



## Chapter 19

# Organizational and Implementation Issues of Patient Data Management Systems in an Intensive Care Unit

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*Since the National Health Service reforms were introduced, the NHS has moved towards a greater emphasis on accountability and efficiency of healthcare. These changes rely on the swift delivery of IT systems, implemented into the NHS because of the urgency to collect data to support these measures. This case study details the events surrounding the introduction of a patient data management system into an intensive care unit in a UK hospital. It shows that its implementation was complex and involved organisational issues related to the costing of healthcare, legal and purchasing requirements, systems integration, training and staff expertise, and relationships with suppliers. It is suggested that the NHS is providing an R&D environment which others are benefiting from. The NHS is supporting software development activities that are not recognised, and the true costs of this task are difficult to estimate. It is also argued that introducing PDMS crystallises many different expectations making them unmanageably complex. This could also be due to PDMS being a higher order innovation that attempts to integrate information systems products and services with the core business.*

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## INTRODUCTION

The National Health Service (NHS) costs the UK approximately £38 billion a year (James, 1995) of which £220 million is spent on IT (Lock, 1996). New IT applications not only support administrative functions and medical diagnosis, but are increasingly used to support resource management and medical audit (Metnitz and Lenz, 1995; Sheaff and Peel, 1995). One such application is patient data management systems (PDMS) in intensive care units, where nurses' main task of planning and implementing patient care requires an awareness of a set of physiological parameters which provide an overview of the patient's general condition (Ireland et al, 1997). The collection of patient data is also a legal requirement of the NHS Executive. The implementation of these new technologies is not proving easy for the NHS. Healthcare professionals involved with IT projects often lack in experience of IT development. Risks are higher in clinical applications which require strong user involvement. These technologies are also being implemented into the NHS at a fast rate, because of the urgency to collect data to support accountability measures.

The NHS has changed quite dramatically over recent years, not least with the introduction of "competitive market forces" (Peel, 1996; Protti et al., 1996). The current healthcare reforms come from various government White Papers, moving the philosophy of the NHS towards emphasising business themes and client choice, and they rely on the 'swift' delivery of IT systems (Willcocks, 1991). All chief executives of health authorities and NHS Trusts are now 'accountable officers', responsible for the efficient use of resources, and are personally responsible for performance (Warden, 1996). Sotheran (1996) argues that using IT in the NHS entails new work structures and changes in activities performed, and that re-distribution of control and power will occur as a result. Bloomfield et al. (1992) found a diversity of interpretations by those involved, that the intended focus of the systems varied from management responsibility, medical speciality, doctor to patient group levels, and that views from one peer group could be imposed upon another. Lock (1996) advocates that "the impact of computer systems on patient care as well as on the business objectives of hospitals should be considered". The 'benefits realisation' approach (Treharne, 1995) is recommended to quantify and document benefits. Donaldson (1996) claims that this process can help justify the investments. However, it seems that the 'benefits realisation' methods are not being implemented or are failing for the following reasons (Treharne, 1995): an over emphasis on IT relative to other critical issues; a lack of focus; a shortage of skills; ineffective business/IT partnership; absence of benefit management process.

Generally, the rapid movement of information technologies into healthcare organisations has raised managerial concern regarding the capability of today's

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