

# Chapter IV

## Capturing Data in Healthcare Using Patient–Centered 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-centered technology in healthcare, with particular emphasis on hand-held mobile devices. The chapter draws on a program 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.*

### **INTRODUCTION**

A three-year research project funded through the Knowledge Transfer Partnership (KTP), due for completion by the end of 2007, has focused on evaluating patient and staff experiences in rela-

tion 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 uti-

lized 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 re-development program, recognized 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 fueled by the potential in disseminating the lessons learned 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 that 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 centered 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-centered care and associated NHS reform. This leads into an account of the re-development program 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 exist-

ing systems. The advantages of the utilization 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-centered 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-centered care and healthcare re-development into a political context. The election of a new Labor 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](http://nhs.uk) Web site). The Labor 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 an end to 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 organizations 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, while 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).

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