

# Impact of 2019 ATS/IDSA Guidelines on Duration of Antibiotics for Pneumonia



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## BACKGROUND & PROJECT AIM

- In 10/2019, American Thoracic Society (ATS) / Infectious Diseases Society of America (IDSA) community-acquired pneumonia (CAP) guidelines removed healthcare-associated pneumonia (HCAP)
- This expanded the number of patients eligible for a 5-day antibiotic course
- Project aim:** Quantify the impact of removing HCAP on antibiotic duration for CAP

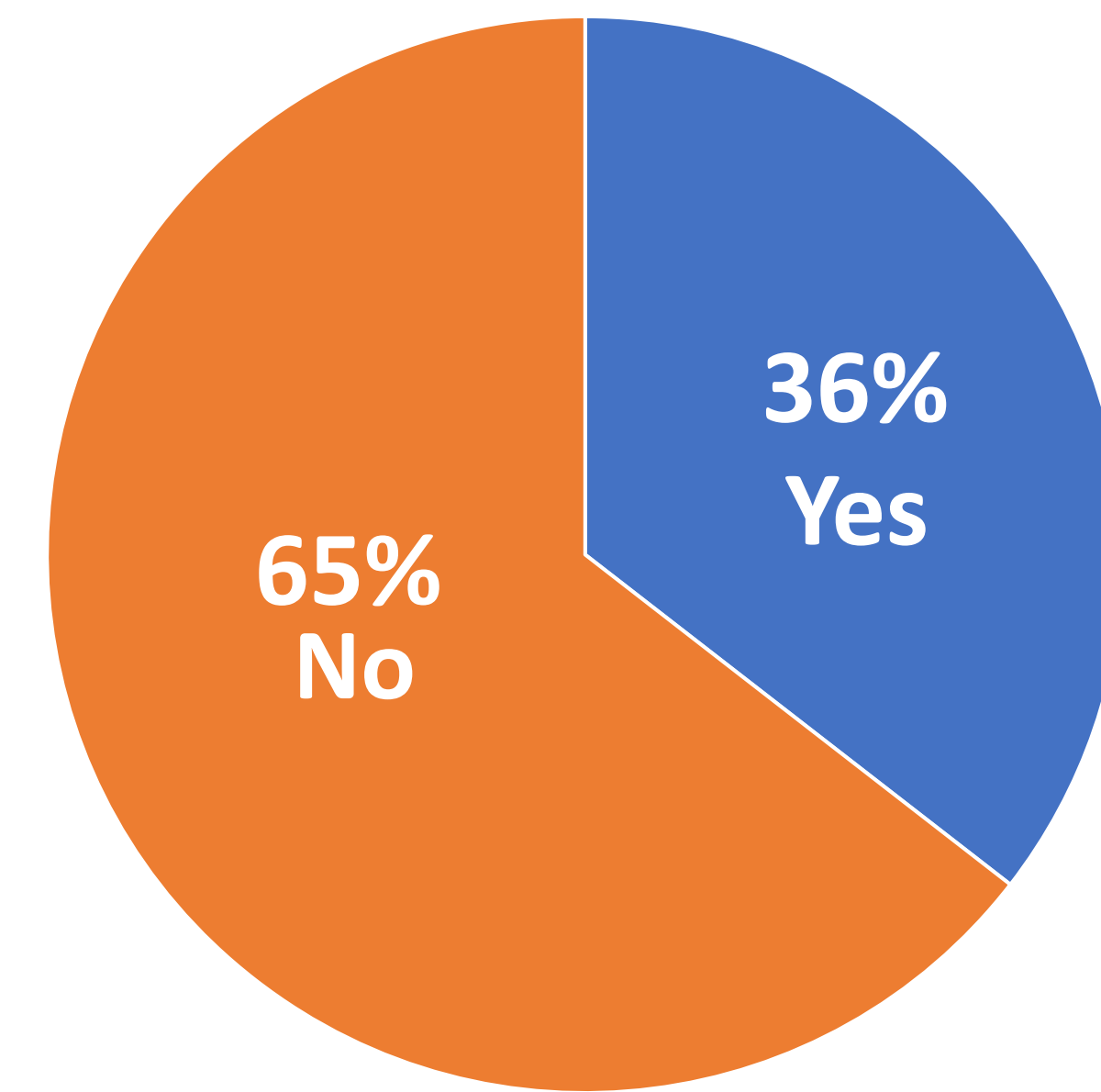
## METHODS

- Design:** Prospective cohort study, 11/2017 to 1/2022, at 46 hospitals in the Michigan Hospital Medicine Safety Consortium
