

# The Impact of Education and Prospective Audit and Feedback on Reducing Ciprofloxacin Utilization at a Small Community Academic Hospital

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## Background:

- Fluoroquinolones (FQs) are associated with severe and disabling adverse effects.
- Increasing rates of resistance has rendered FQs less favorable for empiric therapy.
- A quality improvement initiative was undertaken to reduce ciprofloxacin utilization.

## Setting:

- 77-bed community academic hospital
- 10,800 emergency department visits
- 2700 admissions
- 5200 outpatient surgeries
- 1800 inpatient surgeries
- Antimicrobial Stewardship Program (ASP) began July 2016

## Methods:

- The multidisciplinary ASP developed and disseminated guidelines for ciprofloxacin use to all physicians via an electronic newsletter in June 2017 (Table 1).
- The ciprofloxacin use guidelines were also shared in-person at meetings with provider groups with high ciprofloxacin utilization rates beginning in June 2017.
- The ASP pharmacist initiated prospective audit and feedback (PAF) for all ciprofloxacin orders beginning in December 2017.
- Ciprofloxacin utilization was measured monthly in days of therapy (DOT)/1,000 patient (pt) days utilizing medication administration data.
- Patient days were determined by National Healthcare Safety Network (NHSN) midnight census.

## Results:

Table 1. Ciprofloxacin Use Guidelines

Indication	1 <sup>st</sup> Line Option
Community acquired intra-abdominal infections, in lower-risk patients	Ceftriaxone + Metronidazole Can change to Cefdinir + Metronidazole when ready to switch to PO therapy
Uncomplicated Urinary Tract Infection	<b>PO options</b> include: • Nitrofurantoin* (*avoid if pyelonephritis suspected) • Cephalexin • Cefdinir  IV option: • Ceftriaxone (can be changed to cefdinir when ready for PO therapy)
Febrile neutropenia	Cefepime
Documented <i>Pseudomonas aeruginosa</i> infection	Ciprofloxacin can be used for <i>Pseudomonas aeruginosa</i> infection if the isolate is susceptible to ciprofloxacin, when oral therapy is appropriate.
<b>Whenever possible, treatment selection should be guided by culture and susceptibility results.</b>	

