



# C-EnterNet News

Volume 2, 2006

## Editor's Note

The C-EnterNet team has been working diligently on analyzing the first 12 months of data (June 2005 to May 2006) collected from Sentinel Site 1 (Region of Waterloo). It has been an exciting time as the team reviewed the rich information gathered from public health, retail food, water and agriculture sources in the sentinel community. This information will be shared through the C-EnterNet 2005-2006 Annual Report, to be published in early 2007 via our Web site. The team has also prepared an Accomplishment Report, for the same period, focusing on the activities that took place and their outputs and outcomes. Looking ahead, C-EnterNet will be presenting these results at local, national and international meetings; preparing the 2006 full-year Annual Report; initiating new targeted research; and working on expansion to further sentinel sites in Canada. Looking back over the past two and a half years, I am proud of what C-EnterNet has accomplished – the design, framework, implementation and analysis for Canada's new national integrated enteric disease surveillance system – and look forward to its continued contribution to food and water safety policy.

Dr. Frank Pollari  
C-EnterNet Program Lead



National advisory group meeting to guide C-EnterNet, Toronto, January 2006.

## Notes from C-EnterNet Central

C-EnterNet hosted its second advisory committee meeting in Toronto on January 18–19, 2006, to receive input from a broad spectrum of experts and stakeholders on the best output and communication strategies. Committee members from locations across Canada participated and member **Dr. Fred Angulo**, from the US Centers for Disease Prevention and Control (CDC), made a presentation on the FoodNet initiative.

On October 3, 2006, the C-EnterNet team met with members of its advisory committee via teleconference to receive input on the first Annual Report.

Working with the local community, hospital and public laborator-

**Standing, from l. to r.:** Ian Gemmill, Michele Van Dyke, Alicia Sarabia, Anne Maki, Linda Demma, Angela Cook, Katarina Pintar, Michael Brodsky, Wayne Lees, André Ravel, Pierre Payment, Barbara Marshall, Frank Pollari, Richard Reid-Smith, Peter Huck, Kevin McLeod and Fred Angulo. **Seated, from l. to r.:** Liane Ong, Sam Ratnam, George Eng, Shannon Majowicz and Jamie Hockin. **Missing from photo:** Mike Cassidy, Jeff Farber, Murray Fyfe, Vic Gannon, Colette Gaulin, Greg Houlahan, Rebecca Irwin, Amin Kabani, Jean Kamanzi, Marilyn Lee, Jane Pritchard, William Robertson, Elaine Scallan and Jeff Wilson.

ies, C-EnterNet coordinated the forwarding of human and non-human *Campylobacter* isolates to the Ontario Ministry of Health and Long Term Care's Ontario Public Health Laboratory and the Public Health Agency of Canada's National Microbiology Laboratory (NML) for subtyping. Results from this research were presented by both **Dr. André Ravel** (C-EnterNet) and **Dr. Cliff Clark** (NML) at the first **Canadian Campylobacter Conference** in Vancouver, in November 2006. This important work will help to identify sources of infection and link cases from the Waterloo sentinel area.

C-EnterNet has begun analysis of data from the **Food Consumption Survey**, in collaboration with Andrea Nesbitt and **Dr. Shannon Majowicz** of the Public Health Agency of Canada (PHAC). The objectives of this survey, performed between November 2005 and March 2006 in Sentinel Site 1 ( $n = 2332$ ), were to describe, for the first time, the food consumption patterns in a Canadian-based population from a food safety perspective. The study will provide baseline data on actual food intake and the domestic food safety knowledge and practices of individuals. This information will help to determine exposure to pathogens through food and water in the sentinel site population. It has already been used as reference data in an outbreak investigation in British Columbia.

C-EnterNet's senior scientists, Dr. Frank Pollari and Dr. André Ravel, participated in meetings

of the federal Health Portfolio's **Science and Policy Advisory Committee** (SPAC) on Canada's proposed Strategy for Safe Food and on SPAC's Pathogen Expert Panel subgroup. Participating in SPAC activities helps align C-EnterNet's efforts with national information needs.

