

Special Article

Lessons From Healthcare Providers' Attitudes Toward Pay-for-performance: What Should Purchasers Consider in Designing and Implementing a Successful Program?

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We conducted a systematic review to summarize providers' attitudes toward pay-for-performance (P4P), focusing on their general attitudes, the effects of P4P, their favorable design and implementation methods, and concerns. An electronic search was performed in PubMed and Scopus using selected keywords including P4P. Two reviewers screened target articles using titles and abstract review and then read the full version of the screened articles for the final selections. In addition, one reference of screened articles and one unpublished report were also included. Therefore, 14 articles were included in this study. Healthcare providers' attitudes on P4P were summarized in two ways. First, we gathered their general attitudes and opinions regarding the effects of P4P. Second, we rearranged their opinions regarding desirable P4P design and implementation methods, as well as their concerns. This study showed the possibility that some healthcare providers still have a low level of awareness about P4P and might prefer voluntary participation in P4P. In addition, they felt that adequate quality indicators and additional support for implementation of P4P would be needed. Most healthcare providers also had serious concerns that P4P would induce unintended consequences. In order to conduct successful implementation of P4P, purchaser should make more efforts such as increasing providers' level of awareness about P4P, providing technical and educational support, reducing their burden, developing a cooperative relationship with providers, developing more accurate quality measures, and minimizing the unintended consequences.

Key words: Pay-for-performance, Healthcare provider, Attitude, Quality, Unintended consequences
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INTRODUCTION

Pay-for-performance (P4P), which is a payment method that provides incentives to healthcare providers based upon the quality of their outcomes rather than simple healthcare service delivery [1], has been rapidly spreading across the world [2-6]. In the United States, this reimbursement method has been adopted not only in private markets such as the Integrated Healthcare Association [7] and Bridge to Excellence [8] but also in Medicare through the Hospital Quality Incentive Demonstration Project [9] and Physician Group Practice Demonstration Project [10]. Among other western countries, the United Kingdom has applied a P4P program (Quality and Outcomes Framework) to contracts with general practitioners [11] and Australia has adopted the Practice Incentive Program to improve quality of care [12]. In addition, the Health Insurance Review and Assessment Service (HIRA) in South Korea has also

conducted a P4P demonstration project, the Value Incentive Program (VIP), for improving the quality of care for acute myocardial infarction and Caesarian section patients in the tertiary teaching hospitals since 2007 [2].

Although many countries and health plans have adopted P4P programs, it is still controversial whether P4P is a successful strategy to increase the quality of care because the effectiveness of P4P and its primary target varies among programs. Many studies have reported positive effects of P4P on quality improvement [5,8,13-16]. However, on the other hand, several studies have raised questions such as the lack of effect [17,18], unintended consequences [16,19,20], disparities [21], ethical issues [22], and so on.

Therefore, to create more successful P4P programs, purchasers (i.e., governments or health plans) should consider all aspects of P4P from its contemplation phase to final evaluation phase. To do this, Dudley and Rosenthal [23] presented P4P checklists, which included

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20 questions for purchasers to consider in running P4P programs; these questions can be categorized into 4 stages according to which phase they relate to (contemplation, design, implementation, and evaluation phase).

However, before doing this, the first step would be to gather providers' opinions toward P4P programs. This is very critical because healthcare providers are not merely primary stakeholders but also important players. The failure of financial incentives to increase cancer screening in Medicare managed care could be explained by a lack of physician awareness [17]. In addition, interventions in the practice site could improve healthcare quality in P4P [15]. Therefore, it would be difficult to implement P4P programs successfully without healthcare providers' support, and they could help to achieve P4P's goals. Also, providers' concerns can contain valuable information that can help purchasers redesign programs to have as positive an effect as possible on the quality of healthcare [23,24].

We conducted a systematic review to summarize providers' attitudes toward P4P, focusing on their general attitudes, the effects of P4P, their favored design and implementation methods, and concerns. After the review, we will discuss what actions purchasers should take to make more successful P4P programs.

