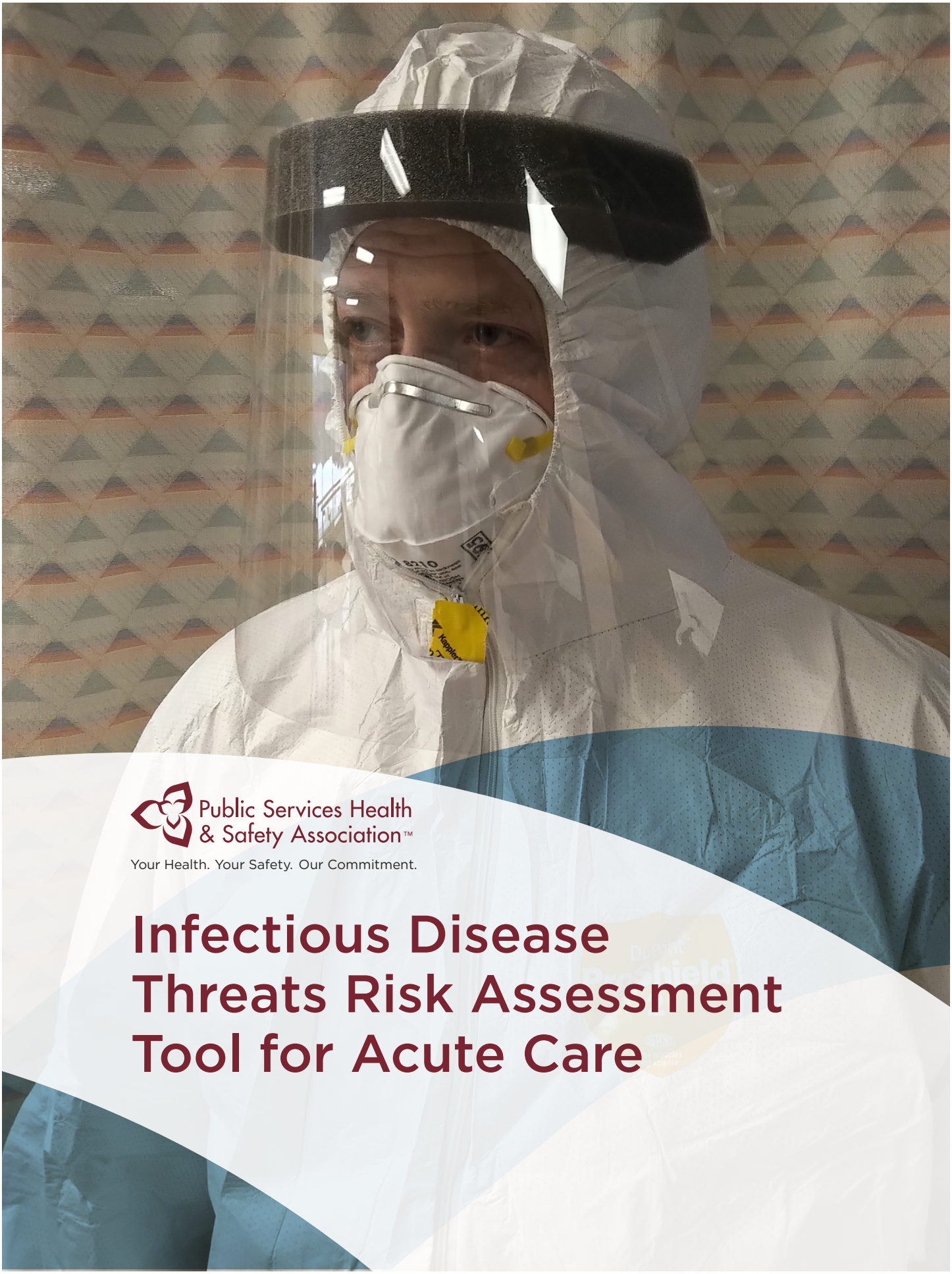

Public Services Health & Safety Association™

Your Health. Your Safety. Our Commitment.

Infectious Disease Threats Risk Assessment Tool for Acute Care

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ACRONYM LIST

ABHRs	Alcohol Based Hand Rubs
AIIR	Airborne Infection Isolation Room
CDC	Center for Disease Control
ED	Emergency Department
EVD	Ebola Virus Disease
EMS	Emergency Medical Services
EPA	Environmental Protection Agency
HCW	Health Care Worker
HSR	Health and Safety Representative
IDT	Infectious Disease Threat
IDT ORA	Infectious Disease Threat Organizational Risk Assessment
IPAC	Infection Prevention and Control
JHSC	Joint Health and Safety Committee
MOHLTC	Ministry of Health and Long Term Care
MOL	Ministry of Labour
MERS-CoV	Middle East Respiratory Syndrome Coronavirus
NIOSH	National Institute for Occupational Safety and Health
OH	Occupational Health
OHS	Occupational Health and Safety
OHSMS	Occupational Health and Safety Management System
OHSA	Occupational Health and Safety Act
ORA	Organizational Risk Assessment
PPE	Personal Protective Equipment
PP	Precautionary Principle
PSHSA	Public Services Health and Safety Association
PUI	Person Under Investigation
RA	Risk Assessment
SARS	Severe Acute Respiratory Syndrome Virus
SEGs	Similar Exposure Groups
SOPs	Safe Operating Procedures

INTRODUCTION

About PSHSA

Public Services Health & Safety Association (PSHSA) is a safe work association, partially funded and designated by the Ontario Ministry of Labour (MOL). PSHSA provides occupational health and safety (OHS) training and consulting services to various public sectors. These include healthcare, education, municipalities, public safety and First Nations communities.

As part of the Ontario Prevention System, PSHSA works with system partners, trade unions, and public sector organizations to create safe and healthy workplaces. To prevent and reduce workplace injuries and occupational diseases PSHSA promotes and helps organizations adopt best practices and meet legislative requirements.

In pursuit of this shared goal, PSHSA recognizes the importance of employers and employees working together collaboratively to identify actual and potential hazards, assess risks, and eliminate, substitute, or control hazards to manage those risks.

Infectious Disease Threats (IDTs) in Healthcare

Globalization, together with risk factors such as travel, population density, displacement, and climate change, have increased the risk of infectious disease threats (IDTs) across the world.

Over the last decade, the health system in Ontario has taken significant measures to mitigate this risk and enhance the province's readiness to respond to a wide range of IDTs, such as Ebola virus disease (EVD).

Other significant IDTs that the health system in Ontario has responded to include Severe Acute Respiratory Syndrome virus (SARS), Middle East respiratory syndrome coronavirus (MERS-CoV), influenza A (H7N9) and pandemic influenza.

In an increasingly complex and challenging environment, hospitals and healthcare organizations are tasked with the frontline role of sustaining readiness and response capabilities to these types of threats. Without the focus and commitment of health care organizations, workers and patients would no doubt be at an increased risk of exposure.

As such, it is essential that hospitals and healthcare organizations continue to maintain and build capacity to manage and adapt to IDTs, now and into the future. Risk management, which includes risk assessment (RA), is a vital component of every organization's ready and resiliency planning.

Building a Ready and Resilient Health System

In July 2016, the Ontario Ministry of Health and Long-Term Care (MOHLTC) released a plan to build a more ready and resilient health system to respond to future IDTs. The plan was called, "Building a Ready and Resilient Health System: Ebola Step-Down and Provincial Baseline Requirements for Infectious Disease Threats" and can be found at the following website address: www.health.gov.on.ca/en/pro/programs/emb/resilience.aspx.

Within the plan an infectious disease threat (IDT) is defined as an infectious disease of public health importance that may have the potential to: 1) spread in Ontario, nationally or internationally and cause significant illness; and 2) significantly impact the provincial health system. Characteristics include: a) has the potential to cause significant illness; b) has the potential to pose a risk to health care workers and impact vulnerable populations; c) may be difficult to prevent; and d) may be difficult to treat.

Coordinated efforts to avoid infectious disease outbreaks that threaten the health of populations are of top priority. Therefore, the aim of the plan is to help enable the systems, structures, skills and culture to maintain readiness and to protect health care workers (HCWs) and all Ontarians. To continue to move organizations in that direction, the plan reinforces baseline requirements for maintaining an enhanced level of health system readiness for significant IDTs in Ontario.

Phase one of the MOHLTC's provincial baseline requirements includes the completion of an annual organizational risk assessment (ORA). Baseline requirements are not meant to replace the need for additional guidance to manage specific IDTs. To enhance activities beyond this baseline, organizations are still expected to reference and follow OHS legislation and applicable regulations, guidance and provincial direction for specific IDTs, if needed.

Development of the Tool

There is an expectation under the Ministry's plan that healthcare organizations conduct an annual IDT ORA to assess the likelihood and impact of potential risks, as well as to determine whether additional controls are required to protect HCWs and all Ontarians. A standard ORA template unfortunately does not exist to assist health care organizations on how to prepare and comply with this MOHLTC requirement.

PSHSA in collaboration with the MOHLTC established a multi-stakeholder expert advisory / working group to support the development of a practical and scalable tool for the acute care sector. The development of the IDT ORA tool and process included a diverse stakeholder contribution from system experts and practitioners in the fields of OHS, infection prevention and control (IPAC), and emergency preparedness and response planning. In addition to the expert guidance from these stakeholders, a literature review and jurisdictional scan were completed to inform the development of the risk assessment tool.

Consensus was reached that the tool and its recommended application be informed by best available evidence, as well as industry best practices, standards, and any legal requirements. In addition, the precautionary principle (PP) will apply where there is a need to err on the side of caution because of scientific uncertainty. Furthermore, where there is an IDT, "safety comes first, and reasonable efforts to reduce risk need not await scientific proof"(Campbell, 2006).

