Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

Comparing Our Countries

<table>
<thead>
<tr>
<th>Measure</th>
<th>Ontario</th>
<th>Canada</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Area</td>
<td>1.076,395 km²</td>
<td>9,984,670 km²</td>
<td>7,741,220 km²</td>
</tr>
<tr>
<td>Land</td>
<td>917,741 km²</td>
<td>9,093,567 km²</td>
<td>7,683,808 km²</td>
</tr>
<tr>
<td>Water</td>
<td>158,654 km² (14.8%)</td>
<td>891,163 km² (8.9%)</td>
<td>77,412 km² (1%)</td>
</tr>
<tr>
<td>Population</td>
<td>12,891,787</td>
<td>33,387,000</td>
<td>21,370,000</td>
</tr>
<tr>
<td>Density</td>
<td>13.9 /km²</td>
<td>3.2/km²</td>
<td>2.6/km²</td>
</tr>
<tr>
<td>GDP</td>
<td>US$574.3 billion</td>
<td>US$1.377 trillion</td>
<td>US$718.4 billion</td>
</tr>
<tr>
<td>Per Capita</td>
<td>US$42,168</td>
<td>US$41,102</td>
<td>US$34,359</td>
</tr>
</tbody>
</table>

Health Care Systems: Comparison

<table>
<thead>
<tr>
<th>Measure</th>
<th>Canada</th>
<th>Australia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life Expectancy</td>
<td>80.34</td>
<td>80.62</td>
</tr>
<tr>
<td>Infant Mortality</td>
<td>5.08</td>
<td>4.76</td>
</tr>
<tr>
<td>Physicians</td>
<td>2.1</td>
<td>2.5</td>
</tr>
<tr>
<td>Nurses</td>
<td>9.95</td>
<td>10.7</td>
</tr>
<tr>
<td>Beds</td>
<td>3.9</td>
<td>7.9</td>
</tr>
<tr>
<td>$ per capita</td>
<td>$2535</td>
<td>$2211</td>
</tr>
<tr>
<td>% GDP on health</td>
<td>9.4</td>
<td>9.1</td>
</tr>
<tr>
<td>Human Dev Index</td>
<td>0.949</td>
<td>0.955</td>
</tr>
</tbody>
</table>

Looking Back…. March 26, 2003
- Ontario’s first ever provincial emergency declared
- Unknown etiologic agent
- Acute Respiratory Illness resembling an infectious disease
- Spreading rapidly throughout hospitals

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

Hong Kong
The Metropole Hotel

Why a Provincial Emergency?
• Scope
• Hidden cases
• Getting ahead of the outbreak

The initial challenge
No name
No clear-cut clinical diagnosis
No test
No idea of clinical course
No idea of long term implications
Not much idea how it spread
When does infectiousness start?
When does infectiousness finish?
Is there any short term immunity?
Is there any long term immunity?

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

The Birth of OSSAC

- Necessity is the mother of…
- Many decisions requiring specialized in put:
  - Hospital epidemiology & infection control
  - Public & community health
  - Provincial Operations Center
  - MOHLTC
    - Hospitals Branch
    - Public Health Branch
    - Emergency Medical Services
  - Community practice settings
  - Nursing
  - Occupational Health

OSSAC Membership

- Chair and Vice-Chair
- Public Health Physicians
- Infectious Diseases clinicians
- Infection Control Practitioners
- Hospital Epidemiologists
- Emergency Medicine
- POC Scientist
- Hospital administration
- Occupational Health

Managing SARS-Ontario Style

Directives for High Risk Respiratory Procedures

Inter-Facilities Transfer Directive

The OSSAC Sweat Shop

A Webber Training Teleclass
www.webbertraining.com
Key Infection Control Recommendations of the Ontario Expert Panel on SARS and Infectious Diseases Control (Walker)

• The report contained 103 recommendations to be implemented over five years.

Infection Control Training and Staffing

• Expand the availability and accessibility of infection control training/courses for those practicing or intending to practice in infection control
• Enhance infection control training of all healthcare providers at the facility level
• Increase the number of infection control practitioners in acute and long-term care facilities, aiming initially for 1:250 beds

Key Infection Control Recommendations of the Walker Panel – cont’d

Regional Infection Control Networks

• Province-wide networks to be established on a regional basis
• Membership to include hospitals, long-term care, public health units, laboratories and others
• Will facilitate and enhance coordination of infection control activities on a regional basis including: implementation of standards and guidelines; surveillance; access to human resource capacity and expertise

Provincial Communicable Disease Committee

• Standing advisory committee should be established together with any necessary subcommittees.
• Mandate to include: develop provincial standards and guidelines, develop core indicators for facility-acquired infections, advise on emergency planning and on research priorities.
• Establish committee web-site to be accessed by healthcare providers and public.
• Initially advisory to the CMOH – later to a new Ontario Health Protection and Promotion Agency.
• Broad membership representing key disciplines and areas of health care.
• Linked to new regional networks for infection control.

