

Background

- Limiting antibiotic prescribing to the shortest effective duration reduces antibiotic-associated adverse events and antimicrobial resistance
- Infectious Disease Society of America (IDSA) guidelines recommend at least 5 days of therapy (and up to 7 days) for adults with Community-Acquired Pneumonia (CAP)
- IDSA guidelines recommend 7 days of antibiotics for Hospital-Acquired Pneumonia (HAP) and Ventilator-Associated Pneumonia (VAP)
- Up to two-thirds of inpatients receive excessive durations of therapy for pneumonia

Hypothesis

- A dashboard with electronic alerts for patients who have exceeded the recommended duration of antibiotics for CAP or HAP may identify opportunities for stewardship intervention and result in improvements in appropriate antibiotic prescribing

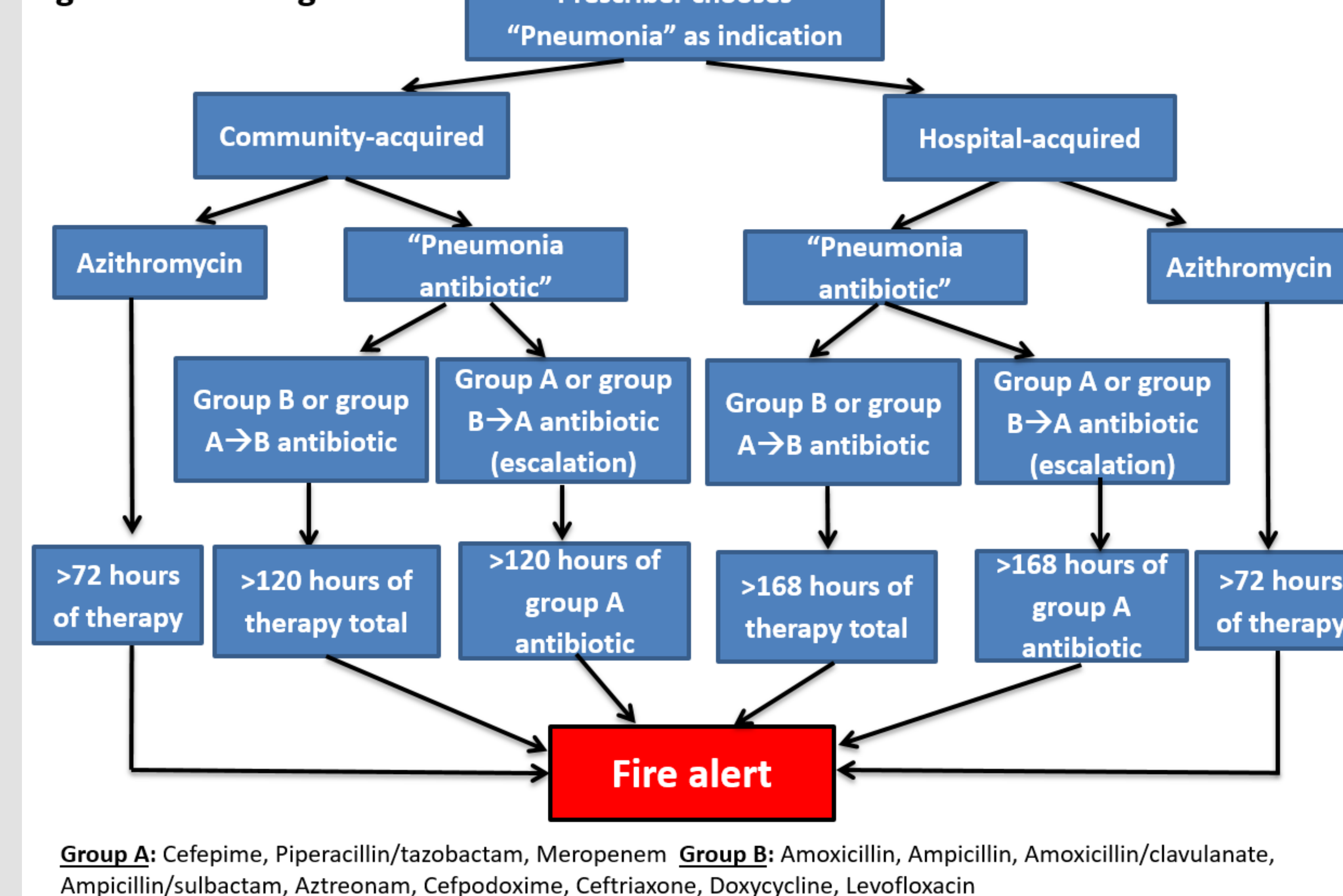
Methods

- With the Penn Center for Healthcare Innovation we created a 'Pneumonia Dashboard' with real-time alerts for inpatients on antibiotics with an indication of CAP or HAP for more than 5 or 7 days, respectively
- We incorporated logic within the electronic alert algorithm to account for antibiotic escalation or de-escalation during therapy (Figure 1)
- Nov 2019 - April 2021:** alerts regularly reviewed by the antibiotic stewardship (AS) team at the Hospital of the University of Pennsylvania (HUP)
 - AS intervention when patients exceeded the guideline recommended duration for pneumonia with seeming clinical improvement by chart review and no additional indication for continuing antibiotics
 - Documented intervention in dashboard and if recommendation made, also documented in Electronic Medical Record (EMR)

Outcomes

- Descriptively characterized interventions and reasons for non-intervention (Figures 3 and 4)
- Compared inappropriate duration of therapy pre- and post-implementation of the dashboard by calculating mean excess days of antibiotics beyond the recommended duration (Figure 5)
 - Excluded patients with SARS-CoV-2, cystic fibrosis, bronchiectasis, or immunocompromising conditions in pre/post analysis
 - Comparison group: Four hospitals in the same health system that did not utilize the pneumonia dashboard

