

# Policy Evaluation: Systematic Review about a pay-for-performance Programme in Public Health in Brazil

## *Avaliação de Políticas Públicas: revisão sistemática sobre um programa de pagamento por desempenho na saúde pública no Brasil*

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## ■ ABSTRACT

The Program for Improving Quality and Access in the Primary Care (PMAQ-AB) is an unprecedented initiative in Brazilian public health considering the amount of funds transferred to municipalities. This systematic literature review aims to analyze how the PMAQ has been studied in the international and national literature to identify which aspects related to the public administration and public policies have been addressed. The PRISMA protocol for systematic reviews guides the entire process of research question definition, search, selection and analysis. The Atlas TI software was used for coding and analysis of studies. It is concluded that there are gaps regarding studies about the formulation, implementation, and evaluation phases of the PMAQ. Finally, it is recommended that the international context of performance pay programs be considered in research and that comparative public policy studies be conducted.

**Key-words:** public policy. Evaluation. pay-for-performance. public health. systematic review

## ■ RESUMO

O Programa de Melhoria da Qualidade e do Acesso à Atenção Básica (PMAQ-AB) é uma iniciativa inédita na saúde pública brasileira pelo montante de recursos repassados aos municípios. Esta revisão sistemática da literatura tem como objetivo analisar como o PMAQ tem sido estudado na literatura internacional e nacional para identificar quais aspectos relacionados à administração pública e às políticas públicas têm sido abordados. O protocolo PRISMA para revisões sistemáticas orienta todo o processo de definição, busca, seleção e análise de questões de pesquisa. O software Atlas TI foi usado para codificação e análise de estudos. Conclui-se que há lacunas nos estudos sobre as fases de formulação, implantação e avaliação do PMAQ. Por fim, recomenda-se que o contexto internacional dos programas de remuneração por desempenho seja considerado na pesquisa e que estudos comparativos de políticas públicas sejam realizados.

**Palavras-Chave:** política pública. Avaliação. pagamento por desempenho. saúde pública. revisão sistemática

## 18 INTRODUCTION

Pay-for-performance or performance based-financing programs have been implemented worldwide in public health. The evaluation of health systems and subsequent payment for performance are the central elements of these programs that are being adopted worldwide in public health to encourage the improvement of quality and the expansion of Primary Health Care. The strengthening of international evaluation actions supported by governments, independent bodies, multilateral organizations, and civil society is a consequence of the complexity in a global context (OLIVEIRA AND PASSADOR, 2019) and the difficulty faced by countries in implementing public policies.

Developed countries such as Australia, the United Kingdom, the United States and Germany have implemented performance-based payment systems (BOECKXSTAENS et al. 2011; CASHIN et al. 2014; CASHIN AND CHI, 2014). This type of system has also been adopted in developing countries like China and Cameroon (WAGSTAFF AND YU, 2007; DE ALLEGRI et al., 2018)

In pay-for-performance programs, the performance of health teams is observed through periodic evaluations. However, the amount of resources invested, the assessment instruments, the payment of bonuses to professionals, the periodicity of the assessment and the assessment process are factors that vary according to the political, economic and social context of each country.

In Brazil, the Ministry of Health implemented in 2011 a programme of payment for performance in public health called the National Programme for Improving Access and Quality in Primary Health Care (PMAQ) with the objective of conducting external evaluations of primary care teams. Over these 8 years, the Ministry of Health conducted evaluations of health teams that joined the programme in Brazilian municipalities.

The evaluation carried out under PMAQ is realized in a partnership between the Ministry of Health and Research and Teaching Institutions in Brazil. Experts from Research and Teaching institutions helped to design the PMAQ framework evaluation. Inter-

viewers trained by the Universities make a “surprise” visit and they collect data in the Basic Health Units.

Since its implementation in 2011, three evaluation cycles have been carried out: first cycle (2011/2012), second cycle (2013/2014) and third cycle (2015/2018) (LEMOS et al., 2018). Economic and political difficulties caused the third cycle of the PMAQ to be longer than the first two evaluation cycles. Three national assessments of primary health care have already been carried out at the PMAQ, which is very significant considering the Brazilian territorial extent, the number of primary health care teams assessed and the amount of resources allocated to this assessment program. Following other international experiences, the PMAQ-AB is not just a program for evaluating health teams. It is also a pay-for-performance program.

