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Case Report

System Structure of Shiraz Diabetes Information Registration – 2014

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ABSTRACT

Introduction: In new millennium, people face new challenges in healthcare such as growing procedure of non-infectious illnesses. Among non- infectious diseases, diabetes and cancer have more prevalence than other diseases. Prevention goals realization, screening plans in the state health system and evaluating the efficiency rate of strategies relating to it is possible when national system of diseases registration to be created and complete and up to date data to be collected. This study has been conducted with the aim of examining Diabetes information registration system structure in Shiraz in 2015.

Methodology: The present study is of applied type and its study method is descriptive. The study population includes medical documents departments of general hospitals and selected Diabetes unit of health centers. In this research, the required information was completed by checklist and through interview and observation. The obtained data were categorized and stated in the format of tables descriptively.

Findings: Findings obtained from this research showed that less than half of studied centers for collecting data used manual method and the rest used semi- mechanized method. In the field of Diabetes data process, less than half of centers use international books for processing data. Almost all studied centers provide their information for patients and healthcare providers. None of studied centers used standard forms of Ministry of health especial to Diabetes disease. Also, it was specified that health centers collect all required data except specialized data of caring eyes and specialized data of leg care, but hospitals due to lack of special form of diabetic patients , only collected demographic data completely and other information of diabetic patients are recoded and stored with format similar to other patients. About method of distributing information, it was specified that all studied centers provide the information to the patient and healthcare providers, with this difference that healthcare centers provide information in the format of abstract and as table and diagram for higher authorities of the organization. Finally, that the follow-up method of diabetic patients in healthcare centers is performed continuously through phone but in hospitals the patient status follow-up after discharge is not performed.

Conclusion: Regarding the importance of diabetes significance, designing and implementing diabetes clinical information system in hospitals by accurate planning and utilizing health information technology management domain experts could be an important step in improving patients care and control and prevention of diabetes.

Keywords: registration national system, diabetes, diabetes information registration

INTRODUCTION AND PROBLEM STATEMENT

Today, diabetes is the most prevalent metabolic disease and a general health problem which leads to creation of complications, morbidity and reduction of life quality in stricken people and so their mortality.This disease has had an increasing growth due to population age increase, increasing of population growth, increasing of obesity prevalence due to inactiveness, more consumption of simple sugars and foods with high calorie. Prevalence of this disease in many societies especially developing countries is increasing. In Iran, based on the performed studies in 1998 to 2001, diabetes prevalence in Tehran had been estimated 10.6%. According to studies of medical sciences research national center, diabetes prevalence in 2001 in the population older than 20 years was estimated 67.4% or 6.1

million persons. Also, it was estimated that in this year near to 100 thousand persons have been afflicted to diabetes.At the same time, direct and indirect costs of diabetes are high comparing other diseases. Therefore, controlling this disease is considered as a priority in all countries including Iran. Necessary element in prevention and control of each disease is existence of sufficient and accurate information about patients suffering that disease, quality of disease incidence and its time and place. In other words, for monitoring care from patients with diabetes and consequences of this care, accurate data should be provided for healthcare providers. In fact, effective coordination in caring diabetes by healthcare providers needs documentation and reliable exchange of diabetes information.For modification of healthcare, supplying needs such as the following cases should be noticed: creating a distinct system of disease registration for monitoring the disease and provided care quality and also existence of qualified practitioners of health information management who have the ability to design, implement and manage registration system.

Diabetes registration system increases quality of patient care, safety and efficiency of patient care. In hospitals, this system is considered a very important tool for physicians and in clinics causes achieving very important clinical results. In diabetes information registration system all information relating to diabetic patients registered. Using this system, healthcare providers could register vital and important components of care plan, while they could see a summary of cares given to patients when visiting the patient and also register new information in this system. This registration system finds more significance when healthcare providers want to make important decisions using it.

At the present time, inour country there is no formal structure about collecting, analyzing and giving feedback to diabetic patients and even other diseases data. Though, in our country registration and report of diabetes has been noticed since 1991, but collecting information in these years has been cross-sectional and hadn't have continuity and cohesion. Now, there is no formal system in the country to oblige hospitals to accurately collect information and type of collected information in hospitals is different due to lack of an identical form, but we can say that demographic specifications, information of controlling pregnancy diabetes and consequences have been considered in all files.