- Participants:** Adult, non-ICU medical patients at 46 hospitals with pneumonia
- Data collection:** Trained abstractors collected data from medical records
- Primary outcome** - % of patients receiving 5-day antibiotic course among those eligible for 5-days based on 2019 CAP guideline categorization
- Statistical analysis:**
  - Evaluated if the effect of the 2019 guidelines differed for patients defined as CAP based on 2007 CAP guideline (pCAP) vs. HCAP (Chi-square)
  - Assessed effect of new guideline on 5-day therapy using a segmented logistic regression accounting for hospital level clustering
    - Changes at baseline
    - Before and after 10/2019

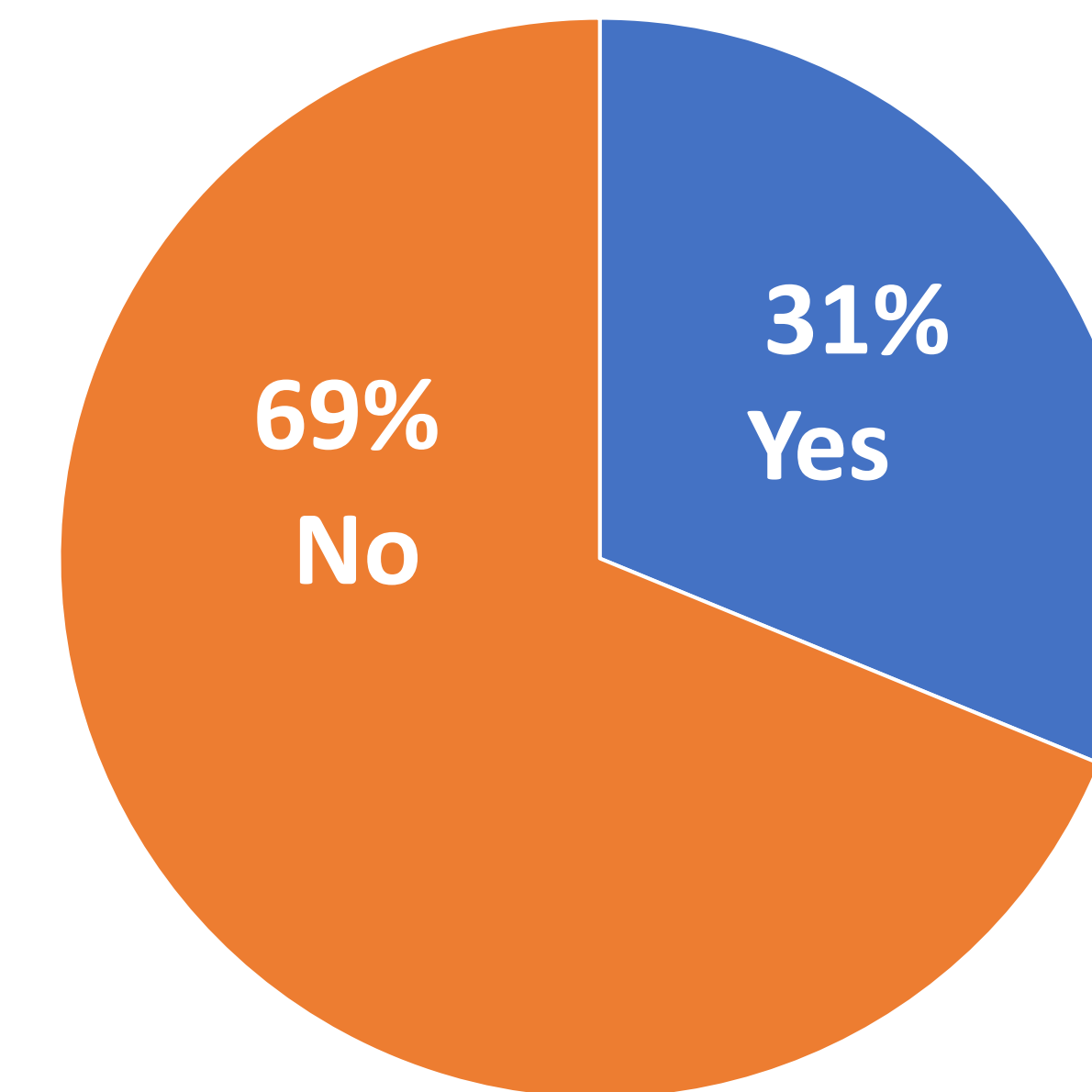
## Fig 1. PATIENTS ELIGIBLE FOR 5-DAY CAP TREATMENT\*

