

# Antimicrobial Usage (AMU) Surveillance in Public Hospitals and Clinics - Hospital Authority Antimicrobial Dispensing Data (2023)

April 2025



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- (Background, Data Scope, Definitions, Measurements, and Statistical Method remained unchanged compared to 2021, and can be accessed at <https://www.chp.gov.hk/files/pdf/hospitalauthorityamudata2021.pdf>)

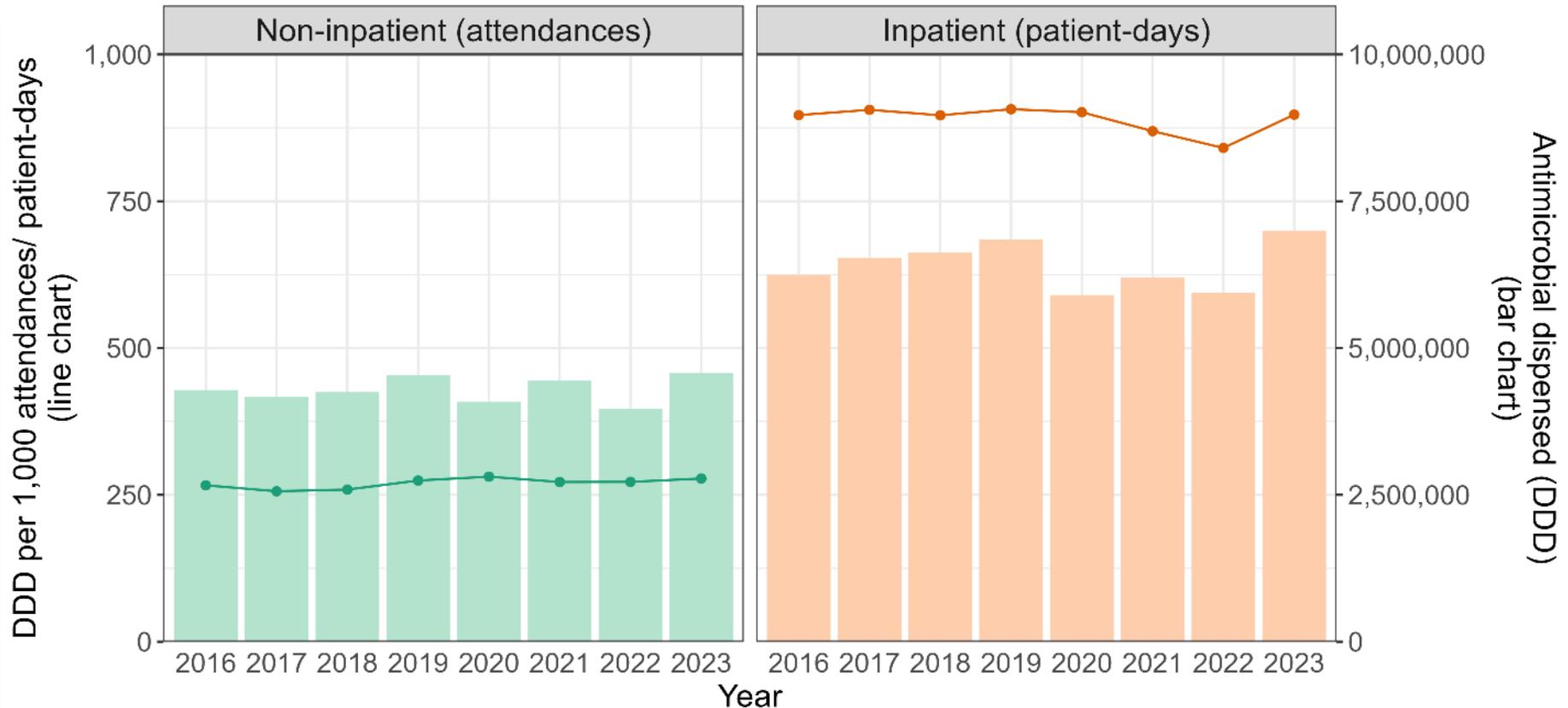


# Results

Total antimicrobials dispensed in public hospitals and clinics  
by service type



# Total Antimicrobials Dispensed in Public Hospitals and Clinics by Service Type



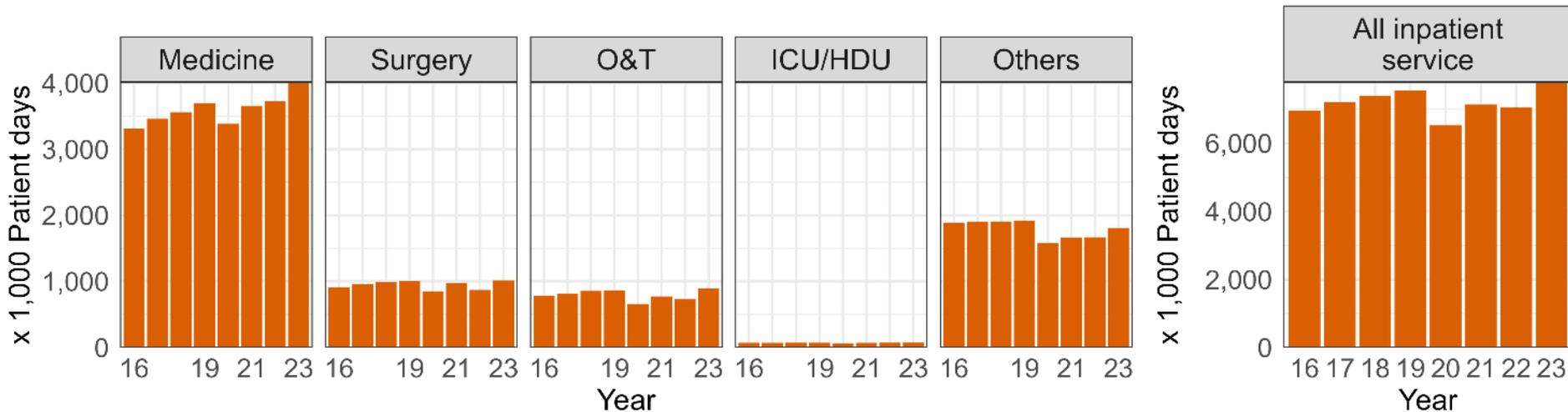
- Total antimicrobial dispensed (DDD) increased in both settings, with a notable rise in 2023, especially among inpatients.
- After adjusting for service volume, antimicrobial use per 1,000 attendances or patient-days remained stable from 2016 to 2023 in both non-inpatient and inpatient settings.

