

Medication Systems are complicated, then you add more sites! Establishment of a Medications System Manager for multi-site medication systems.

Marxen S¹, Van Garderen A², Sullivan S³, Dixon S¹, Barras M⁴, Ogilvie M⁵, Simmons J²

Background

- Electronic Medication Safety Systems (eMSS) have demonstrated effectiveness in medication safety across various healthcare settings.
- Maintenance aspect of eMSS often gets overshadowed during implementation, with focus being on the initial setup.
- Guidelines exist for some eMSS (1-3), though with the exception of electronic medication management (EMM) software, there is a lack of clear guidance regarding maintenance for other eMSS within the Australian healthcare context.
- Canadian Institute for Safe Medication Practices emphasizes maintenance for Automated Dispensing Cabinets (ADCs) and Smart Pump Dose Error Reduction Software (DERS) (2-3).

Objectives

Establish a Medication Systems Manager for multi-site eMSS, to reduce clinical variation between hospital sites, improve safety and efficiency, reduce duplication of effort and capitalise on opportunities.

Action

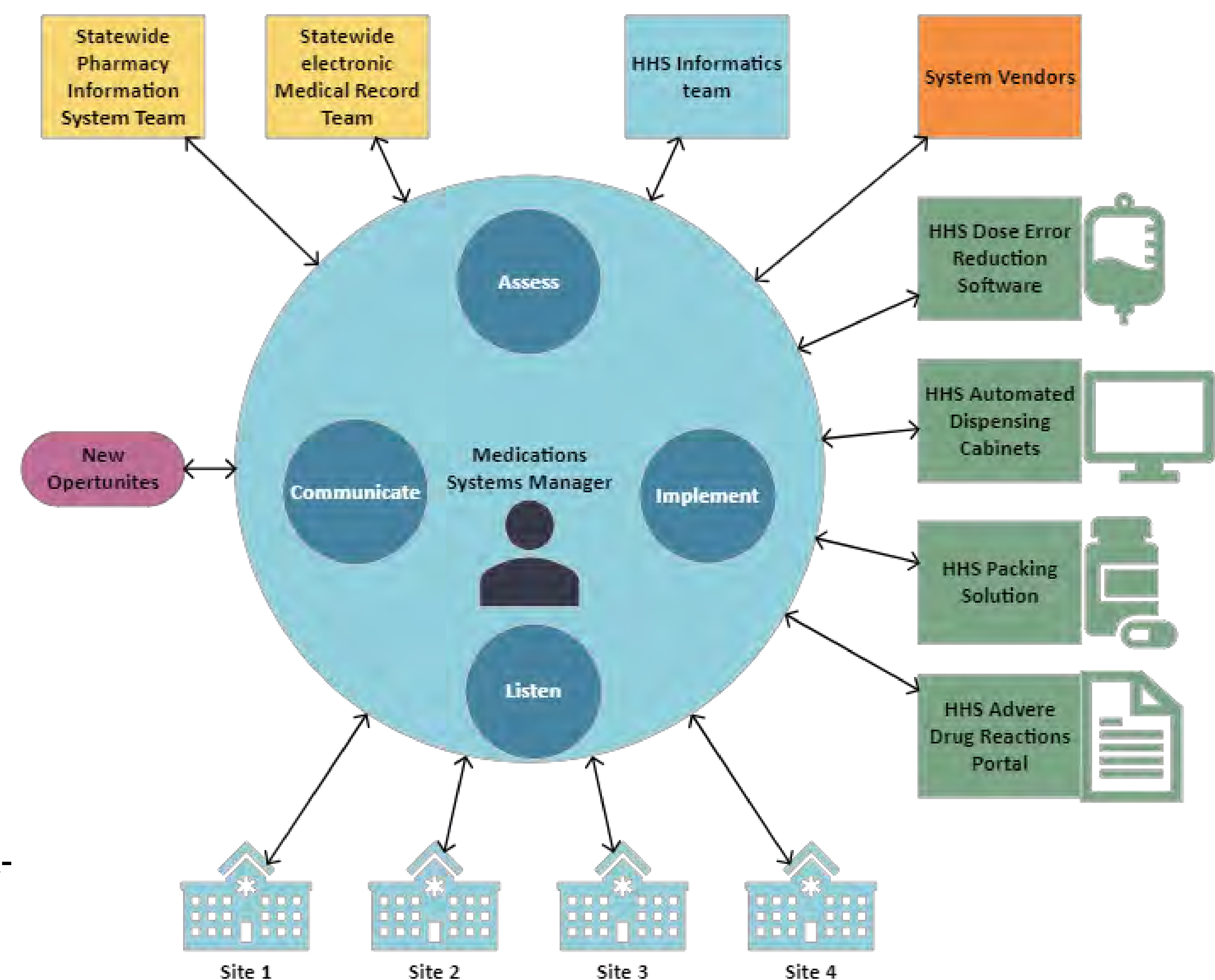
The Informatics department conducted a trial for a hospital and health service (HHS)-wide Medication Systems Manager role. This role focus was to:

- Identify and map locally implemented eMSS.
- Implement risk management strategies for identified gaps.
- Promote opportunities for growth and improvement by suggesting and adopting new systems.
- Propose and establishing appropriate governance.
- Serve as a central coordination point for sites seeking enhancements.
- Ensure any unintended adverse effects on upstream or downstream systems were detected and effectively managed in eMSS.
- Liaise with eMSS vendors.
- Act as the subject matter expert for the HHS and collaborate with front-line clinicians.

Evaluation

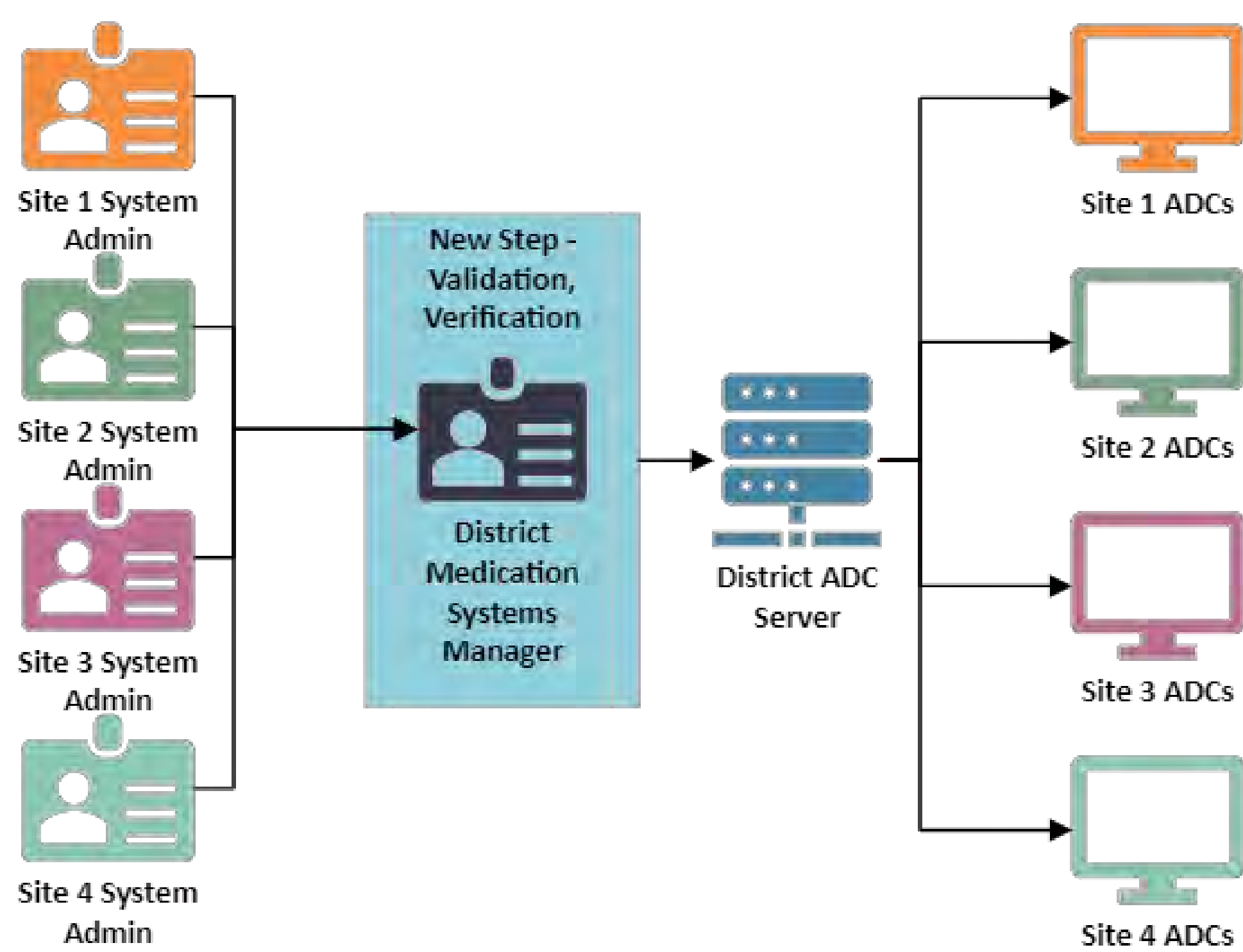
The trial achieved the following:

- Implementation of:
 - Multi-site responsive wireless pump DERS update process (Example 2).
 - eMSS digital dashboards for ADCs and DERS compliance.
 - HHS centralised governance and management established for ADCs (Example 1).
 - Web-based DERS live search lookup tool for clinicians.
- Conversion of Webstercare™ packing program from single to multi-site server with back-ups (Example 3).
- Integration of role into HHS Informatics service and medication governance structures with recurrent funding.



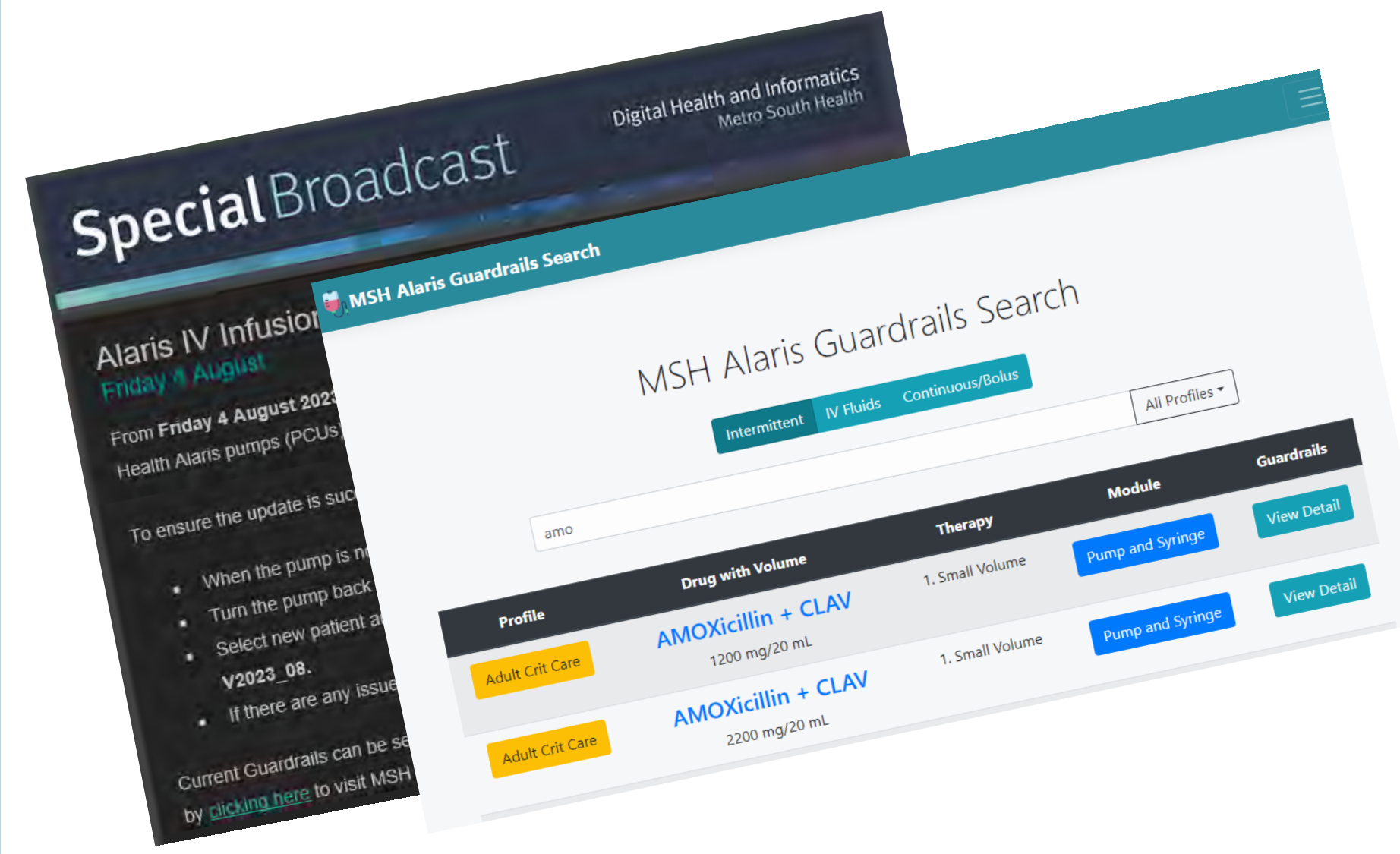
Example 1 – ADC

Multi-site ADCs fleet with joint infrastructure existed. Each site was able to add/edit high level user accounts and system settings that could impact other sites.
Solution: HHS wide management through Medications Systems Manager
HHS procedure and governance implemented. Permissions for multi-site impacting items restricted. Sites submit change requests for multi-site impacting items. Review, testing, communication and implementation of each change coordinated by the Medications Systems Manager. The role reviewed related system (up and down stream) changes for impacts and implement ADC system changes, particularly profiling EMM solution.