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

From the SARS Commission:

• “Public health must invest in the scientific and professional capacity necessary both locally and provincially to provide meaningful expertise and advice to health care facilities and institutions. For long-term issues, protocols, policies and directives, the province has a tremendous resource in the Provincial Infection Diseases Advisory Committee (PIDAC), with its multi-disciplinary approach and wide spectrum of expertise, to play the role of advisor and expert. But no advisory committee can supply the operational resources required to respond to immediate problems in the field that require speedy investigation and intervention.”
  - Justice Archie Campbell, April 3, 2005

Operation Health Protection

• On June 22, 2004 Minister Smitherman publicly released Operation Health Protection: An Action Plan to Prevent Threats to our Health and to Promote a Healthy Ontario.
• The Action Plan includes many recommendations of the Walker Panel and Justice Campbell.
• It will be be rolled out over the next 3 years.

Operation Health Protection - Strategic Priorities

I. Creation of a Health Protection and Promotion Agency
II. Public Health Renewal
III. Health Emergency Management
IV. Infection Control and Communicable Disease Capacity
V. Health Human Resources
VI. Infrastructure for Health System Preparedness

Key Infection Control Recommendations of the Walker Panel – cont’d

Facility Design

• Standards and guidelines relevant to infection control required – to be developed through the Provincial Communicable Disease Committee and used to guide a needs assessment for negative pressure and isolation rooms
• Identification of physical plant barriers to effective infection control and develop multi-year plan for their removal
• Dedicated fund of one-time costs to address facility remediation requirements prioritized on the basis of criteria established through the Provincial Communicable Disease Committee

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

PIDAC: People and Products

Committee Members
- Dick Zoutman
- Kirti Patel
- Richard LeBlanc
- Anna Koil
- Pauline Latchford
- Lisa Thorpe

Terms of Reference
- Committee
- PIDAC
- Subcommittees
- Communicable Diseases
- Immunization
- Infection Control
- Surveillance

Best Practice Reports
- Centralization of Laboratory Services
- Communicable Disease Network

Principles for PIDAC
- Advisory to CMOH
- Evidenced-based in all work we do
- Use continuous quality improvement methods
- Take at least two day’s to solve the world’s problems

In Memoriam:
Dr. Sheela Basrur

1956-2008

PIDAC: Initial Priorities
- Hospital design issues
- Advisory support to EMU for pandemic planning etc
- Strategic Planning for subcommittees
- Website

Priorities: Infection Control
- Review of FRI documents
- Review of SARS directives
- Review of High Risk Procedure directive
- Basic elements of IC program for hospitals
- Standards for reprocessing
- ARO’s – MRSA or C.difficile as model for provincial “approach” to surveillance/management
- Infection Control education – core competencies

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

Priorities: Surveillance

- Review of FRI documents
- Review of SARS directives
- Surveillance for *C. difficile*
- Scan/overview of existing/pending surveillance systems

Priorities: Vaccines

- Assessment of the suitability of newly licensed vaccines for the Ontario publicly funded immunization program
- Education of healthcare workers on immunization issues
- Vaccine schedules
- Recommendations for adult vaccine priorities
- Enhanced surveillance and reporting VPDs e.g. varicella, pneumococcus
- Maximizing uptake of vaccines

Public Health Renewal: Progress to Date

Chief Medical Officer of Health Independence
- Bill amending the Health Protection and Promotion Act to increase independence of CMOH introduced on October 14, 2004

Local Public Health Capacity Review
- To be guided by a Local Public Health Capacity Review Committee
- Will be opportunity for stakeholder input

Communicable Disease Positions
- Funding for 180 full-time communicable disease positions within public health units

Infection Control and Communicable Disease Capacity: PIDAC – cont’d

- Full PIDAC membership in place Fall 2004
- Mandate includes:
  - Review and develop standards and guidelines for application across Ontario – work on document relevant to *C. difficile* complete
  - Develop core indicators for facility-acquired infections
  - Advise on immunization programs
  - Advise on emergency preparedness for an outbreak
  - Advise on infection control education
  - Advise on research priorities

Infection Control and Communicable Disease Capacity: Regional Networks

- Regional networks for infection control to be phased in to coordinate infection control activities across and through all parts of the healthcare system
- Strategic framework and core deliverables for all networks being developed upon the advice and guidance of PIDAC
- Three initial networks to be established in 2004/05
- Based upon an evaluation of and lesson learned from the three initial networks, province-wide implementation of networks to take place by 2006/07
- Boundaries of networks will be informed by the LHIN process

Infection Control and Communicable Disease Capacity: Education

- Web-based Infection Control Education at Queen’s University and Centennial College
- Core competencies in infection control for all healthcare workers being developed and validated – to be used as a platform upon which to build multi-modality educational tools and programs
- Review of university and college healthcare program curricula to determine infection control content to be initiated Fall 2004

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARSDr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

Infection Control and Communicable Disease Capacity: Infection Control Practitioners

- Increased number of full-time positions for infection control practitioners within hospitals
- Targeted funding
- Primary goal to achieve 1 practitioner per 250 beds and then….

