



Evaluation of Oral Step-Down Therapy for Enterobacterales Bloodstream Infection

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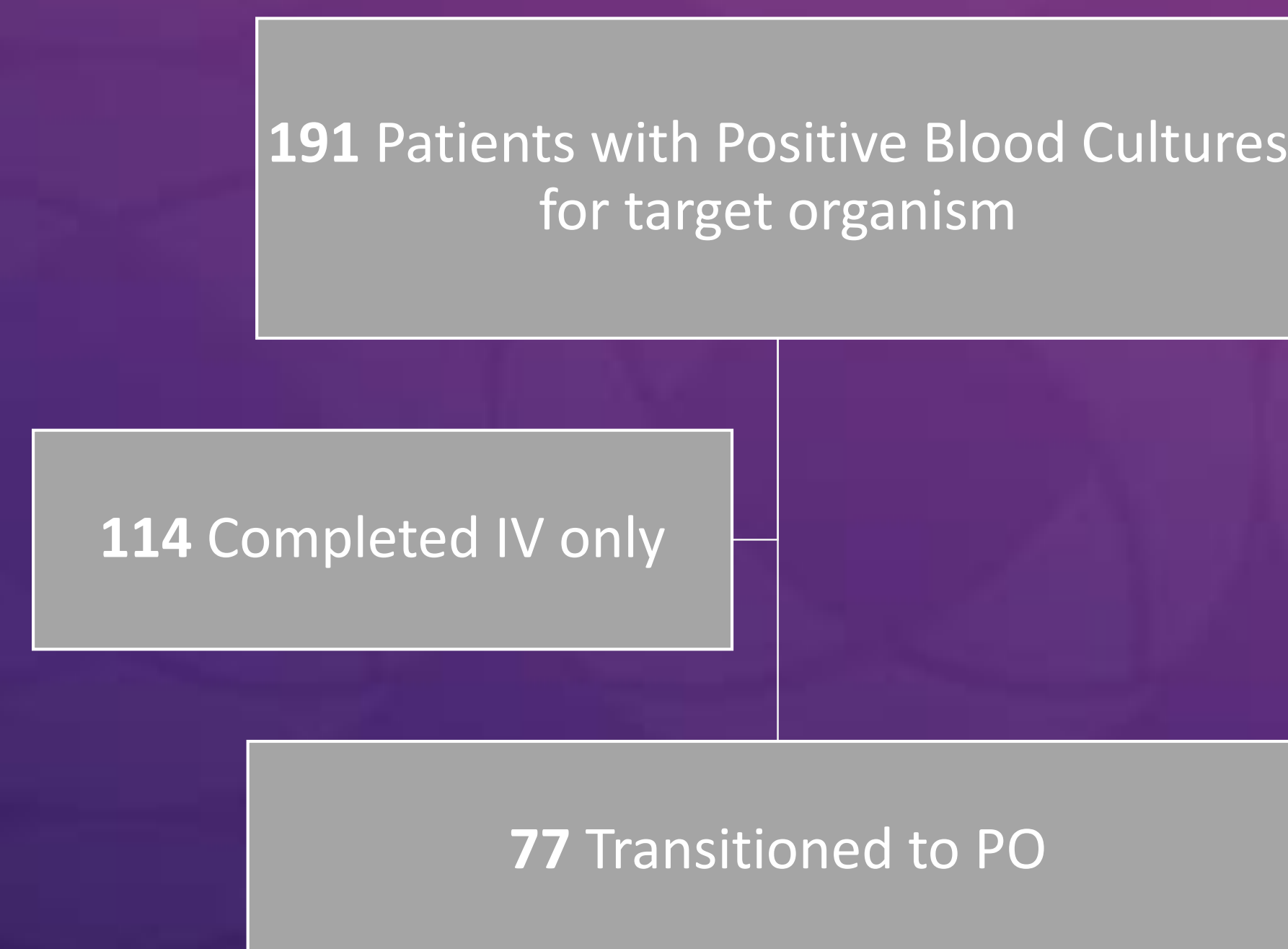
Background:

- Oral antibiotic stepdown therapy for Enterobacterales bloodstream infection (BSI) appears to be a safe option, though high bioavailability drugs like fluoroquinolones and trimethoprim-sulfamethoxazole are often recommended without clear evidence demonstrating superiority.
- Due to increasing concerns of fluoroquinolone resistance and collateral damage with an increasing community *C. difficile* rate, our organization sought to reduce overall fluoroquinolone use and a shift toward oral beta-lactams was observed. A review was conducted to assess the outcomes of this shift.

