



Improving the Education Gap in Perioperative Antibiotic Selection for Patients with Penicillin Allergies

Reema Shah, DO, Bridgette Bolshem, MD, Reema Shah, DO, Chad Skidmore, DO, Megan Wang, MD, Medina Gerasimov, MD, and Joseph Pena, MD

¹Department of Anesthesiology, Zucker School of Medicine at Hofstra/Northwell Health, Manhasset, New York



INTRODUCTION

- Misconceptions about **penicillin allergies** often lead to the use of less effective alternatives.
- Patients who do not receive cephalosporins face a significantly **increased risk** of developing a **surgical site infection (SSI)** postoperatively [1].
- SSIs can **increase hospital length of stay and readmission rates**, leading to **poorer patient outcomes and higher hospital expenses** [2].
- Our project aims to improve antibiotic selection practices at Northwell by making these changes by July 2025:
 - **Increasing cephalosporin use** in penicillin-allergic patients to at least 75%.
 - Conducting at least two **targeted educational interventions**.
 - Expanding data collection across **additional sites**.

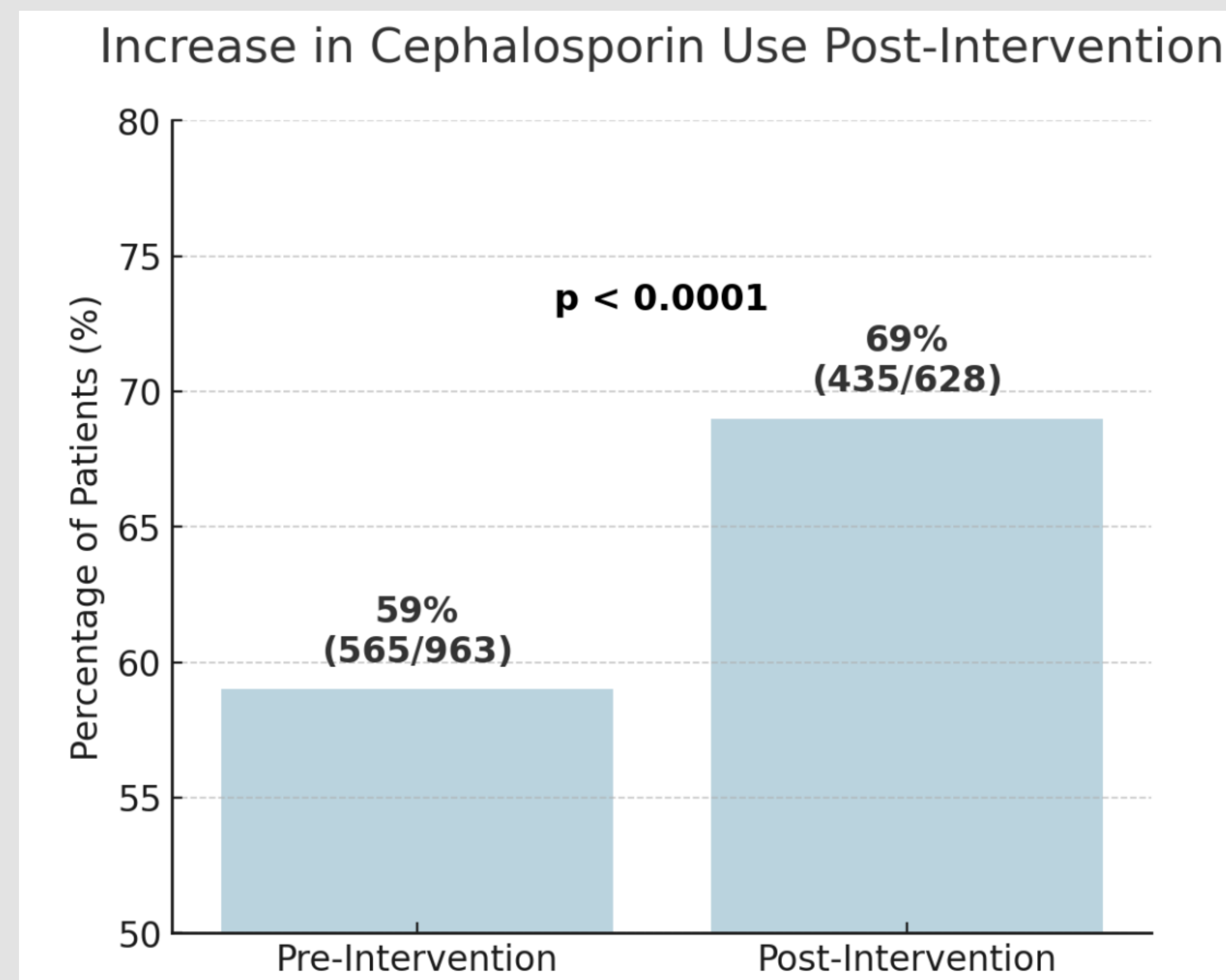


METHODS

- Our intervention was tested in iterative cycles through a **phased implementation approach**:
 - We collected baseline data on cephalosporin use in penicillin-allergic patients during the **pre-intervention (January-July 2024)** period to assess existing prescribing patterns.
 - An updated Northwell antibiotic policy was implemented on July 17, 2024.
 - We then collected data in the **post-intervention (August-December 2024)** period to monitor changes in practice.

RESULTS

- Our findings demonstrate a **significant improvement in antibiotic selection practices** following implementation of **Northwell Health's updated cephalosporin guidelines**. Cephalosporin use among penicillin-allergic patients increased from **59% (565/963) in the pre-intervention** period to **69% (435/628) in the post-intervention** period, a **statistically significant change (p<0.0001)**.
- Qualitatively, we found an **increased level of provider awareness and engagement**, as evidenced by participation in anesthesiology and surgery department discussions.
- Dissemination of information ultimately occurred gradually through **conference discussions and direct communication with surgical teams**.



CONCLUSION

- Cephalosporin use among penicillin-allergic patients **statistically increased** from the pre-intervention to post-intervention period. This suggests a **shift toward best practices**, which is expected to **reduce surgical site infection rates**, as patients not receiving cephalosporins face nearly double the risk of infections.
- Moving forward, we may **refine data analysis, conduct targeted provider education, and expand data collection** across additional Northwell Health sites to ensure **sustained improvement in antibiotic stewardship**.
- OB/GYN make up half of clindamycin usage. Beyond education initiatives, we could work with pharmacy to remove clindamycin from OR pyxis machines. Clindamycin could be a useful future metric for guideline adherence.

REFERENCES

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