The objective of this systematic review is to analyse the studies published on the PMAQ in the international and national literature in order to identify which aspects related to the area of knowledge of public administration and public policies have been addressed. This analysis allows for the mapping of studies, categorization, identification of gaps and networks of authorship and co-authorship.

The policy evaluation is often described in the literature about public policy as a stage in the policy process (or cycle as it is known). This systematic review shows that policy evaluation is much complex than is used to be described in the literature. This systematic review was carried out based on the recommendations of the PRISMA protocol. The PMAQ as an evaluative programme has its own policy formulation, implementation, and evaluation stage. The papers selected in this systematic review evidence how researchers are internationally and nationally studying the stages of the PMAQ.

## 19 RESEARCH DESIGN AND METHODS

The Prisma protocol guided this systematic review. It is presented in 27 items and a 4-step flowchart and aims to help authors improve reports of systematic reviews and meta-analyses (GALVÃO, PANSANI AND HARRAD, 2015). The systematization started

from the search for texts using the descriptors “National Program for Improving Access and Quality of Primary Care (PMAQ)” or “National Program for Improving the Access and Quality”, jointly, between 01/01/2011 and 27/03/2019. Three procedures were applied with the purpose of locating the intended intellectual production: a) in the type of material, the option “articles” was selected; b) articles written in any language and c) search in peer-reviewed journals.

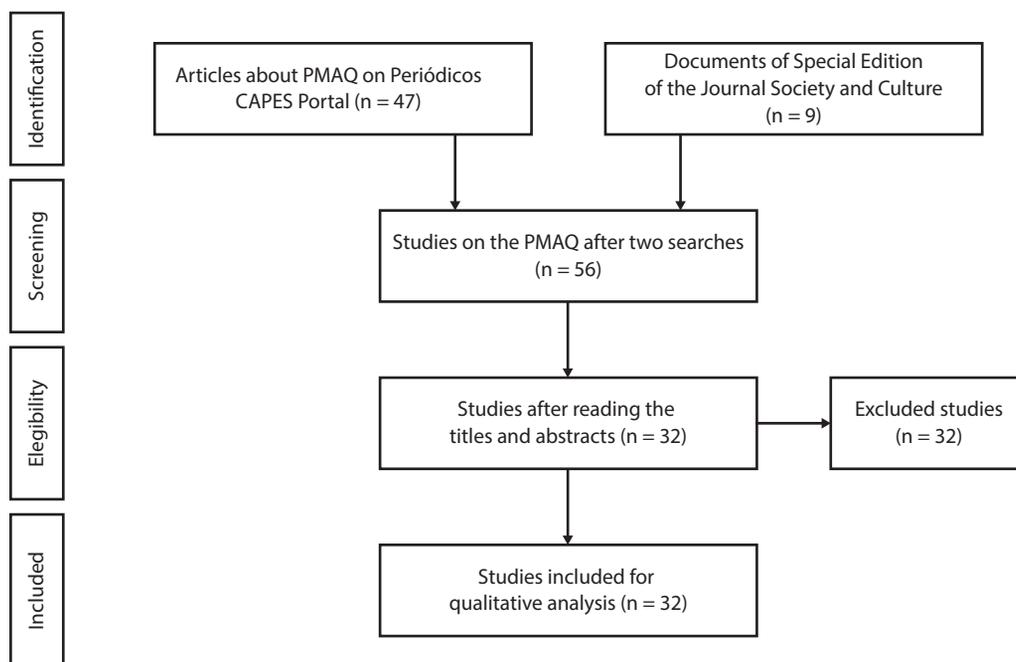
The first search, in the Periódicos Capes database, generated 47 records and the second search was directed to the journal “Sociedade e Cultura” which published in its volume December 21, 2018 a special edition with 6 articles on pay-for-performance programs in public health. The search included the following databases: Directory of Open Access Journals (DOAJ), SciELO, MEDLINE / PubMed, Scopus,

SciELO, Web of Science, OneFile (GALE), ScieELO Public Health, Dialnet and PubMed Central.

From the 2 collections, the application of the selection and exclusion criteria followed, which included: a) exclusion of duplicates; b) alignment of the content of the selected material with the problem of this review. Based on these criteria, 18 records of the preliminary search result in the Periódicos Capes database and 3 articles published in the special edition of the journal Sociedade e Cultura were excluded because they deal with public health performance payment programs implemented in other countries.

