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Antimicrobial Resistance (AMR) Surveillance on Culture Specimens in Public Hospitals and Clinics - Hospital Authority AMR Data (2023)

April 2025

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- Summary

Results - Blood Culture

Overview on patients with blood culture

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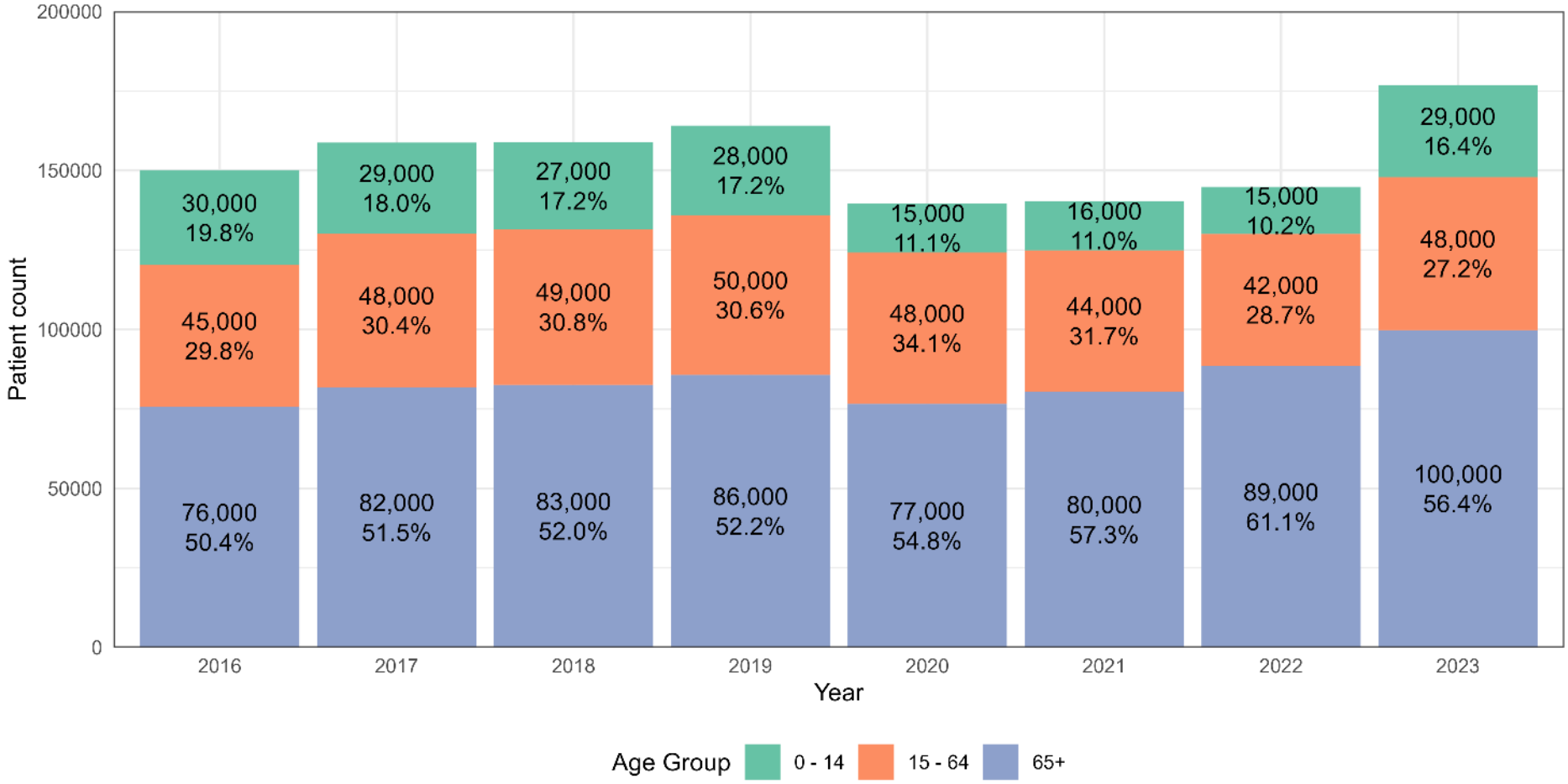
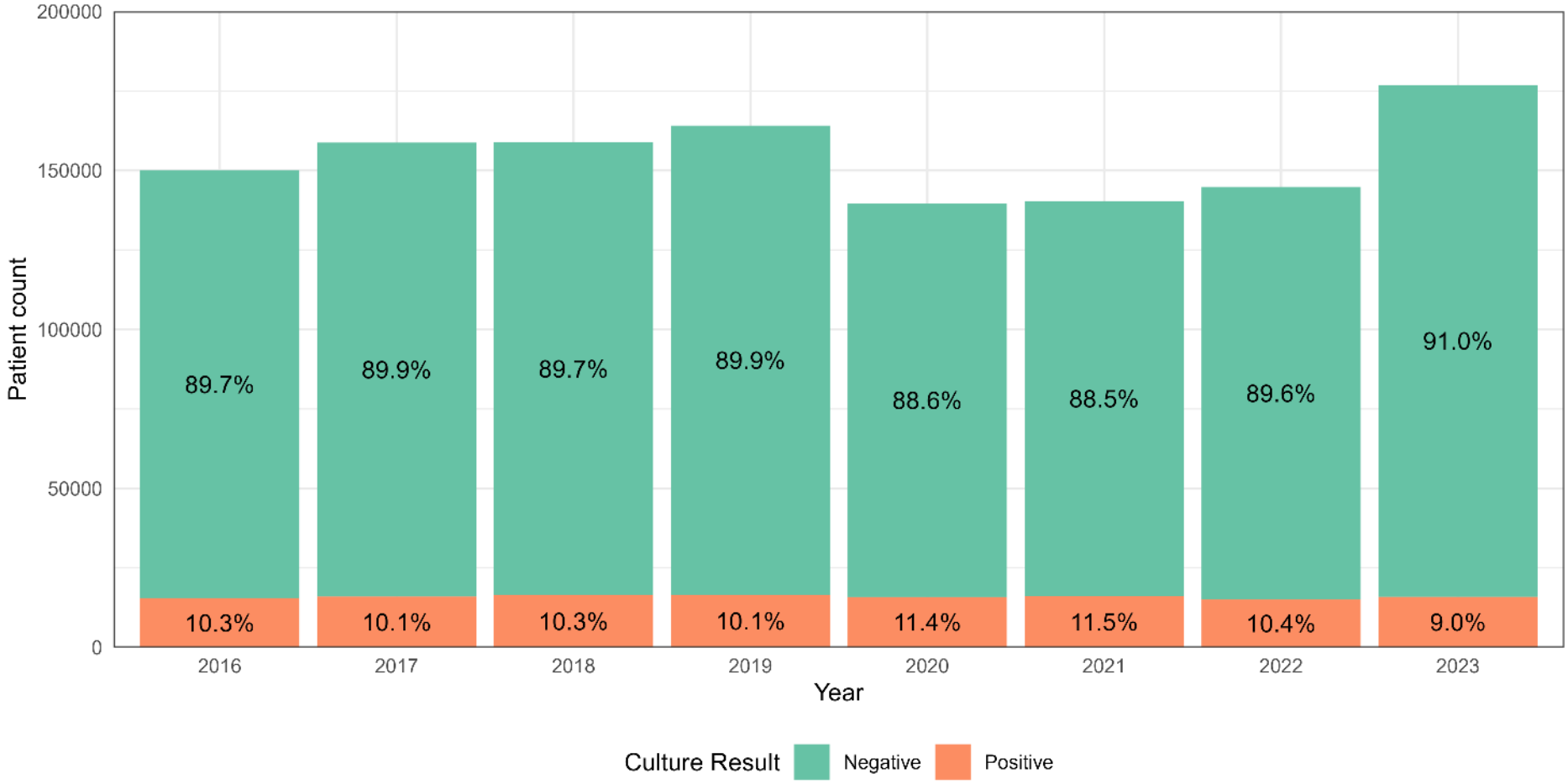
Age distribution of patients with blood culture



- No. of patients with blood culture increased from 145000 in 2022 to 177000 in 2023.
- >50% patients aged 65 years or above from 2016 to 2023.

