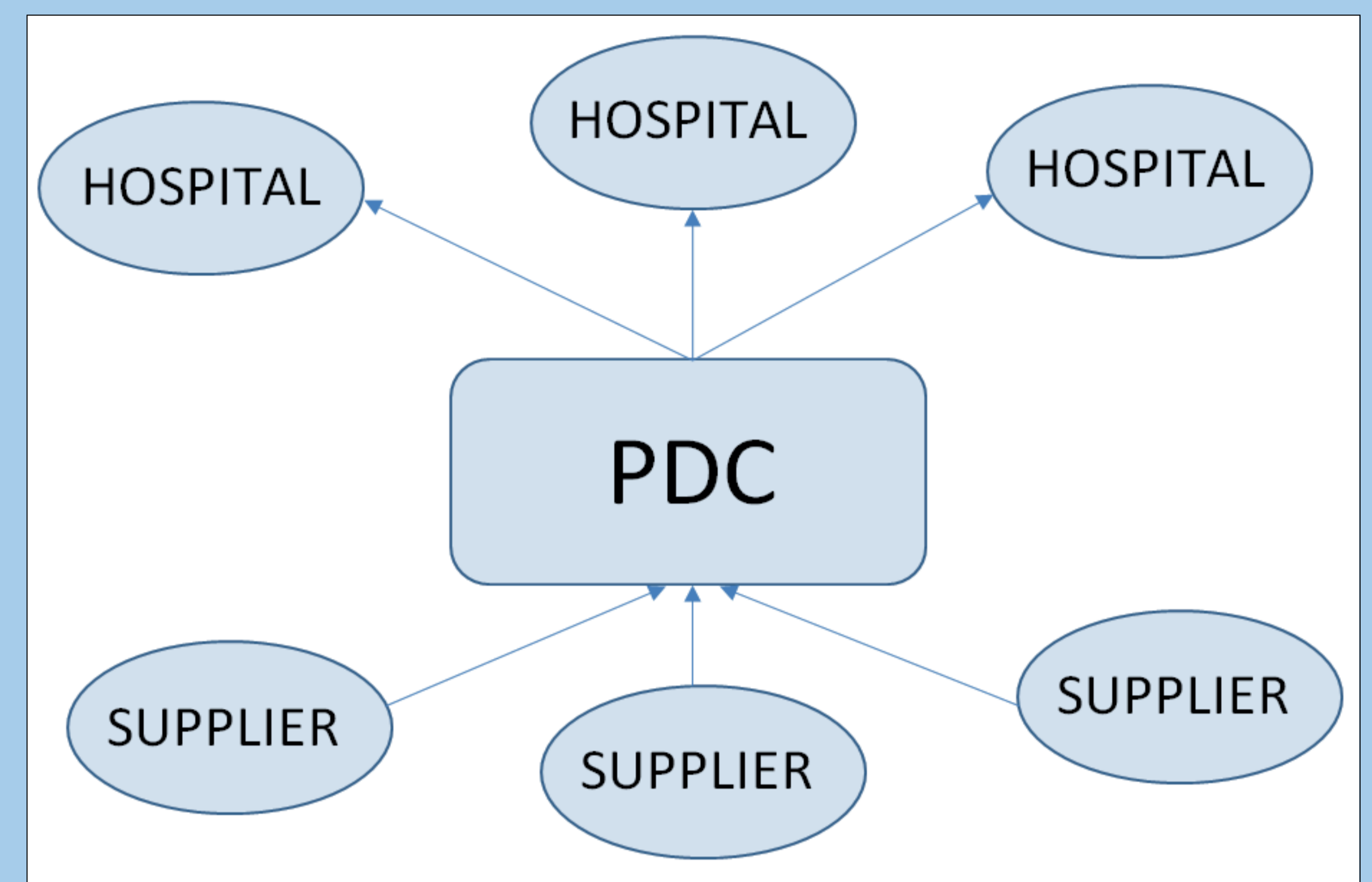


Early-stage experiences of the implementation of a large-scale robotic storage and distribution system in a hospital pharmacy service within a large UK health authority

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OBJECTIVES

The redesign proposal (accepted by NHS Greater Glasgow & Clyde in 2008) aimed to: centralise hospital procurement of medicines; improve medicines' safety; and release hospital pharmacy staff to near-patient tasks. Where hospitals previously ordered medicines from a number of suppliers, they now ordered from the Pharmacy Distribution Centre (PDC). Over a period of 3 years, the total capital investment programme has been around €3.2 million. This paper aims to analyse the first 6 months' experiences arising from this redesign.



Post-redesign Distribution System

METHODS

Thirty-six pharmacy staff from 4 hospital sites were interviewed over 11 visits between May and September 2010. Interviews were complemented by documentary data on the redesign programme. Data analysis involved inductive coding followed by thematic analysis. Research findings were fed into monthly project board meetings to inform decision-making project.



Automated Loading of Robot at PDC

RESULTS

Technical dimensions

The robotic storage and distribution system

- Frequent errors, including missing, wrong or damaged items
- Some sites devised their own local solutions by storing and using non-requested stock, as well as reporting errors

The pharmacy management system

- Not all hospital sites had access to, nor were assiduous in enforcing, the latest computer software needed for ordering.

Sourcing medicines unavailable from the PDC

- Sourcing these medicines from other hospitals/suppliers was problematic

Social/human dimensions

Understanding staff roles within the system

- Staff felt unaware of their roles in the new system
- A 'mix and match' approach was taken, resulting in vague job role expectations

The importance of effective communication

- Staff unsure to what extent their concerns were considered by management
- Staff unaware of some day-to-day operations (e.g. PDC delivery days and times etc.)

The effect on staff morale

- Staff felt a personal responsibility for patients
- Anxiety and stress experienced, yet some sites reported having a strong pharmacy team

CONCLUSIONS

- The use of robotics in medicines distribution may lead to initial staff resistance
- Serious adverse feedback loops between social and technical dimensions are possible
- If such early-stage problems can be effectively overcome, significant benefits are achievable

“It’s about getting the right treatments to the right patients at the right time.”

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