# HA service volume by service type and specialty

## Non-inpatient service

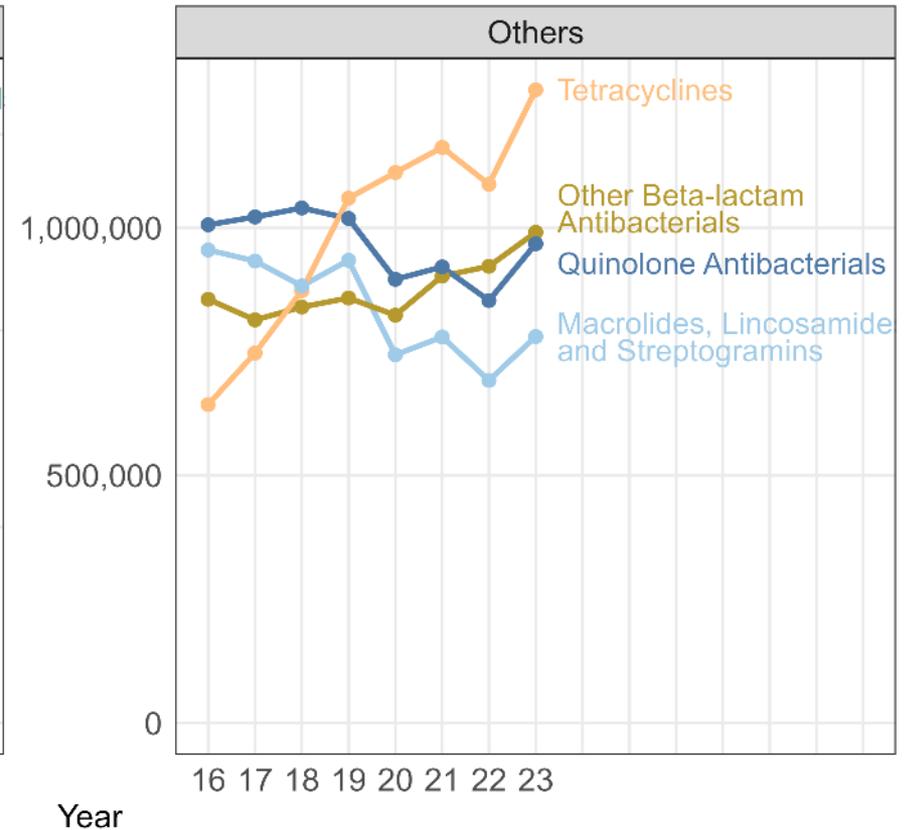
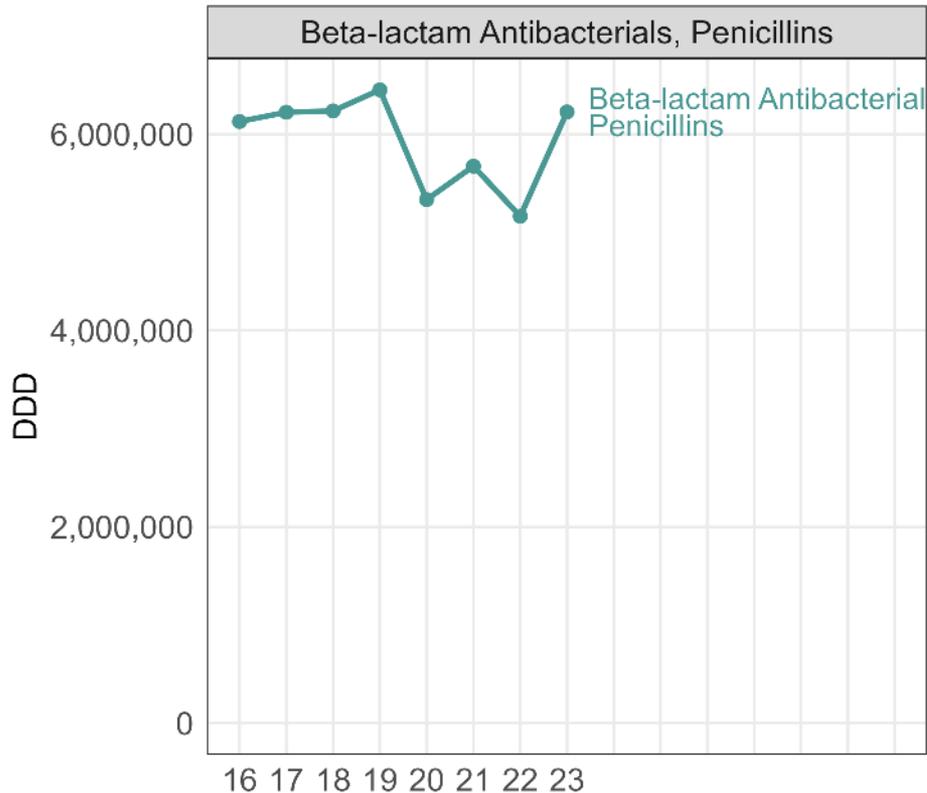


## Inpatient service



- In 2023, both non-inpatient attendances and inpatient patient days reached their highest levels since 2016.

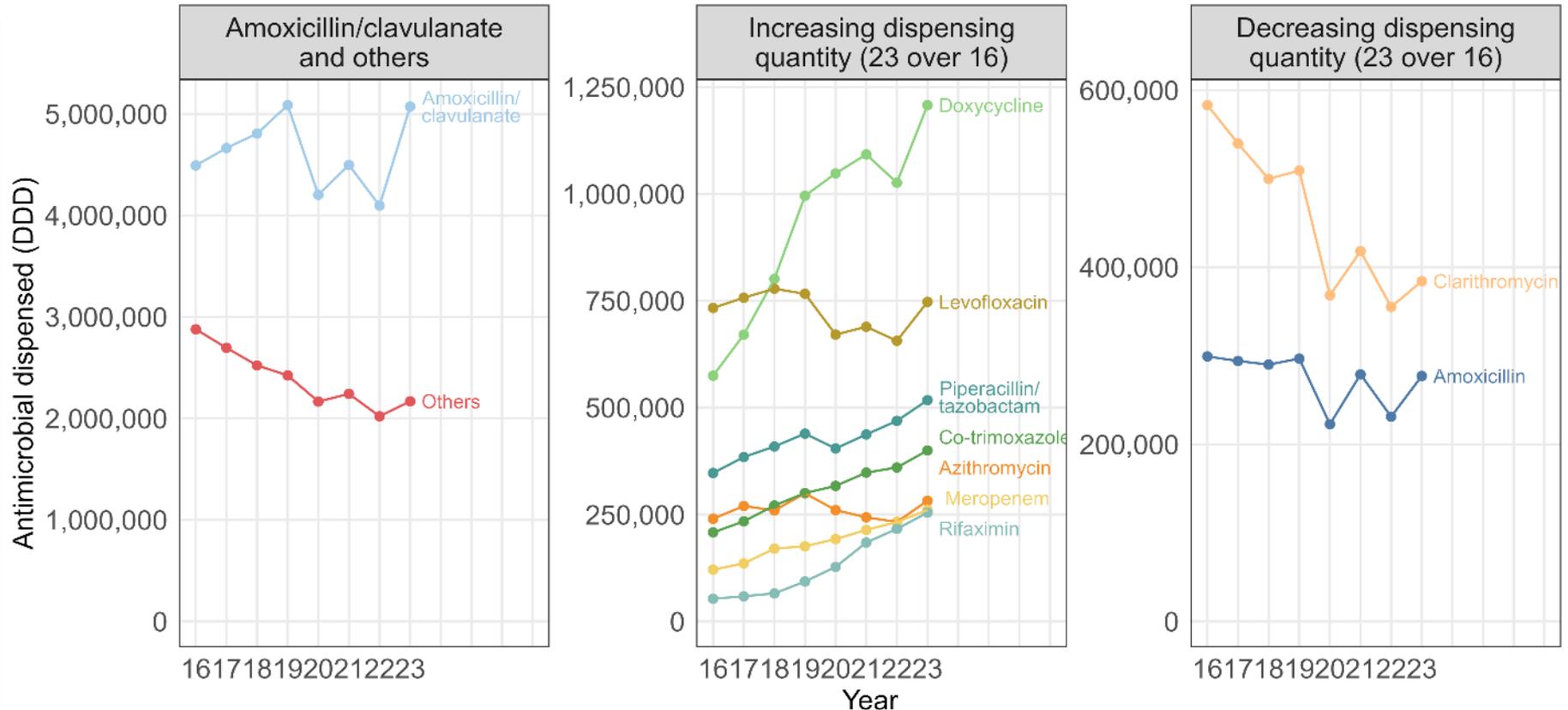
# Five Most Dispensed Antimicrobial Groups in Public Hospitals and Clinics in 2023