Percentage of patients with positive blood culture

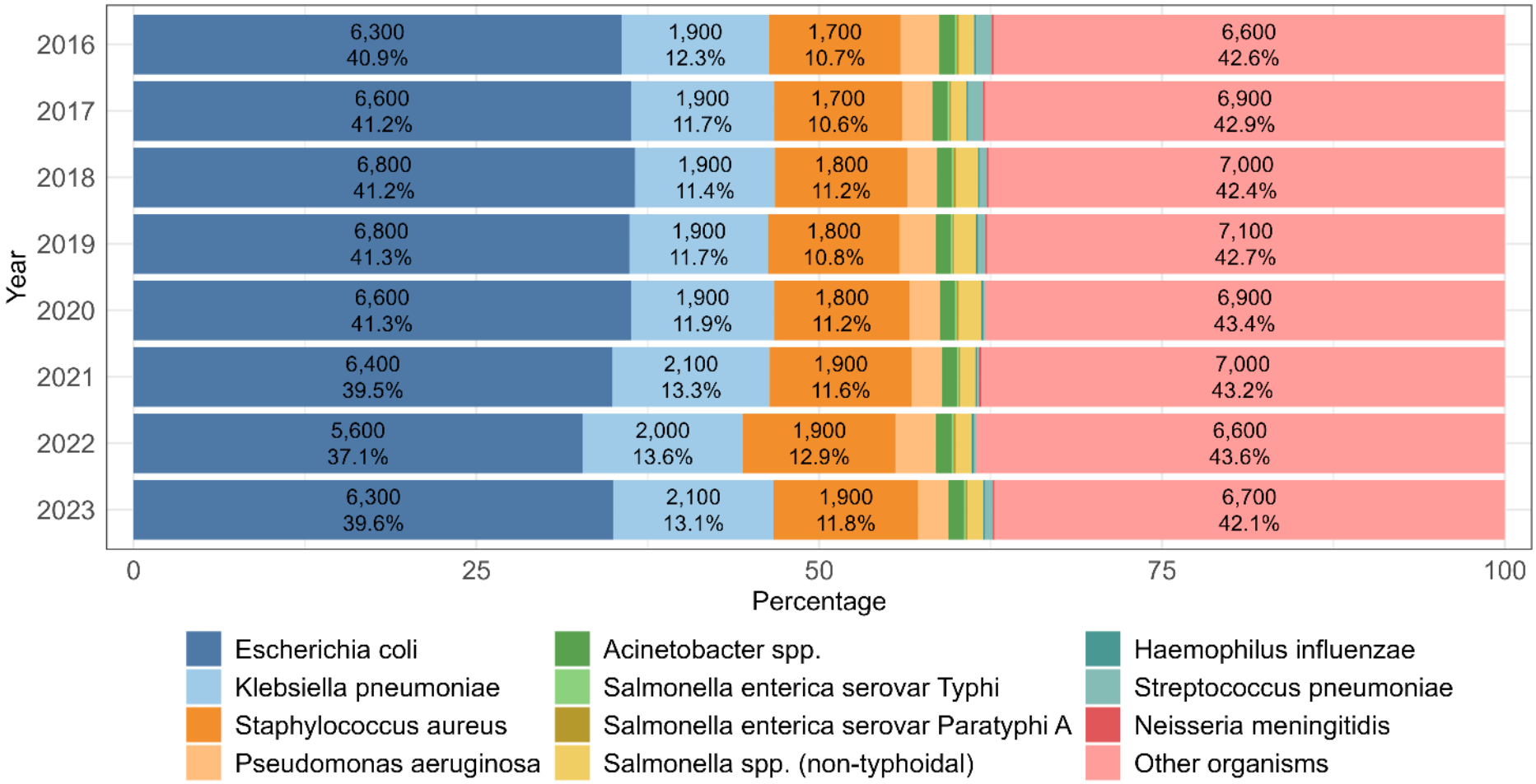


- % patients with positive blood culture remained stable over the past years at 9-11%.

Results - Blood Culture

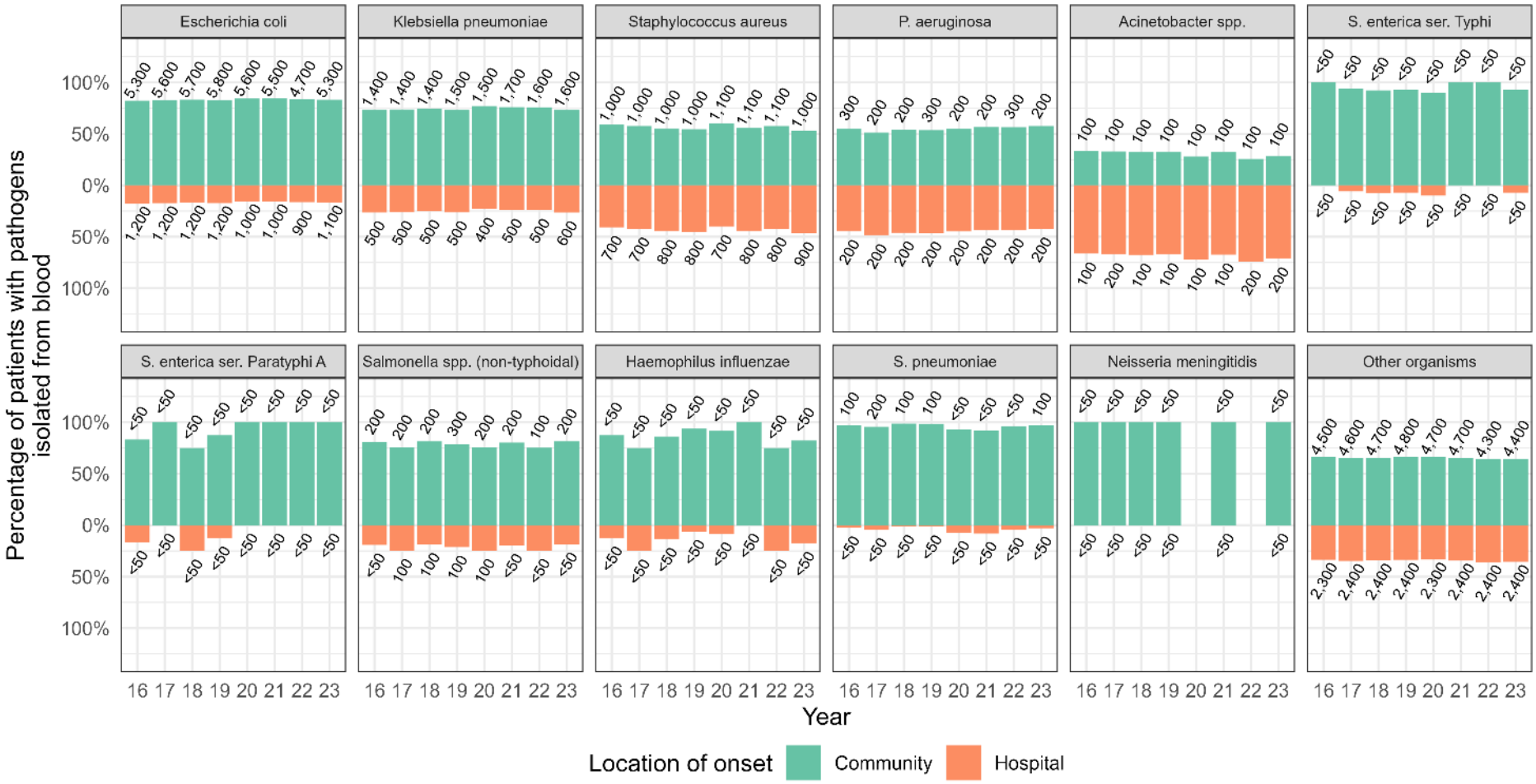
Overview on WHO priority organisms isolated from blood

