



Ontario Antimicrobial Stewardship Survey Summary

Background

- The Ontario Ministry of Health and Long-Term Care and the Ontario Agency for Health Protection and Promotion have asked the Institute for Safe Medication Practices Canada (ISMP Canada) to lead a multiphase antimicrobial stewardship project
- In phase 1, ISMP Canada surveyed Ontario hospitals to determine the current state of hospital-based antimicrobial stewardship practices in the province, the results of which are summarized below

Survey Content and Population

- Web-based survey (157 total possible questions) administered between September 12 and December 4, 2007; paper survey also available
- Questions about various antimicrobial stewardship activities and practices, including those recommended by the Infectious Diseases Society of America (IDSA) and Society of Healthcare Epidemiology of America (SHEA) as best practices for institutions¹, the hospital's ability to measure and monitor antimicrobial use, and the current reporting of trends in antimicrobial use
- Targeted to 3 main professional groups in all Ontario hospitals (excluding specialty mental health institutions): directors of pharmacy, infectious diseases (ID) physicians, and medical directors of intensive care units

Survey Results and Talking Points

- 40% response rate (114/286); respondents represented 55% of hospital corporations in Ontario (80/146)
 - Response rates by professional group
 - 62% for pharmacists (62/100), 19% for ID physicians (15/81), and 35% for medical directors of intensive care units or their designates (37/105)
 - Response rates by hospital corporation type
 - 75% for academic health sciences centres (12/16), 46% for large community hospitals (25/54), 64% for small community hospitals (37/58), and 33% for chronic care or rehabilitation hospitals (6/18)
- Survey respondents' perceptions about use of and resistance to antimicrobials
 - Overwhelming response that antimicrobial resistance was an issue of concern (113/114 of respondents)
 - Substantial or some room for improvement in how antimicrobials were used in their hospitals
 - Use of broad-spectrum antimicrobials at their hospitals could be reduced by 30% to 37% without reductions in the quality of patient care
- Perceived priority
 - Only 38% of respondents from academic health sciences centres and 33% of those from community hospitals perceived that the appropriate use of antimicrobials was a publicized priority or strategic goal of their hospital
- IDSA/SHEA antimicrobial stewardship guidelines recommend that hospitals have a multidisciplinary antimicrobial stewardship team, which should include an ID physician and a clinical pharmacist with ID training as core members

- Such teams are rare in Ontario hospitals, with antimicrobial management committees or subcommittees of the pharmacy and therapeutics committees being more common (academic health sciences centres, 67%; non-academic health sciences centres, less than 33%)
 - These committees may perform some activities that overlap with those of antimicrobial stewardship teams; however, there are also notable differences in their functions.
- Creation, implementation and funding of active antimicrobial stewardship programs and teams in Ontario hospitals would play a critical role and fill an important gap in developing, implementing, and monitoring antimicrobial stewardship activities
- Prospective audit and feedback by antimicrobial stewardship teams on a regular basis has been shown to significantly improve antimicrobial use in hospitals and is cost-effective and financially self-sustaining. Other strategies could include optimizing antimicrobial dosing, reducing unnecessary combination (redundant) therapy, promoting de-escalation therapy, converting parenteral to oral therapy whenever possible, and discontinuing antimicrobials when they are no longer needed.
- IDSA/SHEA antimicrobial stewardship guidelines recommend that healthcare systems must invest in data systems to allow the evaluation of antimicrobial stewardship as a routine measure of quality improvement. Process and outcome measures should be established to determine the impact of antimicrobial stewardship on antimicrobial use and resistance patterns.
 - 35% of respondents indicated that trends in antimicrobial use were reported in terms of dollar costs at least annually, and less than 15% indicated reporting at least annually using other units of measure (e.g., number of units, grams, defined daily doses, or days of therapy)
 - Most common barriers to regular reporting of data on antimicrobial use
 - Lack of staff or time (94% of all pharmacist respondents), lack of knowledge about how to extract the data from the hospital system (48%), and difficulty in getting this type of data out of the hospital and pharmacy computer systems (40%)
 - Development of human resources for antimicrobial use measurement and monitoring and the allocation of dedicated personnel for this activity are critical to any antimicrobial stewardship program
 - Enhancing computer and data systems may facilitate regular measurement and reporting of antimicrobial use, as well as provincial benchmarking, similar to existing programs in other countries
- Ontario hospitals have undertaken many activities to improve antimicrobial use and reduce antimicrobial resistance; however, there is more work to be done
- The detailed Ontario survey data gathered will be used in phase 2 of the project to develop consensus recommendations on priority interventions for Ontario hospitals, which will then be piloted and evaluated in a representative sample of Ontario hospitals in phase 3

References

1. Dellit TH, Owens RC, McGowan JE, Jr., et al. Infectious Diseases Society of America and the Society for Healthcare Epidemiology of America guidelines for developing an institutional program to enhance antimicrobial stewardship. *Clin Infect Dis* 2007;44:159-77.