

# Pay-for-performance challenges in family physician program

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Gharibi F, Dadgar E. Pay-for-performance challenges in family physician program. *Malays Fam Physician*. 2020;15(2):19–29.

## Keywords:

pay for performance, P4P, family physician, Iran

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## Abstract

**Objective:** This study was conducted to investigate the challenges faced in the implementation of the pay-for-performance system in Iran's family physician program.

**Study design:** Qualitative.

**Place and duration of study:** The study was conducted with 32 key informants at the family physician program at the Tabriz University of Medical Sciences between May 2018 and June 2018.

**Method:** This is a qualitative study. A purposeful sampling method was used with only one inclusion criterion for participants: five years of experience in the family physician program. The researchers conducted 17 individual and group non-structured interviews and examined participants' perspectives on the challenges faced in the implementation of the pay-for-performance system in the family physician program. Content analysis was conducted on the obtained data.

**Results:** This study identified 7 themes, 14 sub-themes, and 46 items related to the challenges in the implementation of pay-for-performance systems in Iran's family physician program. The main themes are: workload, training, program cultivation, payment, assessment and monitoring, information management, and level of authority. Other sub-challenges were also identified.

**Conclusion:** The study results demonstrate some notable challenges faced in the implementation of the pay-for-performance system. This information can be helpful to managers and policymakers.

## Introduction

The primary mission of health systems is to provide high-quality care and satisfactory health outcomes using their available resources. However, evidence indicates that the level of spending does not necessarily determine the quality of outcomes. For example, health expenditure in the US constitutes about 16 percent (USD 4 trillion) of the country's GDP.<sup>1</sup> However, despite spending twice as much as most industrialized countries, the US health care system is ranked last among industrialized countries in terms of quality, accessibility, and efficiency;<sup>2</sup> this low ranking is exacerbated by severe geographical, economic, and racial inequalities in terms of access to health services and health outcomes.<sup>3</sup>

Accordingly, many governments have adopted initiatives to manage health care performance indicators, especially in rural areas. Pay-for-performance (P4P) is one of the most prominent programs in this respect.<sup>4,5</sup> P4P is designed to enhance health services through financial incentives;<sup>6</sup> it aims to improve the quality and efficiency of services and overcome the shortcomings of conventional repayment systems, which provide financial incentives merely on the basis of the volume and complexity of services.<sup>7</sup> Successful design and

implementation of P4P requires many elements, including performance indicators and standards for effective evaluation, training for surveyors/evaluators, appropriate external evaluation processes, educating for family physicians and their team members on evaluation requirements, linkages between performance-evaluation results and payment systems, and financial incentives to encourage high-quality services.<sup>8</sup>

Financial incentives in P4P achieve two major goals: one, they provide an economic incentive to change provider behavior by encouraging a high-quality, evidence-based performance;<sup>9,10</sup> two, they eliminate the negative effects of existing repayment systems, such as those that consider volume rather than value.<sup>11</sup> Traditional payment approaches like fee-for-service (FFS) lead to inducing demand and overuse while controlled care results in the underuse of health services.<sup>12</sup> P4P is a system in which payments are based on the quality and efficacy of the provided care. This system is used as a complement to volume-based methods (FFS), case payments (payment for each discharge based on diagnosis-related group) and per capita (capitation) payments.<sup>13</sup>

Studies show that the number of P4P-related programs has dramatically increased (from 37 cases in 2003 to 170 cases in 2007).<sup>14</sup> In the

United States, P4P is used by more than 100 private health-care programs as well as Medicaid and Medicare.<sup>15</sup> England, Canada, and Australia are among the countries that use P4P as the basis of medical payments.<sup>16–18</sup>

Of course, P4P is not without its flaws or negative consequences; in some cases, its implementation has resulted in the spread of inequality and a reduction in the quality of some services.<sup>19,20</sup> This system has some major disadvantages, including inappropriate health outcomes, the spread of inequality in the health sector, and a potential increase in cost.<sup>21</sup> Another negative consequence of the system is that service providers often neglect areas of care that, despite significantly impacting health outcomes, are un-measurable or attribute no rewards.<sup>22</sup> This system can sometimes improve the quality of documentation rather than that of services and care, failing its main objective.<sup>23</sup>

