Family Physician Financing: Developing versus Developed countries

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Abstract

Considering the role of family physician in rising public access to general practice under a referral system on one hand and its impact on the reduction of health cost on another hand, we compare family physician in ten countries with the following inclusion criteria: different regions of WHO (World Health Organization), a well-known or specific health financing, at least a country similar to Iran in terms of socioeconomic situation and GDP (Gross Domestic Production), at least one of the countries in the list of 1404 Iran Vision Document, and the availability of data. The required data were gathered through valid databases, essential documents as well as a famous website with a focus on the financial function of family physicians. Finally, data were analyzed by comparative tables. The findings revealed that most resources in selected countries are collected from public revenues. Besides, family physician is not funded separately, and all countries finance family physician under primary health care. The results of this study also showed that purchasing family physician services in different countries is based on contracts, and its payment mechanism is a mix of salary, capitation, bonus, fee for service, or pay for payment; however, reimbursement to Iranian urban family physicians is mostly through capitation. The experiences of different countries in the implementation of family physician show that the mechanisms of collecting resources are different across different countries due to their various context. This study suggests that more emphasis on public resources and suitable pooling may be a good solution to improve family physician financing.

Introduction

All over the world, the family physician is a part of health reform to face with health system deficits (1). This program is a way to move from an expensive, fee for service, disease-oriented and discrete system to a real cost-effective, satisfactory, patient-oriented and integrated system (2). , The referral system as the main pillar of family physician, is a process in which the patients are faced with the lower level of health services to seek the assistance of a more equipped and trained person (3). Referral system eliminates redundant and duplicate visits, reinforces the relationship of general physicians with specialists and finally controls care costs (4). The family physician and referral system had been introduced in UK since late 1950s and later expanded to other countries, e.g. North Europe and Canada (5).

The family physician provides comprehensive care to patients and their families with the priority of prevention, chronic surveillance and care coordination (6). The root of family practice in Iran backs to 1971 in Chonghoranloo, The west-Azarbayjan province of Iran (7). Family physician program in the form of referral system is one of the best managerial strategies, especially in rural and less developed areas of Iran, which was approved and implemented from 2005 for all rural residents, nomads, and cities populated less than 20000 people (8). Three years later, the urban family physician program arrived at health policy agenda to be implemented as pilot in three cities populated more than 20000 people (naming: Khusestan, Sistan-baluchestan, and Charmahal-o-bakhtiari) (9). Due to some problems like physicians' insufficient income, wasting time in reception, and multiple insurance funds, the 02 version of urban family physician program protocol was designed and implemented as the pilot in two provinces in 2012 (Fars and Mazandaran) (10). Shiraz, the capital city of Fars province, was included in this program (1.5 million population, 650 general family physicians and 300 specialists) (11).

The literature review showed that despite the underlying diversity in financial resources and providers, family physician in different countries deals with similar challenges. In Iran, family physician has lots of difficulties including imperfect referral system, lack of proper feedback to family physicians from specialist, huge duties, uncertain financial resources and policymaking challenges (12). One of the proposed problems of Iran urban family physician is failure in implementing referral and gatekeeping roles of family physicians (13).

Although health systems through the world apply risk adjustment methods for resource allocation based on needs, these approaches are not used in Iran. Therefore, in recent years, considering improper health resources allocation and failure in moving resources to regions more in need, researchers have focused on using patterns based on needs for resource allocation in the various areas of Iran (14, 15). Generally, health financing suffers from some fundamental issues: increasing health costs, continuous advances in science and technology as well as population growth (16). In this study, we reviewed the family physician finance in ten countries to compare the financial methods of family physicians in Iran with selected countries.

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Material and Methods

Study design: We used a comparative method to compare family physician financial mechanisms in Iran with several selected countries. Data gathering tools were fish cards and data extraction forms. We used fish cards to collect data from library resources, reports published by European observatory of health systems, WHO, World Bank, scientific databases like PubMed and Scopus, and SID (Scientific Information Database). Besides, data extraction forms were designed from literature review and based on WHO framework. An expert panel in the field of health policy validated our tool with their comments. The comparative variables were as follows:

- The contextual characteristics of the countries (political, social, and economical)

- Some of prosperity index rankings (governance, economy, and health)

- Family physician financing

- Existing referral system and compulsory or voluntary registration of a family physician

These variables were validated by the research team.

