

**Impact of contextual factors on health care use, externalities and the need for incentives**J. Perelman¹, J. Alves¹¹ Escola Nacional de Saúde Pública, Universidade Nova de Lisboa, Lisbon, PORTUGALContact: jperelman@ensp.unl.pt

Objectivos (Objectives): The influence on contextual effects on people's health has prompted increased interest over the recent years. This impact may be related to environmental factors, like the quality of air or water, criminality, availability of parks or local markets for fresh fruits and vegetables, or to provision of public services, namely, public transportations, schools and health centers. They may also reflect the role of socioeconomic context on health like economic inequality or unemployment rate, that go beyond socioeconomic individual effects. The influence of context poses challenging questions in terms of public policies. If local context and policies are health determinants, they also potentially affect health care use. However, except in Nordic countries, local policy-makers have limited competences on health care provision. As a consequence, local authorities potentially produce externalities on health care use without supporting their consequences. In this paper, we first build two indicators of socioeconomic deprivation and environment context at the smallest local level in Portugal (freguesias, i.e. municipality). Then, we test empirically the impact of these factors on patients' health care use at the hospital level. Results allow us discuss the need to provide incentives to local authorities related to the impact of their actions on health and health care.

Metodologia (Methodology): We used data from the last census (2001) to get information from the 4,037 Portuguese municipalities. In order to construct the municipality socioeconomic profile, we used 15 variables on education attainment, income, occupation, unemployment rate, quality of housing and isolation. We performed a principal component analysis which allowed reduce this set of variables to two factors that jointly represented 52% of total variance. The first factor was positively related to high education and high income (here-below, affluence factor) while the second was positively related to low education, loneliness, unemployment and living in worse material conditions (here-below, deprivation factor). A similar exercise was performed for contextual aspects more directly related to environmental factors (rubbish, water provision and residual water drain/treatment, parks and criminality) and local policies (public expenditures on culture/sport, primary care centers and elderly houses, total revenues). A total 12 variables were used that were also reduced to two factors (poor environment and low public investment factors). Then, these factors were merged, using the patient's municipality, with data for all in-patient discharges at Portuguese NHS hospitals for the year 2007. We measured the impact of the patient's area socioeconomic profile and environmental factors on in-patient length of stay (LOS) and case-mix (CM), through multivariate regression.

Resultados (Results): Controlling for age, sex and diagnosis related group, patients coming from the most affluent areas have a significantly 5% lower length of stay, while those in the most deprived areas have a 4% longer one. The patients' casemix from patients living in affluent areas is also 0.50 point lower than the average, and 0.27 points higher for those living in deprived areas. As regards environmental factors, they also influence length of stay and casemix as expected, with higher LOS and CM being associated to poor environment and lower public investment.

Conclusões (Conclusions): Our study emphasizes the role of socioeconomic and environmental context, at the municipality level, on health care use at the hospital level. By doing so, it enlightens the role of local authorities on improving people's health and decreasing their health care needs, through improving local environment and investing in public policies. Hence, our results argue in favor of an incentive mechanism to local decision-makers to internalize the impact of their actions on health.