Enhancing Communication and Cooperation in Human Service Delivery Through the Internet

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Abstract

In this paper we explore the concept of human service delivery in health care enhanced by the application of the Internet and viewed from the perspective of allied health, in particular, social work professionals. We view the Internet as a tool which can facilitate changes in health care service provision. It can promote the exchange of information and stimulate communication between health professionals within and across health care organisations. In an age where the need for accountability and quality assured services are paramount, the Internet can provide a wellspring of information which we can draw from in an efficient and effective manner. We investigate those applications in which the Internet can be beneficial in improving and integrating health care service provision for both consumers and providers.

1 Introduction

Through the introduction of the Internet, providers and uses of information have been able to *i)* considerably shorten the timing process for the access and delivery of information *ii)* increase communication across various boundaries and *iii)* share relevant information which can be utilised to achieve their objectives.

This has evolved from the early days of Internet use in educational and research communities to the situation of today, which is characterised by a wider variety of consumers on the Internet and their specific requirements. The increased penetration of the Internet has revealed new opportunities for various enterprises. For example, new services over the Internet such as electronic publishing, advertising and merchandising have created new business opportunities for service providers. The capabilities of the Internet can also provide increased value to consumers of services, e.g. fast discovery of the most appropriate service providers.

It is now recognised that the Internet can play a significant role in the medical setting, in enhancing support for the related activities [1]. We believe that this role can be extended into the realm of allied health, in particular social work services (i.e. human service delivery). While the Internet can play an integral role in clinical applications, its use in human service delivery can complete the intervention, thus meeting the emerging community-wide focus of health care provision. This is augmented by the fact that health care can no longer be viewed in the context of a pure medical intervention. Rather, the treatment of illness requires an holistic approach (i.e. both physical and psychological consequences of illness).

Various government initiatives related to the promotion of the Internet reflect the significant role that the Internet can play in both economic and human aspects of a country. For example, a number of governments are introducing electronic commerce activities for their internal operational activities and also as a part of the requirements for their purchasing polices. The objective is to establish a basis for the fast introduction of this new technology and thus its rapid adoption by numerous industry participants.

Similarly, in a number of countries, governments are also attempting to promote the use of the Internet within public health systems to streamline their functional process. However, these are only early days yet and we anticipate that there would be a much greater penetration of the Internet in health care in years to come.

In this paper we are endeavouring to identify those Internet applications that are currently available (or will be available in the near future) and which can be used to provide the following improvements in health care service provision.

- A more *effective* and *efficient* service delivery by all medical professionals. This means not only better quality health care delivery by individual professionals but also an *improved cooperation* between these.
- More *involvement of consumers* from the wider community in the process of service delivery.

The role of social work professionals can be regarded as unique, in that it serves as an interface with the community on one hand and the medical profession on the other. Thus social work represents a good starting place for considering Internet applications for the enhancement of communication and cooperation in the integrated health care environment.

The structure of the paper is as follows. In section 2 we look at new requirements for the health sector, with a particular focus on social work services. In section 3 we endeavour to blend social work service requirements with possible benefits the Internet can bring. In section 4, we confine this relationship to those potential applications that can be implemented over the Internet. Concluding remarks are summarised in section 5.

2 Human service delivery: a new reality

The current economic climate in Australia has caused governments to look more in depth at the way funds are distributed to their different portfolios. Health care has increasingly come under the microscope for its budget as a seemingly ever expanding one. There has been a restructuring of services with the aim of achieving more effective and efficient service delivery within specific health areas and placing an emphasis on certain aspects of services. However, there has been little done in the way of a proactive approach to addressing the multifaceted problems created when one service is 'cut' or made to integrate into another.

One of the reasons for this oversight is the fact that the health system tends to be considered in an institutional paradigm e.g. hospitals, general practitioners, nursing homes etc. This is despite the fact that many of these institutions deal with the same patients and that requirements for health care spans their institutional boundaries [2].