The ORA is not meant to provide every possible control measure nor duplicate the extensive knowledge, resources, and tools related to routine practices and well established IPAC program components. Likewise, the ORA is not meant to replace your pandemic plan or specific MOHLTC directives issued in the event of an IDT in the province. It is hoped the tool, however, will align with hospital's current occupational health and safety management system (OHSMS) components, the work of the Joint Health and Safety Committees (JHSCs), and go beyond pandemic planning to fill a ready and resilience gap that likely exists in most Ontario hospitals related to IDTs.

Acknowledgement

PSHSA acknowledges and appreciates the time and expertise of the many subject matter experts from the system, labour unions, hospital association, and frontline healthcare professionals (e.g., OHS, Occupational Health (OH), IPAC, Emergency Management, Clinical) that participated in the guidance and development of this tool.

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PART 1 – KEY CONSIDERATIONS

The section that follows provides more detail on the context of how an IDT ORA relates and fits within a mature health and safety program.

OHSA and Due Diligence

The Occupational Health and Safety Act (OHSA) provides the legal framework to ensure that Ontario's workplaces are safe and healthy. Employers and other workplace parties are obligated to comply with all of the requirements of the OHSA and its regulations. Employers seeking guidance on specific issues related to legislation should seek appropriate legal counsel and / or consult people with expertise in OHS.

In addition to specific obligations, employers and supervisors also have a general duty they must comply with. The general duty clause, under 25.(2)(h) and 27.(2)(c) of the OHSA states that employers and supervisors must take every precaution reasonable in the circumstances to protect workers from hazards in their workplaces. This is more than a legal defence, in the absence of government orders and prosecutions, it should be seen as a standard against which employers and supervisors can judge the quality of their OHS programs (Edwards & Humphrey, 2000).

Hazard and Risk Assessments (RAs)

Employers and supervisors are expected to systematically identify and foresee actual and potential hazards present in their workplace. Hazards could be any thing, situation, activity, task, process, operation, etc. that has the potential to cause harm. In order to foresee the existence of hazards related to IDTs, employers and supervisors must use their knowledge of the workplace and the information available to them about those types of workplace hazards (Edwards & Humphrey, 2000).

Foreseeability is not whether a reasonable person would have expected an accident or exposure to occur in a particular way, but rather whether a reasonable person would have recognized there was a hazard that needed to be addressed (Edwards & Humphrey, 2000). It should go without saying, once foreseeable hazards have been identified, employers and supervisors need to assess the risk posed to workers from these hazards.

As it relates to IDTs, after employers and supervisors have identified and categorized hazards present in their workplaces they must then assess the nature and level of risk for exposure posed to workers from these hazards. RAs in this context will help

to provide workplace parties with the information about the actual or potential IDT hazards in a workplace so that appropriate control measures can be identified based on risk.

Note that a gap analysis is not a RA. A RA looks at hazards and risks, while a gap analysis looks at performance — A gap analysis, which compliments a RA, is designed to identify deficiencies (e.g., within a program / management system), provide recommendations for improvement, and appropriately control the risks. A gap analysis can come in handy when you are monitoring compliance and evaluating if all necessary measures and procedures are being carried through as planned.

The Canadian Centre for Occupational Health and Safety (CCOHS) describes the process and components of a RA as:

- Identifying and categorizing hazards that have the potential to cause harm (hazard identification);
- Analyzing and evaluating the risks associated with hazards (risk analysis and risk evaluation); and
- Determining appropriate ways to eliminate hazards, or control the risk with hazards that cannot be eliminated (risk control).

This description for the most part is based on the terminology outlined in the Canadian Standards Association (CSA) Z1002 Standard "Occupational Health and Safety - Hazard Identification and Elimination and Risk assessment and Control. Their framework is similar with the process and model (see Figure 1) outlined in the International Organization for Standards (ISO). 2nd Ed. (2009). ISO 31000:2009: Risk Management – Principles and Guidelines.

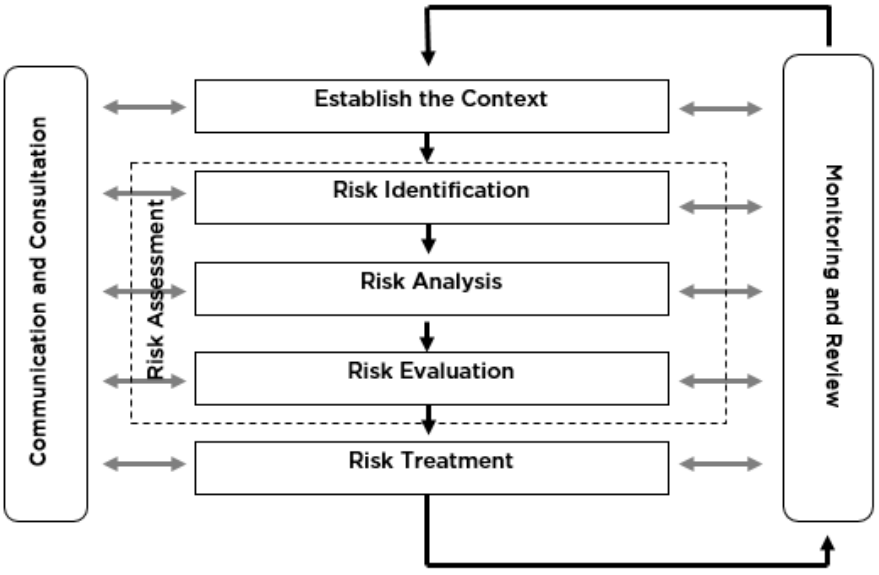


Figure 1. ISO 31000:2009: Overview of Risk Management.

Note that organizations often interchange and have different meanings associated with the terms RA and risk management. CCOHS and ISO include risk control in their RA process, but CSA does not. Regardless of terminology adopted, the scope of this project, as will be shown shortly in the section below, is to develop a tool that includes all of risk management.

Lastly, it should be pointed out that there is no one sanctioned approach to assessing biological risk and rigid classification is not possible. Often it is appealing for people to consider RA for infectious agents in the same way as chemical and radiological materials. Infectious agents, however, are intrinsically different from these materials, which affect how their risks are assessed.

Good to Know

Hazard - is a potential source of harm (i.e., infectious disease). Hazards arise from people, equipment, material, environment, and processes.

Risk - is a combination of likelihood of harm / exposure occurring and severity of harm / exposure. Risk arises from hazards.

Exposure - is the reasonably anticipated harmful contact with blood or other potentially infectious / biohazardous material that may result from the performance of a worker's duties.

Harmful Contact (Bloodborne Pathogens) – is the situation where an injury penetrates through intact skin (needle stick injury), or a mucous membrane (eyes, nose or mouth), or non-intact skin (cut, rash or sore) and that contact exposes a worker to blood or other potentially infectious material.

Risk Assessment - is the process of identifying hazards and risk of exposure, as well as analyzing and evaluating the risk of exposure to determine whether additional precautions are needed to control these risks.

Risk Management – is the process of completing a risk assessment plus the application of risk control. Good risk management includes communication and consultation, as well as monitoring and review.

Organizational Risk Assessments (ORA)

Organizational risk assessments (ORAs) mean different things to different people. The varying approaches and frameworks used to develop and conduct RAs has a lot to do with the context in which they are developed and how they were intended to be used. Our review of ORAs completed in the acute health care sector identified that RAs at the organizational level are often not well understood, comprehensive, completed by a qualified professional, or fully implemented. It is hoped that our IDT ORA tool and supporting guide will help improve that situation.

For better outcomes, employers first need to take the time to understand the purpose and scope behind the MOHLTC's phase 1 annual baseline requirements for ORA.

The MOHLTC (2016) describes an ORA as the following:

- An ORA is an evaluation done by an organization in order to identify which risks (internal and external) the organization may face, the likelihood of facing those risks and what the impact would be. This process also includes determining whether the level of risk is acceptable or whether additional controls are required;
- Health care organizations must conduct an ORA to assess the risk of IDT exposure and consider potential transmission for all individuals who use the organization's facilities or vehicles. Organizations must undertake ORAs in consultation with the Joint Health and Safety Committee (JHSC), Health and Safety Representatives (HSR), OHS team and IPAC team, where these teams exist; and
- Organizations must conduct an ORA on an annual basis and must re-evaluate with an action plan when appropriate, such as for a specific IDT. This assessment must evaluate the effectiveness of present control measures and the implementation of the hierarchy of controls to prevent the spread of an IDT.

Precautionary Principle (PP)

The Ontario Health Care Health and Safety Committee Under Section 21 of the Occupational Health and Safety Act defines precautionary principle (PP) in their Guidance Note for Workplace Parties # 5 titled: "Application of Hazard Control Principles, including the Precautionary Principle to Infectious Agents (October 2011)".

They state within the guide that the PP is an approach for protecting workers in circumstances of scientific uncertainty, reflecting the need to take prudent action in the face of potentially serious hazards without having to await complete scientific proof that a course of action is necessary.

This definition takes into consideration the Honourable Mr. Justice Archie Campbell's recommendations concerning the PP as expressed in his final report (2006) on Severe Acute Respiratory Syndrome (SARS), entitled "Spring of Fear".

Since the report was published, it is widely accepted that the PP should apply in situations where there is no definitive scientific evidence regarding the risk posed by a hazard. Within this content, the PP serves to guide workplace parties in the prudent selection of controls measures related to subject hazards.

Hierarchy of Controls

The approach to the selection of controls for hazards of IDTs should be guided by the hierarchy of controls. The hierarchy of controls is a strategy for the application of hazard control, which has a long standing tradition in the field of OHS. The model is a hierarchy because there is a preferential order and selection of controls.

Workers exposure to workplace hazards should be eliminated where possible. When this is not an option workplace efforts should follow the hierarchy of controls—control at the source, along the path and finally at the worker (see figure 2). Controls at the workers, including personal protective equipment should always be a last resort.

The categories and order of applying hazard control measures that are most reliable and effective are the following: (1) elimination; (2) substitution; (3) engineering; (4) administrative (including drills, training) and work practices; and (5) personal protective equipment (PPE). Elimination and substitution is not always an option when dealing with patients and infectious diseases.