Using P4P, especially in areas such as primary health care (PHC) and family physician programs, may result in the inappropriate and unnecessary use of therapeutic procedures. For example, a hospital seeking better health outcomes may prescribe antibiotics for patients with pneumonia or other infectious diseases regardless of whether they are required.<sup>24,25</sup> This system can also exacerbate inequality along racial, ethnic, gender, linguistic, or economic lines. For instance, P4P can lead to the exclusion of high-risk patients or patients from specific social groups;<sup>26</sup> it can also result in cream skimming, meaning that providers may choose individuals with a higher probability of better results and a higher performance.<sup>27</sup> It is worthwhile to note that P4P systems, which are currently used all around the world, vary significantly in terms of evaluation methods and payment mechanisms; consequently, there is significant outcome variance.<sup>28</sup>

PHC is the core of any public health system. It is defined as “the health care services delivered in the first level of contact between individuals, families, and society with the health system.” The PHC system provides essential health care services in people’s major life environments, such as the home, school, and the workplace. The Iranian PHC system is a well-designed system that has expanded to provide its service package—which includes child and maternity health, environmental health, professional health, communicable health and immunization, non-communicable health, disaster management, health education and

promotion, healthy nutrition, and oral health—to all citizens, including those in rural areas. It is the largest component of the overall Iranian health care system with a high workload but a low share of the annual budget from the Iranian Ministry of Health and Medical Education (MOHME). Most of the services provided by the Iranian PHC system are free and those that are not are low in cost. Accordingly, this system should receive significant funding from the MOHME; however, it received just 10% of the main budget.

Generally, the family physician program is an effective and efficient plan that provides comprehensiveness, gatekeeping, a referral system, continual care, access to care, quality, and safety in the PHC system. The family physician program in the Iranian PHC system was launched more than a decade ago to meet the medical needs of and serve as a gatekeeper for the population. While family physicians mainly focus on primitive and preventive services, they usually do the same routine curative affairs done by all physicians outside the PHC system. Family physicians are medical doctors that have graduated from medical universities; they can work as general practitioners but they must first work, in return for their free education, in rural or urban areas as family physicians. However, medical doctors often remain in PHC as family physicians after their compulsory work.

Medical graduates willing to work in PHC can join FPP immediately after medical school without passing any additional training courses. These physicians will be the managers of PHC centers in rural or urban areas. This is a remarkable feat, as a successful performance in both occupations (family physician and health services manager) requires high knowledge and experience. Family physicians are paid a fixed monthly amount unrelated to performance, quality, or even quantity.

Given the importance and necessity of improving the quality, effectiveness, and efficiency of services provided in the Iranian family physician program through a P4P system, it is essential to understand and address the challenges involved in the implementation of P4P. This paper aims to investigate these challenges and provide appropriate solutions.

## Methods

This study uses a qualitative approach. The data

was collected through interview sessions with 32 participants. We interviewed 23 family physicians earning their Master of Public Health (MD, MPH); four MPH instructors/academics (PhD in one of the following fields: social medicine, health services management, and epidemiology), and five current or former senior managers of the family physician program (MD, PhD) at the Tabriz University of Medical Science. A total of 17 individual and group interviews were conducted in an unstructured manner (non-directive approach). The MPH is an informal, non-mandatory educational qualification general practitioners can acquire to enhance their competencies in public health, PHC, and family medicine. The qualitative approach was used to meet the needs of this study due to the lack of any similar quantitative study and its related questionnaire.

This study was conducted by two researchers (one male and one female) with PhD degrees in health services management. Both authors currently work as faculty everyone invited to participate accepted the invitation. This research topic was selected because of its importance and relevance to the fields of public health and health services management.

Purposeful sampling was used to gather information from people who are able to provide rich views and experiences on the subject. This sampling method allowed the researchers to extract conceptual patterns from the minds of various individuals in an optimal manner.<sup>29</sup> For this study, the researchers conducted 17 individual and group face-to-face interviews in order to obtain participants' thoughts on the challenges in the implementation of P4P in the family physician program. Information was obtained through unstructured questions without directing their views to avoid bias.

The scheduled interviews were conducted in the health services management and social medicine departments at the Tabriz University of Medical Sciences. One of the researchers asked the determined interview questions and facilitated the discussion between participants while the other researcher took notes and sent feedback to the participants. The duration of the individual and group interviews ranged from 45 to 60 and 105 to 135 minutes, respectively. The interviews continued up to the point of data saturation level; there was eventually no new information coming from the participants. Finally, the received comments were spread among all participants and feedback was collected for confirmation and

correction. All interview sessions were recorded with a recorder device and then transcribed, meaning the researchers had two sources of data for analysis: the notes obtained from and approved by participants and the transcriptions of the recorded interviews on paper.

