

A Model of Basic Dental Care Service for Iran

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Objectives To study components of oral health care system in some developed countries and propose a model for Iran.

Methods The present study was a qualitative, cross-sectional, and comparative research that took place in 2012. Oral health care systems in some developed countries have been reviewed to propose a framework for Iran. This framework has been discussed and reviewed by an expert panel using Delphi method.

Results A table presenting type of service provider, type of centers and personnel, and methods for reimbursement in oral health care delivery system has been discussed by an expert panel. The experts, with an average 75% agreement rate, agreed on the need for a basic oral health care package free of charge for under 18-year-olds, compulsory periodical check-up examinations, and guarantee for payment of the services by national insurance funds. Simplicity, comprehensiveness, focus on prevention and at risk age groups facilitate the adaptability of the model to various populations.

Conclusion An appropriate model for oral healthcare delivery system needs universal health insurance coverage, a basic service package focusing on preventive care with mandatory regular dental check-ups, participating of private practitioners, and financing services through government revenues, premium, and health tax.

Keywords Delivery of Health Care, Dental Care, Health insurance, Dental Staff

Introduction

Oral health is an integral part of general health and a prerequisite for optimal quality of life must be included in the provision of health care.¹ A healthy oral cavity requires individual action, complemented by professional care and community-based activities.² Receiving professional dental care depends on the cultural and social characteristics of the care receivers as well as the characteristics of the oral health care system, such as availability, accessibility, affordability and conformity of the services to patients' needs.³⁻⁶

Cost of dental services may act as the most important barrier for receiving dental services especially among disadvantaged people.⁷ Even in economically developed countries, financial resources are not always accessible or properly allocated.⁸ Therefore a part of people may not have access to dental care in each country.

Iran has a population of about 80 million; out of which, 49% are females, 24% is below the age of 14 years, 70% are middle-aged and 6.1% are 65 years and older.⁹ Healthcare services are provided in three forms in Iran: public (governmental), private and by insurance companies. In the public sector, Ministry of Health and Medical Education (MOH) is the main provider of services. In 2013, 1,942 Public Dental Clinics (PDCs) have provided primary oral health care services including tooth extraction, fluoride varnish application, restorative treatments, scaling and root planning. All citizens can benefit from these services. The tariffs of the services are annually set by the MOH. Target groups (children < 12 years of age, pregnant and lactating mothers) have specific tariffs lower than that of the whole population. Provision of these services is by dentists (1,375 official employees, 646 serving their compulsory service and 51 working on a contract) or dental therapists (150) who are paid by the MOH. Main dental care providers in Iran are

dentists working in the private sector. Until 2013, there were 26,000 registered dentists in Iran; out of which, more than 90% were working in the private sector.¹⁰

Two insurance systems are available in Iran: Public (governmental) and commercial. About 90% of Iran population are covered by the health insurance; and 28% have both the public and the commercial (complementary) insurance; 10% have no insurance.¹¹ A total of 400 medical centers accept the publicly-insured patients and about 2000 centers have contracts with the insurance companies and offer basic dental care services (extraction, restorative treatments, scaling and root planning) to the insured patients. Dental care providers offering services to the commercially insured patients are mainly private practitioners, which provide various types of services. The non-insured patients can refer to the private or the public (governmental) sector. The tariffs for the services provided by the public sector are less than half the tariffs of the private sector. Oral health needs in terms of untreated carious teeth, deep periodontal pockets, dental plaque, and calculus are prevalent among Iranian population indicating the high need for treatment.¹²

This study aimed to assess and compare the characteristics of health care delivery systems in some developed countries and to suggest a suitable model for providing basic dental care services in Iran with a developing health care system.

Materials and Methods

Detailed description of methods has been presented in another article.¹³ The ethical considerations of the study were approved by the ethics committee of the research institute for dental sciences, Shahid Beheshti School of Dentistry. Based on the Korpi and Palme categorization,¹⁴ health care systems of Finland (an example of the encompassing model), UK (an example of the Beveridgian model), France and Japan (examples of the Bismarkian model), and Canada (an

example of targeted model) were selected to be compared. These are all countries with developed economy in which trends in population oral health status show promising

results based on WHO oral health database.¹⁵ We evaluated the characteristics of health care systems in these countries which provided a base for a comparative table (Table 1).

