eHealth and its role in Primary Health Care in New Zealand

by Denise Irvine

Abstract

The rise of eHealth is rapid. The use of information and communication technology (ICT) to deliver health care by both health professionals and consumers is expanding .This exciting and innovative use of ICT is being recognized globally as enhancing quality, accessibility, accuracy, cost effectiveness, equity and efficiency. The more it is used, the more possibilities for the application of this innovative approach to delivery of health information and care, become evident.

Exploration of the literature identifies ehealth is being used in four broad areas: :

- Clients: who seeks information online, use self management tools, are participants in electronic communities and in matters where they require a second opinion.
- Primary Care: includes using this technology for patient management, medical records, prescribing and obtaining relevant records, reports and other data, thus tailoring the health care to the specific needs of the client.
- Home Care: includes care services delivered by health professionals via the above technology
- Hospitals: where this technology is able to deliver information on personal health information relating to clients, electronic messaging to health professionals in remote and outlying areas, and professional development from a variety of specialties. (Silber,2003.p.3).

The paper presented uses the New Zealand Primary Health Care Strategies (2001) six directions, links them to Silber's four broad areas identified above and identifies clearly in each section, which eHealth tools would be appropriate to inform or deliver care.

eHealth is proving to be a major paradigm shift in the provision of health information and health care internationally. Its introduction is rising rapidly. This innovative approach to the

delivery of health information and health care is being   recognized globally as enhancing quality, accessibility, accuracy, cost effectiveness, equity and efficiency in the delivery of health information and health care. With the New Zealand Health Care System now focusing on empowerment of consumers by encouraging self management of health, and a concentrated approach to health care outcomes, long established ways of delivering health information and care are being challenged. As a consequence of this there is constant exploration in the field to discover new and innovative ways to provide significant improved health service to a wider section of the population. This must be managed within the constraints of the available health dollar. The purpose of this article is to examine how eHealth can be utilized in the delivery of primary health care in New Zealand**.**

eHealth is defined by Tan (2005, p.42) as:
 "The use of existing and emerging e-technologies to provide and support health care delivery that transcends physical, temporal, social, political, cultural and geographical boundaries"

eHealth may be utilized in both urban and rural communities around New Zealand. There are a large number of communities that frequently find it difficult to access health information and care. These may be clients living in isolated areas, parents at home with young children or those elderly who for personal reasons are only able to access very infrequent care. As well, there are health professionals who need current information or advice relating to a client being cared for or who wish to ensure seamless care for the client by keeping all members of the team informed about progress. The provision of eHealth tools will enable these communities and health professionals, regardless of geographical location, time of day and personal circumstances, to achieve better health care.

With the introduction of the Primary Health Care Strategy, (Ministry of Health,2001) six key directions for achieving a new vision in primary health care were identified. These were :
  o Work with local communities and enrolled populations
  o Identify and remove health inequalities. .
  o Offer access to comprehensive services to improve, maintain and restore people's health
  o Co-ordinate care across service areas.
  o Develop the primary health care workforce
  o Continuously improve quality, using good information.

Silber (2003, p.3) identified four main areas where eHealth can provide a myriad of opportunities in the provision of health information and health care.   These are:
  ▪ Clients
  ▪ Primary Care
  ▪ Home Care
  ▪ Hospital

The following table sets out how each of the six directions in the Strategy , links with the areas set out by Silber and what tools would assist.

Primary Care Strategy	Key Areas	EHealth tools
Work with local communities and enrolled populations	Client	Web Messaging Virtual reality Skype iPods
	Primary Care	Personal Digital Assistants (PDAs) Email CD Roms Tablet P.C.
	Home care	Computers which record and transport health information.
Identify and remove health inequalities	Client	Video Link up with health professionals Skype or web cams
Offer access to comprehensive services to improve, maintain and restore people's health	Primary Care	Emails Photo/Video phones Skype or web cams
Co-ordinate care across service areas.	Hospitals	Email Electronic health records Video links
Develop the primary health care workforce	Primary Care	Professional development by web - either international or national i-Pods
Continuously improve quality, using good information	Primary Care	Laptops with wireless connections PDAs
	Clients	Health portals

(Irvine, D. 2006)

