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Health Community Portals: A Wish List

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ABSTRACT

This paper discusses the features that could add value to a health community portal. Much has been published about Portals. A myriad of aspects have been researched: definitions, technical features, functionality, desirability, attributes and usability, among others. More often than not, specifically in the health sector, these portals appear to be designed to suit the "public or client" market segments.

This paper, by contrast, seeks clarification on those aspects that would be relevant to a "Health Community". That is, to cater for the needs of providers of health (as well as the public) in all its shapes and forms within a pre-determined region.

It aims at summarising the most valuable aspects, features and content that might be sought by a health community for a particular region. Initially, a definition of portals is discussed and then consideration is given as to how they might apply in the health domain. The recommended model highlights different functions for health portals: a 'public' face and a functional 'provider' portal. Each meets the earlier definition of 'portal' in that they would provide access to dynamic content from a variety of sources in a variety of source formats as it is needed.

INTRODUCTION

Primary (health) care, for the purpose of this paper**,** involves health services provided outside hospital by General Practitioners (GPs), dentists, pharmacists, opticians and community health services, nurses, midwives, and so forth. It is where initial contact is made before a referral occurs. A **web portal** is a special Internet site that can act as a gateway to give convenient access to other related web sites. This paper examines the potential of web portals to support communication, information sharing and networking amongst primary health-providers.

PRIMARY (HEALTH) CARE

Martin and Sturmberg (2005) suggest that primary care is undergoing a major transformation, with a focus on shifting GPs' work patterns and remuneration towards integration with multidisciplinary teams and the wider system (Martin & Sturmberg 2005). The general goal of these reforms is to achieve better access to comprehensive integrated community-based care, which in turn, should improve population health and reduce health disparities (Starfield 1998). Keleher (2001) defines the shifting of primary care from a strictly clinical domain to a more holistic Primary Health Care which:

"…incorporates personal care with health promotion, the prevention of illness and community development. …includes the interconnecting principles of equity, access, empowerment, community self-determination and intersectoral collaboration. It encompasses an understanding of the social, economic, cultural and political determinants of health" (Keleher 2001)

However, primary care is not yet integrated nor coordinated into the wider "Primary Health Care System" (to include allied health services, community health nurses and centres, pharmacists, hospitals, etc) (Keleher 2001; Martin & Sturmberg 2005). What we do know is that GPs often have a network of private allied health care provider, but have limited knowledge of the complete range of services available in a community and how to gain access to these services (Wenck & Lutton 2005).

WEB PORTALS AND HEALTH

The Oxford Dictionary (1973) describes a portal as a doorway or a gateway. A gateway is described as being the means of entrance or exit or the frame or structure built over the entrance. A simple definition of a Web Portal sees it as a special Internet site designed to act as a gateway to give convenient access to other related web sites (Davison et al 2003, Phillips 1998). Costopoulou and Tambouris (2004) suggest that a Web portal is an information gateway that "attempts to address information overload through an Internet-based environment in which to search and access relevant information from disparate IT systems and the Internet using advanced search and indexing techniques."

The term portal means different things to different people. Smith (2004) considered 17 definitions of portal and classes of portal. He provides a definition of portal to distinguish it from other types of information systems: "… an infrastructure providing secure, customisable, personalisable, integrated access to dynamic content from a variety of sources, in a variety of source formats, wherever it is needed". This seems to require that a Web site should meet a number of criteria before it can be considered to be a portal. Van Brakel (2003) discusses a number of different portal definitions: "It is surprising how many times the term portal is being used to describe a static Web site environment. The corporate world is particularly at fault in this context: a well-designed and dedicated Web site that provides access to specialised resources or goods might be referred to as an information directory or information hub, but it is definitely not a portal with its current specialised functionalities. Simply affixing the word "My" to a system and adding a personal logon feature definitely does not metamorphose a static Web site into a portal …"

An important notion behind the concept of a portal is that it often does not provide content itself, but organises content from other providers (Rao 2001). This often occurs through the provision of some type of directory or search services.

Van Brakel (2003) also examines a number of definitions that require that a portal should **add value** for the user by providing more sophisticated information access features. He also adds that they should also specifically include customisation and personalisation features. In this context he describes personalisation as the ability to include personal information (such as a stock portfolio) or to subscribe to specific channel and/or alerts. Customisation provides the user with the ability to alter the look of the portal (for instance, by changing colours) depending upon personal preference. An important concept behind the idea of a portal is the idea that it can be a 'one stop shop' for users with either generic or specific information needs. Rao (2001) defines portals as "those one-stop Web sites that try to satisfy most of an individual's daily Web needs". One of the major requirements of the one stop shop is that content from disparate providers must be integrated into one point of access (Costopoulou and Tambouris 2004).

For the purposes of our research, we prefer a more generic approach to the definition of a portal. We would amend Smith's (2004) definition as follows:

A Web portal is an infrastructure providing secure, integrated access to dynamic content from a variety of sources, in a variety of source formats, wherever it is needed. Value is added to the information by filtering it according to the purpose of the portal and shortening user search costs by the provision or directory or other search services. Value may also be added for the user by the addition of customisable and personalisable options and extra or bundled services.