Table 1- Characteristics of oral health care system in some selected developed countries

	Methods of financing	Population coverage (type of dental services)	Location of services	Amount of payment by patients	Methods of reimbursement
Finland	Municipality (general tax+ governmental subsidy)	<21-year-olds (all dental services) All finnish inhabitants (all dental services except orthodontics and prosthodontics)	Public dental clinics (dentists hired by the municipality)	<21-year-olds: free >21-year-olds: franchise based on the tariff Preventive dental services: Free of charge	Salary
	Public health insurance (tax to salary)	All finnish inhabitants (all dental services)	Private clinics (dentists working in private sector)	All other services: payment by patients and reimbursed partly by the insurance	Fee-for- service
UK	National Health Service; NHS (general tax)	Target groups (primary dental care)	Access center (General dentist and public health dentist)	Free of charge	Salary
		Vulnerable groups (primary dental care)	Community dental services (General dentist and public health dentist)		
		All population (hospital services)	Hospital centers		
	Private insurance: Denplan (Premium)	All population (all services based on the contract)	Private office (those accept NHS patients)	¼ of fixed costs	Capitation
France	Sickness fund (employee-employer premium)	Employees and their relatives (dental check-up and preventive care including fissure sealant and conservative treatments)	liberal practitioners(General Practice)	For dental check-up and preventive care: Insurance directly pays dentists. For other treatment: insurance repay 70% of dental cost to patients.	For dental check-up and preventive care: Insurance directly pays dentists. For other treatment: insurance repay 70% of dental cost to patients.
	General insurance (social security fund, complementary insurances)	The poor and low-income people (dental check-up and preventive care including fissure sealant and conservative treatments)			
	Complementary insurance: Mutual insurance (employees)	Employees with a defined income (all services based on the contract)	Franchise based on the contract	Fee-for- service	
	Private insurance (individuals)	Individuals or groups (all services based on the contract)			
Canada	National insurance (tax)	<10-year-old school children (Quebec), aboriginals, those refer to hospitals (basic and hospital dental services)	Private and Community clinics, hospitals	Free of charge	Fee-for- service
	Private Insurance (government-employer)	Dental care plan (regular dental check-ups, radiography, preventive care, restorations, root canal therapy, prosthodontic)	Private dental centers and offices	Free of charge	Fee-for-service

			and orthodontic treatments)			
		Group plan (employee-employer)	The individual and dependents (all services based on the contract)			Franchise based on the contract
		Individual plan	The individual (all services based on the contract)			
	Government (general tax)	Target and vulnerable groups (only preventive care)		Public health centers (dentists hired by the government)	Franchise	Salary
		Government-managed health insurance	Workers of small factories with <1200 Yen (only curative care)			
Japan	Social health insurance	Self-managed health insurance	Workers of factories with >300 workers (only curative care)	Private dental centers and offices	Franchise: 30% of the total cost (children and the elderly are exempted from payment of franchise)	Fee-for-service Fee-for-service
		National health insurance	Farmers, unemployed, elderly, and retired (only curative care)			
	Private insurance (Premium)	Individuals or groups (all services based on the contract)			Franchise based on the contract	

This table included methods of financing, population reimbursement. The collected materials were then reworded coverage, setting (location for provision of services), type into the form of recommendation statements (Table 2). of services, type of providers and methods for

Table 2- Recommendations adopted from the comparative table of the characteristics of oral health system in the selected developed countries.