- In 2023, Beta-lactam antimicrobials, penicillins continued to be the most dispensed antimicrobials.
- Compared to 2022, all five of the most dispensed antimicrobial groups experienced a increase in dispensing volume.



# Ten Most Dispensed Antimicrobials in Public Hospitals and Clinics in 2022



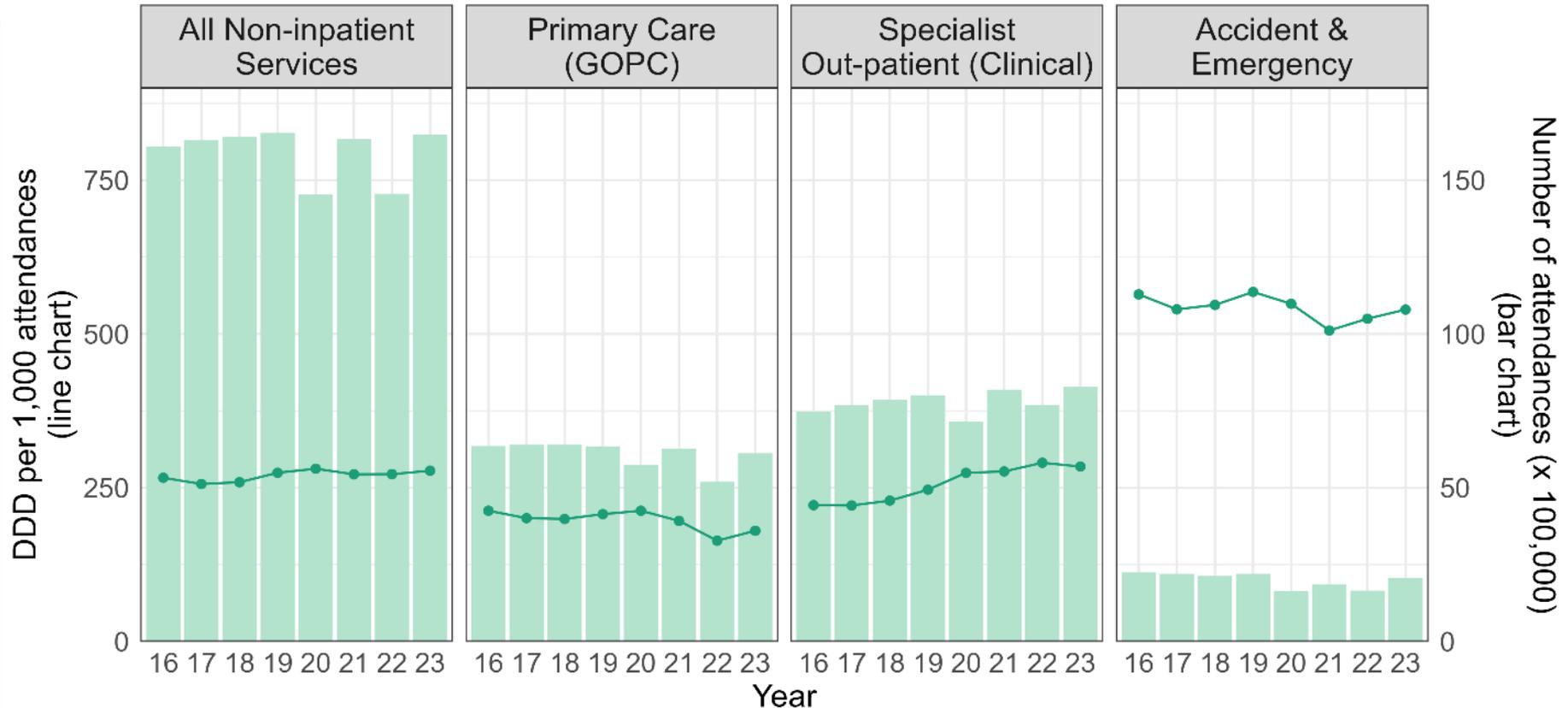
- In 2023, amoxicillin/clavulanate (Augmentin) remained the most dispensed antimicrobial.
- Doxycycline, levofloxacin, piperacillin/tazobactam, co-trimoxazole, azithromycin, meropenem and rifaximin showed notable increases.
- Clarithromycin and amoxicillin dispensing quantities continued to decline in 2023.

