

## A national pay-for-performance scheme for primary health care is associated with a small reduction in avoidable hospitalisations in Brazil

### KEY MESSAGES

- Despite the rapid expansion of pay for performance (P4P) schemes globally over the last decade, their contribution to improvements in health service delivery and health outcomes in low- and middle-income countries is unclear.
- Brazil's National Programme for Improving Primary Care Access and Quality (PMAQ), which was implemented nationwide between 2011-2019, provides an important opportunity to evaluate the effects of one of the largest P4P schemes in the world.
- New research reveals that the expansion of PMAQ led to a modest but significant reduction in avoidable hospitalisations in Brazil – an indirect measure for quality of primary health care.
- Results indicate that PMAQ reduced avoidable hospitalisations by 3%, equivalent to approximately 60,800 hospitalisations in 2018.
- These findings suggest that P4P can lead to modest improvements in the quality of primary health care (PHC), thereby contributing to the growing global evidence base on the effects of P4P schemes.

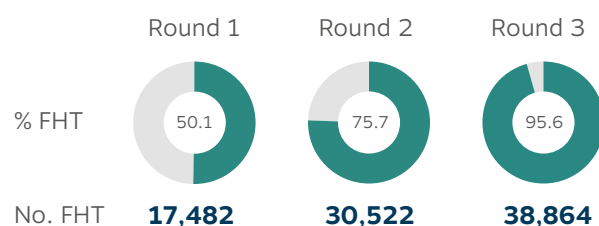
**Based on:** Russo LX et al. Pay for performance in primary care: the contribution of the Programme for Improving Access and Quality of Primary Care (PMAQ) on avoidable hospitalisations in Brazil, 2009–2018. *BMJ Global Health*, Volume 6, Issue 7. <https://gh.bmj.com/content/6/7/e005429>

**About EQUIPMAQ:** The EQUIPMAQ project investigates how the national programme for Improving Primary Care Access and Quality (PMAQ) has affected socioeconomic inequalities in the financing and delivery of primary care. We are a multi-disciplinary team of researchers based in the United Kingdom and Brazil funded by the UK Medical Research Council, Newton Fund, and CONFAP (Conselho Nacional das Fundações Estaduais de Amparo à Pesquisa).

### BACKGROUND

Over the past two decades, Brazil has invested heavily in PHC as a means of improving health outcomes and moving towards Universal Health Coverage. In 2011, Brazil introduced the National Programme for Improving Primary Care Access and Quality (PMAQ), a pay-for-performance scheme that allocated funding to municipalities based on the performance of family health teams (primary care providers). During 3 rounds ending in 2019, the Ministry of Health provided financial incentives for a wide variety of structure, process and outcome indicators. By the third round of the scheme (2017-19), PMAQ had become one of the largest P4P schemes in the world, reaching around 39,000 (89.5% of) family health teams. However, despite nine years of implementation, PMAQ is under evaluated in terms of its effects on quality of care and health outcomes.

#### Participation in PMAQ by Family Health Teams



This research brief shares key findings from research that examined the association between PMAQ and hospitalisations for ambulatory care sensitive conditions (ACSCs) – a set of diseases and health problems for which timely and high-quality PHC can reduce the need for inpatient admissions. By improving quality of PHC, it is expected that PMAQ would deliver more prevention and better treatment at the PHC level, resulting in fewer hospitalisations for ACSCs. The research estimated the association of PMAQ on hospitalisations for ACSCs across 5,564 municipalities between 2009 and 2018, controlling for observed demographic, socioeconomic and health supply-side constraints. A novel aspect of the research was the inclusion of a measure of implementation intensity of PMAQ, taking into consideration the percentage of participating teams in each municipality rather than a dichotomous (yes/no) measure of exposure.

