

# Implementation of a Penicillin Allergy Delabeling Protocol to Reduce Use of Alternative Antibiotic Prophylaxis in Surgical ENT Patients

Darlene Baysa, DNP, APRN, FNP-C

Project Faculty: Alicia Gill Rossiter, DNP, APRN, FNP, PPCNP-BC, FAANP, FAAN

## PROBLEM STATEMENT

- Penicillin allergy label is associated with higher risk for adverse effects and postoperative infections
- Lack of practice guidelines that recommend delabeling of penicillin allergy prior to surgery
- Penicillin allergy not routinely addressed in primary and specialty clinics
- At the project setting, over 4,000 surgical ENT patients with penicillin allergy label received alternative antibiotic prophylaxis in 2021

## PROJECT PURPOSE

- Reduce the use of alternative antibiotics as prophylaxis during ENT surgery

## PROJECT AIM

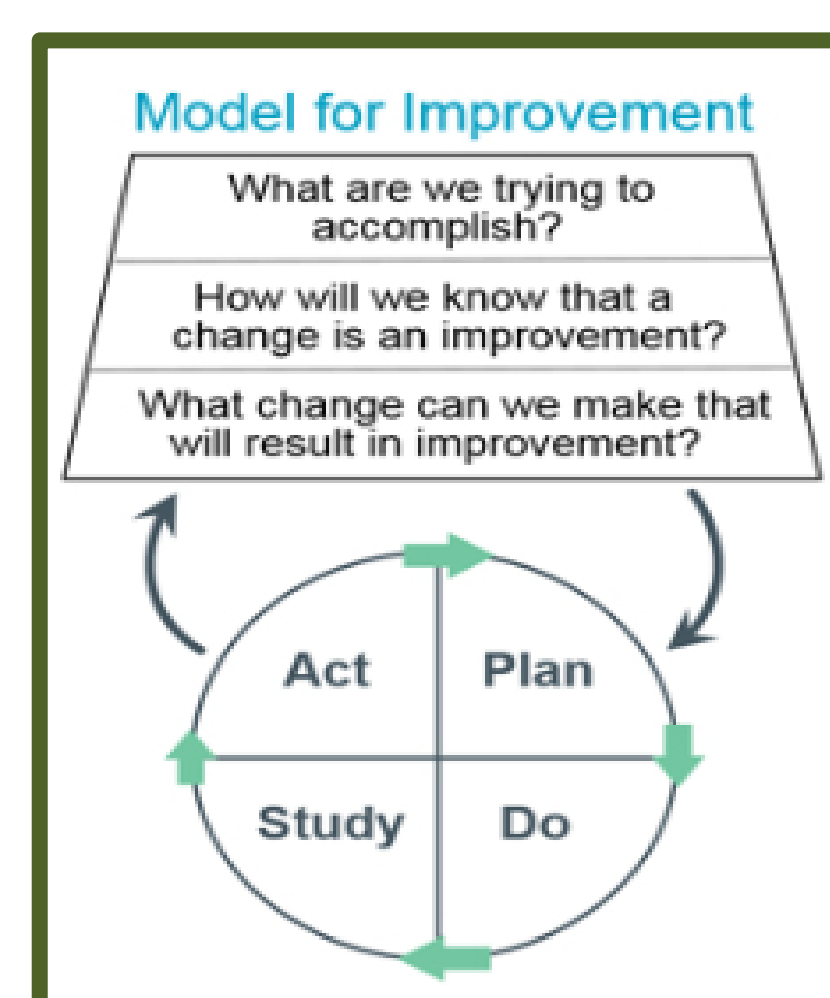
- Implement a delabeling penicillin allergy protocol in the allergy clinic over 12 weeks

## PICOT QUESTION

- In surgical ENT patients with penicillin allergy label, will the implementation of a penicillin allergy delabeling protocol compared to current practice reduce the use of alternative antibiotic prophylaxis and postoperative infections over three months?

