DEVELOPING A MODEL FOR IMPROVING THE QUALITY OF IRAN'S PRIMARY HEALTH CARE SYSTEM THROUGH CLINICAL GOVERNANCE: A DELPHI STUDY

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Abstract:

Clinical governance is range of policies used to raise patient satisfaction, improve health care outcomes and reduce adverse events. The aim of this study is developing a model for improving the quality of Iran's primary health care through clinical governance. First, literature review and focus group discussions were used for finding pillars and components of clinical governance model in Iran's PHC system. Then these items were confirmed by using Delphi study and expert panel sessions. Developed model consist of one prerequisite Pillar (leadership), 5 main pillars of quality based management, community participation, health information management, human resource development, monitoring and evaluation, 20 components and 75 indicators. It is derived from international literature and viewpoints of domestic health specialists in accordance with Iran current health system and has the potential to improve Iranian health status and indicators.

Key words: Clinical governance, Delphi Iran, Model, Primary Health Care, quality.

Introduction:

Primary Health Care (PHC) system of Iran has been created to improve the access of disadvantaged groups and reduce health inequalities between urban and rural areas [1]. The first unit of health service delivery in Iran's rural areas is health houses. Each health house covering approximately 1200 to 1500 individuals provides services to one main village and one or more satellite villages. Community health workers who work in health houses are called Behvarz, who are selected from the local area. Health centers that supervises the health houses cover about 6000-10000 people. The staff of each center includes one or two physician and some health technicians. Every health center supervises and covers five health houses. The referrals hospital providing services for health centers are the

district general hospitals which have main specialties such as internal medicine, surgery, pediatrics, O&G and anesthetics [1].

In urban areas, health posts provide similar services as health houses. This network is managed by district health centers, under the supervision of medical sciences universities. There is at least one medical sciences university under the supervision of the Ministry of Health and Medical Education in each province [2].

Iran's health indicators are improved every year after establishing PHC system [3]. Iran's health indicators progress was so rapid; thereby some of the weaknesses and shortcomings of the system have been neglected. Literature review shows that Iran's PHC system has a lot of weaknesses in some areas; such as old PHC structure requiring to be updated, traditional and poor information system (paper-based), inappropriate human resources management, low levels of community involvement in solving health problems and low degree of system accountability [4-8].

It seems that Iran's current PHC system requires a series of qualitative reform for mitigating its weaknesses and challenges. Countries with similar problems have benefited the advantages of clinical governance in their own PHC system. The term "clinical governance" describes a wide range of policies used to reform the National Health Service (NHS) in the United Kingdom (UK) in which primary care groups were expected to implement clinical governance in their PHC organization/teams [9]. The aim of using clinical governance in PHC is to raise customer satisfaction, improve collaborative relationships and efficiency within and across PHC teams, increase job satisfaction for professionals, improve care outcomes and reduce adverse events [10].

Based on the adoption of clinical governance by Iran's Ministry of Health, this framework was implemented only in second and third levels of health care system (hospitals), but the first level of health service (PHC level) was deprived of implementing this quality improvement agenda due to lack of clear pattern [11], Therefore, the aim of this study is Developing a model for improving the quality of Iran's PHC system through clinical governance.

Methods:

We did literature review to find clinical governance pillars and components in developed countries PHC system.

All of retrieved literatures were studied carefully by authors and clinical governance models in PHC systems were extracted from literature. In the second stage we did a qualitative study to gather experts' opinions about pillars and components needed for Iran's PHC systems quality improvement model based on clinical governance. Three focus group discussions (FGD) were conducted with seven PHC experts in Tabriz University of medical sciences, between January and June 2015. Participants were selected using purposive sampling, as an appropriate method of sampling in