**Figure 1: Association between PMAQ and avoidable hospitalisations per 10,000 population**

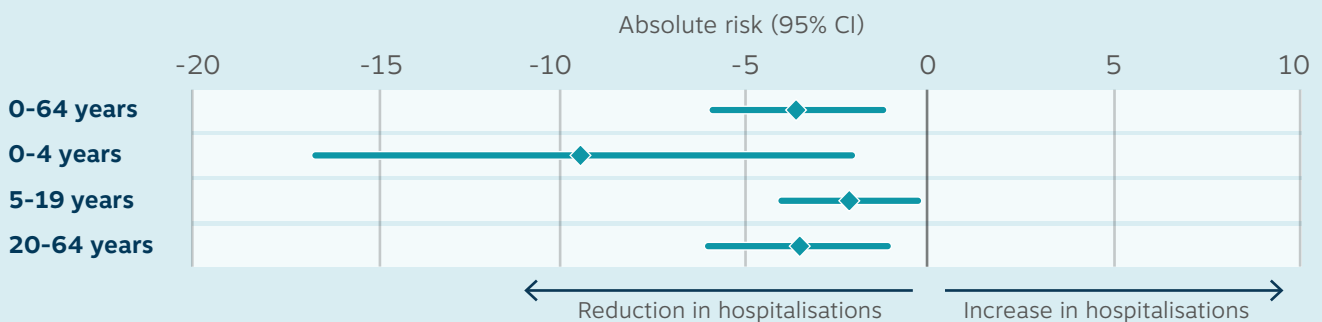


Figure shows the reduction in the rate of avoidable hospitalisations per 10,000 people associated with an increase from 0% to 100% in the coverage of PMAQ.

## KEY FINDINGS

- The roll out of PMAQ across municipalities was associated with a modest but significant reduction in avoidable hospitalisations for ACSCs (figure 1).

  - PMAQ was associated with a reduction of approximately 60,829 hospitalisations for populations aged 0-64 in 2018.
  - Participation of PMAQ at 89.5% of total family health teams corresponds to a reduction of 3% of the mean hospitalisation rate for ACSC.
  - The impact of PMAQ on ACSCs is strongest for children under 5 representing a reduction in 11,936 hospitalisations in this age group in 2018.
  - When stratified by age group and diseases, PMAQ expansion was associated with a reduction in hospitalisations for gastroenteritis for 0-4 years, asthma for 0-4 years and 5-19 years and renal disease for 20-64 years.

- Several potential mechanisms may underpin the effect of PMAQ on avoidable hospitalisations including improvements in work processes and planning at the team level. Examples include home visits, support from other professionals and referrals to specialised care, resulting in improvements in access and quality of care.

Qualitative studies provide some insights from different states in Brazil. For example, in Paraná, workers engaged in PMAQ reported improvements in health information registries allowing better monitoring of target populations. On the other hand, in Goiás and São Paulo, studies showed a low perception of PMAQ and its impact on clinical practices and work processes.

**More information:** <https://www.lshtm.ac.uk/research/centres-projects-groups/equipmaq>

**Related resource:** *EQUIPMAQ brief 1 (June 2021)* Reduction in socioeconomic inequalities in the quality of primary health care under Brazil's national P4P scheme.

## Evidence from other countries

- In **England**, hospitalisations for ACSCs incentivised by the Quality and Outcomes Framework led to a reduction of 2.7% and 8% in the first and seventh year after the framework was introduced, respectively, compared with ACSCs that were not incentivised by the programme.
- In **Portugal**, a study showed that municipalities that implemented a P4P scheme amongst family health teams had no statistically significant impact on hospitalisations for ACSCs compared with municipalities that did not implement the scheme.
- In the **USA**, a study found that two out of three states that implemented P4P schemes had a reduction in ACSC hospital admissions.

\* Sources available in original publication.

## IMPLICATIONS FOR POLICY

- The findings suggest that P4P can contribute to improved quality of primary health care, as evidenced by a reduction in avoidable hospitalisations.
- In Brazil, PMAQ has benefitted from a long period of investment in primary health care, and the scheme was implemented alongside a broad set of federal measures to expand the primary health care system. This context may have provided institutional background to enhance better results of PMAQ.
- Decisionmakers must include monitoring and evaluation framework alongside health policy implementation to identify expected and unexpected results, enabling them to make timely adjustments, avoiding inefficiencies and health inequalities among population groups.