Country selection:

In the current study, Iran and nine other countries were selected to get compared for family physician financing. The country selection process was as follows:

Inclusion criteria: To be from different regions of WHO, having a well-known or specific health financing, at least a country similar to Iran in terms of socioeconomic situation and GDP, at least one of the countries in the list of 1404 Iran Vision document, and the availability of data. As a result, the below countries were selected to be studied:

USA (due to its located in North American region of WHO and having a financial system based on private insurance), Canada (located in North American region of WHO and having financial system with tax-based insurance). Australia (located in the western pacific ocean an having national health insurance), England (located in Europe region and having financial system with tax-based insurance), Germany (located in Europe region and having financial system based on social insurance), France (located in Europe region and having financial system based on national insurance), Japan (located in the western pacific ocean an having a specific financial system), Turkey (located in Europe region and one of the countries on spotlight in the document of 1404 Iran Vision), Thailand (located in Southeastern Asia Region and being similar to Iran in the terms of socioeconomic and GDP).

Data gathering and Analysis: The required data to compare the family physician financing in among the selected countries was gathered through valid databases like Scopus, PubMed and Science Direct and reviewing the important documents such as health system review: health system in transition and international profiles of health care

systems as well as the famous website naming: WHO and World Bank using keywords: family physician, financing, finance, etc. This study is approved by the ethics committee of Iran University of Medical Sciences: part of a Ph.D. thesis supported by Iran University of Medical Sciences (Code: IR.IUMS.REC1395.9221557205).

Results

The findings of the countries' context (political, economic, and social characteristics) are compared in Table1. As it is shown in this table, the government type of Australia, Canada, England, Japan, and Thailand is Constitutional monarchy, while that of USA, France, Germany, Turkey, and Iran is Republic according to Legatum Report. Among the selected countries, Canada governance had the best rank (Rank 9) and then England (Rank10) and Germany (Rank 12). Besides, the worst governance rank belonged to Thailand (Rank 98) after Iran (Rank 133). Except England and Iran, the rest of the studied countries were capitalist. The results showed that USA had the highest amount of GDP per capita while Thailand had the least. Also the highest total health expenditure as a percent of GDP belonged to USA (17.1%), and the least went to Turkey (5.4%). As it is shown in Table1, the first health rank among the studied countries, according to the newest Legatum Report belongs to Japan and the last to Iran. Human Development Index (HDI), which is a mix of three indexes of life expectancy, income per capita and education, is very high for the countries USA, England, France, Germany, Australia, Canada, and Japan, and high for Iran, Turkey and Thailand. Also according to Legatum report, economic rank among the studied countries was better for England (Rank 7), Germany (Rank 9), USA (Rank 10), and Canada (Rank 15), respectively, while Iran rank was the worse (Rank 103). Among the reviewed countries, USA was the most (321.4 million people) and Australia the least (23.9 million people). Green color present good situation. As it is shown in Table1, political, social and economic situation of Turkey is not good (yellow color). Besides, orange color stands for unsuitable situation. According to Legatum report, Iran is in an unsuitable situation.

The finding of finance (revenue collection and resource pooling) is presented in Table2. As it is shown in this table, the most resources in the studied countries are collected from public revenues; however, in some like Germany, Japan and Turkey are based on social insurance. In none of the countries, the family physician finance is not separated from primary health care resources. Health fund pooling in the selected countries is different and is on a range from central pooling to insurance pooling level like Medicare and Medicaid. However, in Iran no pooling mechanism does exist for urban family physician. As it is shown in Table 3, referral system does exist in Canada, Australia, and England completely, it partially exists for some programs in USA, France, Germany and Japan and also voluntary in two provinces of Iran (Fars and Mazandaran). Family physician registration is only compulsory in England and Turkey. It is not compulsory in the rest of selected countries except for some capitation models in Canada, and two provinces of Iran. Besides, the findings of service purchasing and reimbursement mechanism of family physicians is provided in Table3. As it is shown in this table, purchasing is by contract

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with sickness funds, insurances and providers, and with the provider-purchaser split. Payment method to physicians is different (salary, capitation, fee for service, or pay for payment), and in all countries but Iran, it was a mixture of these methods.