Content analysis was used to analyze the data obtained from the interviews. This means that the concepts and existing themes in the data were extracted, interpreted, and reported using a systematic approach (30). In the coding process, challenges expressed by the participants were presented in the form of a code or item and were nominated. Then, according to the overt and covert themes embedded in the codes, identical codes were categorized based on their meanings/contents and the sub-themes of the study were formed. Finally, the main themes of the study were created and labeled with the integration of sub-themes. Initially, 74 codes were obtained; then, similar codes were merged to form a total of 46 codes.

During the interpretation stage, which entails searching for patterns, communications, concepts, and interpretations in the aggregated data, the researchers developed and interpreted the ideas and their contents by examining the final themes.<sup>31</sup> In order to enhance and confirm the rigor of the study, the two researchers analyzed the transcripts independently. An independent external assessor then compared the results of the two analyses and a conclusion was reached after a final discussion. The analysis results were given to all of the participants for their approval and agreement. Additionally, two experts confirmed the validity of the obtained items, subthemes, and themes.

Informed consent was obtained from all participants. All participants participated in the study freely and permission was obtained from all of the participants to record their interviews. Anonymity was guaranteed. This study was approved by the Ethics Committee of Tabriz University of Medical Sciences (IR.TBZMED.REC.1394.580).

## Results

The age range of study participants was 29–48 with a mean age of 35. The majority of participants (65%) were male and worked for the government (mainly in PHC centers as family physicians) in collaboration with other health workers. Currently, family physicians in Iran receive fixed monthly payments that are not

affected by people covered (per capita), services delivered (per case), or quality of provided care (P4P).

This study identified 7 themes, 14 sub-themes, and 46 items related to the challenges in the implementation of P4P systems in the Iranian family physician program. The main themes are: workload, training, program cultivation, payment, assessment and monitoring, information management, and level of authority. Other sub-challenges were also identified (**Table 1**).

**Table 1:** Challenges in the implementation of the pay-for-performance system in Iran's family physician program

Main Themes	Sub-Themes	Related Codes
<b>Workload</b>	Heavy workload of family physicians	- Broadness of duties - Large number of covered people
	Lack of management skills in family physicians	- Lack of knowledge and skills related to leadership - Lack of knowledge and skills related to quality - Lack of knowledge and skills related to teamwork
<b>Training</b>	Lack of knowledge and skills related to preventive and social medicine in family physicians	- Medical students neglecting public health courses - Lack of newcomer and in-service trainings - Weakness of family physicians, especially in promotional and preventive affairs - Physician's activity in family physician team limited to the conventional therapeutic approach - Weakness of family physicians' attitude towards the nature and activities of this program
	Lack of awareness among people about the nature and importance of family physicians	- Poor education by the MOHME and mass media about the family physician program - Public failure to follow the referral system - Low public trust in the expertise and ability of family physicians - Use of physicians with little experience as a family physician
<b>Program cultivation</b>	Self-underestimation of status and importance among family physicians	- Giving little importance to family physicians relative to clinical specialties - View among family physicians that the job is a temporary one that they will leave soon
	Weak intra/extra-collaboration with family physician team	- Poor collaboration of institutions outside the health sector with family physician team - Lack of feedback about referred patients by specialists to the family physicians
<b>Payment</b>	Low PHC budget	- Low PHC budget relative to hospital services - Low wages for family physicians relative to specialists
	Lack of proper infrastructure for instituting P4P	- Insufficient infrastructure for performance-based payment system - Clinical and treatment views of the managers in charge of paying family physicians - Individual-centeredness of payments - Lack of competition among family physicians