# Results

Antimicrobials dispensed in HA non-inpatient service by service

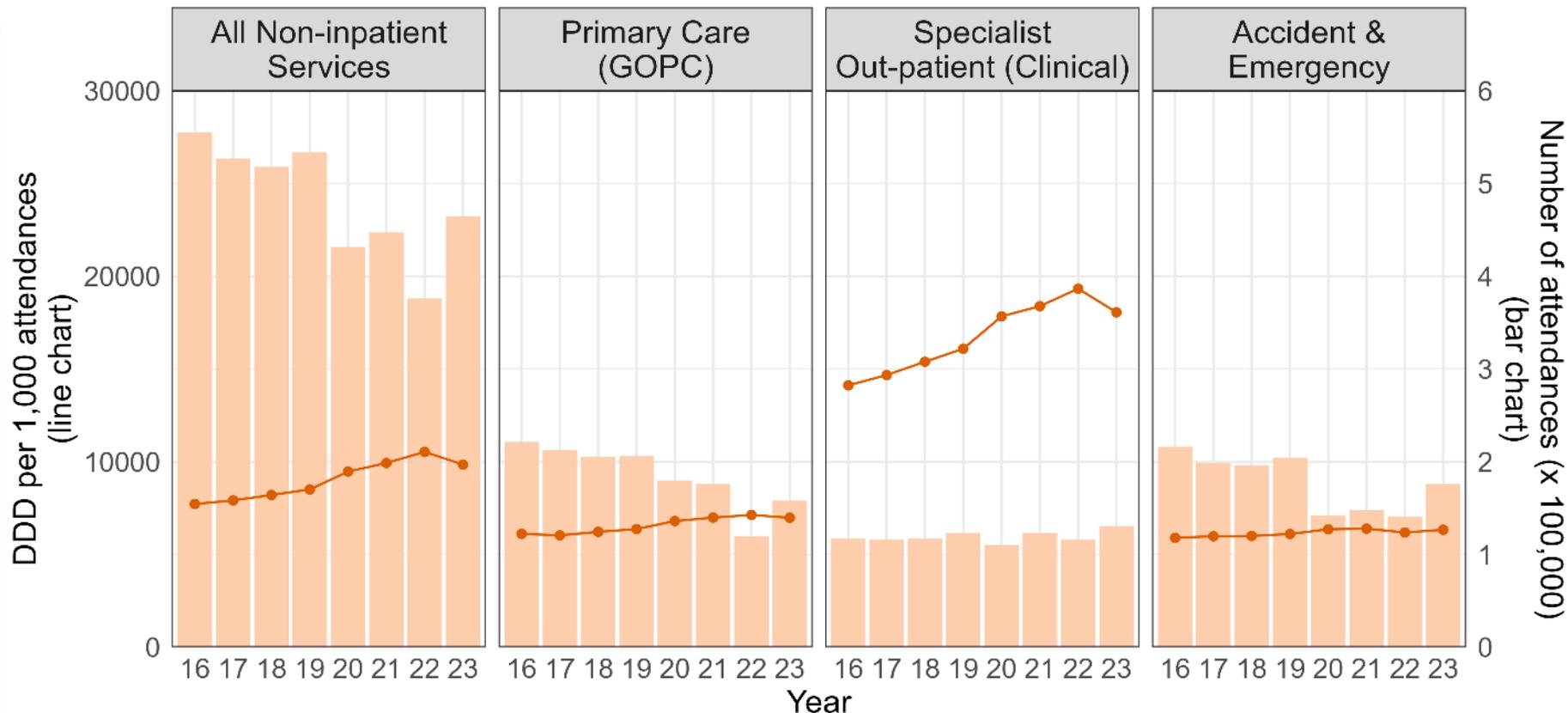


# Total Antimicrobials Dispensed in HA Non-inpatient Service by Service



- Attendance numbers in 2023 rebounded to pre-pandemic levels across most service types.
- Antimicrobial usage (DDD per 1,000 attendances) in 2023 remained stable across all non-inpatient services, with primary care showing the lowest rate and Accident & Emergency the highest.

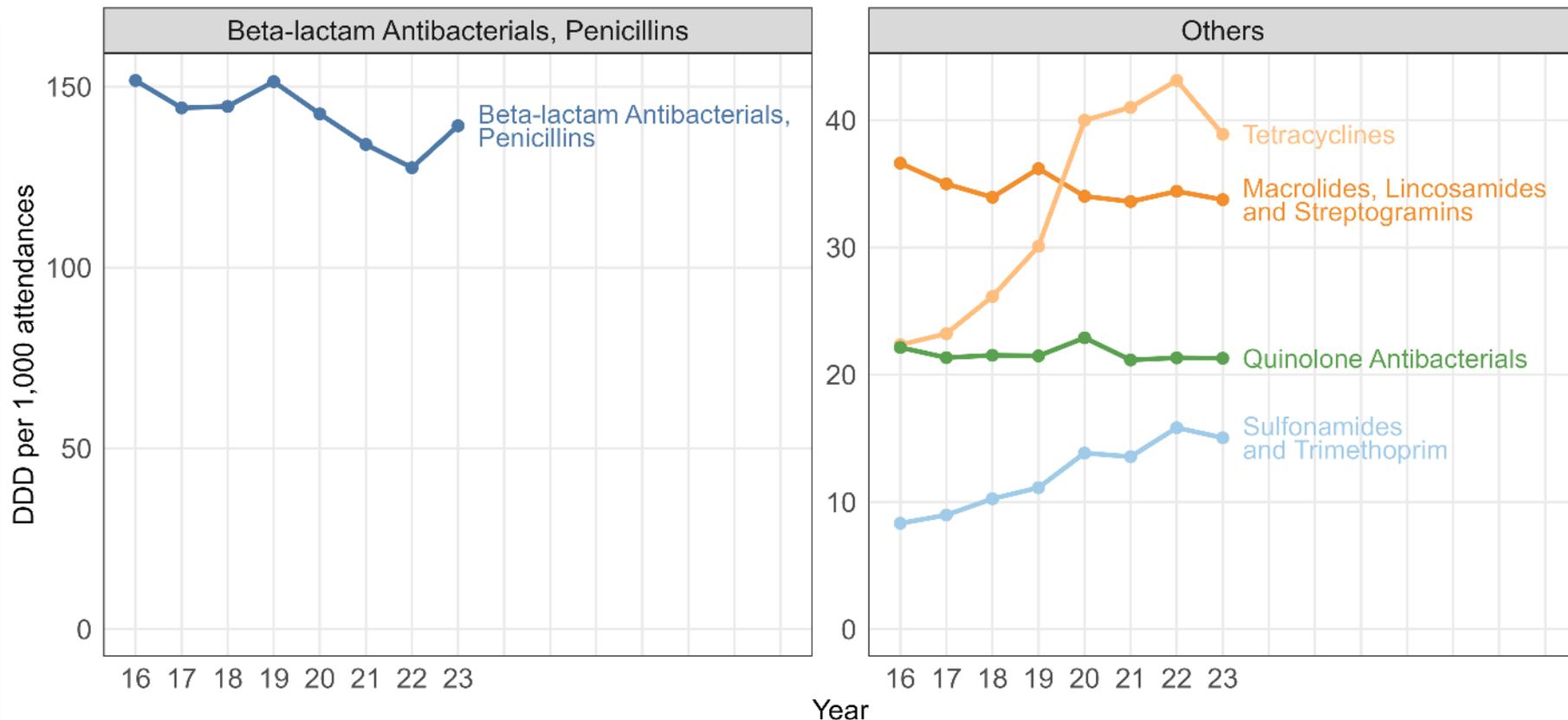
# Pattern of HA non-inpatient service attendances having dispensed antimicrobials



- Attendance numbers in 2023 for non-inpatient services increased, especially in Accident & Emergency and Primary Care.
- In 2023, antimicrobial usage (DDD per 1,000 attendances) remained stable or slightly declined across all non-inpatient services, with specialist out-patient clinics showing the highest rates.