Of those 5-day eligible, 34.4% (N=4,936/14,358) of patients hospitalized for pneumonia at 46 Michigan hospitals received 5 days (pCAP 35.5% N=3,750); HCAP 31.2% N=1,186, P<.001)

**pCAP (N=10,565)**



**HCAP (N=3,793)**



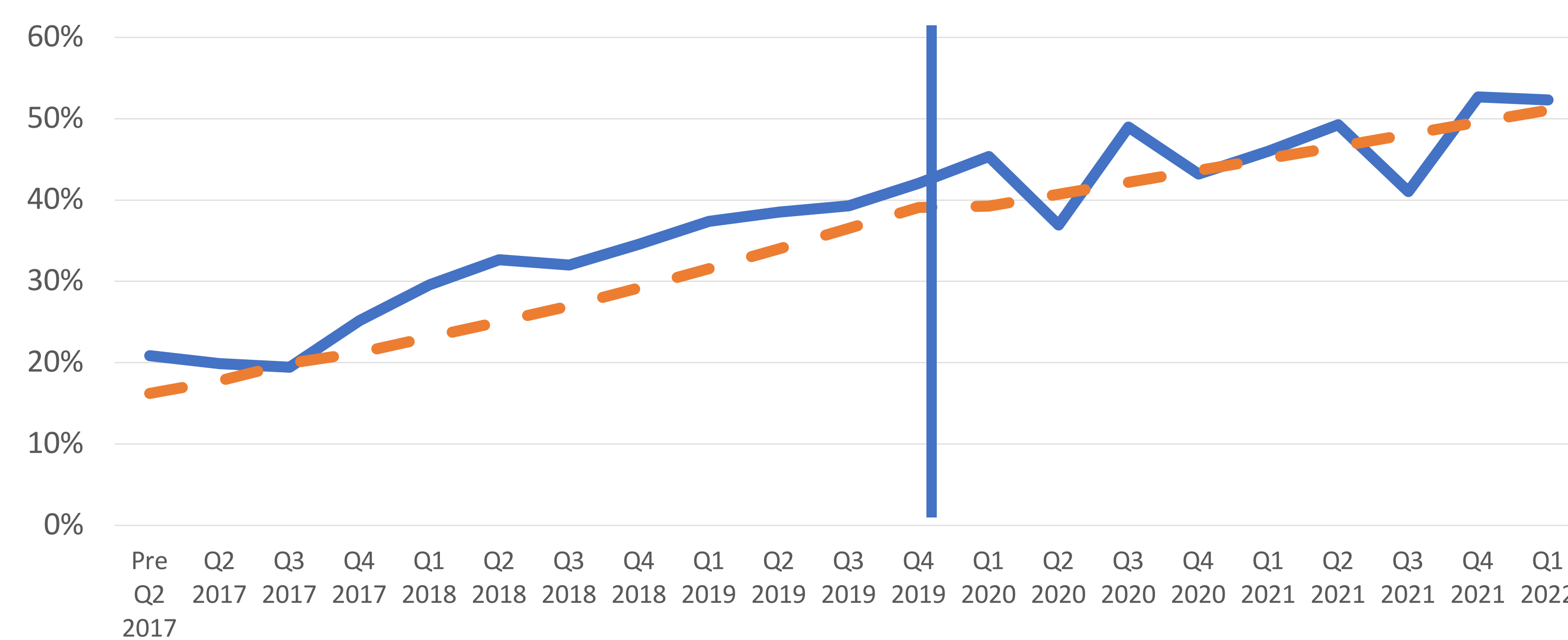
\*Eligibility for 5 days included clinically stable by day 5, or discharged by day 3 of hospitalization, or no alternative reason (comorbidities or specific organism growth) for longer duration

## DISCUSSION

- Among patients hospitalized with pneumonia eligible for 5-day duration, 2/3 received excess antibiotics; similar for pCAP and HCAP (Fig 1).
- Prior to 2019 guideline, 5-day treatment rate was improving for HCAP and pCAP (Fig 2).
- Rate of improvement decreased after 10/2019 for both pCAP and HCAP, though only pCAP was statistically significant (Fig 2).
- The 2019 ATS/IDSA guidelines did not appear to have an added effect on improving antibiotic duration; rather, antibiotic duration was already improving prior to the new guidelines.