Main Themes	Sub-Themes	Related Codes
<b>Assessment and monitoring</b>	Lack of criteria and scientific tools for qualitative assessment of the program	<ul style="list-style-type: none"> <li>- Lack of suitable criteria and assessment tools even for routine monitoring programs</li> <li>- Lack of consideration of the conditions of different work environments and communities while monitoring</li> <li>- Lack of attention to the multiplicity of functions and results in evaluations</li> </ul>
	Lack of a well-defined mechanism for assessment	<ul style="list-style-type: none"> <li>- Government-owned monitoring and evaluation system and the lack of an independent entity for this task</li> <li>- Lack of proper accreditation system in the field of PHC</li> <li>- Overlooking doctor mistakes due to lack of physicians</li> <li>- Lack of organization and discipline in monitoring and evaluation</li> </ul>
	Lack of appropriate assessors	<ul style="list-style-type: none"> <li>- Lack of trained and experienced assessors</li> <li>- Inappropriate treatment of assessors by family physicians and their teams</li> </ul>
<b>Information management</b>	Poor information infrastructure	<ul style="list-style-type: none"> <li>- Weakness in software and hardware infrastructures</li> <li>- Lack of proper health records, especially in electronic form</li> </ul>
	Poor systemic management of production cycle and information flow	<ul style="list-style-type: none"> <li>- Poor management in the cycle of data collection and analysis as well as the production and flow of information</li> <li>- Poor and incomplete filling of existing files by physicians</li> <li>- Lack of appropriate databases related to health centers and their performances</li> <li>- Lack of proper information exchange between institutions and different levels in the provision of services</li> <li>- Neglecting the verification of documentations and reports provided by family physicians</li> <li>- Non-correspondence of the data and information created in the system with the real needs</li> <li>- Negligence of user-friendliness of the information provided for different users</li> </ul>
<b>Level of authority</b>	Insufficient authority of family physicians	<ul style="list-style-type: none"> <li>- Inadequate authority of family physicians to establish intra/extra sectoral relationships</li> <li>- Lack of sufficient supervisory power of family physicians over the health team and social workers</li> <li>- Inadequate authority of physicians in the selection or modification of the health team members</li> </ul>

### **Workload**

#### *Heavy workload of family physicians*

One challenge faced in the implementation of a P4P system by those in the family physician program is the broad range of responsibilities, which results in a heavy workload. They claim

that the workload is so heavy that they cannot perform many of their duties in a high-quality manner; when the number of people covered by a physician is too high, even their basic duties—such as providing proper health education, positively influencing patients, conducting research, and obtaining statistics—cannot be performed effectively. The following statements

represent this theme: “The range of defined duties for family physicians is very extensive and the workload is extremely high, and in such a situation there is not enough time for doing preventive and promotional activities” (MPH student, 34, man); “The implementation of P4P system will be effective only when the duties assigned to family physicians are reasonable and within their capabilities” (MPH instructor, 51, woman).

### **Training**

#### *Lack of management skills in family physicians*

Another challenge is the lack of management knowledge among family physicians, especially regarding leadership and quality improvement. Family physicians do not receive theoretical and practical training, so they do not have skills in this field. This theme is exemplified by these statements: “Leadership training courses of the physicians are very limited, and, in many cases, the doctors do not receive any in-service training, especially in management affairs. Their in-service trainings are also inadequate and inefficient” (PHC manager, 52, man); “People in the family physician team have not been trained to carry out the affairs related to this program, and they have been working with the same mentality and incomplete skills for years” (MPH student, 39, man).

#### *Lack of knowledge and skills in preventive and social medicine among family physicians*

Another challenge is the limited capability of family physicians to deal with preventive and social medicine due to their lack of adequate knowledge, attitude, and skill in those areas. As a result, family physicians are not involved in areas such as medical prevention and family care. This exclusion results in the lack of community-based services and the provision of services in a defective, treatment-based manner. This theme stems from statements in the vein of the following: “Medical students do not receive proper education on how to play an effective role in family physician program at the university, and this leads to the formation of a treatment-based mentality in them” (PHC manager, 48, man); “Many doctors start their job as family physicians immediately after obtaining a degree and they do not receive proper trainings at the beginning of their service. Resultantly, family physicians take the same treatment-based approach acquired at the university and practice it” (MPH instructor, 37, woman).

### **Program cultivation**

#### *Lack of awareness among people about the nature and importance of family physicians*

Another obstacle is the insufficiency of cultural programs from the MOHME and other responsible institutions aimed at educating the community about the nature, objectives, importance, and approach of the family physician program. This has left people unaware of the program, resulting in low levels of cooperation with family physician teams. The following statement embodies this problematic theme: “People are unfamiliar with the nature and philosophy of family physicians, because such responsible bodies as the MOHME and the mass media do not provide adequate and continuous information about family physician program and its importance to the people” (MPH student, 27, woman).

