

# Implementing Clinical guidelines for treatment of Uncomplicated Cystitis and Asymptomatic Bacteriuria

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## Introduction

- Antibiotic resistance is rising. Primary care providers are well positioned to implement guidelines to decrease resistance and adverse drug events.
- An average of 7 million health care visits occurred for uncomplicated cystitis between 1996 and 2001 making this one of the most common reasons antibiotics are prescribed in primary care<sup>1</sup>.
- Asymptomatic bacteriuria (ASB) varies by population. The largest prevalence is seen in diabetic women (7-27%, older community dwelling persons (15%), and long term care residents (up to 50%)<sup>2</sup>.
- Treating ASB increases the risk of symptomatic cystitis, drug resistant pathogens, adverse drug events, and cost burden<sup>3</sup>.
- Guidelines for Uncomplicated cystitis and ASB have been updated with increased focus on decreasing adverse drug events and drug resistance<sup>3,4</sup>.
- Despite these updates, there is still limited adherence<sup>1</sup>.

## Purpose

- **Purpose:** Increase the number of recommended antibiotics prescribed for uncomplicated cystitis, decrease the number of antibiotics prescribed for ASB, and to increase provider's knowledge about prescribing per the clinical guidelines.
- **Objective 1:** Rural clinic providers will feel knowledgeable about treatment per the clinical guidelines.
- **Objective 2:** Rural clinic providers will decrease the use of antibiotics for ASB.
- **Objective 3:** Rural clinic providers will use the clinical guideline to determine best treatment for uncomplicated cystitis.

## Methods

- This project was deemed not human subjects research
- Setting: Belmond Clinic & Clarion Clinic – Iowa Specialty Hospitals and Clinics
- Population: Adults age 18 or older with an encounter diagnosis of ASB (R82.71) or uncomplicated cystitis (N39.0, N30.01, N30.0, R30.0, R35.0, R39.15) from two rural health clinics
- Timeline: July 2019 – December 2019

Implementation Strategies for Evidence-Based Practice<sup>5</sup>

### Create Awareness & Interest

Mentor Meeting	Senior Leadership Meeting	Clinic Operations Meetings	Provider Questionnaire
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### Build Knowledge & Commitment