qualitative studies [12]. The participants were active in decision-making positions and they were as executive and academic staff inside health system who participated from different regional and national health levels. The inclusion criteria included having a minimum of five years of experience in PHC, background education in the field of medical sciences and the ability to express their opinions. The lack of tendency to participate in the study and revoking conscious satisfaction were considered as the exclusion criteria. Written informed consent was obtained from all participants prior to recording. All FGDs were performed by the first author and recorded on a digital voice recorder. The facilitator was an academic member of Tabriz University of Medical Sciences holding PhD in health care services management with over 15 -year experience in the field of PHC. Each session lasted between 40-75 minutes (Mean=60'). Before starting FGDs, researchers explained the study objectives and reasons for their selection of FGD and clarified benefits of the study and how they could access the results of the study. The key question for the FGDs was: "What pillars and components are essential for the Iranian model of quality improvement in PHC system based on clinical governance concept?"

Follow-up questions continued based on the participants' responses. The FGD sessions were continued until findings seemed repetitive. Data collection and analysis were done simultaneously during 6 months in 2015. The MAXQDA10 software was used for transcription and classification of codes. Conventional content analysis was used to identify categories and themes. Transcribed FGDs were reviewed several times to understand the relations between concepts and then important sentences were highlighted and codified into the smallest meaningful units. Next, the primary codes were classified and a coding scheme was shaped. Draft reports were sent back to each participant for respondent validation. To ensure the credibility, dependability, and conformability, several methods were used. Prolonged engagement and reviewing handwritten notes by participants to get feedback increased the credibility of the research. Some sections of the transcriptions and extracted codes were sent to external observers to confirm dependability. For facilitating conformability, the research team members discussed the content of the study until consensus was reached. In the third stage, Pillars and components which were obtained from Literature Review stage and focus group discussions categorized in 8 pillars and 118 components in three sessions of experts panel. The pillars and components were sent to 40 qualified experts in the form of Delphi questionnaire. In this questionnaire, experts were asked to focus on the importance and applicability of pillars and components. Scale used in this study had 4-point. 34 questionnaires with response factor of 85% were collected. Using the median score of respondents, items with median score of 3- 4 were admitted, and 1 -2 were excluded from the model, and items with median score

of 2 -3 were selected for discussing in expert panels. After the Delphi study and organizing four sessions of expert's panel, PHC quality improvement models pillars and components were identified. In forth stage of this study, we have identified measurable performance indicators for this model components by using literature review and four sessions of experts panel. Evidences on PHC indicators were assessed with two authors . After reviewing related documents, all PHC performance indicators were extracted. Indicators were finalized for quality improvement model of Iran's PHC system through clinical governance, by holding nine sessions of expert's panel between October 2015 - May 2016.

Results:

Documentation review indicates that clinical governance exist in limited countries PHC system such as United Kingdom, Australia and New Zealand. After studying their models, we had found eight pillars and 78 components that were repeated in different literature.

In second stage of this study, for collecting the viewpoints of related specialists about key elements and components of PHC quality improvement model, seven experts participated in three separate FGD sessions .The mean age of the participant's was 51.7 years (ranging 46–63) and their mean experience was 22.3 years in PHC (ranging 17-34). There were six males and one female; 100% of participants had higher education in medical sciences (pediatrician, psychiatrist, social medicine, pathologist and Ph.D. in health services management).

After codification and analyzing data, eight main pillars (management and leadership, effectiveness of PHC, human resource development, safety, quality improvement, health information management, community involvement and customer participation and health care evaluation and audit) and 49 components were extracted,

After aggregation of pillars and components which were obtained from literature review and focus groups, Delphi questionnaire was designed and sent to qualified professionals. This questionnaire had 8pillars and 118 components. By gathering Delphi questionnaire, subsequent expert panel sessions (4 sessions) were held. Iran quality improvement model for PHC system, with one prerequisite Pillar (leadership), 5 main pillars (Quality Based Management, Community Participation, Community Participation, Health Information Management, Human Resource Development and Monitoring and Evaluation) and 20 components was developed. 462 PHC indicators which were obtained from literature review, were examined in nine sessions of expert panel, some indicators were changed, some were removed, and some were accepted, considering the Iranian PHC system quality improvement

model and PHC system status. Finally, 75 indicators were introduced for proposed model. Iran's PHC quality improvement model through clinical governance and selected performance indicators is shown in table 1.

