

# Requirements and Incentives for Implementation of Pharmaceutical Strategic Purchasing in Iranian Health System: A Qualitative Study

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## Abstract

**Purpose:** According to the importance of strategic purchasing as a prerequisite for overall access and universal health coverage, this study was conducted to explore requirements and incentives for implementation of pharmaceutical strategic purchasing in the Iranian health system.

**Methods:** This was a qualitative study conducted through content analysis with an inductive approach applying a five-stage framework analysis. Data analysis was started right after transcribing each interview applying MAXQDA<sub>10</sub>. Data was saturated after 32 semi-structured interviews with experts. These key informants were selected purposefully and through snowball sampling.

**Results:** The findings are categorized under three main themes: “Payment Mechanisms to Service Providers”, “Insurance Reimbursement Mechanisms” and “Rules and Regulations”, and eight related subthemes.

**Conclusions:** According to the importance of incentive interventions in pharmaceutical strategic purchasing, it is necessary to pay close attention to pharmaceutical price, realistic and fair premiums and appropriate contracts with suppliers, along with estimation a reasonable profit margin for pharmaceutical suppliers and the appropriate reimbursement mechanisms as the most significant incentives for increasing access to pharmaceuticals and implementing strategic purchasing.

**Keywords:** pharmaceutical, incentive interventions, resource allocation and purchasing, strategic purchasing, Iran

## 1. Introduction

The extents of supply and demand in Iran’s current health system and shortcomings in the referral system have made patients determine their own demand for health goods and services (Mehralian & Bastani, 2015). As a result, the patients may make unnecessary purchases or purchase low-quality or expensive goods and services due to their lack of medical knowledge or on the other hand, information asymmetry (Bazyar et al., 2016). Meanwhile, insurers, as the most important resource allocation and purchasing agencies of healthcare services, need to create a balance between costs, service quality, and justice in order to survive (Viyanchi, Rasekh, Safikhani, & Rajabzadeh, 2015). One way to achieve this important purpose is to use strategic purchasing of health services which will ensure that their quality and price are appropriate (WHO, 2000).

Currently, the major purchasers of health services in Iran are four insurance organizations as follows: Social Security Organization (SSO), Medical Services Insurance Organizations (MSIO), Armed Forces Medical Services Insurance Organization (AFMSIO), and Imam Khomeini Relief Foundation (IKRF) and as the national statistics shows about 83% of the country population had a basic coverage of one of these insurers in 2010

however, it is believed that after setting Iranian health transformation plan in 2014 this increased to 95% (Bazyar et al., 2016).

Despite this broad coverage, Iranian Health insurance system suffers inefficiency in many aspects like: high Out of Pocket Expenditures (OOP), Fee For Service (FFS) payment to hospitals and physicians as well as low financial protection against health services for the insured and considerable coinsurance rates (Bazyar et al., 2016). To increase their efficiency and promote equity, these organizations need to adopt strategic purchasing of health services, which has also been mentioned in Iran's Fifth Five Year Development Plan (Choobtarashan, 2011). The mentioned insurance organizations must develop a model for strategic purchasing, since Iran's 20-year prospective national vision emphasized the people's access to effective, healthy, and high-quality pharmaceuticals at a reasonable price (Bastani, Dinarvand, Samad Beik, & Pourmohammadi, 2016).

Evidences concerning allocated expenditures to pharmaceutical sector from the total national health expenditures are rigorously emphasized the significance of strategic purchasing as an effective mechanism to allocate resources and supply healthcare services as well as pharmaceuticals. For example, the results of a 2002 study on health services in Iran showed that the majority of healthcare costs are related to pharmaceuticals and medical equipment in the public sector and treatment as well as visit cost/franchises in the private sector. Moreover, the results of this study showed that 68% of out of pocket payments in the outpatient sector is related to visits, treatments, and pharmaceuticals (Islamic Republic of Iran, 2009).

Some studies on the trend of visits and pharmaceutical costs of insurers have indicated an increase in the number of visits as well as average and total pharmaceutical costs. The number of visits to pharmacies has been higher in patients insured by AFMSIO. Moreover, the trend of visits to pharmacies by patients insured by SSO has significantly increased since 2002. Significantly a higher pharmaceutical cost of MSIO has also been reported (Noori, 2008).

In addition, evidence suggests that service providers are responsible for ensuring the efficacy and quality of health interventions. Service providers need internal and external incentives to act effectively (Preker & Harding, 2003). The strategic purchasing process is critical for ensuring the consistency of external incentives through contracts, budgets, and payment mechanisms (Bastani, Mehralian, & Dinarvand, 2015; WHO, 2000).