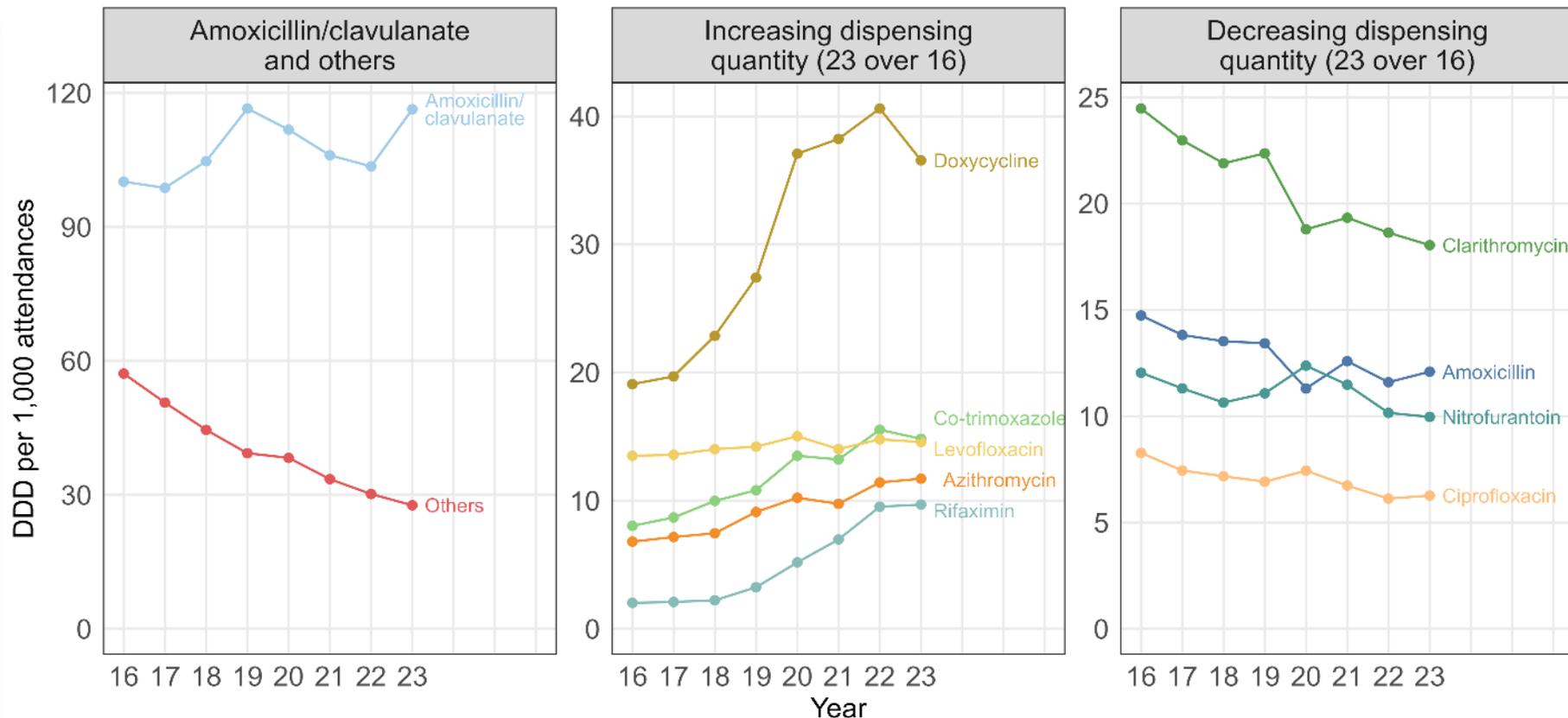
# Five Most Dispensed Antimicrobial Groups in Non-inpatient Service in 2023



- In 2023, Beta-lactam antibacterials (penicillins) remained the most used class, with usage rebounding from 2022 to 2023.
- Tetracyclines peaked in 2022 but declined by 2023, while sulfonamides and trimethoprim showed a steady upward trend over the years.



# Ten Most Dispensed Antimicrobials in Non-inpatient Service in 2022



- In 2023, amoxicillin/clavulanate (Augmentin) remained as the most dispensed antimicrobial in non-inpatient services, with usage rebounding from 2022 to 2023.
- Doxycycline and several other antibiotics showed increased dispensing in 2023 compared to 2016, with doxycycline peaking in 2022.
- Clarithromycin, and nitrofurantoin showed decreasing trends, with lower usage in 2023 than in previous years.

