

NAUSP METHODOLOGY UPDATES:

Application of the Priority Antibacterial List in Australian acute-care hospitals, 2019-21

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BACKGROUND

The National Antimicrobial Utilisation Surveillance Program (NAUSP) undertakes quantitative surveillance of antimicrobial use in Australian hospitals. Increased stratification of data implemented in January 2021 has enabled surveillance by hospital location. Total aggregated hospital usage rates were analysed using the Priority Antibacterial List (PAL) before and after stratification.



METHODS

Monthly and annual antibacterial usage rates (defined daily dose (DDDs) per 1000 occupied bed days (OBDs)) were calculated using pharmacy dispensing records together with patient occupancy data for all acute care hospitals contributing to NAUSP from 2019-21. Antibacterials were classified using the PAL categorisation system.



KEY FINDINGS

Proportionate usage of PAL *Curb* category antibacterials did not significantly change over the three-year period. In 2021, the proportion of total aggregated antibacterial use (excluding theatre and emergency locations) that was classified as *Curb* was 56.7%, compared to 55.5% in 2019 and 57.4% in 2020.



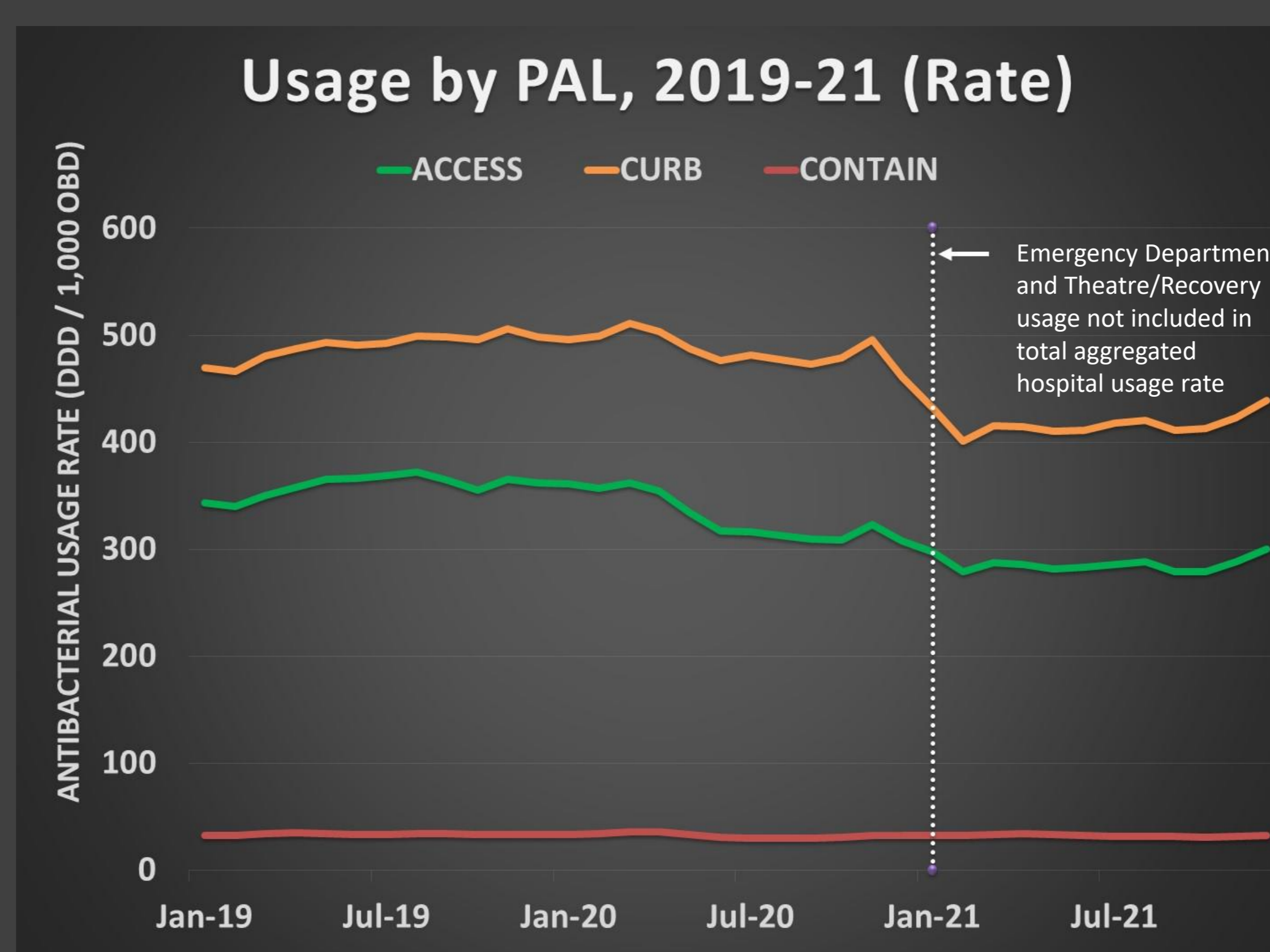
TAKE-AWAY

- Prior to stratifying NAUSP data by hospital location, cefazolin was a key driver of total hospital *Curb* usage rates.
- Stratification of NAUSP data from January 2021 allowed analysis of total usage rates excluding usage in emergency and theatre/recovery. The anticipated decrease in the proportional use of *Curb* antibacterials was not observed.
- Antimicrobial stewardship efforts should continue to promote *Access* category antibiotics where clinically appropriate and utilise NAUSP PAL analyses to observe longitudinal prescribing trends.