In Person Slide Presentations	Pocket Guide Local Antibigram	Questions answered Clinic Operations	Email Education
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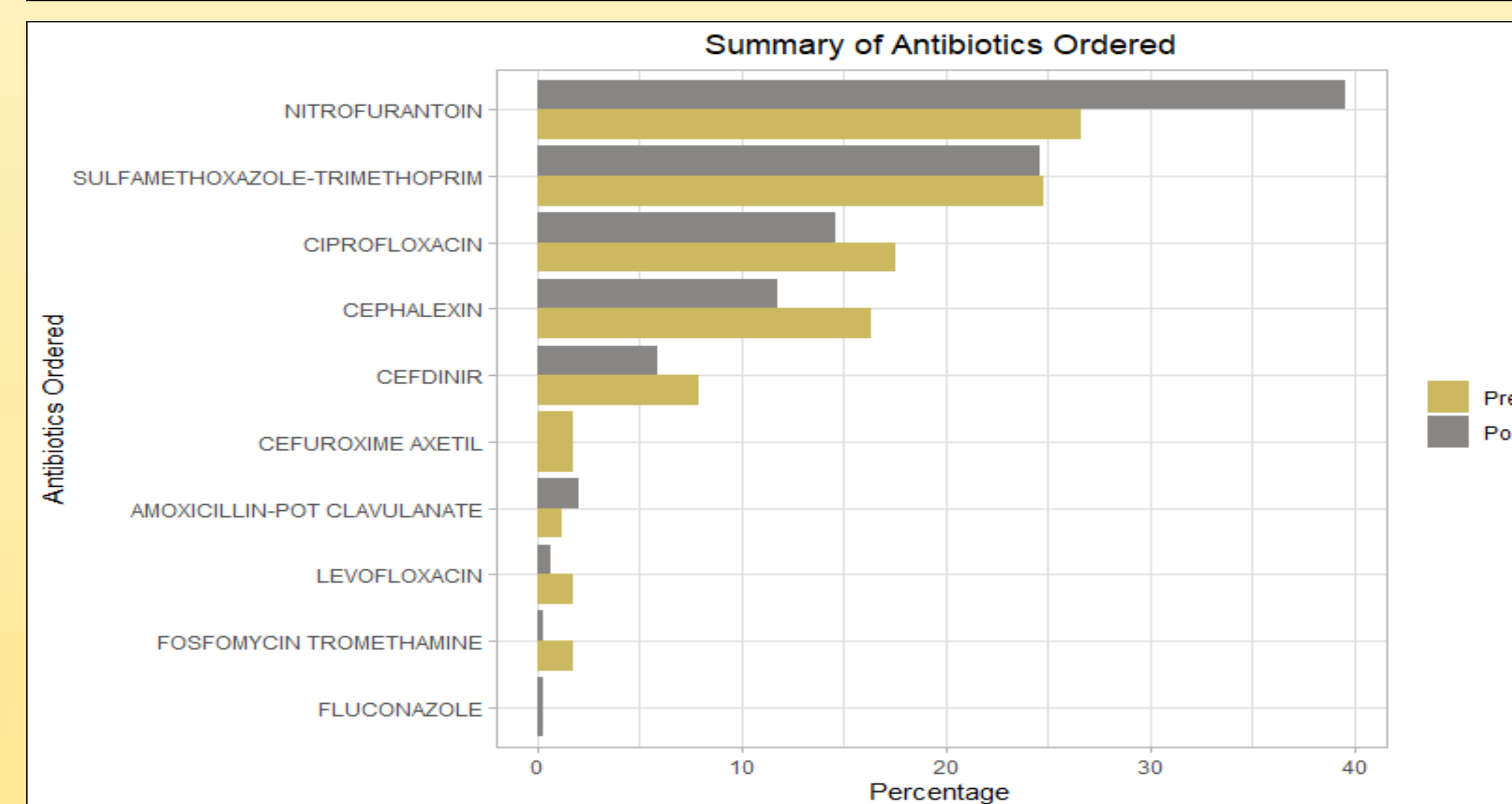