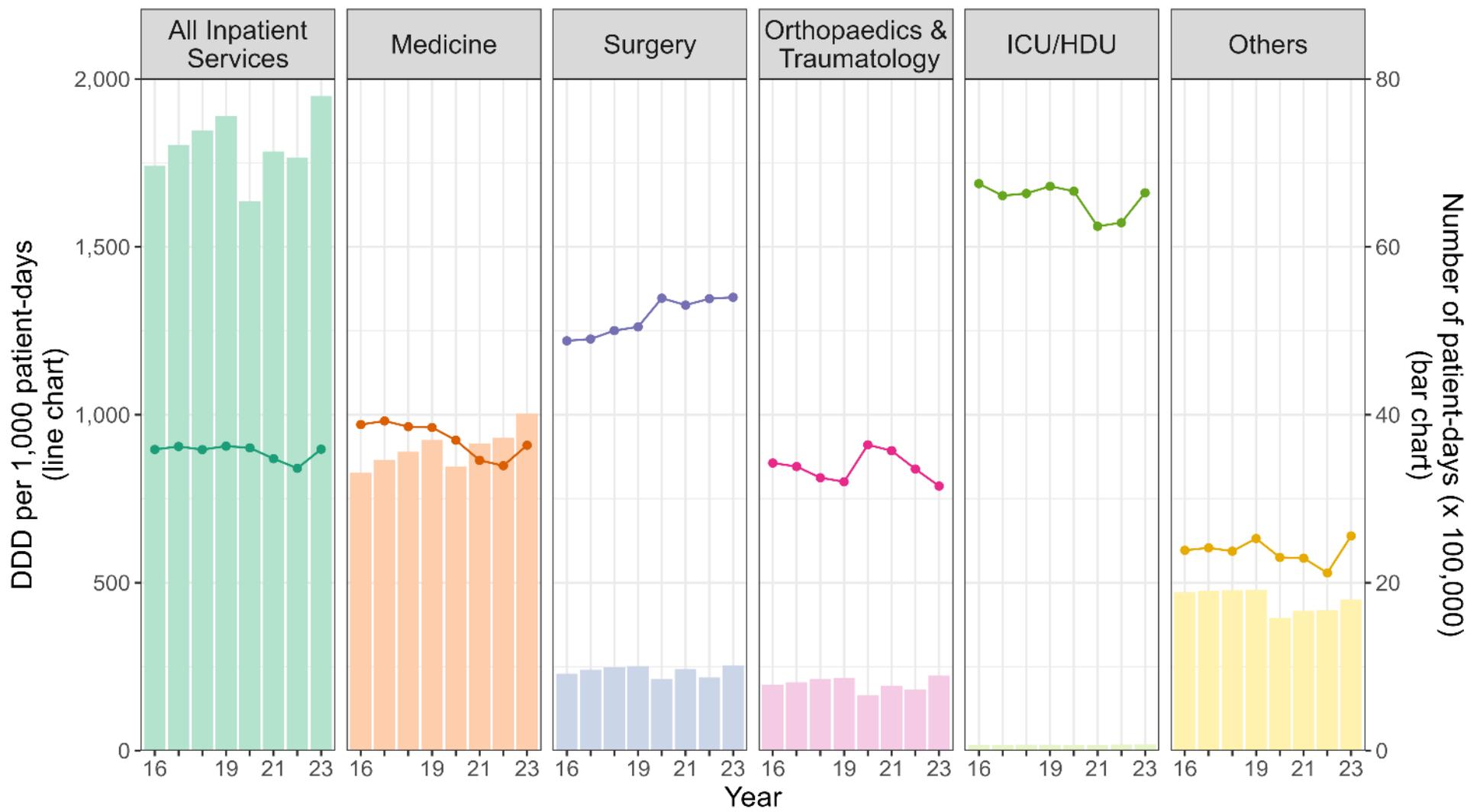


# Results

Antimicrobials dispensed in HA inpatient service by specialty



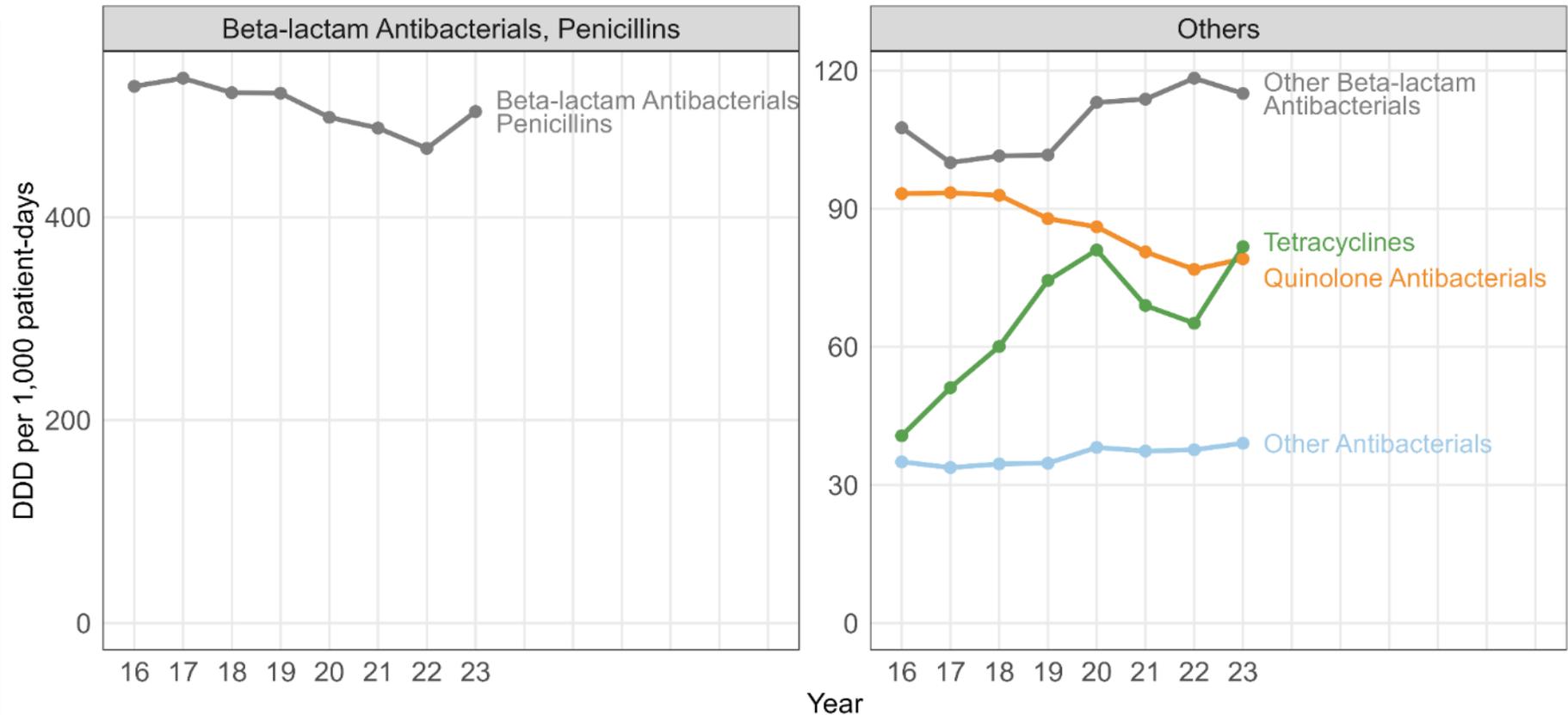
# Antimicrobials Dispensed in HA Inpatient Service per 1,000 Patient-days by Specialty



- In 2023, antimicrobial use (DDD per 1,000 patient-days) increased across all inpatient services except Orthopaedics & Traumatology.
- Orthopaedics & Traumatology showed a decline in antimicrobial use, while surgery saw rising trends.