METHODS

I. Operational Definition of Pay-for-performance

There are various definitions for P4P for organizations. For example, "the use of payment methods and other incentives to encourage quality improvement and patient-focused high value care" [25]; "incentives (generally financial) to reward attainment of positive health results" [26]; and "transfer of money or material goods conditional on taking a measurable action or achieving a pre-determined performance target" [27]. In order to perform systematic review, we needed to identify our own definition of P4P. In this article, P4P was operationally defined by any kind of financial incentives or rewards to healthcare providers aiming to improve quality of care. That is, we decided to pay attention to the fact that "pay" refers to financial benefits from purchasers and "performance" means only quality performance (or outcome).

II. Search Strategy

A flow chart of the brief search strategy is shown in Figure 1. One librarian searched for published articles in two electronic databases, PubMed and Scopus, using selected key words. The electronic search was performed from 22 to 23, December, 2011 using the following keywords: pay for performance; incentive or reimbursement; performance or quality; payment or purchasing; health personnel, healthcare provider, physician, nurses, or hospital; attitude, behavior, position, or response; survey or questionnaires. Publication time and type were not limited. Two reviewers (Jo MW and Lee JY) screened target articles for analysis from results of electronic searches using titles and abstract review. Table 1 presents the inclusion and exclusion criteria used in the target articles chosen by the reviewers. Then, two reviewers read the full version of the screened articles and chose the final articles. In addition, references and forward citations of screened articles were also searched without any time limitations. One unpublished report was also added by expert opinion. Disagreements on the final choice of articles were resolved by discussions on the operational definition of P4P among the authors. Because the objective of this study was not to draw a single conclusion, the quality and heterogeneity of studies were not used for exclusion criteria and just considered in discussions. Among 1835 articles from PubMed, Scopus, and expert opinion, on the basis of their title and abstract, 58 articles were selected for full-text review. This review process provided 14 articles eligible for our analysis: 13 from the reviewed articles and 1 mentioned in the reference lists of several reviewed articles.

III. Summarization of Information

General information from the studies was extracted from the 14 articles that were finally selected: citation, country, program, target and eligible population of study, study participants, and survey method (Table 2). Healthcare providers' attitudes on P4P were summarized in two ways (Tables 3 and 4). First, we gathered their general attitudes and opinions regarding the effects of P4P. General attitudes included three items: level of awareness, agreement or disagreement, and the reasons why they support or oppose P4P. Providers' opinions on the effects of P4P were reviewed in terms of their behavioral changes, effects on quality of care, and financial impact. Second, we rearranged their opinions regarding desirable P4P design and implementation methods, as well as their concerns. Because there were differences in the context

including target population, design, or goal of P4P and the healthcare system, the original descriptions in the selected articles were used in this paper if possible.

RESULTS

I. Study Descriptions for Articles Included in the Final Analysis

Table 2 shows the study descriptions including the first author and publication year, countries, the specific P4P program, target population, eligible bias, target population, and survey methods. Among the 14 studies, 11 studies were conducted in US and least 3 studies analyzed P4P in the US and UK, Korea, and Canada. The targets of the surveys were individual physicians in 6 studies, hospitals or physician organizations in 5 studies, and directors or physician executives in 2 studies. The total number of respondents in each study ranged from 16 to 1243. In a survey method, a mailed survey including postal service (6) was most common followed by interview (4), web-based survey including online questionnaire (3), fax (2), and poll (1).

II. General Attitudes Toward P4P and Their Views on the Effects of P4P

We summarized providers' general attitudes toward P4P and their view on the effects resulting from P4P (Table 3). Table 3 showed the possibility that some healthcare providers still have a low level of awareness about P4P [28-31]. For example, McDonald and Roland

[28] indicated that many physicians were not aware of the target contents or had poor understanding of the relation between performance and incentives payments received. Also, Lee et al. [29] mentioned that the majority of healthcare providers did not know or understand what a P4P program was. Lastly, Young et al. [30] reported that physicians were fairly negative about their understanding of the details of P4P programs and the amount of incentive money being offered to them.