Distribution of organisms by year



- The three most common WHO priority organisms cultured from blood between 2016 and 2023 were E. coli, K. pneumoniae, and S. aureus, accounting for >50% of cases each year.
- Case count for other less common WHO priority organisms remained low and stable: P. aeruginosa (400 cases), Acinetobacter spp. (200 cases), Salmonella spp. (200 cases), H. influenzae (<50 cases), S. pneumoniae (100 cases), N. meningitidis (<50 cases).

Distribution of organisms by location of onset



- E. coli, K. pneumoniae, Salmonella spp., H. influenzae, S. pneumoniae and N. meningitidis were predominantly community-onset from 2016 to 2023.
- More than half of Staphylococcus aureus isolated were community-onset.
- Acinetobacter spp. was predominantly hospital-onset.

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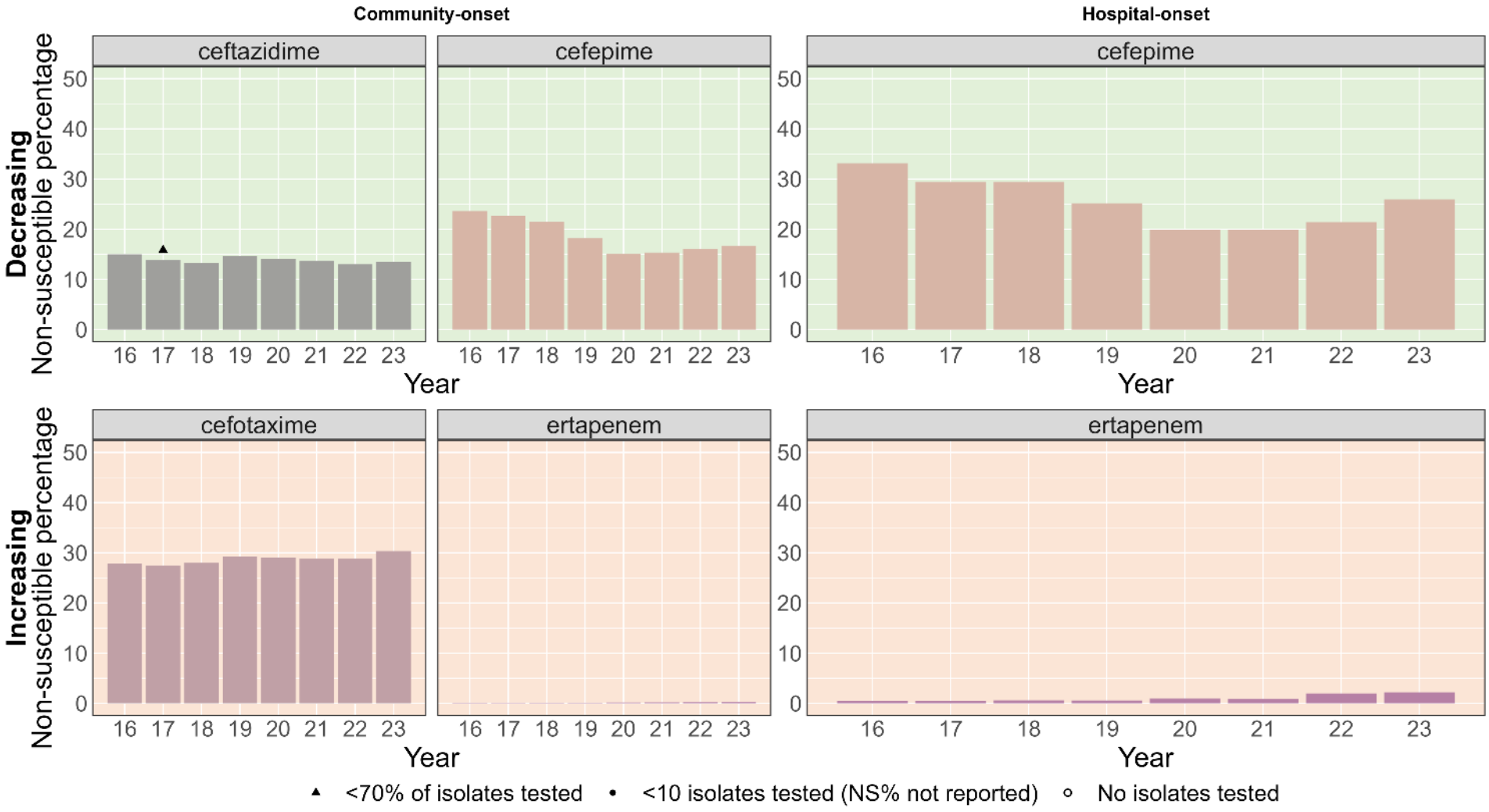
Results - Blood Culture

