

# Healthcare Associated Infections Can We Stop The Insanity?

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# Case Studies #1

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## Case Studies #1

- 29 yr old female, present to ER in Ottawa with 3 day history of progressive cough and low grade fever
- Recently returned home from a 1 month visit to Saudi Arabia
- While there , had a 1<sup>st</sup> trimester miscarriage and was in a local hospital for 16 hrs
- Stayed in a village where camels were in the immediate vicinity
- Husband drank Camels' milk; She did not.
- Husband and 4 year old son are healthy

## Case #1

- Placed in Respiratory isolation: airborne/contact

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- MERS PCR negative
- Influenza PCR positive for INF A



## Case #2

- 23 year old immigrant to Ottawa who arrived 3 months ago
- As part of immigration physical, no voiced complaints
- Chest x-ray shows infiltrate at the right mid-zone
- Public Health calls for an assessment in the TB clinic
- Clinic is closed as part of hospital closure
- Seen in ER but ER was warned of patient coming and placed into negative pressure room and resp precautions were started immediately

## Case #2

- Patient was asymptomatic **BUT** admitted to a dry cough for the past few days.
- Low grade temperature of 38<sup>0</sup>C
- CXR show a definite infiltrate
- Admitted to hospital, Induced sputum is positive for AFB
- Started on therapy and MTB was confirmed

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- ENT examined and did not detect a stone
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- ID called for advice on antibiotics.
- Suggested serology for Mumps and notification of Public Health
- Serology was positive for Mumps
- No secondary cases reported

## Case # \$4

- 67 year old woman present with feeling unwell
- Routine blood work indicates elevated liver enzymes
- Hepatitis B negative
- Hepatitis A and C antibody positive
- PCR confirmation of HEP C infection
- NOTE: had HCV serology done 1 year earlier and was negative
- Had colonoscopy 3 months previous.

## Case # 4

- One colonoscopy patient earlier that day known to have Hep C
- National microbiology lab tested and the 2 viruses are virtually identical
- Subsequent testing of other patients ( 3 days back and forward), 2 others found HCV positive from the same day
- How does this happen?

## Case #4 Hepatitis C Transmission

- 3 different colonoscopy clinics in Toronto
- At least 7 individuals have been infected
- In all cases, there is proof of proper disinfection of the colonoscopes **And** no commonality of scopes
- Most likely cause was the anesthetic used during the procedure
- Another investigation had similar problems in a hospital colonoscopy unit
- 2 patients infected 6 months apart one genotype 1 and the other genotype 3. Same Anesthesiologist

## Case #5 MRSA outbreak

- Occurred on a vascular surgery unit
- Happened during SARS
- MRSA found on the door handles of the washrooms
- Lots of hand hygiene at the front door but not necessarily at the bed side
- Solution here was reduce crowding and improved ABHR



## Sterilization issues in the community

- Diet clinic keeps urines in the same fridge as their vitamin injectable
- Dental clinics where the sterilizer is not monitored for effectiveness

# Why don't we have more nosocomial infections?

- We are mainly lucky
- 1.5% of Ontario population has HCV.
- So you have a 98% chance not to get HCV even with poor IPAC techniques and applications
- Many procedures are in/on mucosal surfaces which are not sterile. How would you know if there were *E. coli* contamination?
- Sometimes the only way is if by chance there is a resistant organism that is transmitted ie MRSA, CPE

# How do we stop the spread of resistance?

- Prevent the passage of the organism from person to person
  1. Sanitation
  2. Hand hygiene
  3. Infection Control principles and practice
  
- Don't enable the organism to grow:
  1. Restrict the antibiotic environment which gives the organism its survival advantage
  2. Use effective antimicrobial which evades the resistance

Appropriate use of antibiotics....Antimicrobial Stewardship

## *C. difficile*

- Many of our outbreaks are polyclonal isolates based on Molecular typing.
- Are these real outbreaks?
- Where is the CDI reservoir in our communities?
- IPAC goes only so far. Need aggressive reduction in discretionary antibiotic usage. **This is ASP**
- **Reservoirs of infections are in animals, children and probably the institutionalized adults**

# 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

- 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)

# The Future of PHO -IPAC?

- Collaboration between IPAC and behaviour psychology
  - hand hygiene,
  - vaccine uptake,
  - prescribing practice (ASP or opioids)
- HAI surveillance system in Ontario (MOHLTC, HQO)
- Apply implementation science through our Regional Support Teams to disseminate new findings and practices
- Evaluation and continuous quality improvement
- Stop the spread of blood borne pathogens in health care
- Make healthcare in Ontario safer for us all

# Why Infection Prevention and Control?

- It works