Data Recycling of Historical Records and Integration in New Information Systems in Cardiology ervice

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Abstract. Introduction and objectives: the advancement of medicine and technology implied that millions of data, coming from diagnostic records, are included in centralized databases. The work presented in this paper presents a solution to recover data stored using an obsolete platform so it is possible to use these historical data for decision support. Furthermore, a solution to store new data from echocardiography and pharmacological information is presented. The application was used for two years in a general cardiology clinic and a regional hospital with 1800 patients recording data on clinical outcomes , hospital admissions , diagnostic tests and laboratory results.

1 Introduction

Since the appearance of information technology and computer science in the second half of the twentieth century, their exponential development make them be applied to any area of knowledge. In medicine, the change has been so dramatic that doctors have switched from using pen and paper to use computers and mobile devices in just 10 years.

Currently is paid much attention to medical processes and to the data used in evaluation of therapies and diseases, therefore, there is an increasing interest in the development of centralized systems. During the transition to the XXI century, there has been some proposals for using information systems but the lack of development in networking and internet connection among the centers have lead to create local applications in health centers or provinces with no data sharing. However, nowadays, there are centralised records at autonomous community level.

This paper tackles the problem of recovering the data from one of the local approaches that stored data and is not able to export these data into the centralised system of Andalucía (DIRAYA) and present and application that can combine both type of data.

2 Material and method

This section presents the old local application used to store data and the new application that is able to recover the data and add new variables into the study.

The new application has been used at the Cardiology Unit in the Santa Ana Hospital from 2010 storing data from 1800 patients.

2.1 Previous application: Eco2000©

The application from where the data is rescued is Eco2000© that, at the Hospital Santa Ana, has recorded data for 10 years and 50000 diagnostic tests with 10 to 15 numerical parameters each.

Eco2000© was developed by the Almiall© company in 1999, this application was implemented with the aim of storing studies in echocardiography (Figure 1). The list of parameters that can be stored considers: echocardiography, doppler study, ventricular function, diagnostic protocols and conclusions.

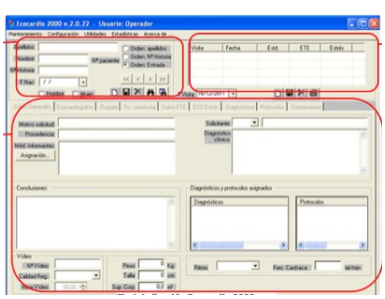

Fig. 1. Screenshot of Eco2000© application.

2.2 New application: SIMBIOSIS

The new application was programmed using Microsoft Access© and consists of several tables designed in a relational data base way.

a) b)

Fig. 2. Main form in the new application.

The application is structured in Tables, Forms 2 a), Reports 2 b), Queries and Macros that helps to introduce and consult data from patients efficiently. The link between both applications was established by matching the column "Idpatient" in the different tables of the data base.

3 Conclusions

A new application to store data recovering previous records has been presented. It was successfully tested in a regional hospital over 1800 patients. As future work, it is planned to reimplement the software using open source tools in order to not depend from companies that can stop giving support at any time.