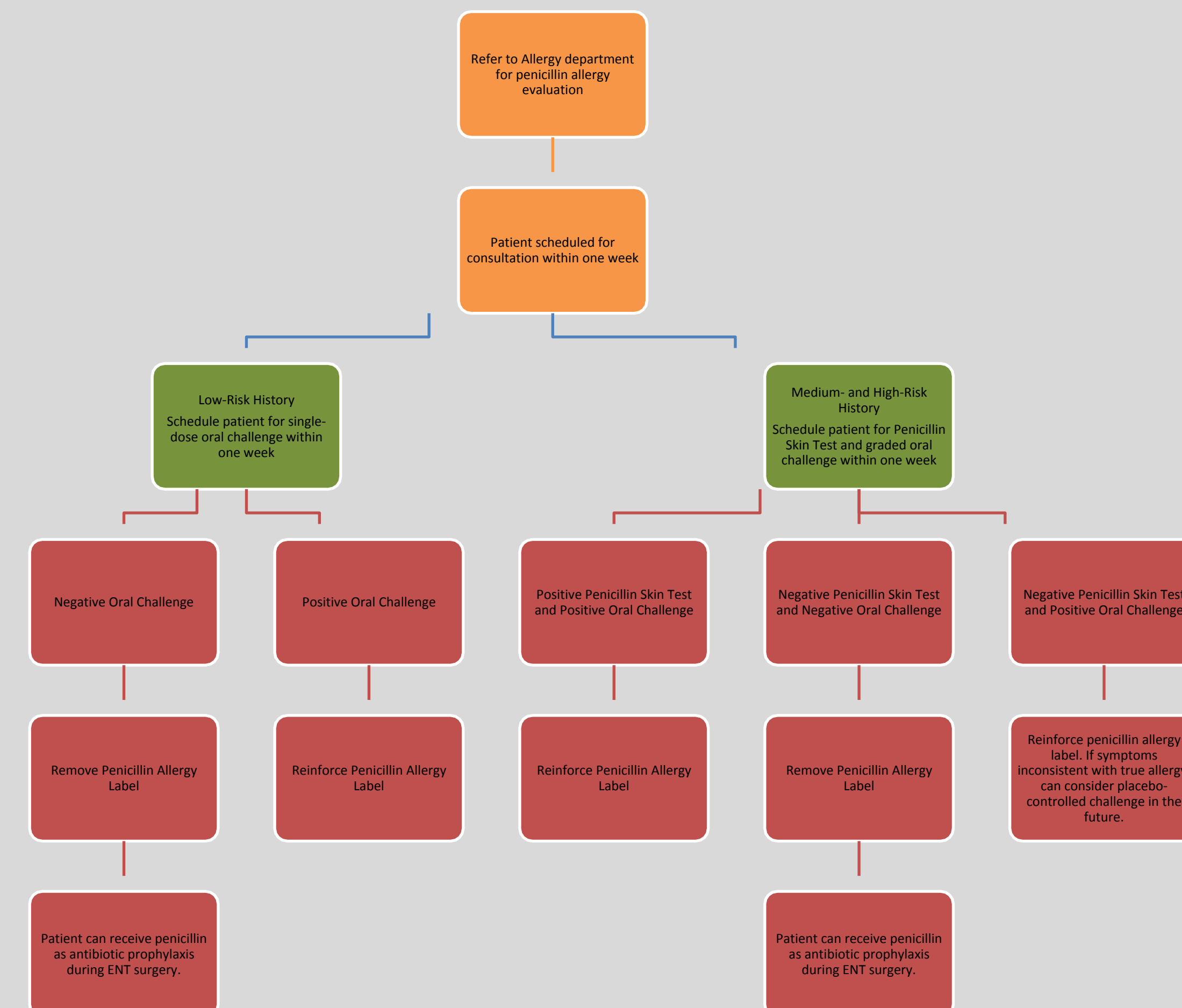
## MODEL/NURSING THEORY

- IHI Model for Improvement
- Jean Watson's Theory of Human Caring



## METHODS

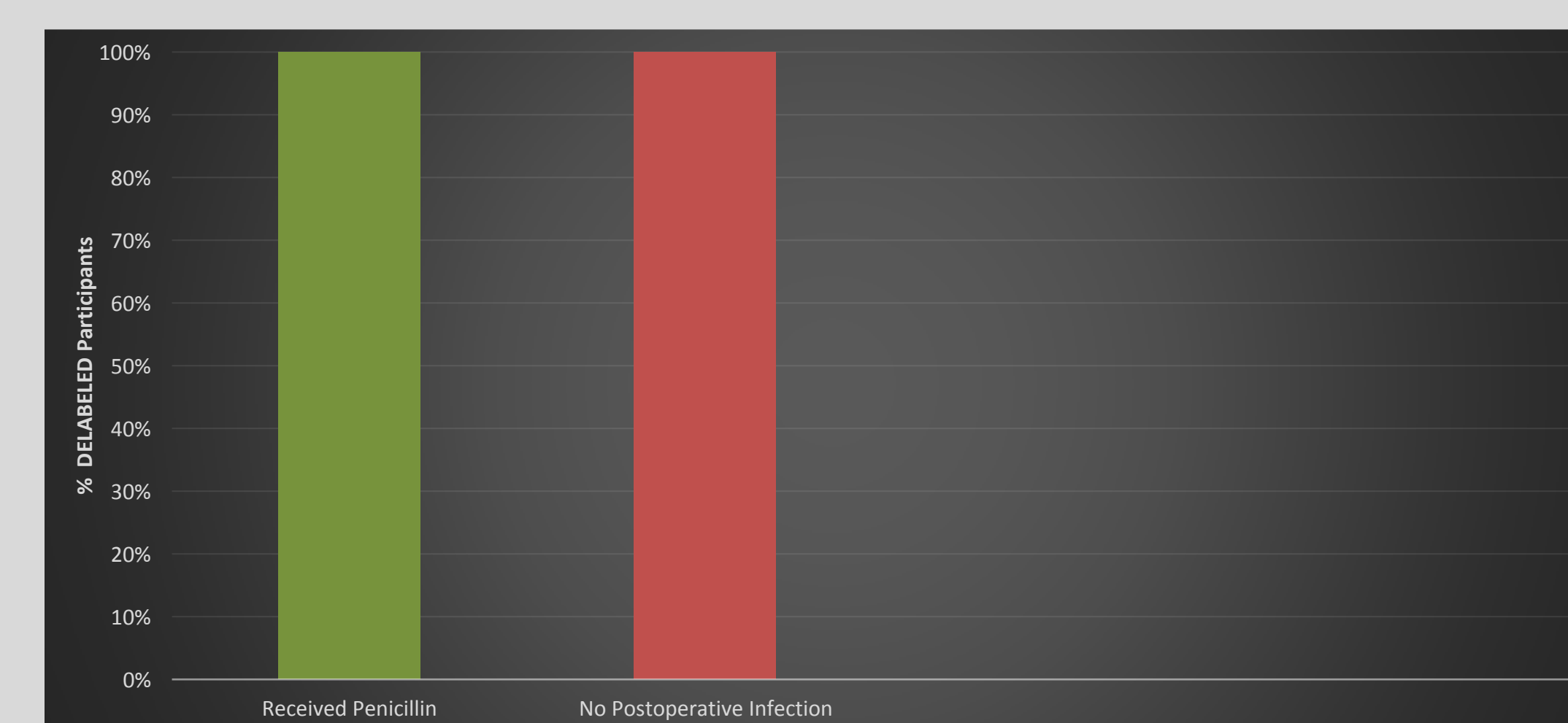
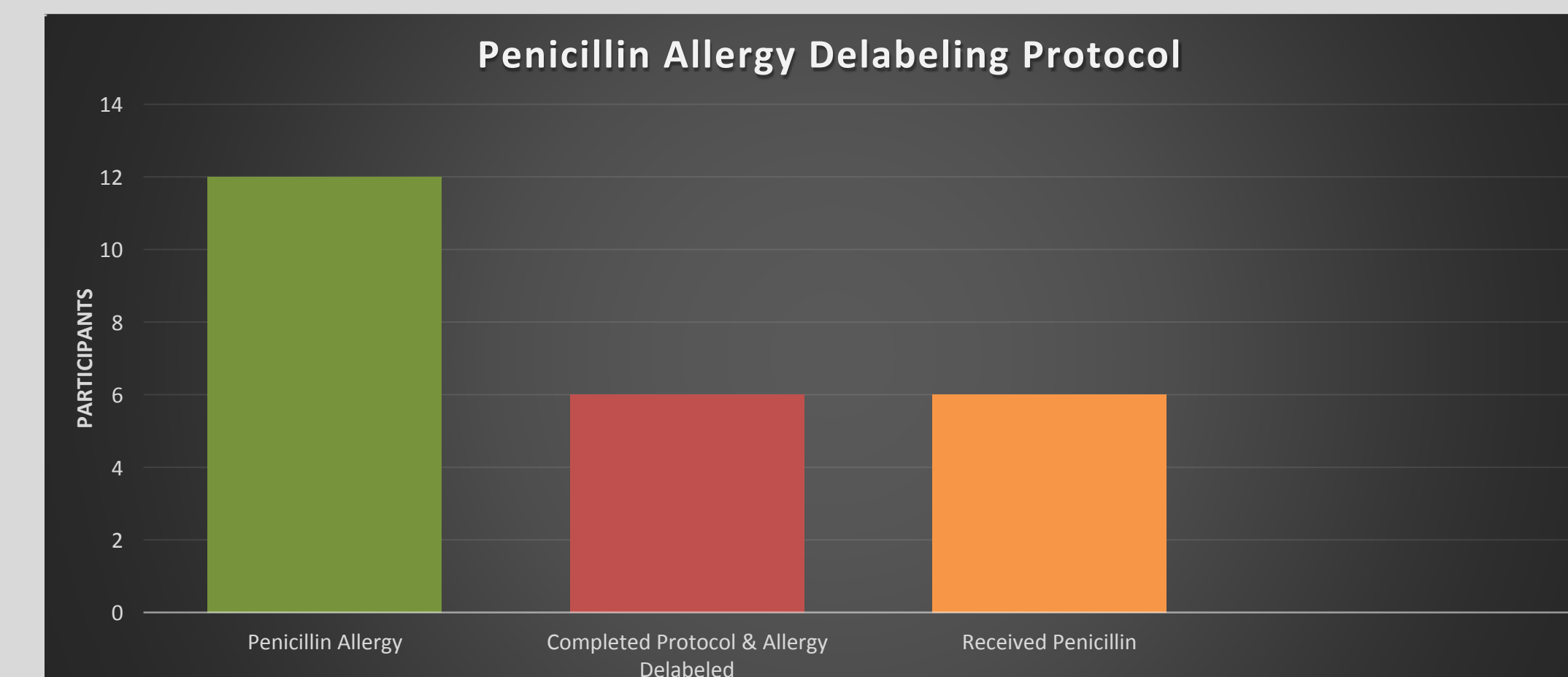
- **Subjects (Participants)**
  - 18 y/o or older with documented penicillin allergy
  - ENT surgery scheduled within the next 12 weeks
  - No history of anaphylaxis event prior to testing
- **Setting**
  - Allergy and Immunology Clinic
- **Measures/Instrument**
  - Participants who met criteria and completed protocol
  - Participants successfully delabeled and received penicillin
  - Postoperative infection rates
  - Clinical record review
  - Protocol utilized validated testing and evidence-based procedures
- **Intervention and Data Collection**