In general, it seems that despite the emphasis of international organizations such as the World Health Organization (WHO, 2000) and the World Bank (Preker & Langenbrunner, 2005) on health care strategic purchasing in developing countries as well the emphasis of Iran's Fifth Socio-Economic Development Plan on strategic purchasing of pharmaceuticals, no specific strategy has been developed by Iranian legislators and politicians. Thus, the present study was aimed to explore and determine the most important requirements and incentives for implementation of pharmaceutical strategic purchasing by insurers in the Iranian health system from the experts' point of views.

## 2. Methods

Thirty two semi-structured interviews were conducted including national policy makers, senior managers, health care practitioners and managers and experts affiliated with four main basic insurance organizations (Iranian Health insurance organization, Social security, Social Security Organization (SSO), Medical Services Insurance Organizations (MSIO), Armed Forces Medical Services Insurance Organization (AFMSIO), and Imam Khomeini Relief Foundation (IKRF)), Supplementary insurance organizations, Ministry of Health and Medical Education (MOHME), Food and Drug Administration and President Deputy Strategic Planning and Control that all are considered as highly ranked decision making professional working for the government. We selected the study participants who were very informed and had enough experience and information regarding to the given issues like health system financing, health management, health insurance, strategic purchasing of health services and other related concepts. Interviewees were selected through purposeful and snowball sampling.

For developing semi-structured interview guide, along with use of related documents of pharmaceutical strategic purchasing, findings of comprehensive review and some experts' viewpoints were applied. Final revised interview guide consists of five main open questions and some sub-questions. Face validity (Lincoln & Guba, 1985) of interview guide was confirmed through conducting six primary interviews with senior health officials in basic insurance organizations and MOHME. We used part of initial analyzed data in final stage data analysis.

All interviews were conducted in a quiet and private space where the participants were not disturbed during the interviews. Whenever it is not possible to interview with participants in their workplace, we postponed interview after work time. Interviews were recorded and transcribed verbatim. Data was analyzed shortly after the interviews. Most Interviews lasted for a minimum of 50 minutes. All interviews were done by one interviewer.

We used a framework analysis method with an inductive approach using five steps (familiarization, identifying a thematic framework; indexing; charting; and mapping and interpretation) assisted by MAXQDA version 10 for data analysis (Ritchie & Spencer, 2002). For ensuring reliability, peer check was occurred in a way that two members of research team conducted coding separately and then discussed to reach consensus in cases of disagreement (Carey, Morgan, & Oxtoby, 1996).

### 3. Results

Table 1 shows demographic characteristics of interviewees. We present the findings under three main themes: "Payment Mechanisms to Service Providers", "Insurance Reimbursement Mechanisms" and "Rules and Regulations", and eight subthemes which are summarized in Table 2.

Table 1. Demographic Characteristics of interviewees

Characteristics	Work experience(year)			Educational level			Employment status				
	<10	10-20	>20	PhD	Msc/MD	Bsc	Insurance Basic	Insurance Supplemental	Health and of Ministry	Deputy	President
<b>Number of interviewees</b>	4	16	12	10	14	8	17	4	8	3	

Table 2. Themes and subthemes related to requirements and incentives for implementation of pharmaceutical strategic purchasing

Themes	Subthemes
<b>Payment mechanisms to service providers</b>	Budget allocation and integration in the pharmaceutical sector Reviewing the allocation of resources and shifting from retrospective to prospective payment mechanisms
<b>Insurance Reimbursement Mechanisms</b>	Modifying insurance reimbursement to special or refractory disease Defining or redefining insurance reimbursement rates for Pharmaceuticals Considering the payment unit for chronic patients
<b>Rules and Regulations</b>	Reviewing the Medical tariff setting mechanism for different public, private, and voluntary sectors to determine purchasing price Effective contracts with the best and most eligible service providers Reasonable profit margins for pharmaceutical suppliers

#### 3.1 Payment Mechanisms to Service Providers

Budget allocation and integration in the pharmaceutical sector

Eleven interviewees (34.5%) believed that based on national health account reports, the annual budget allocated to the pharmaceutical sector is not transparent. They argued that the budget must be specified and integrated to enable purchasing organizations to increase the depth of their service packages and develop strategic purchasing. Even though the Fifth five year development Plan has mentioned the reforming insurance system and integration of resources, integration has mainly been structural rather than financial. One expert commented on this issue:

*"Allocation of resources and budgets is the responsibility of the Ministry of Welfare, not the Ministry of Health. Policy-makers proposed the establishment of the High Council of Insurance to overcome these challenges, but in practice the responsibilities of this council were never specified!" [P<sub>11</sub>]*

In addition, another participant emphasized inappropriate mechanism of actuary and premium setting as a result of not integrated resources in the country:

*"Unspecified and lacking insurance funds force insurers to insist on low and unrealistic premiums" [P<sub>20</sub>].*

##### 3.1.1 Reviewing the Allocation of Resources and Shifting from Retrospective to Prospective Payment Mechanisms

Twenty one interviewees (66%) believed that prospective payment systems such as per capita, weighted per

capita, diagnosis-related groups or case mix are of special importance to strategic purchasing by insurers. They stated that an efficient payment system must increase efficiency, reduce costs, and ensure quality as well as being equitable. An interviewee stated that:

*“Our payment system should shift toward per capita, because in this system the insured person seeks treatment faster and the disease is treated in early stages with lower costs ...” [P<sub>10</sub>].*

Another interviewee argued that:

*“The most important factor in establishing a per capita system is incentive for provision of cost-effective services. In fact, this system is suitable for both primary health care providers and hospitals, and pharmaceutical supplies are the main component in both cases ...” [P<sub>19</sub>].*

### 3.2 Insurance Reimbursement Mechanisms

#### 3.2.1 Modifying Insurance Reimbursement to Special or Refractory Disease

Twenty interviewees (62.5%) believed that a great challenge facing strategic purchasing is the current process of pharmaceutical purchase for refractory patients by basic and supplemental insurance companies whereby a portion of the money paid by the patient as an out of pocket is reimbursed. They argued that this process must be modified. One interviewee commented:

*“... Our organization made a lot of profit after modifying the purchasing process for a single chemotherapy medicine. Instead of complicating the process and reimbursing the money that the patients had paid out of their own pocket, we held the organization responsible for purchasing the medicine immediately after its prescription. This way the purchasing process was modified, the patients were satisfied, and the organization profited ...” [P<sub>18</sub>].*

Reviewing the mission of insurers and shifting focus from treatment interventions to health and prevention is one way of modifying cash flows and reimbursement of health care and medicine costs. According to the interviewees,

*“This approach is rooted in the treatment-oriented attitude of our insurers whose focus is on reimbursement; if they become more health-oriented and focus on prevention, this problem will resolve by itself” [P<sub>23</sub>].*

Another participant mentioned:

*“In most countries, medicine costs are shared by the patient in the form of, for example, franchise fee. Of course in some countries franchise fee depends on the intensity of the disease or the level of medical services, and reimbursements are made for generic drugs or are limited to specific indications or demographic groups” [P<sub>30</sub>].*

#### 3.2.2 Defining or Redefining Insurance Reimbursement Rates for Pharmaceuticals

According to 18 interviewees (56.25%), insurers need clear reimbursement standards or guidelines for each pharmaceutical category based on their therapeutic effects or indications, effectiveness and efficacy. These standards should be met by all purchasers (insurers) without an exception. An expert commented that:

*“... For some reasons, each insurance company has its own list of covered drugs or pharmacopeia, which may not be approved by other companies ... Well, there is no clear scientific standard for covered pharmaceuticals and coverage is often based on negotiations and preferences” [P<sub>16</sub>].*

#### 3.2.3 Considering the Payment Unit for Chronic Patients

Nine interviewees (28%) believed that payment unit must vary based on the type of disease (acute or chronic), duration of treatment, and the amount of medication needed. For instance, one interviewee stated that:

*“The type and volume of services provided to patients must be considered in the payment unit. Payment per patient, regardless of duration, type, and quantity of hospitalization or the volume of services provided, can be challenging for insurance funds” [P<sub>18</sub>].*

### 3.3 Rules and Regulations

#### 3.3.1 Reviewing the Medical Tariff Setting Mechanism for Different Public, Private, and Voluntary Sectors to Determine Purchasing Price

Twenty interviewees (62.5%) believed that unrealistic prices and delay in setting of tariffs can affect the pharmaceutical section and overall health-sector. It also may cause insurers to encounter many problems because of the serious gap between activity-based cost and tariffs in pharmaceutical sector and some inevitable problems like international sanctions can worsen this process. For instance, one interviewee commented that:

*“Health insurance should consider annual inflation, costs of implementing the Targeted Subsidy Plan, and sanctions in premium-setting” [P<sub>20</sub>].*

