Implementation of Remote Pharmacist Verification of Cancer Medicine Prescriptions within a Day Oncology Hospital

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Background

Following implementation of electronic prescribing technology, remote pharmacist verification was identified as a method of increasing clinical support to regional and metropolitan hospitals. Potential resource-saving benefits were identified for both metropolitan and regional area pharmacy sites.

Aim

To investigate safety, time, and resource-saving benefits of implementing remote pharmacist verification of cancer medicine prescriptions within a day oncology hospital.

Methods

A pre-implementation risk assessment graded risks on the potential consequence and likelihood of occurrence. Actions were agreed upon and implemented at the two study sites. A procedure for verification of cancer medicine prescriptions was written and staff were validated for competency using in-house training assessments. Remote verification occurred when clinical workloads exceeded staffing levels which would ordinarily result in the use of extra pharmacist resources. These resources included the use of rotational relief pharmacists or pharmacists from another day hospital. The primary and secondary outcomes were to determine 1) safety and viability of remote verification and 2) resource-saving benefits of remote pharmacist verification expressed as additional pharmacist hours. The analysis took place over eight weeks and data collected included: number of prescriptions, time taken to verify prescriptions on site and remotely, issues referred to the site pharmacist and medication incidents recorded in the electronic risk reporting system. Resource-saving benefits were determined by calculating the time spent undertaking remote verification which was expressed in terms of pharmacist hours per week.

Table 1. *Remote Pharmacist Verification of Cancer Medicine Prescriptions Risk Register*

No.	Risk	Risk Rating	Action
1.	Medication incident resulting from lack of clinical information recorded in electronic prescribing systems	**Moderate**	The procedure for pharmacist verification of cancer treatment orders contains a minimum standard of information that must be considered during verification. If the standard cannot be achieved the order cannot be verified and must be referred to the site pharmacist.
2.	Medication incident as a result of clinical handover	**Moderate**	A handover tool will be created to allow the recording of clinically significant issues that require handover and follow-up at the site.
3.	Inability to resolve clinical issue directly with medical staff due to off-site location	**Low**	If unable to contact doctor directly to resolve issue, the order must not be verified and handed over to the pharmacist in charge at the site.
4.	Lack of available pharmacist notes from previous pharmacy reviews that flag clinical issues requiring follow-up	**Low**	All pharmacists to document clinical review of patients in the electronic prescribing system with handover of clinically significant issues to follow-up on next cycle if required
5.	Financial costs associated with incorrect allocation of stock for treatment preparation	**Low**	When the pharmacy is notified of a patient enrolment onto an access program, clinical trial (or is affected by alternative funding arrangements) a 'Pharmacist Note' must be made in chart.

Results

Median number of prescriptions remotely verified per week across two day hospitals was 48. Of these, 83% were either cytotoxic, monoclonal antibody or immunotherapy prescriptions. The median time taken to remotely verify a chemotherapy prescription was 3.6 minutes versus 3.5 minutes when conducted at the site of treatment.
The most frequent issues referred to site pharmacists were: outdated patient weight (29%), supply issues such as recycled doses of chemotherapy (17%), and 'other clinical issues' that required pharmacist-patient follow-up on the day of treatment (15%). No medication incidents directly related to remote verification were reported in the electronic risk reporting system during the study period. Remote verification saved a median of 2.9 hours (173.5 minutes) of additional pharmacist resources per week.