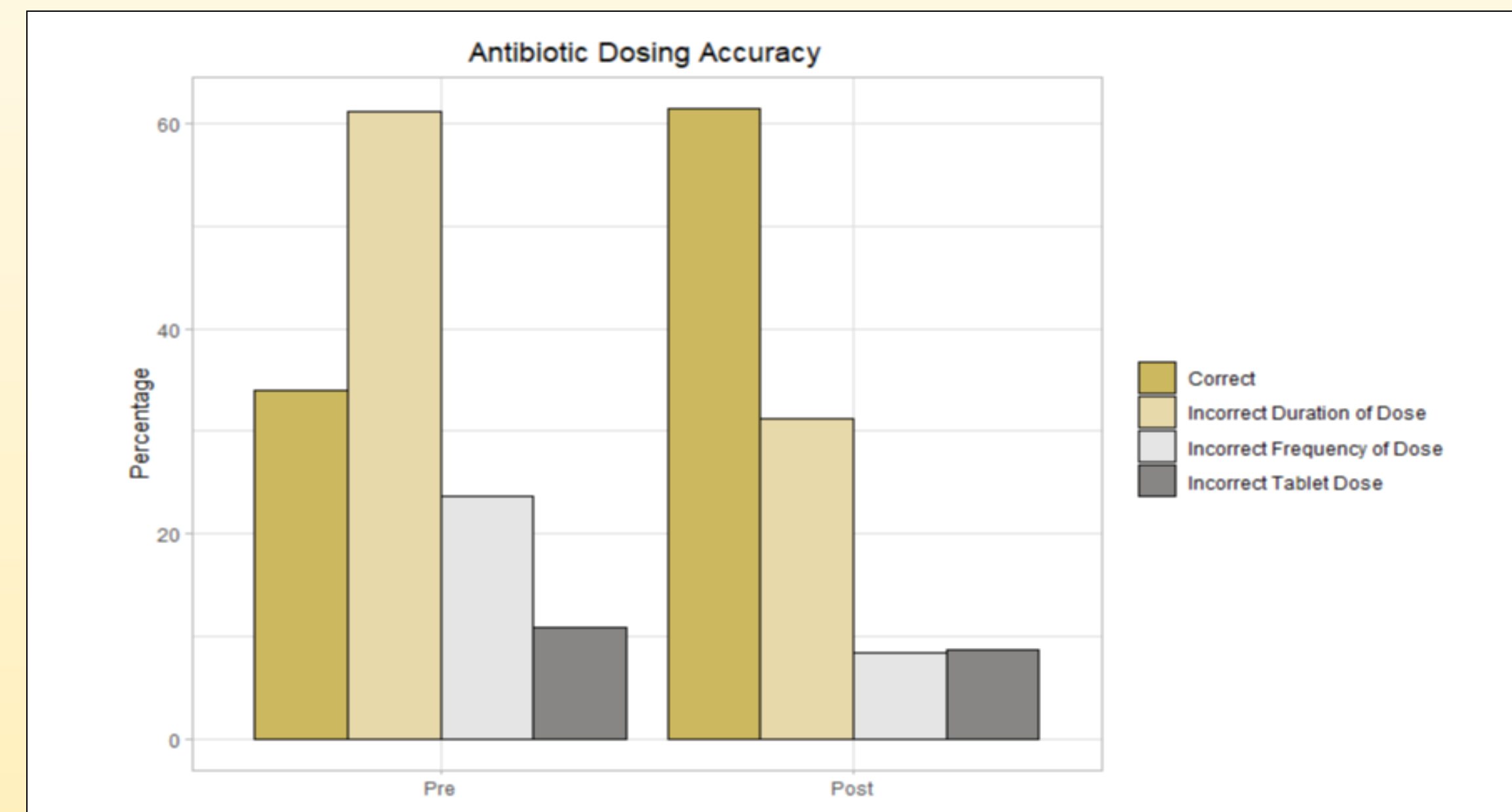
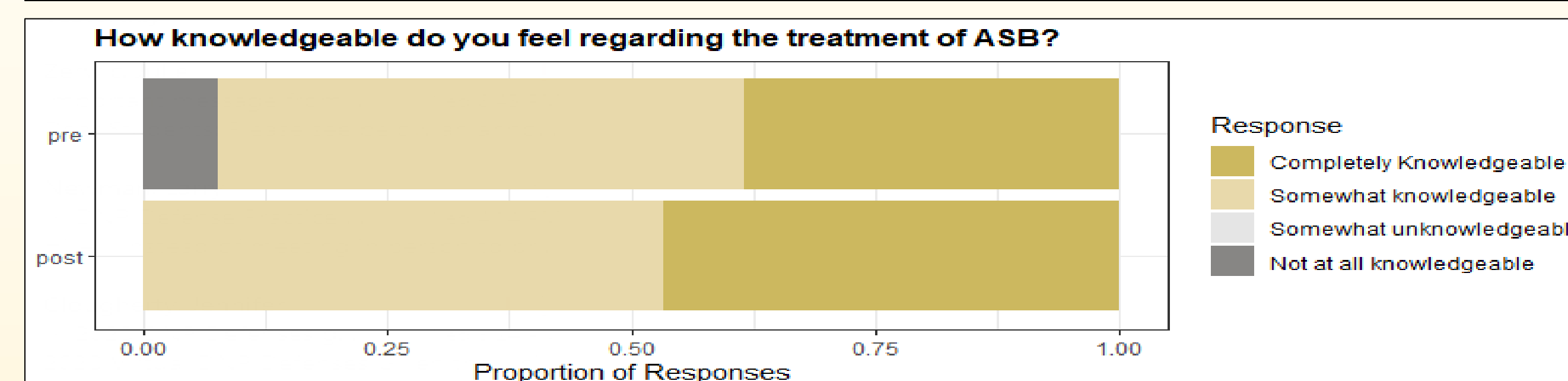
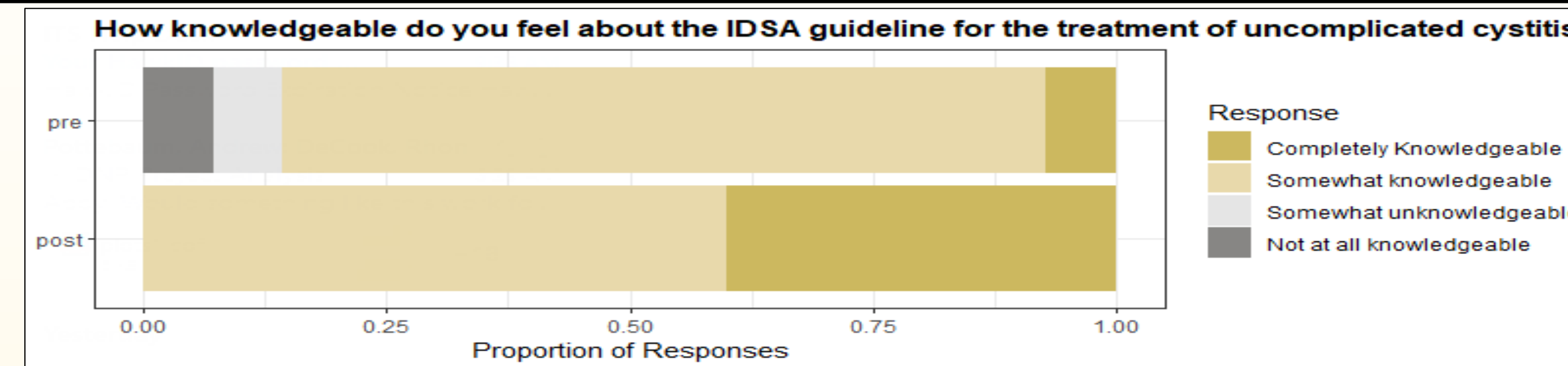
### Promote Action & Adoption