Figure 1. Alert Algorithm



Results

Figure 2. Screening and Outcomes

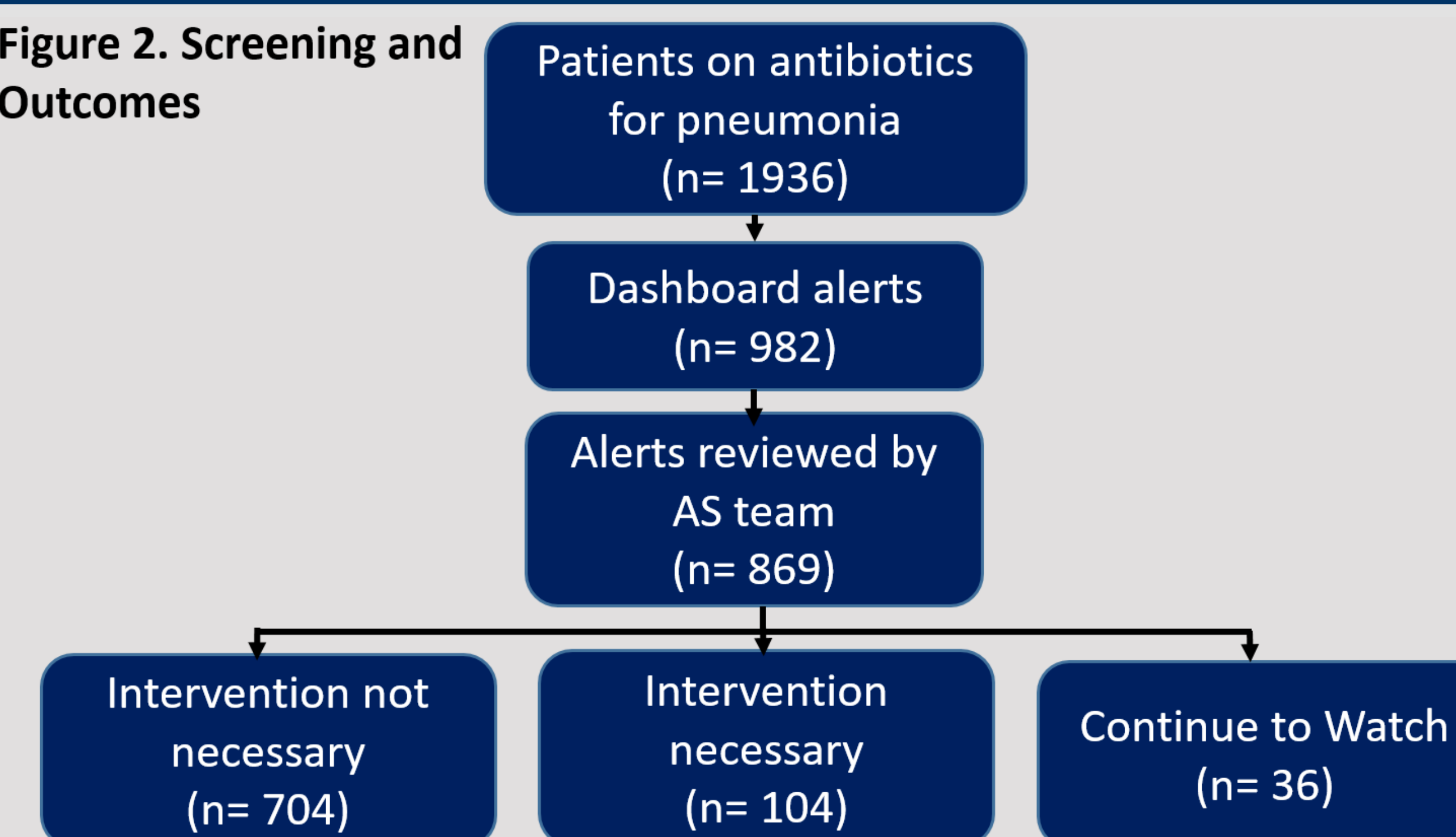


Figure 3. Intervention Necessary and Team Contacted (n=99)

