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Hospitals not always prepared for full costs of implementing electronic patient records

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Hospitals don't always take into account the full costs of implementing new electronic health record systems and should be better prepared if they are to maximise the benefits, finds research published online in the *Journal of the American Medical Informatics Association* (*JAMIA*).

Electronic health record (EHR) systems can improve the safety, quality, and efficiency of healthcare in hospitals, and their adoption is a priority for the UK and US governments.

But despite their promise and the existence of EHRs in UK primary care for several decades, UK hospitals have been slow to adopt the technology, citing cost as a significant barrier, say the study authors.

As part of England's £12.7 billion (US$20 billion) National Programme for IT (NPfIT), three EHR systems were procured centrally: iSOFT's Lorenzo Regional Care; Cerner's Millennium; and CSE's RiO. But their implementation has been fraught with difficulty.

And the English government announced the dismantlement of the programme in September 2011, after a Cabinet Office review concluded it was "not fit to provide the modern IT services that the NHS needs."

The researchers evaluated the implementation of the three systems in 12 diverse healthcare organisations, in three different regions of the country, and at different stages of implementing these systems.

They also carried out 41 semi- structured interviews with 36 hospital staff, members of the local implementation team, and those involved in the implementation at a national level, between February 2009 and January 2011.

They identified four overarching cost categories associated with implementing an EHR system: infrastructure (such as hardware and software); personnel (such as a project managers and training teams); estates/facilities (furniture, fittings and space); other (such as training materials).

Many factors affected these costs, with different hospitals choosing varying amounts and types of infrastructure, diverse training approaches for staff, and different software applications.

Some of the hospitals incurred significant costs in testing the software while some spent a lot of money training clinicians and administrative staff to use the new system, using either one-to-one, classroom, or mass training sessions, or different combinations of both.

The decision to backfill staff on the wards varied among hospitals, with one hospital stumping up a one-off cost of £750,000 (over US$1.1 million) to provide cover for clinical staff who were being trained to use EHRs, while another spent no money at all on providing cover.

The analysis showed that, overall, implementation proceeded at a much slower pace than expected, with many challenges along the way.

Out of the four main categories of associated expenditure identified, hospitals were most likely to cut back on training and implementation costs.

Certain factors were systematically under-appreciated in project

planning, including the need to back fill staff due to lost productivity, and the need to test the system due to inadequate vendor testing.

"With cost considered one of the most significant barriers, it is important for hospitals and governments to be clear from the outset of the major cost categories involved and the factors that may impact on these costs," conclude the authors.

If organisations don't take these factors on board, they risk failure, the authors warn.

"Failure to adequately train staff or to follow key steps in implementation has preceded many of the failures in this domain, which can create new safety hazards," they say.

More information: A qualitative study identifying the cost categories associated with electronic health record implementation in the UK, Online First, DOI: 10.1136/amiajnl-2013-002404

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