Discussion

According to the findings of this study, by moving from monarchy systems (like England, Australia and Thailand) to republics (for example turkey, Germany and Iran) financing changes from basically public models (based on tax and governmental incomes) to less public such as social insurance, or even USA which is mainly based on private financing. Japan was heterogeneous in this category because it has a monarchy government, but its primary care is financed through insurance. Therefore, the Financing system of various countries differs and the method each country uses for health system financing depends on the history and the culture of that country (16). The health share of GDP is one important index of development and may help social prosperity, life expectancy increase, and mortality reduction. Therefore, rich countries spend larger proportion of their income on health (17). Health expenditure per capita in USA has been 20 times for 40 years. USA spends more than any country on health, both per capita and absolute but its health outcomes is not as expected (18). The results of the current study showed that by moving from high-income countries (like Australia, Canada, France and England) toward middle-incomes (for example Turkey and Iran), resource collection transforms from general revenues to insurances. So it can be said that, the manner of revenue collection for health is probably related to the country income. But the exception in his regard is Thailand, a middle-income country which uses public revenues for health financing. Thailand is a middle-income country with a huge advance in universal health coverage which has got popular world-wide due to good goals achievement at a low cost (19). In this regard, Thailand health transform plan was so impressive in moving resource collection toward public revenues for more population coverage. Besides, universal health coverage in Thailand, has reduced poverty and catastrophic cost through fair healthcare financing (20). Thailand is a developing country which has deeply invested on primary care, an outstanding example of health system redesign to reduce social determinants of health (21). However, developed countries due to have more financial resources devote more proportion of their incomes to health, and consequently are more prosperous in health compared with developing ones. A good indicator in this regard is the combined index of HDI (Human Development Index) which facilities countries' comparison in the aspects of education, health and economic situation. This index rank was very high among high-income countries, the developed ones. According to Legatum 2017 report, Japan rank was very good and among the selected countries in this study, Japan stands rank one. Besides, the highest life expectancy belongs to Japan. This maybe because of the specific health system in Japan: patients in Japan can directly go to a specialist without referral at a rational cost which makes the patient to be treated at early stages of the disease (22).

Iran family physician financing regardless of general similarities, has some important differences compared with other countries. The findings of this study showed that most

resources in the selected countries are collected through public revenues. Besides the financial resources devoted to family physician in the studied countries but Iran is funded under primary care resources while in Iran it has a separate fund. According to the current study results, purchasing family physicians services in different countries is based on contracts and the payment method to physicians is a mix method (including salary, capitation, bonus, fee for service, or pay for performance) , however, in Iran, urban family physician payment is mainly based on capitation. Considering urban family physician resource which is exclusively based on insurance, the reason of choosing this payment mechanism may be cost saving.

In Scandinavian countries like England, family physician plays the role of a gate keeper I n the health system, in another words the patient does not have dirt access to second level services, and must be referred to the specialist or hospital from the first level (family physician). There are two justifications for gate keeping role: one, cost control with reducing unnecessary interventions, and second, efficient usage of second level services due to information asymmetry of family physician compared with patients about higher level services (23). According to the present study, referral system exists in Canada, Australia and England but in the rest of the countries it was voluntary or limited to some plans and centers. These three countries, were common in monarchy government, high income and public health resource collection. Besides registration with GP was only compulsory in England and Turkey that may be due to having a monarchy system along with socialist ideology. For instance, in Australia, general practitioners present a huge amount of medical advices and are the first contact with patient after pharmacists and act as a gate keeper. General practitioner is the most important medical form in Australia; these doctors consult, provide medical care, family planning, minor surgeries, preventive services and dug prescription and follow-up the patients after refer (24). Family physician implementation in these countries maybe due some reasons like National Health System and the importance of family physician in their health system. Thailand launched family physician since 1999, but its family physician is not developed due to lack of professional and governmental support, public no-value considering for family physician compared with a country like USA and inadequate time for some care aspects which is essential to family physician such as car continuity, physician-patient relationship and disease psych-social factors (25).

Conclusion

According to this comparative study, which compares the family physician implementation experiences of different countries, the resource collection mechanism of family physician in the selected countries differs and this difference may be due to the variety in the context characteristics of the countries. The current study showed that the mechanism of purchase and reimbursement for family physician is very similar in the selected countries. According to the results of the present study it seems that more emphasis on public resources and proper pooling may be a good solution to the family physician financing of Iran.