Diagrammed in four stages (identification, screening, eligibility, and inclusion), Figure 1 summarizes the trajectory of the review carried out flanked by the respective result achieved in each phase:

Figure 1 PRISMA Protocol



Source: Research Data

After completing the search and selection, inclusion / exclusion procedures, the next step took place with the aid of Computer Assisted Qualitative Data Analysis (CAQDAS) Mendeley bibliographic reference manager for the ordering of the collected texts. The sequence included the summary of the material collected in a spreadsheet in Microsoft Excel software with the information: title; year of publication; author

and institutional link; keywords in the text; problem and objective; type of research; collection and analysis procedures; main conclusions and gender of the first authors of the articles.

In addition, after the inclusion phase, all articles were analysed through the Atlas Ti software using open coding techniques. The codification is the central part of the data analysis process, and it is possible

to use three kinds of codes with the Atlas.TI: open, axial, and selective. According with Bandeira-de-Mello and Cunha (2003), the open codification involves breaking, analysing, comparing, conceptualizing, and categorizing of the data. The codes (also known as constructs or concepts) were extracted from the literature in policy analysis field and pay-for-performance programmes relating the objective of this systematic review with the results expected.

This codification process resulted in 10 codes (stakeholders, formulation, implementation, international context, financial incentives, evaluation, external-evaluation, self-evaluation, user satisfaction, performance) organized in four code families: International context of pay-for-performance programmes and the use of financial incentives, the formulation and policy-design phase, the implementation and the evaluation phase.

In the following section the data analysis is organized in six parts including a section to characterize the papers, the code families and a synthesis of what need to be enlightened about the PMAQ.

## 20 RESULTS

### 20.1 Characterizing the papers

The journal “Saúde em Debate” launched in 2014 a special edition with only articles about the PMAQ, which contributes to explain the expressive number of studies on the topic published in this journal. In turn, the journal “Sociedade e Cultura” launched in 2018 a special edition for studies that focus on pay-for-performance programs in public health, such as the PMAQ. However, only one article published in this special edition of the journal focuses on PMAQ.

Although the search period was between the years 2011 and 2018, the studies on the PMAQ included in this review were published from the year 2013. The year 2017 concentrates the largest number of publications: 9 (28%) included in this systematic review, which can be seen in the table 1.

About the method and design of the study, there was a balance between the number of quantitative and qualitative studies. Among the 32 articles, in 16 (50%) the authors used a qualitative approach, while 15 (46,

87%) are written in a quantitative approach and in 1 (3.13%) of the studies a mixed approach was observed.

After preliminary analysis of the characteristics of the studies included in this systematic review, the articles were analysed and coded with the aid of the Atlas Ti software. In the “public policy” category, references were allocated to the initial phases of the PMAQ, such as the formulation and Implementation. In addition, highlights were also given to studies that report the performance of the stakeholders involved in the program, analysis of financial incentives and the challenges faced within the scope of the PMAQ.

In the thematic category named “evaluation”, there are codes related to the evaluation process that took place within the scope of the PMAQ: external evaluation, self-evaluation, user satisfaction, team performance and information technology.

### 20.2 International context of pay-for-performance programmes and the use of financial incentives in the policy evaluation

In all the 32 papers selected in this systematic review, only in four papers the PMAQ is characterized as a pay-for-performance programme in an international context (MACINKO et al., 2017; SADDI et al., 2017, SADDI et al., 2018, UCHÔA et al. 2018). Do not treat the programme as a P4P is to exclude that context in which these programmes are created. The international context influenced the design of the PMAQ in Brazil. Looking to the programmes introduced outside Brazil is a powerful way to improve the policies and to criticize what should be done differently.

Even in the papers that mentioned the PMAQ as a P4P programme, it was not found in this selection papers relating the influence of the Quality and Outcomes Framework (QOF) pay-for-performance programme introduced in United Kingdom to the design of the Brazilian P4P.

Comparative studies cross-countries are not easy to be conducted, however the results may allow the health managers to make decisions evidence based. The same public policy actions produce different results in different contexts. And this should not be ignored. Studies about the PMAQ in Public