The information provided below, is an expansion on how the tools identified above, would be utilized by:

CLIENTS

- Electronic communication participation. Utilizing email as a means of communication with health professionals.
- Second opinion consultations
- Virtual reality which could enable the client to access web sites and acquaint themselves with procedures or environments
- Health smart cards the size of a credit card, could contain complete health history so regardless of where the consumer is located, their health history accompanies them and would stop the client having to continually repeat their health history to a multiple of health practitioners. This card could also include their gene sequence – i.e. a family has a history of cancer would alert health practitioners and clients to closer monitoring of this families health. (Tan,2005;Silber,2003)
- Health information portals. These portals and self management tools enable clients to access information on line at their own convenience to assist with independent decision making
- Video link up sites based on maraes, at community centers or local small libraries. to enable a virtual visit from health professionals

PRIMARY CARE

- Electronic records which could be emailed between organizations to:
    - increase accuracy of information
    - ensure the information is sent immediately on discharge to allow seamless care
- Personal Digital Assistants are small hand held computers which are now quite frequently used by registered nurses. Client's records such as lab results, xray reports and specialist reports can be held on this technology and accessed by the nurse at the client's home. They can also hold a pharmacopoeia which allows a quick reference to drug classification and current research.
- Internet for prescribing and appointments.
- Exploration of the possibility of prescriptions being emailed to a rural location.
- Appointments could be made with the relevant practitioner immediately by either PDAs or internet. .
- Internet for accessing specialist knowledge.
- Video phones /photo phones where wounds, skin abrasions, rashes could all be scanned into email and forwarded for consultation.
- Telehealth, which is the use of telecommunication and computer technology for the delivery of nursing care, utilizing computerized decision support system to triage client's concerns and provide care.
- Web sites, which would be used by Practice Nurses, could be developed for specific groups of clients and would include communication possibilities, discussion boards, and current research.
- Professional education offered by computer, virtual reality or pod casts

HOME CARE

Home care services which are delivered by health professionals to those who have appropriate technology in their own homes could be "virtual visiting' utilizing photo phones, video or computer to visit those 'sick at home' elderly or those at home for health reasons. This information technology would allow the health professional to 'virtually visit' therefore keeping this vulnerable population safe and supported. An added benefit could be support of the caregivers resulting in some alleviation of stress. A health practitioner visiting this population could have immediate access to specialist advice if the need arose.

A home monitoring system which transports vital signs and statistics, through a computer, directly to the health care professional This innovative technology could be utilized to allow those with chronic or palliative conditions to remain in their own homes if this is what they choose to do, still allowing them access to the quality service offered by their health professional.

HOSPITALS

- Electronic health records which could be accessed by those needing this information such as Doctors, nurses and other health professionals, thus reducing the possibility of repeated treatments or tests

- Electronic messaging which could deliver the above personal health information within the hospital and out to other organizations which have input into a particular client health care e.g. Hospice , Rest Homes or Retirement villages

- Electronic messaging and video linking to and from rural and remote areas to reduce travel for client to a specific geographical area but will still allow access to specialized care through the video link.

- Professional development for health professionals - either international or national.

The introduction of eHealth is rising rapidly internationally so it is "when' not "if"

As new technology presents itself, the possibilities for health professionals and nurses in particular, to explore the myriad of opportunities opening up and identify different ways of presenting an inspiring and cutting edge health service are endless. This article has explored the exciting and innovative opportunities offered to nurses and other health professionals to expand health care practice in New Zealand. It has achieved this by linking the six directions set out by the Primary Health Care Strategy, 2001, to the four specific areas of client, primary health care, home care and hospital and specified which eHealth tools would be appropriate.

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BIOGRAPHY:

Denise Irvine MBS. BSocSci RN. Health Consultant – eHealth

Denise Irvine has broad experience in both health and education, having worked as a senior
nursing lecturer at WINTEC New Zealand for twenty one years and manager of the
postgraduate nursing program. Having seen the positive benefits of providing health
information and health care by information and communication technology, she established
a consultancy in eHealth. This consultancy provides advice and support to health
organizations, staff and consumers in the use of information and communication
technology as a valuable health delivery tool. http://www.e3health.co.nz

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