

## Qualitative Research

# Implementation of a cross-border health service: physician and pharmacists' opinions from the epSOS project

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## Abstract

**Objective(s).** To explore the opinions of health professionals with experience of the European Patient Smart Open Services (epSOS) system regarding the epSOS services perceived utility, potential impact and main barriers and facilitators to its use.

**Methods.** Qualitative study design involving focus groups with health care professionals with experience of epSOS system. A semi-structured topic guide was developed to guide the discussion.

**Results.** epSOS services were seen as interesting intuitive services and easy to operate. The greatest impact was in terms of positive impact on communication, clinical safety and patient management. Data reliability, difficulties in accessing the service and aspects related to information technology architecture were considered the most relevant barriers.

**Conclusion.** This study has provided insights into the strengths and limitations of two new eHealth services for use across countries within the European Union, and has provided indications of how those services could be improved.

**Key words:** Electronic medical records, focus groups, health professionals, quality of care, qualitative research.

## Introduction

eHealth policies can help ensure the sustainability of health care systems by making them more efficient, by improving the quality of care and by providing better data for management while ensuring enhanced communication among stakeholders. These potential benefits were fully recognized in the European Commission's first eHealth Action Plan produced in 2004. Since then, the Commission has focused on developing targeted policy actions to implement eHealth initiatives (1,2). Member States have responded to this eHealth policy agenda through participation in large scale pilot projects such as European Patient Smart Open Services (epSOS), partially funded under the ICT Policy Support Programme (ICT PSP).

The overall aim of the epSOS project was to develop, pilot and evaluate cross-border eHealth services which would improve the quality and safety of health care for citizens travelling between

European countries. As a first step, the epSOS project focused on electronic patient records and on two cross-border health care services. The first of these was intended to facilitate the exchange of basic patient summary data (PS). The PS provides the health professional with essential information needed for health care and, in case of unexpected need, for the continuity of care. The epSOS PS is a standardized set of basic health data containing: demographic information about the patient (name, birth date, gender), medical summary (allergies, diagnosis, medical implants and surgical procedures), a list of current medication including prescribed medication. The second service, ePrescription (eP), is centred on the electronic transmission of prescription data to a pharmacy where the medicine can then be dispensed.

When epSOS was initiated in July 2008, only a few stakeholders were involved but it gradually grew to encompass 25 countries and

about 50 participating institutions consisting of national ministries of health, and national and regional competence centres. The project ended on 30th June 2014.

From the outset, evaluation of the epSOS project involved obtaining feedback from health professionals so as to gain an understanding of their attitudes and preferences for such services. This was done using a qualitative approach with health professionals involved in the project. This article reports on the findings of focus groups (FG) with the health professionals in regard to their overall opinion of epSOS services and the main barriers and facilitators to their use.

## Methods

### Subjects and setting

The study was performed with health professionals from countries who had piloted the epSOS PS and eP services. Participants were recruited through the epSOS National Contact Point, an organization whose members were decided on by each participating country. The FGs were conducted in April 2014.

Purpose sampling was used to recruit participants with experience of using the epSOS service or participated in the pre-piloting testing phase, in which teams from the participating countries tested technical aspects of epSOS implementation before going to live. It was ensured that the inclusion from each pilot site participating in the piloting and both types of health professionals who had used the service, as well as ensuring the participants' experience covered both types of service offered within epSOS. All participants gave their written informed consent.

### Study design

Two FGs were conducted with physicians and pharmacists separately. FGs were used because they have proved to be useful in studying the success or failure of programmes and in the evaluation of pilot projects (3,4).

A semi-structured topic guide (Box 1) was used based on exploratory in-depth interviews conducted during the preparatory stages. Discussions were conducted in English and were facilitated by an experienced qualitative researcher. The sessions were recorded and one observer took notes during the session. The Consolidated Criteria for Reporting Qualitative Research (COREQ) were used to ensure the validity of the results for the submissions of this qualitative study

#### Box 1. Focus group topic guide followed during the focus group sessions

1. Round of introductions
2. Overview and simulation of epSOS project
3. Debate 1. Experience with epSOS from the user point of view
  - Overall experience
  - Potential advantages and benefits
  - Potential drawbacks
4. Debate 2: Exploring barriers and facilitators for the implementation of epSOS services
  - What factors facilitate using epSOS
  - What factors prevent using epSOS

### Data analysis

Discussions were audio-taped and transcribed verbatim and were sent to participants for review and validation. Transcripts and field notes were read independently by two independent researchers and, in conjunction with the themes in the interview guideline, a

coding frame was developed in iterative discussions. Data analysis was done manually and content analysis was conducted to refine subthemes and make comparisons. Emerging themes were discussed and grouped by category and the information in each category was condensed, reflected on and interpreted together by all researchers.