- 1-To maintain and promote oral health, all citizens must be able to properly receive basic dental care services.
- 2-Type of basic service of each country must be defined based on the oral and dental status of individuals
- 3-Considering the high risk of caries and periodontal disease and confirmed effects of preventive interventions, these services must be included in the basic dental package
- 4-Basic dental services must be covered by the national/public health insurance fund.
- 5-Basic dental services must be free of charge for those under 18 years of age.
- 6-The cost of basic dental services for those under 18 years of age must be provided by specific budgets of the Ministry of Health.
- 7-Citizens over 18 must pay part of the cost of basic dental treatment in the form of user-fee.
- 8-User-fee of basic dental treatment must be based on the type of service as percentage of the total cost.
- 9-The cost of basic dental services covered by insurance must be funded by the public budget (capitation), taxes and insurance premium.
- 10-Insurance funds must only have the responsibility to supervise and purchase the service. Provision of services must be done by other organizations.
- 11-Insured individuals must be free to choose where to receive the service.
- 12-Centers affiliated to the health insurance and the Ministry of Health must serve as specific centers to provide services.
- 13-The specific centers have the responsibility to provide periodic examinations, preventive services and approve the treatment needs of patients and refer them to other centers to continue treatment.

*Preventive services include fluoride therapy, fissure sealant, scaling and tooth cleaning

**Basic dental services include preventive services, pulpotomy, treatment of superficial caries of permanent teeth, extraction of hopeless teeth, periapical radiography and periodic examinations

A summary of the study and its background, details of the methods, the comparative table and the related recommendations were sent to experts in the health sector of Iran to obtain their opinion using a Delphi method. These experts were either senior university educators in related

fields or director and experts of related departments in the Ministry of Health and Ministry of social welfare. The criteria for selection the experts are presented in Table 3. Level of agreement for each of the components of the recommendations was recorded using a 9-point Likert scale.

For further analysis, scores 1-3 were regarded as “disagreement”, scores 4-6 as “mild or moderate agreement” and 7-9 as “agreement”. Any item of the recommendations that achieved the “agreement” response of 75% of the experts was accepted. Those items that did not

achieve the “agreement” response of 75% of the respondents were sent to the experts anonymously in the next run of Delphi. After three runs, we reached the consensus as the opinion of the respondents remained unchanged.

Table 3- The criteria for selection of experts in Panel discussion

1-Familiarity with the healthcare system of Iran
2-Familiarity with the rules and regulations of budgeting
3-Familiarity with the rules and regulations of insurance
4-Executive work experience in insurance and healthcare systems
5-Work experience in centers providing services or insurance companies
6-Scientific or research experience in healthcare or insurance systems

Those meeting four of the above-mentioned six criteria were invited for participation in this study

Results

Table 1, the product of first phase of the present study, presents components of oral health care delivery system in the selected countries. Variability in the components of oral

health care delivery systems represents various cultural, social, economic and political contexts of the countries. In total 24 experts in health sector in Iran participated in the present study. Their opinions are reflected in the figure 1.