Goals of diabetes clinical registration system includes identification of groups at risk, reduction of the patient economic and human costs reduction, codifying regulations of prevention and control healthcare, improving care quality and accurate informing to patients and specialists.

Advantages of Diabetes Registration System

Population registration books provide a suitable base for studies of autoimmune diseases group and offer accurate and exact information regarding diseases outbreak in whole population.Registration system for chronic diseases like diabetes could specify diabetes epidemiologic trend in the population. This system allows disease epidemiology to be described even based on new criteria and to provide fast and on time warnings for healthcare providers. Also, it causes production of report and help performance of intervening plans in state, regional and local levels.Registration system could be a valuable resource for performing epidemiologic studies and provide a suitable feedback for the organization and physician. Diabetes registration system could collect and process data of diabetic patients and provide them in information format.

Through creating diabetes information registration system creates the possibility of sharing information, improving support from the diabetic patient, sharing in a safe health network and also cooperation in diabetes matter.Since the patients information are registered by their user identification, the patient registration system reduces the possibility of error outbreak and disorder in this field, causes reduction and finally omission of disorder in the method of taking the patients history and also using existing resources in all time dimensions (assimilation), causes stabilization of economic aspects in improving treatment results, full support of diabetic patients registered in system (stability).Among main goals of diabetes registration system are data integration, support in decision making, examining and access to data in care moment. But, the registration system aim is beyond these goals and the most important aim is planning in national level.

With progress of information technology, potential of diabetes registration systems performance will become more than usual and eternal performance. These potentials include dynamic integration of data, support decisions, data access.Using clinical information systems like registration systems and health electronic record causes increasing of quality, security, effectiveness of patients care and increasing of hospital working course.

History and Codification of Diabetes Registration Books

It is for some years that necessity of collecting, retrieving and analyzing diabetic data suing diabetes registration books have been accepted by physicians and epidemiologists.

One of the first books of childhood diabetes registration books was created in 1979 in suburb of Elgin Pennsylvania with joint cooperation of Petersburg children hospital, Petersburg university epidemiologic department and practitioners of hospital health information management in its suburb and surroundings. Now, this registration book has been considered as a pattern for registering diabetes all over the world and Petersburg University has been selected as cooperative center of world health institute for training and diabetes registration. In 1980, bigger steps have been taken for improving diabetes information system and in 1990 simultaneous with the progress of information technology, a great progress occurred in this field. It is for years that diseases registration book is used in US, for example in New York Glycosylated hemoglobin registration system was created which could help healthcare providers to trace diabetic patients.

Diabetes Information System Goals

According to assertion of world health organization and international federation, diabetes registration national system goals includes: national studies, planning, implementation, qualitative auditing of healthcare, health information feedback for preserving health, creating evaluation and comprehensive plans of identifying and controlling diabetes, providing effective and efficient healthcare for diabetic patients, performing research and utilizing monitoring and control systems using information technology for securing quality of diabetes healthcare presentation.

Among other diabetes information registration system, we can point to identifying patients with diabetes and their first grade relatives respectively for treatment continuation and examining existence or lack of existence of diabetes, continuation of caring diabetic patients through follow-up and their continuous calling, providing multi-specialization care to patients and improving their self-control, quality control and evaluating provided care through calculating parameters and indicators resulting from diabetes and also providing statistics of disease and mortality due to diabetes to respective organizations.In international level, some studies have been performed like Diamond which is a multinational project of world health organization for children diabetes. Main goals for performing these studies include:

Monitoring international patterns of Insulin-dependent sweet diabetes accession till 2000, basic provision for standardized studies in the field of risk factors of insulin-dependent sweet diabetes , evaluating healthcare (for example accessibility to insulin) and health economy relating to diabetes.

Diabetes Information System Structure

Diabetes information system has a specific structure which is firstly started from region level and then develops to national level. For example, in US diabetes information registration system has been started in 1979 and now has been promoted to diabetic patients' information electronic registration level by multiple organizations such as US diabetes association. In England, has also started regional activities of diabetes information registration and hospital patients registration since 1980 and in 2002 a project under the title of national plan of diabetes clinical auditing support was organized in national level.In Iran, Ministry of Health has been considered as responsible of the state diabetic patients' information registration national system. In 1996, the state diabetes committee was constituted which acted as a supervisor committee. Diabetes committee is in fact center of codifying policies relating to diabetes plans. This committee is responsible for planning, implementing, creating motivation and evaluating all activities relating to diabetes in institutes. Presidency of medical sciences university is at the top of this committee and its members include: physicians, nutrition experts, diabetes unit nurse, managers of battling with diseases group, experts responsible for non-epidemic diseases, health chancellors, treatment and medicine, health information management and information technology. Diseases management center is one of subsets of health adjacency of diabetes information registration center.Data relating to new cases of diabetes after registration are respectively reported to the city registration center, then to province registration center (regional registration center) and finally to national center of diabetes center.