Another interviewee added that:

*“Untimely setting and announcement of tariffs can cause problems like higher out of pocket or informal payments” [P<sub>30</sub>].*

### 3.3.2 Effective Contracts with the Best and Most Eligible Service Providers

Twenty interviewees (62.5%) believed that purchasing organizations must be able to contract with the best pharmaceutical suppliers in order to make strategic purchases. Win-win contracts must be negotiated to ensure the interests of both the demand and supply side. One interviewee commented on the importance of contrasts as follows:

*“The purchasing organization should be able to choose from several suppliers and this cannot be achieved unless there are legal ways of contracting with pharmaceutical suppliers” [P<sub>13</sub>].*

While the national situation indicates that the opportunity for bargaining and negotiating between purchasers(insurers) and pharmaceutical suppliers through fair play contracts is not possible not for wholesalers nor the retail market. In this regard, one of the participants claimed:

*“... SSO or MSIO as the biggest pharmaceutical purchasers cannot choose the best supplier or distributor of the medicines; they only reimbursed the bills referred to the company after providing pharmaceuticals by hospital or community pharmacies.”[P<sub>2</sub>]*

### 3.3.3 Reasonable Profit Margins for Pharmaceutical Suppliers

More than half of the participants (16 interviewees/50%) emphasized the reasonable profit margin for drug manufacturers and, more importantly, distributors. However, most retail channels (i.e. pharmacies) and some wholesale channels complain of their profit margins in the pharmaceutical industry. The interviewees were of the opinion that:

*“Producers and distributors must have the expected profit margin per unit and maximum sales volume in order to avoid loss” [P<sub>9</sub>].*

*“The profit margin for the pharmaceutical distributors is about 3-4%, which is not reasonable and may put them at the risk of bankruptcy” [P<sub>20</sub>].*

However, it must be noted that having reasonable profit margins and mechanisms for prevention of manufacturers from exiting the industry or their possible bankruptcy are as important as expanding insurance coverage and developing basic benefit package. One of the interviewees commented on this issue:

*“What we need in the pharmaceutical sector is to reduce people’s costs while providing reasonable profit margins for pharmacies and the industry” [P<sub>4</sub>].*

## 4. Discussion

To address the requirements and incentives for implementing pharmaceutical strategic purchasing in Iran, the present findings were classified into 3 major themes: (1) payment mechanisms to service providers, (2) insurance reimbursement mechanisms, (3) rules and regulations.

Regarding payment methods, evidences have implied that per capita, fee-for-service and fixed price are more effective than others in terms of cost control, service quality, and implementationconvenience (Howitt, 2005). Other evidences also have shown that the dominant payment system in the elementary level of more than 50% of countries is the per capita system, while countries that use both per capita and fee-for-service systems have achieved better results (Ferman, 2008). For instance, evidence from the British National Health Service (NHS) indicates that payment to pharmacies is based on the fixed-price system for 95% of distributed medicines. In 2009, patients paid pharmacies £7 as professional fee for each prescribed medicine regardless of its price, and pharmacies that distributed more than 1600 pharmaceuticals each month made an annual profit of £17000 (Waters & Hussey, 2004).

Other studies suggest that disregarding service providers’ incentives for direct and unofficial payments have reduced the efficiency of payment system reforms in most countries. In countries where doctors’ income mainly consists of direct fee-for-service paid by the patients, implementing per capita payment plans cannot have any effect on the behavior of service providers (Brooks, Sorofman, & Doucette, 1999). In addition, not adopting the right payment method can have negative consequences for the health system. In China, for example, direct cash payments to service providers have increased the number of unnecessary services, especially in the

pharmaceutical and professional service sectors (Bloom & Shenglan, 1999). It has been shown, however, that no single payment method can be effective by itself while mix payment plans are recommended to achieve and benefit the advantages of all the single methods and at the same time avoid their negative points (Howitt, 2005).

Obviously disregarding payment mechanisms can aggregate the current problems of purchasing organizations and acts as a barrier to strategic purchasing. Busse et al. mentioned performance-based payment systems as an important factor in strategic purchasing of health care services (Busse, Figueras, Robinson, & Jakubowski, 2007). Thus, shifting toward a performance-based payment system for the medical staff can be effective for strategic purchasing in Iran's health system as well.