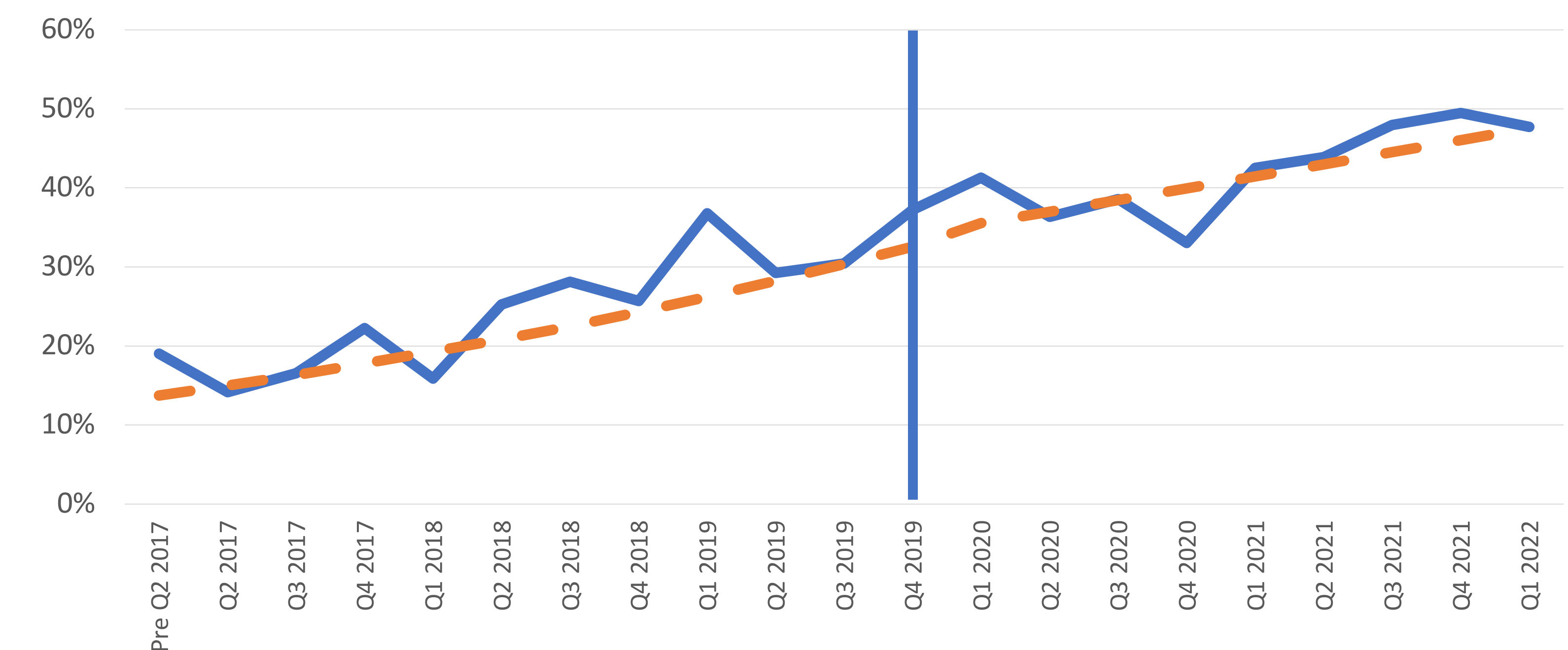
## Fig 2. PATIENTS WHO MET PRE-2019 GUIDELINE pCAP/HCAP DEFINITION, PROPORTION RECEIVING 5 DAYS OF THERAPY AMONG THOSE ELIGIBLE

**pCAP (N=10,565)**



pCAP pre-10/2019: OR 1.56 (95% CI=1.44-1.69, p<.001) per year  
pCAP post 10/2019: OR 1.27 (95% CI=1.14-1.42, p<.001) per year; p=0.001

**HCAP (N=3,793)**



— Raw Data  
— Predicted Data

HCAP pre-10/2019: OR 1.51 (95% CI=1.33-1.71, p<.001) per year  
HCAP post 10/2019: OR 1.28 (95% CI=1.09-1.51, p<.001); p=0.12

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