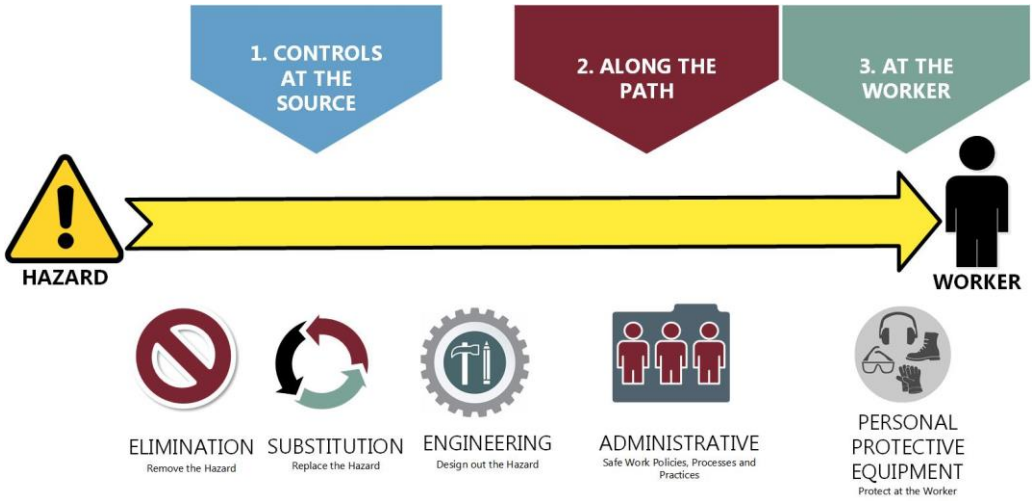


Figure 2. Model of the hierarchy of controls applied at the source, along the path, and at the worker.

Chain of Transmission

For infection and illness to occur in a new host, there are six (6) necessary and sufficient conditions:

1. The agent must be pathogenic.
2. There must be a reservoir of sufficient number for the organism to live and reproduce.
3. The agent must be able to escape from the reservoir.
4. The organism must be able to move through the environment (e.g., air-borne, contact, carriers such as mosquitoes or ticks).
5. There must be a portal of entry for the new host (e.g., broken skin, mucous membrane, inhalation, blood transfer); and
6. The new host must be susceptible to the agent.

The illustration in Figure 3 below provides a visualization of this Chain of Transmission model.

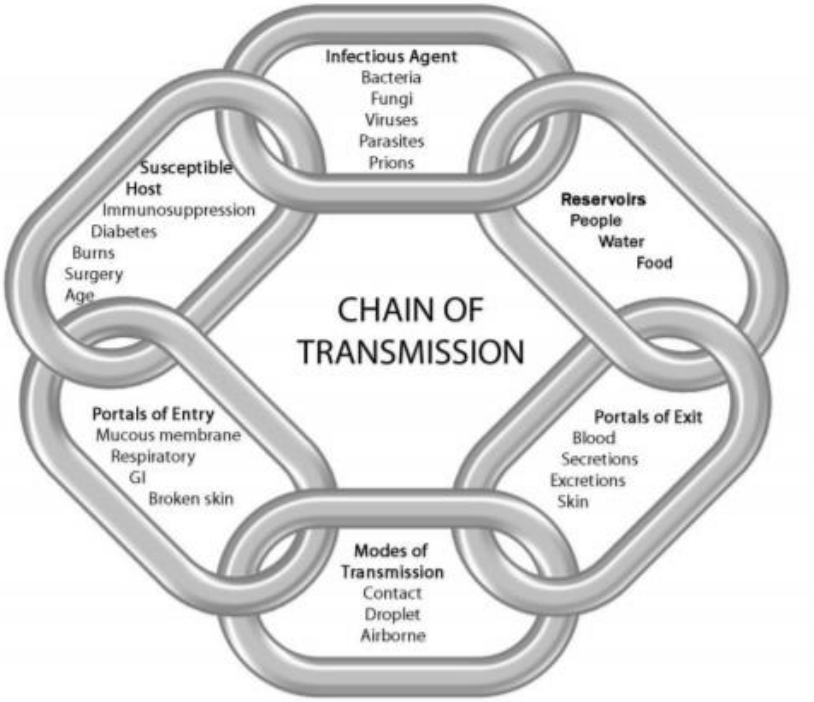


Figure 3. The Chain of Transmission. *Source:* Public Health Ontario. Provincial Infectious Diseases Advisory Committee (PIDAC). Routine Practices and Additional Precautions In All Health Care Settings, 3rd Ed. (2012).

The key take away from the model is that we must break the chain of Transmission as part of the control strategy when completing an IDT ORA (see figure 4).

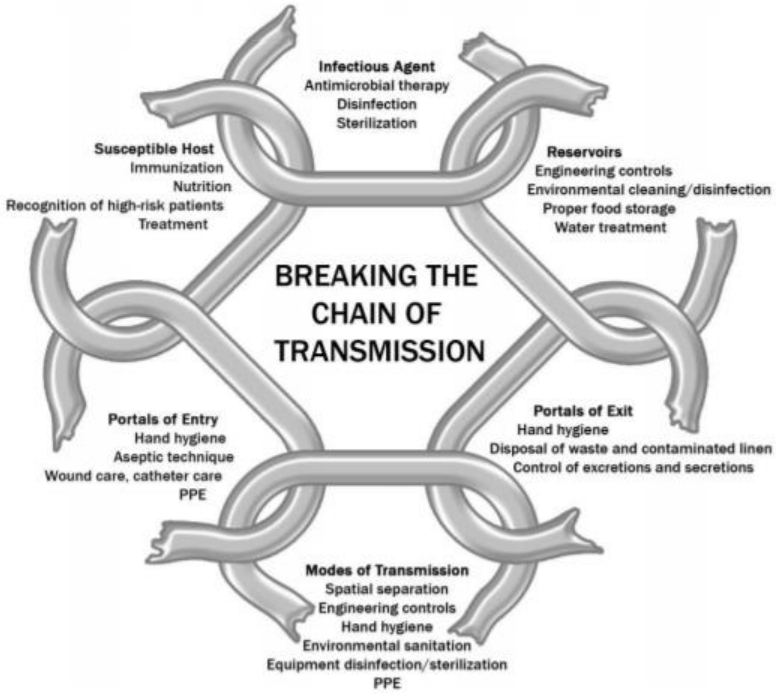


Figure 4. Breaking the Chain of Transmission. *Source:* Public Health Ontario. Provincial Infectious Diseases Advisory Committee (PIDAC). Routine Practices and Additional Precautions In All Health Care Settings, 3rd Ed. (2012).

Worker Involvement

RAs are often completed by management or by technical staff within support departments. While it is important that management plays a leadership role in OHS and technical staff are involved in the RA process, they may not always have a complete picture of the organization's hazards and risks of exposure.

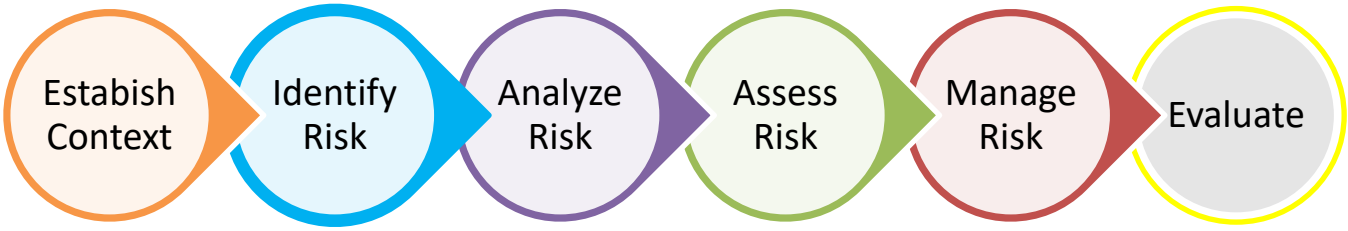
To ensure the risk assessment is comprehensive it is important that workers and union representatives (if any) participate, review, and / or audit the IDT ORA. A copy of the IDT ORA must be provided to the JHSC.

Employers should view the JHSCs or HSRs (if any) as valuable resources and consult them regularly on the development of all written measures, procedures and training (O. Reg. 67/93 - Health Care and Residential Facilities Regulation). An *annual review* of measures and procedures is required unless a more frequent review is requested by the JHSC or there is a change in circumstances that may affect the safety of workers.

As part of the process the employer should also involve and consult other key stakeholders. This broader representation will help increase the effectiveness of desired outcomes.

PART 2 – CONDUCTING AN INFECTIOUS DISEASE THREAT ORGANIZATIONAL RISK ASSESSMENT (IDT ORA)

The following diagram illustrates six (6) steps to completing an IDT ORA:



Although the terminology employed in this process does not align completely with any one risk assessment standard, it does contain a detailed risk management framework to help:

- establish the context;
- identify and categorize risks of exposure;
- analyze risk factors and assumptions;
- estimate and evaluate risks to set priorities;
- determine appropriate standards;
- identify control measures;
- implement an action plan; and
- evaluate the effectiveness of controls.

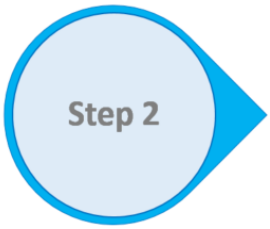
Each of these are important and necessary steps of risk management.

Step 1: Establish Context

Before getting started it is advisable that a review be conducted to ensure a good understanding of the workplace and any systemic challenges or barriers that may exit. Key factors to consider include, but are not limited to the following:

- type (screening, testing, treatment) of hospital;
- location (rural versus urban), geographical area, and population size the hospital serves;
- patient characteristics;
- facility layout and organizational structure;
- patient/visitor entry and exit points;
- location and nature of the work of health care services provided;
- values, beliefs, and strategic plan;

- staff safety culture and engagement;
- staff skill set and competencies;
- reports of existing / other exposures / illnesses and points of exposure;
- policies, procedures, processes, training, and systems to manage infectious diseases;
- OHS management system;
- previous risk assessments completed; and
- ongoing monitoring of infectious disease threats in the community and beyond.