We investigated why healthcare providers support or oppose P4P (Table 3). Their opinions varied according to their P4P settings. Proponents stated that 1) if the

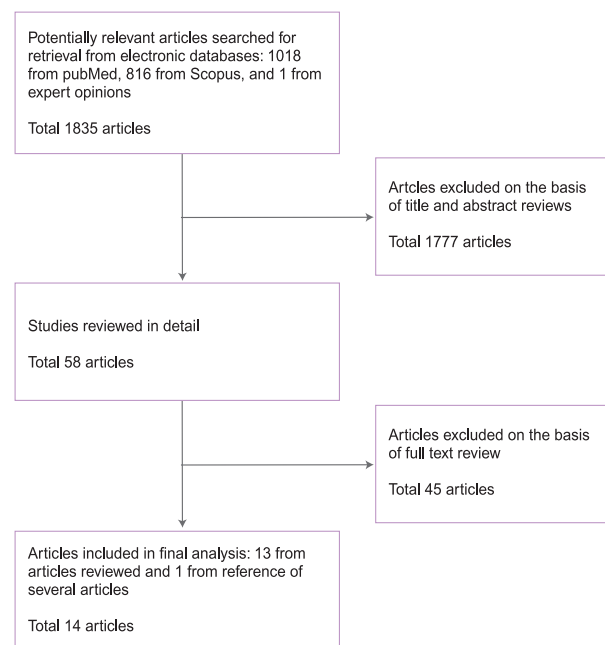


Figure 1. Search strategy flow chart.

Table 1. Inclusion and exclusion criteria

Inclusion criteria	Exclusion criteria
<ol style="list-style-type: none"> 1. Pay-for-performance definition: The programs include our concept of pay-for-performance, regarding of its name 2. Respondents: healthcare providers 3. Primary data gathered by the methods of survey, interview, and/or poll 4. Peer reviewed original articles or reports in Korean or English 5. Articles should include at least one item of the following content: <ol style="list-style-type: none"> 1) Providers' awareness of pay-for-performance 2) Providers' general attitudes to pay-for-performance (i.e., agree vs. disagree) 3) Providers' opinions on the effects of pay-for-performance such as the its effect on quality of care, behavioral change, or financial perspectives 4) Providers' opinions on desirable pay-for-performance design and implementation 5) Concerns on implementation of pay-for-performance including unintended consequences 6) Description on barriers or limitation for pay-for-performance implementation 	<ol style="list-style-type: none"> 1. Articles that did not deal with pay-for-performance 2. Articles in which respondents were not healthcare providers 3. Articles that used secondary data from other studies 4. Review articles

Table 2. Study descriptions for articles included in the final analysis

Citation	Country	Program	Target	No. of eligible population	No. of study participants	Survey method
Pines JM et al., 2007 [35]	USA	CMS & JCAHO	Chairpersons and medical directors from hospitals with emergency medicine training programs in the USA	129	90	Online questionnaire
Locke RG et al., 2008 [36]	USA	Non-specific P4P	Primary care osteopathic physician members of the American Osteopathic Association	1000	123	Mailed survey
McDonald R et al., 2009 [28]	USA & UK	The California initiative & Quality and Outcomes Framework	In the England sample (20) physicians from 2 regions & in the California sample (20) physicians from 4 organizations that ranged in size from 600 to 3,000 physicians and health care clinicians	20 (UK) & 20 (California)	20 (UK) & 20 (California)	Face to face interview using the same topic guide
Young G et al., 2010 [41]	USA	Managed care plan adopted a P4P program (SNS-A) & P4P for primary care physicians focused on a diabetes care component (SNS-B)	Physicians from CHCs in SNS-A and from medical group in SNS-B	256 Physicians from 13 CHCs (SNS-A) & 156 physicians from three participating medical groups	56% (SNS-A) & 63% (SNS-B)	Mailed survey
Casalino LP et al., 2007 [32]	USA	Physician P4P program	General internist	1168 from 1668 randomly selected general internists listed in the AMA physician master-file	556	Mailed survey
Steiger B, 2005 [37]	USA	Non-specific P4P	ACPE members (physician executives)	7444	932	Poll
Damberg CL, 2009 [34]	USA	Integrated Healthcare Association P4P program	182 Physician organizations contracted with the seven largest HMOs in California	35 Physician organizations	35 Physician organizations: in 14 organizations replaced with similar organizations	Interview
Reiter KL et al., 2006 [38]	USA	Statewide hospital-level P4P system between Blue Cross Blue Shield of Michigan and 86 hospitals with which it contracts	86 Hospitals	86 Hospitals	65 Hospitals	Structured interview
Goldman LE et al., 2007 [40]	USA	Non-specific P4P	Safety-net hospitals	-	37 Hospitals	Semi-structured interview
Lee SI et al., 2010 [29]	Korea	Non-specific P4P	All healthcare organizations in Korea	All tertiary teaching hospitals, general hospital, and hospital and randomly selected 2000 clinics	522 Healthcare organizations, including 31 tertiary teaching hospitals, 182 general hospitals, 158 hospitals, and 152 clinics	Web-based survey
Young GJ et al., 2007 [30]	USA	Non-specific P4P	The members of physician organizations in Massachusetts and California	-	1243 physicians: 689 from California and 554 from Massachusetts	Mailed survey
Erekson EA et al., 2011 [31]	USA	Non-specific P4P	The members of the American Urogynecologic Society	A total 1203 members of the American Urogynecologic Society	212 members of the American Urogynecologic Society	Web-based survey
Natale JE et al., 2011 [33]	USA	Non-specific P4P	-	Medical directors from all 19 CCS-approved PICUs	16 CCS-approved PICUs	Postal service and fax transmission
Kaczorowski J et al., 2011 [39]	Canada	P4P incentives for preventive care	246 physicians from 24 primary care network or family health network groups in 110 different sites across southwestern Ontario participated in the P-PROMPT project	-	115 physicians completed both pre-intervention and post-intervention survey	Fax survey

