

**Title:** Global Point Prevalence Survey on Antimicrobial Consumption and Resistance at Kingston Health Sciences Centre by Dr. Alison Sumner

**Background:** Antimicrobial stewardship is a cornerstone of inpatient prescribing, with the goal of reducing unnecessary antimicrobial exposure, reducing the development of drug-resistant microbes, and reducing adverse effects associated with antimicrobial use. We carried out a hospital-wide survey to measure the point-prevalence of antimicrobial prescriptions and associated clinical data to generate a snapshot of antimicrobial use at Kingston Health Sciences Centre.

**Methods:** Data collection was carried out from October - November 2019. Members of the research team conducted chart reviews using pre-populated surveys produced for each inpatient with an active antimicrobial prescription (as of 08:00 on day of data collection). Data of interest included (but was not limited to) antimicrobial regimens, treatment indications, documented stop/review date, and proportion of targeted therapy.

**Results:** At the time of surveying, 184 inpatients at KHSC were receiving antimicrobials (36.9% of the hospital population), in 266 courses of individual therapy. The highest proportions of antimicrobial usage occurred in ED Admits, followed by Kidd 2 ICU, and Davies 4 ICU (Surgical). 62% of courses were administered parenterally. Approximately 41% of courses were administered empirically, whereas 28% of courses were targeted to culture results. 31% of courses served as medical or surgical prophylaxis. 54% of courses included a stop or review date. The most common indication for treatment was community-acquired infection (43%), followed by hospital-acquired infection (25%), and medical prophylaxis (17%). Common agents hospital-wide included cefazolin (18%), followed by ceftriaxone (15%), and vancomycin (7%). At the time of surveying, 41% of general medicine patients were receiving antimicrobials, making up 20% of antimicrobial prescriptions hospital-wide. Compared to overall hospital practices, the most common treatment indications on the medicine ward remained community-acquired infection (62%), followed by medical prophylaxis (23%), and hospital-acquired infections (12%). The commonest agent on general medicine wards was ceftriaxone (11%) followed by amoxicillin/clavulanic acid, vancomycin, and nystatin (9%). The medicine ward had lower rates of parenteral antibiotic use (47%), and higher rates of targeted treatment (37%), and documentation (58%) compared to hospital-wide data.

**Discussion:** Consistent with other studies, antimicrobials make up a large proportion of inpatient medication prescriptions. Use on general medicine wards was overall more targeted, involved more documentation, and consisted of more oral regimens. Clinical indications were similar across the hospital. Based on the results, Internal Medicine teams have already shown adoption of antimicrobial principles, and are well-positioned to lead antimicrobial stewardship efforts during daily clinical practice. An area of improvement includes the reduction in use of broad-spectrum agents, and limiting vancomycin use to specific indications (MRSA, and select others) with increasing targeted regimens. Future research is needed to evaluate CTU-led stewardship practices on a general medicine service. This may lend insight into the feasibility of delegated antimicrobial stewardship activities hospital-wide.