GI Suite – Compliance Review

CAMDR | Canadian Association of Medical Device Reprocessing

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So where do we go wrong?

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The individual responsibility for protecting patients from infection isn't new – it's always been at the core of healthcare practice

The founders of the professions of medicine and nursing stressed the essential need for patient safety:

"Primum non nocere" - (First, do no harm)

…originated from the writings of Hippocrates, the father of medicine, where he said:

"As to diseases, make a habit of two things – to help, or at least to do no harm."

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Complacency:
A feeling of contentment or self-satisfaction, especially when coupled with an **unawareness of danger,** trouble, or controversy

Healthcare workers **MAY** see obvious harm when it occurs but more often than not staff do not see the "near misses" – and this feeds the complacency

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Complacency prevents us from seeing:

- ✓Sources of harm
- ✓Near misses
- ✓Ourselves as sources of harm

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What else are we up against?

Emerging & New Technologies are excellent for advancing our diagnostic and therapeutic options BUT…

↑complexity of healthcare interventions = ↑risk of personal failures that can harm patients

GI →Automation in cleaning, disinfection & sterilization as well as more complex medical devices introduce tremendous training & competency requirements

If you are going to automate it…

There has to be someone to run it…

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'I hear you – but is it really a problem?'

- Why does "Dr. Jones" still do bronchoscopy procedures in a room that has no negative air exchange on a TB positive patient?
- Why does nurse "Betty" still not wear PPE or a face shield when assisting for endoscopy procedures?
- Why does technician "Bob" still not do a proper leak test prior to disinfection or use gloves when handling disinfected instruments?
- Why are contaminated instruments not labeled and transported properly to decontamination?

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Human factors

- ✓ Intense workloads
- ✓ Continuing high procedure counts
- ✓ Staff fatigue & shortage of staff
- ✓ Length of time employed & practicing in a given position
- ✓ Compliance with hand washing, uniform and hygiene equipment safety & surface disinfection

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Hospital Acquired Infection (HAI) or Nosocomial infections

- ✓ Infection acquired in hospital where the patient was admitted for reasons other than the infection

HAI's are among the leading causes of death in Canada…

More than 200,000 patients get infections every year while receiving healthcare in Canada; more than 8,000 of these patients die as a result

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Each person working in healthcare, whether it be in a clinical or non-clinical role, is responsible for taking active measures to minimize the risk of HCAI by modifying ingrained behaviors and to break the chain of infection

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Hospital Acquired Infections (HAI's)

The rate of preventable healthcare-associated infections (HCAI) is unacceptable and it must be reduced – however and whatever it takes:

- ✓ Mortality rates attributable to *Clostridium difficile* infection have more than tripled in Canada since 1997
- ✓ The healthcare-associated methicillin-resistant *Staphylococcus aureus* infection rate increased more than 1,000% from 1995 to 2009
- ✓ About 80% of common infections are spread by healthcare workers, patients and visitors
- ✓ Proper hand hygiene can significantly reduce the spread of infection
- ✓ Best practices in preventing infection can reduce the risk of some infections to close to **zero**

-Public Health Agency of Canada – HAI

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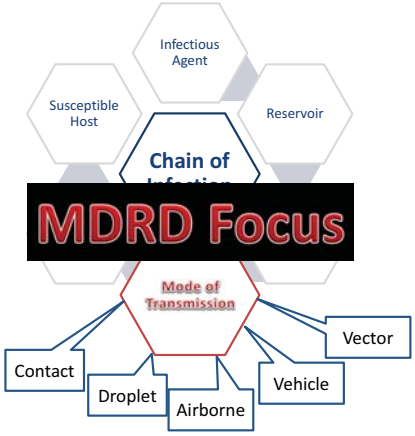
The Mode of Transmission is the Key Component



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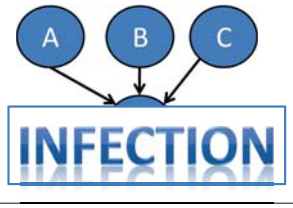
For an infection to occur – 3 criteria must be met:

A. Sufficient number of pathogenic microorganisms must invade the body
B. The pathogens must find an appropriate portal of entry
C. The target host must be susceptible



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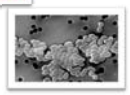
"The Big Four" Pathogens in GI

- *Clostridium difficile* 
- *Pseudomonas aeruginosa* 
- Methicillin resistant *Staphylococcus aureus (MRSA)* 
- Vancomycin resistant *Enterococcus (VRE)* 

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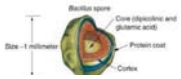
Types of Microorganisms – "THE OFFENDERS"

- *Bacteria* 
- *Viruses* 
- *Fungi* 
- *Prions* 

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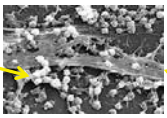
Biofilms within GI Endoscopy

- A **biofilm** is a structured community of microorganisms encapsulated within a self-developed polymeric matrix and adherent to a living or inert surface.
- Formation of a biofilm begins with the attachment of free-floating microorganisms to a surface
- If the colonists are not immediately separated from the surface, they can anchor themselves more permanently using cell adhesion

Staphylococcus aureus



Exopolysaccharide (EPS)

Staphylococcus aureus biofilm

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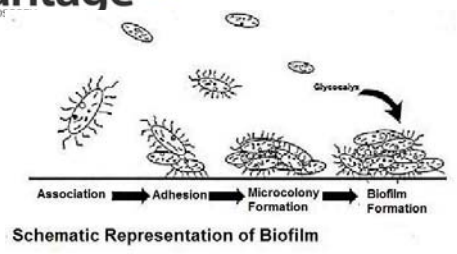
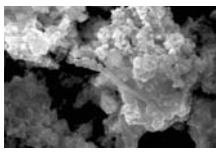
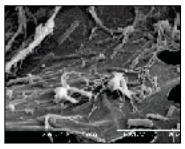


Schematic Representation of Biofilm





- Many organisms have been shown to produce biofilms
  Staph aureus (MRSA), Pseudomonas. aeruginosa, Klebsiella pneumoniae
- Biofilms are a potential source of infection when the biofilm-associated cells detach
- Biofilms have been found in AER's & high level disinfectant solutions

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Routine infection prevention and control practices within GI endoscopy:

1) The approach to infection control in which all human blood and body fluids are treated as if known to be infectious
2) All medical devices received for reprocessing are considered potentially infectious

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Surveillance or Infection Event

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Why AUDIT in GI?

Disease transmission has occurred via endoscopy

Endoscopes are complex and difficult to reprocess
- ✓ Biofilms present added challenge

Reprocessing personnel
- ✓ Shortcuts due to high procedure volume, rapid turnaround, short staffing
- ✓ Training certification required
- ✓ On-going competency & Recertification
- ✓ Manager responsibilities

Automated Endoscope Reprocessors, accessories & filters are a significant source of failure during high level disinfection, PM

Storage cabinets & conditions out of compliance

Drying of instruments is poorly understood

Design of MDRD department (separation of clean/dirty)

Transportation of medical devices continues to be a problem

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Why AUDIT in GI?

- Infection Control Practitioners audit GI infrequently if at all
- Accreditations are not done frequently enough to ensure that the GI suite is meeting all of the guidelines
- Vendor partners can provide specific information regarding their equipment but often times this information conflicts with hospital policies & procedures – this leads to confusion and auditing can identify discrepancies

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Processes reviewed to meet standards:

- Procedure room and bedside cleaning
- Transportation to/from procedure room
- Precleaning and leak testing
- Automated / manual cleaning and disinfection
- Drying and storage
- General endoscope care

Results:

Areas that meet or exceed standards	Areas that do not meet standards
Recommend any potential improvements towards achieving best practices	Define critical areas that need immediate attention and provide an action plan
Identify inefficiencies to help streamline workflow and improve capacity	Identify areas that do not meet guide-lines
Provide solutions to encourage repetition of high level performance	Suggest an action plan for areas that may not meet accepted standards