

# Removing the EHR warning not to use cephalosporins in individuals with a penicillin allergy: the effect on cephalosporin allergy and anaphylaxis incidence



## Rationale

After careful consideration with stakeholders, the warning to avoid cephalosporins when penicillin allergy present was removed from the electronic health record (EHR) in Kaiser Permanente Southern California (KPSC) on 12-20-2017.

## Methods

All KPSC members with a penicillin allergy and any antibiotic use in 2017 and 2018 were identified along with contemporaneous comparison groups in Kaiser Permanente Northern California (KPNC), where the warning remained in effect. All new cephalosporin allergy reports within 30 days of course initiation and cephalosporin-associated anaphylaxis cases were identified.

## Results

There were 150,548 KPSC penicillin allergic members, 69.0% female, mean age  $48.6 \pm 23.0$  years, exposed to 331,918 antibiotic courses, 18% cephalosporins, in 2017 and 157,131, 69.3% female, mean age  $48.8 \pm 22.9$  years, exposed to 357,574 antibiotic courses, 27% cephalosporins, in 2018. There were 140,183 KPNC penicillin allergic, 69.6% female, mean age  $50.0 \pm 22.5$  years, exposed to 303,509 antibiotic courses, 15% cephalosporins, in 2017 and 146,559, 69.9% female, mean age  $50.2 \pm 22.5$  years, exposed to 322,909 antibiotic courses, 16% cephalosporins, in 2018. The 2018 versus 2017 odds of cephalosporin use was 1.72 in KPSC and 1.09 in KPNC,  $p < 0.0001$ . Cephalosporin allergy incidence went from 1.1% to 1.0%/course in KPSC and from 1.2% to 1.1%/course in KPNC,  $p = 0.06$ . Cephalosporin anaphylaxis incidence went from 0.0019% to 0.0035%/course in KPSC and from 0.0048% to 0.0064%/course in KPNC,  $p = 0.70$ .

## CONCLUSION:

The warning removal was associated with more cephalosporin use by penicillin "allergic" individuals in KPSC, compared to KPNC, without clinically-significant changes in cephalosporin-associated allergy reporting or anaphylaxis incidence.