**Table 1** Characteristics of the articles selected in the systematic review

Author (s)	General Design	Research Design	PMAQ Evaluation
Chimara et al. (2013)	To evaluate how the process of adhering to the PMAQ is by the managers of the Basic Health Units in the microregion of Cidade Tiradentes, in the city of São Paulo.	Qualitative/ interviews	1º
Moraes et al. (2013)	To highlight the use of the worker's performance as an instrument of work management in public health policy.	Qualitative/ Documentary Research	1º
Garcia et al. (2014)	To reveal aspects of the organization of primary health care in the 78 municipalities of the State of Espírito Santo-Brazil, in the context of the PMAQ, from June to September 2012.	Qualitative/ secondary data	1º
Linhares et al. (2014)	To evaluate the implementation process of the National Program to Improve Access and Quality of Primary Care in the State of Ceará.	Qualitative/ docu- mentary research and interview	1º
Protasio et al. (2014)	To characterize the organization, articulation and assistance of the health care network in the state of Paraíba, based on data from the 1st evaluation cycle of the PMAQ-AB.	Quantitative/se- condary data	1º
Rizzotto et al. (2014)	To analyse the composition and management of the workforce in Primary Care in Paraná.	Quantitative/ Secondary data	1º
Seidl et al. (2014)	To analyse work management in primary care based on interviews with professionals from the teams participating in the PMAQ in 2012	Quantitative/ Secondary data	1º
Teixeira et al. (2014)	To analyse the Health Promotion practices of Primary Care teams in Brazil and macro-regions were analyzed using the PMAQ-AB	Qualitative/ Secondary data	1º
Cardoso et al. (2015)	To assess the self-assessment of the quality of the Family Health Strategy (FHS) in the context of management and its correlation with characteristics of the FHS and the municipality.	Quantitative/ Secondary data	1º
Feitosa et al. (2016)	To analyse the changes that PMAQ has caused in primary health care services.	Qualitative/ secondary data	2º
Cavalli et al. (2016)	To analyse aspects of work management and training of doctors who participated in the PMAQ, cycles I and II	Quantitative/ Secondary data	1º and 2º
Fontana et al. (2016)	To develop and apply a model for assessing the management of the work process in Primary Health Care in municipalities in Santa Catarina, using data from the second cycle of the external evaluation of the PMAQ.	Qualitative/ Secondary data	2º
Telles et al. (2016)	To investigate the methodology of application of the PMAQ-AB: its evaluation by health professionals, its results and its impact on the organization and health care, from the perspective of health workers.	Qualitative/ Secondary data	1º e 2º
Uchôa et al. (2016)	Analyse the influence of contextual indicators on the performance of municipalities regarding the potential of access to primary health care in Brazil and discuss the contribution of nurses who work in this access.	Quantitative/ Secondary data	1º
Giovanella et al. (2016)	To analyse the insertion of doctors from the Mais Médicos Program (PMM) according to the quality of the structure of the Basic Health Units (UBS), seeking to recognize synergies between the PMM, the PMAQ and the Requalifica UBS program	Qualitative/ Secondary data	1º and 2º
Matta-Machado et al. (2016)	To provide an overview of the distribution of institutional support in primary care in Brazil and identify associations between institutional support activities and the result of PMAQ certification.	Quantitative/ Secondary Data	1º
Miclos et al. (2017)	To evaluate the performance of primary care in Brazilian municipalities in relation to health actions and results	Quantitative/ Secondary data	1º
Mocelin et al. (2017)	To investigate the view of health professionals regarding accessibility conditions for people with disabilities after the implementation of the PMAQ in the Family Health Strategy Units.	Qualitative/ inter- views	1º, 2º and 3º