When efforts are made to improve the health system, what typically happens is that supporting systems, such as information systems, are put into place that are focused entirely on one institutional structure e.g. to improve quality of service in, for example, the administrative services of a hospital. As a result of this and the fact that technology investment decisions occur within these decision making structures, information that is in the health system tends to cluster around these structures and rarely crosses their boundaries as also pointed out in [2]. The resulting accumulated data (which is both information based and information driven) can instead be transported across boundaries and utilised by human services to complement the health care process thereby utilising redundant data and preventing duplication.

Co-operative team approaches to holistic health, enhanced by new technologies, can address the deficits often found in the restructuring process.

It is becoming evident that we need to learn from the mistakes created by inadequate planning associated with the restructuring process and the inequity in funding resulting from this. In particular, the benefits of new technologies should be considered when making strategic decisions. For example, the Internet can substantially improve cooperation between medical professions and make service delivery a more integrated process. Thus, implementation of the Internet across and within the whole health network should become a part of the new reality in government strategic planning.

An integral part of this network is social work and it is our belief that by bridging the gaps between health providers with communication services significant benefits can be created, especially for the consumers.

Social work is concerned with changing and improving society. This mission, to improve social and economic conditions has interested humankind for centuries. The evaluation of existing and future technology is one thread of this human preoccupation with making sense of and having some control over situations of change.

While governments generally support the necessity for change while working within the context of limited resources, there arises a situation which leads to interest groups operating in a very competitive environment. Social work, a highly political activity, is part of this scene [3]. Social workers need to be at this forefront of technological change to put forward both ethical and social impact studies which can be utilised in governing the introduction of new technologies.

As these new technologies, in particular the Internet, allow access to the general consumer in the community. They can therefore lead to new aspects in the concept of social justice[1]. Social justice has been described by Miller [3] as having four principles, *equity, equality, access* and *participation*. These principles can be promoted by the use of the Internet in health care setting. This guides our justification for the gradual introduction of Internet applications into social work practice. We believe the Internet offers opportunities for a communication strategy which will allow people to be informed about information technology and information education.

Being of this nature, the Internet applications can contribute to what has been identified as effective coping mechanisms for consumers within a health care setting, according to Germain [4]:

- provision of information in the appropriate amount and at the appropriate time
- staff behaviour and services that support consumers self-esteem and reward their coping efforts
- organisational procedures and policies that respect consumer life style, cultural values and social supports
- opportunities for taking action, exercising judgement and making decisions within the limits of their illness]

In general, these guidelines provide the prescriptions for humanising health care. They also fit the professional purpose of social work and influence its roles and functions and shape its practice domain.

1. This has an intrinsic link with social work but also spreads across other domains such as economics, law and philosophy.

