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# The Global Point Prevalence Survey of Antimicrobial Consumption and Resistance (Global-PPS): Antimicrobial prescribing in Australian Hospitals

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## INTRODUCTION AND PURPOSE

A standardized method for antimicrobial use surveillance in hospitals was used to assess antimicrobial prescribing in Australia in a pilot study. Australia is a country of 24 million people. The hospitals are based in Melbourne and Sydney, the two largest cities. Monash Health is a large network of hospitals with 1417 beds. Five hospitals from this network have contributed to the study. The Alfred Hospital and Concord Hospital are both 450 bed teaching hospitals.

All Australian hospitals are required to have an antimicrobial stewardship programme, and hospitals are also encouraged to participate in the National Antimicrobial Prescribing Survey (NAPS), and National Antimicrobial Utilization Surveillance Program (NAUSP). There are also widely available extensive national antibiotic guidelines. The Global-PPS allows comparison of use in regions including ours.

## METHODS

A point prevalence survey (PPS) was conducted in 2015, in 7 metropolitan hospitals in Melbourne and Sydney. All are teaching hospitals. The PPS was conducted in the acute and subacute beds, including both adult and paediatric patients. The survey included all inpatients receiving an antimicrobial on the day of PPS. Data collected included age, gender, weight, antimicrobial agents, doses, reasons and indications for treatment, microbiological data, compliance to guidelines, documentation of indication for antimicrobial use and anticipated stop/review date. Denominators included the total number of inpatients. A web-based application was used for data-entry, validation and reporting as designed by the University of Antwerp (www.global-pps.com).

## RESULTS

Of the 2012 patients surveyed in 139 different wards in 7 participating hospitals, 771 (38%) were being administered ≥1 antimicrobial agents on the day of the survey (total prescriptions 1219 antimicrobials). Paediatric patients were 10% of the cohort sampled, and accounted for 10% of the antimicrobial use. The percentage of patients on antimicrobials in each hospital ranged from 15-62%. Figure 1 shows the indications for antimicrobials use, both adult and paediatric data combined. Overall the most commonly treated infections were pneumonia (no of prescriptions=206; 17%), skin/soft tissue infection (n=147; 12%) and intra-abdominal sepsis (n=113; 9%).

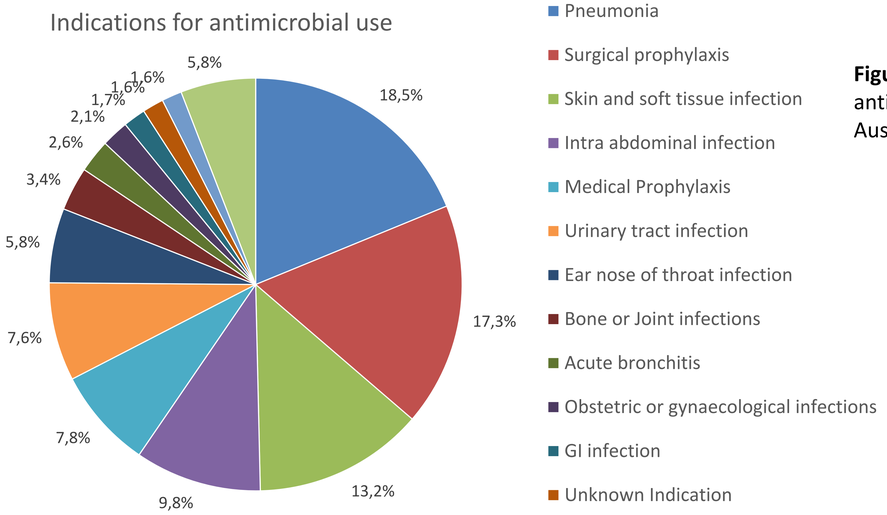


**Figure 1.** Indications for antimicrobial use in Australian hospitals.

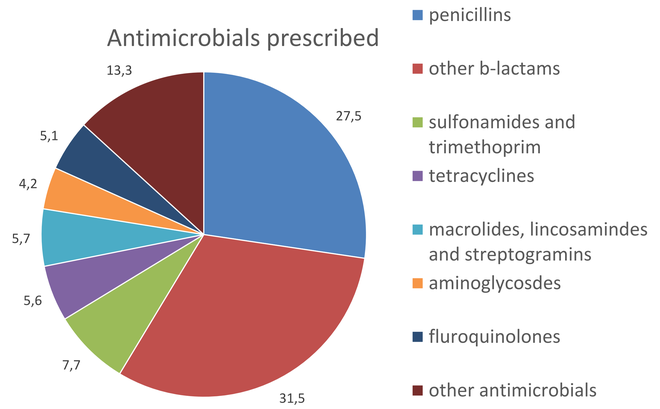


**Figure 2.** Antimicrobials used in Australian hospitals

The prevalence of antimicrobial prescriptions involving penicillins (28%), other beta-lactams (32%) were similar to the prevalence in European hospitals (33% and 29% respectively) but quinolone use (5%) was lower than in European hospitals (12%). Similarly, the proportion of BL/BLI of penicillin prescriptions (53%) and third generation cephalosporins as a proportion of other beta-lactams (40%) were lower than in European hospitals (70% and 45% respectively, see Figure 2).

Quality indicators were similar to those reported in European hospitals, with 85% having a documented indication; and 61% being guideline compliant, but a stop/review date only documented in 28%.

References
1. Australian Commission on Safety and Quality in Health Care (2015). Antimicrobial prescribing practice in Australian hospitals: results of the 2014 National Antimicrobial Prescribing Survey , ACSQHC, Sydney
2. Australian Commission on Safety and Quality in Health Care (2015). Antimicrobial use in Australian hospitals: 2014 report of the National Antimicrobial Utilisation Surveillance Program, ACSQHC, Sydney

## CONCLUSION

The global point prevalence survey complements data from NAPS and NAUSP. The NAPS data from 2014 showed surgical prophylaxis was the primary indication for antimicrobials use (13.1%), followed by community acquired pneumonia (11.3%) and medical prophylaxis (8.3%)[1]. The NAUSP data from 2014 demonstrated that b-lactamase inhibitor combinations were the most widely used antibiotics in Australian hospitals (180.7 DDD per 1000 occupied bed days) followed by first generation cephalosporins (130.9 DDD per 1000 occupied bed days).

Although the Global-PPS data is only from a small number of Australian participating hospitals, the overall prevalence of antimicrobial use was similar to those described in Europe, but with differences in the agents prescribed reflecting differences in national prescribing guidelines. Participation of a larger number of Australian hospitals will provide additional detail on the comparative epidemiology of antimicrobial use in Australia compared to other countries and regions of the world.

Disclosures: “bioMérieux is the sole sponsor of the GLOBAL Point Prevalence Survey. The funder has no role in study design, data collection, data analysis, data interpretation, or writing the report. Data are strictly confidential and stored anonymous at the coordinating centre of the University of Antwerp.”