Step 2: Identify Risks

Next, from an organizational perspective you need to identify hazards and risks of exposure to IDT in consultation with the JHSC / HSR. This task requires, employers to proactively identify, list and categorize hazards, or system challenges or process that if not addressed can contribute to exposures to IDTs.

Complete this step assuming that an IDT already exists and is either at your door step or is in the building. Additionally, think of a worst case scenario with an infectious disease, such as Severe Acute Respiratory Syndrome (SARS), Ebola Virus Disease (EVD), or a threat of an unknown novel pathogen. Ask yourself, would your organization be prepared and resilient enough to respond effectively to such a threat? Were control measures effective at preventing any significant exposures leading to harm.

To help you get started, we identified IDT type hazards and processes that can lead to exposure based on critical activities or tasks of similar exposure groups (SEGs) working within similar functional areas of a hospital (with the exception of PPE). We also identified potential risks of exposure based on potential modes of transmission (e.g., contact, droplet, / airborne).

Good to Know

Similar Exposure Groups (SEGs)

SEGs are groups of workers, volunteers, etc. having the same general exposure profile for the agent(s) being studied because of the similarity and frequency of the tasks they perform, the materials being used, process being run, and controls in place (Mulhausen & Damiano, 1998).

Grouping workers into a SEG avoids having to assess every position individually. If the members of a large work group do a similar job and are exposed to similar risks, data from a representative sample of those workers can be used to predict the exposure of the whole group.

A comprehensive examination by the expert advisory / working group of existing practices, literature, standards, guidelines, and best practices identified twelve (12) key hazard domains / areas of concern. Organizations, however, can identify, list, and characterize hazards in any manner that makes sense to them.

The twelve (12) key hazard domains / areas of concern are:

1. Personal Protective Equipment (PPE);
2. Transport Patients;
3. Points of Entry and Common Areas;
4. Emergency Department (ED);
5. Clinical Diagnostic and Treatment;
6. Ambulatory Care;
7. Laboratory;
8. Environmental Cleaning and Disinfecting;
9. Equipment Reprocessing;
10. Linen Management;
11. Waste Management; and
12. Handling Human Remains

We understand that the PPE hazard domain / area of concern could and should be considered within each of the other hazard domains / areas of concern. We chose to pull this out and highlight at the top our list because of its importance and significance as a last line of defence. If PPE are not properly selected, used, and care for, the risk of exposure can be high. In this regard, PPE is considered a hazard.

Instead of identifying sets of PPE required for every IDT imaginable, which can be confusing and difficult to apply, try utilizing a control banding approach (e.g., levels 1 to 3; see figure 5), where IDTs and tasks are grouped together based on health hazard/risks, exposure potentials, and a set of controls chosen to help prevent harm to workers. The final selection of PPE may need to be modified / refined based on directives and risk-based considerations.

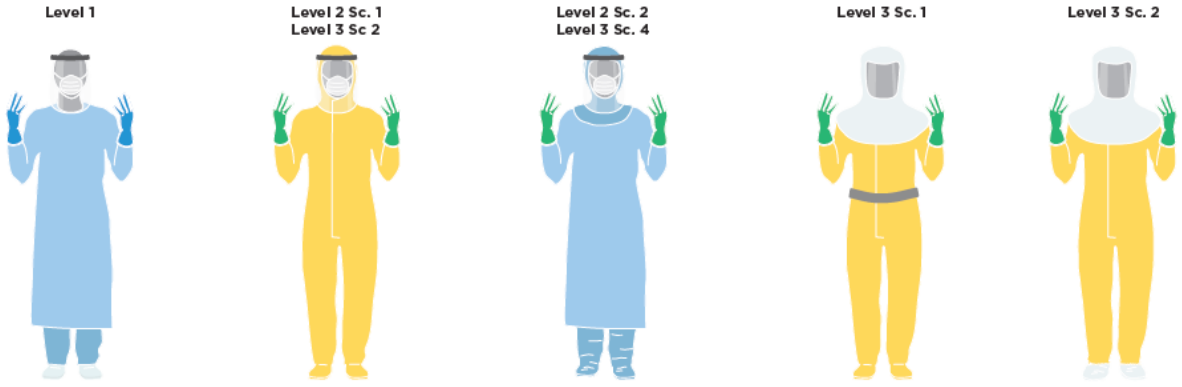


Figure 5. Example control banding approach to selecting PPE for IDTs.

Hospitals are encouraged to assess their workplace and customize the tool for their specific set of circumstances. This will likely require organizations to add additional hazard domains / areas of concern, critical activities / tasks, other potentially exposed people or job positions, as well the corresponding risks of exposure based on potential modes of transmission.

Step 3: Analyze Risks

Before you can assess the risks of exposure, you need to have a good understanding of the current controls in place and what risk factors are at play. Risk analysis will proceed with varying degrees of detail depending on the scope of the risk assessment, the complexity of the hazard or hazardous situations, the type(s) of risk reduction strategies selected, and the information, data, and resources available.

Begin this step by listing all existing controls for each potential risk of exposure and categorize them based on the hierarchy of controls (described above under the 'Key Considerations' section). When outlining existing controls it is important to audit and state whether controls are being consistently followed and how effective they are at mitigating risk.

When considering risk factors we must consider the biological agent, host, and the environment (see Figure 6). The interrelationships between them must be considered within the context of external forces affecting them. Keeping in mind the interactions among these three variables does not necessarily result in disease or damage.

Risk factors need to be understood to properly estimate the risk of exposure to an IDT. Figure 6 provides a model with lots of examples of internal and external organizational risk factors (Johnson, 2001). CSA standard Z1002-12 Hazard Identification and Elimination and Risk Assessment and Control standard also provides other considerations and sources of information when analyzing risk.

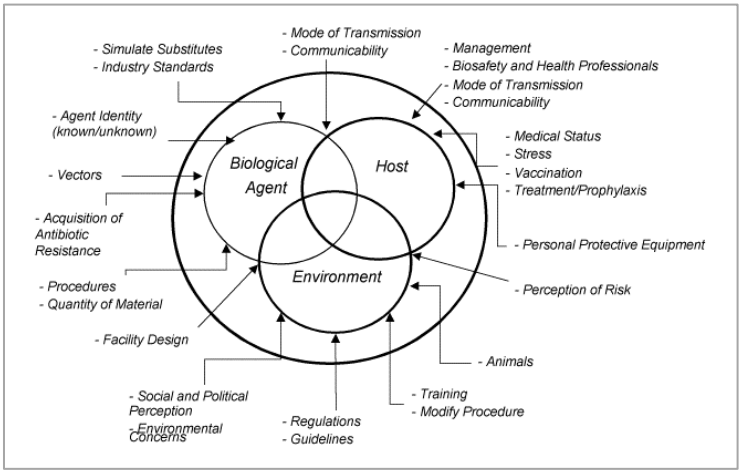


Figure 6. Risk assessment factors associated with the biological agent, host, and the environment. *Source:* The American Biological Safety Association. Understanding, Assessing, and Communicating Topics Related to Risk in Biomedical Research Facilities, Johnson, (2001).

Another approach to analyzing risk factors is to consider risk factors based on the likelihood and consequence of infection. According to Australian Master OHS and Environmental Guide (2007) the *likelihood* of a person acquiring an infectious disease at a workplace may be affected by the following risk factors:

Risk Factors	Examples
Exposure	The frequency and duration of exposure, the number of people who are exposed, and whether the exposure is routine, occasional or unpredictable.
Workplace	Design features at the workplace that increase risk such as surfaces that cannot be readily cleaned; means to lock down the facility; limiting entry / exit point; and isolation rooms or negative pressure rooms.
Task	Contact with blood and body fluids (e.g. intubations).
Worker	Immunization and skills and experience.
Environmental	Whether workers will be required to visit locations where ID are endemic.
Infectious Disease	The ability of the micro-organism to spread readily.
Effectiveness of Existing Controls	Whether existing controls adequately prevent and manage the risk or whether more could be done.

Table 1. Risk factors that affect the likelihood of a person acquiring an infectious disease at a workplace. *Source:* Australian Master OHS and Environmental Guide (2007).

Likewise, the *consequence* of a person acquiring an infectious disease at a workplace may be varied:

Consequence	Examples
Acute Health Effects	These are characteristic initial signs and symptoms of an ID and are usually short-lived. Acute health effects can be mild (e.g., the common cold) or more serious (e.g. measles).
Chronic Health Effects / Conditions	These are the ongoing signs and symptoms of illness that are caused by some ID that are capable of persisting in the body after the initial infection. For example, chronic Q fever infection can cause health problems such as endocarditis (inflammation of the lining of the heart cavity and valves).
Adverse Pregnancy Outcomes	This can include increased maternal illness, miscarriage, stillbirth, and birth defects.
Psychological Health Effects	Exposure to infection risks can cause considerable anxiety even when the exposure does not result in an infection, e.g., following a needle stick injury exposure to SARS.
Spread of Disease	This is particular concern where there are vulnerable groups at the workplace, such as patients and infants.
Cost	Occupational infectious diseases can have a significant economic impact on a business increased absenteeism, disruption of services, litigation and negative publicity.

Table 2. The consequences of a person acquiring an infectious disease at a workplace. *Source:* Australian Master OHS and Environmental Guide (2007).

Step 4: Assess Risks

After you have analyzed the risk of exposure, you need to estimate and evaluate the level of risk. To estimate the level of risk you first need to understand that risk is a product of probability (likelihood) and consequence (severity).