Table 1: Iran's quality improvement model in PHC, pillars, components and related indicators.

Pillars		Components	Indicators
Prerequisite Pillar	**Leadership**	Needs based strategic planning	Existence of needs based strategic planning
			Existence of an annual standard action plan based on strategic planning
		Accountability and Responsiveness	Percent of addressed community health needs
			The percentage of availability of assessments and reports on the quality and cost of the health services for population
		Organizational environment	Dominancy of observance of justice in organization interactions
			Status of occupational security
			Existence of respectful and human stick atmosphere in organization
			Rate of organization trust (staff)
		Decentralization	The percentage of programs that have been delegated to every level of organization
			Degree of staff's authority to do/complete organizational tasks
Main Pillars	**Quality Based Management**	Continuous quality improvement (CQI)	Presence of appropriate structure for improving the quality
			The percentage of improved processes in healthcare units
		Quality of Care (effective, safe, efficient, accessible, acceptable)	The proportion of patients with diabetes / high blood pressure / depression with complete care plans that are in accordance with agreed clinical guidelines (**effective**)
			The proportion of patients with diabetes / high blood pressure / depression with a complete care plan who were given recalls or reminders as recommended in the care plan (**effective**)
			The proportion of patients with diabetes / high blood pressure / depression with a recorded care plan that is reviewed by the planned review date (**effective**)
			The proportion of patients whose medication list was reviewed by a clinician within the previous 12 months (**effective**)
			The rate of right implementation of hand hygiene (**safety**)

			Existence of Policies to prevent the misuse of look-alike, wright-alike medication (**safe**ty)
			Rate of medication errors (**safety**)
			existence of medication alerts strategies in PHC(**safety**)
			Percent of care related information delivered (**safe**ty)
			The proportion of eligible workforce who have received infection control training within the previous year (**safety)**
			The incidence of needle stick within the previous year (**safety**)
			Percent of staff with active and comprehensive health file (**safety**)
			Percent of health workers injuries in PHC (**safety)**
			Geographic accessibility of health care facilities (**accessibility**)
			Percent of local people who have active and comprehensive health file (**accessibility**)
			Percent of standard referrals according to protocol (**accessibility**)
			Percent of referrals facilitated by referral coordinator (**accessibility**)
			The percentage of referrals with feedback (**accessibility**)
			Average waiting time to see a doctor if non-urgent (**accessibility**)
			Percent of on time emergency care (**accessibil**ity)
			The proportion of customers who have received communications that are culturally and linguistically appropriate (**acceptable**)
			Percent of duplicated medical tests /par clinic per year (**efficient**)
			-Average per capita PHC operational expenditures (**efficient**)
		Risk management	percent of employees having appropriate risk management knowledge
			Existence of prioritized and updated risk list in healthcare units
			The percent of risk reductions have been done in healthcare units

Main Pillars	**Community Participation**	Client Satisfaction	Customer satisfaction rate
			The rate of recommendations of PHC provider to others
			Percent of customers on time referring according to planning
		Customer and community empowerment	The rate of community health literacy
			The rate of general self-care in community
			The rate of familiarity of customers with their rights
			The number of active NGOs in catchment area
			Existence of health board of trust in catchment area
			Percent of decision made under supervision of local board of trust
			Proportion of non- governmental members in health board of trust
		Customer voice	The proportion of on time response to customers complaints
			The rate of customer demand has led to changes.
		Public - Private Partnership	The number of outsourced services to non-government sector
			The proportion of health services provided by the private sector
	Health Information Management	Improving Quality of Health Data	Health data quality index
		Establishment of health indicators identification in all levels	Percent of health indicators with complete identification in every levels
		Dissemination of Health Information	Public access to health information are needed
		Development of Information and Communication Technology	The percentage of health units with internet access
			The percentage of population with electronic health file
			The percentage of health units with standard website
			Use of information and communication technology in health units
			Existence of two-way electronic communication in health facilities
	Human Resource Development	Staffs Individual /Professional Development	Percent of new staff training
			The percentage of staff receiving continuous training
			The percentage of staff with professional development plan

