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Analysing the efficiency of team-based practices

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Key Findings

- The policy that introduced the team-based practices was successful in improving the efficiency of the teams and reducing disparities between those practices that converted to the new organizational model
- The team-based practices are "doing more" – providing more visits and higher quality of care – albeit smaller teams do so at relatively higher costs.
- The maturity of the team is associated with significantly higher technical efficiency but has no significant impact on cost containment

What Problem Was This Research Addressing?

The reorganization of the primary care services in 2005 in Portugal brought the creation of Family Health Units (FHU) to improve efficiency and access through organizational changes and financial incentives. These team-based units benefited from more autonomy and performance contingent payments according to their development stage (from FHU-A to FHU-B). Amid a scenario of rising health care costs, our interest was to establish the extent to which the configuration of team's resources, the levels of activity and quality of care, leveraged by potential inefficiency, can contribute to the discrepancies in costs between practices.

What This Research Adds

An increasing body of literature[1,2,3] recognizes the presence of technical and allocative inefficiencies in the general practices associated with organizational elements. Adding to the previous work, the present study provides further evidence in support of the use of both quantitative and qualitative aspects of the healthcare providers output to facilitate the interpretation of the efficiency measures as accurate images of their performance. Furthermore, this work attempts to provide elements for the national policy debate regarding the optimal size of the team-based practices and whether

the local authorities should incentivize more practices to convert into the FHU scheme, through the comparison of the efficiency and the study of potential unexploited economies of scale.

Methods

This study used stochastic frontier analysis to estimate cost-inefficiency i.e., the difference between observed yearly costs and the total expenses that would occur on the cost frontier given the unit's output and the prices of resources. The differences obtained reflect most sources of measurable inefficiency and are assumed to be affected by the type of organization, the ratio of nurses and administrative staff to physicians, the maturity of the team and the regional market conditions. Efficiency was measured at the practice level for the units nationwide in a period from 2016 to 2018. The cost included labour expenses and physician induced costs (pharmaceutical expenditure, diagnostics tests, and therapy costs). The health care outputs analysed were the number of patient visits to nurses and family physicians and the index of adequate care in maternal health, child health and of patients with diabetes. The indexes were obtained based on an extensive set of quality indicators. Other factors considered to affect total cost were the practice organizational model, the

complexity of the patients (age, gender, comorbidities, socio-economic conditions), the rurality of the coverage area, the average list size and the number of patients without an assigned physician.

Research Findings

Descriptive evidence suggests considerable variation in output and cost across practices. The analysis using both quantitative and qualitative outputs suggests that these differences are associated with the organizational model. In the adjusted model, there were no significant cost containment gains in team-based practices compared with non-team-based models (PHCU) for practices with a small scale, as Fig.1. highlights. Thus, despite having a mixed payment system with financial incentives, the cost of the relatively larger FHU-B is not different from the cost of other types of practice when subject to the same conditions and for the same scale of production. The overall efficiency of the units is on average 91% after adjusting for the underlying conditions in which they operate. Practices with a higher estimated efficiency score are those organized as an FHU (see Fig.2.) but we observe a potentially convergent trajectory of efficiency levels across practices. An organizational factor contributing to efficiency gains is a lower ratio of nurses to physicians (a counterintuitive result that might suggest that practices with more nurses are not employing their skills efficiently, or that their time might be devoted to other activities not properly captured in these outputs). The maturity of the team and the ratio of assistants to physicians do not significantly affect the cost-efficiency.
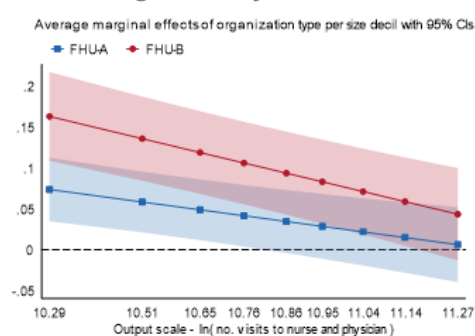
Policy Relevance of Research

- Identifying factors that influence physician practice costs is important for providing evidence-based organizational schemes and practice payment systems with effective incentives.
- The results reveal the existence of scale economies in the primary care units despite the composition and management of practices being highly regulated, a result that needs to be considered in the discussions regarding efficiency in health care provision.
- Policies aiming at cost containment and improve efficiency should consider that relatively smaller-scale practices despite the organizational changes and performance incentives may still suffer from maladies of scale, for instance, co-ordination difficulties and lower peer pressure.
- It is well established that environmental factors play a significative role in determining why some practices are lagging in cost-efficiency. The results also provide evidence in support of the importance of including both quantitative and qualitative aspects of output in the analysis to contribute to the debate regarding the trade-off between quality and efficiency.

Fig. 1. Association between the organizational model and practice cost.
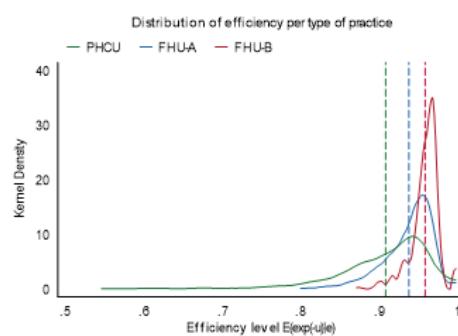

Fig. 2. Distribution of efficiency scores. Efficiency scores lower than 1 mean that a further proportional decrease in cost is feasible, given output level and technology of those practices

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