

Decreasing Antibiotic and Surgical Site Infections in Reconstructive Breast Surgery: Results from a 2015 to 2022 National Evaluation

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PURPOSE

The American Association of Plastic Surgeons recommends perioperative antibiotic prophylaxis for patients undergoing clean cosmetic breast surgery. There are currently no guidelines for prophylactic postoperative antibiotics for those undergoing breast reduction or post-mastectomy reconstruction. This study aims to evaluate trends in antibiotic use in the postoperative period >48 hours after reduction mammoplasty or postmastectomy reconstruction and evaluate factors associated with surgical site infection.

METHODS

Source: Meritive Marketscan, a large national employer sponsored insurance claims dataset from 2015 to 2022

Inclusion: Autologous or implant-based breast reconstruction following mastectomy, or reduction mammoplasty.

Exclusion: Non-surgery related antibiotic use

Analysis: Propensity score weighting, linear/logistic regression evaluating differences in >48h antibiotic use

39,374 patients

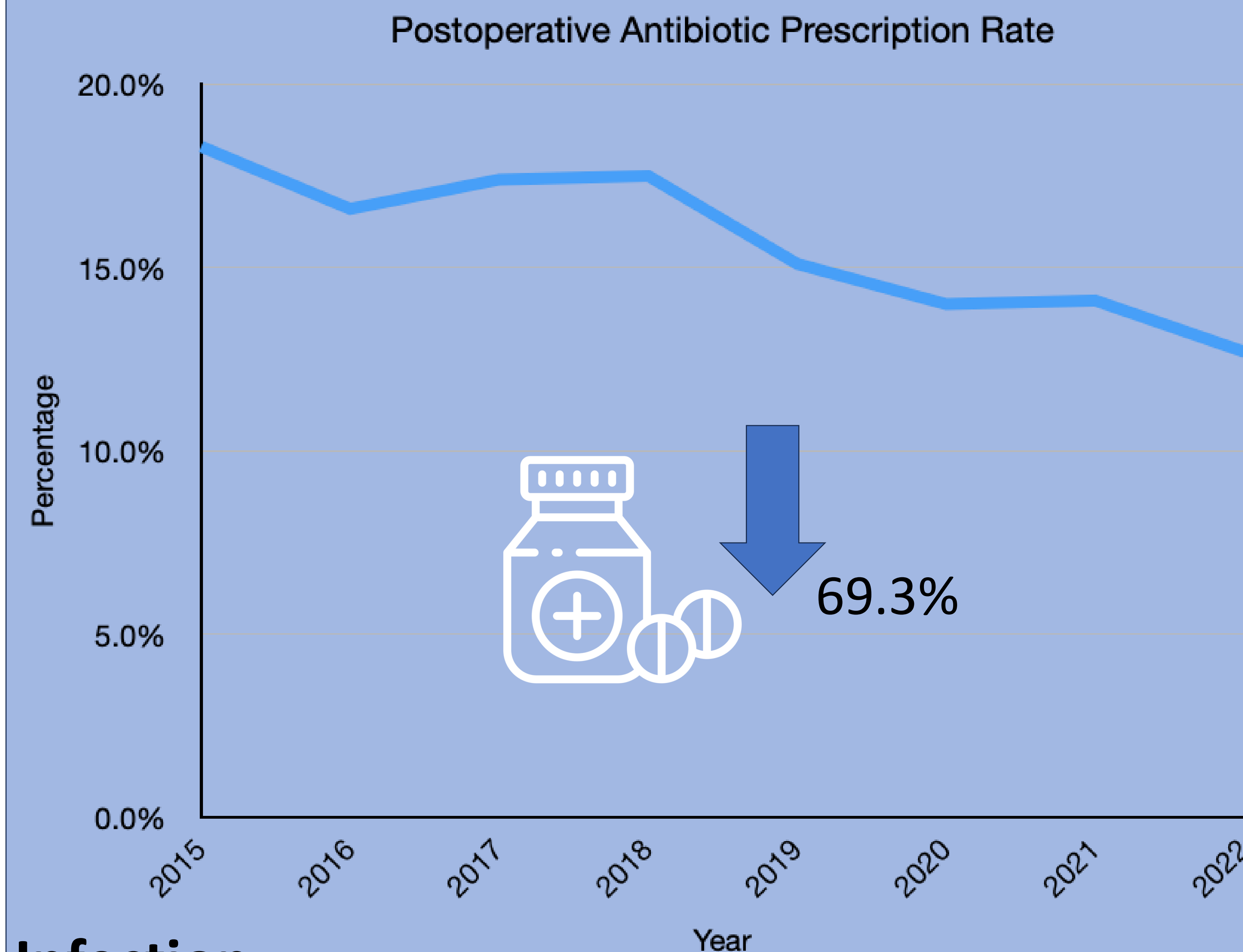
2,709 implant-based reconstruction

707 autologous reconstruction

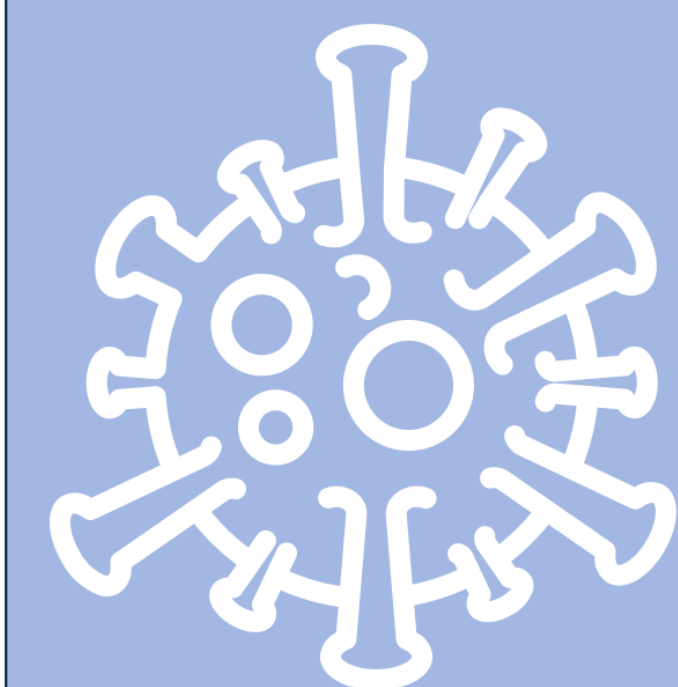
30,750 Reduction mammoplasty