USA, United States of America; CMS, Center for Medicare & Medicaid Services; JCAHO, Joint Commission on Accreditation of Healthcare Organizations; P4P, pay-for-performance; UK, United Kingdom; CHC, community health centers; AMA, American Medical Association; ACPE, American College of Physician Executives; HMO, Health Maintenance Organization; CCS, California Children's Services; PICU, Pediatric Intensive Care Unit; P-PROMPT, Provider and Patient Reminders in Ontario: Multi-Strategy Prevention Tools.

Table 3. Healthcare providers' attitudes on P4P: general attitudes and its effects

Citation	General attitudes			Effects		
	Awareness	Agree/disagree	Reasons	Behavioral change	Effect on quality of care	Financial impact
Pines JM et al., 2007 [35]	Not mentioned	Disagree on PN-5b	Pn-5b will not lead to improvement in quality of care	Yes Respondents report a number of operational changes that are being implemented to improve time to antibiotics for pneumonia.	Disagree Emergency department do not agree that P4P incentives targeting early administration of antibiotics for patients with pneumonia will lead to improvement in quality of care for these patients.	Not mentioned
Locke RG et al., 2008 [36]	Not mentioned	Skeptical	The majority of survey respondents were skeptical that P4P would appropriately capture the quality of their work and did not believe that health outcomes should influence their reimbursement.	No "Attention to meet these performance goals" would not cause significant change in the healthcare of their patients	Not mentioned	No impact 72% felt that health outcome measurements should not influence their reimbursement.
McDonald R et al., 2009 [28]	Our study found, however, that many physicians were unaware of the target contents or had a poor understanding of the relation between their performance and incentives payments received	UK- Supportive US- Challenging to their autonomy	Not mentioned	UK - P4P changed the nature of the office visit. US - It appeared to have little impact on the nature of the office visit.	Not mentioned	Not mentioned
Young G et al., 2010 [41]	Not mentioned	Agree We did not uncover any opposition against P4P	Not mentioned	Not mentioned	P4P may have minimal short-term effect on quality improvement.	No impact on safety net setting
Casalino LP et al., 2007 [32]	Not mentioned	Supportive	Not mentioned	Not mentioned	It can lead to increase	Not mentioned
Steiger B, 2005 [37]	Not mentioned	Supportive	Not mentioned	Not mentioned	P4P can improve quality	Not mentioned
Damberg CL, 2009 [34]	Not mentioned	Agree benefits outweigh adverse consequences	Not mentioned	Yes P4P has directly affected organizational behavior by increasing accountability for quality, influencing the speed of IT adoption for quality management, and creating greater organizational focus and support for quality programs and goals	Limited These changes did not translate into the breakthrough improvement in quality desired by plans and purchasers	Not mentioned
Reiter KL et al., 2006 [38]	Not mentioned	Not mentioned	Not mentioned	Structure and process changes in organizations	Not mentioned	Not mentioned
Goldman LE et al., 2007 [40]	Not mentioned	Not mentioned	Not mentioned	Not mentioned	Improving quality	Not mentioned
Lee SI et al., 2010 [29]	Overall low awareness to P4P. Higher level organizations were more aware of P4P than lower level organizations	Disagree except tertiary teaching hospitals	Proponents- It is natural that high performing healthcare organizations receive a financial reward. Opponents- P4P could become a method of government control over healthcare organizations	Positive behavioral change but clinics disagreed	Increased but clinics disagreed	No significant financial effects
Young GJ et al., 2007 [30]	Low level of awareness	Agree	Not mentioned	No or minimal change	It can improve quality	Minimal financial impact
Erekson EA et al., 2011 [31]	Low level of awareness	Not mentioned	Not mentioned	Not mentioned	Neutral	Not mentioned
Natale JE et al., 2011 [33]	Not mentioned	Mixed agree and disagree	Physicians should be financially rewarded for better patient outcomes. P4P is not an effective way to improve patient outcomes	Agree PICU physicians would change their behavior to obtain a financial incentive	Negative	Not mentioned
Kaczorowski J et al., 2011 [39]	Not mentioned	Agree	Not mentioned	The established target levels and bonuses provided appropriate financial incentive to substantially increase the uptake of mammography and Papanicolaou test	Not mentioned	Positive effect Physicians were given bonus