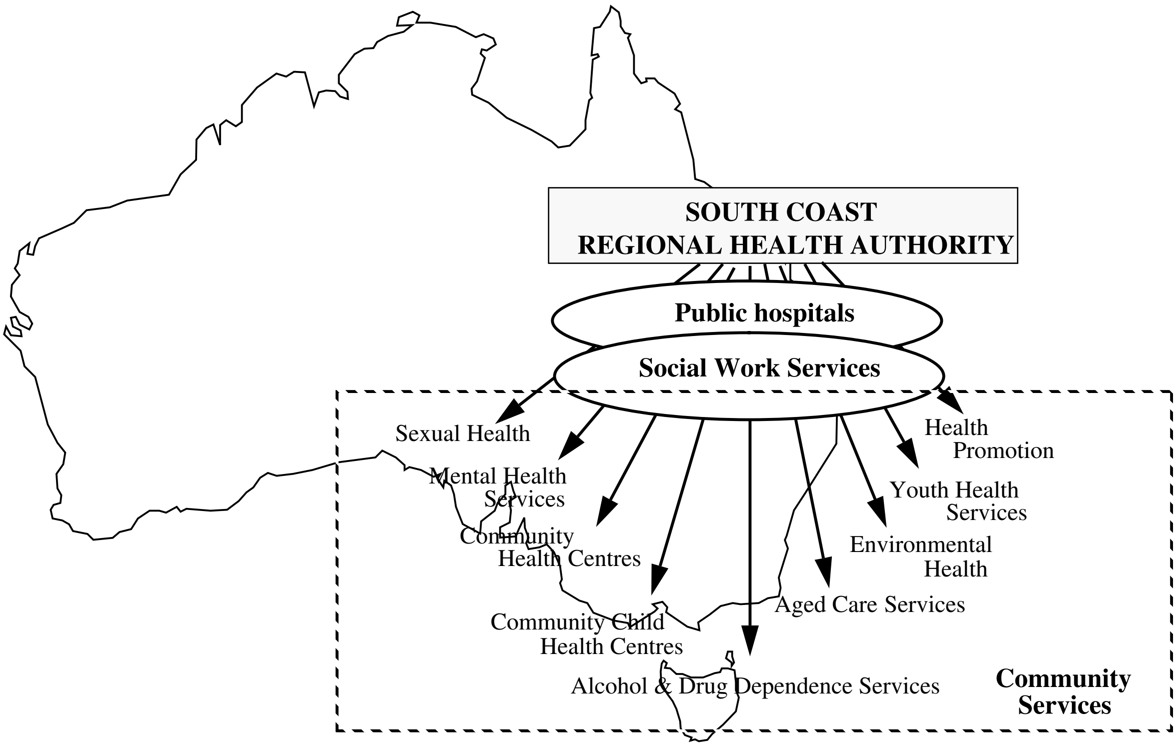

Figure 1. Application domain for the Internet use in a health care setting

As social work professionals, we view the introduction of new technologies, as having the potential for reducing and streamlining the complexity in service provider interactions. Technology can affect the way in which services are delivered, it can assist the worker in making more informed decisions when tackling new problems, it can facilitate the use of novel approaches, methodologies and concepts. But most importantly, it can motivate and facilitate change.

To summarise, the benefits of the Internet can assist in alleviating the problems created by cost cutting and the possible associated psycho-social impact on consumers of health care. In next section we will have a closer look at how certain human services can be supported by the use of the Internet.

3 Human services and the Internet

Allied health plays an integral role in service delivery to the community. It consists of a body of professionals (e.g. physiotherapist, occupational therapist, social worker, dietician and psychologist) who take on the sharing of 'continuing' care of a consumer mostly after medical intervention has taken place.

The linking of allied health skills and computing services to address the health needs of a community involves the sharing of multidisciplinary skills and available resources united in redefining the business of health care.

Each participant, through use of the Internet, can acquaint her/himself with services offered and, through the co-operation of team-work, can provide an optimal service to the consumer.

The benefits obtained from using the Internet denote the recognition that individual health care within the community requires efficient access to all resources within that community. Health care is not designated to single health care agencies such as hospitals and their residents but extends to those mainly in the community setting [5]. Internet access can provide the pathway for consumers to maintain contact with doctors, nurses and allied health professionals and to gain knowledge about their own health.

One specific benefit from the use of Internet can be attributed to aged care services. A good example of this benefits can be found in research undertaken in the CHIN project [5]. This project is a pilot project involving client centred community health information network. As a part of this project it was found that care givers of persons with Alzheimer's disease[2] utilised the communication features more than any other feature; this communication was largely of a

[2] as well as persons living with AIDS

social nature i.e. messages of hope, support and inspiration. These types of interactions are the core of social work intervention activity and the resulting benefits e.g. alleviating feelings of isolation and hopelessness felt by many consumers are the very goals we aim to achieve when working with consumers.

