Infection Prevention and Control Programs in the federal workplace.

ESDC 2015 Federal Labour Program Open House
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Who We Are

ESTABLISHED IN
2009
NON-PROFIT ASSOCIATION

Funded Partner of the Ministry of Labour

WE PROVIDE OCCUPATIONAL HEALTH & SAFETY Training Resources Consulting

WE WORK WITH
1.67+ MILLION WORKERS
10,000+ ORGANIZATIONS

ONTARIO’S PUBLIC & BROADER PUBLIC SECTORS:
Government
Emergency Services
First Nations
Education
Healthcare

PSHSA.ca
Who We Serve

GOVERNMENT
- Municipal Government
- Provincial Government
- Transit
- Recreation
- Public Works
- First Nations

EMERGENCY SERVICES
- Fire
- Policing
- EMS
- Security
- Corrections

HEALTHCARE
- Institutional Health
- Primary Care
- Long-term Care
- Community Care
- Diagnostic Services
- Public Health
- Mental Health
- Treatment Services

EDUCATION
- School Boards
- Universities
- Colleges
- Career Colleges
- Museums
- Libraries

FIRST NATIONS
- Public Works
- Fire
- EMS
- Roads
- Long-term Care
- Education
Objectives

✓ Review common terms associated with IPC
✓ Examine key steps to developing a sustainable Infection Prevention and Control program
✓ Discuss potential infectious hazards associated with occupations and tasks in our workplaces
✓ Create an action plan to address gaps and promote a safer workplace
Common Terms and Definitions

• **Biological hazards** are produced by infectious agents that can cause illness or disease in humans.

• **Infectious Disease** – illness due to an infectious agent or its toxic byproducts being transmitted directly to a healthy human individual from an infected individual or animal, or indirectly transmitted through an intermediate animal host (vector) or inanimate environment.
Infection Prevention and Control Program

• A set of policies and exposure control plans that form a comprehensive strategy to prevent and control infectious diseases in the workplace.

• Part of a Hazard Prevention Program addressing occupational disease due to exposure to biological agents used, produced, handled or stored at the workplace and which affect the health of the employee.
Group Discussion

What are some common biological hazards in your environments?

What workers are exposed to these hazards?
Potential Workers Exposed

- Health Care and Social Services
- Child Care
- Teachers
- Animal Handlers/Farming
- Food Services/Food Handling
- Cleaners/Maintenance
- Road, Marine, Aviation
- Environmental, Water and Waste Operators
- Hairdressers/Spas
- Arborists/ Horticulture
- Law Enforcement
- Correctional Institutions
- Wilderness workers
- First Aiders
- Military personnel
Types of Infectious Agents

- Bacteria
- Parasites
- Viruses
- Fungi
Bacteria

• Microscopic, single-cell, self-replicating organisms
• (e.g. Pulmonary Tuberculosis, Salmonella, Legionnaires, Bacterial Conjunctivitis, Q Fever, Psittacosis, Methicillin-resistant Staphylococcus Aureus, Anthrax, Clostridium Difficile).
Viruses

- Smaller than bacteria and require a host cell to thrive and multiply
- (e.g. Hepatitis B, Hepatitis C, Influenza, HIV, Hantavirus, Rabies, WNV, Ebola)
Parasites

• Any organism that lives in or on another organism without benefiting the host organism

• (e.g., Giardiasis, Malaria, Tapeworms, Bedbugs, Lice, Toxoplasmosis, Herpes Zoster).
Fungi

• Plant like organisms that reproduce by forming spores
• (e.g., Mold, Athletes’ foot, Ringworm, Histoplasmosis).
Route of Entry

- Ingestion
- Inhalation
- Absorption
- Injection
Means of Transmission

Types of Transmission:

- Direct Contact
- Indirect Contact
- Airborne
- Droplet
- Vector borne
- Vehicle borne
Chain of Transmission

RESEVOIR

INFECTIONOUS AGENT

MODE OF TRANSMISSION

Direct Contact  Indirect Contact  Airborne

Droplet  Vector  Vehicle

SUSCEPTIBLE HOST

PORTAL OF ENTRY

Ingestion  Inhalation  Injection  Absorption
Employer Responsibilities

• Duty to protect the health and safety of employees
• Identify and assess the risk of infectious diseases and implement proper controls through their Hazard Prevention Program
• PPE, training, health protection (e.g. vaccination)
• Investigate and report accidental exposures to infectious diseases
• Consult JOHS Committee regarding Exposure Control Plans, PPE, etc.
• Collaborate with internal stakeholders (OHN, IPC and Safety professionals)
Employee Responsibilities