P4P, pay-for-performance

Table 4. Healthcare providers' attitudes on P4P: desirable design and implementation methods and concerns

Citation	Desirable design and implementation methods	Concerns	
		Clinical unintended consequences	Other concerns
Pines JM et al., 2007 [35]	Yes 1) Possible solutions are to encourage hospitals to improve overall operations by incentives focusing on the improvement of fundamental measures of patient flow 2) provide incentives to hospitals to improve patient safety across all diseases, or 3) provide incentives for process improvement programs. Programs such as these do not focus on specific diseases and may benefit all patients.	Yes 1) The provision of antibiotics before chest radiograph results 2) the prioritization of chest radiographs over other radiographs 3) and the prioritization of patients with suspected pneumonia.	Not mentioned
Locke RG et al., 2008 [36]	Yes Almost two-thirds of respondents indicated that the insurer should rate them as individuals as opposed to being pooled in their practice group.	Yes 1) These initiatives may focus attention on areas that are not of primary concern during a specific visit between patient and provider-which may cause physicians to miss other important quality goals. 2) If a patient presents with a stressful social and medical issue (eg, depression, elder abuse), the physician might spend time addressing issues that could dramatically improve a patient's life but are not part of measurement guidelines. 3) The P4P measures, which will be difficult to implement for many primary care physicians, may also penalize practitioners who treat patients in underserved populations that may not have the resources to follow physician recommendations.	They are not ready to implement P4P in terms of technology (IT and EMR). Thus, they need educational support
McDonald R et al., 2009 [28]	1) This study suggests that the unintended consequences of pay-for-performance programs are likely to vary according to the design and implementation of these programs. Therefore, when designing incentive schemes, more attention needs to be paid to factors likely to produce unintended consequences. 2) The potential adverse effects of external incentives on motivation are likely to be diminished where individuals identify with the goals and values of incentive programs and feel that they have a degree of autonomy in their delivery.	1) The inability of Californian physicians to exclude individual patients from performance calculations caused frustration. 2) Some physicians reported such undesirable behaviors as forced disenrollment of noncompliant patients.	1) Threats to the ongoing physician-patient relationship 2) US-their autonomy was being challenged 3) The computerized support required to deliver the targets.
Young G et al., 2010 [41]	Not mentioned	The survey data did not point to any substantial concerns about unintended consequences.	Safety net providers face complicated and diverse patient needs that compete with P4P's quality goals for clinicians' time and energy. One way to mitigate this factor is by improving these providers' access to information technology.
Casalino LP et al., 2007 [32]	1) Health plans and government will work hard to make quality measures accurate. 2) Both individual and group evaluation can be possible.	1) Measuring quality may lead physicians to avoid high-risk patients. 2) Measuring quality will divert physicians' attention from important types of care for which quality is not measured.	Quality measures are not adequately adjusted for patients' medical conditions or socioeconomic status.
Steiger B, 2005 [37]	1) Additional data needed, in addition to claiming data 2) Large organization is now under more favorable conditions in current P4P setting so the rich get richer. 3) More acute indicators and those reflecting clinical significance. 4) Incentives are not new money so there are always winners and losers.	1) Dumping: non-compliant or difficult patients 2) Cherry Picking: they prefer the patients who give them high reimbursement	Physicians spending more time making sure they are meeting certain guidelines rather than treating patients. Some poll participants say P4P is just a convenient way to get physicians and health care organization to adopt better technology.
Damberg CL, 2009 [34]	Not mentioned	Not mentioned	Not mentioned
Reiter KL et al., 2006 [38]	Not mentioned	Not mentioned	Not mentioned
Goldman LE et al., 2007 [40]	1) Government should support to gather quality data. 2) Government should reduce additional cost resulted from P4P.	Not mentioned	1) The cost and accuracy of data collection 2) The difficulty of getting accurate performance data 3) How to adjust case-mix, in particular, underserved patients
Lee SI et al., 2010 [29]	1) Voluntary participation 2) The organizational performance should be evaluated 3) P4P should reward both high performers and performance improvers with financial incentives, but should not penalize low performers. 4) Additional funding should be set aside for financial incentives. 5) Not only medical claim data but also other clinical data should be used in evaluation. 6) Government or health plans should pay for reporting.	Healthcare providers voiced significant concerns about the potential of unintended consequences including 1) avoiding of high-risk patients, 2) ignoring quality of care in unmeasured areas, 3) neglecting compulsory medical services to maximize financial reward, and 4) the possibility that medical records could be manipulated	Not mentioned
Young GJ et al., 2007 [30]	Not mentioned	Not serious	A lack of quality improvement infrastructure is a major barrier to achieving pay-for-quality goal
Erekson EA et al., 2011 [31]	1) Performance measures not adjusting for the comorbidity of individual patients 2) The need for the development and utilization of appropriate performance measures 3) Doubt of adequacy of data 4) Careful monitoring of unintended consequences 5) Educating physicians about P4P	High risk patients will be penalized as they tend to have (worse) outcomes	Not mentioned
Natale JE et al., 2011 [33]	They are wary of the accuracy and validity of data used to generate these performance measures and are discouraged by the time and costs required to collect self information.	Included among these worries that patient data and results can be manipulated by administrators and practitioners, making accurate comparison impossible. One such manipulation is the avoidance of high-risk patients or procedures by physicians.	Not mentioned
Kaczorowski J et al., 2011 [39]	Not mentioned	Not mentioned	Not mentioned