RESULTS

Antibiotic Use Trends >48h postop



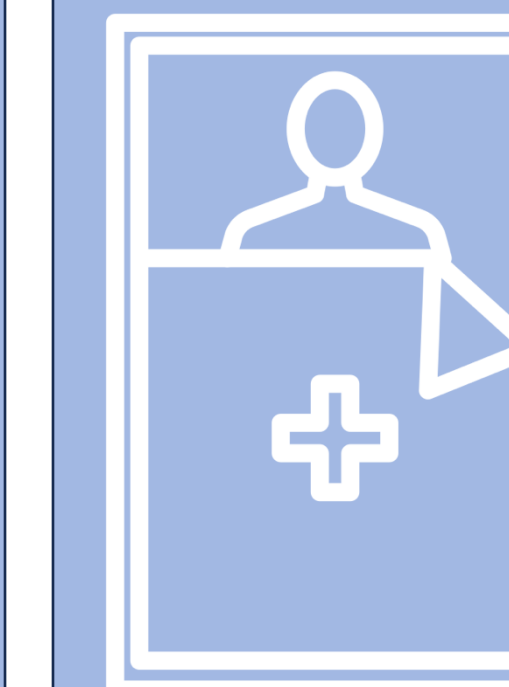
Infection



Antibiotics reduce odds of infection by 28% when continued past 48h postoperatively (95% CI: 0.64 to 0.81, $p<0.001$)

High comorbidity burden increases odds of infection by 13% (Elixhauser >8: 95% CI: 2.27 to 3.89, $p<0.001$)

Antibiotic Associated Factors



Breast reduction was associated with lower odds of postoperative antibiotics compared with mastectomy or post-mastectomy reconstruction (OR: 0.55, 95% CI: 0.04 to 0.76, $p<0.001$)

Reconstruction following mastectomy resulted in lower antibiotic continuation past 48h postoperatively **compared to mastectomy alone** (implant: [OR: 0.17, 95% CI: 0.15 to 0.19, $p<0.001$] Autologous: [OR: 0.37, 95% CI: 0.30 to 0.46, $p<0.001$])

No regional differences were found

CONCLUSIONS

Antibiotic use decreased throughout the study period.

Antibiotic use past 48h was associated with lower infection risk among propensity weighted patients while greater comorbidity burden was associated with both higher risk of infections and increased odds of antibiotic use.

These data suggest guidelines on antibiotic use postoperatively must consider patient comorbidity burden and tailoring antibiotic use and encourage antibiotic stewardship.