Methods:

- Retrospective cohort study included all patients within our 3-hospital system who had a positive Enterobacterales blood culture and were transitioned to oral therapy to complete treatment outpatient for bacteremia between January 1, 2017 and September 30, 2019.
- The primary outcome was recurrent BSI within 30 days of completing initial treatment.
- Secondary outcomes included 30-day mortality, 30-day recurrence of organism at an alternate source, 30-day readmission, and 90-day BSI relapse.

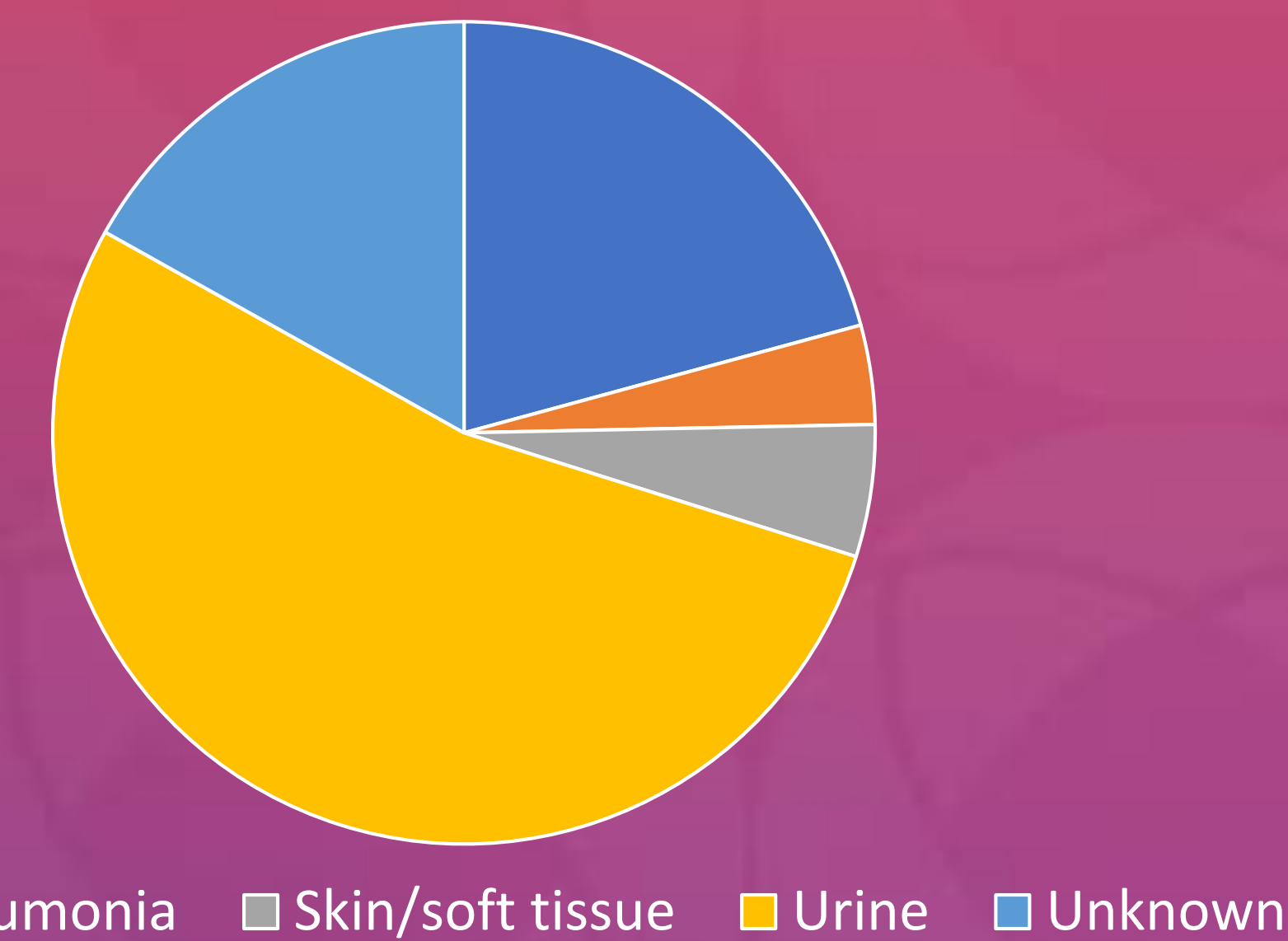
Results:



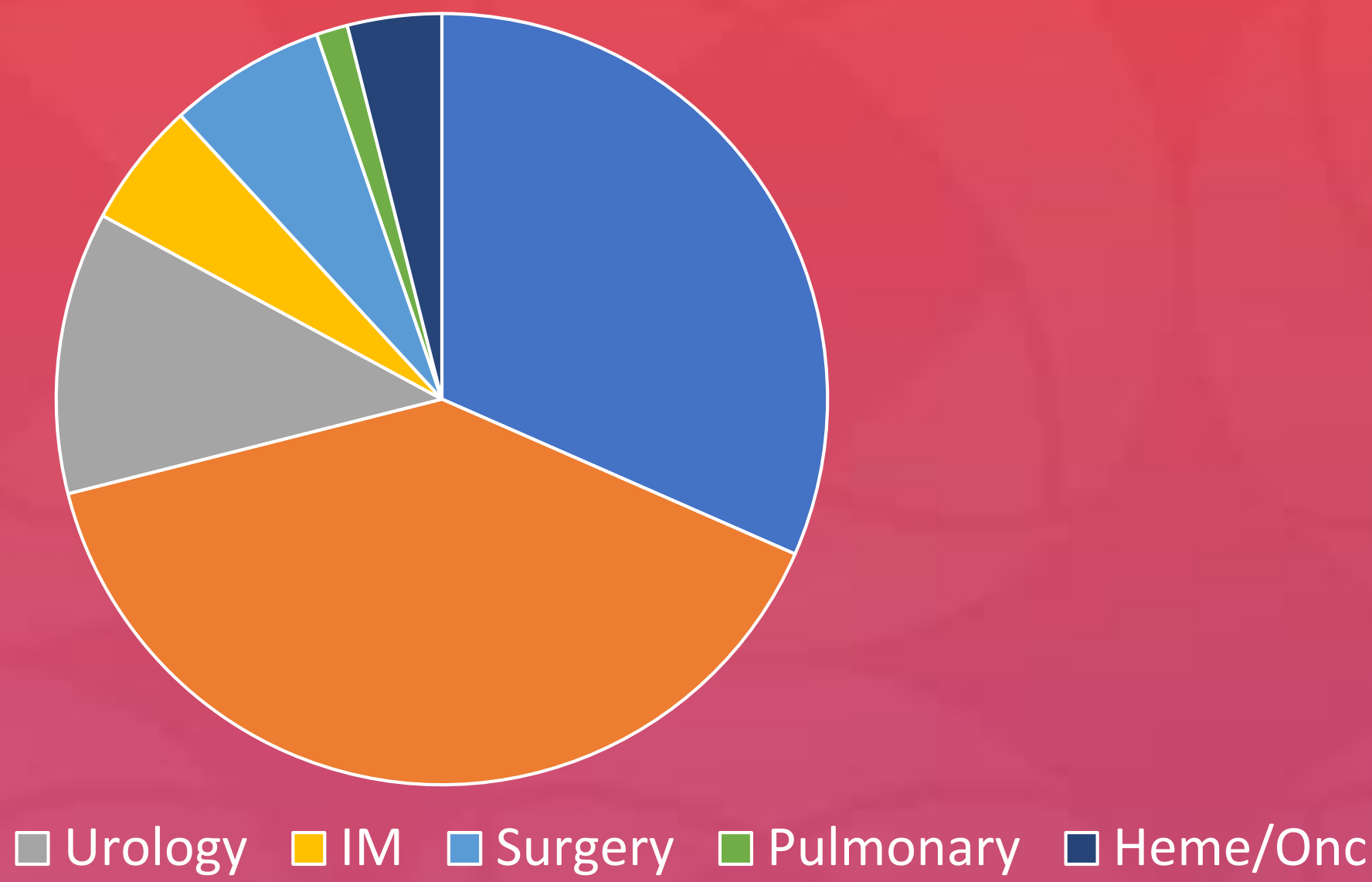
Results:

Patient/Treatment Characteristics	n (range or %)
Mean age, years	68 (25-98)
Male	34 (44)
Mean weight, kg	77 (46-129)
Active IV Duration, days	5.01 (1-15)
Active PO duration, days	9.25 (1-21)
Total antibiotic duration, days	14.2 (7-33)