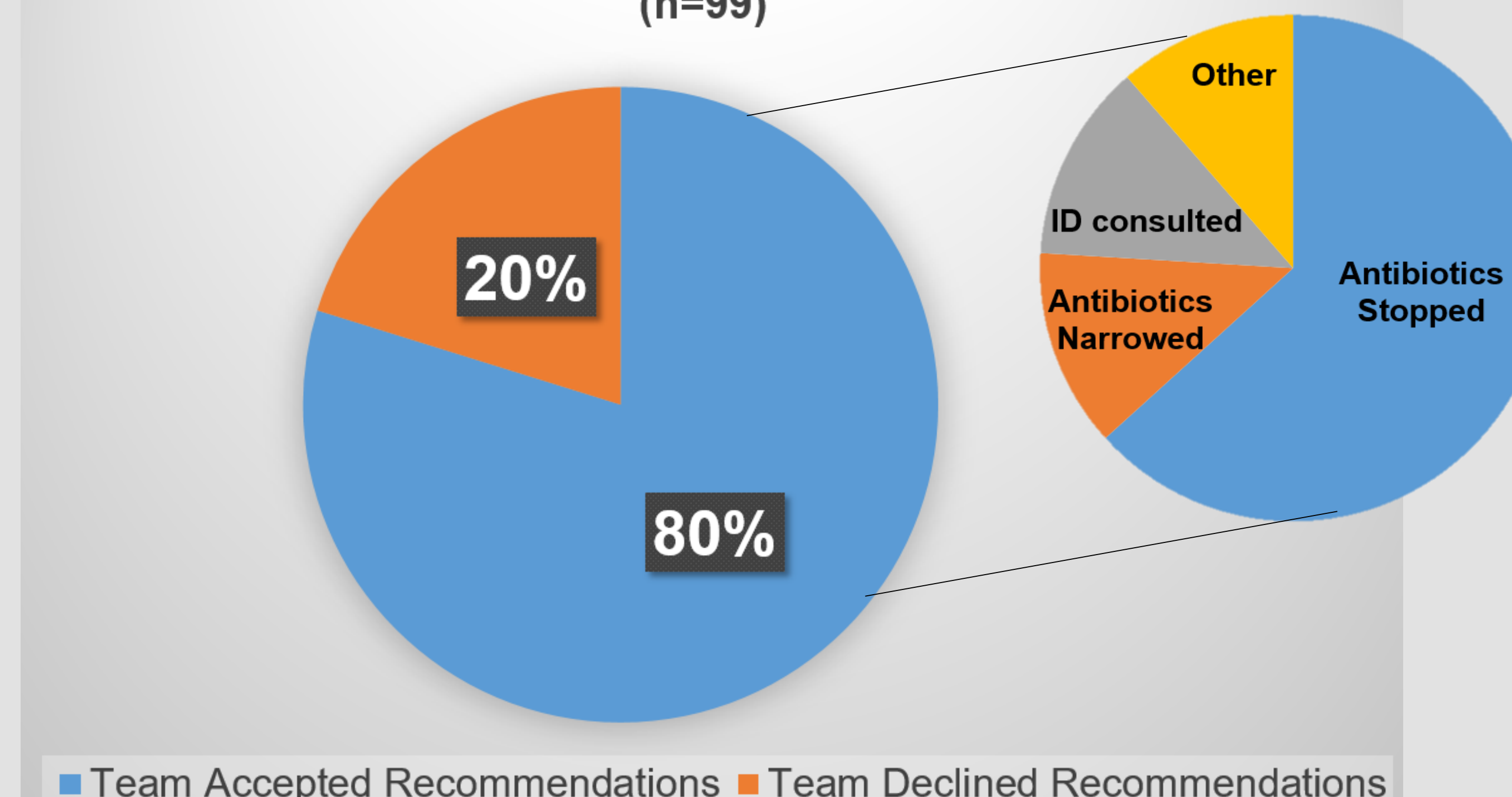


Figure 4. Intervention Not Necessary

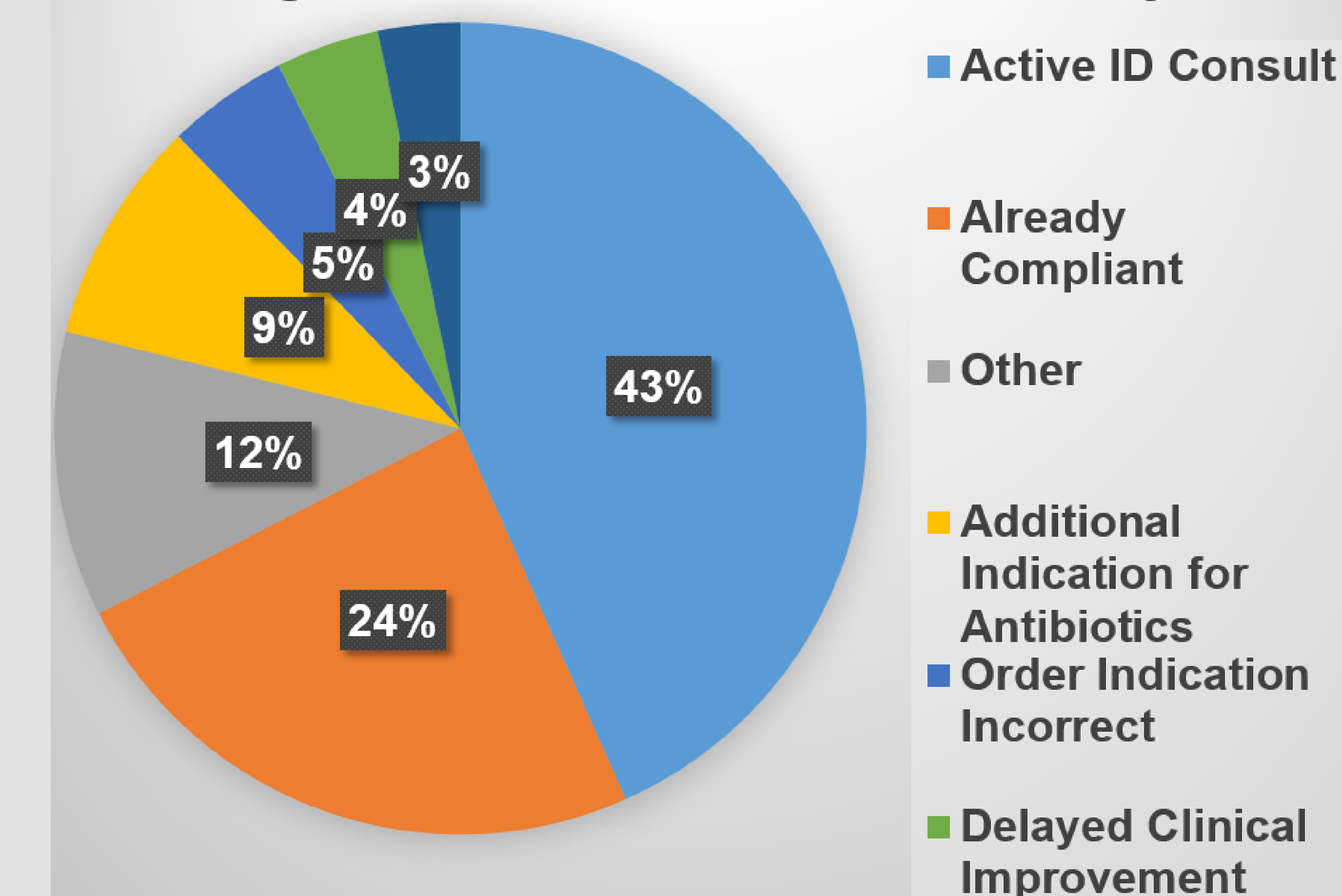
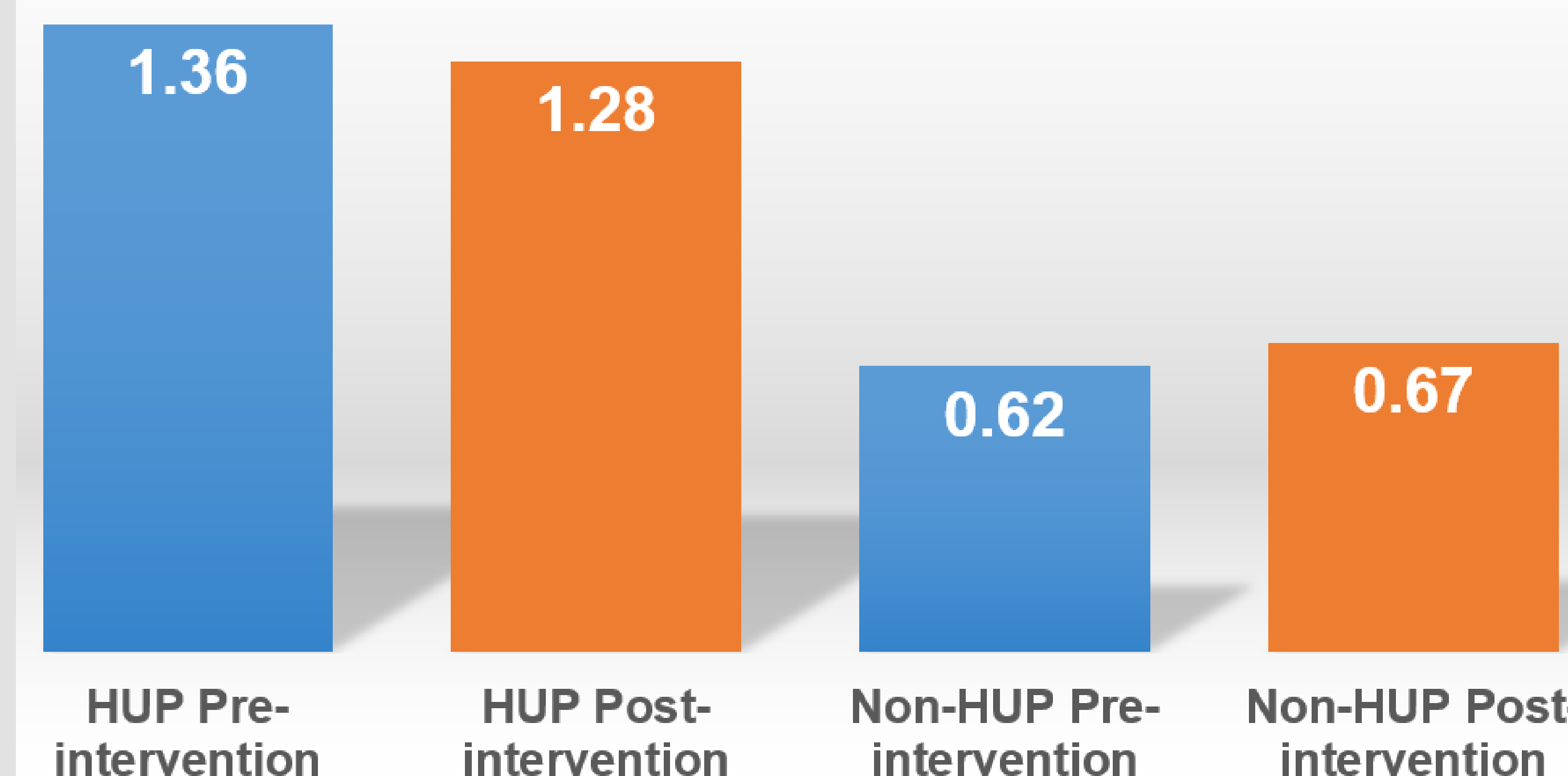


Figure 5. Mean Excess Days of Antibiotics for Pneumonia



Conclusion

- The pneumonia dashboard is a potentially valuable stewardship tool which may reduce excess days of antibiotics for pneumonia
- There was not a large overall difference pre- and post-intervention though our AS team found the dashboard to be one of our more high yield tools

References

- Metlay JP et al. Diagnosis and Treatment of Adults with Community-acquired Pneumonia. An Official Clinical Practice Guideline of the American Thoracic Society and Infectious Diseases Society of America
- Vaugh VM, Flanders SA, Snyder A, et al. Excess Antibiotic Treatment Duration and Adverse Events in Patients Hospitalized With Pneumonia. *Ann Internal Med.* 2019; 171:153-163.

Disclosures

The authors of this presentation have nothing to disclose concerning possible financial or personal relationships with commercial entities that may have a direct/indirect interest in this subject matter