In addition, the improvements in the quality of consumer services can only be realised when systems extend beyond the boundaries of one organisation. For example in the case of aged care services, we would envisage a direct communication link between aged care assessment services and hostels and nursing homes. This would expedite the process of placement, thus alleviating long stays in hospital beds which often result in unnecessary distress for both the consumer and their relatives.

Health care reaching towards the 21 century needs to take note of the differences in the aging population of today and tomorrow. These future populations will hopefully be more computer literate having had some exposure in formative years. For those who have a disability, the Internet can benefit their quality of life through mental stimulation and communication and therefore assist in the maintenance of their mental health and feelings of self worth. For example, the Internet can be a preferred medium of communication for those who cannot leave the home environment.

Based on these general considerations about the benefits of the Internet for improving co-operation between all players in the health care setting and enhancing communication within the community, we will endeavour to highlight areas where this is pertinent. This will be done by using a health care model of organisations, structures and professionals under the umbrella of Queensland Health Department as depicted in Fig. 1 [6]. The South Coast Regional Health Authority consists of a number of agencies, which can interwork with one another in the region. In particular social work professionals have a unique role (as depicted in the figure and mentioned in the previous section), in that they are aligned with each of these agencies.

The agencies who offer health and human services within a region typically include public hospitals and community services. While each of the participants has its own purpose and goals (embodied in their mission statements[3]), the role of social work professionals is specific. Namely, that of stepping between medical intervention and the psychological responses to death and illness resulting from different causes. These professionals work closely with all the participants identified above. However, the flow of information within and between agencies is presently based on obsolete technologies, which inhibit the provision of efficient and optimal health and human service delivery.

We have identified some improvement targets for the operations associated with health care delivery in this setting include:

- a better insight into and a more efficient utilisation of resources within the Region and across its boundaries (e.g. state or nation wide) through better coordination of regional activities
- reduction of the rate of inappropriate admissions and ensuring a minimum length of stay in hospital
- more effective interactions and sharing of work among social work professionals and social work and other professionals
- equal access for consumers
- more timely service delivery
- enhancing quality of life for consumers
- optimal sharing of information and knowledge on a regional, national and international basis
- more accessibility of services to the consumer and assistance in health promotion
- faster and more accurate identification of the most suitable or competent service provider
- development of systems and processes for collection of data for improvement planning.

We conjecture that the Internet can contribute in reaching these performance targets and changing existing health care services. In particular, it can support an improved cooperation between social work services and other health participants, in order to provide a more timely, better quality and more cost-effective health care service delivery.

The Internet can provide access to numerous newsgroups, information services, technical and medical journals etc., thus improving cooperation between the medical professionals. However, its importance in linking people within community should not be overlooked and indeed, this is the application domain on which we wish to concentrate.

We note that the Internet services available can be utilised to achieve the above, only if the problem domain of the health setting is correctly understood. In other words, rather than simply superimposing the latest technology on the health care processes, one should first understand the characteristics of the health care environment. For example, one should identify main agencies and their relationships in this medical setting, along with important health processes and the corresponding improvement targets, and then position new technology so that these targets can be achieved.

4 Application benefits of the Internet

The Australian health system, besides being fragmented like that of many developed countries, suf-

3. These are beyond the scope of this paper.

fers from not being able to address consumers needs adequately, as is also pointed out in [2]. We hope that the relevant Internet applications can benefit those for whom the system was established so that they could become active participants within the system.

We have identified several categories of Internet applications in the health care environment. These can serve as a good initial framework which can be extended upon for a future support structure. Our application domain indicates a scenario of a regional health setting. A common thread which holds these categories together is a co-operative team work structure where quality of service to consumers should be the over riding concern.

This example depicted in Fig.1 has the objective of illustrating potential flows of information for co-operation and communication within and between agencies that can transcend national and geographic boundaries.

The Internet benefits have been broadly encompassed within the following applications.