The following paragraphs illustrates how a risk assessment matrix can be utilized to estimate risk based on these two parameters and then use that information to evaluate its significance. Its significance level (high, medium, low) is important because it allows us to set priorities and informs our subsequent decision making around future control measures.

Start Step 4 by reviewing the sample 'Risk Assessment Matrix' below. The sample risk matrix is based on a semi-quantitative 5 x 5 likelihood versus severity rating scale. The risk rating scale for both likelihood and severity provide a qualitative criteria scale (e.g., highly unlikely to very likely) to help determine corresponding levels. (NOTE: If a risk management program with a risk matrix and rating scale are already in use within a facility, it can be used in place of the one provided).

To determine the overall level of risk for each hazard in the tool, you will need to plot the output of the likelihood risk rating scale (out of 5) against the output of the severity risk rating scale (out of 5). For instance, a likelihood rating of four (4; likely) plotted against a severity rating of four (4; severe) has an overall risk rating of eight (8; high).

Risk Assessment Matrix

	Severity Rating				
Likelihood Rating	**Negligible (1)**	**Minor (2)**	**Moderate (3)**	**Severe (4)**	**Critical (5)**
Very likely (5)	**Medium (6)**	**Medium (7)**	**High (8)**	**High (9)**	**High (10)**
Likely (4)	**Medium (5)**	**Medium (6)**	**Medium (7)**	**High (8)**	**High (8)**
Possible (3)	**Low (4)**	**Medium (5)**	**Medium (6)**	**Medium (7)**	**High (8)**
Unlikely (2)	**Low (3)**	**Low (4)**	**Medium (5)**	**Medium (6)**	**Medium (7)**
Highly Unlikely (1)	**Low (2)**	**Low (3)**	**Low (4)**	**Medium (5)**	**Medium (6)**

This overall estimate of risk exposure (out of a total of 10), will give you a semi-quantitative description of risk (8; high).

Using this output from the matrix, you can apply the risk estimate to the table below to evaluate its significance. Be sure to document the significance level (e.g., High-8) in the applicable column (i.e., Risk Significance Level) of the IDT ORA tool. By sorting the significance level of each risk of exposure in the tool, it will help you to set priorities and inform decision making around future control measures.

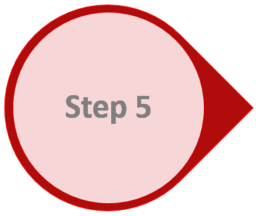
Risk Significance Level – Priority Rating Scale
HIGH - Intolerable Risk (8 – 10) Immediate action required to reduce risk.
MEDIUM - Undesirable Risk (5 -7) Efforts must be made to monitor and reduce risk further.
LOW - Tolerable Risk (2 -4) Monitor and reduce risk further where practical.

The challenge of risk assessments lies in those cases where incomplete information on risk factors exists. In a lot of cases, the analyst is faced with variability and uncertainty throughout the iterative risk assessment process. In the absence of robust scientific evidence, uncertainty must be resolved through the use of expert judgement. This method requires and encourages collaboration with multiple experts, which may lead to differences of opinion, but allows all relevant information to be considered.

In lieu of additional data and knowledge, risk assessors must ensure that any errors in risk estimation are in the direction of public and employee health protection. A conservative approach is generally advisable when insufficient information forces subjective judgement. This may lead to risk estimates that are overly cautious, but this outcome is appropriate and consistent with the PP.

To help inform and document the uncertainty level of the risk estimate, we have created a qualitative rating for the 'Scientific Evidence Level'. While completing your IDT ORA use the following table below to describe (i.e., H, M, L) and record the strength and variability of your risk estimate. As more information comes in and the strength of scientific evidence improves the corresponding uncertainty level can be revised.

Scientific Evidence Level – Uncertainty Rating Scale
HIGH Very little scientific evidence was used to determine risk rating.
MEDIUM Evidence was used to determine risk rating, but not robust.
LOW Very strong evidence was used to determine risk rating.



Step 5: Manage Risks

Managing the risks of exposure require a number of important steps. First, the individual or team completing the ORA must determine the appropriate standard(s) for all risks to which they want to control. Standards are criterion to which hazards may be judged or decided. Probably the best way to describe a standard is to provide a number of examples.

During the Ebola response planning there was a lot of uncertainty amongst hospitals around the proper selection of personal protective equipment (PPE) and the donning and doffing sequence that should be utilized. To assist with this matter, both PSHSA and the Centre for Disease Control (CDC) created donning and doffing checklists based on various PPE assembly. A lot of thought and consideration went into these documents. As such, these checklists are considered best practice standards. The specific requirements (e.g., double gloves; single use, disposable, impermeable coveralls; NIOSH-certified, fit-tested, disposable N95 respirator) detailed within them are also considered standards as well.

While neither checklists will be entirely suitable for all organizations to adopt without a certain level of customization, they provided a standard and starting point in which further decision making could be judged or decided. In other words, standards are considered best practices, but are not necessary absolute and have to be considered carefully. For instance, during the doffing process, CDC recommended frequent disinfection of gloved hands using Alcohol Based Hand Rubs (ABHRs), but it still remains unclear today if this practice actually eliminates or introduces additional risks of exposure to frontline HCWs. Likewise, there were compatibility issues with certain brands of goggles and face shields that had to be sorted out at the organizational / department level.

Second, unless there is a specific legislative requirement or Ministry directive, it will be incumbent upon all organizations to sort through applicable standards and

decide upon the most appropriate control measures for their specific set of circumstances and risks. Since certain controls will be relevant to your workplace and others will not; you will need to carefully consider and select controls based on your specific workplace. At the end of day, all hazards and their corresponding risks require reliable and effective control measures. For a more in depth decision on what constitutes an effective control measure and how to go about applying controls, please refer to the above section titled, "Hierarchy of Controls".

Third, after we have identified the control measures to mitigate risk to an acceptable level, we have to assign people responsible and track the implementation of those controls. It is recommended that the action plan be finalized with input from the JHSC and other key stakeholders. This will assist with the task of assigning people responsible for implementation, but also to ensure that the ORA has undergone a proper consultation process to ensure transparency, quality, and buy-in. As required by the OHSA, the final report will need to be shared with the JHSC / HSR (if any).

To assist with the task of action planning, we have created columns in our IDT ORA tool for documenting the "Person Assigned", the "Target Date" for completion and the "Status" of implementation. The "Person Assigned" needs to have both the responsibility and authority to carry out the task(s) placed upon them. The "Target Date" should be set based on a reasonable timeframe that considers all the factors involved (e.g., level of risk, complexity of task, resources and budget available, etc.). The "Status" column allows the reviewer to know where the action item(s) currently stands. We recommend the following nomenclature for the status (Not started (NS), In Progress (IP), Completed (C)) followed by the percentage (e.g., IP – 50%) or the date completed (e.g., C – 06/26/18).

Step 6: Evaluate

The final step in the IDT ORA process is to evaluate the effectiveness of the controls put in place. Shortly after implementing controls, efforts should be made to reassess the hazard domains and the risks of exposure with the additional controls in place.

This is required to determine if the hazard and their corresponding risks of exposure have either been eliminated or reduced to a more tolerable level (e.g., high to low). It is expected that effective controls will result in a decrease in occupational injuries, illnesses and diseases or in the case of IDTs hopefully prevent their occurrence out right.

Organizations should evaluate the effectiveness of controls by verifying that:

- The controls are in place and working as expected to eliminate or adequately control the hazards;

- The controls have been communicated to effected employees;
- Employees are using the controls properly;
- The controls have not introduced any new hazards; and
- Information on the controls have been included in necessary program documents (e.g., policy, procedures, records) and training.

After controls have been verified for effectiveness, place a "V" and the date verified in the "Status" column (i.e., V- 12/02/18).

Gathering ongoing information about risk management activities should be encourage on a regular basis to help support the determination that controls are operating as planned and achieving desired outcomes. They can also help identify areas in need of improvement.

PART 3 – INFECTIOUS DISEASE THREAT ORGANIZATIONAL RISK ASSESSMENT TOOL

In July 2016, the Ontario Ministry of Health and Long-Term Care (MOHLTC) released a plan to build a more ready and resilient health system to respond to future infectious disease threats (IDTs). The aim of the plan is to help enable the systems, structures, skills and culture to maintain readiness and to protect health care workers (HCWs) and all Ontarians.

Phase one of the MOHLTC's provincial baseline requirements includes the completion of an annual organizational risk assessment (ORA). The ORA is not meant to duplicate the extensive knowledge, resources, and tools related to routine practices, pandemic planning, and well established IPAC program components. Likewise, the ORA is not meant to replace specific MOHLTC directives issued in the event of an IDT in the province.

Unfortunately, a standard IDT ORA template does not exist to assist health care organizations on how to comply with this requirement and future MOHLTC accountability requirements. PSHSA in collaboration with the MOHLTC established a multi-stakeholder expert advisory / working group to support the development of a practical and scalable tool for the acute care sector.

It is hoped the sample IDT ORA Tool developed by the expert advisory / working group will align with hospital's current occupational health and safety management system (OHSMS) components and *go beyond* pandemic planning to fill a ready and resilience gap that exists in a lot of Ontario hospitals.

The IDT ORA tool follows a six (6) step process outlined in Part 2 and is divided into two worksheets:

- Risk Identification and Analysis Worksheet; and
- Risk Assessment and Management Worksheet

Use of the tool is not mandatory. For organizations that elect to use the tool for their annual IDT ORA, they should refer to the proceeding section "Completing an Infectious Disease Threat Organizational Risk Assessment (IDT ORA)" for guidance on its proper completion. It is expected that hospitals will customize the tool to reflect their workplace and their corresponding hazards and risks. A fillable word version of the tool, consolidated into one worksheet, can be found on the PSHSA website.

