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# AHRQ STEWARDSHIP OUTCOMES: REFLECTIONS FROM A HOSPITAL

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# LAWRENCE MEMORIAL HOSPITAL

- 25 bed critical access hospital
- On-site pharmacist 40 hrs/week
- 2 full-time primary care physicians with occasional weekend hospitalist coverage




# ANTIMICROBIAL STEWARDSHIP AT LMH

- Committee formed in May 2016
- Reports to P&T Committee
- Pharmacist Lead, 2 physicians, Nursing, Quality, Infection Prevention, Lab
- Meet Quarterly

# AHRQ SAFETY PROGRAM FOR IMPROVING ANTIBIOTIC USE

## Promises

- 12 month program created to develop and implement a bundle of interventions designed to improve antibiotic stewardship
-  Education
- Access to resources to help develop order sets

## Requirements

- Pre- and Post- Intervention structural assessment
- Pre- and Post- Intervention Unit-specific Hospital Survey on Patient Safety Culture data
- 10 Team Antibiotic Review forms/month
- Monthly antibiotic usage data
- Quarterly C. diff lab ID events data

## Collection Period

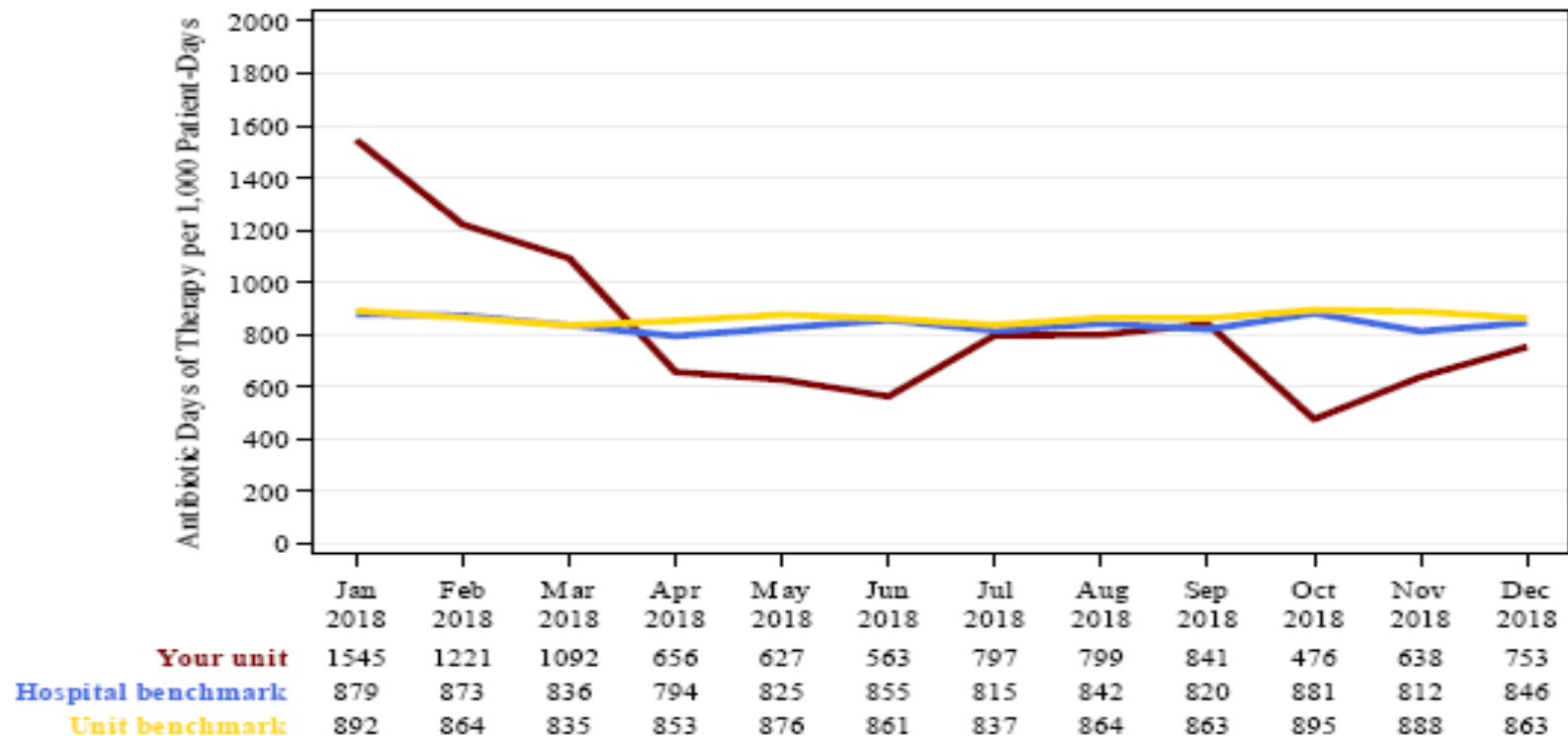
**Quarter 1** (baseline period): *January, February, March 2018*