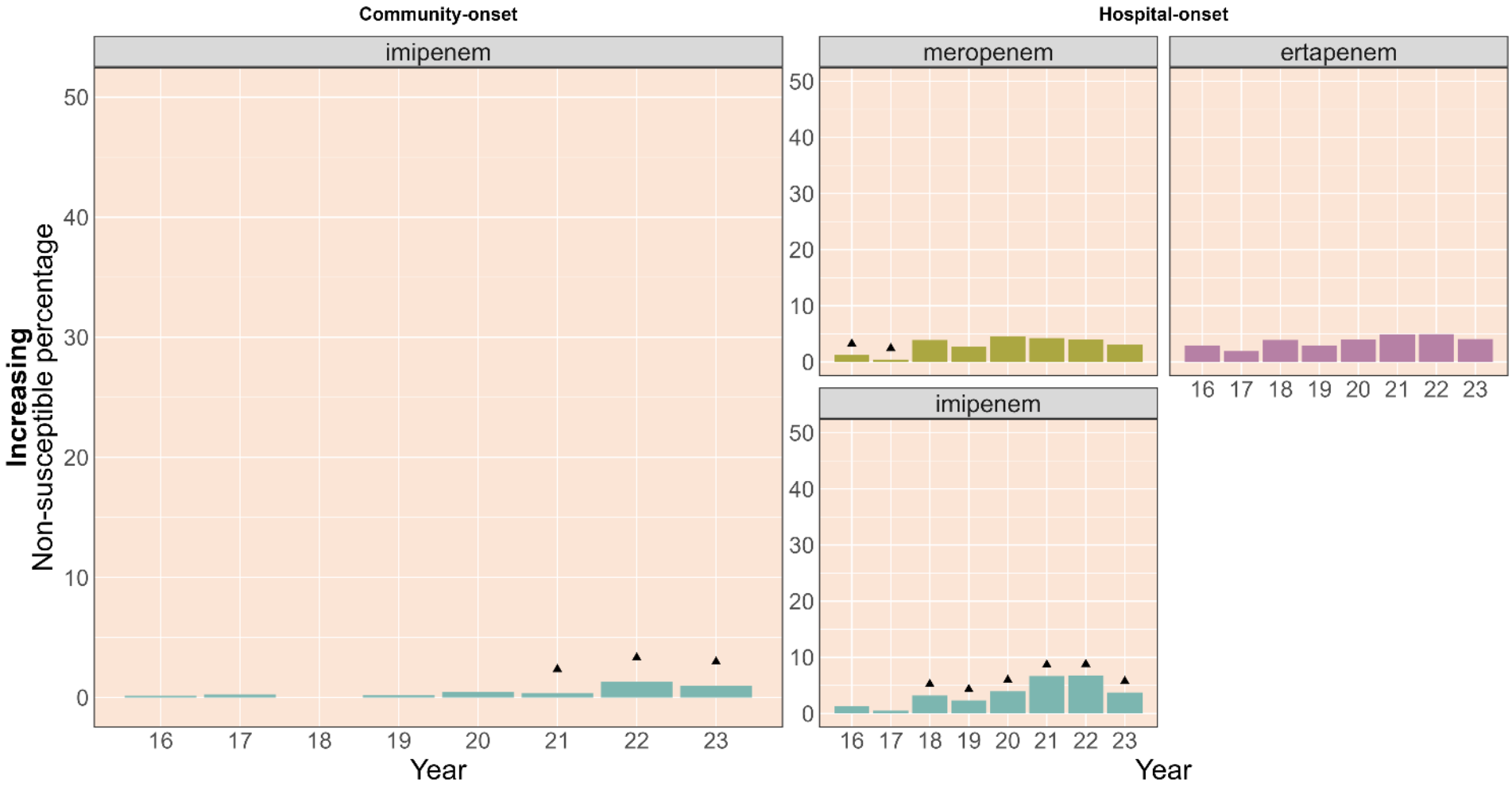
AST results for WHO priority organisms isolated from blood

AST results with significant trend for E. coli (16 to 23)



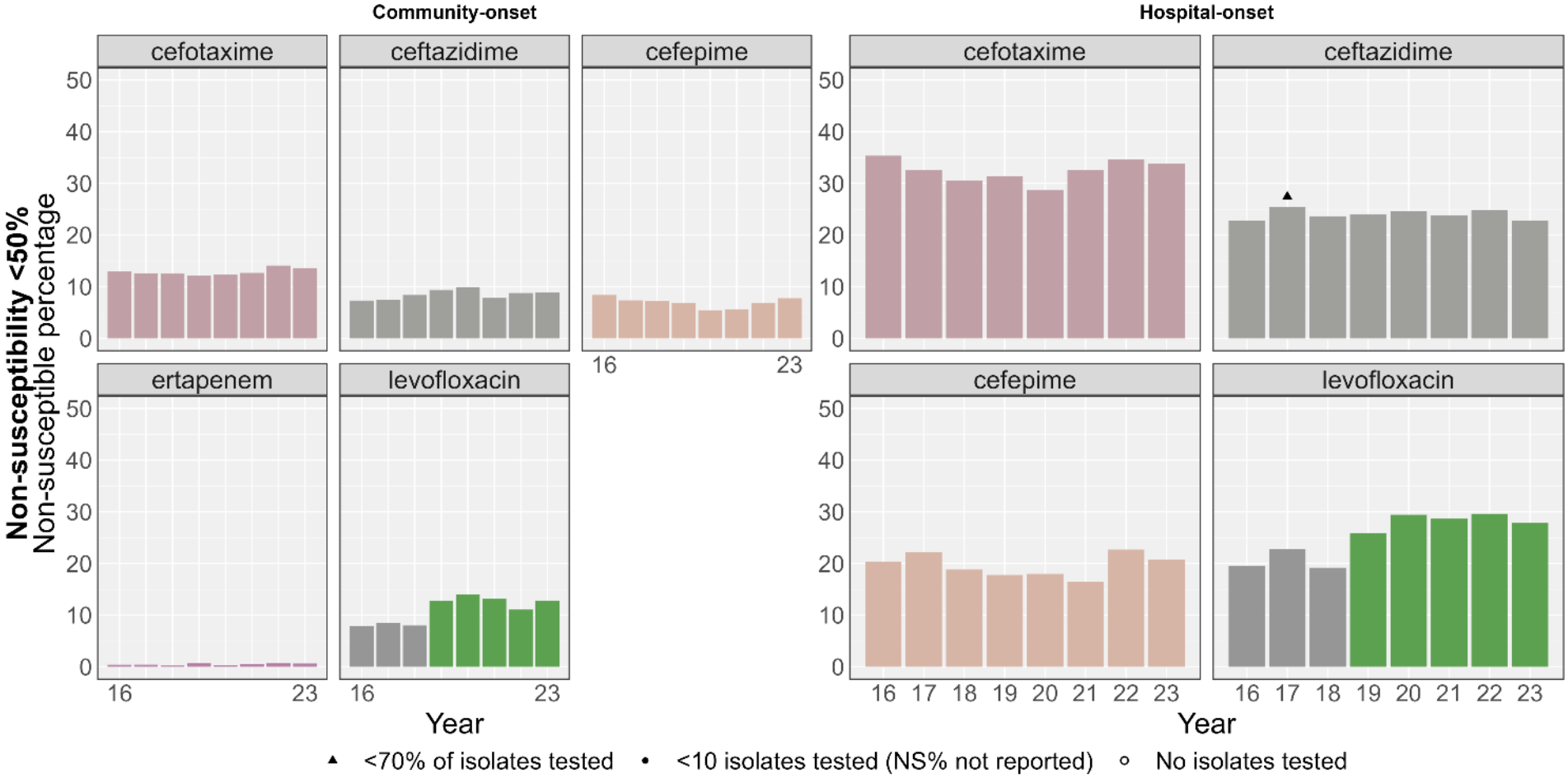
- Cefepime and community-onset ceftazidime show significant decreases in non-susceptible percentage from 2016-2023, indicating improved antibiotic effectiveness over both timeframes.
- Community-onset cefotaxime and ertapenem, plus hospital-onset ertapenem, demonstrate significant increases in non-susceptible percentages during 2016-2023.

AST results with significant trend for K. pneumoniae (16 to 23)



- Imipenem (both community and hospital-onset), meropenem (hospital-onset), and ertapenem (hospital-onset) all show significant increasing non-susceptible percentages during 2016-2023.