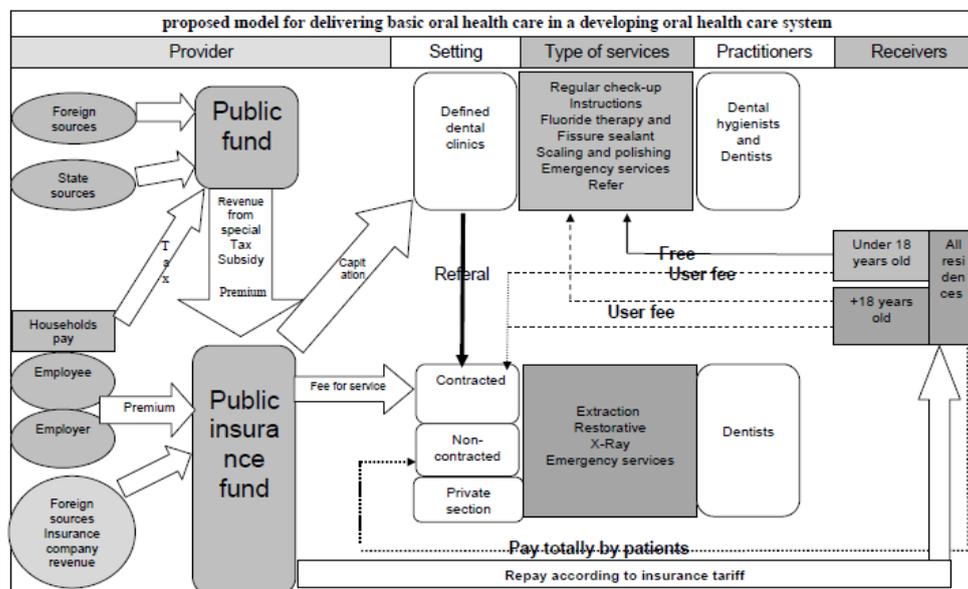


Figure 1- The proposed model for delivering basic oral health care services in a developing oral health care system

This figure shows the proposed model for delivering basic oral health care services achieved by Delphi method with 75% agreement among the experts.

Method of financing: two actors play their roles in this process:

- The government via: 1) General taxation, 2) Allocation a part of subsidies to health, and 3) Allocation a special yearly budget for oral health department.
- Insurance funds via: 1) premium paid by the employer-employee base, 2) Budget provided by the MOH, 3) International and national financial aids.

Population coverage (Oral health care recipients): The coverage of National health insurance (public insurance) must be universal and include all people residing in Iran. Considering the limited facilities and diversity of the population, the best strategy would be to cover specific groups to receive basic dental services (<18-year-olds) in the

first stage and then extend the insurance coverage to other groups.

Setting: 1) Defined dental clinics supervised by MOH and public insurance companies. 2) Private sector including contracted and non-contracted private dentists/clinics.

Type of services: Mandatory regular check-ups, oral health need assessment, preventive services, emergency treatments and referral of patients for more specialized dental care could be delivered in defined dental clinics. Tooth extraction, restorative treatments and emergency services may be provided in contracted private clinics via referral system.

Type of providers and method of reimbursement: practitioners in defined dental clinics can be dental hygienists and general dentists hired by MOH or the insurance companies that are paid by a capitation method. Contracted dentists only receive a fixed percentage of the cost according to a fee-for-service payment; the rest of the cost will be paid by insurance

companies according to tariffs. If an insured patient refers to a dentist who is not in contract with the insurance company, he/she has to pay for the entire cost of treatment. If the service is included in the list of treatment needs of the patient, after confirmation by the insurance company, part of the expense will be paid to the patient by the insurance company.

Percentage of out of pocket paid by people: basic services must be free of charge for those under 18 years of age and others must pay the fee. The percentage of patient fee paid by the adults varies depending on the type of service received. For instance 10% for the preventive services, 20% for fillings, 30% for extraction and 35% for denture. To control the costs of treatment, use of insurance advantages for receiving dental services requires strict adherence to mandatory periodic examinations.

Discussion

The most important role of a health care system is the provision of resources, easy access to health centers and controlling the affordability of services for ultimate users. For this purpose, the health policy makers must take measures to coordinate between these factors for better health promotion.

In order to promote oral health, most developed countries have established state funds that cover a part of the costs particularly for children and disadvantaged groups. Moreover, a complementary plan by national insurance funds also refunds a proportion of cost of health services to those who receive their oral health care via the private sector. In Finland with an Encompassing model the municipalities and the national health insurance system pay for the services. The municipalities cover the expenses of services using the municipal income tax, out-of-pocket fee paid by the patients (user fees), and state subsidies. The national health insurance covers the expenses of services using the employer-employee premium.¹⁶ In UK with a Beveridgian model, National Health System finances health care costs through tax payments. Less than 10% of the population pays for their medical expenses via private insurances.¹⁷ In Bismarkian model like France health service insurances (including three National Health Insurance Funds), universal sickness insurance and complementary insurance (mutual insurance or private insurance) cover the health care expenses. Complementary insurance covers the entire or part of the services that are not paid for by the national insurance.¹⁸

In Canada with a targeted system, national health insurance does not cover dental care. Thus, the costs of dental care are mainly covered by the private health insurances.¹⁹ In Iran, however, the expenses of oral health services are mainly paid out of pocket and in the private sector. The government and the public and commercial insurance funds cover a part of these expenses. As revealed in the results, all experts agreed upon increasing the share of national health insurance in covering the costs of oral health services. This has been emphasized in the Constitution of Iran and in the third five-year national development program. The government is,

therefore, assigned to provide basic dental services through national revenues.