Figure 1. *Number of Charts Remotely Verified with Time Saved per Week (mins)*

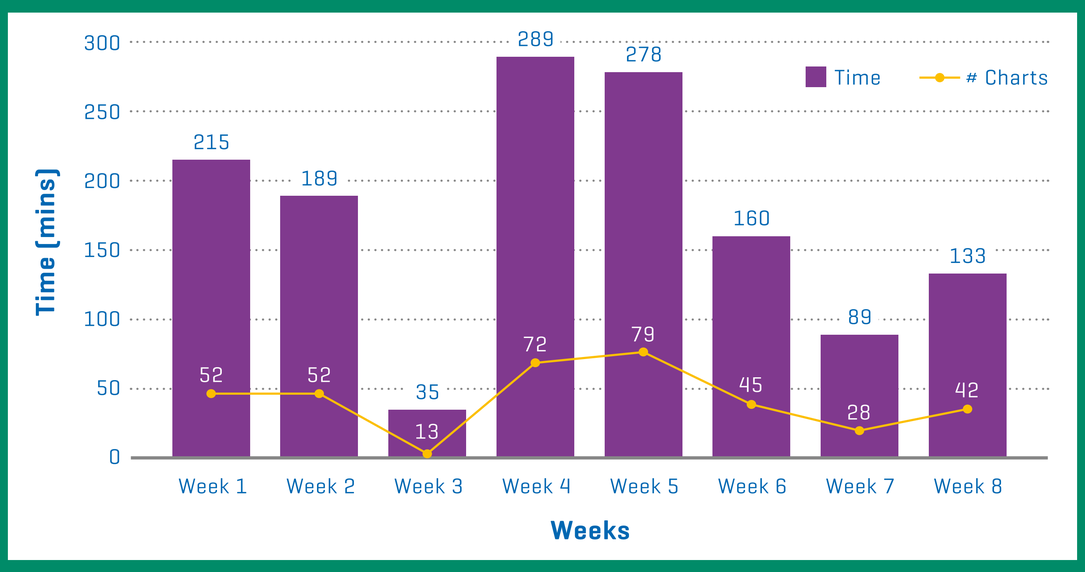
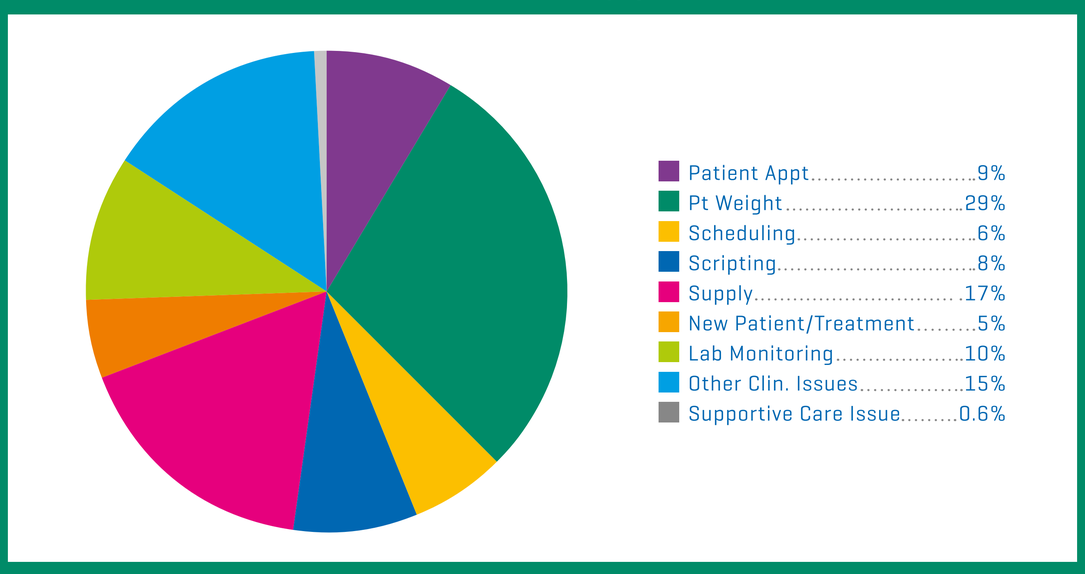


Figure 2. *Issues Handed-over to Site Pharmacist (%)*



Discussion

A challenge during the study related to differences in the way pharmacists used the electronic prescribing system to record clinical and treatment-related information at each site. This was not an anticipated risk and was retrospectively added to the risk register as a "moderate" risk.

A limitation to remote verification is the availability of the remote pharmacist if their own site workload does not allow them to undertake this on a particular day. This did not occur in the study period. In these instances the site would default to using rotational relief pharmacists.

Time taken to verify orders remotely was anticipated to take longer than conducting the review onsite due to pharmacists being unfamiliar with patients and local prescribing habits. However, results indicated very little difference in time taken which we attributed to the use of electronic medication records across the two sites.

Conclusions

- Electronic prescribing technology has enabled remote verification of cancer medicine prescriptions
- Implementation of this practice showed no increase in medication incidents in clinical practice
- This practice did not significantly increase the time taken to clinically verify a prescription
- Remote clinical verification enables greater support and resource-savings across a national hospital network