

# Impact and Sustainability of Antimicrobial Prescribing Feedback with Peer Comparison to Hospitalists in a Community Hospital



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## Background

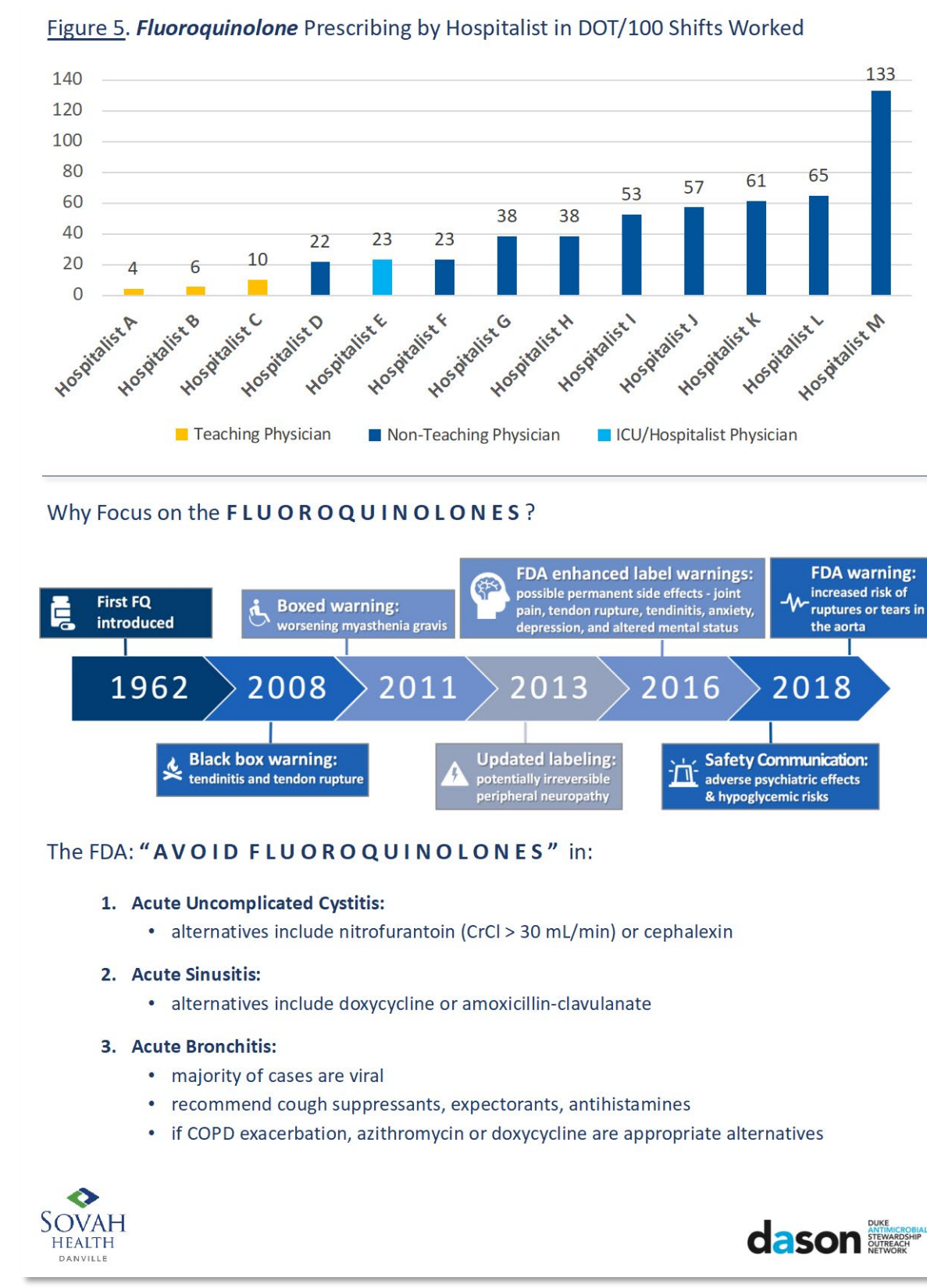
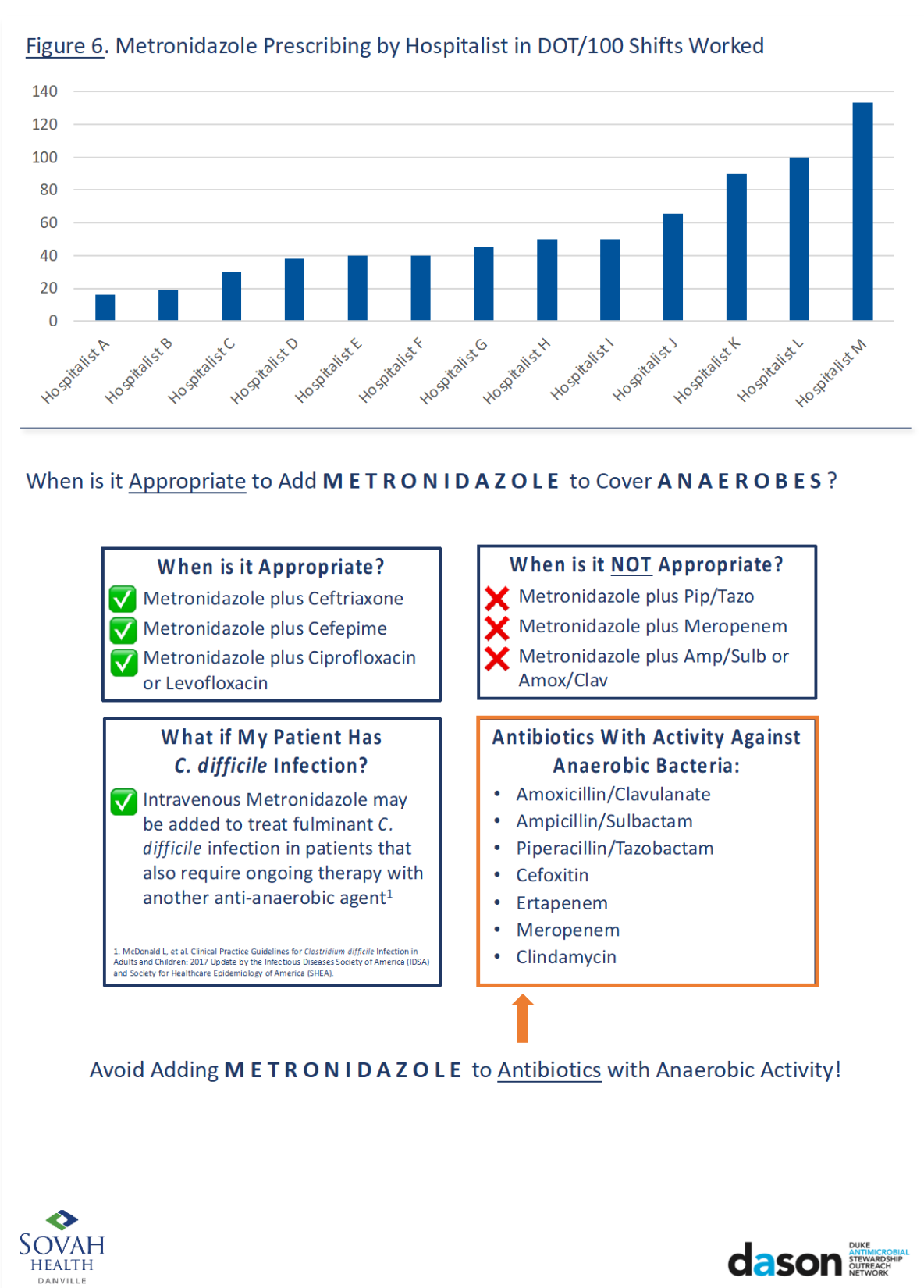
- Antibiotic prescribing feedback with peer comparison has been shown to reduce antibiotic prescribing in the outpatient setting, but data regarding its impact in the acute care setting are lacking
- We previously developed novel denominator metrics to account for differences in work habits and patient volume when presenting prescriber feedback with peer comparison
- Using these novel denominator metrics, we presented antibiotic prescribing feedback with peer comparison and targeted education annually in small group sessions to hospitalist physicians throughout 2018-2021 and measured its impact on hospitalist-specific and facility-wide antibiotic prescribing