1.0 RISK IDENTIFICATION AND ANALYSIS WORKSHEET

Completed by: _____

Signature: _____

Date: _____

IDENTIFY RISK				ANALYZE RISK	
Critical Activity / Tasks	**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
1. Personal Protective Equipment (PPE)					
1.1.	Wearing and Removing PPE	All	Contact	Direct contact (with infectious blood or body fluids) to unprotected skin		
			Contact	Indirect contact (with objects that have been contaminated with infectious blood or body fluids) to unprotected skin		
			Contact	Inadvertant touching of face and mucus membranes of eyes, noise, and/or mouth		
			Contact	Exposure during removal of PPE (e.g., incorrect		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
				sequence, self and cross contamination)		
			Contact	Percutaneous sharps injury		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters person's breathing zone		
			All	Breach of PPE (e.g., tears, incompatibilities, equipment failure, glove separates from the sleeve) and exposure to intact and non intact skin		
2. Transport Patients						
2.1	Transporting and Receiving Patients - Intrafacility	Health Care Workers / Security	Contact	Direct patient contact while transporting or assisting		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
			Droplet / Airborne	Infectious agent enters person's breathing zone		
			Contact / Droplet	Cross contamination through staff, equipment (e.g., stretcher, wheel chair) and/or materials (e.g., patient belongings)		
2.2.	Transporting and Receiving Patients - Interfacility Transport	Health Care Workers / EMS / Security	Contact	Direct patient contact while transporting or assisting		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters person's breathing zone		
			Contact / Droplet	Cross contamination through staff (including EMS), equipment (stretcher) and/or materials (patient records, personal belongings)		
			All	Exposure due to enclosure and close proximity of seating during transportation (i.e., ambulance)		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
3. Points of Entry and Common Areas						
3.1	Providing Information and Direction	Volunteers	Contact	Direct patient contact while transporting or assisting		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters person's breathing zone		
3.2	Waiting in Common Area	Patients	Contact	Cross contamination through waiting area furniture		
			All	Exposure due to crowded or close proximity in seating		
4. Emergency Department (ED)						
4.1	Registering Patients	Registration Staff	Contact	Direct and indirect patient contact while registering hospital visit		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters person's breathing zone		
4.2	Waiting for Registration, Care and Treatment	Patients and Other Visitors	Contact	Cross contamination through waiting area furniture		
			All	Exposure due to crowded or close proximity in seating and line ups		
4.3	Conducting Triage and / or Isolating Patient	Triage Nurse	Contact	Direct and indirect patient contact during triage and / or transporting to private isolation room		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters person's breathing zone		
			Contact / Droplet	Cross contamination and spread through EMS		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
				transport staff and equipment (e.g., stretchers)		
5. Clinical Diagnostic and Treatment						
5.1	Evaluating and Diagnosing PUI	Clinical Staff (Physicians, Nurses, Specialists, etc.)	Contact	Direct and indirect patient contact during clinical diagnosis and treatment		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters staff 's breathing zone while evaluating and providing care		
5.2	Treating and Caring for Patient with an Infectious Disease of High Consequence	Clinical Staff	Contact	Direct and indirect patient contact during treatment and care of patient		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters worker's breathing zone while interacting and providing care		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
			Contact	Cross contamination and spread through staff and equipment (e.g., stethoscope; blood pressure cuff)		
6. Ambulatory Care						
6.1	Checking in Patients for Appointments	Reception	Contact	Direct contact and spread of blood or other body substance		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Droplet / Airborne	Infectious agent enters persons breathing zone		
			Contact	Cross contamination through environmental surfaces and materials		
6.2	Waiting in Common Area	Patients	All	Exposure due to crowded or close proximity in seating		
			Contact	Cross contamination through furniture,		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
				equipment, and environmental surfaces		
7. Laboratory						
7.1	Specimen Collection, Transport, and Submission	Phlebotomist / Health Care Workers	Contact	Collection of clinical specimens		
			Droplet	Sprays or splashes generated during specimen collection tasks		
			Contact / Droplet	Direct handling of contaminated, punctured, and/or unsealed clinical specimens		
			All	Splash, splatter, or bioaerosols with blood or body substances created during spills		
			Contact	Skin puncture from contaminated glass during spill clean up		
			Contact	Cross contamination of surfaces in clinical collection and spill clean up areas		

IDENTIFY RISK				ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
7.2	Managing and Testing Routine Clinical Specimens	Laboratory Workers	Contact / Droplet	Direct handling of contaminated, punctured, and/or unsealed clinical specimens		
			All	Sprays, splashes, or aerosols generated during laboratory processes, procedures, activities, and tasks		
			All	Splash, splatter, or aerosols with blood or body substances created during spills		
			Contact	Skin puncture from contaminated glass during spill clean up		
8. Environmental Cleaning & Disinfecting						
8.1	Cleaning and Disinfecting of Public and General Areas	Housekeeping Workers / Environmental Services Workers	Contact	Direct contact and spread of blood or other body substance		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
8.2	Cleaning and Disinfecting In Patient - Care Areas	Health Care Workers / Housekeeping Workers / Environmental Services Workers	Contact	Direct contact and spread of blood or other body substance		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
			Contact	Cross comamination of cleaning equipment and supplies outside the hot zone		
8.3	Containing, Cleaning and Disinfecting Spills of Blood or Other Body Substances	Health Care Workers / Housekeeping Workers / Environmental Services Workers	Contact	Direct contact and spread of blood or other body substance		
			Droplet	Infectious agent comes in contact with unprotected skin or mucus membranes		
9. Equipment Reprocessing						
9.1	Transport, Storage and Handling of Equipment	Housekeeping Workers / Porters	Contact / Droplet	Direct handling of contaminated equipment		
			Contact / Droplet	Leakage of bags or containers holding equipment contaminated with blood or body		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
				substances during transport, storage and handling		
			Contact	Cross comamination of dirty and clean equipment and materials		
9.2	Pre-Rinse and Cleaning of Equipment	Medical Device Reprocessing Workers	Droplet	Splash or splatter of blood or other body fluids to unprotected skin and mucus membranes during pre-rinsing and cleaning tasks involving high pressure water		
			Airborne	Dispersion of aerosols from contaminated equipment being rinsed in basins and utility sinks		
			Contact	Percutaneous injury from sharps or equipment during handling and cleaning by hand		
			Droplet / Airborne	Splash, splatter, or mist created from reprocessing equipment due to poor design, maintenance, and / or misuse		

IDENTIFY RISK				ANALYZE RISK	
Critical Activity / Tasks	**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
10. Linen Management					
10.1	Handling and Removing Soiled Linen	Health Care Workers	Contact / Droplet	Direct handling of contaminated linen		
			All	Splash or splatter of blood or other body fluids to unprotected skin and mucus membranes through excessive agitation of linen		
			Contact	Percutaneous injury from needles left or stuck into linen		
			Contact / Droplet	Leakage of bags or containers holding textiles and fabrics contaminated with blood or body substances during storage and handling		
10.2	Transporting Linen	Housekeeping Workers / Porters	Contact / Droplet	Direct handling of contaminated linen		
			Contact / Droplet	Leakage of bags or containers holding textiles and fabrics contaminated with blood or body substances during storage,		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
				handling, transport, and / or shipping		
			Airborne	Dispersion of aerosols from contaminated laundry placed into laundry chutes		
10.3	Cleaning Soild Linen	Linen Services Workers	All	Splash or splatter of blood or other body fluids to unprotected skin and mucus membranes through excessive agitation of linen		
			Contact	Cross comamination of soiled and clean laundry		
			Contact	Mattresses and pillows that cannot be adequately cleaned and disinfected		
11. Waste Management						
11.1	Placing Contaminated Material into Waste Container(s)	Health Care Workers	Contact	Direct handling of waste materials		
			Droplet	Splash or splatter of blood or other body fluids to unprotected skin and mucus membranes		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
11.2	Closing and Decontaminating Waste Containers	Environmental Services Workers	Contact	Direct handling of waste materials		
			Droplet	Splash or splatter of blood or other body fluids to unprotected skin and mucus membranes		
11.3	Interfacility Transport and Storage of Waste Containers	Material Handlers / Porters	Contact	Leakage of fluids during handling, storage, transport, or shipping of waste containers		
			Contact	Cross contamination of waste containers and materials outside of the hot zone		
			All	Unsafe handling of waste (e.g., opening, leaks, spills, etc.)		
12. Handling Human Remains						
12.1	Post Mortem Preparations	Health Care Workers	Contact	Direct handling of human remains		
			Contact	Laceration and puncture with contaminated instruments		

IDENTIFY RISK					ANALYZE RISK	
Critical Activity / Tasks		**Similar Exposure Groups (SEGs)**	**Mode of Transmission**	**Potential Risks of Exposure**	**Existing Controls**	**Risk Factors**
			Droplet	Splash or splatter of blood or other body fluids to unprotected mucus membranes		
12.2	Transportation of Human Remains	Health Care Workers	Contact	Contact with contaminated equipment and materials outside of the hot zone		
			Contact	Leakage of fluids during handling, transport, or shipping from compromised body bag		
12.3	Mortuary Care and Disposition of Remains	Mortuary Workers	All	Unsafe handling of remains (e.g. washing, cleaning, or embalming body, removing inserted medical equipment or implanted medical devices, opening body bag)		

2.0 RISK ASSESSMENT AND MANAGEMENT WORKSHEET

Completed by: _____

Signature: _____

Date: _____

	ASSESS RISK		MANAGE RISK				
	Risk Significance Level (L/M/H)	**Uncertainty Level (L/M/H)**	**Standards**	**Proposed Controls**	**Person Assigned**	**Target Date**	**Status (NS/IP/C)**
1. Personal Protective Equipment (PPE)							
1.1							

ASSESS RISK			MANAGE RISK				
	Risk Significance Level (L/M/H)	**Uncertainty Level (L/M/H)**	**Standards**	**Proposed Controls**	**Person Assigned**	**Target Date**	**Status (NS/IP/C)**
2. Transport Patients							
2.1							
2.2							

ASSESS RISK			MANAGE RISK				
	Risk Significance Level (L/M/H)	**Uncertainty Level (L/M/H)**	**Standards**	**Proposed Controls**	**Person Assigned**	**Target Date**	**Status (NS/IP/C)**
3. Points of Entry and Common Areas							
3.1							
3.2							

4. Emergency Department (ED)							
4.1							
4.2							
4.3							
5. Clinical Diagnostic and Treatment							
5.1							

5.2							
6. Ambulatory Care							
6.1							
6.2							

7. Laboratory							
7.1							
7.2							

8. Environmental Cleaning & Disinfecting							
8.1							
8.2							
8.3							
9. Equipment Reprocessing							
9.1							
9.4							

10. Linen Management							
10.1							
10.2							
10.3							

11. Waste Management							
11.1							
11.2							
11.3							
12. Handling Human Remains							
12.1							

12.2							
12.3							

APPENDIX A - EXAMPLES OF KEY CONTROL MEASURES

Based on a review of CDC Ebola best practice and standards, the following key control measures were compiled by the expert advisory/working group to assist, but not limit organizations with the completion of their IDT ORA tool. Source documents can be found at www.cdc.gov/vhf/ebola/index.html.

