

Chapter 3

Adoption of ICT in Rural Medical General Practices in Australia: An Actor–Network Study

Patricia Deering

National Health Workforce Task Force, Australia

Arthur Tatnall

Victoria University, Australia

Stephen Burgess

Victoria University, Australia

ABSTRACT

ICT has been used in medical General Practice throughout Australia now for some years, but although most General Practices make use of ICT for administrative purposes such as billing, prescribing and medical records, many individual General Practitioners themselves do not make full use of these ICT systems for clinical purposes. The decisions taken in the adoption of ICT in general practice are very complex, and involve many actors, both human and non-human. This means that actor-network theory offers a most suitable framework for its analysis. This article investigates how GPs in a rural Division of General Practice not far from Melbourne considered the adoption and use of ICT. The study reported in the article shows that, rather than characteristics of the technology itself, it is often seemingly unimportant human issues that determine if and how ICT is used in General Practice.

INTRODUCTION

Most medical practices in Australia make good use of many aspects of Information and Communications Technology (ICT) for administrative purposes, but it is not the case that as many individual medical general practitioners (GP) also do so for clinical purposes. The study reported in this article found that it is important to note the difference between the adoption of ICT by *general practice* (the organisation) and its adoption and use by *general practitioners* (the individuals). The adoption process in each case is complex, and many stakeholders have grappled with issues such as the cost of computerisation, the rapid changes in technology, the lack of agreed standards and the problems of introducing technological solutions into the daily work place of general practice.

While there are generally pockets of high uptake and use of ICT in different parts of Australia, there are differences in the details of adoption from one practice to another and even within practices. There are also differences in adoption in terms of the acceptance of the idea (of using ICT) versus doing something practical with it.

Some rural areas in Australia are extremely remote, but the study reported in this article examined use of ICT in the Central Highlands Division of General Practice¹ (CHDGP), based in a rural area not very far from the outskirts of Melbourne (the State capital). GPs in rural areas, even those that are not extremely remote, face special challenges in relation to their use of ICT. A major consideration relates to resources and

geographical distance: the further you are away from the resources of a large city, the longer it takes and the more it costs to gain access to them. This is particularly the case with hardware and software purchases, training and support for ICT use (Burgess 2002).

This study investigated how GPs in CHDGP considered the adoption of ICT. CHDGP is one of 111 nationally funded divisions of general practice in Australia (along with 8 state-based entities) that have been charged with the task of linking General Practitioners with each other and with linking GPs with their communities to improve health outcomes. The study investigated and modelled the socio-technical factors that acted to enable, and to inhibit uptake and use of ICT by GPs in this region. After an initial survey of the use of ICT by GPs, the research reported in this article details case studies of two representative practices from the 43 existing within the study area.

Research on the use of ICT in 1190 medical general practices in Australia by Henderson, Britt and Miller (2006) indicated that all but 79 had a computer available for medical use. Figure 1 gives an indication of the availability of ICT in medical practices.

It is important to note that this Figure shows reported availability and not actual use by individual GPs. Research has shown, however, that in the study area individual GPs continue to use ICT mainly for administrative and some clinical functions but that much less use is made of online functions and to assist with diagnosis (NHIMAC 1999; GPCG 2001; Henderson et al. 2006).

Figure 1. Computer availability at medical practices (adapted from Henderson et al. (2006))

A computer is available for:	Number of practices	Proportion of all practices
Billing	1050	79.6%
Prescribing	1101	83.5%
Medical records	934	70.8%
Other administrative tasks	974	73.8%
Internet/e-mail	888	67.3%

10 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/adoption-ict-rural-medical-general/65884

Related Content

Is a Stock Exchange a Computer Solution?: Explicitness, Algorithms and the Arizona Stock Exchange

Fabian Muniesa (2011). *International Journal of Actor-Network Theory and Technological Innovation* (pp. 1-15).

www.irma-international.org/article/stock-exchange-computer-solution/51551

Knowledge Redundancy, Environmental Shocks, and Agents' Opportunism

Lucio Biggiero (2011). *Knowledge-Based Intelligent System Advancements: Systemic and Cybernetic Approaches* (pp. 252-282).

www.irma-international.org/chapter/knowledge-redundancy-environmental-shocks-agents/46459

Opening the Black Box of Leadership in the Successful Development of Local E-Government Initiative in a Developing Country

Johanes Eka Priyatmaand Zainal Abidin Mohamed (2013). *Social and Professional Applications of Actor-Network Theory for Technology Development* (pp. 173-192).

www.irma-international.org/chapter/opening-black-box-leadership-successful/70838

Understanding the Implementation of IT Governance Arrangements and IT Infrastructure Using Actor Network Theory

Hafizah Mohamad Hsbollah, Alan Simonand Nick Letch (2016). *International Journal of Actor-Network Theory and Technological Innovation* (pp. 44-55).

www.irma-international.org/article/understanding-the-implementation-of-it-governance-arrangements-and-it-infrastructure-using-actor-network-theory/166599

The Sentiment Revealed in Social Networks during the Games of the Brazilian Team in the 2014 World Cup: A Conceptual Approach of Actor-Network Theory

Rita Paulino (2015). *International Journal of Actor-Network Theory and Technological Innovation* (pp. 41-51).

www.irma-international.org/article/the-sentiment-revealed-in-social-networks-during-the-games-of-the-brazilian-team-in-the-2014-world-cup/128339