

Chapter 4.4

Remote Patient Monitoring in Residential Care Homes: Using Wireless and Broadband Networks

Tanja Bratan

Brunel University, UK

Malcolm Clarke

Brunel University, UK

Joanna Fursse

Brunel University, UK

Russell Jones

Chorleywood Health Center, UK

ABSTRACT

The UK's National Health Service (NHS) is undergoing great reform. Driven by a demand for higher quality health care provision, information and communication technologies (ICT) are increasingly being used as tools to realize this change. We have investigated the use of remote patient monitoring (RPM), using wireless and broadband networks, in three community care

homes between July 2003 and January 2006. The aim of the project was to determine for what conditions and in which setting the RPM was most useful and to establish an organizational and clinical infrastructure to support it. Evaluation of the project demonstrated clinical benefits such as the early detection of cardiac events, allowing prompt intervention and routine monitoring of other conditions. A change in work practices resulted in a more collaborative approach to patient management and led to an increase in communication between health care professionals from different

DOI: 10.4018/978-1-60960-561-2.ch404

sectors, as well as the establishment of protocols for seeking advice. Technically, the equipment largely met the users' needs. In conclusion, the monitoring proved a useful tool for the management of chronic diseases and has great potential to contribute to the reform of the NHS.

INTRODUCTION

The UK's National Health Service (NHS) has been and continues to be subject to major change. Driven by an increase in expectations, together with an aging population and the availability of new medical technologies (Department of Health, 2006), the government presented its vision for reform of the NHS in the NHS Plan in 2000. The main themes of this plan were to: (1) develop a service that would offer prompt and convenient care; (2) enable rapid access to diagnosis and treatment in modern facilities; and (3) give patients the choice over the time, place, and personnel involved in their treatment (Department of Health, 2001). Central to the plan was the creation of the National Program for IT (NPfIT), the largest IT program in the world. A national data spine and a national broadband network (N3) were designed to connect health care providers to a central secure system (Calkin et al., 1999) and support many e-health initiatives. These initiatives include the electronic patient record, repeat prescription, choose and book, as well as help with profiling, clinical governance, and reuse of data (Department of Health, 2002).

e-health is an umbrella term and can be defined as "the application of information and communications technologies (ICT) across the whole range of functions which, one way or another, affect the health of citizens and patients" (Maheu et al., 2001). This ranges from medical applications such as telemedicine, remote patient monitoring, and electronic patient records to telecare and beyond to tools that empower patients such as health Web sites.

The objectives of this chapter are to:

- Inform the reader about the potential of ICTs to reform health care
- Demonstrate the application of ICTs in form of a specific e-health case study
- Discuss future trends in the area

The case study, e-Vital, was a feasibility and market validation project providing remote patient monitoring (RPM). The UK element of the project investigated the use of RPM in two residential care homes and one nursing home. The work was novel in that it exploited new forms of technology, wireless and broadband networks, to provide the communication infrastructure to small health care organizations.

BACKGROUND

As the number of elderly people in society continues to grow, so do the health care costs associated with this section of the population and the need to find a means for efficient and effective provision of health care. Continued aging of the population is inevitable during the first half of this century, as the relatively large number of people born after the Second World War and during the 1960s baby boom become older (British National Statistics: Ageing, 2005). Chronic disease is more prevalent among the elderly, with almost 75% of the over 65 year-olds suffering from at least one chronic disease, while nearly 50% have two or more (Calkins, Boulton, & Wagner, 1999). Many require frequent medical attention, both in a clinical environment and at home. As a result of cost-issues, over-crowded hospitals, and the preference of elderly people to remain in their normal environment, there has been a trend to move away from hospital-based health care to home-based health care (Maheu, Whitten, & Allen, 2001).

The UK government has been actively promoting home-based health care as part of its program

13 more pages are available in the full version of this document, which may be purchased using the "Add to Cart" button on the publisher's webpage:
www.igi-global.com/chapter/remote-patient-monitering-residential-care/53637

Related Content

A Treatise on Rural Public Health Nursing

Wanda Sneed (2011). *Clinical Technologies: Concepts, Methodologies, Tools and Applications* (pp. 2013-2028).

www.irma-international.org/chapter/treatise-rural-public-health-nursing/53694

PACS Failure Mode and Effects

Carrison K.S. Tongand Eric T.T. Wong (2009). *Governance of Picture Archiving and Communications Systems: Data Security and Quality Management of Filmless Radiology* (pp. 193-206).

www.irma-international.org/chapter/pacs-failure-mode-effects/19330

Simulations to Assess Medication Administration Systems

Elizabeth M. Borycki, Andre W. Kushniruk, Shigeki Kuwataand Hiromi Watanabe (2009). *Nursing and Clinical Informatics: Socio-Technical Approaches* (pp. 144-159).

www.irma-international.org/chapter/simulations-assessmedication-administration-systems/27328

Informatics Applications in Neonatology

Malcolm Battin, David Knightand Carl Kuschel (2009). *Medical Informatics in Obstetrics and Gynecology* (pp. 130-150).

www.irma-international.org/chapter/informatics-applications-neonatology/26189

Legal Issues in Health Information and Electronic Health Records

Nola M. Ries (2011). *Clinical Technologies: Concepts, Methodologies, Tools and Applications* (pp. 1948-1961).

www.irma-international.org/chapter/legal-issues-health-information-electronic/53691