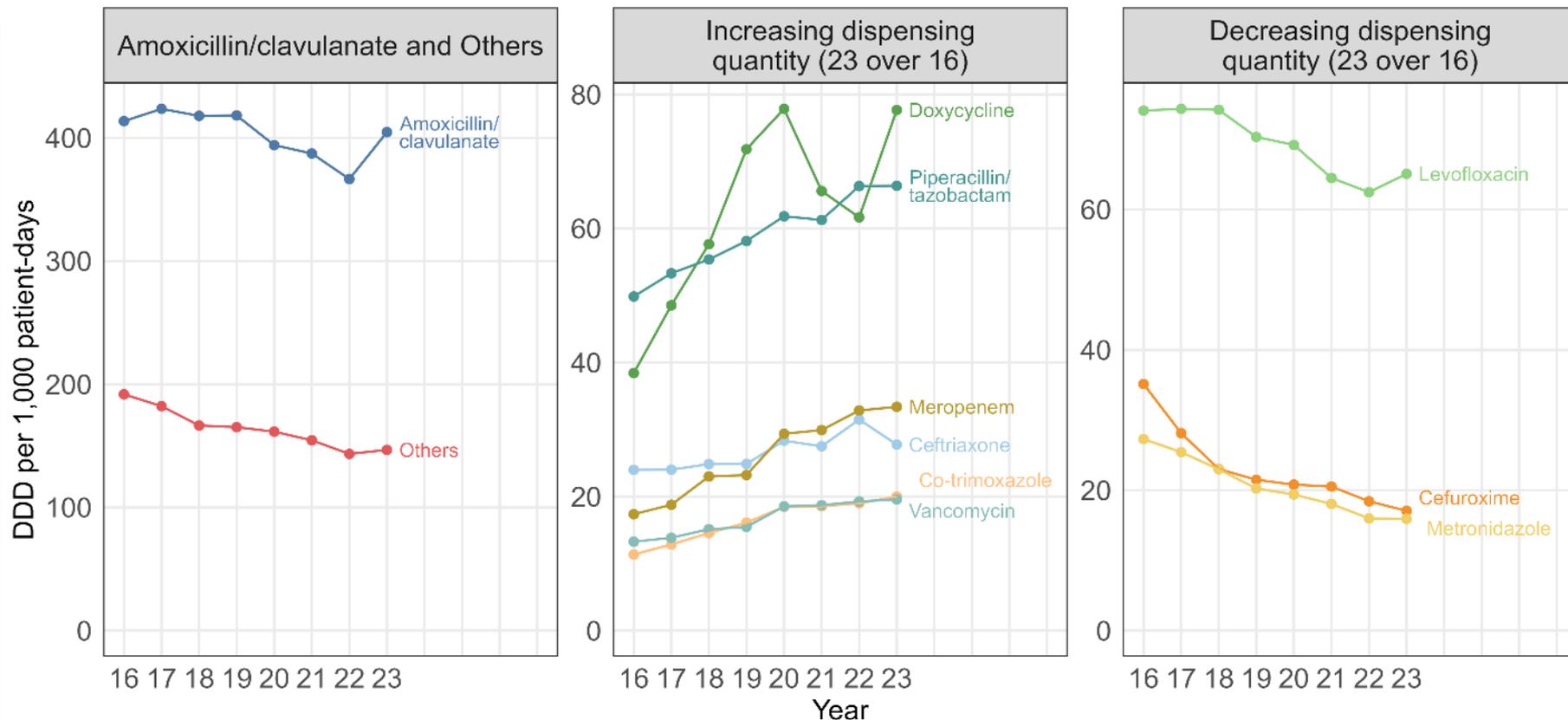


# Five Most Dispensed Antimicrobial Groups in Inpatient Service in 2022



- In 2023, Penicillins remained the most used class, with usage around 500 DDD per 1,000 patient-days.
- Tetracyclines showed a marked increase from 2016 to 2023, reaching similar usage levels as Quinolone Antibacterials by 2023.
- Overall, most antimicrobial classes showed stable or slightly declining trends, except for Tetracyclines, which increased notably over the period.

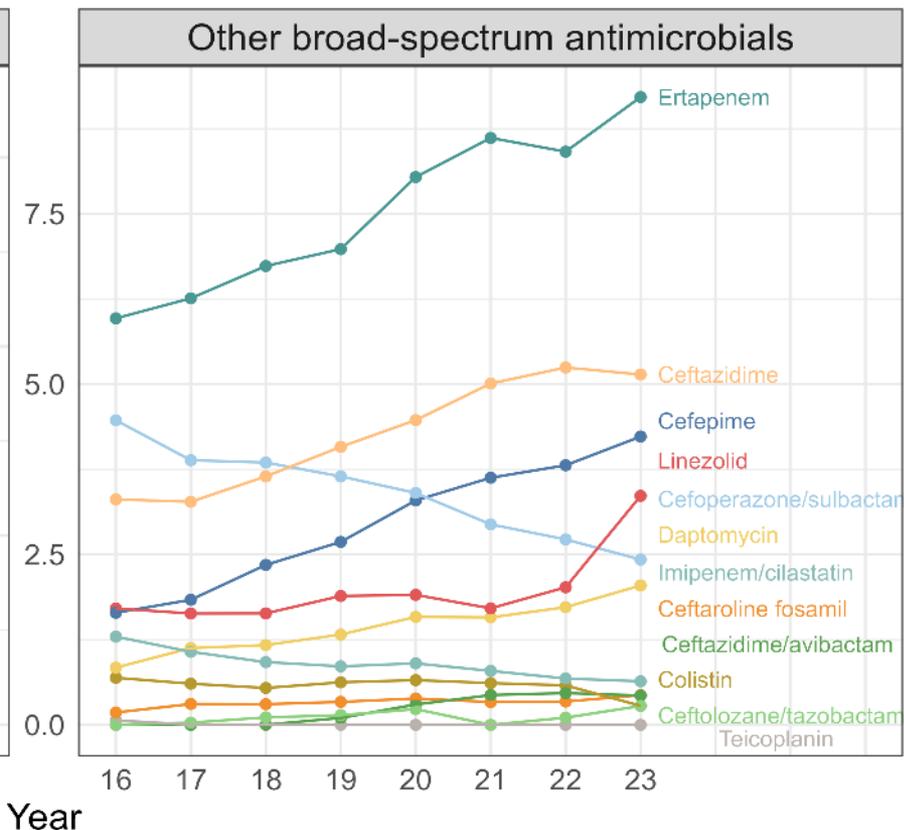
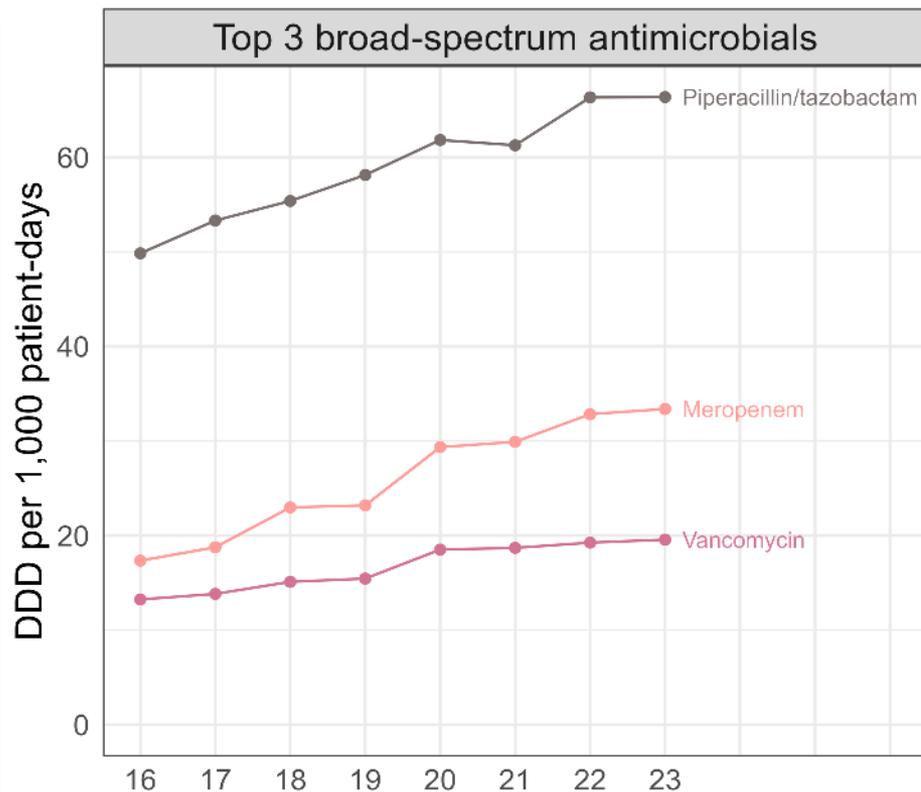
# Ten Most Dispensed Antimicrobials in Inpatient Service in 2022