• Follow safe work procedures as specified by the employer
• Utilize standard precautions
• Report all hazards or exposures to occupational infectious diseases
• Follow specified pre and post exposure programs in consultation with health professional
• Maintain optimal health
JOH&S Committee Responsibilities

- Participate in developing hazard awareness at the workplace;
- Promote participation of education and training;
- Monitor the workplace to ensure that effective safe work procedures are developed and implemented;
- Participate in accident/incident investigations of exposures to infectious diseases;
- Provide recommendations regarding tools, equipment and personal protective equipment;
- Participate in infection control program review.
Infection Prevention and Control Program

- Recognition
- Assessment
- Control
- Evaluate

- Biological Hazards Risk
- Determine Level of Priority
- Eliminate or Reduce Risk
- Monitor Effectiveness of Controls
Hazard Recognition

• Who can be harmed?
• How can they be harmed?
• What biological hazard can cause illness or disease?
Sources of Biological Hazards

- People
- Equipment
- Material
- Environment

Process

Recognition
Risk Assessment

• How likely is the hazard to cause harm?

• How severe could harm be?
Sources of Biological Hazards in the Workplace

- Sharing of equipment, clothing, supplies
- Contact with contaminated surfaces
- Blood and body fluid handling
- Food and waste handling
- Animal Handling/bites
## Risk Matrix

<table>
<thead>
<tr>
<th>Severity of Injury</th>
<th>Likelihood of Injury</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Moderate</td>
<td>High</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td>Minor</td>
<td>Medium</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
<tr>
<td></td>
<td>Low</td>
</tr>
</tbody>
</table>

**Assessment**
# Priority Rating

## Estimate likelihood:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>Illness or harm due to this hazard is very likely</td>
</tr>
<tr>
<td>Medium</td>
<td>50-50 chance that the hazard will cause illness or harm</td>
</tr>
<tr>
<td>Low</td>
<td>The hazard will probably not cause illness or harm</td>
</tr>
</tbody>
</table>

## Estimate severity:

<table>
<thead>
<tr>
<th>Rating</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Major</td>
<td>Hazard could cause fatal or serious illness, resulting in permanent or long term disability</td>
</tr>
<tr>
<td>Moderate</td>
<td>Hazard could cause moderate illness resulting in lost time</td>
</tr>
<tr>
<td>Minor</td>
<td>The hazard could only cause minor illness without lost time</td>
</tr>
</tbody>
</table>
Exposure Control Plan

- Assists employee with how to control exposure
- Keep it short!
- Apply principles of control hierarchy and make relevant to the way in which the job is done.
<table>
<thead>
<tr>
<th>Exposure Control Plan Hierarchy</th>
<th>Examples of controls for infectious diseases</th>
</tr>
</thead>
<tbody>
<tr>
<td>Elimination or Substitution</td>
<td>Hire experts to control/clean up biohazards</td>
</tr>
<tr>
<td></td>
<td>Avoid areas where animal vector present</td>
</tr>
<tr>
<td>Engineering</td>
<td>Tongs or other tools</td>
</tr>
<tr>
<td></td>
<td>SEMD</td>
</tr>
<tr>
<td></td>
<td>Ventilation (TB)</td>
</tr>
<tr>
<td></td>
<td>Automated washrooms</td>
</tr>
<tr>
<td></td>
<td>Autoclave</td>
</tr>
<tr>
<td>Administrative</td>
<td>Washing hands policy</td>
</tr>
<tr>
<td></td>
<td>PPE policy</td>
</tr>
<tr>
<td></td>
<td>Partner-up/contact security for difficult clients</td>
</tr>
<tr>
<td></td>
<td>Restraints for difficult clients</td>
</tr>
<tr>
<td></td>
<td>Boil water policy for wilderness travel</td>
</tr>
<tr>
<td></td>
<td>Bleach concentration for decontamination</td>
</tr>
<tr>
<td></td>
<td>Redesign of the work process</td>
</tr>
<tr>
<td>PPE</td>
<td>Gloves: rubber for liquids, leather for bites/scratches</td>
</tr>
<tr>
<td></td>
<td>Face shields or goggles</td>
</tr>
<tr>
<td></td>
<td>Respirators: dust masks, ½ face respirators</td>
</tr>
<tr>
<td></td>
<td>Protective suits, shields, knee-pads</td>
</tr>
</tbody>
</table>
Control Hazards

- Controls at the source
- Controls along the path
- Controls at the worker

- Engineering controls
- Administrative & work practices
- Personal protective equipment