Infrastructure for Health System Preparedness

- Goal is to modernize Ontario’s processes for collecting and analyzing information related to infectious diseases, and for delivering timely information to healthcare providers and to the public as required
- Implementation of the integrated Public Health Information System (PHIS) to begin in 2004/05 - will support provincial communicable disease surveillance and outbreak management within public health units, including contact tracing and quarantine management
- Development of comprehensive IT tools and infrastructure to deliver necessary information to healthcare providers and the public on matters of public health during an emergency and on a day-to-day basis underway – known as the PHIIT strategy

When and how to clean hands

Role models and reminders

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

Ontario Agency For Health Protection and Promotion

Public Reporting of HAI

Ontario Auditor General’s Report on HAI

WHAT HAS NOT CHANGED:
BURDEN OF NOSOCOMIAL INFECTIONS IN CANADA

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

What Has Not Changed:
Impact on Health Care Costs

<table>
<thead>
<tr>
<th>Condition</th>
<th>Rate per Day</th>
<th>No. Infections per Year</th>
<th>Extra Days per Case</th>
<th>Extra Bed Days/yr</th>
<th>Cost per Infection</th>
<th>Cost per Year others</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surgical Wound</td>
<td>1.29</td>
<td>33,621</td>
<td>8.2</td>
<td>438,042</td>
<td>$8,200</td>
<td>$438,042</td>
</tr>
<tr>
<td>Pneumonia</td>
<td>0.08</td>
<td>23,990</td>
<td>20.0</td>
<td>481,280</td>
<td>$20,000</td>
<td>$481,280</td>
</tr>
<tr>
<td>Bacteremia</td>
<td>0.23</td>
<td>10,724</td>
<td>24.0</td>
<td>249,084</td>
<td>$24,000</td>
<td>$592,598</td>
</tr>
<tr>
<td>Urinary</td>
<td>2.50</td>
<td>91,853</td>
<td>2.4</td>
<td>220,467</td>
<td>$2,400</td>
<td>$2,200</td>
</tr>
<tr>
<td>Other</td>
<td>1.07</td>
<td>41,123</td>
<td>4.8</td>
<td>197,590</td>
<td>$4,800</td>
<td>$197</td>
</tr>
<tr>
<td>Total</td>
<td>219,834</td>
<td>1,566,137</td>
<td></td>
<td></td>
<td></td>
<td>$3,566,137</td>
</tr>
</tbody>
</table>

What Has Changed

• High level Global and National Focus on Infection Prevention and Control
• Provincial Programs in Infection Prevention and Control
  – Eg. Ontario Provincial Infectious Diseases Advisory Committees (PIDAC)
  – Quebec mandating Infection Control Practitioner numbers
  – Many other examples

What Is Changing

• Recognition of where expertise lies
  – CHICA-Canada
  – Academia
    • Medical Microbiologists, Infectious Diseases specialists, epidemiologists etc

What Is Changing

• Coordination of efforts
• Strategic Partnership between:
  – CHICA-Canada
  – Canadian Patient Safety Institute (CPSI)
  – Canadian Council on Health Services Accreditation (CCHSA)—Now Accreditation Canada
  – Public Health Agency of Canada (PHAC)
• To coordinate activities aimed at infection prevention and control

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

What Needs To Change

• Lack of Research
  – Poor to nonexistent funding for translational and applied research in infection prevention
• Huge knowledge gaps
  – Eg. Do N95 Respirators really protect against infections? Do surgical masks? Which is better?
  – What is best surgical pre-operative preparation of the patient’s surgical site?
  – Reservoirs of and best methods to kill C. difficile

Infectious Diseases In Canada

CHICA
AIPI
AMMI
CCCAR

PHAC
NML
Provinces & Territories

Industry
CPHA
Academia
CCHSA

Individual Facilities

CHA & Hospital Associations

What Needs To Change

• Integrated Surveillance across Canada
• Practitioner to Region to Province to Nation to Global
• Global to Nation to Province to Region to Practitioner
• Health Practitioners out of the loop yet this is the point of infection transmission
• Feed back is powerful

Canadian Nosocomial Infectious Diseases Surveillance Program (CNISP)

• Established 1994
• Focused on Nosocomial infections
• Terrific example of national collaboration of government & field experts
• Excellent work to date
• Severely under resourced however
• High potential

CHICA’s Mission

• CHICA-Canada is committed to improving the health of Canadians
  – by promoting excellence in the practice of infection prevention and control
  – by employing evidence based practice and application of epidemiological principles.
• This is accomplished through education, communication, standards, research and consumer awareness.

Community & Hospital Infection Control Association - Canada (CHICA)
• a multidisciplinary, professional organization for those engaged in the prevention and control of infections
• CHICA has approx 1500 members across Canada
• www.chica.org

A Webber Training Teleclass
www.webbertraining.com
Infection Prevention & Control in Ontario: 5 Years After SARS
Dr Dick Zoutman, Queen’s University, Canada
Broadcast Live From AICA 2008, Melbourne, Australia

Thank you AICA!

A Webber Training Teleclass
www.webbertraining.com