This study showed that the mechanism of financing for the family physician in Iran is not as great as the other countries studied in the current paper. The collection and pooling of family physician in Iran is weak. Therefore, continuous research and make solution to the finance of this program could lead to better implementation of family physician and accomplish health outcomes. Last but not least, lessons from this study could help policymakers at national level before any decision to extend this program to whole the country. Besides, it is helpful for countries that look to Iran as a hub for regional health reforms.

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Conflicts of interest

Authors declare that they have no conflicts of interest.

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Table1. Comparing context characteristics of selected countries [26-30]

Countries / context	USA	Canada	Australia	England	France	Germany	Japan	Turkey	Thailand	Iran
Political	**Republic** Governance:20 **Capitalist**	**Constitutional monarchy** Governance:9 **Capitalist**	**Constitutional monarchy** Governance:14 **Capitalist**	**Constitutional monarchy** Governance:10 **Socialist**	**Republic** Governance:23 **Capitalist**	**Republic** Governance:12 **Capitalist**	**Constitutional monarchy** Governance:18 **Capitalist**	**Republic** Governance:70 **Socialist**	**Constitutional monarchy** Governance:98 **Capitalist**	**Republic** Governance:133 **Socialist**
Economic	GDP*: 53 THE[1]:17.1% **High Income** Economic Rank:10	GDP*: 42 THE:10.4% **High Income** Economic Rank:15	GDP*: 42 THE:9.4% **High Income** Economic Rank:20	GDP*: 35 THE:9.1% **High Income** Economic Rank:7	GDP*:37 THE: 11.5% **High Income** Economic Rank:25	GDP*: 44 THE:11.3% **High Income** Economic Rank:9	GDP*: 37 THE:10.2% **High Income** Economic Rank:23	GDP*: 18 THE:5.4% **Middle Income** Economic Rank:55	GDP*: 13 THE:13% **Middle Income** Economic Rank:27	GDP*: 15 THE:6.9% **Middle Income** Economic Rank:103
Social	Pop**: 321.4 LE[2]:72/78 HDI: 11 **(very high)** Health Rank:30	Pop**: 35.94 LE:80/84 HDI: 9 **(very high)** Health Rank:24	Pop**: 23.96 LE:81/85 HDI: 3 **(high)** Health Rank:10	Pop**: 65.13 LE:79/83 HDI: 16 **(very high)** Health Rank:19	Pop**: 66.54 LE:79/85 HDI: 22 **(very high)** Health Rank:18	Pop**: 81.68 LE:79/84 HDI: 4 **(very high)** Health Rank:12	Pop**: 127 LE:80/87 HDI: 10 **(very high)** Health Rank:4	Pop**: 78.67 LE:73/79 HDI: 72 **(high)** Health Rank:53	Pop**: 67.96 LE:72/78 HDI: 88 **(high)** Health Rank:35	Pop**: 79.11 LE:74/77 HDI: 68 **(high)** Health Rank:95

*: **GDP per Capita**

: **Population

[1] THE: Total Health Expenditures
[2] Life Expectancy

Table2. Financing the primary healthcare in the selected countries [22, 24, 31-39]