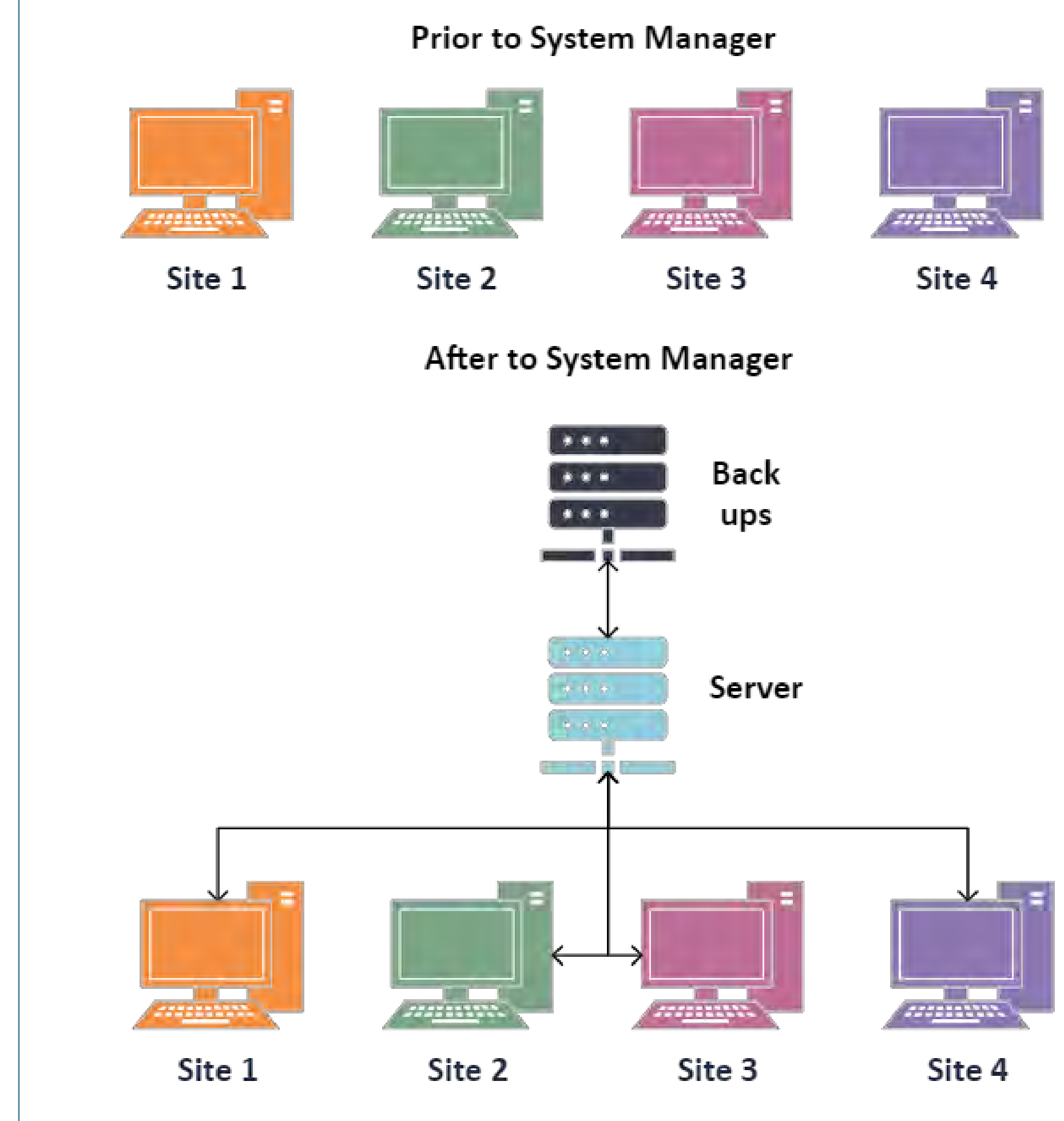
Example 2 – Pump DERS

Pump fleet replaced with updated DERS library and Wi-fi capability. Needed a pathway for updates implemented.
Solution: Ongoing management by Medications Systems Manager
DERS changes drawn from multiple sources: user requests, new products, upstream system changes, procedure/guideline changes and DERS alerts data. Systems Manager ensured:
1. Changes identified, reviewed and build drafted.
2. HHS governance review and approval.
3. Testing by Systems Manager and opt in sites.
4. Scheduling and communication of changes.
5. Update on web-based tool for DERS look up.
2021-22 financial year 331 changes to profiles occurred across 4 library updates.
Average DERS compliance improved from 76% in June 2021 across 151,000 infusions to 81% in June 2022 across 189,000 infusions.



Example 3 – Webstercare™ Packing Software

Packing software was on a local computer and not accessible on other computers. Corruption, damage or loss of data and need to rebuild the database.
Solution: HHS wide server implemented
HHS wide server implemented and connected to multiple computers. Server regularly backed up to enhanced contingency. Access was securely managed by an Active Directory Group.



Discussion

The implementation of a Medications Systems Manager that is responsible for multiple eMSS demonstrated that such roles are critical in ensuring that these systems are managed, updated and supported appropriately to maintain patient safety benefit, reduce duplication of effort and variation across sites and improve clinician experience.

References

1. Australian Commission on Safety and Quality in Health Care. Electronic medication management systems: a guide to safe implementation. 3rd edition. Sydney: ACSQHC; 2019.
2. Institute for Safe Medication Practices (ISMP). ISMP Guidelines for the Safe Use of Automated Dispensing Cabinets. ISMP; 2019
3. Institute for Safe Medication Practices (ISMP). ISMP Guidelines for Optimizing Safe Implementation and Use of Smart Infusion Pumps. ISMP; 2020. <https://www.ismp.org/node/972>

Affiliations:

- 1 Logan and Beaudesert Hospitals, Metro South Health, Meadowbrook Qld, QLD
- 2 Digital Health and Informatics, Metro South Health, Woolloongabba, QLD
- 3 Metro South Health, Eight Mile Plains, QLD
- 4 Princess Alexandra Hospital, Metro South Health, Woolloongabba, QLD
- 5 Redland Hospital, Metro South Health, Cleveland, QLD