

Antimicrobial resistance in Canada: Update on activities of the Canadian Committee on Antibiotic Resistance

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The present article is the second in a series of articles provided by the Canadian Committee on Antibiotic Resistance (CCAR) to update readers on its activities. CCAR is a national organization formed to coordinate Canadian efforts to control the development and spread of antimicrobial resistance (AMR). With offices in Ottawa, Ontario and Vancouver, British Columbia, CCAR provides outreach to the public and professional communities through a variety of activities, including seminars, publications and management of a comprehensive Web site on resistance issues in Canada. CCAR also assists both federal and provincial governments to develop policy, and to identify human and financial resources for addressing AMR.

In the coming year, CCAR plans to continue discussions on steps toward the implementation of a National Action Plan including a comprehensive national surveillance system, mechanisms to reduce the inappropriate use of antibiotics and increased efforts in preventing the transmission of AMR. CCAR has worked closely with Health Canada to assess the potential for a national surveillance system, and continues to encourage the federal government to retain and expand existing systems to enable timely reporting and response. After the recent threat of terrorist activities involving anthrax, CCAR has served as an information resource for the media and government regarding the potential impact on resistance related to the widespread use of antibiotics for anthrax chemoprophylaxis.

CCAR has initiated a *Burden of Illness* project to examine the social and economic costs of drug-resistant infections in Canada. In addition to incorporating estimates from published and unpublished research into an economic model, the project team will interview patients and health care workers affected by resistant infections to assess the

personal and social cost of resistance. For information, contact David Birnbaum at david.birnbaum@ubc.ca.

With support from Health Canada and private sector partners, CCAR will host a national conference on antibiotic resistance, to be held in Ottawa on October 6 and 7, 2002. The conference will provide current information and analysis on the state of resistance in Canada, demonstrate responses to the problem and develop a consensus on the National Action Plan to combat antibiotic resistance.

CCAR coordinated Canadian input into the World Health Organization's *Global Strategy for Containment of Antimicrobial Resistance* (1) and helped to disseminate the document after its release in September 2001. The report is available through the CCAR Web site <www.ccar-ccra.org> or from the World Health Organization Web site <www.who.int/emc/amr.html>. Also available through the CCAR Web site (or at <www.anmv.afssa.fr/oiicc/conference/guidelines.htm>) are guidelines on resistance released in October 2001 by the World Association for Animal Health.

CCAR hosted a workshop at the Canadian Public Health Association annual meeting held in October 2001, in Saskatoon, Saskatchewan. The workshop, sponsored by 3M Canada, provided an overview of the antibiotic resistance issue for public health professionals.

CCAR is working with the Canadian Pharmacists Association to develop and distribute an information kit on antibiotic resistance. The package will contain material for pharmacists to provide to consumers, a continuing education credit course, lists of Web sites for further information and an evaluation component. The project is supported by an unrestricted educational grant from Aventis Pharma. For information on the kit or other CCAR activities, please contact Rick Walter at ccar@shaw.ca.

The activities of several CCAR affiliated organizations are summarized below:

Health Canada

The Division of Enteric, Foodborne and Waterborne Diseases at Health Canada is engaged in both surveillance and targeted studies relating to AMR in human enteric pathogens. Health Canada works closely with provincial and federal partners in the public health and agrifood sectors. The Division has initiated or completed a series of surveys to assess the strengths and limitations of resistance data related to enterics currently collected across the country. These studies will guide the Division in the design and implementation of its national surveillance program:

- *AMR Surveillance in Canada*: A survey, in collaboration with the Division of Nosocomial Pathogens, Population and Health Branch, to review surveillance projects currently operating within both public and private sectors
- *AMR Testing on Enteric Pathogens within Provincial Laboratories*: A survey of provincial laboratory directors to assess current practices regarding AMR testing performed in provincial laboratories on enteric pathogens
- *National Laboratory Study*: A survey of microbiology laboratories in Canada to collect information on current AMR testing practices for enteric organisms
- *Retrospective analysis of provincial AMR data*: A study to collate data from provincial laboratories that receive, test and store a representative sample of enteric pathogens; data from 1993 to 2000 will be analyzed to assess trends

