

Innovation in Healthcare Systems: A Socio-technical Perspective

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We have investigated the large-scale automation of medicines distribution in NHS Greater Glasgow & Clyde, which is the largest regional health organisation in the UK. The pharmacy service is delivered on 14 hospital sites, involving approximately 530 pharmacy staff and an annual expenditure on medicines of around EUR 138 million.

The empirical evidence on the success of technological innovations in healthcare systems is decidedly mixed. There is considerable evidence on both theoretical and empirical grounds that the severity of implementation problems is likely to increase disproportionately with the scale and complexity of a healthcare technology installation.

A key finding from the initial stage of our research was that the introduction of new technology in healthcare may not only lead to unintended first-order consequences such as initial staff resistance, but can also generate potentially serious adverse feedback loops between the social and technical dimensions of the new system. A key finding from the second stage of the research is that the longer-term impact of new technology may be quite different for different groups of healthcare staff. New automated systems may free front-stage staff from more routine administrative activities, enabling them to spend more time directly with patients. On the other hand, back-stage staff may well find that their learning opportunities and promotion possibilities are curtailed as a result.

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