Financing	USA	Canada	Australia	England	France	Germany	Japan	Turkey	Thailand	Iran
Revenue Collection	Medicare (23%), Medicaid (16%), other governmental plans (4%), Private insurance (35%), Out Of Pocket (O.O.P) (14%) and others (18%)	Public Federal, Province and local revenues. Province revenues from tax income, income on consumption and companies' incomes.	70% from public resources like taxes and only30% from private resources	Mostly tax income from Her Majesty's Revenue and Customs (HMRC) (such as tax income, value added tax (VAT), corporation tax, and indirect taxes on tolls (like fuel, tobacco and alcohol)	Governmental public budget, health social insurance and marked taxes for free public complementary (CMU-C)	Sickness funds collect insurance premiums from employers and employees.	Taxes (36.4%), insurance premiums (49.2%), cost share (14.4%)	Health social insurance (43.9%), governmental resources (29.1%), O.O.P (17.4%) and other private resources (9.6%)	By general government health expenditure (GGHE), a little by Social Health Insurance (SHI) and 13.9% through O.O.P	Family physician Urban family physician: insurance (social security insurance , Iranian Health Insurance and Imam Khomeini Relief Committee) as well as National budget through 1% of VAT[3]
Resource Pooling	Medicare, Medicaid, insurance based on employer, Veterans Affairs (VA) and independent insurance market	In three level: federal government, province/local government and Regional Health Authority (RHAs)	Government and health insurance funds	Pooled in the country level. Health department, devotes the resources to local authorities and NHS for public health plans to be distributed among clinical commission groups as well as primary and specialized care services.	SHI reimburses the cares retrospective and there is not a formal allocation mechanism.	Central Reallocation Pool which adjusts and devotes the collected incomes by risk and disability.	Financial re-allocation mechanism which is directed by social insurance fund and was replaced with financial re-allocation mechanism for 65-74 people in 2008.	In the past, collected incomes were pooled in Social Insurance Organization (Sosyal Sigortalar Kurumu: SSK), Social Insurance Agency for Merchants, Artisans and the Self-employed (BUG-kur) and Government Employees' Retirement Fund (GERF), But currently, employees' insurance premium is pooled in SHI	Comptroller Generals Department (CGD) for Civil Servant Medical Benefit Scheme (CSMBS) and Social Security Office (SSO) and Social Health Insurance (SHI) and National Health Security Office (NHSO) for UCS and private insurance for voluntary health plan. These organization pool and purchase the services.	Each fund pools separately

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[3] VAT: Value Added Tax

Table3. The mechanism of services purchase and reimbursement to family physicians in the selected countries.

Financing	USA	Canada	Australia	England	France	Germany	Japan	Turkey	Thailand	Iran
Purchase	**Traditional Medicare:** contract between physician and patient **Part C & D:** Medicare contract between insurance and health care Organization **Medicaid:** contract with providers **Reimbursement:** Medicare and Medicaid reimburse by Fee-For-service (FFS), salary, capitation or O.O.P from patients	The physicians are both purchaser and provider. **Reimbursement:** family physicians are paid by mix-method (45%), FFS (34%), salary (6%) and others (11%)	There has been always conflict between common fund and the states. **Reimbursement:** It is salary and FFS.	There is purchaser-provider split in the England. Most **Reimbursement:** physicians are paid by salary and the others capitation which is adjustable by age, gender and other demographic factors.	**Reimbursement:** From past reimbursement was through FFS in Franc but since 2000 it has moved to Disease-Related Group (DRG) and Pay for performance. Currently governmental institutions and social insurances by FFS, Pay for performance and Activity-based payment (Tarification à l'activité). About half of physicians are paid by salary.	The contract is between federal physicians and federal sickness funds. The dominant purchase method for outpatient services is collective contacts. Under the model of selective contracts, sickness fund contracts with the provider directly. **Reimbursement:** Until 2008, reimbursement was through capitation but since 2009 in the form of services based on performance. Private physicians are paid by FFS and hospital physicians by salary.	Purchaser-provider relationship is based on the contract and almost all providers have to arrive at this contract with government. Since Japan National health Insurance (NHI) does not pay to non-contributing providers. **Reimbursement:** Previously it was based on FFS but currently the payment is **based on** fee schedule. There is no difference between the payment of clinic or hospital physicians and the payment is through salary plus bonus.	Purchaser-provider are separated since 2008. Private insurance and Supplemental Security Insurance (SSI)purchase services from public and private institutions. Those institutions under the supervision Ministry of Health have no contract and in this case, global budget is transferred from SSI to Ministry of Health. For private institutions there is a contract between SSI and providers. The services are purchased from governmental and private providers by global budget. **Reimbursement:** The payment to family physicians in primary care centers and ambulatory health centers is through capitation, and FFS for those working in other centers.	CGD, SSO, NHSO And private insurance **Reimbursement:** salary	Insurance institutions (social security insurance, Iranian Health Insurance and Imam Khomeini Relief Committee). **Reimbursement:** The payment to urban family physicians is through capitation
Does Referral system exist?	In some insurance plans	Yes	Yes	Yes	Voluntary (visits and drug prescription cost without physician referral is higher)	General no (except specific plans)	NO (Except some big hospitals and university centers)	NO (but the specialist visit cost referred from a generalist is lower)	No	NO (but in two provinces, if one referred to specialist from the family physician visit is cheaper)
Is registration with family physician Compulsory?	No	No (except some capitation models)	NO	Yes	NO (except for some patients voluntary)	NO	NO	Yes	NO	In two provinces yes