## Results

Seven physicians and seven pharmacists from Croatia, Finland, Hungary, Italy, Portugal and Spain piloting either PS or eP or both attended the FGs. The mean age was 47 (range 31–62) and 46% were female. As most of pilot sites participating in epSOS were hospitals, all physicians attending the FGs were specialists working in hospital departments. The pharmacists were primarily working in community pharmacy offices.

Findings were grouped by three main themes: overall opinion of the service, potential impact, utility and principal barriers and facilitators. Direct quotes are in italics, together with the FGs (physicians or pharmacists) from which the quote came.

### Use of epSOS

In general, epSOS was seen as an interesting PS and eP service, which is easy to operate and intuitive, and which does not require special skills to use. The way the information is structured was positively valued and it was considered easy to access.

### Utility and potential impact of epSOS services

The three frequently recurring themes were the likely positive impact on communication, clinical safety and patient management. Participants were particularly positive about being able to access patient health information even when the patient does not speak their language.

*'They (the patients) don't have to think about bringing papers, the paper prescriptions, thinking about whether they lost them, or if they put them in the luggage...'(male, pharmacist).*

Communication with patients is a central concern and the possibility of accessing patient information in the professional's own language was seen as a way of overcoming language barriers and improving physician–patient interaction. Pharmacists felt it helped them provide a better service to foreign patients.

*'We very often live with people from foreign countries who come into our emergency department for health care and we experience the problem epSOS tries to solve, or at least to improve, almost every day...'(female, physician).*

*'Because with the paper prescription, if he or she doesn't speak English, then it's not going to happen, but with this, because the platform is in Croatian...the prescription is actually written in my own mother language'(female, pharmacist).*

Improvement in communication was also seen as contributing to clinical safety, as knowledge of the patient's history could lead to better clinical decision making.

*'As a professional it gives me the security that this patient has this treatment prescribed... and also you give me a name and that name is linked to a prescription and furthermore I have a confirmation, which gives me that security...'(female, pharmacist).*

The impact on health services centred on the type of situations in which epSOS is most likely to be used: emergency care and managing patients with chronic conditions.

*'Emergency care, I think, is the area that would benefit the most. Because there you need a quick response, there you need the amount of information available...'(female, physician).*

'I think basically most of the patients that will travel abroad, and will use this service are actually chronic patients...' (male, physician).

### Barriers and facilitators of epSOS eHealth service adoption

Barriers and facilitators identified by participants in relation to the use of epSOS eHealth services are presented in [Table 1](#).

Some participants were concerned about the quality of the original data or possible errors in the coding systems used to transmit data, which was based on the codes in the International Classification of Diseases (ICD 9 and ICD 10). Some physicians felt it was more important to have a description of the problem rather than a code.

'Sometimes these were related to problems originally in the ICD. Of course, we couldn't solve these within epSOS, because this is a problem in ICD itself....' (male, physician).

However, other participants saw the use of systems such as ICD for transcoding as unavoidable, because the huge amount of data involved. On the other hand, participants agreed that physicians need to be aware of the risk that information will be incomplete or inaccurate due to transcoding.

I think coding is important, that everything is coded, for clinical safety. Everything that is not coded or that is free text or that is not translated, then there may be missing information for you that can be relevant... (male, physician).

There was also comment on the difficulties in accessing the service and particularly, the requirements for patient identification, which relied on health care identification cards and numbers which varied considerably in format between countries. Obtaining patient consent was also considered to be time-consuming and imply and additional administrative burden.

With regard to usability, participants noted that it would be important to integrate epSOS with national health information technology systems to avoid having to switch between computer screens to obtain all necessary information in a particular case. This was seen as an impediment to using the tool, especially in an emergency situation.

In line with comments arising in the first stage of the discussion, the possibility of improved communication with patients and the concomitant potential for improvements in quality of care and clinical safety was perceived as one of the main adoption facilitators for the two eHealth services.

'This is something that not only gives us access to information but it helps us also to overcome language barriers, because if I could speak to the patient, many patients would be able to give me the information which is there...' (male, physician).