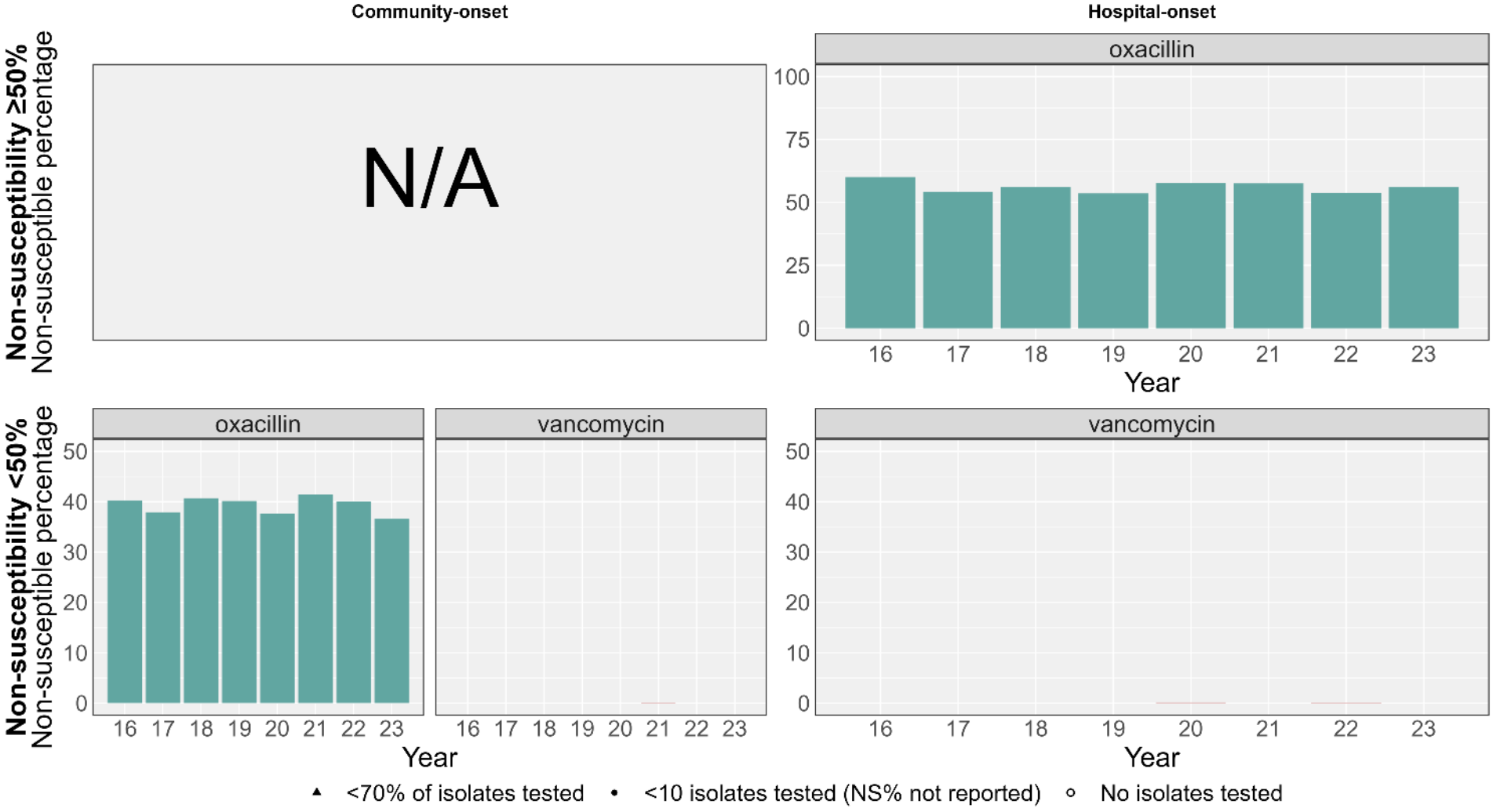
AST results with no trend observed for K. pneumoniae (16 to 23)



Note:
The CLSI released revised fluoroquinolones interpretive criteria for Enterobacterales (excluding Salmonella spp.) in 2019, and revised piperacillin/tazobactam interpretive criteria for Enterobacterales in 2022. These updates may have contributed to the observed increase in subsequent years compared to the years prior to the criteria changes.

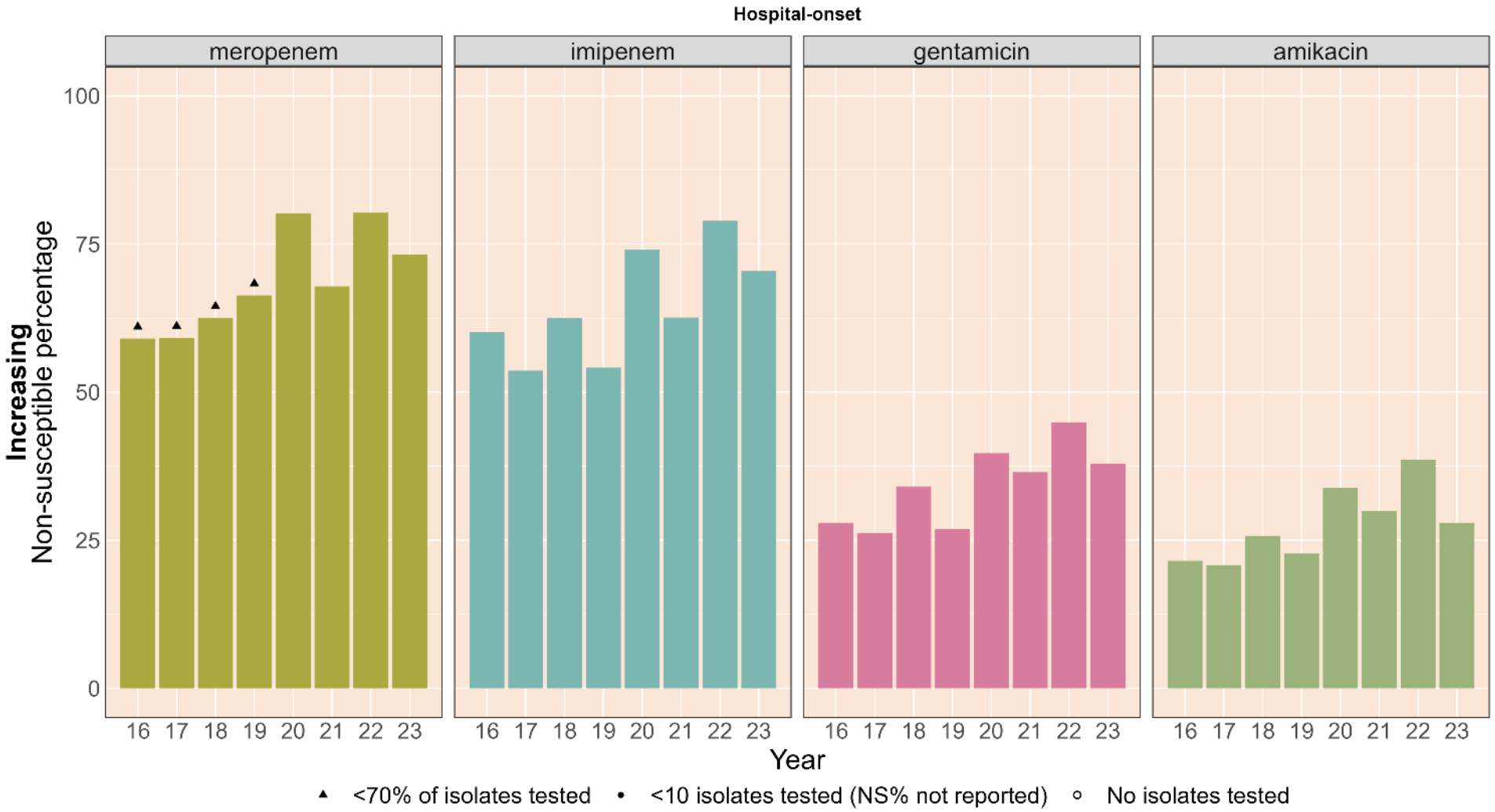
- Cefotaxime, ceftazidime, levofloxacin (both community- and hospital-onset), ertapenem (community) and cefepime (hospital) show no statistically significant trend in non-susceptibility from 2016-2023.