Regarding insurance reimbursement mechanisms, the participants mentioned the following as requirements for pharmaceutical strategic purchasing: modifying insurance reimbursement to refractory patients, defining standards for reimbursement of prescription charges by insurers and considering the payment unit for chronic patients. In addition to payment methods, cash flow is an important factor in insurance reimbursement to refractory patients. That is, purchasing organizations may have the patients pay the drug price and then reimburse all or a portion of their costs (e.g. the situation in India or the current condition of AFMSIO and some refractory patients in Iran) or directly purchase medicines from service providers through pre-defined contracts (Bennett, Creese, & Monasch, 1998).

In addition, the results suggest that defining standards for reimbursement of prescription charges in relation to drug effects is of primary importance. However, there seems to be no relationship between reimbursement and the effects of covered medicines in the Iranian setting (Viyanchi et al., 2015). Moreover, each insurance company in Iran has its own list of covered drugs or pharmacopeia (Ahmadi, Samadbeik, & Sadoughi, 2014), while studies have shown that one of the ways of controlling costs and increasing access to pharmaceuticals is to incorporate a list of basic medicines into the purchasing and procurement policy of the insurance companies (Gilson et al., 2001).

Nevertheless, Viyanchi believes that basic life insurance companies in Iran have not been actively involved in drug pricing and contingent liabilities, while in other countries reimbursement of the drug costs of the insured dynamically evolves based on the performance of the new medicines. Iranian insurance companies have not yet recognized the importance of developing a list based on pharmacoeconomical studies, interaction with pharmaceutical companies, and legal and financial considerations. This is to the detriment of both the insurer and the insured and discourages manufacturing firms from maintaining and improving the quality of their products (Viyanchi et al., 2015). Therefore, it is necessary to inform policy-makers about the principles of strategic purchasing and the demand-oriented nature of drug purchase so that a pharmacopeia can be developed by the High Council of Insurance for all purchasing organizations based on National Essential Medicine Lists (NEML) and moderated local needs.

The rules and regulation theme consisted of three subthemes, i.e. reviewing the tariff setting mechanism to determine purchasing price, effective contracts with the best and most eligible service providers, and achieving reasonable profit margins for pharmaceutical suppliers. Theoretical evidence on premium-rate setting shows that it is the most important tool for health policy-makers in any country, which can influence justice, efficiency, quality, and responsiveness in service provision and may help in evaluating the accessibility of services (Doshmangir, Rashidian, & Akbari, 2012).

A study of premiums in the British NHS shows that pharmaceutical companies are required to follow the Pharmaceutical Price Regulation Schemes which provides assurance on almost all the branded medicines bill for the NHS and encourages participation and investment by industries that are successful in research and development (Zare H, Azadi M, KeshavarzKh, Hakim Zadeh SM, & M, 2013). However, evidence from Iran suggests that the determined tariffs are less than the estimated cost of services, which can seriously influence purchasing organizations (JafariseSirizee M et al., 2008). It is thus recommended to set reasonable tariffs based on the pharmaceutical prices.

Other evidences from New Zealand have shown that effective contracts are essential for competitive and reasonable pricing of health services (New Zealand Ministry of Health, 2003). According to Busse et al., effective contracts are cost-effective, evidence-based, and volume-based to ensure the quality of products (Busse et al., 2007). Couffinhal and Habicht argued that the contractual framework for purchasing of health services in Estonia is based on volume-based contracting (Kutzin J & A, 2005). However, Raeissi considers the type of contracted services as well as the format and duration of the contract to be important in strategic purchasing (Raeissi, Nasiripour, & Karimi, 2013). Thus, given the importance of fair contracts, it is essential for purchasing organizations to be able to identify the best pharmaceutical suppliers and after that contract in a fair play and

win-win conditions.

## 5. Conclusion

Finally, there is little evidence on purchasing price and reasonable profit margins and these factors vary in different centers. However, profit margins may be higher in official centers (Enemark, Alban, Seoane-Vasquez, & Seiter, 2004; Nyanator F, Asare BA, & Tayvia H, 2002). Moreover, the structure of distribution costs affects total costs as well as pharmaceutical use. For instance, profits based on fixed percentages can encourage distribution of expensive medicines, while declining percentages can rein such incentives (Kumaranayake, Hongoro, Lake, Mujinja, & Mpembeni, 2003).

In addition to pharmaceutical price, appropriate reimbursement mechanisms, realistic and fair premiums and fair contracts with suppliers, it is important to estimate a reasonable profit margin for pharmaceutical manufacturers and suppliers and use it as an incentive for increasing production and supply, which in turn increases accessibility of medicines.

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## Competing Interests Statement

The authors declare that there is no conflict of interests regarding the publication of this paper.

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