One Plus One Makes Less than Two? Consolidation Process in Italian Local Health Authorities and Population Mortality

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1 Background

Is the centralization of health care management a win-win policy? Over the last decades, Italian Local Health Authorities (LHAs in what follows) experienced a massive consolidation process that caused, as a result, a drastic reduction in their number. In fact, LHAs passed from 659 in 1992 to 197 in 2001 (Di Novi *et al.*, 2018), resulting 139 in 2015 and 101 in 2017 (Italian Ministry of Health, 2018).

The increase of life expectancy and the consequent aging of population raised concerns on the dynamics of Italian health spending in such a way that institutional settings have changed and policies mostly oriented at containing costs and increasing efficiency have been implemented. The consolidation of LHAs represents a prominent example of this pattern and is the focus of this study. More specifically, this paper evaluates the impact of LHAs consolidation process on population mortality within Italian municipalities, focusing on the mergers that have taken place since 2004 and are still in progress in some regions.

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2 Objectives

This paper aims to answer the question: does the amalgamation of two or more LHAs affect the quality of provided care?

The question of whether Italian LHAs amalgamation programs affect the quality of health care for patients has not been studied yet and can represent a further step in the debate regarding the effects of mergers in the provision of public services. Thus, the motivation of this analysis relies on giving some evidence on the indirect effects that this "merging mania" may produce. In fact, the more straightforward direct effects are related to cost-saving benefits by cutting off the number of General Managers and administrative staff. Given this strength, from a theoretical perspective, the maximum benefit would be obtained by establishing a single LHA per region or a single LHA for the whole country. Nevertheless, this merging design may reasonably have some weaknesses and produce, eventually, a worsening of health care services. As a matter of fact, a limit might exist to the complexity that a single management body can effectively supervise. Heterogeneous effects are also possible since the specific needs of a few local communities could no longer taken into proper account.

3 Methodology

We estimate the impact of the above mentioned policy shifts on population mortality using the within municipality variation over time, distinguishing between the geographical characteristics of municipalities (mountain Vs. non-mountain) and controlling for individual municipality trends. Since each region set up the policy in different years, we use a staggered difference in difference as identification strategy to estimate the average treatment effect, capturing and disentangling the full dynamics both in the short run and in the medium-long run. The variation occurring from different timing of amalgamation reforms across the Italian regions, and then the Italian municipalities, once the effect of time is adequately accounted for, provides several advantages to evaluate whether a larger LHA does a better job. Indeed, the different time periods of implementation allow for getting

rid of potential selection into treatment by keeping in the sample only those municipalities belonging to LHAs that have been treated at some point in the available observation period. Moreover, we are able to control for potential anticipation effects and to disentangle the full dynamics of the treatment effect in the short and in the medium-long run.

4 Results

We find that there is a statistically significant increase in municipality mortality after the reforms and this effect grows over time with respect to the baseline pre-reform years (3, 4 and 5 years before). Being in the post-reform years would increase the population mortality by 2.7% in the two periods after the policy shift with respect to the baseline pre-reform years, 6.8% in the third and four year following the LHAs consolidation, 10.4% in the the fifth and the sixth, 13.6% after more than six years. Interestingly, the effect is produced in both types of municipalities considered, mountain and non-mountain, but it is worth noticing that its magnitude looks almost double in the mountain municipalities in the medium-long run. Results are robust to different specifications of placebo test and the non-statistically significance of the coefficient associated to the time dummy 2-1 years before suggests that no anticipation effect occurred. Our results show that population mortality increased in the years following the reform, especially in mountain municipalities, reasonably the most isolated ones, and suggest that policy makers should carefully consider the impact on health care effectiveness and accessibility before allowing more mergers.