

# Telepharmacy Model Supporting 24/7 Pharmacist Medication Order Review in Community Hospitals

HUGO: Healthcare Undergoing Optimization

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## Aim

Develop a strategy to allow for shared 24 hour pharmacist coverage in a group of 12 community hospital sites to improve medication safety.

## Context

Twelve community hospital sites in Ontario ranging size from 12 to 438 beds. Common ADT and Pharmacy Information System software

## The Problem

- ❖ 97% of Hospital Pharmacies close overnight
- ❖ Patients are admitted and medications are changed around the clock
- ❖ Accreditation Canada requires 24 hour access to a pharmacist in hospitals
- ❖ Accreditation Canada standard 15.1: The pharmacist reviews prescription and medication orders within the organization prior to the administration of the first dose
- ❖ Once Computerize Prescriber Order Entry (CPOE) and an electronic Medication Administration Record (eMAR) are implemented, a hospital pharmacist's review and intervention in real time is an essential link
- ❖ One small/medium hospital doesn't have the capacity or budget 24 hour pharmacist coverage

## Intervention

- Telepharmacy provider was hired and a pre-designed stepped approach for go-live was initiated-Nov'13 thru May'14
- Telepharmacy service optimized based on data-Nov'14
- Telepharmacy provider review orders when pharmacy departments were closed (most often between 1600 and 0700 during the week and 24hr on weekends.)
- Regular teleconferences were arranged involving respective pharmacy directors and telepharmacy provider to review pharmacy coverage and services.
- Review included: collected data through running reports, logging drug-related problems using a log sheet and documenting number and type of phone calls-Oct '14

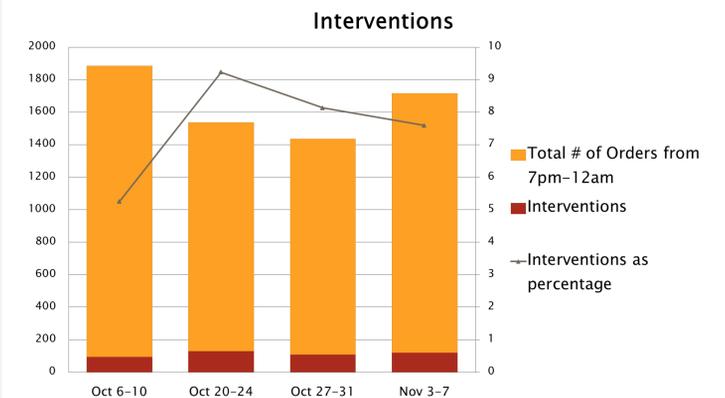
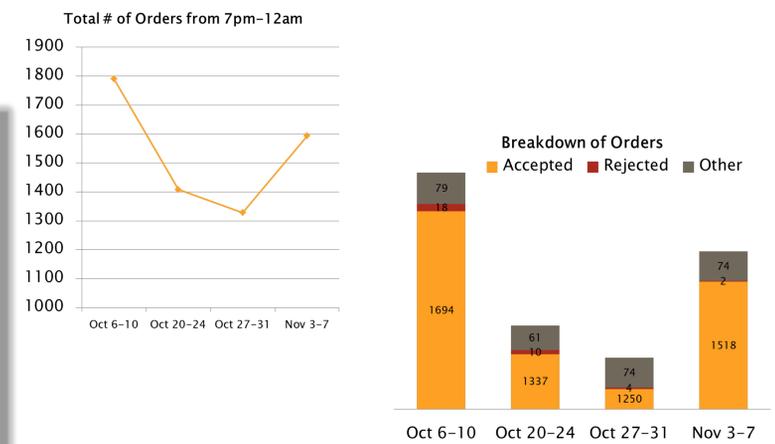
## Cases: High Risk Medications

Case 1: Patient ordered dalteparin (a Low Molecular Weight Heparin) and was already on rivaroxaban (Novel Oral Anticoagulant - NOAC) - intervention made and dalteparin stopped

Case 2: Tobramycin 120 mg IV Q18H on a patient that was transferred between wards in a hospital; The eMAR indicated the next dose was going to be given at 1700 hrs despite the prior dose being at 1430hrs - intervention made and time changed to 2230hrs.

Case 3: Patient ordered Novomix 30 insulin 48 units SC daily (patient takes with supper) with another order for Novomix 30 insulin 56 units SC with supper; both were on MAR for 1630 hrs administration while intention was 48 unit dose to be with breakfast - intervention made and dosing times changed to breakfast and supper.

Case 4: Patient transferred from one facility in the region to the ICU of a larger facility; the order for vancomycin 1750 mg IV Q12H was ordered as vancomycin 1000 mg IV Q12H after transfer in a patient weighing 160 kg; After discussion with the prescriber the dose was changed to the original 1750 mg IV Q12H.



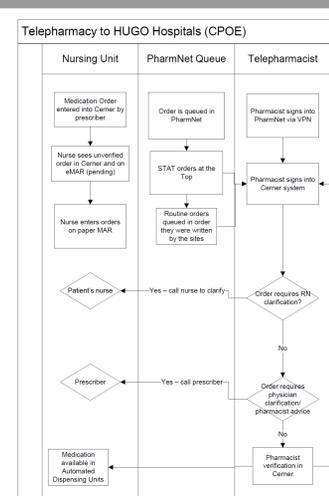
## Lessons Learned

- ❖ Telepharmacy use for medication order review is a cost-effective means to enhance and expand pharmacist coverage
- ❖ Sharing of pharmacist resources across several hospitals has allowed for a collaborative approach to overcome the identified barriers to patient safety and implementation of Accreditation Canada standards
- ❖ 24/7 order review results in improved patient safety, best possible pharmacotherapy is achieved in real time and allows for enhanced on-site clinical programs
- ❖ Telepharmacy model of care is an efficient and viable solution to support 24/7 pharmacist medication order review.

## References

- ❖ Pedersen et al. ASHP National Survey of Pharmacy Practice in Hospital Settings: Monitoring and patient education—2012. Am J Health-Syst Pharm. 2013; 70:787-803.
- ❖ Wakefield et al. A network collaboration implementing technology to improve medication dispensing and administration in critical access hospitals. J Am Med Inform Assoc 2010;17:584-587.
- ❖ Schneider PJ. Evaluating the impact of telepharmacy. Am J Health-Syst Pharm. 2013; 70:2130-2136.

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## Effect of Change

- Medication orders were now being verified by a pharmacist in real time
- After the prescriber ordered them, a pharmacist could verify for appropriateness and accuracy before being administered by the nurse
- Clinical interventions reduced Drug Related Problems and patient morbidity

## Results

- ❖ During the week from Monday to Friday from 1900 to 1200 am, on average 61 orders per hour were verified, rejected or modified.
- ❖ Peak times (2 telepharmacists) handled 125 orders/hr.
- ❖ Data collected and analyzed over a 4 month period

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