#### *Self-underestimation of status and importance among family physicians*

In addition to the community’s lack of awareness, many family physicians themselves consider the family physician program to be far less important than clinical specialties. This is simply incorrect. Family physicians and their teams in PHC provide the most cost-effective services bringing and the most benefits to society; they are strongly supported by international health organizations and academic institutions. This sub-theme has been inferred from statements like: Family physicians consider their duties as less important than clinical specialists and they are not aware of the important role of family physicians in creating a healthy society. Living in the countryside exacerbates this feeling” (MPH student, 32, man).

#### *Weak intra/extra-collaboration with family physician team*

Another aspect of cultivation is related to weak intra/extra-collaboration with family physicians. Solving many of the problems faced by communities through the family physician program requires the close cooperation of many institutions outside the health sector. Unfortunately, this is often difficult and is not achieved in many cases: “In many cases, in order to solve people’s health problems, we need the assistance of governorates and local authorities, water and wastewater organizations, road maintenance agencies, etc. And in some cases, this cooperation is not achieved because

external organizations are not justified with the importance of health issues or they claim to have a shortage in resources” (MPH instructor, 40, man).

### **Payment**

#### *Low PHC budget*

Another challenge facing the implementation of P4P is the inadequacy of the PHC budget, which dramatically discourages qualified individuals from participating in the family physician program. Additionally, the inadequacy of financial resources reduces the feasibility of PHC-related interventions. Participants explained that: “The allocated fund to the PHC sector is much lower than that of hospital care and treatment affairs, which is in conflict with standard managerial and economic principles. This inadequate budget, which reflects the poor attitude of managers and policymakers of the MOHME and the lack of attention paid by health insurance system to the priority of prevention, will weaken the performance indicators of the health system, especially in the area of justice and access” (PHC manager, 47, man).

#### *Lack of proper infrastructure for instituting P4P*

The shortcomings of current management systems constitute one of the main challenges. Participants believe that the country’s current health system is excessively weak and faces serious problems in its daily operations. Moreover, the system is often unsuccessful in the implementation of new programs. They believe that the hardware and software facilities necessary for implementing such a system are not yet available. This theme is drawn from the following statements: “One of the main obstacles to the implementation of this program is the weak management of health care systems. We always run the world’s successful plans in the wrong way because we do not have enough studies on them. Moreover, we have poor localization in the implementation phase” (PHC manager, 62, man); “There is not a well-defined system for creating a P4P system because payments are often individual-based and in the form of salary. The managers responsible for payment systems of family physicians still have a hospital and treatment-based view” (MPH instructor, 41, man).

### **Assessment and monitoring**

#### *Lack of criteria and scientific tools for qualitative assessment of the program*

The shortcomings of monitoring systems constitute a major problem for P4P implementation. According to the participants, there are copious shortcomings. They believe that the monitoring is not done objectively or scientifically; there is no suitable tool for regular monitoring. This theme stems from statements like: “Monitoring is not objective and documented, and personal tastes are applied to them” (MPH student, 35, man); “The performance of the family physician is not consistent with the monitoring questions. Moreover, monitoring is not based on actual performance” (MPH instructor, 38, man); “There are currently no clear criteria for measuring performance, and there is no direct relationship between good performance indicators and the amount of physician’s effort. Also, the conditions of different work environments are not considered in the monitoring process” (MPH student, 38, woman).

#### *Lack of a well-defined mechanism for assessment*

Another serious obstacle is the assessment system’s lack of appropriate mechanisms and processes. The current mechanisms are entirely state-owned; this is problematic, as a governmental mechanism is affected by political pressure and the consistency of the program will be hindered by changes in the government. Participants believe that: “An appropriate accreditation program needs to be defined and implemented for PHC. Afterward, many problems will be resolved” (MPH instructor, 56, man); “Monitoring family physician program is not done objectively and scientifically, but it is mainly fulfilled in a subjective manner. While assessing, the assessors are not very accurate and they do not get the needed scientific documents from the participants” (MPH instructor, 45, man); “If performance monitoring is done with an educational approach to help family physician team with their duties and enhance their skills, it can be useful. But the current system takes a top-down and detective-like view” (PHC manager, 42, woman).