AST results with no trend observed for S. aureus (16 to 23)



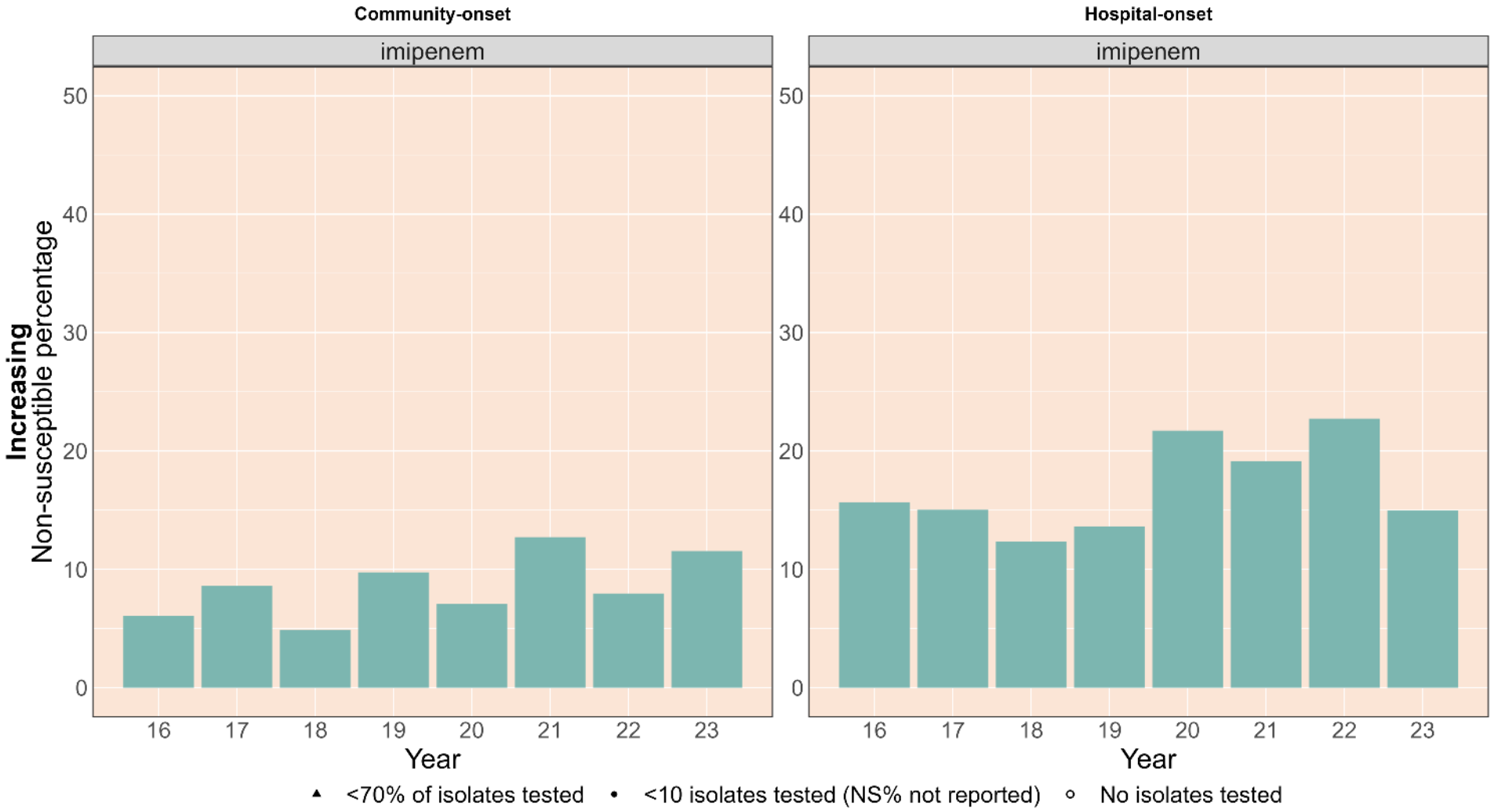
- Oxacillin resistance shows no significant trend 2016-2023, maintaining consistent non-susceptibility rates around 55% for hospital-onset infections and 35-40% for community-onset infections.

AST results with significant trend for Acinetobacter spp. (16 to 23)



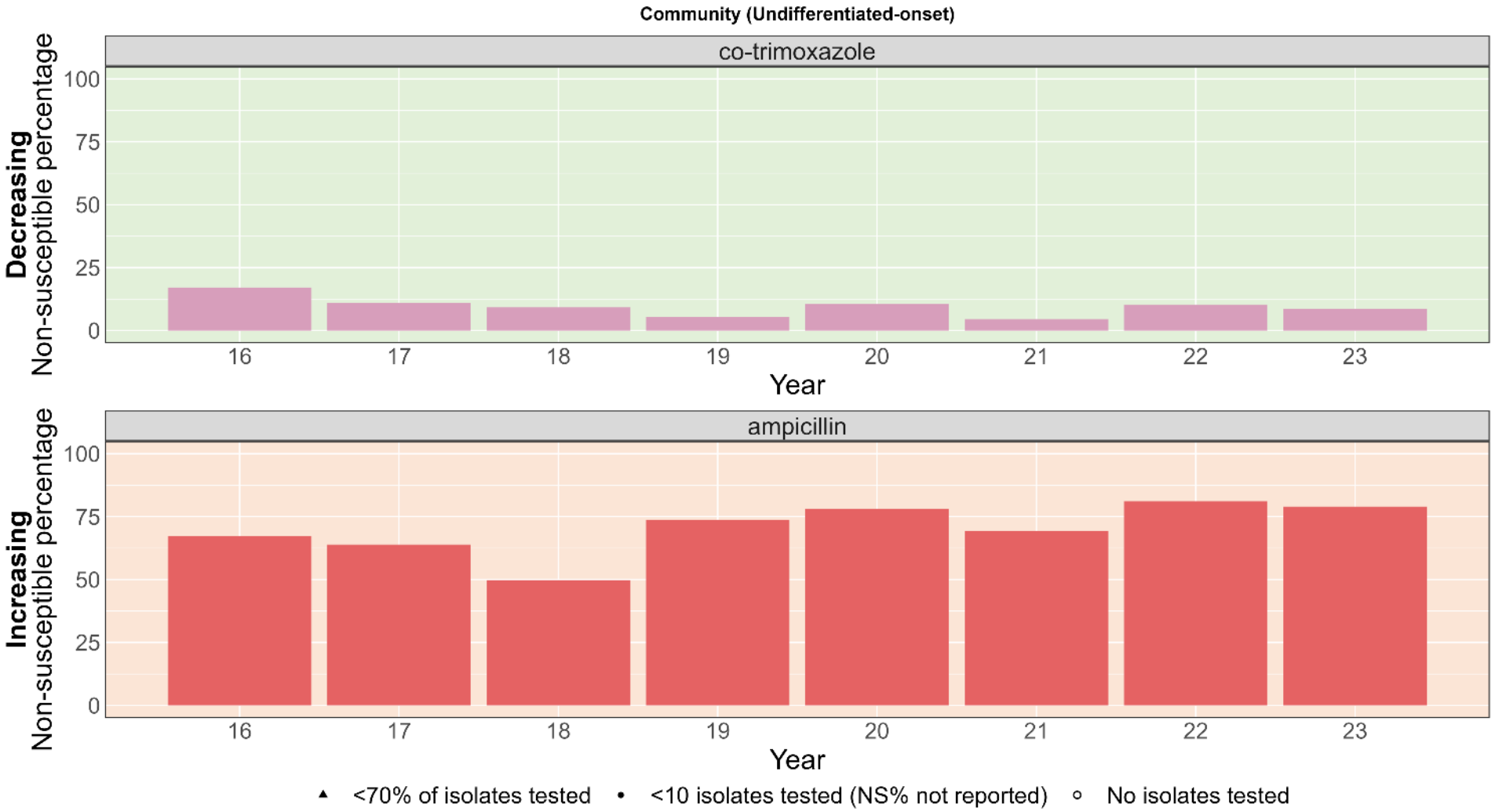
- Hospital-onset meropenem, imipenem, gentamicin, and amikacin all show a significant increase in antimicrobial resistance rates from 2016-2023.

