The Future of Infection Prevention and Control: Lessons Learned From the Past and the Present

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Objectives

• Can we learn from the past?
• What are the barriers to making a difference in IPAC?
• How can we work together to innovate in IPAC through collaborative research and implementation?
Once upon a time......
Infection Control in the ’80s

• Many larger hospitals still had no Infectious Disease expertise
• Infection control was very lab based
• No real focus on patient safety
• Not really research oriented esp in Canada
• Training was ad hoc
• Key metric was clean surgical wound infections
• We talked hand hygiene but no one cared outside the OR
My Training in IPAC

• No formal training and no training requirements
• Joined VGH Infection Control committee for experience during my ID fellowship. ICP leader was Moira Walker
• First Infectious Disease MD at OGH and asked to join IC committee
• 2 months later, the ICC chair resigned and I was elected as Chair
• Hard lesson in how to navigate the world of hospital senior management (who always says no)
Mentorship and Collaboration

- VP Medical Affairs.......Dr Don Hill
- ICP..................................Jocelyn Contant
- Lab IC tech.......................Cathy Oxley

- I had a lot to learn, We all had a lot to learn
Early Research

• Acinetobacter outbreak in ICU
• Legionella outbreak associated with shock absorber
• How to monitor surgical infections from day/short stay surgery
Lessons Learned

• We could do innovative research in Canada that was “world class”

• ICPs learned how much fun research was esp. to present at APIC/SHEA and be lead author

• Other centre looked to our team for advice and education

• We developed a RCPSC ID training program with both training in IC and fellowship opportunity in Infection Control

• Virginia Roth, Cathy Suh, Ziad Memish

• MSC epidemiology specialization in IC
The World was Changing

This was an era of explosion of new antimicrobials;

- 3rd generation cephalosporins
- Carbapenems
- Quinolones
- Antifungals fluconazole
- Antivirals acyclovir and then gancyclovir
- HIV meds
- Non-invasive procedures and their learning curves
The world was changing—multidrug resistance

- MRSA
- VRE
- ESBL
- Penicillin resistant pneumocococcus
- Macrolide resistance
- C. difficile

- And there were hospital cuts…. To IPAC and housekeeping
Who Are the Players in infection Control?

- Local
- Regional
- Provincial
- Federal
- Worldwide

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Are You Confused?

“Every system is uniquely and perfectly designed to produce the results it is currently producing.”

Peter Senge, MIT, Author of The Fifth Discipline

What should we expect from the system I just described?
What you can get is

- **SARS in Toronto**
  - CDC/Dr. Erskine Palmer

- **Ebola in Liberia**
  - CDC/NIAID
SARS

• Communications
• Leadership
• Data
• Lab capacity
• Epidemiology capacity
• Preparedness
• Jurisdictional issues: eg. SARS research funding
What have we learnt from SARS?

- OAHPP “Agency” – PHO scientific capacity, planning, data analysis,
- PHO does NOT make policy decisions.
- Gov’t may decide that policy decisions and science don’t always align. (see N95 in H1N1)
- PHOL has been bolstered with expertise to develop new assays as needed
- Alignment with the CMOH, EMB and MEOC
History repeats itself

• Deja vu all over again?
• Mixed messages confuse the public and health care workers
• Erosion in trust of Public Health Officials
• No trust in government or “Big Pharma”
• Seen in SARS, Pandemic H1N1, and Ebola
• Public trusts a former Playboy Bunny for health and vaccine advice???
What is IPAC Today?

- Surveillance
- Education
- Antimicrobial resistance
- Isolation procedures and PPE
- Antimicrobial Stewardship
- Hand Hygiene
- Environmental cleaning
- HCW Vaccine promotion
So What is IPAC Today?

• Patient Safety
• Health Care Provider protection
How are we doing?

- Hand hygiene rates have improved
- MRSA is decreasing
- CDI outbreaks are stabilizing. Less cases/outbreak
- VRE is increasing slowly
- Antimicrobial resistance is emerging
- More patients die today from hospital misadventures than ever
- Worst Ebola outbreak the world has ever seen
- Ebola showed us that front line workers do not feel prepared or protected
How do we feel about our accomplishments?

