

Decentralising services

— a pharmacy without walls

By Ron Purkiss, PhD, FRPharmS

Patient-focused care is a concept that involves all the services that a patient needs to be available when and where they are treated.¹ Ten years ago some British hospitals developed satellite pharmacies to provide this patient-focused service.² Satellite pharmacies were only partially successful due to several operational problems. These included losing the flexibility offered by larger teams by dispersing staff into smaller units, providing cover in times of staff shortage, increased staff costs and the need to revert to a central pharmacy for weekend and out-of-hours services.

The satellite pharmacies provided the same services as the central pharmacy, but enabled a more focused approach to patient care. However, this development was delivered at a reduced level of efficiency.

Technology has now developed, allowing the principles of patient-focused care to be achieved without the problems associated with establishing satellite pharmacies.

Central robotics

Traditional systems of hospital medicines management involve prescribing, ordering, dispensing, distributing and administering medicines. These processes become labour intensive, creating opportunities for errors or delays.

Enthusiasts within hospital pharmacy have sought to improve the efficiency of these processes by installing robots in a central pharmacy. However,

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this approach does not change the traditional system of medicines management.

This is not to say that it has no advantages. Some trusts report a saving in staff time,^{3,4} and although I have not witnessed any such saving at my trust (merely one type of workload being replaced by another), it has enabled a skill mix shift towards more lower paid staff, reducing employment costs.

A central robotics system will also store medicines efficiently, control stock, pick medicines rapidly and accurately, and operate quietly without the need to take annual leave. However, because it does not change the medicines management process, it will not improve the patient experience.

Robots on wards

In contrast, if small dispensing robots were located on wards or within ward blocks, the medicines management process could be improved. Decentralised robots have several advantages because they dispense medicines where the patient is situated. Advantages include:

- Reducing the handling of medicines and staff travel time to and from a central pharmacy
- Storing medicines securely at ward level while accurately recording medicines use to provide a fully accountable system
- Allowing pharmacy staff to be permanently based on wards, promoting multidisciplinary working and communication
- Avoiding reliance on a single centralised robot
- Enabling the contents of each robot to be tailored to the ward or block of wards

- Enabling pharmacists to use remote supervision to approve the dispensing of medicines out-of-hours

Cost solutions

Installation of robotic systems is expensive. However this cost can be offset by savings resulting from releasing space in the central pharmacy. Alternative provisions may need to be made for outpatient dispensing and other services that require a central position. Aseptic manufacture and medicines information could be located anywhere, including off site if appropriate.

Decentralised dispensing robots can be installed in stages to spread the capital and depreciation costs. Also, maintenance costs can be negotiated so that they are marginally greater than for a single central robot. In addition, by replenishing ward stock using electronic communication with wholesalers or manufacturers, large stocks in a central store are no longer needed, meaning less money is tied up in stock holding. In some hospitals, this saving could pay the capital cost of a robotic system.

Making space

Providing the space for several decentralised robots may be considered to be an issue. However, a small robot holding sufficient medicines for a ward block (such as those designed for continental community pharmacies) can be accommodated within a 15m² room. A bespoke, dispensing medicine cupboard could reduce this space requirement to no more than that occupied by traditional ward cupboards.

Potential

Dispensing robots linked to electronic prescribing and bar code administration systems can provide a fully automated prescribing, dispensing and administration system that is auditable and accountable and reduces medication errors.⁵ Recently, several privately funded projects at large UK hospitals have adopted this approach. In Oslo, a newly built hospital has opted for this decentralised robotic system of medicines management. This marks the start of a new beginning — one where pharmacy is without walls.

References

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