

## Policy Brief - January 2020

# Efficiency in primary care

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### Key Findings

- The team-based practices introduced are “doing more”- providing higher quality with a constant level of staffing (at higher average cost).
- The policy that introduced the team-based practices was successful in improving the efficiency of the teams and reducing disparities between practices that converted to the new organizational model.
- The maturity of the team is associated with significantly higher technical efficiency but less relative cost containment.

### What Problem Was This Research Addressing?

The reorganization of the public primary care providers in 2005 in Portugal aimed at improving quality and access to face the rising demand reduce territorial inequalities and increase the utilization of these services in order to relieve the over-burdened emergency services. Team-based units were created with extended office hours, larger patient's lists, and quality targets in order to improve efficiency and access through organizational changes and a mixed payment system. These units benefited from more autonomy and performance contingent payments according to the development stage of the teams. This research examines the relationship between the characteristics of the models governing the teams and the existence of technical and allocative inefficiency in the operation of these teams.

### What This Research Adds

The analysis of the efficiency of the teams that self-selected into more autonomous practices and those that remained under the local administration is the first stage of evidence that contributes to the analysis of the efficiency of the whole primary health care. This research takes the economic lenses to assess efficiency or productivity goal for managing the general practitioners'

workforce and designing cost-effective, multi-disciplinary primary care system in Portugal. This is the first study that estimates the technical and allocative efficiency at the primary care practice level for the entire country.

The study of the efficiency of (self) selected teams is very relevant to guide the policy debate and future decision, in questions such as whether these teams are worth the additional money? Or whether the local authorities should incentivize more practices to self-select into the scheme? The overall efficiency predicted by our model for primary care units in the Portuguese NHS is on average around 100-80% after adjusting for the underlying conditions in which the practices operate (environmental factors). Therefore, through an appropriate target setting, it should be possible to make substantial efficiency gains in some practices. Decision-makers and health care managers should consider that better management of practices may improve efficiency. However, this research also highlights that some scales of production (frontiers) have only been achieved by the teams in the second stage of the team-based scheme, suggesting that the organizational change might be key to leverage some productivity levels, otherwise not attainable by practices with less favourable organizational model.

### Project Partner:



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## Methods

We analysed the practices' efficiency using the stochastic frontier methodology for production and cost functions and investigated which factors account for differences in the level of efficiency. The deviation from each practice to a practice that uses the most efficient way to achieve a certain output level without using more resources than those strictly needed provides a scale to estimate the technical efficiency of each practice. Applying a more restrictive concept we can also consider that a practice is allocative efficiency if it minimises its cost given its output and input prices, i.e. it is using the least expensive combination of resources. We use a longitudinal administrative database from the public providers of primary care nationwide (~900 units) over a three-year period. The estimation also included a set of variables not analysed in previous research such as the age and tenure of the practitioners. The estimation of the frontiers goes beyond the volume dimension as we express the production and costs as a function of quality in multiple disease areas, socio-economic variables and other environmental factors.

## Research Findings

This study identifies a considerable variation in the efficiency scores between each organizational model. Not all units are equally efficient in producing the same outputs, but the practices organized in team-based models obtain more consistent results suggesting a lower sensitivity to the regional variations. The differences in the technical and cost (in)efficiencies of the practices highlighting the importance of analysing both efficiencies simultaneously. Regarding the structural and organizational factors, we find that the maturity of the team is associated with significantly higher technical efficiency but less relative cost containment. Larger average lists of patients per physicians and the use of aids such as assistants and interns are associated with increased capacity. Practices with a higher ratio of nurses to GP (above 1:1) are associated with more cost inefficiencies for the same quantity of visits. This result is against the traditional expectation: a higher ratio of nurses to GP given the wages differences is an indication of allocative efficiencies in the production of health care services. Identical results were nevertheless found by (Puig-Junoy & Ortún, 2004) in Catalonia. This might suggest that practices with more nurses are not employing their skills efficiently, or that nurses' time

## Policy Relevance of Research

- The aim of this study is to provide policy advice through the evaluation of alternative organizational models of healthcare practices
- Focusing on efficiency, one of the six health quality measures indicated by the WHO (along with safety, accessibility, fairness and acceptability), this paper is an empirical analysis of the capacity of three types of caregivers to achieve the best possible outcome by applying current medical knowledge and resources.
- Address some of the well-known challenges of multi-disciplinarily: coordination costs, and free riding
- Highlight the “technological” limitations of the non-team-based models to achieve higher performance for the same level of quality despite the appropriate target setting and the availability of resources.

might be devoted to other activities such as training and counselling that might not be properly measured in the total office visits. However, if we consider as the main output the achievement of higher scores of appropriate treatments of patients with chronic diseases (hypertension and diabetes), children and pregnant women, we observe that a higher proportion of nurses is associated with reduced allocative inefficiencies, as we would expect. This may suggest that the nurses' time might be being used as a substitute of GP to provide care to a certain patient group prioritized by the reform and achieve the quality targets.

The research also found that the factors that explain the higher need for this type of care, such as the socio-economic conditions and the complexity index of the patient's population (demographic factors and morbidities) were not found to be conducive to significant (in)efficiencies. As well as other factors that explain the barriers to access, such as the rurality index.

Our findings reflect the impacts of similar reforms in non-integrated primary care systems. These results are relevant for policymakers to design action targeted at minimizing variations on the efficient achievement of quality targets and uses of resources.

## References

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