**Dr. André Ravel** leads a groundbreaking new discussion group on **source attribution**. The group, which is currently informal, includes scientists from PHAC, the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), the British Columbia Centre for Disease Control (BCCDC) and Michigan State University. Its goal is to provide a forum to exchange ideas about source attribution in order to forge a common understanding and define common terminology. Since a wide variety of definitions and methods exist in this specialty, the group was brought together to consolidate conceptual thinking about source attribution in the literature. C-EnterNet is in contact with Danish and U.S. counterparts to exchange ideas on source attribution methodology. The Danish Zoonosis Centre has developed a novel method to estimate source attribution for human salmonellosis infection, based on comparing the serotypes distribution across various sources including human samples, domestic food (pork, beef, eggs, chicken) and imported food. This method may be applicable to the current Canadian data on *Salmonella*. Because the analysis of foodborne disease outbreak data is a valuable approach to estimating source attribution, three datasets

of Canadian foodborne outbreaks, covering the last three decades, were analyzed through a collaborative effort with the data providers.

Last, but not least, are the personal achievements of C-EnterNet team members. Congratulations to **Katarina Pintar**, who was recently awarded a **Walkerton Clean Water Centre Scholarship** to support her University of Guelph PhD thesis work on *Cryptosporidium* risk assessment. While Katarina is on maternity leave, C-EnterNet welcomes a recent University of Guelph MSc graduate, **Andrea Nesbitt**, whose thesis *Food consumption patterns, home food safety practices, and gastrointestinal health in a Canadian community* provides valuable information for public health policy. And kudos to **Barbara Marshall**, who received her Master's degree from the Faculty of Environmental Studies at York University in June. Her research focused on *Developing an integrated enteric disease surveillance system in Canada*. Congratulations as well to **Dr. Angela Cook**, who successfully defended her Master's thesis, *Antimicrobial resistance in enteric bacteria isolated from retail turkey and veal meat*, at the Department of Population Medicine, Ontario Veterinary College, University of Guelph, in April.

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**Dr. Frank Pollari offers congratulations, on behalf of C-EnterNet and Region of Waterloo Public Health, to PhD candidate Katarina Pintar, upon her receiving a Walkerton Clean Water Centre Scholarship**



## Notes from C-EnterNet Sentinel Site 1: The Region of Waterloo

C-EnterNet's dynamic relationship with Region of Waterloo Public Health (ROWPH), championed by ROWPH manager **Chris Komorowski** and upheld by his staff, continues to provide a solid cornerstone for the activities of C-EnterNet. On June 5, **Barbara Marshall** and **Nancy Sittler** were invited to present "C-EnterNet... A unique story of collaboration between the federal government and local public health" to a ROWPH staff meeting. The theme of the meeting was community engagement, with a focus on the value, successes and lessons learned of partnerships and collaborations.

With C-EnterNet's mandate – to develop collaborative partnerships and strong networks – in mind, C-EnterNet linked with **Cathy Egan**, the new coordinator of the **Waterloo Wellington Infection Control Network (WWICN)**, one of 13 new networks of its kind in Ontario. Cathy, the former manager of Infectious Disease Control at the Middlesex-London Health Unit, is currently assisting C-EnterNet with training and strategic projects. Cathy

shared her experiences in infectious disease control with PHAC epidemiologists in Guelph in August.

In the spring and summer of 2006, C-EnterNet partnered with the Region of Waterloo to complete its well water survey, supporting a local initiative to identify potential areas within the Region that were vulnerable to nitrate contamination – a demonstration of capacity building and knowledge exchange within the partner health unit. The findings, presented in a paper entitled *An investigation of bacteriological and chemical water quality and the barriers to private well water sampling in a Southwestern Ontario community*, are in preparation for submission to the *Canadian Journal of Public Health*.