The Division is also coordinating a multiprovincial *Salmonella typhimurium* case-control study involving four provincial public health ministries and laboratories with the National Laboratory for Enteric Pathogens. This study will compare the risk factors and burden of illness for DT104 with non-DT104 and resistant with nonresistant *S typhimurium* infections. The Division is exploring options for an ongoing human enterics AMR surveillance system designed to integrate surveillance systems currently being established to monitor resistance in food and animal pathogens. For information, contact Kathryn Doré at Kathryn_Dore@hc-sc.gc.ca.

The Laboratory for Foodborne Zoonoses in Health Canada has established an Antimicrobial Resistance Unit to coordinate activities related to AMR surveillance and research. A core team of scientists will work to develop a national AMR surveillance program in the agrifood and aquaculture sectors. Additionally, the Laboratory for Foodborne Zoonoses is involved in research projects that are examining the relationship between antimicrobial use and the development of resistance at the farm level. These initiatives will ultimately provide the necessary data to develop

science-based policies to control the emergence and dissemination of resistance from animal sources. For information, contact Rebecca Irwin at rebecca_irwin@hc-sc.gc.ca.

Canadian Hospital Epidemiology Committee

The Canadian Hospital Epidemiology Committee, a sub-committee of the Canadian Infectious Disease Society, continues to collaborate with Health Canada in the Canadian Nosocomial Infection Surveillance Program (CNISP). A major activity of the CNISP is hospital surveillance for antimicrobial-resistant bacteria. The CNISP has completed six years of data collection for methicillin-resistant *Staphylococcus aureus* (MRSA) and three years for vancomycin-resistant enterococci, plus a one-year surveillance project for extended-spectrum beta-lactamase-producing *Escherichia coli* and *Klebsiella* species. The program will continue active surveillance for MRSA, vancomycin-resistant enterococci and extended-spectrum beta-lactamase-producing *Escherichia coli* and *Klebsiella* species. In February 2002, the CNISP will also conduct a country-wide point prevalence survey for nosocomial infections in Canadian Hospital Epidemiology Committee facilities and will collect data on the number of patients in isolation due to infection or colonization with an antimicrobial-resistant organism. This project will provide a snapshot picture of the impact of antibiotic resistant organisms in Canadian acute care facilities. For information, contact Lynn Johnston at ljohnsto@IS.Dal.Ca.

British Columbia Centre for Disease Control

The British Columbia Centre for Disease Control (BCCDC) Laboratory Services has published revised guidelines for the control of resistant organisms in British Columbia (2). These updated guidelines provide recommendations for the level of precautions used within acute care hospitals with endemic MRSA and suggest modifications to focus prevention activities on those patients most vulnerable to infections. The guidelines also call for more reliance on standard precautions as opposed to organism-specific precautions to control AMR in community and residential care settings, acknowledging that more intense infection control measures in these settings may alter the risk-benefit ratio. The BCCDC plans to conduct prevalence studies of a sample of facilities in the province and examine the nosocomial spread of MRSA in those facilities. The Centre also plans to evaluate the effectiveness of the revised guidelines in facilitating the movement of persons colonized or infected with a resistant organism through the health care system. The guidelines can be downloaded from the BCCDC's Web site at www.bccdc.org. For information, contact Bruce Gamage at bruce.gamage@bccdc.hnet.bc.ca.

Ontario Chief Medical Officer of Health Annual Report

Colin D'Cunha, Ontario's Chief Medical Officer of Health, focused his 2001 Annual Report on the topic of antibiotic resistance (3). Entitled *Antibiotic Resistance: Emerging Risks and the Partnership Solution*, the report outlines the resistance

issue, describes measures being taken to address the problem and provides recommendations for collaborative action. The report is available at <www.gov.on.ca/health/english/pub/ministry/cmoh_antibio.pdf>.

