

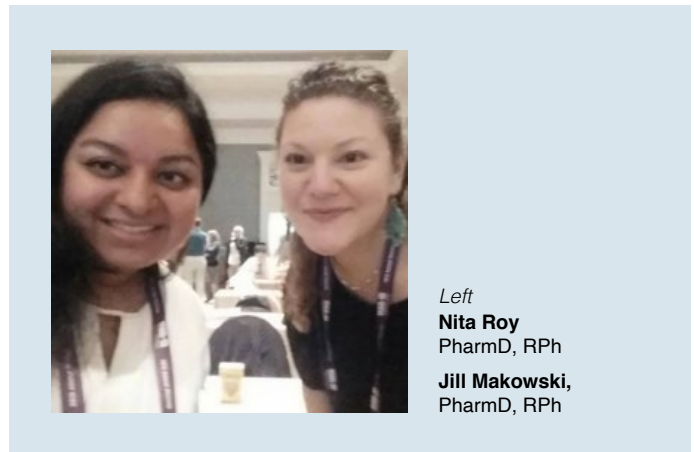
Pharmacy team helps improve process and align response to sepsis care

SOUTHCOAST HEALTH

In 2015, when Southcoast Health began a review of their sepsis practices, the system's two clinical infectious disease pharmacists – Nita Roy and Jill Makowski – participated as key members of the planning and process improvement team. The clinical pharmacy team played a key role in developing robust, concurrent processes. The first step was to review and understand the CMS sepsis guidelines, which are long and complex and require providers to make decisions at several different points. Second, the pharmacists distilled the guidelines into a consumable list so that clinicians could choose the appropriate drugs expeditiously. Third, by driving allergy reviews for anaphylaxis, the team drove less second line antibiotic use and fewer exceptions. Finally, the pharmacy team managed the patient's antibiotics concurrently and pursued de-escalation and appropriate switch to orals. Their work has been embedded in standard practices and they continue to be essential members of the Sepsis Committee.

A Problem of Alignment: Sepsis and Stewardship

The initial phase of work involved a detailed review of the sepsis order sets, the health system's antibiogram and the new CMS sepsis guidelines. A review of the antibiotics that were included in the order sets showed an obvious misalignment between recommended antibiotics in the sepsis bundle and covered organisms. For example, the pharmacists noticed that levofloxacin was recommended for almost every indication but the local antibiogram demonstrated low effectiveness for certain infections. In addition, emerging data had linked quinolone use and other restricted antibiotics to *C. difficile* rates. The antibiotic stewardship team had implemented a program to reduce fluoroquinolone use system wide and was concerned about success with both sepsis and stewardship.



Left
Nita Roy
PharmD, RPh
Jill Makowski,
PharmD, RPh

Aligning the Stakeholders

Together with P&T Committee and key physicians in areas such as infectious disease and emergency medicine, the sepsis committee developed a simplified, unified approach to select SEP-1 compliant antibiotic regimens that covered the organisms in our area. The review resulted in several changes to the sepsis order sets and made use of the escalation process whereby an on-call infectious disease physician could be involved for deviations in recommended regimens. The Department of Medicine also modified infectious disease call protocols and job descriptions to include support for stewardship efforts. **The program achieved a 38 percent reduction in restricted antibiotic use from 2015 to 2016 and a 91 percent reduction in levofloxacin use over the past three years. During this period, the program achieved a declining *C. difficile* rate from 7.50 per 10,000 patient days in 2014, to 6.89 in 2014, and 5.09 by the end of 2018 (.493 SIR).**

Hardwiring Process to Speed Workflows

One of the keys to success was to hardwire process into the electronic health record where possible. Southcoast Health's Information group enabled emergency department (ED) clinicians to access through the automated dispensing cabinet the first dose of all appropriate antibiotics without the need for stewardship review. In the EPIC system, the team helped design a stewardship pre-approval option for ED antibiotic orders used for sepsis through a "sepsis button" available when ordering antibiotics, thereby improving time to antibiotics. The pharmacy team retained in place a post-hoc compliance program to assure consistency.

Summary

Overall, Southcoast Health's antimicrobial stewardship program pharmacists have been instrumental in appropriate and timely care. The alignment of sepsis and stewardship practices has been able to reduce the use of fluoroquinolones while raising SEP-1 compliance to percentiles in the 80th-90th range. In turn, the system has seen improvements in timing of care and outcomes such as *C. difficile* rates.