So, valuable information about diabetes accession, complications due to it and survival and death of the country diabetic patients is provided. It seems that in near future, diabetes information system turns to one of the most vital systems in providing effective and safe healthcare.Aligalbandi et.al (2006) performed a study under the title of examining information registration status in diabetic patients' records of Sari city treatment and training centers. Findings showed that despite the performed efforts in recent years in the field of reinforcing more patients information registration and physician training in the field of accurate diagnosis based on diseases international categorized needs, still there are many problems in registering necessary and essential needs. Then, using specialized forms of diabetes which are designed and confirmed by Ministry of Health is suggested in treatment training centers. Hosseini et.al (2006) performed a study under the title of examining diabetes information registration system in some countries. The performed study in these countries shows that these countries by investing in this field have had a considerable role in progress of caring diabetic patients and finally concluded that none of Tehran hospitals have had registration system and only one hospital performs some activities in this regard which is in collecting data.

Jahanbakhsh et.al (2005) conducted a study under the title of designing minimum data series of sweet diabetes: base of diabetes management effectiveness indicators. In this study, they examined diabetes minimum data series in Tehran city and compared it with other countries. In this stage, it was specified that at the present time there is no standard and uniform series of diabetes minimum data in Tehran city hospitals. Also, it was specified that countries of America, Australia, Scotland and Finland are among countries which have utilized diabetes minimum data in managing diabetes.

Hengbeen et.al (2007) performed a study under the title of registering diabetes in healthcare centers – describing epidemiology of type II diabetes. In this center, epidemiology f type II diabetes since 2005 to 2008 was examined. The aim of this study was determining age, race, type of treatment and hemoglobin level of diabetic patients and the study showed that diabetes registration system is able to provide a base for evaluating care from diabetic patients and also a vital tool for implementing future plans.Larsen et.al (2002) performed a study under the title of long term evaluation of diabetes care management system in Integrated Heath Network. In this study, it was tried to address the impact of Diabetic Care Management system on glycosylated hemoglobin, LDL and HDL.

Wyne performed a study under the title of information technology for treating diabetes: improving results and controlling costs in US.

In this study, it was specified that type II diabetes prevalence from 1990 to 2002 has increased about 61%. Also, US diabetes association has estimated that costs in 2002 has been about 132 billion $ which will increase each year for 200 billion $ till 2020.

METHODOLOGY

The study method has been descriptive and it was performed by cross sectional method. The study setting included general training hospitals of Shiraz medical sciences university and also healthcare centers. The statistical population was constituted from medical document sector of general training hospitals of medical sciences universities (Namazi and Faghihi hospitals) and diabetes unit of health centers (clinics of Nader Kazemi, Fatematolzahra, MosaebnJafar and Golestan). Selection of the above centers has been due to existence of diabetes center.

For collecting required data in each hospital and health center, a checklist was provided. This checklist has been designed by the researcher and through internet sources. Checklist validity was confirmed by experienced professors. The checklist contained 10 parts including various used forms, various data, data references, data process method, required equipment and space, acceptance criteria, data collecting method, data references, information distribution, reporting method, patients follow-up which was completed through observation and interview.

In this study, data after collecting and revising entered Excels software and was analyzed and information has been provided in table format.

Findings

In this study, researcher examined features of diabetes information registration system in selected healthcare centers in Shiraz city and surveyed 10 goals that the results are as follows:

The results obtained from this study about determining various used forms in selected centers showed that none of healthcare centers used standard forms of Ministry of Health, in this form that health centers used state plan of diabetes prevention and control forms and hospitals hadn’t designed forms special to diabetic patients. So, type of information collected by these canters was different with each other.The results obtained from this study about determining method of collecting data in selected centers showed that less than half (33%) of centers processed their data manually and the rest of centers through semi-mechanized method.Based on a study conducted by Morris (1996), it was specified that electronic system comparing manual systems has more ability in identifying diabetic patients. At the present time, electronic record of diabetic patients' information has been promoted by multiple organizations such as US diabetes association. In electronic system, creating and storing patients' information and relations have been mechanized.