#### *Lack of appropriate assessors*

Another major barrier is the lack of appropriate assessors for objective and scientific evaluation of the family physician program. The Iranian health care system, especially in PHC, lacks

trained and experienced assessors. Resultantly, the assessors lack the knowledge, attitude, and performance necessary to properly conduct an accurate evaluation. Hence, we cannot expect their evaluations to improve performance. In this regard, a participant believed that: “Assessors are usually selected from the people who have not been involved in the health system, and in particular the family physician program. So, they have no administrative experience in this area, which leads to inappropriate assessments and lack of motivation in family physicians” (MPH student, 41, man).

### **Information management**

#### *Poor information infrastructure*

Poor information infrastructure in the Iranian health care system, especially in the family physician program, is another major deficiency preventing the successful implementation of P4P. Neither the software nor the hardware infrastructure is sufficient for proper monitoring and evaluation, as most rural areas do not have reliable internet access or appropriate computer systems. Several statements exemplify this theme well: “We still do not have access to the internet and computer systems in many rural areas. The internet connection is also very slow and we have constant internet interruptions. Most of the health personnel in the villages are not skillful in using the internet and other related programs. Even family physicians themselves are unfamiliar with the existing programs” (MPH instructor, 50, man); “It is necessary to define and set up health records accurately based on health system’s information requirements, especially family physician program, in both paper and electronic forms” (MPH student, 29, man).

#### *Poor systemic management of production cycle and information flow*

Collecting appropriate and timely data on the health status of people in the community and system performance is essential, as this data serves as the basis for management decisions. Accordingly, data collection, analysis, and presentation play a crucial role in the continual improvement of health care systems. Participants believe that: “Physicians and their health teams should receive the needed trainings on how to complete medical records and collect statistics related to their performance. It is also necessary to monitor the accurate and timely completion of medical records” (PHC manager, 55, man); “The family physician team must accurately identify

its information needs with the participation of all other parties, and have access to them. Unnecessary information should not be generated in the system and the information systems should cover all needs” (MPH instructor, 45, man).

### **Level of authority**

#### *Insufficient authority of family physicians*

A fundamental factor in achieving a desirable job performance is a healthy balance between responsibility and authority. If they are tasked with many responsibilities, employers should also have sufficient authority, especially when managing their subordinates. Family physicians lack the authority necessary to influence their team or establish proper intra/extra-relationships. Participants believed that: “Family physicians lack adequate control and influence over their team and social workers, because they have little role in selecting, recruiting, or changing them” (MPH student, 30, woman); “Payments to health personnel are defined by the system and family physicians cannot change them. This is not logical because while the activities and performance of the health team members influence the performance of family physicians and their assessment scores, they do not have sufficient managing power over their subordinate groups” (MPH student, 42, man).

### **Discussion**

This study was designed and conducted to identify the challenges in the implementation of a P4P system in Iran’s family physician program. This study identified 7 themes, 14 sub-themes, and 46 codes related to these challenges. The main themes were found to be: workload, training, program cultivation, payment, assessment and monitoring, information management, and level of authority. Other sub-themes were also identified.

Kahn et al. (2010) investigated some challenges regarding the lack of tools and measures for assessing P4P. They suggested the following solutions to overcome the challenges: take appropriate measurements for the evaluation of high-quality performance; involve all parties in all stages of design, implementation, and evaluation; conduct appropriate research, especially for economic assessments.<sup>21</sup> These results are similar to those of this study because both of them emphasize the need to develop an appropriate evaluation tool that covers all aspects of evaluation, including context, input, process, output, outcome, and impact. Additionally, both of these studies purport



that P4P could improve the quality of provided care and health outcomes.

Schatz et al. (2007) identified the following barriers to the implementation of P4P: outcome variance stemming from disease severity and problems associated with the alignment of patients during measurement and evaluation, immoral patient selection based on likelihood of improvement, lack of motivation, frustration, and low professional independence of physicians. They concluded that strengthening the management system and using scientific management rather than traditional management would help to overcome these obstacles.<sup>32</sup> They also emphasized the clinical condition of the covered population and its effect on health outcomes and, in turn, on payment in P4P. This study suggests that the clinical condition of the population must be considered when determining payment. This major payment determinant was not mentioned by the participants of this study. This could be due to contextual differences; the study by Schatz et al. is about acute care while this study is about PHC. The last recommendation of Schatz et al. regarding the importance and necessity of good management in P4P is generally similar to the results of this study.