The 3<sup>rd</sup> C-EnterNet/ROWPH workshop, "Focus on Water", was held on June 20. It featured speakers from the University of Waterloo, C-EnterNet and Region of Waterloo Water Services. This one-day event provided an overview of current chemical and microbial issues in the Region and a forum for communication between public health specialists and water services.

University of Guelph Population Medicine MSc student **Victoria Keegan** is currently finishing her thesis, *Descriptive analysis of enteric illness in Waterloo, Ontario: 1990-2004*, which provides useful historical background for C-EnterNet and ROWPH. Meanwhile, fellow MSc student **Marsha Taylor** updated C-EnterNet on her research on childcare centre policies and enteric diseases, currently being carried out in collaboration with the Region of Waterloo. Their results will be shared in a national consensus meeting where best practices for prevention and management of enteric illness in childcare facilities can be developed.

ROWPH management and staff have also been busy sharing knowledge. **Chris Komorowski**, **Peter Heywood**, **Curt Monk** and **Ken Diplock**, along with **Barb Marshall** and co-presenter **Dr. Mike Cassidy** from the Ontario Ministry of Agriculture, Food and Rural Affairs (OMAFRA), each delivered presentations at the annual Canadian Institute of Public Health Inspectors (CIPHI) – Ontario Branch conference entitled "On the Frontlines: Integrating Research with Practice," held in Niagara Falls, Ontario, on September 14. C-EnterNet congratulates **Peter Heywood** on becoming president-elect of the CIPHI Ontario executive.

Finally, we are proud to announce that **Nancy Sittler**, C-EnterNet site coordinator at ROWPH, has entered the new **Master's in Public Health** program at the **University of Waterloo**. Her research will focus on the work of C-EnterNet.



*Enhancing the work of public health: ROWPH planner Alana Bowering discusses with Cathy Egan (WWICN), Chris Komorowski and Peter Heywood (both of ROWPH) in Cambridge, Ontario*



**Participants learning together at the "Focus on Water" workshop in Waterloo**

## Note from C-EnterNet's Retail Food and Agriculture components

In partnership with OMAFRA, C-EnterNet has completed its first year of enumerating pathogens isolated from retail raw meat samples. The resulting prevalence and count data will provide comprehensive information for detailed quantitative risk assessment.

Following the completion of the first year of sampling of swine operations in Sentinel Site 1, C-EnterNet, in partnership with the **Ontario Veterinary College**, successfully expanded these activities to include dairy operations. Plans are underway to include beef and poultry commodities as well.

In October, C-EnterNet, in partnership with the Canadian Animal Health Coalition, met with representatives of the agri-food industry to discuss on-farm sampling and the release of results.



## C-EnterNet: Knowledge Exchange and Dissemination

### Recent C-EnterNet publications and reports:

- ♦ C-EnterNet produced an annual report to bring OMAFRA's **Food Safety Research Program** up to date on the progress of the study *Prevalence and enumeration of foodborne microbial hazards in retail raw meat products in an Ontario community*.
- ♦ A Canadian Water Network annual report submitted in partnership with

lead investigator **Dr. Peter Huck**, the Natural Sciences and Engineering Research Council (NSERC) Chair in Drinking Water Treatment at the University of Waterloo, summarized C-EnterNet's source water monitoring and human health surveillance activities in the Region of Waterloo. The report is an illustration of the integral partnership and community collaboration on which C-EnterNet is based.

- ♦ A paper by K. Pintar, A. Cook, F. Pollari, A. Ravel, S. Lee and J. Odumeru, *Quantitative effect of refrigerated storage time on the enumeration of Campylobacter, Listeria and Salmonella on artificially inoculated raw chicken meat*, was accepted for publication by the *Journal of Food Protection*.
- ♦ A paper by P. Heywood, K. Burrows, J. Cutler, C. Komorowski, B. Marshall and H.L. Wang, *Hepatitis A, food handlers, international travel and community risk: Public health out-*



## Canadian Animal Health Coalition Meeting, Toronto.

*From l. to r.: Frank Pollari, Matt Taylor, Ed Empringham, Angela Cook, Gordon Coukell and Myles Frosst.*

*break intervention strategies*, is being prepared for submission.