AST results with significant trend for P. aeruginosa (16 to 23)



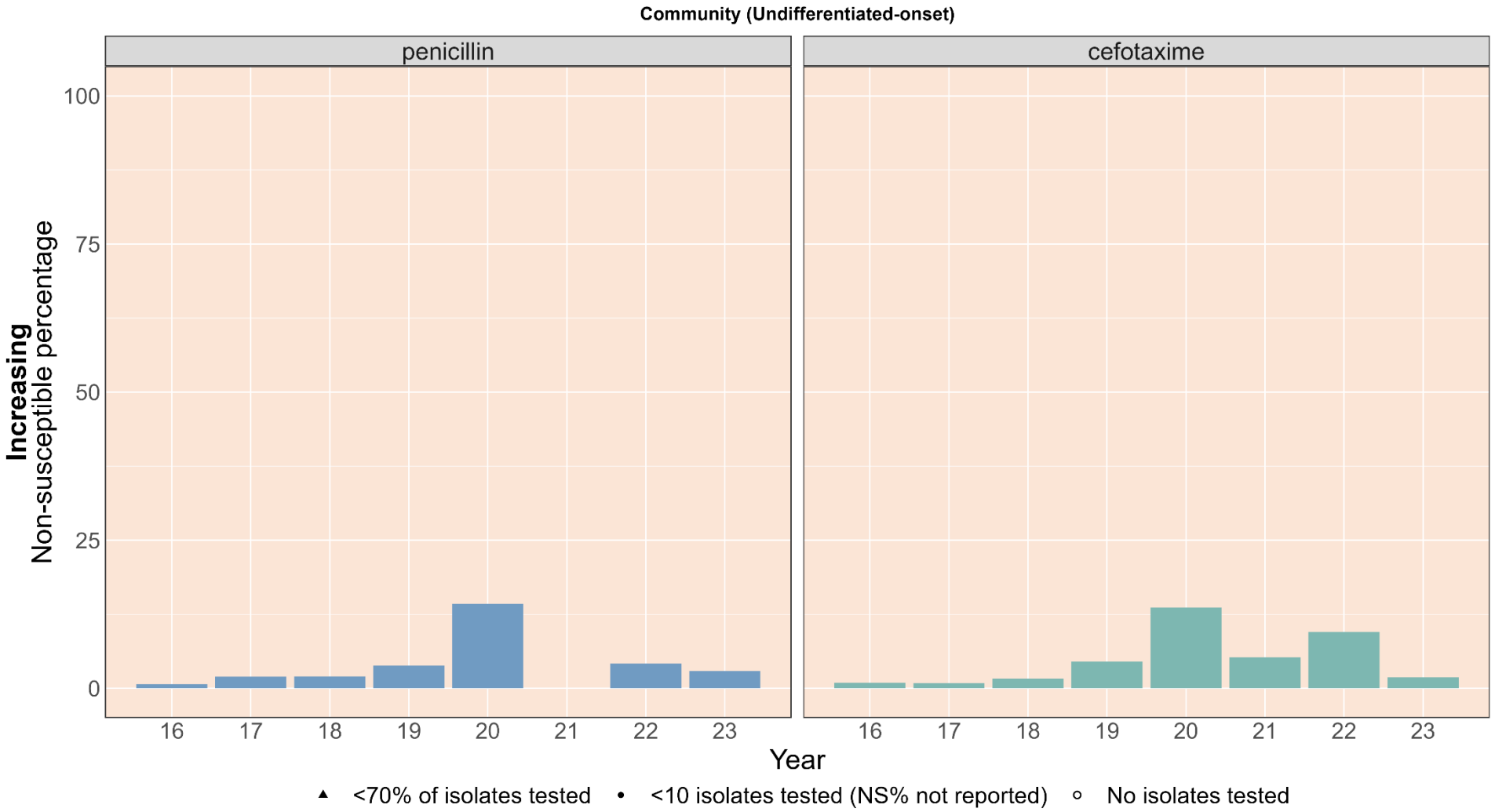
- Hospital-onset imipenem exhibits a significant increasing trend in resistance percentages during 2016-2023, with notably higher non-susceptible percentages than community-onset infections.
- Community-onset imipenem shows a statistically significant during 2016 -2023.

AST results with significant trend for Non-typhoidal Salmonella (16 to 23)



