Using mobile applications to support dissemination and implementation of clinical practice guidelines in Colombia

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ABSTRACT

In recent years, Colombia's government and academic institutions have invested a considerable amount of resources in the development of clinical practice guidelines (CPGs) in an effort to improve the quality of care across the entire country's health system. However, the effectiveness of this endeavor largely depends on the Ministry of Health's ability to deliver these guides to their final users in an easy to understand and usable way. In this poster, we present the method and preliminary reports on a project in which we investigate the use of mobile technologies to support the dissemination and implementation of CPGs in the Colombian context.

1. INTRODUCTION

Dissemination of clinical practice guidelines (CPGs) has been traditionally supported using printed materials. However, this strategy has shown only small effects in improving professional practice (Giguère et al., 2012). Not surprisingly, there is a recognized need for practical tools to help physicians and other health professionals to acquire the knowledge in the CPGs and to implement that knowledge in their clinical practice (Davis et al., 2003). In recent years, the mobile technologies have appeared as an alternative to support the achievement of this goal ("National Guideline Clearinghouse | Mobile Resources,") ("ACP Clinical Guidelines for iPhone"). This project seeks to investigate the use of mobile technologies to support the dissemination and implementation of CPGs in the Colombian context.

2. MATERIALS AND METHOD

We constituted a steering committee involving CPG developers, health professionals, medical informaticians and representatives from the Colombian Ministry of Health. Committee sessions were conducted in which challenges in the dissemination and use of CPGs were discussed. Special effort was made to analyze the problem from different perspectives, including the one from the Ministry of Health and the one from the final users.

Based on these discussions, we defined requirements for the architecture, functions and user interphase. These requirements along with paper prototypes were evaluated and adjusted in sessions of the steering committee.

We are now implementing mobile prototypes based on which, we will conduct laboratory usability studies using thinks-aloud protocols with a sample of final users.

3. RESULTS

3.1 REQUIREMENTS

The system will present the recommendations included in the CPGs organized according to the CPG's research questions. The system will guide the users to follow the algorithms included in the CPGs. The system will enable the distribution of new CPG algorithms and recommendations through Internet. Finally, the system will permit the user to follow different algorithms with different patients asynchronously, recording the step of each patient in each algorithm.

3.2 ARCHITECTURE

As shown in Figure 1, the system will comprise three main components: a server application and two mobile-client applications. The server application will be responsible to distribute the content (i.e. algorithms and recommendations) managing their versions. The algorithms application will guide the user thought out the algorithms, managing the information about

individual patients, whereas the recommendations application will present questions and recommendations included in each CPG. Both mobile applications will operate offline except when downloading new content.
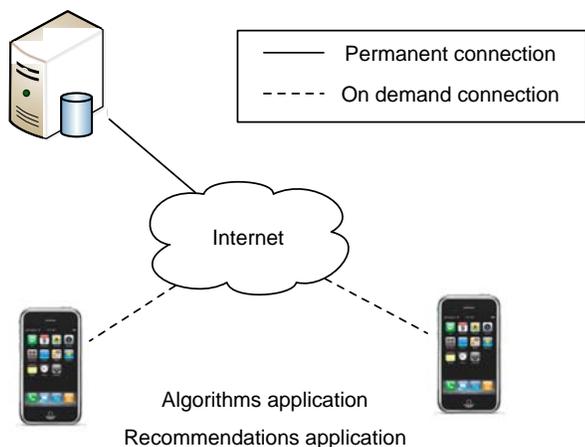

Figure 1. Architecture

3.3 PROTOTYPES

Figure 2 (left) presents a paper prototype for the algorithms application. The user interphase is divided into five sections. Section one will be used for the application's title and menu. Section two will show the CPG's title. Tapping this section will allow the user to select or download other algorithms. Section Three will show the patient's information. Tapping this section will allow the user to select another patient or to introduce the information about a new patient. In section four, the application will ask questions to the user. Finally, in section five, the application will display instruction to the user.
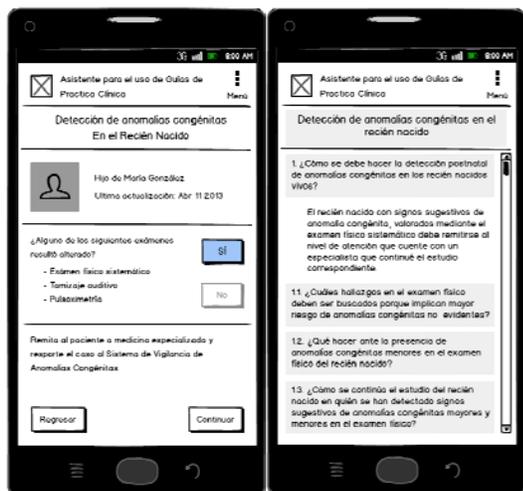
Figure 2. Paper prototypes

Figure 2 (right) presents a paper prototype for the recommendations application. The user interphase is divided into three sections. Section one will be used for the application's title and menu. Section two will show the CPG's title. Tapping this section will allow the user to select another CPG or to download new content. Section Three will show the recommendation from the current CPG. Tapping a question will display the associated recommendation.

4. NEXT STEPS

Currently, we are implementing mobile prototypes, based on which, we will conduct laboratory usability studies using thinks-aloud protocols with a sample of final users.

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