### *Conferences and meetings attended:*

- ♦ At the **American Water Works Association International Symposium on Waterborne Pathogens**, in Atlanta, Georgia, March 15–17, C-EnterNet learned about other international surveillance programs and made contact with leading researchers in the field of waterborne disease.
- ♦ The **Canadian Water Works Association 12<sup>th</sup> National Conference on Drinking Water**, in Saint John, New Brunswick, April 1–4, provided C-EnterNet with the opportunity to learn about current research on drinking water in Canada and to renew professional networks.
- ♦ The **US Centers for Disease Control and Prevention (CDC) 3<sup>rd</sup> Annual International Collaboration on Enteric Disease Burden of Illness Studies Network Meeting**, on March 18, provided the opportunity to learn more about how the United States and other countries are addressing the issue of source attribution and defining better measures of the burden of enteric disease.
- ♦ C-EnterNet was represented at the **CDC's FoodNet Vision** meeting in Atlanta, on March 2–3, to identify areas for coordination and complementation of our sentinel surveillance systems.
- ♦ C-EnterNet met with Maureen Lo and Maria Suglio and toured the **Canadian Medical Laboratories** facilities in Mississauga, Ontario, in July.
- ♦ C-EnterNet met with **Andrew Papadopoulos**, Director of the School of Occupational and Public Health at **Ryerson University**, in Toronto in May to investigate opportunities for collaboration, public health inspector student placements and public health inspector curriculum for water training.
- ♦ **Food Safety Network**, "Getting the Word Out: Are We Communicating Effectively?" **Food Safety Communicators Conference**, at the University of Guelph, June 13.
- ♦ **Canadian Institute of Public Health Inspectors' 72<sup>nd</sup> Annual Educational Conference**, "Meeting Tomorrow's Challenges Today," Regina, Saskatchewan, June 26–28.
- ♦ **Canadian Public Health Association 97<sup>th</sup> Annual Conference**, "What Determines the Public's Health," May 28–31 in Vancouver.
- ♦ **Canadian Research Institute for Food Safety, Guelph Food Safety Seminar Series Partnership**, "Food Safety: Full Circle," 3<sup>rd</sup> Annual One Day Symposium, September 21.
- ♦ **1<sup>st</sup> Annual PHAC Research Forum** in Winnipeg, March 20–21, to inform researchers of the opportunities created by integrated surveillance activities within sentinel sites.
- ♦ **National Enteric Disease Surveillance Meeting** in Montréal, January 23–25, to provincial enteric disease epidemiologists and laboratory workers.
- ♦ **Federal, Provincial and Territorial Committee on Food Safety Policy**, Prince Edward Island, May 8–11.
- ♦ **Canadian Food Inspection Agency professional update course**, May 5 and 18.
- ♦ **OMAFRA Food Safety Research Program Forum: "The Animal-Human Health Link and Its Impact."**
- ♦ **Federal Food Safety and Nutrition Research Meeting**, Ottawa, October 12.
- ♦ **Ordre des médecins vétérinaires du Québec**, Annual Meeting, Saint-Hyacinthe, October 13.
- ♦ **Association of Public Health Epidemiologists of Ontario conference**, "Key Databases in Public Health: An Epi's Guide to the Galaxy," London, Ontario, October 15–16.
- ♦ **Canadian Campylobacter Conference**, Vancouver, November 3.
- ♦ **Ontario Central Public Health Laboratory seminar** for laboratory staff, Toronto, November 23.

### *Looking ahead*

Look for details on the upcoming **C-EnterNet Integrated Laboratory Workshop** to be held in early spring 2007, as well as the release of the **C-EnterNet 2006 Annual Report**.

#### **For further details on C-EnterNet, please contact:**

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