A study by Hart-Hester et al. (2008) raised significant challenges regarding the quality of health services provided by physicians with credible evidence and clinical guidelines. They proposed the following solutions: strengthen health-information systems by designating an electronic health record and inserting all clinical cases into it, strengthen the documentation of provided health services, use electronic tools to support clinical and management issues, and exchange health information among different specialists.<sup>2</sup> They pointed to the lack of a well-designed information-management system as the main challenge facing the implementation of a P4P system. These results are similar to those of this study, and both studies emphasize the importance of clinical- and information-management systems.

Brush et al. (2006) pointed out a number of challenges regarding the successful implementation of P4P. Some of their suggested solutions were as follows: compile quality measures based on valid evidence; create structures and tools to improve quality; recognize improvements in processes and outcomes; allocate adequate funds and incentives to improve physician performance; emphasize the role of data collection, data analysis, and the use of clinical and management data; define

functional goals based on a common consensus; establish objective and transparent means and rating health care providers; conduct research on related issues.<sup>12</sup> Their results are notably similar to ours; they emphasize the need to develop valid and evidence-based evaluation tools, design proper information-management systems, and define a suitable and effective evaluation process.

Of course, it is important to note that all of these mentioned studies were conducted in developed countries with high-quality PHC systems. They have all considered just two themes: assessment and monitoring mechanisms (Kahn 2010; Brush 2008) and information-management systems (Hart-Hester 2008; Schatz 2007); neither evaluated any of the other five themes. This indicates that there are challenges facing the implementation of P4P in Iran that do not exist in developed countries.

Many researchers have made suggestions and developed interventions to resolve the identified challenges, which will be discussed here.

In order to reduce the workload of family physicians, it is necessary to clearly define their responsibilities and assign a reasonable range of tasks based on appraisal, time, and epidemiologic and demographic characteristics of the covered population. The number of people under the supervision of each family physician should be carefully determined. Payment should be per capita, or based on the: number of people covered; patient characteristics and needs; quality of delivered services as determined by clinical protocols and guidelines; obtained health outcomes; caregiver satisfaction.<sup>33</sup>

Providing family physicians with training on management skills as well as preventive and social medicine at university would improve their abilities and boost public confidence in them. Other training courses based on job description and public need, either before service or during service, should accompany this academic training. These training courses could be provided as formal and compulsory sessions, as is the case with other clinical specialties. The content of these courses should be determined by precise scientific studies. In order to cultivate the family physician program, extensive training on the importance and role of family physicians in community health should be provided to the public, intra/extra-sectorial organizations, and family physicians themselves.<sup>34</sup> In particular, the importance of the referral system must be explained to the public. In order to improve the payment system for family

physicians, payment mechanisms with a special look at PHC needs should be considered.<sup>35</sup>

The requirements and infrastructure of P4P should be provided through experienced managers. Evaluation, assessment, and monitoring systems can be improved through the development of appropriate evaluation tools and the design of a proper evaluation process based on process-mapping rules and suitable mechanisms for assessors. Information systems should be reformed through the development of an electronic health record and a scientific mechanism for the preparation and publication of targeted and timely clinical and management information.<sup>36-38</sup> Additionally, granting a reasonable level of authority to family physicians over their teams and establishing intra/extra-relationships would seriously enhance the feasibility of this program. It is necessary to identify the main organizational stakeholders, involve them in the program, and gather their views at all stages of development.<sup>39</sup>

The main limitation of this study was the difficulty in managing interviews with the participants. The researchers resolved this problem by making appointments with the participants and encouraging them to participate.

### Conclusion

There are numerous challenges in the implementation of P4P in the Iranian family physician program. First and foremost is the absence of a systematic post-graduate training

program for medical doctors interested in family medicine. Second, the range of duties for family physicians is both wide and unclear. This study also uncovered the absence of a robust evaluation-reward system or information-management system and the lack of family physician authority over their staff. Based on our findings and discussion, we made suggestions for strengthening the family physician program, especially in terms of training, evaluation, funding, and information management. Hopefully, the results of this study will be helpful for managers and policymakers in removing the identified barriers and improving the quality of the Iranian family physician program. The results of this study may also be useful for other countries attempting to implement P4P in their family physician programs.

### Acknowledgments

The researchers appreciate the sincere collaboration of the participants who provided valuable and accurate information in the interviews as well as the Student Research Committee of the Tabriz University of Medical Sciences, which sponsored this research project.

### Funding

None

### Conflicts of interest

The authors declare that there is no conflict of interest.

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