**Quarter 2** (first program quarter): *April, May, June 2018*

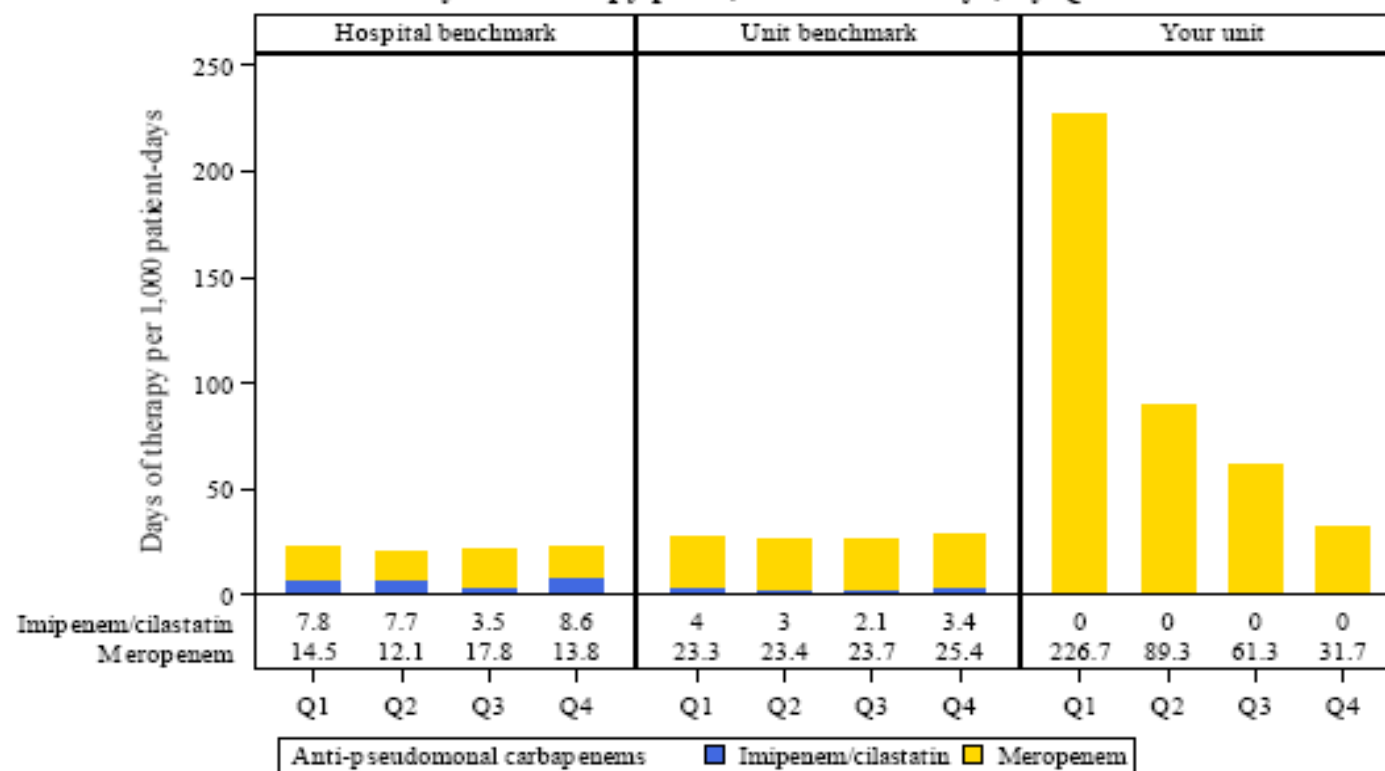
**Quarter 3** (second program quarter): *July, August, September 2018*

