources. Severity has to affect waiting time and not socioeconomic status. Given the structural presence of waiting times, it is important to underline as disparities could be evaluated using the concept of excessive waiting times. Having a certain amount of waiting time is physiological; the real problem is excessive waiting time where patient's health start to be at risk of deterioration. The notion of excessive has to be derived from clinical evidences for each type of health services. Further work should be done to evaluate socioeconomic disparities in the context of excessive waiting time.

Future research on the topic, where possible, should evaluate disparities in service of different levels of severity (ie, primary care and secondary care) in the same set of space and time. Every health services can suffer different levels of disparities with different mechanisms producing them. Landi et al<sup>2</sup> found

that inequalities are higher for primary care. Growing the complexity of the health service disparities were lowering. This hypothesis needs to be tested in other contexts. Moreover, future works should be devoted to evaluate the total amount of waiting time citizens face throughout all clinical paths, from primary care to secondary care. Last but not least, future studies should analyze other characteristics affecting waiting time such as the administrative area/region where the patient lives, the local health authority, the number of GPs in the area, and others to understand whether organizational/administrative factors may be more or less important than individual characteristics in determining disparities in waiting times.

### Author Contributions

AT and SL conceived of the presented idea. SL performed the literature review. AT and EI verified the analytical methods. AT encouraged SL to investigate the policy implications of the empirical findings and supervised the findings of this work. All authors discussed the results and contributed to the final manuscript.

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