### Discussion

This is the first study we are aware of to have carried out an in-depth qualitative examination into the opinion of health professionals on cross-border eHealth services. One of the strengths of the study was that both pharmacists and physicians participated in the FGs, which meant we were able to obtain opinions from potential health professionals who will make considerable use of the system. Regarding physicians attending the FGs, most were specialists working in different hospital departments because the majority of pilot sites participating in the pre-piloting phase of epSOS were hospitals rather than primary health care centres. Although we recognize that primary care physicians will often be the first point of contact for patients abroad, they were not included in the primary testing stage of the project and that is why we focused on those who had used the service.

Health professionals participating in the FGs were generally positive about the new epSOS services and highlighted the contribution this type of service can make towards improving the quality of care, enhancing patient management and facilitating communication between patients and health care professionals. This positive attitude is consistent with the results of some previous research (5–7) though other studies have found some reluctance among health care professionals to adopt eHealth technologies (8). Participants, however, have voice concerns regarding data reliability and identification requirements which indicate some lack of confidence among health professionals. Participants considered that epSOS would lead to more optimal decision-making and therefore better care particularly in emergency care and the management of patients with chronic conditions.

Overall, however, participants considered that the greatest benefits would be in the form of enhanced patient–professional communication because of their role in overcoming language barriers. Though there have been few studies on the effects of IT use on health professional–patient communication, Hsu *et al.* (9) did provide some evidence that computer technology could lead to improve communication and better patient understanding of medical decisions. In the present study, improved communications were also seen as to lead a decrease in medication errors and adverse effects.

Several barriers to the uptake of such services were also identified. In particular, regarding ease of access to information and the accuracy and quality of the health data provided through the system. The latter concern was the accuracy of cross-border coding of clinical information. The strengths and limitations of coding within health records and drug terminology have been discussed in previous studies (10–12) which stressed the need to achieve consensus among health professionals and to avoid erroneous content in computerized decision support systems (13). Recent studies (14) have also highlighted the need to harmonize health information used in

**Table 1.** Major facilitators and barriers to using epSOS during the focus group sessions

Facilitators	Barriers
Access to patient health information probably improve communication with patients	Concerns around coding of clinical information and medicines (errors in cross coding might lead to inappropriate decisions)
Greater knowledge of patients' clinical characteristics and treatment will improve clinical decision making, i.e.	Lack of integration with national health service information technology systems
- Patient summary (e.g. allergies, medical diagnosis)	
- ePrescription service: prescribed medication is shown in pharmacist's mother tongue	
Simplicity and ease of use (intuitive and user friendly service)	Patient identification and consent process are currently laborious and somewhat time consuming

cross-border services to improve the continuity and quality of care across Europe. The difference in coding systems between European countries is an issue which affects any cross border project and epSOS is no exception.

A possible limitation is that participation was voluntary which may lead to a selection bias whereby individuals who are more predisposed and interested in eHealth may be more likely to participate. However, participants appeared to be willing to express reservations about aspects of the service which they considered to be weak points. Data saturation might be another limitation. There were constraints on recruiting health professionals to participate, firstly because of the limited number of pilot sites who took part in the piloting phase during the project and secondly because the project was drawing to a close. In the end, we tried to have representatives from pilot sites from Croatia, Finland, Hungary, Italy, Portugal and Spain as well as representatives of both types of health professional that used the services. Discussion was quite extensive and rich and strong themes emerged with a high level of consensus.

Finally, patients were not included in the FGs because they did not have experience on the use of the system and was felt insufficient to provide content for a FG session. However, patients were also actors to take into account and we elicited their opinion through a specific survey on the use of a cross-border service.

Despite its limitations, the study should provide useful input for national and European authorities and information gathered in epSOS has already been incorporated in the guidelines on the minimum/non-exhaustive patient summary dataset (15). It may also help Member States to assess the implications of adopting a PS data set in practice.

## Conclusions

Our study identified key facilitators and barriers for the implementation of a cross-border service of medical information exchange which are in line with those noted in the 2012–2020 Action Plan. The study findings provide further insight into the needs and challenges involved in implementing this type of service and may usefully contribute to the design and development of a homogenous Europe-wide framework for the exchange of medical information. Including all relevant stakeholders in such a process should help ensure a successful outcome.

## Declaration

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Conflicts of interest: none.

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