1. PERSONAL PROTECTIVE EQUIPMENT (PPE)

Pre-Contact

- Develop plans and protocols for selecting, care and use, donning and doffing PPE
- Establish and maintain a written respiratory protection program
- Establish generic PPE ensembles based on level of risk (e.g., screening, advanced contact precautions, airborne/Aerosol Generating Medical Procedures (AGMP))
- Provide step by step procedures for donning and doffing PPE
- Designate areas for PPE donning and doffing, separate from the patient care area (e.g., patient's room)
- Ensure doffing areas are large enough to allow freedom of movement for safe doffing, have space for leak proof infectious waste containers, a new glove supply, and alcohol-based hand rub (ABHR) and Environmental Protection Agency (EPA) registered disinfectant wipes for use during the doffing process
- Provide interactive training for staff on the proper protocols and step-by-step procedures related to selecting, donning, and doffing PPE
- Ensure that HCWs are able to demonstrate competency through testing and assessment in donning and doffing PPE correctly before entry into the patient care area
- HCWs should practice simulated patient care activities while wearing PPE to understand the types of physical stress that might be involved, how to recognize and report early signs and symptoms (such as heat stress, fatigue), and to determine tolerable work/rest cycles and shift lengths
- Document training of observers and HCWs for proficiency and competency in donning and doffing PPE and in performing routine clinical care duties while wearing PPE
- Provide regular refresher training to maintain skills
- Develop protocols and procedures on what to do in the case of an equipment failure or detection of a breach in PPE (e.g., a tear develops in an outer glove, a needlestick occurs, a glove separates from the sleeve)
- Ensure all PPE is used and worn in the context of a comprehensive infection prevention and control program

- Refine and customize generic procedures as necessary based on risk factors and precautions identified for specific infectious disease threats
- Avoid unnecessary procedures involving sharps
- Use safety engineered needleless IV systems whenever possible
- Conduct regular inspections of PPE to ensure proper supplies, maintenance and functionality, including checking expiration dates on all equipment
- Establish a facility exposure management plan that addresses decontamination and follow-up of healthcare workers in the case of any unprotected exposure

Contact

- Ensure that policies, procedures, programs are in place and are being followed
- Ensure a dedicated trained observer is using an established checklist to coach, monitor, and document successful donning and doffing procedures, and is providing immediate corrective instruction if the HCWs is not following a recommended step
- The trained observer should read aloud to the HCW each step in the procedure checklist and visually confirm and document that each step has been completed correctly with comfort and proficiency
- Trained observers should not serve as an assistant for doffing PPE
- A designated doffing assistant or “buddy” might be helpful in some circumstances, (e.g., during the doffing of the PAPR)
- Staff providing care to patients with an ID of high consequence must be supervised by an onsite manager at all times
- The site manager or his/her designee should observe the HCWs in the patient room if possible (e.g., through a glass-walled intensive care unit [ICU] room, video link) to identify any unrecognized lapses or near misses in safe care
- Ensure that PPE selected covers the HCWs clothing and skin and completely protects their mucous membranes
- PPE must remain in place and be worn correctly for the duration of work in potentially contaminated areas
- PPE should not be adjusted or modified while in the patient care area
- Reinforce the need to keep hands away from the face during any patient care and to limit touching surfaces and body fluids
- PPE must be removed slowly and deliberately in the correct sequence to reduce the possibility of self-contamination or cross -contamination
- Ensure that HCWS take sufficient time to don and doff PPE slowly and correctly without distraction
- Dispose of PPE in leak proof infectious waste containers

- Ensure frequent cleaning of the floor and work surfaces in the doffing area
- Prevent needlestick and sharps injuries by adhering to correct sharps handling practices

Post-Contact

- HCWs must move immediately to the doffing area if a breach occurs to assess the potential exposure
- In the event of a significant splash, the HCW should immediately move to the doffing area to remove PPE
- Follow a facility exposure management plan that addresses decontamination and follow-up of healthcare workers in the case of any unprotected exposure
- Staff unable or unwilling to adhere to infection control and PPE use procedures should not provide care for patients suspected or confirmed of having an ID of high consequence

2. TRANSPORT PATIENTS

Pre-Contact

- Develop plans and engage system partners (including provincial and local public health, EMS agencies, private and public providers, ground and air medical transport agencies, emergency management, healthcare, healthcare LHINs, law enforcement and others) to collaborate and coordinate interfacility transports of Persons Under Investigation (PUI) or patients with confirmed infectious diseases of high consequence
- Ensure that transportation plans have been developed, exercised, and validated
- Foster a strong EMS/hospital interface, with communication plans, training, exercises, and development of Safe Operating Procedures (SOPs) that involve both healthcare and EMS providers
- Delineate the roles and responsibilities of medical personnel at the sending and receiving facilities (e.g., upon patient arrival)
- Determine hospital point of entry and exit, when and where patient handoff will take place for the receiving facility and at what specific point the patient transport responsibility will transfer from ground transport crew to receiving facility
- Determine and document whether the EMS transport crew will move the patient to the isolation room or conduct patient handoff at facility entrance and remain outside of the institution

- Determine whether procedures will vary for ambulatory or non-ambulatory patients and how to decontaminate belongings and medical records accompanying patient
- Plan for contingencies, such as the event that primary transport service is unavailable, vehicle malfunction or failure prior to arrival at the destination, medical equipment failure, unavailable or closed route for transport, motor vehicle collision, breach in PPE during the transport, provider unable to continue duties, and/or hostile/combative patient
- Ensure that policies and protocols exist for transporting pediatric patients
- Ensure that protocols are in place for notifying and activating the EMS transport agency
- Engage provincial/local public health in these discussions
- Determine and plan for how long it will take for the EMS transport agency to arrive
- Determine contacts among law enforcement required for escort
- Determine the process for establishing routes and alternate routes, if applicable
- Determine which staff will conduct the transfer (e.g., a specially trained group of prehospital providers, trained hospital staff, etc.)
- Consider how many and what level of staff will be involved, their necessary training, and the vehicle configuration and capabilities
- For staff that may participate and accompany EMS, determine the appropriate level of PPE based on risk of exposure and patient symptoms
- Determine and monitor PPE supply and availability
- Determine where and how affected staff will be disinfected/decontaminated, if PPE is breached
- Determine equipment and medication needed during the transport and where these will be located
- Determine the level of responsibility of the hospital facility for packaging, transporting and disposing of waste, ambulance and equipment disinfection and decontamination, and where this will be done (e.g., location at the receiving facility)
- Ensure that the EMS transport crew is aware of and familiar with donning and doffing location, patient handoff location at sending and receiving facilities, location for waste management and shower facilities, if available, and location for disinfection/decontamination
- Designate a media staging area for air–to-ground transports

Contact

- Assess the need for security during transport, at the sending and receiving facility, and along the transport route, as needed

- Determine the medical authority for the patient while in transit
- Involve the medical director or appropriate person providing medical oversight in planning/preparation and ensure availability for consultation during interfacility transport
- Ensure that a receiving ambulance is staged and prepared to accept the patient(s) from the air transport crew for air-to-ground transports

Post-Contact

- Ensure decontamination of corridor/route through the facility, if applicable
- Ensure protocols are in place for personnel health monitoring/surveillance, as appropriate

3. POINTS OF ENTRY AND COMMON AREAS

Pre-Contact

- Identify all points of entry
- Develop a plan to control and manage points of entry and public common areas
- Use design and signage to point potentially infected patients directly to the main entrance of ED
- Ensure secondary entrances instruct and redirect patients to the ED
- Place, clear and easy to read, self-screening signage at entrances
- Identify patients with travel histories, exposure, and /or clinical symptoms that relate to generic or specific infectious diseases of high consequence
- Place ABHR in sufficient numbers at all entrances
- Instruct everyone to use hand hygiene stations at entrances
- Clearly mark travel routes to ED from secondary entrances and identify pathways that minimize potential exposure, and transmission
- Minimize close contact and over crowding in common areas, including consideration of layout for furniture
- Volunteer staff assisting patients should be instructed on proper protocol and to monitor supplies and compliance

Contact

- Direct patients to put on PPE, if applicable

Post-Contact

4. EMERGENCY DEPARTMENT (ED)

Pre-Contact

- Develop a plan to identify and management patient's who might have an ID of high consequence
- Develop screening tools and algorithms that identify, isolate, and report
- Prescreen in advance of entry if possible
- Train staff on the proper protocols and step-by-step procedures related to selecting, donning, and doffing PPE
- Identify all entrances to the ED
- Place, clear and easy to read, self-screening signage at entrances
- Design and use signage to point patients directly to registration and triage
- Identify patients with relevant travel histories, exposure, and /or clinical symptoms that relate to generic and/or specific infectious diseases of high consequence through signage and prescreening processes
- Ensure the ED is prepared to receive the patient in a designated area (away from other patients) if the patient is arriving by EMS transport and have a process in place for safely transporting the patient on the stretcher to the isolation area with minimal contact with non-essential healthcare workers or the public
- Place ABHR in sufficient numbers at entrances and throughout the ED
- Utilize signage to instruct patients to use hand hygiene stations at entrances