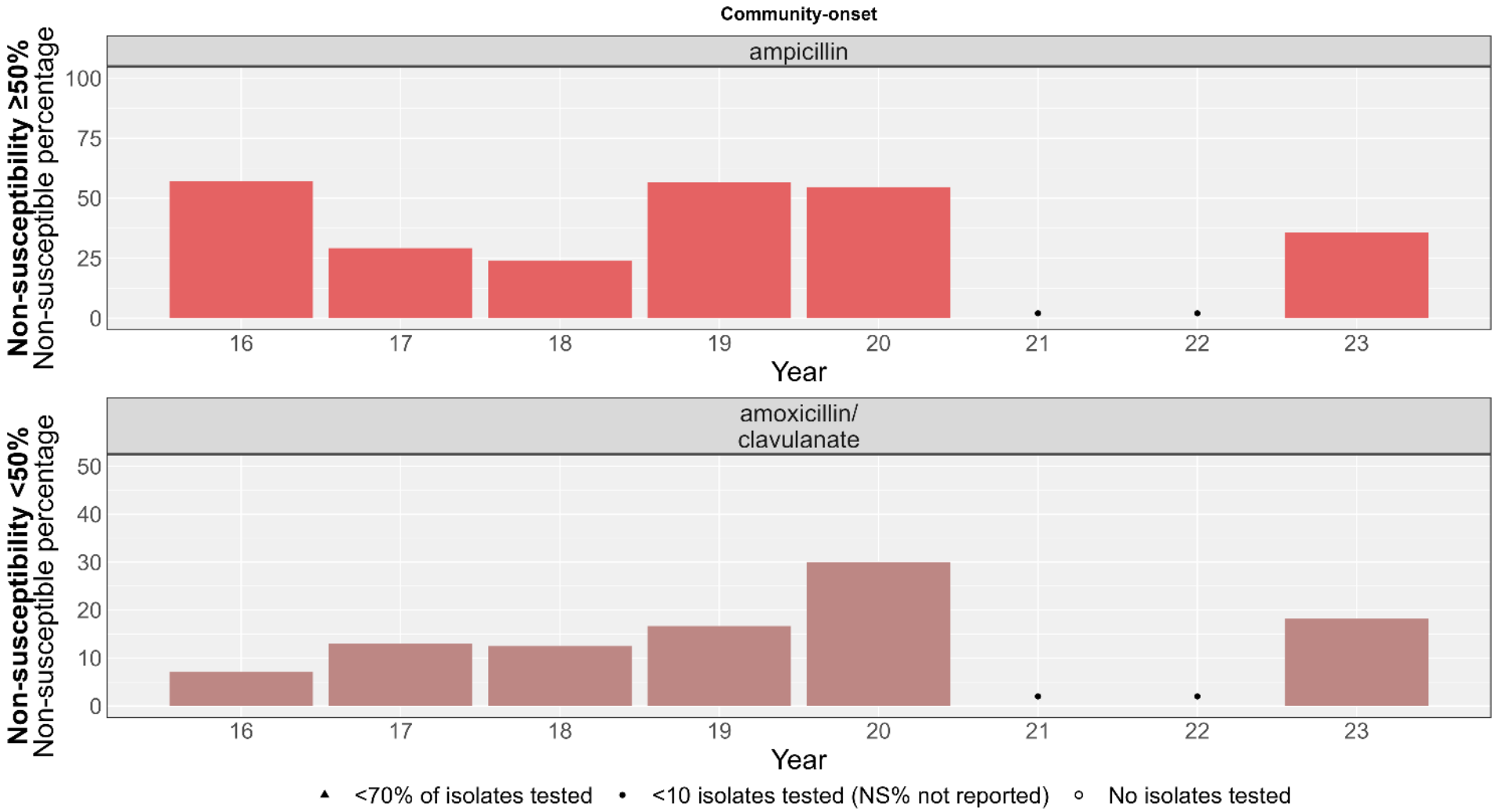
- Co-trimoxazole in community-onset infections shows a significant decreasing trend in non-susceptible percentage during 2016-2023.
- Ampicillin in community-onset infections demonstrates a significant increasing trend in non-susceptible percentage during 2016-2023.

AST results with significant trend for S. pneumoniae (16 to 23)



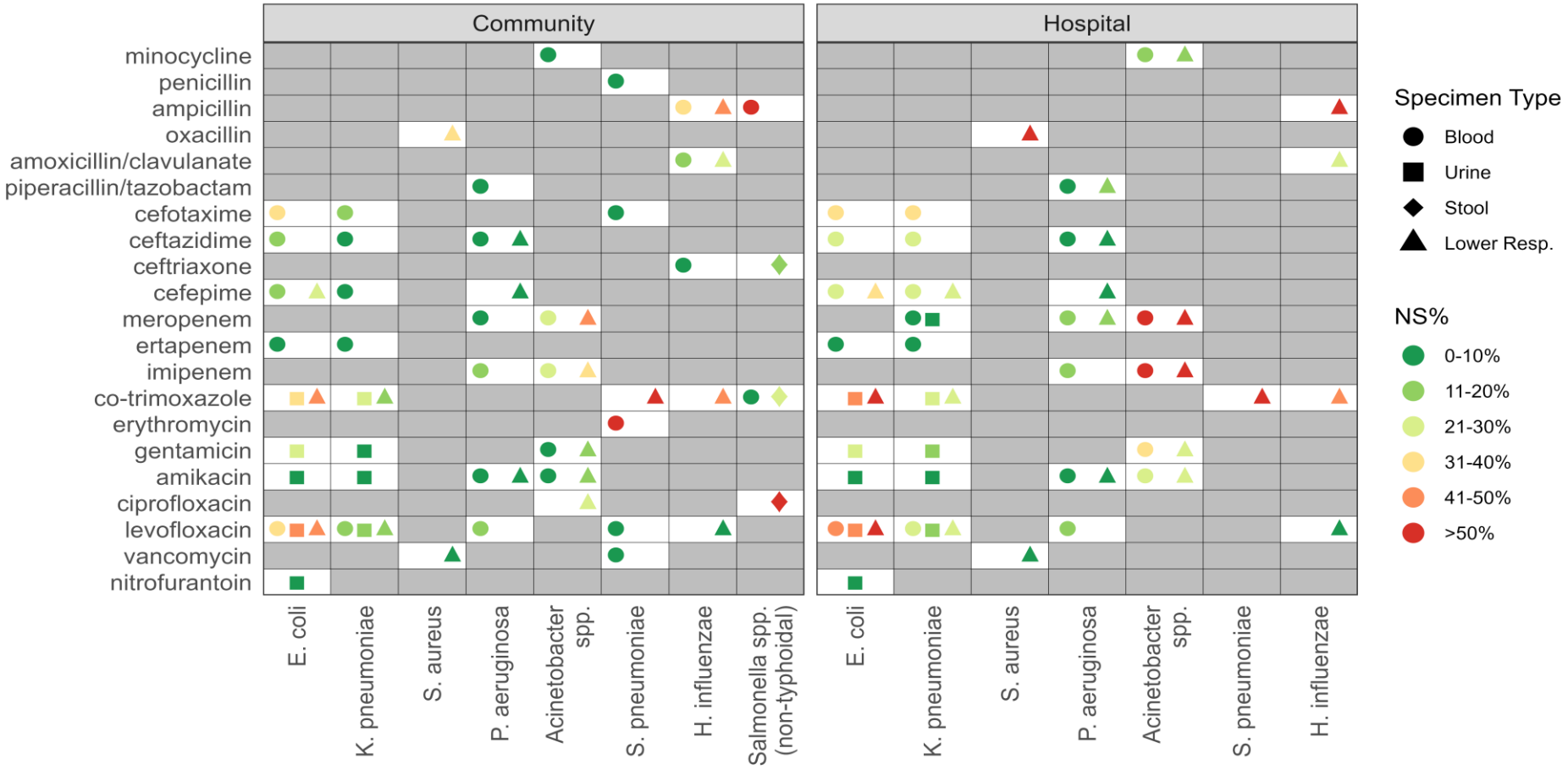
- Penicillin and cefotaxime in community-onset infections shows a significant increasing trend in non-susceptible percentage during 2016-2023.

AST results with no trend observed for H. influenzae (16 to 23)



- Community-onset ampicillin and amoxicillin/ clavulanate show no significant resistance trend during 2016-2023 despite fluctuations in non-susceptibility percentages.

Summary



Note: Only drug-bug combinations with more than 10 isolates and at least 70% of isolates tested for susceptibility in 2023 are shown.

- Carbapenem resistance among Enterobacterales (E. coli and K. pneumoniae) was observed in infections of hospital- and community- onset.
- Higher non-susceptibility rates (orange/red symbols) are more frequently observed in hospital isolates, especially for Acinetobacter spp. and Pseudomonas aeruginosa.