The benefits of web portals in aggregating information from multiple sources and making that information available to various users is well known; more importantly, they can provide the services of a guide that can help to protect the user from the chaos of the Internet and direct them towards an eventual goal (Tatnall 2005).

More generally, however, a portal should be seen as providing a gateway not just to sites on the Web, but to *all network-accessible resources*, whether involving intranets (within an organisation), extranets (for special partners of an organisation), or the Internet (Tatnall, Burgess & Singh 2004). In other words a portal offers centralised access to all relevant content and applications (Tatnall 2005).

Furthermore, looking beyond the scope of this paper, "*E-health*" is an emerging field on the intersection of medical information technologies, public health and business, referring to health services and information delivered or enhanced through the Internet and related technologies. Portal technology, allowing services to be accessible over the Internet is a perfect tool for providing e-health services (Kosinska & Slowikowski 2004).

The literature on health portals tell us that the Internet offers a seemingly endless amount of health information of varying quality. Health portals, which provide entry points to quality-controlled collections of websites, have been hailed as a solution to this problem (Glenton, Paulsen & Oxman 2005). However, it has been demonstrated that the information accessible through (government run and funded) health portals is unlikely to be based on systematic reviews and is often unclear, incomplete and misleading. Portals are only as good as the websites they lead to (Glenton, Paulsen & Oxman 2005).

COMMUNITY HEALTH

Community health is a discipline that concerns itself with the study and betterment of the health characteristics of communities. While the term community can be broadly defined, community health tends to focus on geographic areas rather than people with shared characteristics (Wikipedia 2005). It is a perspective on public health that assumes community to be an essential determinant of health and the indispensable ingredient for effective public health practice. It takes into account the tangible and intangible characteristics of the community – its formal and informal networks and support systems, its norms and cultural nuances, and its institutions, politics, and belief systems (MAAP 2000). Because health (broadly defined as well-being) is influenced by a wide array of socio-demographic characteristics, relevant variables range from the proportion of residents of a given age group to the overall life expectancy of the neighbourhood. Medical interventions aimed at improving the health of a community range from improving access to medical care to public health communications campaigns. Recent research efforts have focused on how the built environment and socio-economic status affect health (Wikipedia 2005). The perceived strength of community care (health) is that services should respond to the individual's needs (Pollock 1995). We will now discuss the role that portals might play in community health.

A MODEL FOR HEALTH PORTALS IN COMMUNITIES

The authors believe that the solution to better health portals lies in discrete, regional and health community owned and run web portals. The smaller portals would be able to provide more up-to-date and be holistically relevant to users (service providers) and consumers (public). This dichotomy between public and providers lies at the heart of the proposed regional community health portal concept. The public portal would, on one side, guide the consumer to reputable information and services and, on the other side, the provider portal restricted to stakeholders and providers for purposes relevant to them whatever these might be. A short explanation of the duality of community health portal follows:

The **public portal** is perhaps currently the most widely used; in fact, a recent study reported that 52 million Americans access health or medical information on the Web (Fox & Fallows 2003). Increasingly, consumers are accessing health information via the Web. The National Library of Medicine's MEDLINE is accessed by consumers as frequently as by health care professionals and researchers. Consumers most commonly use MEDLINE to access information about specific conditions or diseases (such as diabetes, asthma, cancer, etc.) and medications (for example, Celebrex) (Thompson & Brailer 2004). Consumer expectations for health care are particularly important in today's environment. Consumers often lack information to understand their treatment choices or to select physicians and other clinicians appropriate for their needs, and they do not like to fill out forms with repetitive information. Consumers report that they often do not feel that they are the principal decision maker for their health care and may feel instead that critical choices are being made by their clinician or their health plan (Thompson & Brailer 2004).

However, for information consumers, a variation of Malthus' law predicts that the exponential growth in information will mean that specific information will become increasingly expensive to find, because search costs will grow but human attention will remain limited. Furthermore, the low cost of creating poor-quality information on the **Web** means that the low-quality information may eventually swamp high-quality resources (Coiera 2000). The quality of online medical information available for patients has long been a concern of health care professionals (Adams 2003). Studies show that many Internet users looking for information are often frustrated by a large amount of irrelevant information retrieved by search engines and by the time it takes to obtain truly relevant information (Finkelstein and Aiken, 2000). Coiera (2000) also suggested that perhaps "reputable information portals" might be one of the answers.

The concept put forward here takes Coiera's (2000) recommendation for the public portal to be of a "*reputable resource*". It simply aims to link the consumer to only stakeholders' approved information (maybe even produced at the local level) and reputable local providers within the intended region along the lines suggested by Tatnall (2005). That is, the local health care community itself will monitor the intended information and provision of services. This includes the ability for GPs to practice some "Information therapy"; which is a process in which clinicians recommend specific Web content to their patients. Systems can be highly automated or they can be manual and informal on the prescriber's end, where doctors simply recommend specific URLs to their patients. With careful coordination, any of them can bring more patients to a healthcare Web site (Internet Healthcare Strategy 2005).