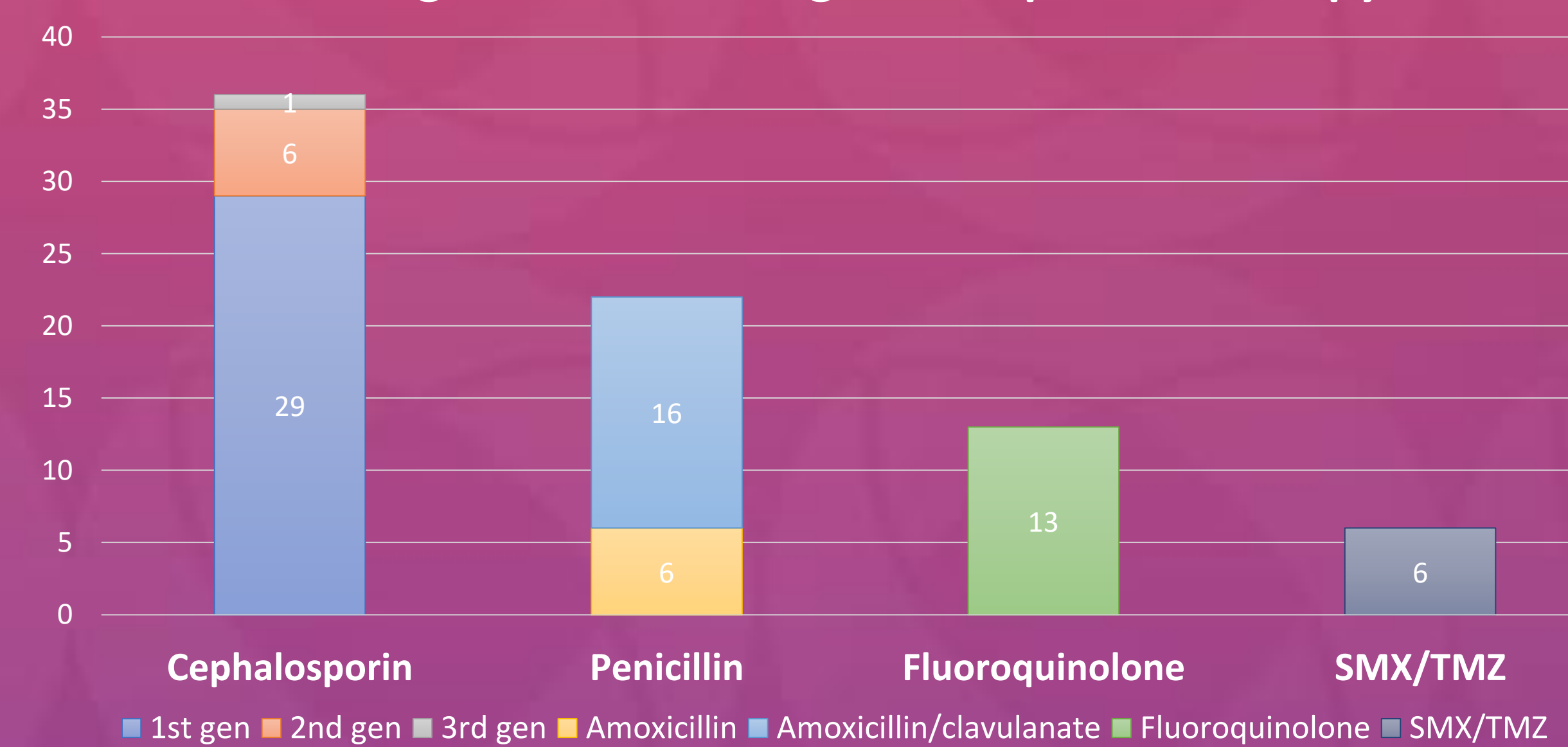
Source of Infection



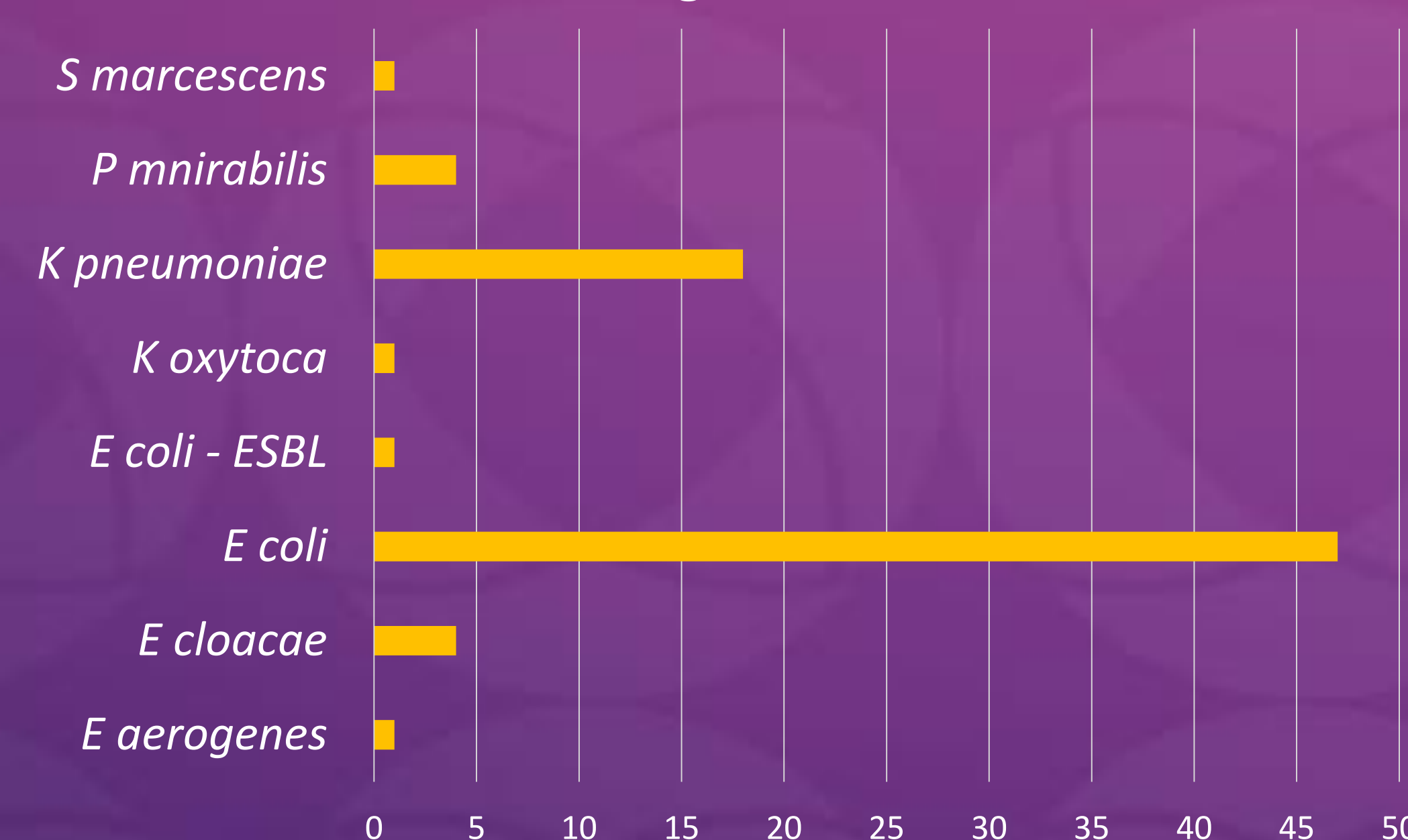
Prescribing Clinician specialty



Oral Agents used as Targeted Stepdown Therapy



Organism



Clinical Outcomes (n=77)	n (%)
30-day relapse: BSI	0 (0.0)
30-day readmission	12 (15.6)
-initial therapy beta lactam	11/12
-initial therapy fluoroquinolone	1/12
30-day mortality	1 (1.3)
90-day relapse: BSI	0 (0.0)
90-day relapse: alternate site	4 (5.2)

Discussion:

- When completing therapy for Enterobacterales infection with oral therapy, beta-lactams are the top prescribed class of antibiotic in our organization
- UTIs were the most common source of infection on our population
- ID and hospitalist physicians were the most common prescribers
- No recurrent 30 or 90-day BSIs were observed regardless of antibiotic class
- 1 patient was discharged to inpatient hospice, no other mortality was observed
- There were 4 recurrent UTIs observed within 90 days; none required readmission
- Of the 12 readmissions, 1 was thought to be related to initial infection by the study investigators

Limitations:

- This study was not designed to detect a difference between antibiotic groups or describe which patients should be transitioned to PO safely

Conclusion:

- Retrospective design and selection bias limits extrapolation to the population at large, but this review provides confirmation that current practices at our organization aren't leading to unintended consequences
- An opportunity to target education on duration of therapy was identified, with the mean total duration of therapy of 14 days
- Additional stewardship initiatives targeting IV to PO therapy are ongoing

References:

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