## Methods

- Antibiotic days of therapy (DOT) for all antibiotics and targeted agents (aztreonam, antipseudomonal beta-lactams, vancomycin, and fluoroquinolones (FQ)) were obtained from the electronic medication administration record and linked to the ordering hospitalist using the DASON Antimicrobial Stewardship Assessment Portal (ASAP)
- Hospitalist-specific shifts worked data by month were calculated from scheduling reports shared by the hospitalist group's administration team
- Antibiotic prescribing reports were prepared using 6-months of prescribing data and presented in DOT/shifts worked in small group sessions in-person (4/2018, 4/2019, 3/2020, 11/2021) or virtually (9/2020) throughout 2018 – 2021

## Methods

- These reports included targeted education for specific antibacterials of interest to the stewardship team based on current initiatives (e.g., aztreonam, metronidazole) as well routine education for certain broad-spectrum or toxic antibacterials (e.g., vancomycin, antipseudomonal beta-lactams, FQs)
- In addition, alternative therapy recommendations were provided for specific clinical scenarios based on locally-developed clinical guidelines and antibiogram data
- Hospitalist physicians were color-coded based on primary role (e.g., teaching versus non-teaching physician)
- Example prescribing feedback reports including 6-months of prescribing data are included below:



When is it **Appropriate** to Add METRONIDAZOLE to Cover ANAEROBES?

<p><b>When is it Appropriate?</b></p> <ul style="list-style-type: none"> <li>Metronidazole plus Ceftriaxone</li> <li>Metronidazole plus Cefepime</li> <li>Metronidazole plus Ciprofloxacin or Levofloxacin</li> </ul>	<p><b>When is it NOT Appropriate?</b></p> <ul style="list-style-type: none"> <li>Metronidazole plus Piper/Tazo</li> <li>Metronidazole plus Meropenem</li> <li>Metronidazole plus Amp/Sulb or Amp/Clo</li> </ul>
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What if My Patient Has C. difficile Infection?

Intravenous Metronidazole may be added to treat fulminant C. difficile infection in patients that also require ongoing therapy with another anti-anaerobic agent!

Antibiotics With Activity Against Anaerobic Bacteria:

- Amoxicillin/Clavulanate
- Ampicillin/Sulbactam
- Piperacillin/Tazobactam
- Cefazolin
- Ertapenem
- Meropenem
- Clindamycin

Avoid Adding METRONIDAZOLE to Antibiotics with Anaerobic Activity!

Why Focus on the FLUOROQUINOLONES?

Timeline: 1962 (First FQ introduced), 2008 (boxed warning), 2011 (FDA enhanced label warnings), 2013 (FDA warning), 2016 (updated labeling), 2018 (Safety Communication).

The FDA: "AVOID FLUOROQUINOLONES" in:

- Acute Uncomplicated Cystitis:
  - alternatives include nitrofurantoin (CrCl > 30 mL/min) or cephalosporins
- Acute Sinusitis:
  - alternatives include doxycycline or amoxicillin-clavulanate
- Acute Bronchitis:
  - majority of cases are viral
  - recommended cough suppressants, expectorants, antihistamines
  - if COPD exacerbation, azithromycin or doxycycline are appropriate alternatives

## Results

- During 5 small group sessions, 31 hospitalists received antibiotic prescribing feedback with peer comparison; time-trended data for FQ prescribing for 7 MDs with longitudinal data are shown in Figure 1
- In the month following feedback sessions, antibiotic use data demonstrated substantial reductions in FQ prescribing (Figure 2), and similar trends were observed among all targeted agents
- Facility-wide, targeted antibiotic use decreased 31% from 2017 to 2021 and was primarily driven by reductions in use by hospitalists