Protasio et al. (2017a)	To identify the main factors that influence User'Satisfaction with Primary Care services by regions of Brazil.	Quantitative/ Secondary data	1º
Protasio et al. (2017b)	To identify the main factors that influence user satisfaction in primary health care in Brazil.	Quantitative/ Secondary data	1º
Macinko et al. (2017)	To Introduce the PMAQ and develop several recommendations to ensure that it continues to improve access and quality of primary care in Brazil	Qualitative/ secondary data	1º and 2º
Queiroz et al. (2017)	To analyse the changes in the area of work management of primary care teams after the implementation of the PMAQ from the perspective of professionals in Primary Care.	Qualitative/ inter- view and focus group	3º
Souza et al. (2017)	To analyse the quality of the PMAQ variables to assess the coordination of primary care.	Quantitative/ Secondary data	1º
Santos et al. (2017)	To describe the incorporation of Information Technologies in primary care and its association with quality, using the PMAQ.	Quantitative/ Secondary data	1º
Saddi et al. (2017)	To reveal a relevant gap in the Brazilian literature on performance pay / PMAQ and, therefore, bring contributions from global health and public policies to the debate	Qualitative/ Theoretical study	1º, 2º and 3º
Chaves et al. (2018)	To evaluate the integration between primary care and the care network of the Unified Health System (SUS) through the Gradual Item Response Model	Quantitative/ Secondary data	1º
Saddi et al. (2018)	To explore the perceptions of frontline health workers - managers, nurses, community health workers and doctors - about the PMAQ (2nd round), and their assessments of the organizational capacity of the health unit	Qualitative/ inter- views	2º
Figueiredo et al. (2018)	To describe the evaluation of users who participated in the PMAQ regarding comprehensive care, the link and coordination of care in the country's macro-regions	Quantitative/ Secondary data	1º
Lemos et al. (2018)	To identify the constituent elements of the PMAQ-AB theoretical framework and, thus, systematize the logical model of this program.	Qualitative/ Documental research	1º, 2º and 3º
Zermiani et al. (2018)	To describe and discuss the perception of health workers in the city of Curitiba-PR, Brazil, on the use of professional incentives as a tool in the management and organization of Primary Health Care.	Mixed/ Questionnaires	2º and 3º
Uchôa et al. (2018)	To assess the usefulness of the PMAQ External Evaluation, considered an innovation.	Qualitative / inter- view and online focus group	1º, 2º and 3º
Abreu et al. (2018)	To analyse the users' perception of the care provided by teams participating in the PMAQ-AB in Brazil. Methods: cross-sectional study with data from interviews with team users in 2012.	Quantitative/ Secondary data	1º

Source: Research Data

Policies field, in Business Administration and Public Management field should consider this aspect.

Concerning to the incentives, in Brazil the financial resources are transferred to the Municipal Health Fund to the municipalities and not to the teams (MORAES et al., 2013; UCHÔA et al., 2018).

The studies highlight aspects of financial incentives such as the competitive nature (MORAES et al., 2013); difference in motivating behavior incentives (FEITOSA et al., 2016); fragility of incorporating a job and salary plan in the municipalities (SEIDL et al., 2014); the increase in the amount of financial resources in primary health care between each cycle of the PMAQ (MACINKO et al., 2017); demotivation due

to the way municipal managers distribute resources (QUEIROZ et al., 2017) and the non-receipt of performance bonuses in the municipality of Goiânia (GO) (SADDI et al., 2018).

Although financial incentives are central elements in pay-for-performance policies, it is important that actions are outlined, and studies are carried out to prove the relationship between these incentives and the results achieved by the teams. There are other social, economic, and environmental factors and public policies that may be contributing to the increase the access and quality.

### 20.3 PMAQ's Formulation and policy-design

Regarding the formulation process, it is emphasized that it is important that the PMAQ is studied together with other policies and programs with which it articulates so that the PMAQ formulators can correct flaws in the design of public policy. In this systematic review, only the study by Giovanella et al. (2016) articulates the results of the PMAQ with the “Mais Médicos Programme” and the “Requalifica UBS” Programme, which were also designed to improve primary health care.

The correction of possible flaws in the formulation is one of the purposes of public policy evaluation. One of the flaws observed in the State of Rio Grande do Sul, for example, is that of communication between the municipal management and the primary care teams (TELLES et al., 2016), since the teams expected returns from the evaluation results for changes or adjustments to the work process (TELLES et al., 2016).

As for changes in the formulation of the program, studies highlight the inclusion of teams from the Family Health Support Center (NASF) and the Dental Specialties Office (CEO) in the third cycle of external evaluations (Macinko et al., 2017). In practice, there was an expansion of the programme since the teams of primary health care and the teams of the Dental Specialties Office are evaluated separately in the PMAQ-AB and in the PMAQ-CEO.

Most part of the studies included in this systematic review are dedicated to the implementation and the evaluation phase of the policy process. There is no paper relating the PMAQ and the decision-making process. The decision-making process in PMAQ included international organisms, the Ministry of Health and experts from international institutions and national institutions. Understanding these negotiations process during the decision-making stage is very significant in terms of mobilization of actors and networks created to formulate policies.

### 20.4 PMAQ's Implementation

Studies about the implementation of the PMAQ are focused on the street-level bureaucrats. The street-level bureaucrats are those who are directly responsible to implement the policy. Studies about their perceptions and how they are acting during the process are necessary once they can modify the public policies and influence directly in the results. In the PMAQ, the street-level bureaucrats are the health teams. They are the focus of the evaluation and they are implementing the health policy even when they are not conscious about this role in the implementation.

