Factors that influence public engagement with eHealth: A literature review

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ABSTRACT

Purpose: Public engagement with eHealth is generally viewed as beneficial. However, despite the potential benefits, public engagement with eHealth services remains variable. This article explores reasons for this variability through a review of published international literature.

Methods: A focused search, conducted in January 2009, of three bibliographic databases, MEDLINE, CINAHL and EMBASE, returned 2622 unique abstracts.

Results: Fifty articles met the inclusion criteria for the review. Four main types of eHealth service were identified: health information on the Internet; custom-made online health information; online support; and telehealth. Public engagement with these services appears to depend on a number of factors: characteristics of users; technological issues; characteristics of eHealth services; social aspects of use; and eHealth services in use.

Conclusions: Recommendations for policy makers, developers, users and health professionals, include: targeting efforts towards those underserved by eHealth; improving access; tailoring services to meet the needs of a broader range of users; exploiting opportunities for social computing; and clarifying of the role of health professionals in endorsement, promotion and facilitation.

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1.   Introduction

Unsurprisingly, definitions of eHealth tend to include aspects of both health and technology; health is generally viewed in terms of process rather than outcome, and technology is seen as a means to supplement, rather than replace human activity. One of the more commonly cited definitions presents eHealth as:

> 'an emerging field in the intersection of medical informatics, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies. In a broader sense, the term characterizes not only a technical development, but also a state-of-mind, a way of thinking, an attitude, and a commitment for networked, global thinking, to improve health care locally, regionally, and worldwide by using information and communication technology' [1].

eHealth is usually presented in a positive light [2] and public engagement with eHealth services is generally seen as beneficial. For example:

- The Internet provides access to a wealth of current health information [3,4].
- Recent advances in social computing provide new opportunities for support [5,6].
- Telecare applications have the potential to help meet the demand for care resulting from the combination of an ageing population and a depleted workforce [7].

Despite these potential benefits, and despite the continued growth in eHealth services, public engagement remains variable [3]. This review of published literature seeks to explore the reasons for this variability.

2.   Background

This literature review forms part of a larger project '*Including everyone in electronic health information services*'. The larger project, commissioned by the National Health Service (NHS) in England seeks to find out what help people need to access and use eHealth services. The aim of this review is to identify and explore factors (barriers and facilitators) that may influence engagement by the public with those services.

3.   Selection of articles

Literature considered in this project includes national and international journal articles, academic or professional (non-academic), and accessible via three commonly used bibliographic databases: MEDLINE, CINAHL, and EMBASE. The search strategy was developed in stages. An initial text search of MEDLINE (via OVID) was carried out using relevant terms in order to find exemplar articles from which to harvest indexing terms, *i.e.* Medical Subject Headings. The terms used in this initial search were: 'HealthSpace' (2 articles returned); 'NHS Choices' (1 article); 'Choose and Book' (19 articles); 'eHealth services' (12 articles); and 'e-Health services' (24 arti-

cles). HealthSpace, NHS Choices and Choose and Book are the names of specific eHealth services provided by the NHS in England. The harvested keywords from this initial search were allocated into one of three categories:

a. Computer applications, *e.g.* Information Systems, Internet, Telemedicine.
b. Health services, *e.g.* Information Service, Referral and Consultation, Self Care.
c. Evaluations, *e.g.* Attitude to Computers, Focus Groups, Patient Satisfaction.

A test MEDLINE search was conducted, with keywords within each category combined by OR and the categories combined by AND. The aim was to access a broad range of evaluation literature around the use of computer applications in health care. The categories and keywords were fine-tuned to ensure that at least all exemplar articles were returned in the final MEDLINE search. Finally, the strategy was reworked for use with CINAHL (via EBSCOhost) and EMBASE (via the National Library for Health, now NHS Evidence).

All searches were carried out in January 2009 and were not limited by date. The bibliographic details for each item from the initial search were reviewed independently by members of the project team (N.R.H., M.J.G.). Articles were retrieved for further analysis according to the following criteria:

- The full text of the article is readily and freely available online, *i.e.* open access or available via the host institution's e-library of online journals.
- The article is published in English.
- The article includes a named or identifiable example of an eHealth service.
- The eHealth service is intended for use by members of the public, *i.e.* in a non-professional capacity.
- The article describes barriers or facilitating factors that may influence the use of eHealth services.
- Both reviewers agree that the article should be included (disagreements over which items to include being resolved through negotiation at a face-to-face meeting).

The following types of articles were excluded:

- Book reviews; commentaries; conference reports, papers or abstracts; editorials; and viewpoints.

Relevant literature reviews were included but these were reserved for cross-validation of the findings of this review. Agreed included articles were obtained, allocated arbitrarily to the two team members and subjected to further analysis. A tailor-made data extraction tool was used to analyse articles into the following categories: bibliographic details; eHealth service (including purpose); study design including participants (types of users, numbers of participants, comparison groups), methods of data collection and analysis and timescale; findings; barriers; facilitators/motivators; and reviewer and review date. Emergent themes that were common across different articles were identified through a further face-to-face meeting.