P4P, pay-for-performance; IT, information technology; EMR, electronic medical record.

measures are accurate, physicians should be given financial incentives for quality [29,30,32,33]; 2) financial incentives are an effective way to improve the quality of healthcare [29,30,32]; 3) the benefits outweigh adverse consequences [34]; and 4) financial rewards are more effective as an incentive compared to non-financial rewards such as peer recognition [32]. However, opponents were concerned that 1) P4P will not lead to improved quality of care [31,35]; 2) they were skeptical that P4P would appropriately capture the quality of care [29,36]; 3) the incentive program was perceived as something externally imposed and managed, which made physicians feel that their autonomy was being challenged or that they were not trusted to perform in the absence of incentive payments [28]; 4) P4P could become a new method of government control over healthcare organization [29], and 5) P4P would result in unintended consequences [28,29,31-33,35-37].

We have summarized the effects resulting from P4P program in terms of behavioral change, effect on quality of care, and financial impact in Table 3. Regarding behavioral change, some healthcare providers reported that they have changed their behaviors to meet the quality goals. These behavioral changes included the structural modification and process alteration at the physician or organization level. At the organizational level, for example, Pines et al. [35] reported a number of operational changes that are being implemented to improve time to antibiotics for pneumonia. Also, Damberg et al. [34] reported that P4P has directly affected organizational behaviors by increasing accountability for quality, influencing the speed of IT adoption for quality management, and creating greater organizational focus and support for quality programs and goals. In addition, other studies indicated that structure and process change to reach the quality standard occurred at the organizational level [29,38]. At the physician level, even though three studies reported that physicians changed their behaviors to obtain financial incentives [28,33,39], other studies denied the fact that P4P induced behavioral changes at the physician level [30,32,36].

As for quality, their opinions on the effect of P4P were still controversial (Table 3). Some studies reported that healthcare providers believe P4P will increase the quality of cares [29,30,32,37,40] while others believe that the effect on quality will be a lack of or limited impact [29,33-35,41]. Lastly, regarding financial impact, only one study reported healthcare providers believe there are significant financial impacts [39]. Instead, other healthcare providers thought that financial gains would be limited or minimal [36,41].