- Why do we feel that IC is a daily battle
- Why is it hard to get senior leadership to support our idea and innovations?
- Why do our colleagues call us the “Infection Police”?

- Are we a bit self-righteous?
- Is IPAC a religion?
- Many of our practices are not evidenced based.
What tools do we use?

• Communication

• Education

• Incentives

• Surveillance and monitoring
When our education program fails

• We plan a NEW education strategy
• Use new posters
• New incentives

• And we get the same results
Insanity

• Doing the same thing over and over again and expecting different results....”
  A. Einstein

• In IPAC, can we stop the insanity?
• How do we change behaviour....ours and our stakeholders?
Lessons learned: GOOD NEWS!!

- IPAC Practices worked in Ebola in N. America
- Proper hand hygiene and isolation practices prevented transmission
- IPAC practices in West Africa.... Reduced transmission
- IPAC practices WORK!!
- However, we are NOT effective enough in promoting IPAC. We need to be more positive and market our accomplishments to senior leaders, governments and our colleagues
What is the Future of IPAC? My Dream

• If everyone cleaned their hands
• We had routine environmental cleaning
• Everyone had a single room

• There would be no patient to patient transmission
• There would be no need for isolation policies (except airborne)
My Dream

• To stop the reuse of needles
• To end the use of multi-dose vials
• To ensure we have a system that puts patient safety ahead of cost containment
• To ensure a system that intelligently uses the technology of the time to spread the word of vaccine safety
• Don’t leave key communication to the media and charlatans
• Stop mixed messages and instill confidence in Public Health and IPAC leaders
The Future of IPAC

• Evidence informed practice

• Understand that how we communicate good science is just as important as the science itself

• The public and most HCWs don’t read the Lancet

• Understanding behaviour and applying behaviour change theory to novel interventions strategies (hand hygiene, vaccination)

• Applying novel ways to disseminate new knowledge
My Dream

• We work together to ask and answer complex IPAC questions

• We disseminate those new findings

• We apply the new knowledge in our IPAC guidelines

• We stop relying on expert opinion and when the experts don’t agree we find ways to answer the complex questions

• We use principles of implementation science to effectively apply new knowledge AND also study/evaluate what applications work (or not)
How do we see the future at PHO - IPAC?

- Collaboration between IPAC and behaviour psychology
- Comprehensive review of VRE blood stream infections (52)
- Identify where is/are the reservoirs of C. difficile (PHOL)
- HAI surveillance system in Ontario (MOH, HQO)
- Apply implementation science through our RICNs to disseminate new findings and practices
- Evaluation and continuous quality improvement
- Stop the spread of blood borne pathogens in health care
Infection prevention and control: Whose role?

• IPAC is everyone’s role and responsibility
• Responsibility for personal protection
• Responsible for patient care and protection
• Prevention of spread from HCW to patient, patient to HCW, patient to patient, to family members.
• IPAC is a culture of personal and mutual respect
• A culture of hand hygiene and personal behaviours and choices
Ebola in Africa

• 20 years ago, HCWs in mission hospitals no longer acquired Ebola through proper hand hygiene, and use of masks and gloves.

• Decreased community spread by educating locals about proper disposition of the dead.

• The spread to large centres magnified the problem and the numbers.

• The lack of basic IPAC protection and HCWs lack of planning, communication, and leadership made a bad situation worse
Why Infection Prevention and Control?

BECAUSE IT WORKS
Future?

- To learn from the mistakes of the past
- To work together to ensure that health care is
  1. a safe place for patients
  2. a safe place to work
Vision without action is daydream

Action without vision is nightmare

Japanese Proverb
Discussion and Comments
Public Health Ontario (PHO)

- Infectious Diseases
- Environmental and Occupational Health
- Health Promotion and Chronic Diseases
- Emergency Response
- Public Health Ontario Laboratories
- Infection Prevention and Control
- Communicable Diseases
- Vaccine Preventable Diseases
- Knowledge Synthesis and Evaluation (Research)
- Resources (tools, ICRTs ASP core competencies)
- Regional Infection Control Networks (RICN)
- IPAC Planning and Operations Support (POS)
- K2A: Knowledge to action