ABSTRACT

A feasibility study was conducted to evaluate the acceptability and effectiveness of the “Safe medication through pharmacovigilance and compliance monitoring (PharmacoV)” service, an Internet-based interactive information tool that assists physicians in identifying potential Adverse Drug Events (ADEs) or contraindications when they are prescribing medicinal products to patients. The users’ perception was assessed by the means of a structured questionnaire containing Likert type responses ranging from 1 to 5. Five hundred eighty nine (n=589) healthcare professionals were enrolled during an eight (8) month trial of the service in London, UK during 2007. The vast majority of the healthcare professionals who participated in the study was very enthusiastic about the PharmacoV concept and perceived clear benefits in terms of accessing drug information. The authors’ results suggest that a well-designed intervention study is possible. This will allow the evaluation of the feasibility, acceptability and effectiveness of the intervention in the context of the different European healthcare systems, and may gradually shape an optimal health care system. Their study is limited to the specific extend that the pilot trial of the service could not be implemented as part of the routine clinical practice of the participating physicians mainly because of the need to continuously update the service functionality during the execution of the study.

Keywords: Decision Support, Knowledge Management, Pharmacovigilance, Pharmacy, Safe Medication

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INTRODUCTION

Pharmacovigilance (abbreviated PV or PhV), also known as Drug Safety, is the pharmacological science relating to the collection, detection, assessment, monitoring, and prevention of adverse effects with pharmaceutical products. Patient safety is a key dimension in the provision of quality healthcare and has become a major issue for all healthcare systems today. Adverse drug events (ADEs) are one of the most frequent types of adverse events affecting hospitalised patients, causing one (1) out of five (5) injuries or deaths per year to hospitalized patients (Leape et al., 1991; Brennan et al., 1991) and the fourth leading cause of death, according to the FDA (Monahan et al., 1990) & (Chan et al., 2001). It is not a coincidence that more than a quarter of a million patients in the United Kingdom and two to three million in the United States are admitted to hospitals showing harmful effects after taking drugs (BMA, 2006). Most health care organisations rely on spontaneous reporting, which cannot detect all adverse events. The use of electronic data can identify instantly the possible presence of ADEs (Wilson et al., 2004; Szarfman et al., 2002). Although Honigman et al. (2001) have investigated the use of EMR in detecting known ADEs, there have been no studies of data mining using EMR. Pharmacov [X] is an internet based information tool that assists physicians to identify potential adverse events or contraindications of drugs when they are prescribing drugs to patients. The application provides a multimodal web interface and no special configuration is required from the client side. It is easily accessible from any computer or computing device (e.g. PC, PDA and laptop) with a standard web browser (HTML 4.x browsers, including Internet Explorer (IE) Mobile and Opera Mobile). After following the website’ guidelines for registration and activation of their account, the users can log on by providing their username and password and choosing the preferred language interface of the service. Table 1 presents the main features of the service as well as its key user interface capabilities.

METHODOLOGY

A feasibility study took place from October 2006 until May 2007 at the Royal Brompton & Harefield NHS Trust in London, UK as part of a multi centred trial in three different European countries (UK, Greece and Czech Republic).

The UK based study group consisted of 589 healthcare professionals. A structured questionnaire containing Likert type responses - ranging from 1 to 5 - was used to estimate the value of a pre-selected set of variables and collect the users’ views on the PharmacoV system. The aim of the trial was to test the extent to which the system functionality complies with the requirements of the user group.

The study participants were enrolled via two discrete streams: in the first stream, the participants were recruited from the Trust’s medical staff. In the second stream, they were recruited from the wider community of healthcare professionals as a result of various dissemination activities that took place throughout the study’s timescale (e.g. workshops, conference presentations, invitations aiming to promote the service via email messages).

In the case of the first stream of participants, the trial was conducted on a personal basis. Users had simply to use a personal computer (PC) from the hospital’s network connected to the Internet, register and then assess and test the PharmacoV service. Following individual training sessions, the users could carry out predefined and/or free testing scenarios. IT literate physicians, physically capable of handling a personal computer, could take part in the study. In the case of the
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