Utilisation of the PAL classification system for AMS

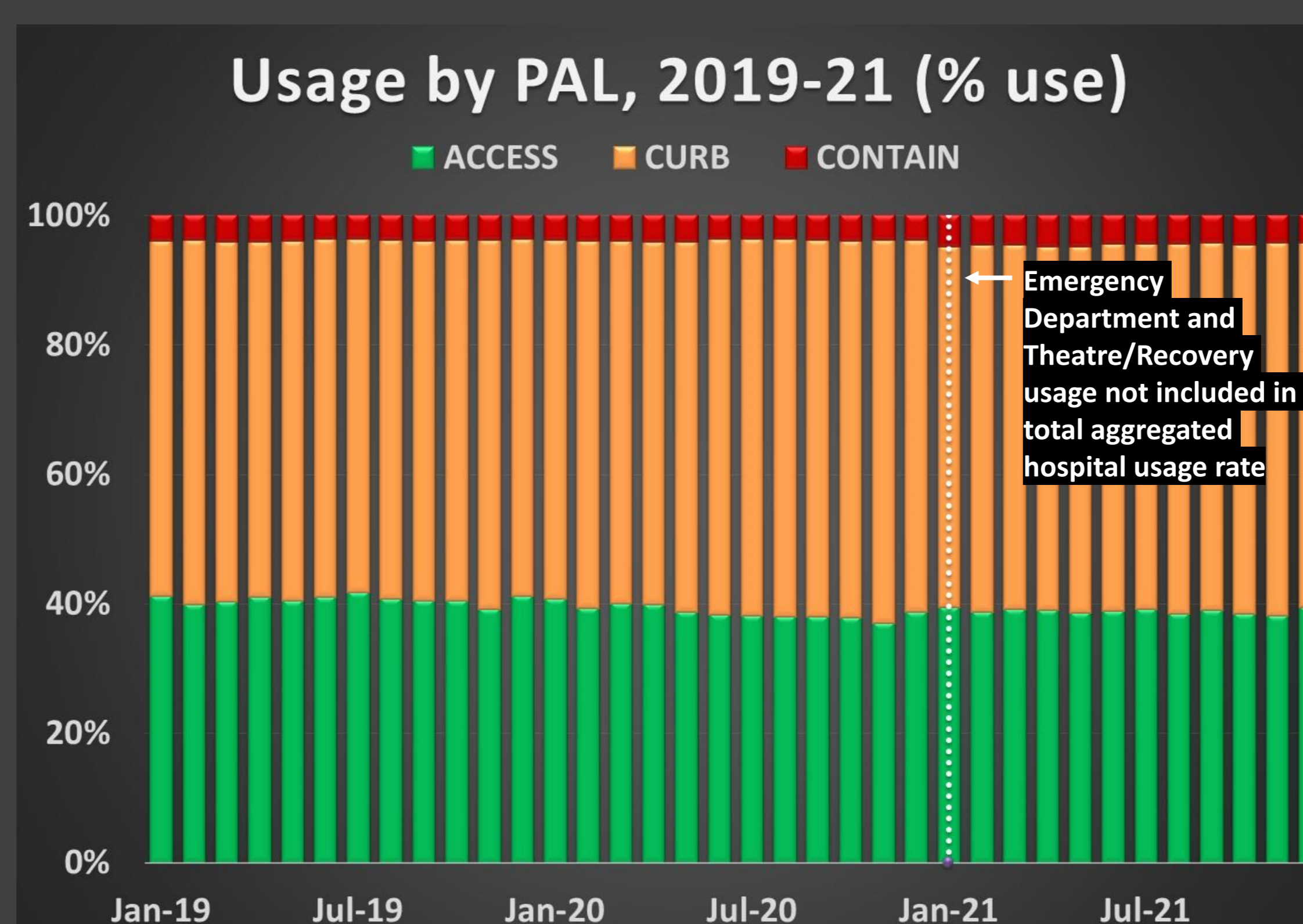
The primary purpose of the Priority Antibacterial List (PAL) is to support surveillance of antimicrobial usage at a national level and improve prescribing by classifying antibacterials according to treatment recommendations in nationally-endorsed prescribing guidelines.¹ Classification is also based on the risk of antimicrobial resistance (AMR) development in human health based on expert consensus. The three categories are *Access*, *Curb*, and *Contain*. Generally, *Access* antibacterials are first-line treatment choices for common infections with a low AMR potential.¹ Previous applications of the PAL on NAUSP data showed a higher proportion of total-hospital usage was categorised as *Curb* rather than *Access*.² Cefazolin, a first-line agent for surgical prophylaxis in Australia, has been identified as a key driver of *Curb* usage.