The Coiera (2000) recommendation fits into research carried out by Sellitto and Burgess (2005), who suggest a weighted-average evaluation scheme by which the information on a particular health-related website can be evaluate using a series of criteria, such as authorship, currency, accuracy, objectivity and privacy (Sellitto and Burgess 2005). The added value provided by such a portal is that it reduces the amount of search time for a 'consumer' and can provide confidence in the quality of information provided.

The **Provider Portal** is intended to be a self-determining body of information and services for the benefit of providers and stakeholders only. The functions of a health care portal in this instance would be many; the following wish list is not exhaustive but begins shaping "*the potential*" for such web portal:

Enhance provider access to up-to-date directories of health care providers: While a national GP directory could potentially be more

efficient (Harris 1999); the mobile nature of GPs and registrars across practices is also a major concern for keeping these registers up-to-date. Other providers, for example, stakeholders like pharmacies can present themselves on the Internet as a platform for drug information or as an advertising platform for their services (Zehnder et al. 2004). Other potential stakeholders could be: Community Centres that might may provide for example, diabetes education, dieticians, weight control and exercise programs, for GPs to refer Diabetic patients.

One stop shop health link gateway: Providers could have their "selected" links to other health related resources available in one place: for example, the Health Insurance Commission (HIC), the Department of health and Ageing (DoHA), Medical Defence Associations (MDO's), The Royal Australian College of general Practitioners (RACGP), Australian Medical Association (AMA), Equipment Suppliers, among many other to be determined.

Support the continuum of care coordination: For example, Wenck and Lutton (2005) recently argued that being able to link to the local community nursing agency can help practices tap into the enormous breath and depth of patient services available in the community for the benefits of their own patients; this two-way collaboration is likely to not just benefit GPs but to enhance allied health providers' awareness of the issues facing local general practices.

Support exchange of information within a secure framework: While the level of complexity here is only limited by our imagination and budgetary restraints. And for the purpose of moving this concept forward, the secure environment relates to the need to log-on to the portal in order to have access to other provider's direct contact details rather than public contact details (at the public portal) as well as specific resources developed locally for the use of providers (Division templates, information support, etc). While the system could be developed to include Intranet and Extranet level access, it is probably beyond this initial concept stage.

Support continuing professional education: A recent Stanford University Medical Centre's effort to apply information technology to support professional education is developing the "PrimeAnswers" portal. A first step in creating a fast search of a customized set of reference objects to match a clinician's patient care questions in the clinic. The objective for the site is to make access to and use of clinical reference faster and easier and to facilitate the use of evidence-based answers in daily practice (Ketchell et al. 2005). This kind of intelligent search engines would be an obvious advantage.

Support improved communication between health care providers: The possibilities are many: phone, fax, plain e-mail, online groups, bulletin boards, chat rooms, condition specific e-mail lists, etc between providers. There of course would need to be provider led, monitored and moderated to maintain a high level of value (whatever participants see as value: clinical, financial, networking, etc)

Dissemination of knowledge: Medical knowledge is rapidly changing from breakthroughs, such as those in molecular biology, that accelerate the introduction of new medications. However, even well synthesized knowledge faces many hurdles to being used in clinical practice. Estimates are that, on average, it takes 17 years for evidence to be integrated into clinical practice (Balas et al. 2000). Because of the enormous amount of information available, health care professionals find it increasingly difficult to keep current with new findings in their clinical practices. Research has shown that physicians incorporate the latest medical evidence into their treatment decisions 50% of the time (McGlynn et al. 2003).

GP lead consumer self care: Some studies are now confirming that using e-health portals to the internet seeking information about one's illness and to exchange experience with other sick persons can result in more self-responsible patients and in a more partnership-based physician-patient relationship (Leiberich et al. 2004).

A recent study by Moody (2005) from the College of Nursing at the University of South Florida concluded that: E-health delivers healthcare services and education, via a Web portal, to older persons with chronic conditions and their caregivers and enables the patient's home to be the point of care. This study also suggested that this growing industry is ripe for exploration by nurses who can empower the patient and caregiver to gain self-care and coping skills (Moody 2005).

CONCLUSION

The emerging concept suggested here begins to point in a particular direction towards the potential for "*regional community health web portal*" and what they could bring to a particular region's consumers and providers of health. The recommended model highlights different functions for health portals: a 'public' face and a functional 'provider' portal. Each meets the earlier definition of 'portal' in that they would provide access to dynamic content from a variety of sources in a variety of source formats as it is needed. Information is filtered according to selected links and appropriate search services. We have not specifically discussed how value may be added for the user by the addition of customisable options or extra services, but these are possibilities. Also, various forms of Internet communication would be added in, especially to enhance the 'provider' service.

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