III. Desirable Pay-for-performance Design and Their Concerns

Table 4 showed healthcare providers' attitudes on desirable P4P design and concerns. In order to summarize providers' opinions, we categorized their points of view into eight general issues such as participation method, evaluation unit and reward recipient, quality indicators, funding, quality of data, additional costs, unintended consequences, and government or health plan's support.

In relation to participation method, only one study directly mentioned that healthcare providers prefer voluntary participation in P4P program, not mandatory participation [29]. Regarding evaluation unit and reward recipients, some providers preferred individual- (or physician-) based performance evaluation, and therefore financial incentives should be given to physicians who achieved the goal of quality [36]. However, other providers believe financial incentives should provide medical group or healthcare organization based on the result of organizational performance evaluation [29,35].

Also, many healthcare providers had serious concerns about current quality indicators [29,31-33,36,37]. They believed that current quality indicators did not appropriately reflect on their clinical situations. For example, they believe quality measures cannot be adequately adjusted for patients' medical conditions or socioeconomic status [32]. Therefore they wanted purchasers to work hard to make quality measures accurate and reflect clinical significance [37].

How to raise funds for financial incentives is another important issue. One article concerned that incentives are not new money so there are always winners and losers [37]. In addition, another study reported that additional funding for P4P should be prepared for financial rewards [29]. That is, healthcare providers prefer to receive additional financial incentives without penalties.

In order to evaluate quality, healthcare providers should gather correct and accurate quality data and should hand in the data to purchasers. However, they felt that this process is very stressful and they could pay additional costs [29,31,33,37]. Also, for accurate quality evaluation, they believe more data needed, in addition to claims data [29,31,33,37,40]. Therefore, they desired that government or health plans should support the gathering of quality data and should pay for the additional costs or reduce the costs of data collection [29,40].

Unintended consequences were one of the most vital issues in designing and implementing P4P. Even though one article reported that unintended consequences would not be so serious [30], most healthcare providers had serious concerns that P4P would induce unintended consequences [28,29,31-33,35-37].

Lastly, the providers felt that they need some support from the government or health plan to make the P4P program more successful. For instance, some articles mentioned that healthcare providers need technical and educational support such as IT infrastructure and electronic medical record [28,30,36,37,40,41].

DISCUSSION

Through the results of our systematic review, we determined that healthcare providers have common attitudes regarding several factors of P4P but different attitudes toward P4P programs. Different attitudes seem to show that healthcare providers are under different P4P settings so their main interests could also be diverse. In fact, one study reported that these contextual differences could explain successful implementation of P4P [42] and the context of P4P was considered to be an important factor in other systematic reviews of evaluation of its effect [43]. Therefore, we reported the content as close as possible to the original expressions. At the same time, we could also extract valuable lessons from their common or diverse opinions. We believe that those opinions could give lessons for successful design and implementation of P4P. Following is what purchasers should consider in making a more successful P4P program.

I. Do Healthcare Providers Correctly Understand What Pay-for-performance Is?

The purpose of this study was to investigate healthcare providers' attitude toward P4P. To do so, ultimately purchasers can reflect their opinions on designing and implementing P4P programs. Therefore, the basic hypothesis was that they could correctly understand the concept, evaluation method, and the relationship between performance and rewards. However, our results indicated that some healthcare providers still have a low level of awareness about P4P [28-31]. If the low level of awareness or understanding about P4P among healthcare providers is a general phenomenon, that would be a serious barrier to implementing a P4P program. As noted, purchasers should note that the provider's support

is essential for the success of P4P [31,32]. Therefore, before implementing P4P programs, purchasers should grasp whether providers are correctly aware of the P4P. If not, they should make an effort to increase the level of awareness such as understanding of the quality indicators and the criteria and methods for distributing financial incentives. This could be a meaningful starting point to reconsider current P4P program. If they have incorrect knowledge about P4P, and if this results in distorted attitudes toward the P4P program, then each P4P program could not get a sufficient degree of support from providers. In order to increase the level of awareness of providers' knowledge and attitudes about P4P, adequate educational support should be provided with them by the health plan or professional societies. Actually, one study reported that providers were more likely to support P4P programs when they had received information about these programs from their professional societies [24].