Figure 1. Ciprofloxacin and Levofloxacin Use and ASP Interventions

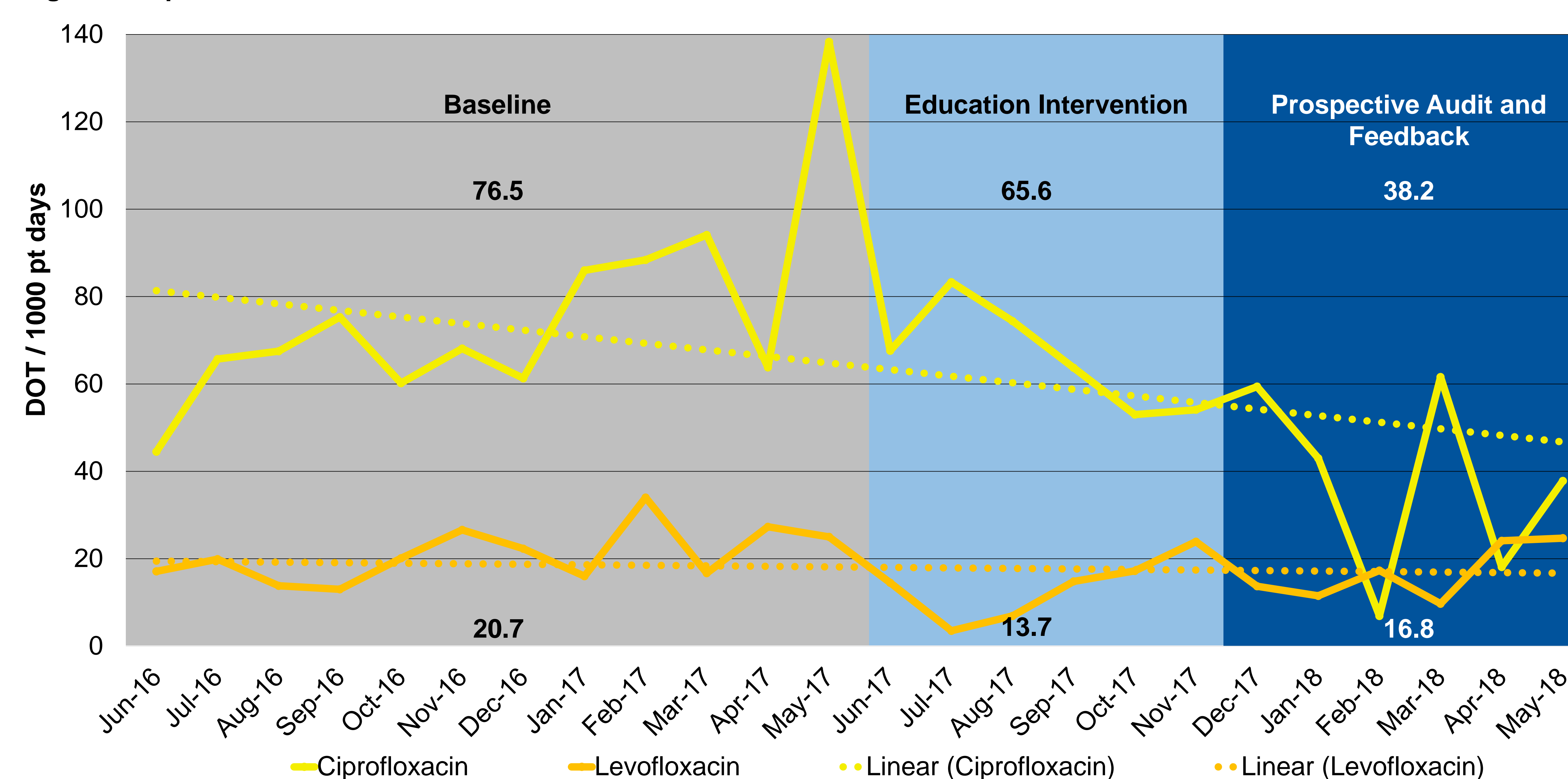
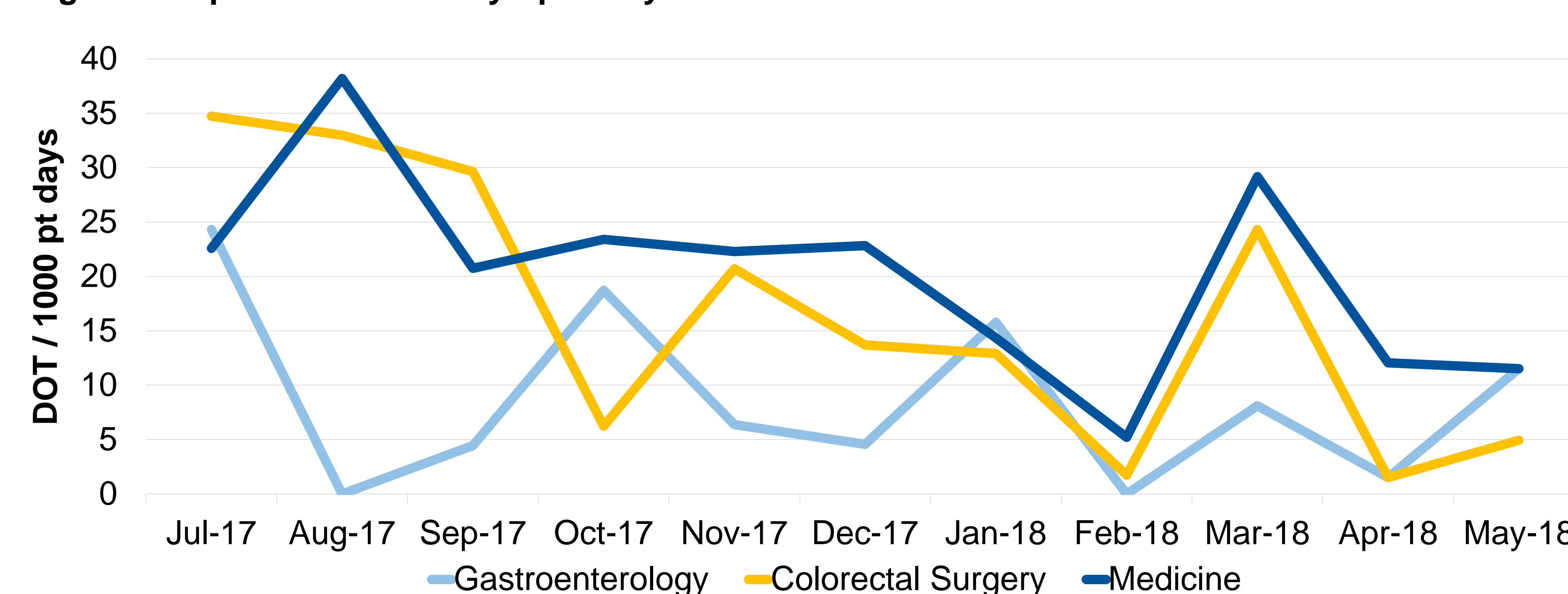


Figure 2. Ciprofloxacin Use by Specialty



## Conclusions:

- The combination of PAF with education achieved the greatest impact on curbing ciprofloxacin use.
- This multimodal approach was effective and sustainable at a small hospital with limited antibiotic stewardship resources.

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