National Information Program on Antibiotics

The National Information Program on Antibiotics (NIPA)'s ongoing campaign, *Antibiotics: Use Them Wisely*, promotes the appropriate use of antibiotics by health care professionals and consumers. In early 2002, NIPA will release its third consumer survey of Canadians' attitudes toward antibiotics and announce the results of its latest Antibiotic Report Card outlining current national antibiotic resistance trends. Other planned initiatives include an information program for the media, an update of NIPA's Web site, and a new consumer print campaign in partnership with Rogers Media. NIPA continues to provide educational tools on antibiotic resistance to physicians and pharmacists. The coalition comprises eight professional health organizations. Its operational costs are underwritten by an educational grant from Pfizer Canada Inc. For information, contact Wayne Saray at wayne.saray@pfizer.com or go to the NIPA Web site at <www.antibiotics-info.org>.

Partners for Appropriate Antibiotic Community Therapy

Partners for Appropriate Antibiotic Community Therapy (PAACT) is a network of clinicians interested in implementing evidence-based approaches to improve prescribing practices. PAACT currently is involved in two major initiatives to combat resistance through health provider and public education:

- *Anti-infective Guidelines for Community-acquired Infections*, 3rd edn (4): This new edition of the reference guide produced by an independent panel of Canadian physicians and pharmacists is a tool to assist in antibiotic prescribing in the community setting. For copies or information, e-mail guidelines@mumshealth.com.
- PAACT Maintenance of Proficiency/Maintien de la compétence professionnelle Certification (MAINPRO-C) Program: This educational program for family physicians, nurse practitioners and pharmacists is accredited for 10 MAINPRO-C continuing education credits. The program is delivered by family physician facilitators and focuses on the management of common infectious diseases. The program is available in Ontario and, by arrangement, in selected other locations nationally. For information, contact Laurie Dunn at alaric@bis.on.ca.

Ontario Pharmacists' Association

The Ontario Pharmacists' Association, in partnership with Bayer Healthcare Division, is continuing a program to reduce inappropriate patient demands for antibiotics on physicians. The program provides educational materials to be used by pharmacists in counselling patients about the use of over-the-counter cold medications, the differences between viral and bacterial infections, and the proper use of

antibiotics when prescribed. Trials of the program in communities in Ontario and three other provinces showed reductions in prescriptions for antibiotics. For information, contact Grant Gunn at grant.gunn.b@bayer.com.

Other ongoing information and research efforts include the Antibiotic Safety Zone and the Factors Affecting Antibiotic Decisions (FAAD) research group.

The *Antibiotic Safety Zone* is an awareness project directed by Ross Pennie of the McMaster University Medical Centre, Hamilton, Ontario. The project provides an accessible set of principles aimed at decreasing unnecessary antibiotic prescriptions for acute respiratory tract infections in adults and children. The principles are presented in poster format, and serve as a practical guide for physicians, clinics, patients, families and child care centres. Posters and patient information materials can be printed or downloaded at <www.fhs.mcmaster.ca/path/faculty/pennie.htm>. For information, contact Ross Pennie at rpennie@mcmaster.ca.

The FAAD research group, directed by Richard Zoutman of the Queen's University School of Medicine, Kingston, Ontario, has examined medical and nonmedical factors affecting prescribing behaviour. Activities include: surveys and interviews with physicians to assess prescribing knowledge and practices for common respiratory tract infections; studies of patients' attitudes and expectations related to respiratory infections; a pilot educational intervention to support rational prescribing; and VET-FAAD, a study of antibiotic use in small animal veterinary practices across Canada in collaboration with the Ontario Veterinary College in Guelph, Ontario. For information, contact Dick Zoutman at zoutman@cliff.path.queensu.ca.

CCAR members include a variety of health care professional organizations, not-for-profit industrial associations and government agencies. The Canadian Infectious Disease Society provides financial and administrative support. CCAR activities are funded primarily through a contract agreement with Health Canada and, in part, through educational grants from several private companies with an interest in antibiotic resistance.

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