Regarding the implementation of the PMAQ, it was observed the efforts of managers to convince health teams to adhere to PMAQ (LINHARES et al., 2014; UCHÔA et al., 2018). The teams decide if they will be evaluated or not, which is an aspect of the PMAQ that try to take out the vision of a punitive evaluation. Once the local health managers have the control about the resources transferred by the Federal government, they are highly interested to motivate the health teams to adhere the PMAQ.

Studies suggest that the initial implementation process was top-down and not very participatory (SADDI et al., 2018). In a study carried out in Goiânia (GO), for example, Saddi et al. (2018) identified that in the second cycle of external evaluations, approximately 46% of health professionals adhered to the PMAQ due to the imposition of municipal management and only 26% responded that they adhered with the objective of improving the quality of services. It is possible that the adhesion of the teams in other regions of Brazil, in addition to the Northeast and the Midwest, was also not entirely voluntary and was motivated by the municipal managers. This is a gap in the literature that would be filled with studies on the process of team adherence in other regions of Brazil.

As a public policy, there are challenges to be faced when implementing the PMAQ. The main difficulties in the implementation process highlighted for the studies included in the systematic review are: precarious infrastructure; inadequate working conditions; lack of dialogue and structure in the Basic Health Units; little integration of members of primary care teams; resistance of professionals; lack

of qualification of the work process; high turnover; insufficiency of information systems focused on primary care; incipient management processes focused on quality; primary care teams with overwork and reduced funding for primary care (TELLES et al., 2016; SADDI et al, 2018; LEMOS et al., 2018).

Regarding stakeholders in the implementation process, there is an analysis of the relationship between the managers of the Ministry of Health and the researchers from the Teaching and Research Institutions (UCHÔA et al., 2018) with an emphasis on the role of the Federal University of Rio Grande do Norte in the PMAQ evaluation process. Studies like this are necessary in order to understand the difficulties of researchers during the field phase of the evaluation and the roles that other Universities and Research Institutions played in the formulation and implementation of the PMAQ.

An international organism involved in the formulation and implementation of the PMAQ is the World Bank. The Baseline Studies conducted by the World Bank in 2005 were an inspiration for the PMAQ. It was not identified among the studies in the systematic review the participation of the World Bank in the PMAQ.

The World Bank is an important stakeholder in the implementation of pay-for-performance policies

worldwide. There are studies that claim that performance pay systems in public health originated from a project in Cambodia that received support from the World Bank during its implementation process in Africa (FRITSHE et al., 2014 apud SADDI, PECKHAM AND MUNDIM, 2018). There is also evidence that the World Bank has acted in the implementation of payment programs in countries such as China and Cameroon (WAGSTAFF; YU, 2007; DE ALLEGRI et al., 2018). Understanding the international context in which the pay-for-performance programmes are created allow this type of results. The lack of studies mentioning the international context explains why this link was not mentioned in previous studies.

It is also important to note that there are little evidence about how primary health care teams are using PMAQ tools and strategies to improve the quality of services. In a study carried out in the city of São Paulo, Chimara et al. (2013) reveals that the PMAQ was not mentioned by the managers interviewed in the study among the tools used in the quality monitoring process.

The relation between the social participation and the PMAQ implementation is a relevant research gap. It was not found in the literature how the social participation influenced the evaluation process carried out under the PMAQ.

**Table 2** Types of studies regarding the early stages of the public policy cycle

Types of studies regarding the implementation	Author (s)
PMAQ's Implementation Phase	Moraes et al., (2013); Linhares et al. (2014); Telles et al. (2016); Macinko et al. (2017) Mocelin et al. (2017); Uchôa et al. (2018); Saddi et al., (2018)
Studies that analyse some aspect of financial incentives in the implementation process	Moraes et al. (2013); Feitosa et al. (2016); Seidl et al. (2014); Macinko et al. (2017); Queiroz et al. (2017); Saddi et al. (2018)
Analysis of stakeholders involved in the process	Uchôa et al. (2018)
Challenges	Telles et al. (2016); Saddi et al. (2018); Lemos et al. (2018)

**Source:** Research Data

The PMAQ implementation is one of the phases most studied. It has been demonstrated the existence of significant gaps and important questions to be answered, regarding the street-level bureaucracy perceptions of the evaluation carried out in PMAQ, the role of important stakeholders such as the Uni-

versities and international organisms during the implementation and the influence of deliberative spaces in society such as the Municipal Health Councils.