**Quarter 4** (final program quarter): *October, November, December 2018*

Antibiotic Days of Therapy per 1,000 Patient-Days, Trend over Time



**Antibiotic Days of Therapy per 1,000 Patient-Days, by Quarter**



# HOW IT WORKED

## Quarter 1

- Introduction to the AHRQ Safety Program
- Antibiotic Stewardship Program Development (Part 1)
- Antibiotic Stewardship Program Development (Part 2)
- Making Effective **Behavior Changes** Around Antibiotic Prescribing
- Making the Case that Improving Antibiotic Use is a **Patient Safety Issue**
- Improving **Communication and Teamwork** Around Antibiotic Decision-Making
- **Identifying Targets** for Improvement in Antibiotic Decision-Making
- Making Effective **Changes in Antibiotic Decision-Making**
- Best Practices in the Diagnosis and Treatment of **Asymptomatic Bacteriuria and Urinary Tract Infections**

## Quarter 2

- **Community-Associated Lower Respiratory Tract Conditions**
- **Cellulitis and Skin and Soft Tissue Abscesses**
- **Ventilator-Associated and Hospital-Acquired Pneumonia**

# HOW IT WORKED

## Quarter 3

- Diverticulitis and Biliary Tract Infections
- *Clostridium difficile* Infections
- Sepsis

## Quarter 4

- Bacteremia
- Sustaining Stewardship Activities



# HOW IT WORKED

## The Four Moments of Antibiotic Decisionmaking



# HOW IT WORKED

- Team Antibiotic Review forms – completed in real-time. (Targeted interventions) Each question tied back to the 4 moments

## ACUTE CARE TEAM ANTIBIOTIC REVIEW FORM

Questions 1-6 should be answered for all patients on antibiotics that you evaluate. Teams should review at least 10 cases per month in real time, not retrospectively.

Question 1: Day of antibiotic therapy: (choose one)

Day 1  Day 2  Day 3  Day 4  Day 5  Day 6  Day 7  >7

Question 2: Antibiotic regimen and indication:

Antibiotic \_\_\_\_\_ Indication \_\_\_\_\_  
 Antibiotic \_\_\_\_\_ Indication \_\_\_\_\_  
 Antibiotic \_\_\_\_\_ Indication \_\_\_\_\_  
 Antibiotic \_\_\_\_\_ Indication \_\_\_\_\_

### Moment ONE

Question 3

• Does the patient have a suspected or confirmed infection that requires antibiotics?  Yes  No

### Moment TWO

Question 4

• Were appropriate cultures ordered before antibiotics were started?  Yes  No  N/A

Question 5

• Were specific reactions for reported antibiotic allergies documented?  Yes  No  N/A

Question 6

• Were empiric antibiotics compliant with local guidelines?  Yes  No  N/A

Questions 7-14 should be answered for patients on antibiotics > 24 hours in addition to questions 1-6 above.

### Moment THREE

Question 7

• Are antibiotics still needed?  Yes (Go to Q 9)  No

If you answered no to Question 7, answer Question 8, otherwise go to Question 9.

Question 8

• If antibiotics are not needed, will you stop them today?  Yes  No

Question 9

• Can antibiotics be narrowed based on microbiology data or other clinical data?  Yes (Go to Q 11)  No (Go to Q 11)  Already narrowed (Go to Q11)

If you answered yes to Question 9, answer Question 10, otherwise go to Question 11:

Question 10

• If antibiotics can be narrowed, will you change to narrower agents today?  Yes  No

Question 11

• Can antibiotics be changed from IV to PO?  Yes (Go to Q 13)  No (Go to Q 13)  Already narrowed (Go to Q13)

If you answered yes to Question 11, answer Question 12, otherwise go to Question 13:

Question 12

• If antibiotics can be changed from IV to PO, will you change to oral therapy today?  Yes  No

### Moment FOUR

Question 13

• Has a planned duration been documented in the medical record?  Yes  No (End of the review)

If you answered yes to Question 13, answer Question 14:

Question 14

• Is the planned duration consistent with local guidelines?  Yes  No  N/A

# HOW IT WORKED – RECOMMENDED DURATION OF THERAPY

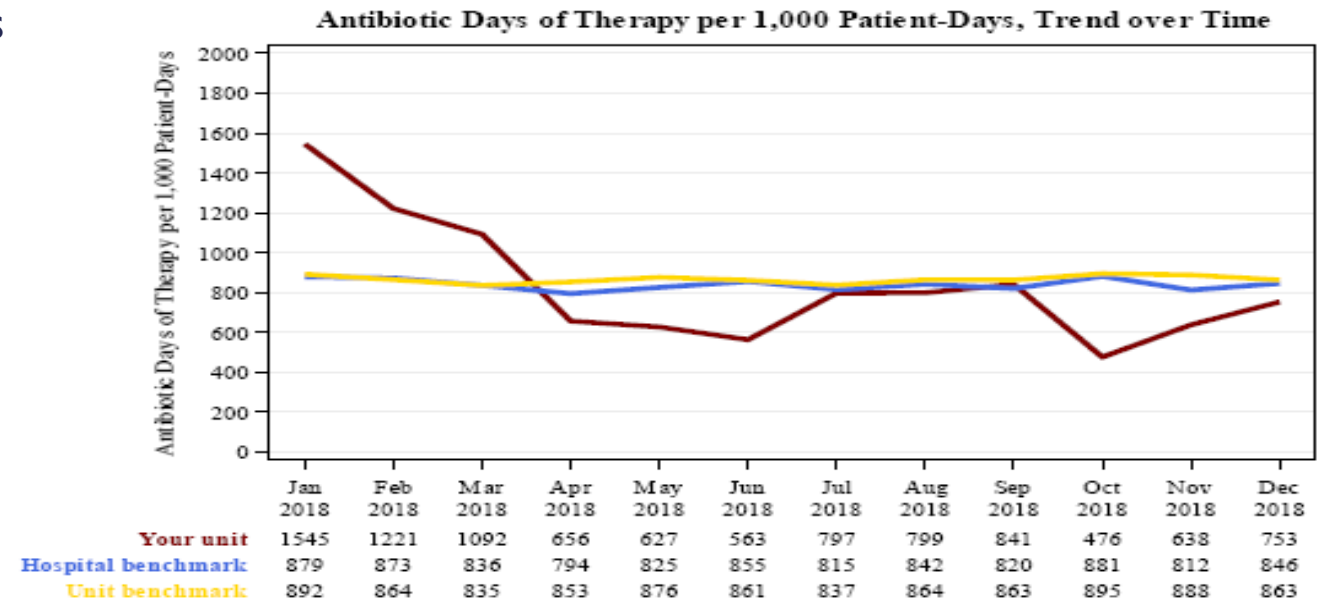
DISEASE PROCESS	DURATION OF ANTIBIOTIC THERAPY
Community-acquired pneumonia	5-7 days
Hospital / healthcare-acquired pneumonia	7 days
Ventilator-associated pneumonia	7 days
Cystitis	3-7 days depending on the agent chosen
Pyelonephritis	7 days unless using an oral cephalosporin
Skin and soft-tissue infections	5-7 days
Intra-abdominal infection with source control	4 days

## HOW IT WORKED – PHYSICIAN EDUCATION

- Physicians were required to complete 2 of the 16 webinars: Asymptomatic Bacteriuria/UTI and Community-Associated Lower Respiratory Tract Conditions
- Distributed and Discussed “One-Pagers” at quarterly Antimicrobial Stewardship Meetings

# SUCCESSSES

- Decrease in both overall and target classes of antibiotic use
- Insight into how we compared to other hospitals and similar units
- Nursing involvement was a positive experience
- Accountability strengthened stewardship efforts



# CHALLENGES

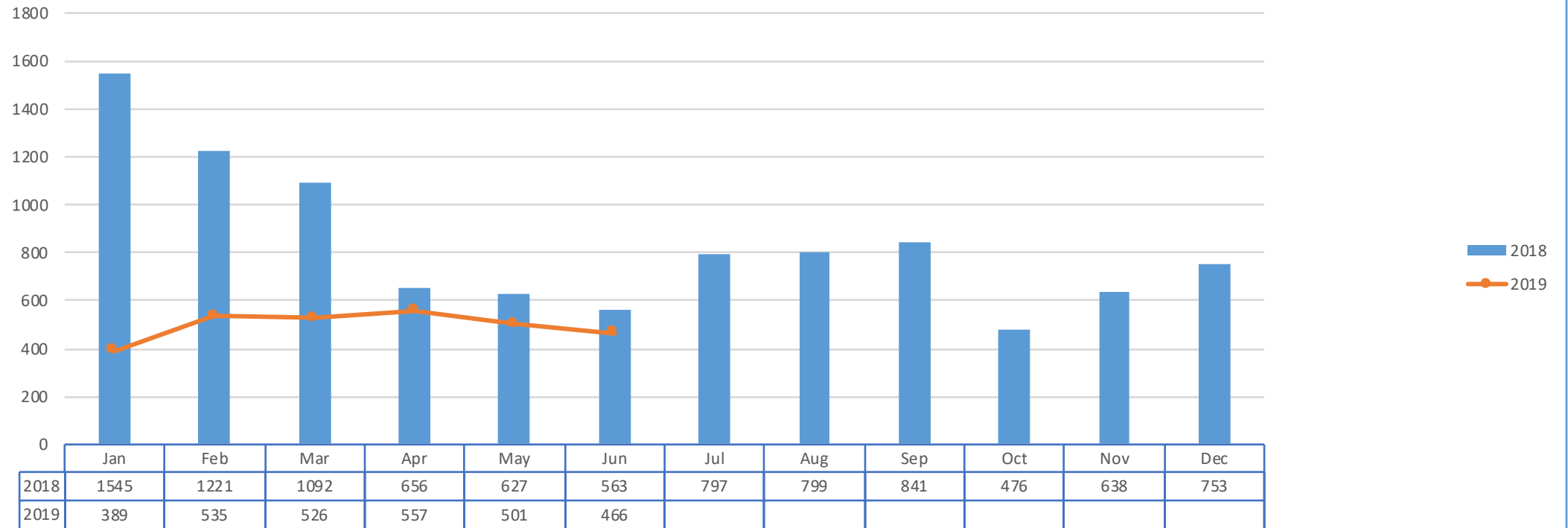
- Changing the culture of length of therapy for IV antibiotics in hospitalized patients
- Competing Interests