Table 1.Distribution of absolute and relative frequency of various data collected in Shiraz selected healthcare centers, 2015

selected centers various data	general training hospitals	health centers	total	
			frequency	percent
demographic	2	4	6	100
data relating to the patient status	-	4	4	66.4
pregnancy diabetes data	-	4	4	66.4
laboratory data	-	4	4	66.4
specialized data of eye care	-	-	-	-
specialized data of foot care	-	-	-	-
data of illness course	-	4	4	66.4
data relating to diabetes consequences	-	4	4	66.4
data relating to nutrition	-	4	4	66.4
medicinal data	-	4	4	66.4

Abdelhak (3003) believes that though registration books may be kept manually or computerized, but an incorporation of diabetes registration books with hospital clinic information system are suggested. The results obtained from this study about determining various collected data in selected centers showed that health centers collect all required data except specialized data of caring eye and specialized data of caring foot , but hospitals due to lack of special form of diabetic patients , only collect demographic data completely. Therefore, necessity of having standard forms and minimum data series is felt. Minimum data series as a conceptual framework have included information relating to care effectiveness.Jahanbakhshet.al (2010) concluded that now there is no standard and uniform minimum diabetes data series and it seems that need to having minimum data series in the state hospitals is felt. The results obtained from this study about determining data collecting resources in selected centers showed that health centers acquire the patients data from the patient himself and their records, laboratories and patients acceptance discharge books, but hospitals use the patients or the patients records and don't use other resources like clinics and drugstores for collecting data. It is required that for better identifying of diabetic patients, all of these resources to be connected.

Table2. Absolute and relative distribution of data process method in Shiraz selected healthcare centers

selected centers various processes	general training hospitals	health centers	total	
			frequency	percent
manual process using diseases international books	-	2	2	33.2
manual process without using diseases international books	-	-	-	-
computerized process using diseases international books	-	-	-	-
semi-mechanized process using diseases international books	2	2	4	66.4
process using ICD-10	2	-	2	33.2

According to a study which was performed by Corneliu (2010), it was specified that data sources could include resources of drugstore, laboratory , payment system of diagnosis – dependent group, registry office and so on. The results obtained from this study about determining method of distributing information in selected centers showed that all centers provide information to the patient and healthcare providers, with this difference that health centers provide information in the format of abstract for the organization higher authorities. Hosseini (2008) believes that information obtained from data process should be offered to the patient, providers of care relating to diabetes and treatment assistant. The results obtained from this study about determining reporting method in selected centers showed that only health centers are active in reporting field about its unit activities to higher authorities of the organization in the format of table and diagram, but hospitals haven't shown any function in this field. Husseini (2008) believes that it is for years that the state health system authorities have suffered diabetes and this illness has caused creating disorder in this system. For this reason, about some diseases like diabetes, we can'tso much adduce to the obtained information and we are inevitable to refer to other countries and international organizations information and statistics and as a result, all state planning and policies of battling with diseases may negatively influenced by this issue. Unfortunately, many medical centers especially non-governmental centers (clinics, hospitals and so on) due to various reasons and motivations, don't implement their role in diseases care system continuum well, and here lack of a comprehensive and complete law in this regard is very obvious. According to results acquired by researcher, it was specified that only health centers oblige themselves to provide report for the organization higher authorities but hospitals haven't done any special measurement in this field. Also, the results obtained from study about method of diabetic patients follow-up in studied centers showed that health centers follow up their patients continuously through phone but hospitals didn't perform the required follow up.

CONCLUSION

Regarding to importance of diabetes disease, designing and implementing diabetes clinical information system in hospitals could be an important step for improving care of patients and controlling and preventing diabetes. For modifying healthcare, we should notice supplying needs such as following cases: creating a distinct illness registration system for monitoring illness and quality of provided care and also existence of qualified practitioners of health information management who have the ability to design, implement and manage registration system, using a similar form in all hospitals and health centers, that is codifying a standard diabetes form and using it in all state healthcare centers. Also, designing minimum data series and standard information elements with unique definitions, determining equal criteria for acceptance and identification of diabetic patients in hospitals and clinics , existence of a suitable relation between treatment centers, drugstores and personal clinics, providing accurate performance in the field of reporting, performing suitable follow-up by hospitals, creating diabetes database in all hospitals, mechanization of all diabetes information registration systems in hospitals.

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