		selection criteria of staff and managers	Percent of staff/ managers selecting or promoting according to clear criteria
		Staff encouragement and motivation system	Percent of practices which is appreciated
			Percent of work burnout
			staff satisfaction rate
		Staff monitoring and Evaluation	Percent of staff informed about their job description:
			Percent of staff who are credentialed in last 5 years
	Monitoring and evaluation	comprehensive monitoring and evaluation system	Percent of units that had comprehensive annual evaluation
			The number of reforms that have been conducted according to evaluation results
			The percent of audited health services
			Rate of resource allocation based on comprehensive evaluation
			Rate of staff/managers promotion based on comprehensive evaluation results
			Percent of organizational units that are accredited

Discussion:

Iran's PHC systems quality improvement model, consists of one prerequisite pillar (leadership), five main pillars (Quality Based Management, Community Participation, Health Information Management, Human Resource Development and Monitoring and Evaluation), 20 components and 75 related indicators.

Documentation review indicates that clinical governance model in primary health care exist in limited number of developed countries. The United Kingdom clinical governance model in their PHC system is composed of "Clinical effectiveness", "Risk management", "Provider education and development", "Clinical audit", "continuing quality improvement", "Quality assurance", "Research and development "pillars [13]. "Provider education and development " pillar in United Kingdom's clinical governance model in PHC, is seen in Iran's quality improvement model too, under the title of "Human Resource Development" and other pillars such as Clinical effectiveness", "Risk management", can be seen as components of quality based management pillar of Iran's model. "Clinical audit pillar in united kingdom model is as a subdivision of "monitoring and evaluation" pillars of Iran's model.

"Effectiveness", Safety", "Competence of and education to support service providers", "Consumer and community involvement", "Information management & reporting", "Governance, leadership & culture", "Appropriateness", "Acceptability" and "Efficiency" are Australian clinical governance pillars [14].

A large number pillars of Australia's clinical governance model such as "education, training and continuing professional development", "use of information", "Governance, leadership & culture" and "patient involvement" are similar to Iran's quality improvement models pillars, but they are listed with different titles, for example in Iran's PHC governance model instead of "education, training and continuing professional development", "use of information" we can see human resource development" and "health information management". Other pillars of Australia's clinical governance model such as effectiveness, safety, appropriateness, acceptability and efficiency exist as subset of quality based management pillar of Iran's quality improvement model. When we compare Iran's developed model for quality improvement with developed countries models, we can see that most elements are similar. Slight differences among these models are related to special health structure and status of PHC system of each country. Experts believed that "Leadership" pillar must be the foundation of Iran's quality improvement model .because the aim of clinical governance in PHC, is improving quality of care and raising patient satisfaction. Leadership plays a key role in improving the quality of services and organizational processes [15]. They guarantee that customer voices can be heard at every level of organization and appropriate response to patient experiences, concerns and needs will be given [16]. Participants of this study believed that PHC organization should focus on four components of; Needs based strategic planning, Accountability and Responsiveness, Organizational environment, Decentralization in the prerequisite pillar of leadership all of which are the elements of powerful leadership.

In a wider literature review by Scott et al, inadequate or inappropriate leadership is highlighted as a key factor which may impede cultural change within healthcare organizations [17]. It is public belief that changing the culture of health organizations is a fundamental prerequisite for every quality improvement program such as clinical governance [18]. The first main pillar which is presented for Iran quality improvement model is "quality based management". Quality based management is way of organizing work flows in health care organizations to reach optimum quality results and outcomes, i.e. quality of health care services, patient satisfaction, employee satisfaction and overall performance results [19]. Continuous quality improvement (CQI), Quality of care (effective, safe, efficient, accessible, acceptable care), risk management are the components that will help Iran's PHC system for achieving aforementioned goals. Community Participation is second main pillar of proposed model. It means "people voluntarily, as a consequence of motivating and encouraging, agree to participate in community projects, often by sharing their labor and other resources instead of obtaining some expected benefits [20]. On the other words, participation was defined as an enabling tool through which individuals and local communities take responsibility for