Monthly data collection	Monthly Updates	Provider Questionnaire	Face to Face Feedback	Medical Executive Update
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### Pursue Integration & Sustained Use

Group, individual feedback	Orthopedic Meeting	Positive Recognition	Medical Executive Meeting	Antibiotic Stewardship Metrics
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## Outcomes



## Evaluation

- Five months after provider training, post survey results revealed 100% of family practice providers feel knowledgeable about the treatment of UC and 100% for the treatment of ASB per the guidelines. This was an increase of 15% for UC and 8% for ASB.
- Due to low number of ASB patients seen, there was an inability to calculate a true change in antibiotic prescribing. Of those that were seen *n*-9, 6 were prescribed antibiotics.
  - Four ASB patients were diagnosed via preoperative screen at the request of one orthopedic group. This contradicts the guideline.
  - Information on the updated guideline, along with current research, was shared with the orthopedic coordinator.
- Following provider education and receipt of the guideline pocket card, the number of appropriate antibiotic prescriptions increased by an average of 29% for uncomplicated cystitis.
  - The local antibiogram indicated that Nitrofurantoin was the best first line agent to use. At 6 months there was a 13.4% average increase in the use of this medication.

## Conclusions

- Advanced Practice Nurse led evidenced based quality improvement projects can lead to practice change.
- **Impacts of Guideline implementation:**
  - Increase knowledge of current guidelines for both acute cystitis and ASB
  - Increase in application of published prescribing guideline for 1<sup>st</sup> line and 2<sup>nd</sup> line medications
  - Increased usage of 1<sup>st</sup> line treatment for uncomplicated cystitis
  - Increased use and knowledge of local antibiogram
- **Challenges:**
  - Low patient numbers prevented significant analysis of ASB treatment.
  - Preoperative urine screening for orthopedic procedures remains a barrier for primary care providers who wish to follow the updated ASB guidelines.
  - Communication was a challenge but offering multiple avenues (email, face to face, hard copies) reduced the challenge.
- **Dissemination:**
  - Monthly email and face to face communication to providers during project
  - Project defense at The University of Iowa
  - Project is being written up for publication submission
  - Quality Management Team and Antibiotic Stewardship Committee at Iowa Specialty Hospitals & Clinics
- **Sustainability:**
  - Iowa Specialty Hospitals and Clinics will continue to track and analyze antibiotic usage in the Belmond Clinic and Clarion Clinic as part of an AHRQ Antibiotic Stewardship project.
  - There is potential for an alert through the current EHR that could be implemented based on specific antibiotics ordered.

## References

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