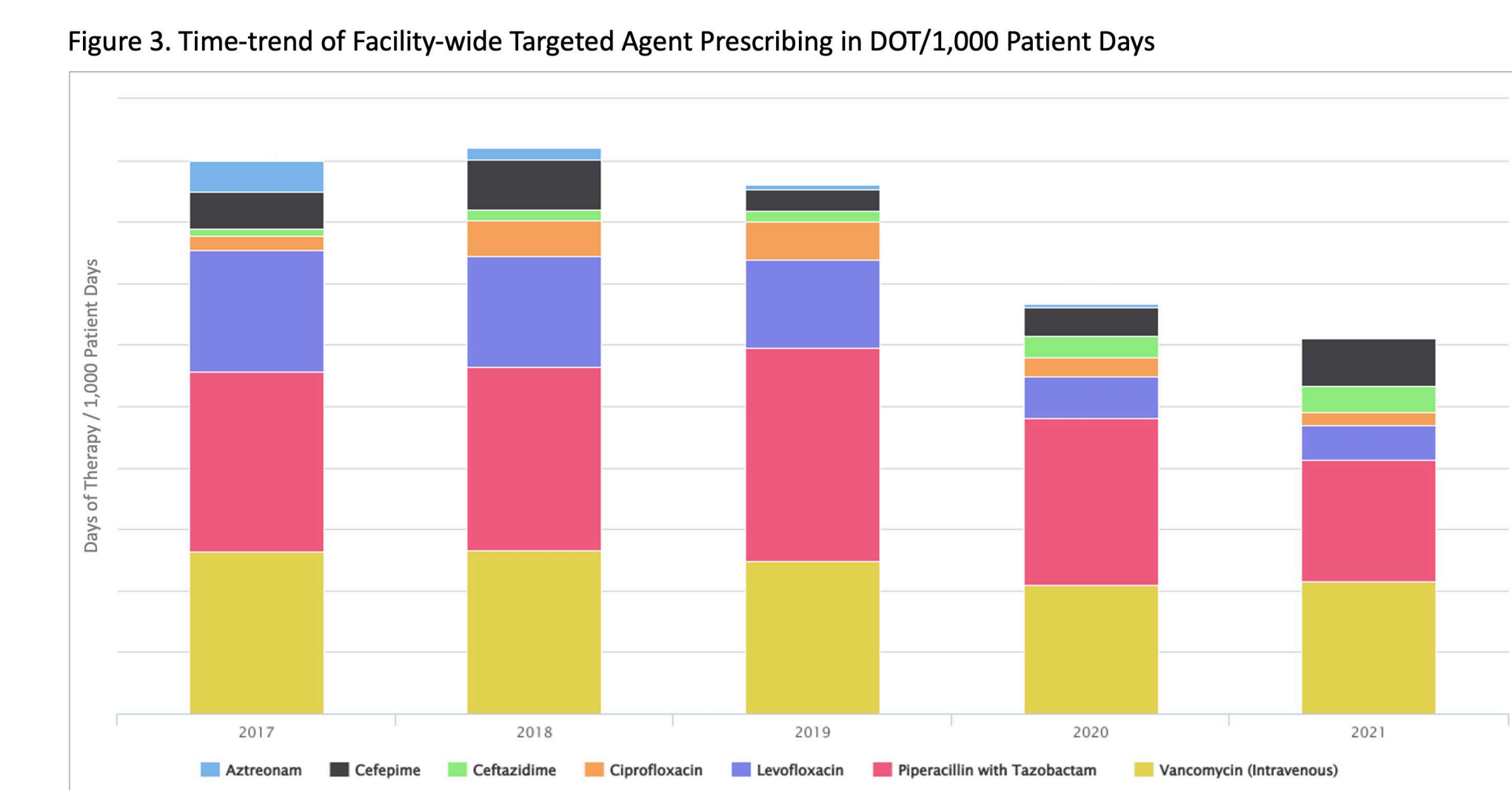


Figure 1. Time-trend of Fluoroquinolone Prescribing in DOT/Shifts Worked by Hospitalists