Universal coverage of health services is a sign of socio-economic development in a society. It improves health outcomes through greater access to health services and provides people with financial protection against the cost of illnesses. For example in Finland¹⁶, and UK¹⁷ universal health care coverage for all citizens is provided. In France¹⁸ Health service insurances and universal sickness insurance, cover approximately 82% of the population. Approximately 90% of the French citizens voluntarily have complementary insurance. In total, 63% of the Canadians have private dental insurance, 6% are covered by the National Health Insurance for dental services.¹⁹ In Iran, around 85% of people have insurance. National health insurance should be expanded to cover all residents.

In the current study, the experts emphasized on compilation of service packages based on the current needs of the society and inclusion of preventive services and their coverage by the national health insurance. This has been experienced in some developed countries. In Finland, those under 21 years of age can receive all dental care services for free in the Public Dental Clinics.¹⁶ In France, patients pay for the surgical and conservative treatments and then the insurance company pays back as much as 70% of the paid amount (according to the tariff specified in the contract) to the patient. Examinations, conservative treatments and Preventive care such as; fissure sealant therapy are mandatory and free of charge for the age group of 6 to 18 years. The fee for preventive examinations is directly paid by the insurance companies to dentists.¹⁸ The high frequency of dental caries and periodontal diseases (dental plaque and calculus) among the Iranian young and middle-aged adults¹² and infrequent preventive care received by them indicate the inadequacy of the preventive programs in the oral health care system in Iran. Developing a comprehensive package including preventive care seems to be the first priority of the oral health care system. Reorientation of oral health services towards prevention is therefore required. This has been emphasized by the World Health Organization to be a priority for continuous improvement of oral health.²⁰

The main provider of dental care services in countries evaluated in the current study was the private sector. Health insurances mostly purchased the services required by the insured population from the private sector. In Finland, UK, and France both public sector and private sectors provide health care services. In Iran, only 10% of the dentists work in the governmental sector or centers affiliated to public insurances. Although the ratio of dentist to the entire population is about 1/3,000, this ratio is 1/37,500 for the public centers and 1/31,500 for the insurance centers.²¹ These values indicate inadequate accessibility to dentists in public sector. To improve the efficacy of services, the MOH and the insurance companies must come up with suitable strategies to seek the cooperation of dentists working in the private sector. This is why in this study the experts suggested that the

governmental (public) centers and insurance centers should play as main centers to provide periodic examinations and preventive treatments and then refer patients to the private sector in contract with them for other services.

There are various methods of payment to the service providers including salary, capitation, and fee-for-service. Each method affects the service provision behavior of the provider. Studies have shown that when the income of the service provider depends on the type of services, the result would be more service delivery by the provider to the patient or shift of the services to a type which brings more income to the provider.²² It has been shown that capitation is the most appropriate payment method for developing preventive services. Although under-treatment has been stated as one of the limitations of this method of payment, studies in Norway²³ showed no evidence of under-treatment in preventive services delivered by dentists. Fee-for-service payment should be considered for the basic services delivered by the private sector. The capitation method is suitable for basic services and the fee-

for-service method for referral of patients to the private sector. This has been agreed upon by the experts in this study.

Conclusion

A suitable model for oral healthcare delivery system in Iran requires universal health insurance coverage, a targeted dental service package with special focus on preventive care, encouraging private practitioners to participate in the public health insurance plan, and financing services through government revenues, premium, and health tax. Mandatory regular dental check-ups should be planned for the continuation of insurance benefits. This model could be applicable in countries with the same condition as Iran.

Conflict of Interests

None Declared ■

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