# LESSONS LEARNED

- Provide physician education in desired format
- Recommendations/Guidelines for best practice aren't always black and white
- Persistence and outside “expert” advice CAN help
- Antibiotic Stewardship is a team effort
- My focus as a pharmacist is not necessarily the focus of the physician, primary nurse, lab technician, etc.

# STEWARDSHIP EFFORTS AFTER AHRQ ANTIBIOTIC SAFETY PROGRAM

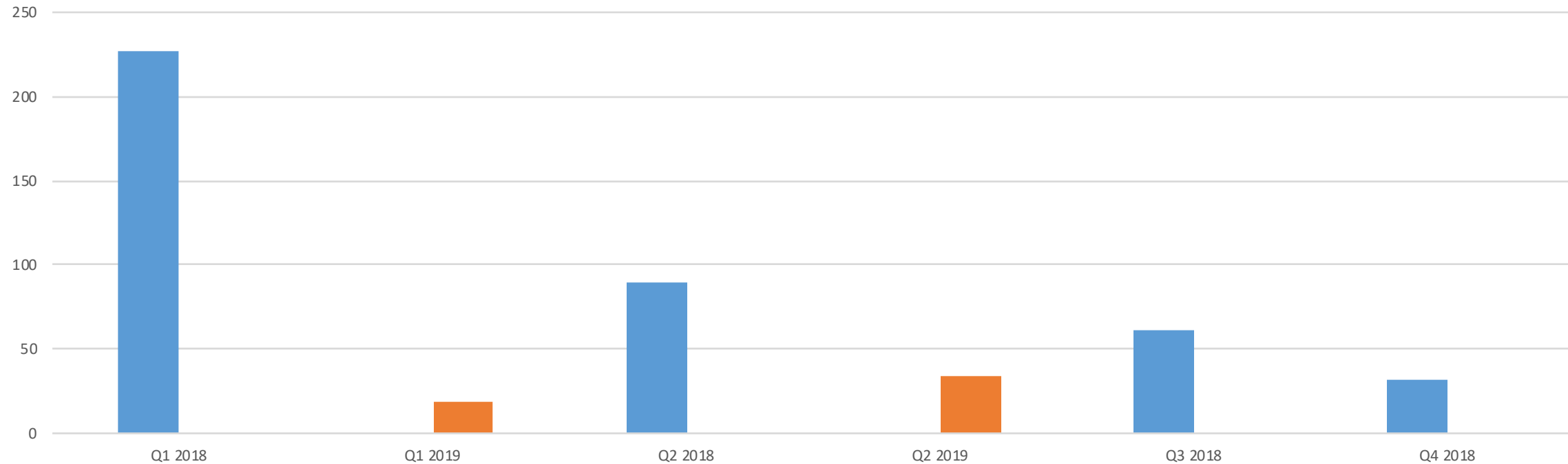
Antibiotic Days of Therapy per 1,000 Patient-Days





# STEWARDSHIP EFFORTS AFTER AHRQ ANTIBIOTIC SAFETY PROGRAM

Meropenem Days of Therapy/1,000 Patient-Days



# STEWARDSHIP EFFORTS AFTER AHRQ ANTIBIOTIC SAFETY PROGRAM

- Physicians are more familiar with the idea of antibiotic stewardship
- Battling competing interests, trying to figure out how to consistently carve out time/ make a part of workflow
- Work on creating processes, possibly add some element of stewardship to PI for accountability