### 20.4.1 PMAQ's Evaluation phase

The PMAQ external evaluation process is divided into four parts: self-assessment, performance in indicators contracted on adhesion, performance in the quality standards verified by interviewers and data collection regarding user satisfaction.

Self-assessment is portrayed in the literature as a process of reflection to improve practices and quality standards (FEITOSA et al., 2016; LEMOS et al., 2018). Cardoso et al (2015) analysed the self-assessment of the quality of the Family Health Strategy (FHS) within the scope of management and its correlation with characteristics of the FHS and the municipalities of the Northeast of Minas and found interesting results, such as, for example, the recognition of the

lack support for social control in the municipalities of that region.

Although studies on the PMAQ cite the self-assessment process, only Cardoso et al. (2015) are dedicated to discussing the results of the data collected in this process. In this sense, there is a gap with regard to studies that reflect on the results found in the team self-assessment process in all Brazilian regions, since Cardoso et al. (2015) studied only a part of the State of Minas Gerais. It was not found in this systematic review studies regarding the performance of the health teams in contractualized indicators.

Concerning to the external evaluation, it was observed in the literature some studies focused on the data collected in parts of this instrument. In summary, the evaluation process under the PMAQ has been studied as follows:

**Table 3** Types of evaluative studies

Types of evaluative studies	Author (s)
Evaluation of worker's performance	Moraes et al. (2013)
Evaluation of the PMAQ adherence process	Chimara et al. (2013)
Policy implementation	Linhares et al. (2014)
Self-evaluation	Cardoso et al (2015)
Health Team's certification process	Matta-Machado et al. (2016)
Assessment of work process management	Fontana et al. (2016)
Evaluation of aspects related to the training of doctors who participated in the PMAQ	Cavalli et al. (2016)
Analysis of the influence of contextual indicators on the performance of municipalities	Uchôa et al. (2016)
Evaluation of the efficiency frontier of primary health care	Miclos et al. (2017)
User's satisfaction evaluation	Protasio et al., (2017a); Protasio et al., (2017b); Figueiredo et al., (2018)
Analysis of the incorporation of Information and Communication Technologies in primary care in Brazil	Santos et al. (2017)
Analysis of the usefulness of external evaluation	Uchôa et al. (2018)
Evaluation of the integration between primary care and the care network of the Unified Health System	Chaves et al. (2018)

**Source:** Research Data

Although data on user satisfaction are not part of the calculation of the performance, studies have been identified in the literature that focus on understanding the factors that influence user satisfaction with the services offered in primary care in Brazil

(PROTASIO et al., 2017a; PROTASIO et al., 2017, b; FIGUEIREDO et al., 2018).

Regarding data on user satisfaction, Macinko et al. (2017) criticize the selection of users who are present at the health unit for the assessment, arguing that users who have little access or who are not being

served at the units may be being excluded. Uchôa et al. (2018) highlight the importance of listening to users and highlight the difficulty of having a statistical sample, since millions of people are considered users of the Unified Health System (SUS).

The evaluation of the evaluation is observed in the PMAQ studies. There are in the literature evaluative studies analysing some aspects of the questionnaire or criticizing some aspect of the evaluation process. However, it was not found studies focused on the performance of the health teams. In fact, this is a very significant aspect once the social and economic context in which the health teams are included may influence in the results. And the evaluation may have side effects that needed to be addressed by studies on public policy.

After data collection, the Ministry of Health calculates the teams' performance in a process called certification. The certification process is the reference used by the Ministry of Health to transfer financial resources to the municipalities through the Municipal Health Fund. The evaluation conducted under the PMAQ is a performance evaluation, so it is notable is the absence of studies in which researchers analyse the results on team performance and correlate with other economic, social, and demographic variables.

### 20.4.2 Synthesis of what need to be enlightened about the PMAQ

Based on this systematic review, the main theoretical and empirical gaps observed and studies regarding the PMAQ are:

**Table 4** Gaps in PMAQ studies

Gaps Categories	Gaps
<b>Policy Formulation</b>	<ul style="list-style-type: none"> <li>■ Studies on the program formulation process highlighting the role of international organizations such as the World Bank</li> <li>■ Studies analysing the role of Universities during the PMAQ formulation process</li> <li>■ Studies clarifying the role of the World Bank in the process of formulating the PMAQ</li> </ul>
<b>Policy Implementation</b>	<ul style="list-style-type: none"> <li>■ Studies analysing the teams' adherence process</li> <li>■ Studies analysing the role of IEPs in the implementation phase of the PMAQ</li> <li>■ Studies combining the analysis of two or more public policies for primary health care</li> <li>■ Studies clarifying the role of the World Bank in the implementation phase of the PMAQ</li> </ul>
<b>Policy Evaluation</b>	<ul style="list-style-type: none"> <li>■ Studies on the results of self-assessment</li> <li>■ Studies establishing a relationship between the results of the Baseline Studies encouraging by the World Bank in 2005 and the results of external evaluations of the PMAQ</li> <li>■ Studies linking the improvement of service quality with financial incentives</li> <li>■ Studies on social participation and social control in the PMAQ</li> <li>■ Studies relating the payment of bonuses to health teams with the performance obtained by the teams</li> <li>■ Studies elucidating how municipal managers have invested the resources from the PMAQ and the consequences of this decision for the performance of health teams</li> <li>■ Studies analysing the performance of health teams in the PMAQ in the light of the economic and social context in which these teams are inserted</li> <li>■ Studies mapping the municipalities that regulated the use of PMAQ resources through municipal laws and the effects of this regulation on performance</li> </ul>
<b>International context</b>	<ul style="list-style-type: none"> <li>■ Comparative studies between the PMAQ and other performance payment programs implemented in an international context</li> <li>■ Comparative studies involving multiple countries</li> </ul>
<b>Research Methods</b>	<ul style="list-style-type: none"> <li>■ Studies using mixed research methods</li> </ul>

**Source:** Research Methods

The PMAQ, as the other pay-for-performance programs, may have side effects such as the possibility of increase the social inequality once Primary Health Teams in deprived areas may face difficulties

to achieve the same performance observed in teams located in wealth areas. It is important to cover this gap to understand and to prevent this kind of side effects.

Besides this, since the end of 1990's, pay-for-performance programmes are being introduced worldwide. And it is very relevant to conduct studies comparing Brazil and other pay-for-performance programmes around the world. These comparative studies could support the Brazilian government to improve the evaluation process in public health.

However, it is necessary to state that our own context need to be always considered and the best practices in the Brazilian States and local municipalities should be the first source of information to improve the evaluation process.

Evaluative instruments developed under our context are valuable to address our specificity as a nation. The recommendation to studies considering the international context is based on the evidence that our political system is not isolated and receive external influence. And we need to identify whether this influence, instruments and evaluation models that are being imported are having good effect on the society.

## 21 FINAL CONSIDERATIONS

This study presents theoretical contributions to the areas of public administration, public policies, and public health, analysing the international and national literature regarding the Program for Improving Quality and Access to Primary Care.

Developed and developing countries have implemented programs like the PMAQ. Therefore, there is a lack of comparative public policy studies considering the international context of pay-for-performance programs in public health and the PMAQ. Besides this, the evaluative practices developed in the Brazilian States and local context should be always considered in the studies and the managers willing to improve the PMAQ. Considering our own particularities as a nation is the most trustful decision to improve the policy evaluation. And any policy imported from other realities should stand out our sovereignty. Brazil is one of the biggest economies in the world and this potential need to be explored by the managers.

The PMAQ database is explored by researchers to conduct analysis about the treatment of diseases,

the working process and health aspects. However, most part of the published studies have a descriptive character. Descriptive studies are considered as a first stage of research regarding the PMAQ. There is a gap to be filled by studies with a more analytical research design.

In addition, it is recommended studies in municipalities showing how municipal managers are investing resources in the three cycles and the results achieved in different investment decisions. And whether financial incentives contribute to deepening social inequalities. Municipal health managers can choose to allocate most resources to teams with higher performances or invest in teams with low performances. When investing in teams with better performance, municipal managers may be failing to consider that teams with low results may be in areas of social vulnerability (MACINKO et al., 2017).

In the process of selection and exclusion of studies, we opted for the exclusion of studies regarding oral health and the Dental Specialties Office. In this sense, it is recommended that systematic literature reviews are carried out that address these two themes that are within the scope of the Quality and Access Improvement Program. In addition, studies in which the authors used the database for epidemiological analyses were also excluded because they are not in line with the objective of this systematic review. Therefore, systematic review studies are also recommended to understand how the PMAQ database has been used in national and international studies.

Finally, the PMAQ-AB is an initiative to systematize data about teams of primary health care unprecedented in Brazil given the amount of resources transferred to the municipalities, the volume of data collected and the mobilization of a network of researchers in its process implementation.

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