Canadian Public Health Laboratory Network (CPHLN) Voluntary Reporting of Carbapenemase-Producing Enterobacteriaceae (CPE)
Overview of NML CPE Activities

- Reference services for hospital/provincial laboratories in Canada as well as other countries requesting assistance
  - Confirmation using both susceptibility testing and genetic testing
  - Outbreak investigations using molecular typing methods for strains and plasmids
  - Whole genome/plasmid sequence analysis for specific cases or research projects

- Laboratory support for CPHLN, the Canadian Nosocomial Infection Surveillance Program (CNISP), the Canadian Integrated Program on Antimicrobial Resistance Surveillance (CIPARS), and CAN-WARD hospital surveillance

- Information dissemination to other federal departments and the research community in Canada and abroad
Data Acquisition

- Data or isolates were submitted by members of the Canadian Public Health Laboratory Network (CPHLN) on a voluntary basis.
- CPE was identified at the provincial/NML level using in-house screening assays.
- Numbers of CPE were submitted by provincial public health laboratories (ON, QC, or BC), while NML generated numbers for other provinces.
- Some data from BC and QC were generated by NML.
- Limitations:
  - The numbers could involve duplicate samples on the same patient although efforts to reduce this have been made.
  - As CPE is not reportable in all provinces, the numbers most likely represent an underestimate of CPE cases reported to the CPHLN.
  - This data represents patient infections and colonizations, and it is believed that no environmental samples were included.
  - Increased numbers of CPE could be a reflection of increased screening at healthcare facilities.
  - The SME reports from Ontario represents data from 2013 onwards.
  - Quebec data represents isolates from 2010 to present.
Notable Changes from the Previous Year

- Canada continues to observe increased reports of CPE with a 1.5 fold increase since 2013
- KPC and NDM continue to be the most common CPE identified in Canada with almost equal numbers being reported in 2014
- VIM and IMP remain very rare in Enterobacteriaceae in Canada
- BC, SK, MB, ON, and QC reported increased cases of CPE as compared to 2013
- The Eastern provinces continue to report very few cases of CPE
- Although rarely reported in other countries, SME continues to remain at elevated levels in Canada
CPE in Canada: CPHLN Data

(n=900)
CPE by Region: CPHLN Data

- **West**: BC, AB, SK, MB
- **Central**: ON, QB
- **East**: NS, NB, NF, PEI

Number of Isolates:
- **West**: (n=317)
- **Central**: (n=577)
- **East**: (n=6)

Data from 2008 to 2014.
CPE by Region: CPHLN Data

(n=900)

West: BC, AB, SK, MB
Central: ON, QB
East: NS, NB, NF, PEI
CPE by Species: CPHLN Data

- E. coli
- K. pneumoniae
- K. oxytoca
- Enterobacter spp.
- Citrobacter spp.
- Serratia spp.
- Other

Number of Isolates

KPC    NDM    OXA-48 Carbapenemase    SME    VIM    Other

(n=900)