1. *Access to a comprehensive repository of community services.* This repository (e.g. a data base) can be set up within each region and updated accordingly. We see its use for transfer of information between local and remote centres when patient transfer is being organised. In this way the transferring centre has access via Internet to a database of the region to which the patient is being sent. A comprehensive discharge plan can be put in place before the patient even leaves the centre, thus alleviating time consuming and costly intervention at the receiving end.

2. *Case conferencing and research applications.* If the workers have access to Internet facilities such as electronic mail in its various forms, including person-to-person, discussion lists, distribution lists, newsgroups and Internet Relay Chat, this can prepare them for a consumer intervention within a much shorter time span. It will also eradicate long waiting lists and have positive results in the long term for financial planning strategies. Through this more direct and controlled approach, the worker can identify 'gaps' in service delivery and also identify those whom the system is supposed to serve and is not serving.

3. *Applications that serve professionals in training/continuing education.* Training programs and other useful information listed under specific headings and stored in World Wide Web (WWW) servers can ensure that the vast amount of information accessible via Internet is available to the worker through quick and easy terminal access. This facility serves to equip the worker with updated information and training relevant to professional development needs. These needs, usually acquired through seminars, workshops etc. are often neglected because of heavy case loads and staff shortages.

4. *Applications that support the delivery of services.* These applications can be used to inform the professional about possible alternate strategies, experience of other professional etc. For example, by using Internet the worker can access information from their own and/or allied fields and make decisions on an optimal intervention strategy and derive a logical case planning application in conjunction with others. This application plays an important role in service delivery as informed decision making is inherent in the competent delivery of services.

5. *Information sharing.* With the advent of Diagnostic Related Groups and the probable formation of Program Management Teams in a health care setting, the decentralisation of allied health departments is inevitable. Internet can play a particular role in this through specialised news groups and video conferences the worker can keep abreast of developments in their specific fields of interest. Also, workers in remote centres can be linked to support networks for supervision and information updates either intra-state of interstate, according to economic boundaries.

6. *Assisting in decision making for clients.* This could be done through WWW browsers (e.g. NCSA Mosaic), which allow access to a full range of text, video and audio resources using a graphical interface. For example, the elderly and/or their relatives are often involved in the selection of a suitable long term care facility when home care becomes too difficult and complex. Nursing homes and hostels could illustrate their particular facility, costs, level of care, waiting time etc. for potential consumers to peruse. They could then make their selections and arrange for assessment through the appropriate body if required.

7. *Selection of the appropriate human service provider.* It is expected that emerging Internet services would facilitate the efficient discovery of resources so that the most appropriate service provider can be identified e.g. family therapist specialist,

8. *Family Reunion.* Suitable Internet services for video conferencing such as Cu-SeeMe, can be a valuable component in linking families of origin to their loved ones who have migrated to other countries or are on holidays. This is especially useful in times of crisis or when an accident happens.

5 Conclusion

In writing this paper we were guided by today's challenge, which is for us as human service providers for the future, to understand what we do, fix our problems and capitalise on technological opportunities to do better tomorrow what we are doing reasonably well today.

It is our belief that the Internet offers a promise for further enhancement of human service delivery. In general, benefits of the Internet can be used to provide better communication and coordination of the delivery of health care services. Exchange of information and facilitation of communication can be seen as emanating from an 'ideal world' aspect, in that it can serve to break down the barriers existing between clinicians and service providers.

However, when looking at the potential benefits that the Internet can have in health care, it is essential that we adopt those which cause people to interact more and not less. Recent media coverage of the ability of the hacker to break codes concerns us in our pursuit for a friendly technology which can be accessed by people on all levels without the fear of their privacy being encroached upon. Therefore hurdles such as security, privacy and confidentiality and pricing are issues not to be ignored.

As the nature of work and the way we work are in constant flux in that they must align themselves with todays modern work practices and lifestyles; the possibilities presented to society by various technologies, especially the Internet, should be exploited to their full potential for the benefit of all.

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