Control
Routine Practices

- Hand Hygiene
  - Hand washing
  - Hand disinfectants e.g. alcohol hand rinse
- PPE
  - As needed (gloves, lab coats, eye protection, masks)
- Sharps use and biological waste disposal
- Cleaning, disinfection, sterilization
- Cleaning of laundry/soiled linen
Equipment & Environmental

Clean
Sanitized
Disinfected
Sterile

Control
Waste

- Microbial Laboratory Waste
- Sharps Waste
- Human Anatomical Waste
- Human Blood and Body Fluid
- Animal Waste
Additional Transmission Based Precautions

• In addition to routine practices, there are additional precautions for specific diseases - droplet, airborne, and contact.
• Additional precautions are based on the way disease is spread.
• Some diseases may be transmitted by more than one mechanism.
Precautions

• **Droplet Transmission:** Droplets are generally thought to travel short distances, e.g. less than 1 metre from source
  • **Precautions:** In addition to routine practices, masks & eye protection may be required.

• **Airborne Transmission:** carried in airborne currents; small particles and droplet nuclei
  • **Precautions:** In addition, to routine practices a fit tested N95 respirator may be required.
Precautions (continued)

• **Contact Transmission:** Direct indirect via hands not being washed between contaminated equipment, other inanimate objects in environment

• **Precautions:** In addition, to routine practices there may be a need for wearing of gloves and gowns and special attention to hand hygiene and environmental cleaning
Additional Controls

- Written work procedures (PEP, pre employment immunization requirements)
- Education and training
- Health promotion strategies
- Health surveillance/ monitoring where appropriate/required
- Risk communication strategy
- Emergency planning/ Business continuity
PIDAC – Best Practices

- Cleaning, disinfection and sterilization
- Environmental cleaning
- Infection control programs in Ontario
- Routine Practices & Additional Precautions
- Antibiotic Resistant Organisms
- Acute Respiratory Illness
- Clostridium Difficile
- STI case management
- Surveillance of HAIs
- Hand Hygiene
Public Health Ontario

Functions and Responsibilities
• Infection Prevention and Control
• Public Health Labs
• Emergency Management
• Environmental & Occupational Health
• Health Promotion & Injury Prevention
• Surveillance & Epidemiology

Control
Cleaning, Disinfection & Sterilization

PIDAC includes best practices for the following:

✓ Purchase, Safe Handling & Storage of Equipment and Products
✓ Reprocessing Procedures
✓ Methods of Sterilization
✓ Education & Training
Health Promotion Strategies - Immunization

• Immunization awareness programs will assist with the elimination, containment or control of infectious diseases.

• Occupational related travel considerations - vaccine preventable diseases still exist globally, can be imported to Canada through travel and can be transmitted to others who are not protected by immunization.
Immunization for Specific Workplace Populations

- Health Care/ EMS
- Lab
- Child Care/ Education
- Exposure to animals/materials from animals
- Humanitarian relief/overseas refugee work
- Institutions for Developmentally Challenged
- Correctional Facilities
- Services within Close Settings (e.g. marine)
- Essential Community Services
- Shelters for Homeless
- Military Personnel

Additional Controls
Control Evaluation

• Are the controls working as expected?
• Are workers carrying out the controls correctly?
• Have any new hazards been introduced?
<table>
<thead>
<tr>
<th>Disease Protocols/Guidelines</th>
<th>Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>Adenovirus conjunctivitis</td>
<td></td>
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<tr>
<td>Antibiotic resistant organisms</td>
<td></td>
</tr>
<tr>
<td>Blood-borne diseases</td>
<td></td>
</tr>
<tr>
<td>Cytomegalovirus</td>
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<tr>
<td>Enteric diseases</td>
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<tr>
<td>Group A streptococcal</td>
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<tr>
<td>Herpes simplex</td>
<td></td>
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<tr>
<td>Influenza</td>
<td></td>
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<tr>
<td>Measles</td>
<td></td>
</tr>
<tr>
<td>Meningococcal disease</td>
<td></td>
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<tr>
<td>Pertussis</td>
<td></td>
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<tr>
<td>Rubella</td>
<td></td>
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<tr>
<td>Scabies</td>
<td></td>
</tr>
<tr>
<td>Tuberculosis</td>
<td></td>
</tr>
<tr>
<td>Varicella/zoster</td>
<td></td>
</tr>
</tbody>
</table>
Resources

• Provincial Infectious Diseases Advisory Committee (PIDAC) Routine Practice and Additional Precaution guideline [www.publichealthontario.ca](http://www.publichealthontario.ca)
• Public Health Agency of Canada [www.publichealth.gc.ca](http://www.publichealth.gc.ca)
• World Health Organization [www.who.int/](http://www.who.int/)
Thank you!