II. Why Do They Support or Object to Pay-for-performance?

Purchasers should pay attention to the reason they oppose P4P. The reasons of opposing P4P may be quite different according to their P4P settings. However, our results showed very interesting phenomenon. That is, two opinions are separated based on different points of attitudes on the same issue. For example, proponents support P4P because it can lead to improve the quality of care and benefits outweigh adverse consequences. On the other hand, opponents disagree on P4P because it cannot lead to improvement in the quality of care and it would result in several unintended consequences. In summary, purchasers should listen to the voices of opponents. If their reasons of objection are correctable or based on misunderstandings, we can reflect their opinions or try to fix them.

III. Strengthening Communication and Collaboration With Providers in Design and Implementation of Pay-for-performance

To achieve the final goal of P4P, purchasers should make cooperative relationship and communicate with providers and professional societies. Like Healy and Braithwaite [44] mentioned that "command and control" would be replaced with "the new regulatory state" seeking flexible, participatory, and devolved forms of regulation. From this point of view, purchasers should

have patience to persuade providers and facilitate their supportive participation. In particular, in the designing stage of P4P program, purchasers should actively communicate with providers and make an effort to reflect their opinions regarding its primary target, evaluation unit and reward recipients, participation methods, carrots or sticks, and funding methods. Of course, government or health plan cannot and should not accept all opinions from providers. However, P4P is also not a zero-sum game. They may often conflict with each other but can cooperate to make better P4P program.

IV. Developing Quality Measures Accurate and Reflecting Clinical Significance

Purchasers should work hard to develop accurate quality measures and reflect clinical significance [37]. According to our study, many healthcare providers had serious concerns about quality measures or indicators. However, there is no perfect evaluation method. Therefore, purchasers should make a continuous effort to monitor and revise current quality indicators regularly in order to reflect providers' professional opinions.

V. Minimizing the Unintended Consequences

Purchasers should take actions to minimize the unintended consequences. From the articles reviewed in this study, we could summarize their concerns about unintended consequences [28,29,31-33,35-37]: avoiding high-risk patients; ignoring quality of care; neglecting compulsory services; inappropriate behavioral changes; and threatening professional autonomy. Maybe, each P4P program can confront different kinds of unintended consequences and its solutions would be also quite different. Although these undesirable consequences cannot be eliminated in the real world, some of them can be fixed or minimized by purchasers.

VI. Are Providers Ready to Implement Pay-for-performance?

Purchasers should pay attention to whether their providers get ready to launch P4P. Also, purchasers should make a plan to decrease the providers' burdens and supportive environments. According to our results, some providers believe they were not ready to or appropriately prepared to initiate P4P [36] and had concerns about infrastructure for P4P introduction such as IT and the quality of data et al [28,30,31,36,37,40,41]. Technical or financial supports such as providing grants

for establishing IT infrastructure, providing education sessions, and sharing costs for additional data collection can be useful strategies for soft-landing of P4P program.

VII. Study Limitation

There could be several limitations in this study. One is incompleteness of literature search. Although we used wide range of search terms and references of searched articles, some studies related with this topic might be missed. In addition we did not use comprehensive source of references such as expert's opinion, qualitative studies, secondary data analysis. Second, there is a possibility that providers might intentionally express negative responses to some questions in their survey in order to get a better strategic position in the future P4P. The third limitation is about the heterogeneity of the articles reviewed in the perspectives of healthcare settings, respondents, and questionnaires. As stated, this heterogeneity could be related with healthcare providers' attitudes in each article. Therefore, we intended to describe and summarize the authors' opinions on items by studies rather than provided a single result.

CONCLUSION

Recently P4P programs have been proliferating across the world, and their main goal was to increase the quality of care by providing financial incentives to healthcare providers. In this study, we reviewed their attitudes toward P4P. Considering their opinions on designing and implementing P4P would be the first step to make more successful P4P programs because they are important stakeholders and key players. Therefore, the purchaser should make more effort such as increasing providers' level of awareness about P4P, providing technical and educational support, reducing their burden of additional data collection, developing a cooperative relationship with providers, developing more accurate quality measures, and minimizing unintended consequences. Since providers' attitudes might depend on the specific context of the P4P program, a survey of the providers' attitudes using items included in this study could be helpful for the soft-landing of a new P4P program.

CONFLICT OF INTEREST

The authors have no conflicts of interest with the material presented in this paper.

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