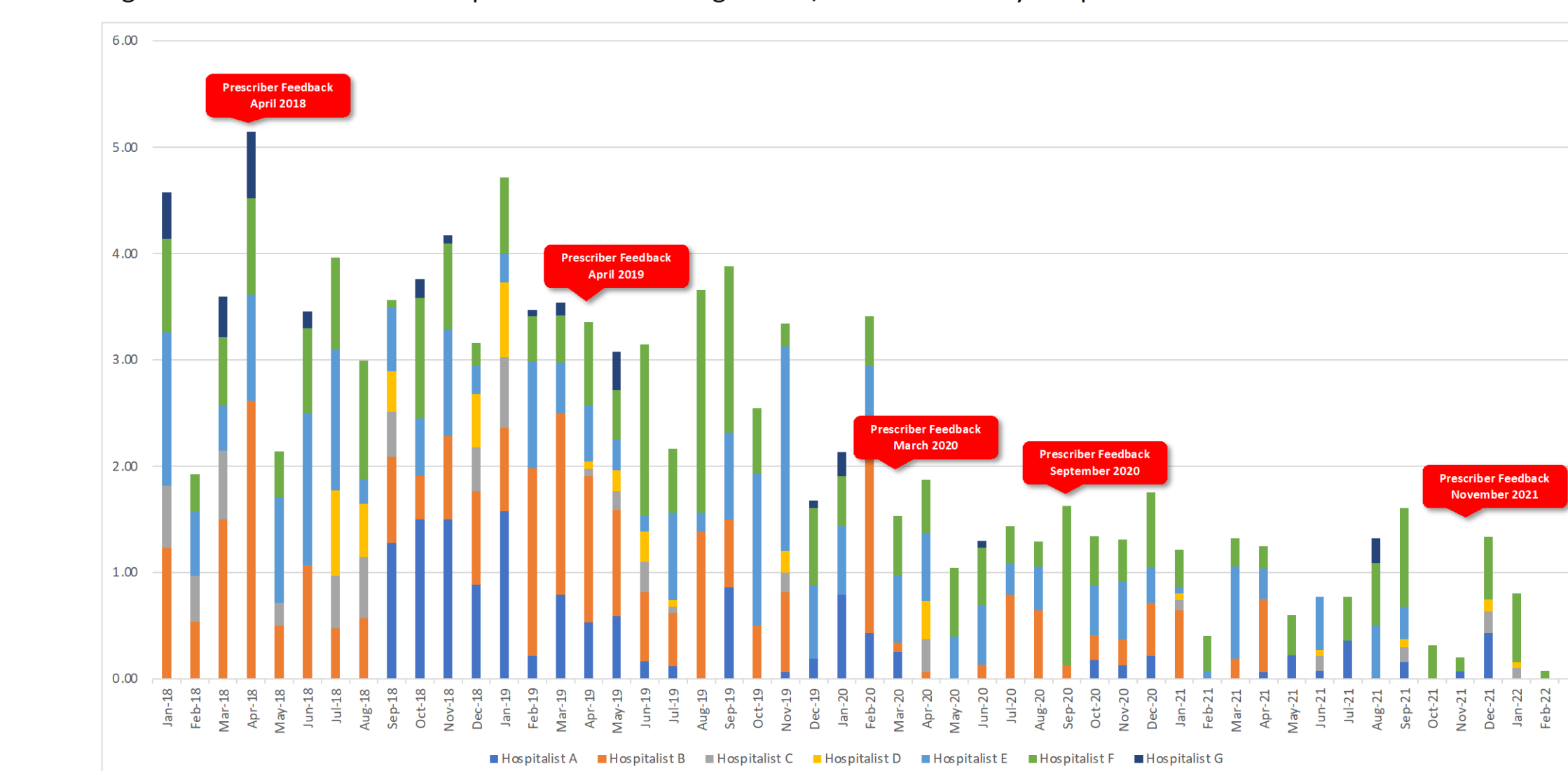
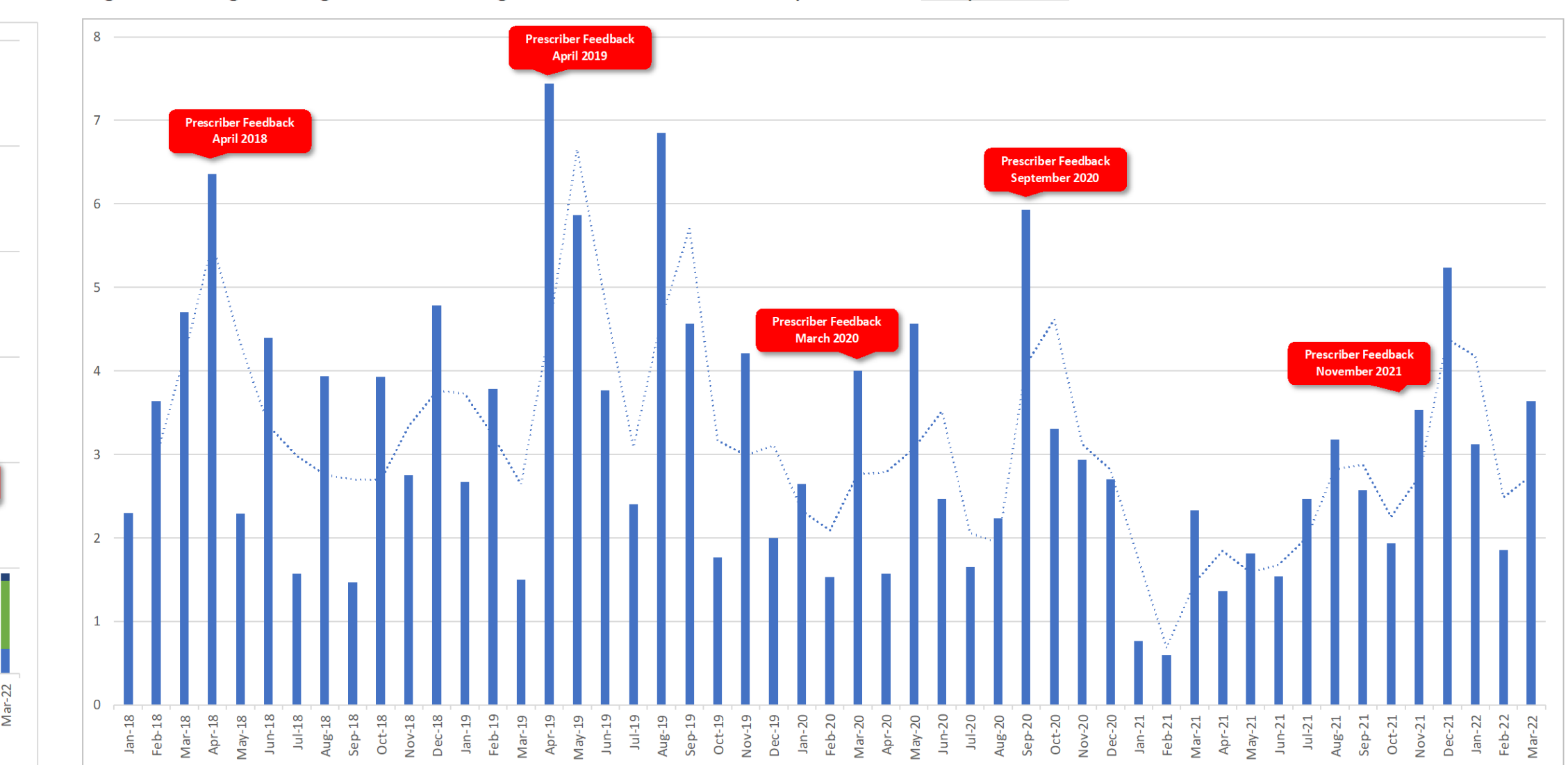


Figure 2. Targeted Agent Prescribing in DOT/Shifts Worked by Month – Hospitalist C



## Conclusions

- Regular antibiotic prescribing feedback with peer comparison and targeted education was associated with a substantial reduction in targeted agent prescribing by hospitalists in our community hospital, contributing to a 31% facility-wide reduction in use of these agents