NAUSP dataset stratification from January 2021



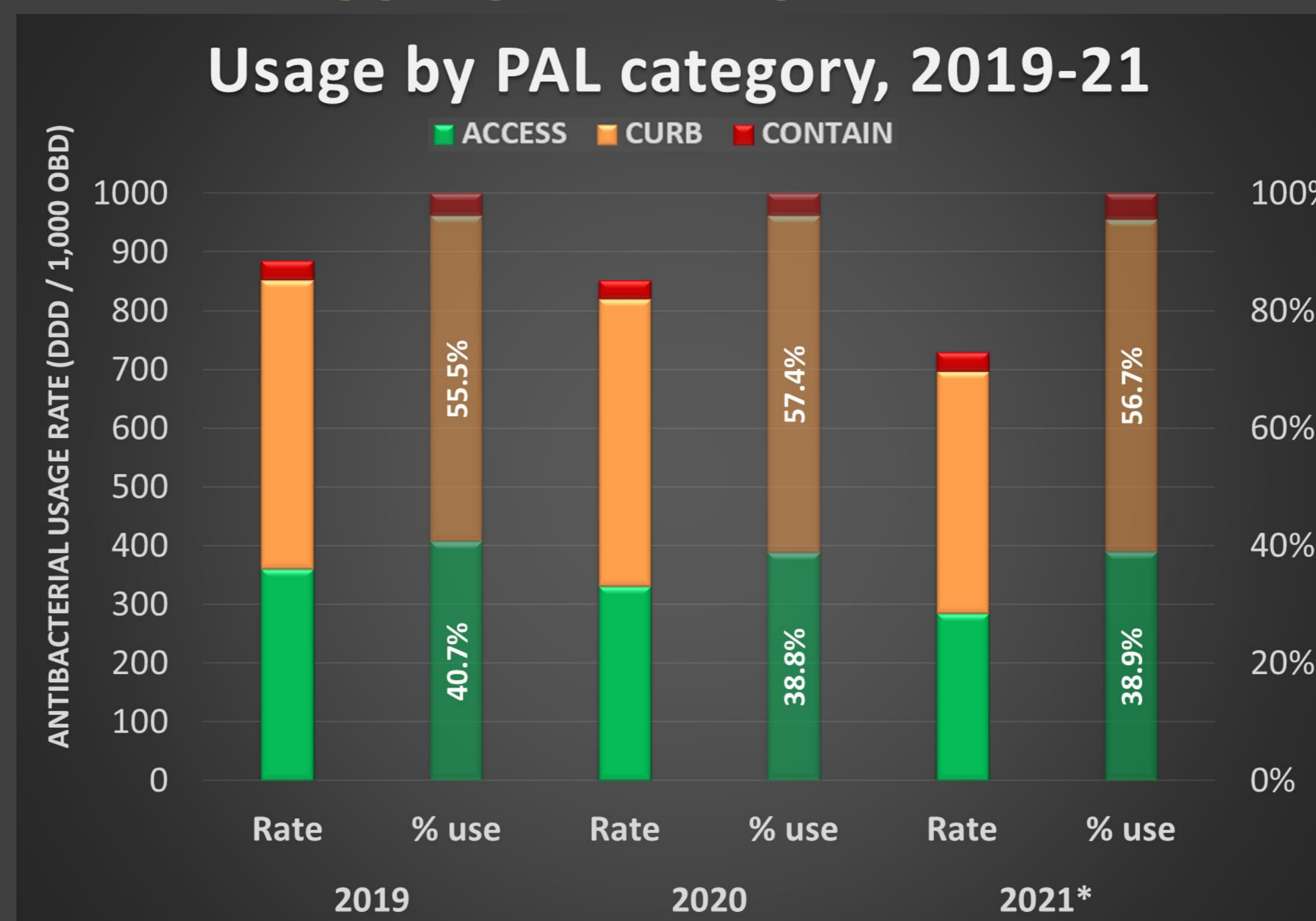
From January 2021, NAUSP datasets were stratified to enable Emergency Department (ED) and Theatre/Recovery (OT) usage to be reported separately. It was anticipated that *Curb* usage outside of these settings would be lower given that most cefazolin use occurs in theatre. The anticipated drop in reported aggregated hospital *Curb* usage rates (DDDs per 1,000 OBDs) can be observed from January 2021.

Proportional usage by PAL category



Given the overall reported *Curb* usage rate fell when ED and OT data was excluded from the aggregated hospital usage rate, it was anticipated that the proportional rate of *Curb* usage would also fall, and that increased proportional use of *Access* agents would be observed. Proportional rates however remained relatively consistent regardless of changes. The WHO suggests a target of 60% usage should come from *Access* category antibacterials.²

Annual aggregate usage – 2019-21



Annual aggregate rates of PAL antibacterials show the expected drop in reported hospital usage rates in 2021. However, the expected change in proportional usage in acute-care settings (excluding ED and OT) to favour agents from the *Access* category instead of *Curb* did not occur. Antimicrobial stewardship efforts should continue to focus on promoting *Access* usage where appropriate.

*Stratification of datasets occurred in 2021, usage reflects inpatient wards only, and excludes ED and theatre/recovery.

References:
1. ACSQHC (2020) Priority Antibacterial List for Antimicrobial Resistance Containment. <https://www.safetyandquality.gov.au/publications-and-resources/resource-library/priority-antibacterial-list-antimicrobial-resistance-containment>
2. Hillock N, Connor E, Wilson C, Kennedy, B (2021) Comparative analysis of Australian hospital antimicrobial utilization, using the WHO AwaRe classification system and the adapted Australian Priority Antimicrobial List (PAL). *JAC-Antimicrobial Resistance*. doi:10.1093/jacam/dlab017