Chapter 3.1
Capturing Data in Healthcare Using Patient-Centred Mobile Technology

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ABSTRACT

This chapter outlines and discusses how an increasingly popular approach of incorporating patient perspectives and experience in research can be used to inform the development of user-centred technology in healthcare, with particular emphasis on hand-held mobile devices. The chapter draws on a programme of research and technological developments between an acute hospital trust and the Schools of Health Sciences and Social Care (SHSSC) and Information Systems, Computing and Mathematics (SISCM) at Brunel University in West London. The authors critically review existing literature and discuss the development of a new prototype mobile device for use by healthcare professionals in capturing patient information at the front end of hospital care.

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INTRODUCTION

A three year research project, funded through the Knowledge Transfer Partnership (KTP), due for completion by the end of 2007, has focused upon evaluating patient and staff experiences in relation to the radical redesign of an acute district general hospital. A key aim of the research is to benefit these groups in an accident and emergency (A&E) environment, through the identification and development of technological tools designed to improve the patient journey which can be utilised by clinicians. Patients and staff have been observed in real-time field settings to establish positive outcomes, as well as areas that could be improved through the introduction of these evidence-based tools. The acute trust's redevelopment programme, recognised at national level, is a consequence of a forward thinking approach to developing and

evaluating hospital services and is underpinned by current National Health Service (NHS) policy and reform.

Motivation for the research project is fuelled by the potential in disseminating the lessons learnt and benefits afforded by the tools across the NHS on a national basis. One key output has been the development of a prototype mobile device (in the form of a personal digital assistant (PDA)) for recording and sharing patient information in an emergency care environment. The impetus for this development arose out of the initial findings of the research that highlighted two key issues of concern to patients and staff: 'communication' and 'waiting times'. It was evident that the ways in which patient information and data were recorded during emergency consultations, and then relayed to staff who needed to use the information for clinical decision making could be problematic, thereby impacting on the patient journey. Hence, we have recommended a possible technological solution.

Rather than focusing on the detailed findings of the main research, this chapter is centred upon describing how the research is being used to feed into the technological development. The chapter begins with the political context surrounding the advent of patient-centred care and associated NHS reform. This leads into an account of the redevelopment programme at the hospital trust involved. The methodology employed in studying staff and patient perspectives at the hospital is presented, followed by a brief account of the key findings around collection and communication of patient information. The application of technology to address the identified issues is then proposed which includes a review of existing systems. The advantages of the utilisation of hand-held mobile technology with its flexibility of application, portability and potential for linking with other systems, steers direction for the subsequent proposal of the patient-centred PDA 'proof of concept'. The chapter concludes with a look towards future trends in the field.

NHS Policy and Reform

As healthcare has a strong political component, it is important to place the advent of patient-centred care and healthcare redevelopment in political context. The election of a new Labour Government in 1997 brought a pledge to alter perceived 'failures' in the NHS, and to build upon and learn from areas of success where they occurred (nhs.uk website). The Labour party had been particularly critical of the market approach of the previous Conservative administration. They aimed to remove competition but maintain the purchaser-provider spilt (Levitt et al., 1999). The approach by the new government to commit to bringing to an end internal markets was viewed as "eclectic and pragmatic." (Ham, 2004; p.54)

The 1997 White Paper, The New NHS: Modern, Dependable, set out the new political approach which was focused on partnership and integrated working, and was driven by performance (although these concepts and new ways of working were being established across certain organisations in health and social care before this time). This created the basis for further NHS reforms outlined in the NHS Plan (Department of Health 2000) and Delivering the NHS Plan (Department of Health 2001). It appeared that efforts were being made to give greater authority and decision making power to patients and frontline staff. Ham (2004) outlined how the policies to deliver the NHS Plan, whilst offering important differences, were to some extent "similar in a number of respects to those that lay behind the internal market (p.67), and this is particularly the case with offering greater patient choice" (Ham, 2004).

However, establishing the patient position at the centre of the NHS goes beyond simply offering greater choice in a healthcare environment. Not only the desire for patient involvement, but the general expectation of this participation has perceptibly intensified in the development and design of NHS services. This is both a political and social shift which is reflected not only by