- Project timeline was 12 weeks
- Excel spreadsheet used for data collection
- Medical records review post-surgery
- Postoperative infection rates post-implementation

## RESULTS

- Of the 12 participants, 6 completed protocol and delabeled, 6 received penicillin as antibiotic prophylaxis instead of alternative antibiotics
- 6 participants who received penicillin as antibiotic prophylaxis did not develop postoperative infections
- One-sample test of proportion
  - P = 0.80
  - Z-statistic = 0.248
  - 95% CI of observed proportion (0.00% to 26.46%)
  - $\alpha = 0.05$
- Summary
  - Reduced use of alternative antibiotic prophylaxis post-intervention
  - No statistical difference in postoperative infection rates pre- and post-intervention



## DISCUSSION

- Limited time frame of implementation contributed to lack of statistical difference in postoperative infection rates hence continued implementation is recommended
- Contribution to antimicrobial stewardship
- Support clinical practice change

## LIMITATIONS

- Covid-19 concerns
- Small sample size
- Participant scheduling conflicts, travel, and procedure cost
- Provider on vacation and sick leave

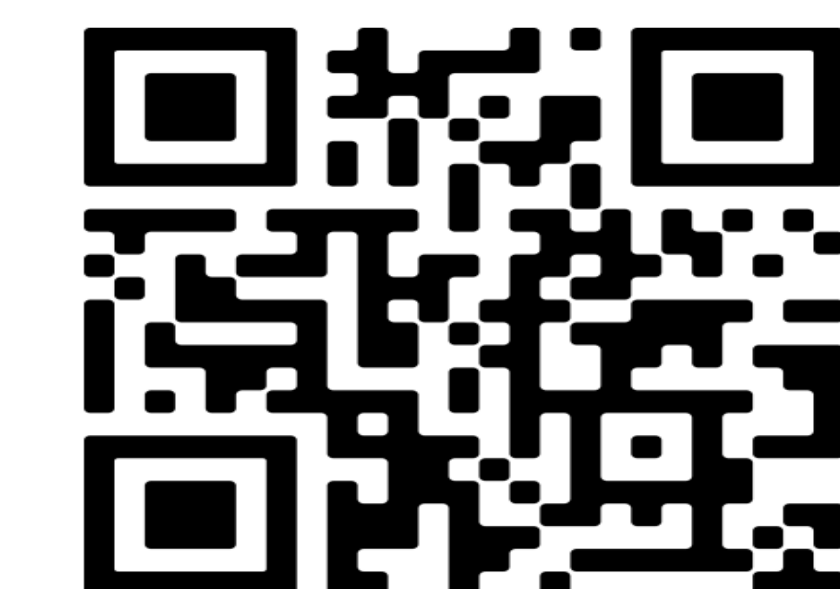
## IMPLICATIONS FOR ADVANCE PRACTICE NURSING

- Delabeling protocol can serve as guide to advanced practice nurses
- Strategies to facilitate and reduce barriers to penicillin allergy evaluation

## SUSTAINABILITY

- Allergy clinic will continue collaboration with ENT department
- Protocol becomes a standard of care in patients with penicillin allergy label prior to undergoing ENT surgery
- Expand collaboration to include primary care and other specialties
- Improve referral process

## REFERENCES



Implementation of a penicillin allergy delabeling protocol reduces use of alternative antibiotic prophylaxis and is a potential strategy to reduce postoperative infection rates in surgical ENT patients.