diagnosing and working to solve their own health and development problems [21]. Iran's PHC system has some challenges such as lack of the sense of ownership among community members towards health system [7], reducing the amount of community involvement in solving health problems [8], inadequate mutual information flow between families and providers [22], lack of flexibility and accountability in the health system [23] and health workers insufficient training in communication skills to properly communicate with people [24]. This study experts proposed four components of "Client Satisfaction", "Customer and community empowerment", Customer voice" and "Public - Private Partnership" to improve PHC system in this pillar.

Health Information Management is third main pillar of Iran's quality improvement model. information is a key resource for PHC organization, and has to be well managed in order to ensure effective and efficient use, health information management means using appropriate strategies for ways of collecting, storing and processing health data, data and information flows, information dissemination and use, tools for examining information systems such as information audit and identification of who is involved, where and when [25]. Weakness in current information system of PHC in providing managerial data for decision making [26], lack of infrastructure, hardware and software for data transmission from production places to consumption centers [27], lack of data management and information analysis skills in health workers[5] and lack of coherent strategy and adequate investment in electronic health [6] are Iran's health system weakness in the field of health information management. According to the study experts, improving quality of health data, establishment of health indicators identification in all levels, dissemination of health information and development of information and communication technology, can lead to solve some of the problems mentioned. Fourth main pillar of quality improvement model in PHC of Iran is "Human Resource Development"(HRD). It is a process of developing and/or releasing human experience via organization development and staff training and development for the purpose of improving performance [28]. Iran's PHC system is facing some challenges in this field such as lack of manpower planning in PHC [6], lack of sufficient professional capacity in some categories of human resources [29], low quality of staff training [6] and low level of motivation in health care workers [27]. Staff, individual /professional development, implementing selection criteria of staff and managers, staff encouragement and motivation system and staff monitoring and evaluation are components that can be effective in improving Iran PHC system in this area. The last main pillar introduced in this study is "Monitoring and evaluation". Monitoring PHC interventions means using collaborative approach to continuously ensure that activities are implemented based on the objectives of the organization. Monitoring information is generated to make necessary

changes for effectiveness and efficiency of process. Effective monitoring done by right tools, the right questions, examining the right things, measures progress of the PHC process and programs. Monitoring is performed during the process in a consistent way. Evaluation means determining immediate outputs and outcomes of the PHC process, and degree to which predetermined objectives are obtained. PHC evaluation also helps in distinguishing current health statues, facts, priorities, objectives, and indicators, if programs objectives are gained using agreed indicators, it Justifies resources consumed, shows what is performed right and what is performed wrong, how not to repeat mistakes and what to do to improve programs [30]. The participant of the study believed that it is possible to measure PHC system performance in the field of quality improvement, responsiveness to customer needs and customer satisfaction that are the ultimate goal of clinical governance in PHC system by implementing "comprehensive monitoring and evaluation system" consisting of regular evaluation, using evaluation results in PHC decision making, health audit and accreditation system,.

Conclusion/recommendations: The aim of this study is developing suitable framework for improving the quality of provided services and responding real needs of customers and other stakeholders in Iran's PHC system. Iranian quality improvement model in PHC system which is derived from international literature and viewpoints of domestic health specialists is prepared according to the Iran's current health system. it is consist of one fundamental pillar of leadership, four main pillars of quality based management, community participation, health information management, human resources development and monitoring and evaluation and related components and performance indicators. This model has the potential to improve Iranian health indicators and massive transformation in the field of PHC. It is suggested that in future studies this model be implemented in Iran's PHC level and its weakness and problems in real condition be identified

Ethical approval: The approval to conduct the study was granted by the ethics committee of Tabriz University of Medical Sciences (Iran).

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