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Development and Implementation of Physician Profiling Tool

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Abstract

Physician Profiling is an analytical tool used to provide information on health care processes and it is based on the generation of different indicators whose purpose is to optimize clinical outcomes. The Hospital Italiano de Buenos Aires created a Physician Profiling Program for family physicians in its Health Maintenance Organization (HMO). The indicators used were based on the Health Plan Employer Data and Information Set (HEDIS). In order to generate and view those indicators, a software program that showed results of every indicator in graph format was developed. The aim of the present study is to describe the development and implementation of such software.

Keywords:

physician profiling, HEDIS, quality indicators, health care

Introduction

Quality monitoring and quality improving are usually related important issues in health care organizations. They both attempt to promote medical care through clinical guidelines and patients' satisfaction.

Deficiencies in healthcare account for the need of monitoring quality patterns. Quality monitoring is usually reported in the medical literature under three categories: (A) Patients who do not get health care benefits; (B) Patients who get unnecessary treatments; (C) Low-frequency use of some interventions [1].

Physicians' work overload as well as their multiple daily duties often result in small deficiencies in health care, which can be easily detected through monitoring tools. Health care quality can be measured either by watching health care processes (e.g. preventive practices delivery) or by health outcomes (e.g. morbidity and mortality rates) [2].

A useful tool for measuring health care processes is **Physician Profiling**, which generates information on health care processes usually by means of data from electronic transactions which provide medical care indicators.

The Hospital Italiano in Buenos Aires is a high-complexity University Hospital with 650 inpatient hospitalization beds and 23 outpatient health care centres distributed between the City of Buenos Aires and the surrounding metropolitan area. It has a pre-paid medical insurance plan called *Plan de Salud* with 140,000 members at present. It delivers 150,000 outpatients visits and 3,000 inpatients admissions monthly. Since 1998, both clinical and administrative issues are registered in a comprehensive health information system [3] . Due to the need to monitor the health care quality of our Hospital Italiano *Plan de Salud*, a physician profiling program has been implemented to measure the performance of interventions at our Institution. The program was created following HEDIS measurements and the indicators were shown to different primary health care physicians by means of a software program which allows for the graphic representation of these indicators. The aim of the present study is to describe the development and implementation of this tool destined to profile primary health care physicians at the Hospital Italiano in Buenos Aires.

Methods

In 2003, to carry out this project, the Family Medicine Unit together with both the *Plan de Salud* Quality Area and the Department of Medical Informatics started the development of a number of health care indicators based on Health Plan Employer Data and Information Set (HEDIS) measurements [4]. HEDIS was created by the National Commission for Quality Assurance (NCQA) in the USA to assess and compare different health plans.

In our case, we used HEDIS to measure intervention performance at the population level. It was not our aim to compare results with other institutions.

Fifteen HEDIS measurements –out of approximately 60— were selected for the creation of these indicators, which were based on cancer screening and control of most frequent diseases. Each indicator was determined by an

equation whose numerator and denominator emerged from an adjustment of the HEDIS measurement selected. For example, the indicator for screening breast cancer was composed as follows:

NUMERATOR: Women with a biannual breast echography or mammography.

DENOMINATOR: 40-75 year old women. No limit to number of patients.

Once indicators had been determined, data was collected and entered into a database. Collected data included patient identification and some other information like period of time measured, age, birth date, hypertension readings, diabetes, last glycosylated haemoglobin (HBGli), LDL and HDL measurement, etc. It later became necessary to establish the source of the data being fed into this database, namely, whether it came from clinical or administrative databases.

Having determined the parameters and collected the data, a web-technology-based interface was designed. The programming language used was PHP 4.0 and MySQL was used as a database. This interface allowed for the graphing of indicators over a year both from the individual viewpoint of each physician and from the institutional standpoint. Figure 1 shows the graph that depicts indicators and their local outcomes in one column (Outcomes) and the desired outcomes according to the bibliography in the other (Goal).

This software was accessible from the Personal Information Section of the Hospital Intranet. For Privacy and Confidentiality reasons regarding personal information, and in order to avoid either political or personal conflicts between our professionals, each physician had access to his/her own results only.

Results were presented in a radar graph, where each axis represented one of the 15 indicators selected.

On the other hand, it was also possible to establish comparisons through a dispersion graph in which the results of a particular physician were compared to the results of the rest of the physicians at our Institution.

Discussion

The tool developed allowed to assess the performance of interventions under the *Plan de Salud* of Hospital Italiano in Buenos Aires. This information was then fed back to the physicians to analyse indicators outcome and to discuss with them the implementation of strategies for continuous improvement. In addition, many of the indicators were deemed difficult to improve solely from the primary health care standpoint and so, other strategies, like Programs for Chronic Disease Management were supported.

At present, work on stratification according to the different profiles is being carried out. The following criteria are being taken into account:

- Health care effectiveness indicators.
- Taking part in institutional resources, like using the Electronic Medical Record (EMR), participating of training courses, making presentations at the hospital discussion groups, attending congresses, etc.
- Scoring health care received (user's degree of satisfaction) through the different available tools.

Another strategy proposed for improvement consisted of making indicators dynamic, even to have hidden indicators for a strategically monitoring in order to avoid the risk posed by the use of profiling indicators, namely, that of working only in terms of the information provided by the indicators and leaving aside other aspects of health care.

In the future, this tool will hopefully enable us to measure the impact of having implemented the Support Systems for the Decision-making Process, which includes alerts or reminders on preventive practices.

References

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