Telepharmacy Support of an Antimicrobial Stewardship Program in a Small Rural Acute Care Hospital

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BACKGROUND

Accreditation Canada introduced the implementation of an antimicrobial stewardship program as a new Required Organization Practice (ROP) for acute care hospitals to improve patient outcomes while minimizing the unintended consequences of antimicrobial use. A successful antimicrobial stewardship program is inter-disciplinary involving pharmacists, infectious disease physicians, infection control specialists, physicians, microbiology staff, nursing staff, hospital administrators, and information system specialists, as available and appropriate. Unfortunately, small, rural acute care hospitals lack access to many of these members especially both a clinical pharmacist and infectious disease physician. Although there are examples of antimicrobial stewardship programs using a remote infectious disease physician, there are currently no reports of a remote clinical pharmacist model to help support and lead an antimicrobial stewardship program.

DESCRIPTION

St. Francis Memorial Hospital (SFMH) is a 20 bed acute care hospital with no on-site clinical pharmacist and have been utilizing telepharmacy services since 2008. Physician orders are scanned into a medication order management software allowing the pharmacist to review orders remotely along with remote access to the pharmacy software solution. To prepare for Accreditation in December 2013, the remote clinical pharmacist was requested to help support and lead the antimicrobial stewardship program.

IMPLEMENTATION

After having the remote pharmacist attend an antimicrobial stewardship conference held by Public Health Ontario (PHO), the PHO gap analysis tool was completed to identify what was already in place and what still needed to be done. The gap analysis tool allowed SFMH to determine the course of action required to develop and implement an antimicrobial stewardship program. Between June 2013 and December 2013, implemented the antimicrobial program with numerous steps taken including:

- Creation of antimicrobial stewardship committee and terms of reference
- Creation of a SFMH specific antibiogram to help with empiric selection of antimicrobials
- Education for both physicians and nurses
- Prospective data collection in September 2013
- Creation of an intravenous (IV) to oral (PO) program lead by the pharmacist restricted to ciprofloxacin, clindamycin, metronidazole, and moxifloxacin
- Monitoring of both Days of Therapy (DOT) and Length of Therapy (LOT) as applicable and costs associated with antimicrobial use

Starting January 2014, the remote clinical pharmacists started providing prospective audit with intervention and feedback.

RESULTS

Figure 1: Days of Therapy per 1000 Patient Days

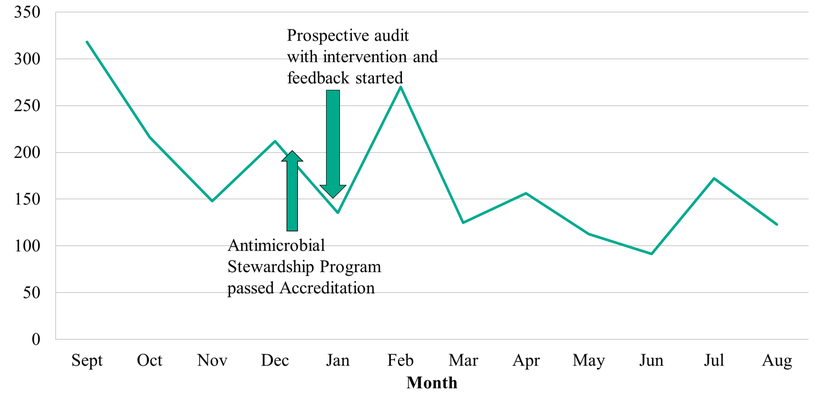
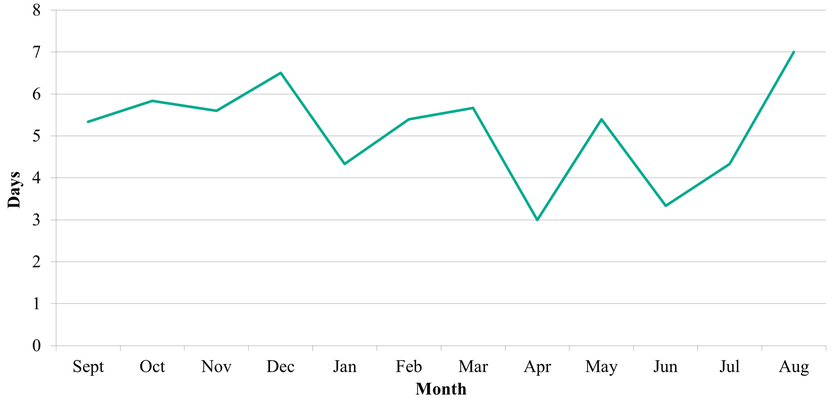


Figure 2: Length of Therapy (LOT) for pneumonia



DISCUSSION

The antimicrobial stewardship program at SFMH was formally accepted by Accreditation Canada in December 2013. An initial analysis was done in March 2014 to see the impact of the prospective audit with feedback and intervention for presentation to MAC. Figure 1 shows the downward trend in days of therapy per 1000 patient days over one year. Figure 2 shows how length of therapy for pneumonia infections was impacted over the year and perhaps further work is required on education and developing clinical pathways.

Further analysis on drugs costs/savings, IV to PO rates, and pharmacist recommendation acceptance rates still need to be done.

NEXT STEPS

In order to grow the antimicrobial stewardship program at SFMH and overcome current challenges, the following measures will be considered going forward:

- Continuing education of staff
- Focus on pneumonia and urinary tract infections
- Develop electronic data collection tool as currently manual data collection/analysis is time consuming
- Hiring an infectious disease physician
- Implementing a pharmacist renal dosing program

IMPLICATIONS

Small rural and remote acute hospitals without access to an on-site clinical pharmacist can successfully implement and maintain an antimicrobial stewardship program by seeking support from experienced remote clinical pharmacists.