- In 2023, amoxicillin/clavulanate remained the most dispensed antibiotic, rebounding from 2022 to 2023.
- Doxycycline showed marked increases in use by 2023, while cefuroxime and metronidazole continued their downward trends.
- Overall, some broad-spectrum antibiotics are being used more, but some older agents (cefuroxime and metronidazole), have seen steady declines in hospital dispensing.



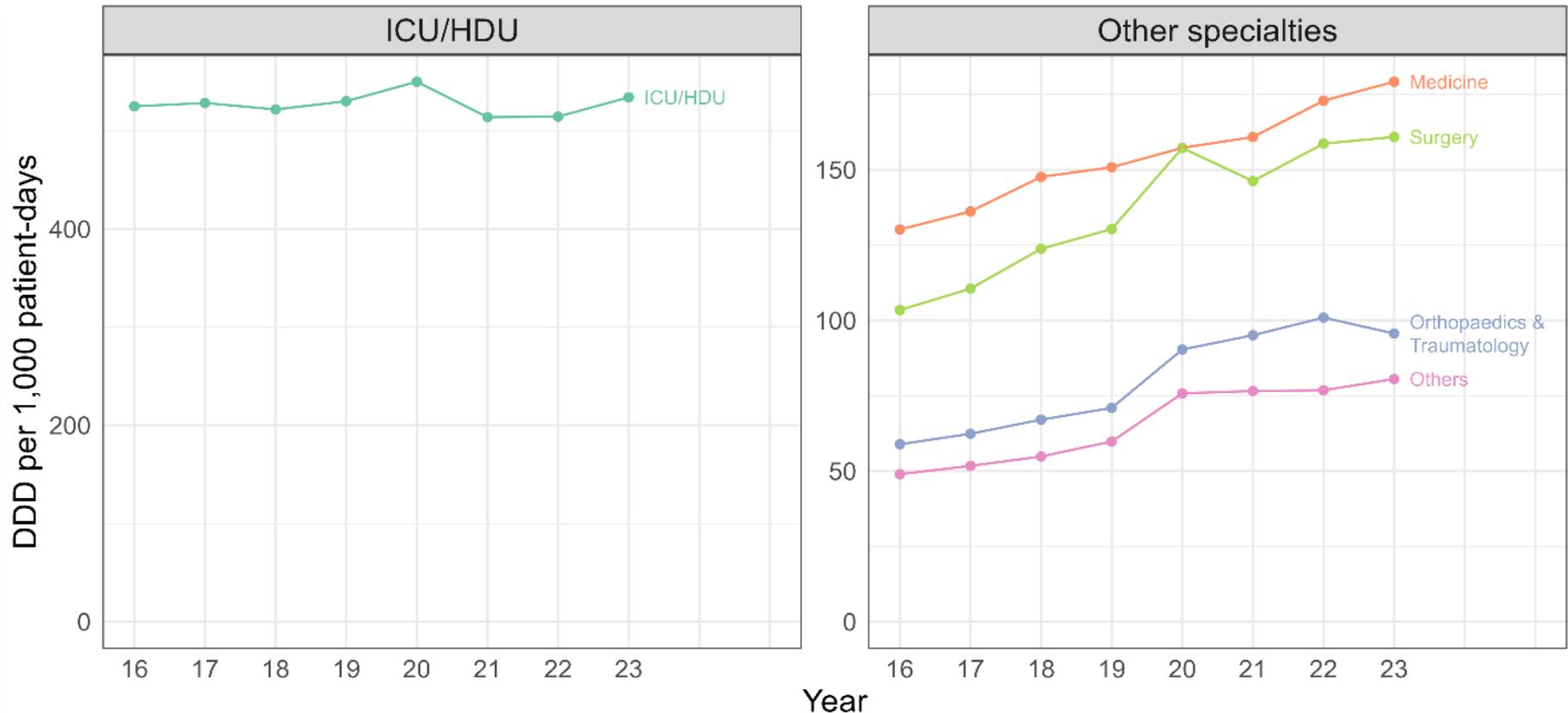
# Broad-spectrum Antimicrobials in Inpatient Service



- In 2023, piperacillin/tazobactam remained the most used broad-spectrum antimicrobial, reaching over 65 DDD per 1,000 patient-days.
- Meropenem and vancomycin usage also increased steadily, hitting about 30 and 20 DDD per 1,000 patient-days respectively in 2023.
- Among other agents, ertapenem showed the highest and fastest growth, peaking above 9 DDD per 1,000 patient-days in 2023.



# Broad-spectrum Antimicrobials in Inpatient Service by Specialty



- In 2023, antimicrobial usage in ICU/HDU remained the highest among all inpatient specialties, showing little change over the years.
- Medicine and Surgery specialties saw the highest antimicrobial use among non-ICU areas in 2023.
- From 2016 to 2023, antimicrobial usage trended upward in all specialties except ICU/HDU, where rates stayed relatively stable.

# Summary and Recommendation



# Summary on AMU surveillance

- Total antimicrobial dispensing rose in 2023 but use per service volume remained stable. Increased AMU probably due to increased number of respiratory bacterial infections after resumption of normalcy from COVID-19. (Slide 4)
- Non-inpatient antimicrobial use per attendance stayed consistent in 2023, with specialist clinics maintaining the highest rates. (Slide 10)
- Increased use of broad-spectrum antibiotics (e.g. ertapenem) in inpatient care signals potential resistance risks. (Slide 17)
- It was noted that there is a rising dispensing of doxycycline, particularly in inpatient services, probably due to treatment for atypical pneumonia. (Slides 7 & 16)



## Recommendation

- Continue monitoring antimicrobial usage in HA hospitals and clinics to assess the effectiveness of the Antibiotic Stewardship Program, with a focus on specialties showing continued increases in dispensing volume.





**THE END**

Thank you