Contact

- Manage all patients using precautions to prevent and minimize any contact with blood or body fluids
- Direct patients to put on PPE, if applicable
- Immediately don the appropriate PPE and isolate patients who has been identified to be at risk
- Avoid unnecessary direct contact
- Promptly place patients in AIIRs who have or are suspected of having an airborne infection, preferably with an anteroom
- Promptly place patient in single patient room or separate enclosed area with a closed door and a private bathroom or covered bedside commode
- Adhere to procedures and precautions designed to prevent transmission by direct or indirect contact (dedicated equipment, hand hygiene, and restricted patient movement)

Post- Contact

- Coordinate and make arrangements for clinical assessment

- Immediately notify the hospital infection control program and other applicable staff
- Immediately report to the health department and make arrangement for intrafacility and/or interfacility transfer, if applicable
- Ensure protocols are in place for personnel health monitoring / surveillance, as appropriate

5. CLINICAL DIAGNOSTIC AND TREATMENT

Pre-Contact

- Develop a plan to diagnose, care and treat patients who might have an ID of high consequence
- Determine the appropriate room to diagnose and care for PUI
- Transfer and place patients into AIIRs who have or are suspected of having an airborne infection, preferably using a room with an anteroom, if available
- Limit room entry to only essential staff with designated roles in evaluation and care to minimize transition risk
- Prepare and train staff on step- by- step clinical guidelines and procedures
- Follow all procedures related to selecting, donning and doffing PPE
- Provide ongoing care and treatment in facilities that have AIIRs to reduce the risk of occupational exposure to aerosolized infectious material in blood, vomitus, liquid stool, and respiratory secretions present in large amounts especially during the end stage of a patient's illness
- Ensure AIIRs should provide ventilation >12 ACH
- Ensure AIIRs have an anteroom or temporary constructed booth that is engineered to provide >12 ACH
- Consider adding change rooms off the anteroom with new room designs and construction
- Ensure the air in an AIIRs is exhausted to the outside, away from air-intake and populated areas (may be recirculated provided that the return air is filtered through a high-efficiency particulate air (HEPA) filter)
- Install self-closing devices on all room exit doors
- Maintain continuous negative air pressure (2.5 Pa [0.01 inch water gauge]) in relation to the air pressure in the corridor
- Monitor and maintain ventilation systems and filters in accordance with engineers' and manufacturers' recommendations

Contact

- Create and adhere to zones to identify contaminated versus non contaminated areas

- Monitor the patient care area at all times, and, at a minimum, log entry and exit of all HCWs who enter the patient's room
- Immediately clean and disinfect any visibly contaminated PPE surfaces, equipment, or patient care area surfaces using an *EPA-registered disinfectant wipe once appropriate PPE has been put on
- Regularly clean and disinfect surfaces in the patient care area, even in the absence of visible contamination
- Limit the number of HCWs who enter the room by expanding job duties
- Ensure the ability to safely conduct routine patient care activities (e.g., obtaining clinical history, vital signs, physical examinations, routine diagnostics and interventions, which may include placement of peripheral IV and phlebotomy, collecting and appropriately packaging laboratory specimens)
- Evaluate patient with dedicated equipment (e.g., stethoscope)
- Complete aerosol generating procedures (AGMPs) within AIIRs
- Monitor air pressure periodically, preferably daily, with audible manometers or smoke tubes at all exit doors, or with a permanently installed visual monitoring mechanism (with alarm preferably)
- Document the results of monitoring
- Ensure active resuscitation is done in a pre-designated area using pre-designated equipment
- Do not reuse equipment used in the care of suspected or confirmed patients for the care of other patients until appropriate evaluation and decontamination
- Consult with the relevant local health department regarding the decision to test a patient for a disease of high consequence

Post-Contact

- Ensure protocols are in place for personnel health monitoring / surveillance, as appropriate

6. AMBULATORY CARE

Pre-Contact

- Develop a plan for the specific ambulatory care setting to prescreen, identify, isolate, inform, and transfer patients
- Train staff on the proper protocols and step-by-step procedures related to wearing and removing PPE
- Prescreen and redirect patients before they arrive, enter or interact with people at facility or department
- Notify the health department and arrange interfacility transfer if off site

Contact

- Identify and manage patients early who might have shown up with an ID of high consequence
- Isolate patients immediately who appear to be at risk
- Avoid unnecessary direct contact and don the appropriate PPE
- Coordinate and make arrangements to transfer patient(s) safely

Post Contact

7. LABORATORY

Pre-Contact

- Prepare step-by step specimen collection, transport and submission protocols
- Provide hands on training for protocols and procedures related to appropriately selecting, donning, and doffing PPE
- Wear PPE during transport within the facility should be determined by a site-specific risk assessment
- Determine patient status as quickly as possible in order to ensure that patient care is not compromised
- Contact local and/or provincial public health authorities if concerned about a patient with an infectious disease of high consequence
- Consult with public health officials regarding the decision to test
- Submit specimens other than blood after consultation with Public Health
- Utilize public health laboratories when applicable to assist in the selection, interpretation, and sourcing of additional laboratory tests needed to manage PUIs
- Conduct testing for persons with clinical signs, symptoms, and epidemiologic risk factors who meet the criteria for PUIs related to a specific infectious disease agent of high consequence
- Plan the route of the sample from the patient area to the location where it will be packed for shipping in order to avoid high traffic areas

Contact

- Manage PUIs by following appropriate precautions to prevent transmission to others and the hospital environment
- Do not separate and remove serum or plasma from the primary collection container
- Collect blood in plastic collection tubes

- Do not transport or ship specimens in glass containers or in heparinized tubes
- Place specimens in a durable, leak-proof secondary container
- Decontaminate the outside of the specimen containers with an approved disinfectant before removing patient specimens from the site of care
- Hand carry specimens to the laboratory or packing area
- Do not use any pneumatic tube system (automated or vacuum specimen delivery system) for transporting specimens

Post-Contact

- Immediately report potential exposures to blood, body fluids, and other infectious materials according to your institution's policies and procedures

8. ENVIRONMENTAL CLEANING AND DISINFECTING

Pre-Contact

- Develop a plan for cleaning and disinfecting strategies for environmental surfaces in public, general and patient-care areas
- Create zones to identify contaminated versus non contaminated areas in high risk patient areas
- Restrict and limit patient visitors and care providers where risk of exposure is high When contact precautions are indicated for patient care, use disposable patient-care items (e.g., blood pressure cuffs) wherever possible to minimize cross-contamination
- Prepare step- by- step guidelines for specific cleaning and disinfecting tasks
- Provide hands on training in cleaning and disinfecting strategies and following procedures related to wearing and removing PPE, removing visible soil, and addressing breaches
- Determine and follow proper procedures for site containment and decontamination of spills of blood or other potentially infectious body fluids
- Ensure protocols include removal of bulk spill material (e.g., glass), cleaning the site, and then disinfecting the site with an EPA-registered disinfectant effective against the potential agent in accordance with manufacturers' instructions
- Avoid large-surface cleaning methods that produce mists or aerosols, or disperse dust
- Avoid using carpet, upholstered furniture and furnishings (e.g., curtains) in high-risk patient-care areas and in areas with increased potential for body substance contamination

- Develop pest-control strategies, with emphasis on kitchens, cafeterias, laundries, central sterile supply areas, operating rooms, loading docks, construction activities, and other areas prone to infestations

Contact

- Use appropriate hand hygiene, PPE, routine and additional precautions during cleaning and disinfecting procedures
- Use single-use PPE where appropriate
- Advise and enforce families, visitors, and patients regarding the importance of isolation precautions and hand hygiene to minimize the spread of body substance contamination (e.g., respiratory secretions or fecal matter) to surfaces
- Limit the number of personnel involved in a clean-up
- Decontaminate outside of cleaning containers before moving them from contaminated to non- contaminated areas
- Select EPA-registered disinfectants that are effective, if available, and use them in accordance with the manufacturer's instructions
- Thoroughly clean and disinfect environmental and medical equipment surfaces on a regular basis by using EPA-registered disinfectants in accordance with manufacturers' instructions
- Keep housekeeping surfaces (e.g., floors, walls, tabletops) visibly clean on a regular basis and clean up and disinfect spills promptly
- Pay close attention to cleaning and disinfection of high-touch surfaces in patient-care areas (e.g., bed rails, carts, charts, bedside commodes, bed rails, doorknobs, or faucet handles)
- Follow proper procedures for effective uses of mops, cloths, and solutions
- Prepare cleaning solutions daily or as needed, and replace with fresh solution frequently according to facility policies and procedures
- Change the mop head based on risk and as required by facility policy, or after cleaning up large spills of blood or other body substances
- Bag and clean mops and cloths after use and allow to dry before reuse; or use single-use, disposable mop heads, cleaning cloths, and wipes, where appropriate, and dispose of these in leak proof bags
- Use a rigid waste receptacle designed to support the bag to help minimize contamination of the bag's exterior
- Ensure compliance by housekeeping staff with cleaning and disinfection procedures

9. EQUIPMENT REPROCESSING

Post-Contact

- Treat all materials used for cleanup as infectious and disposed of in a biohazard waste container

Pre-Contact

- Thoroughly clean and disinfect environmental and medical equipment surfaces on a regular basis by using EPA-registered disinfectants in accordance with manufacturers' instructions

Contact

- Use disposable barrier coverings as appropriate to minimize surface contamination
- Use disposable patient-care items (e.g., blood pressure cuffs) wherever possible when contact precautions are indicated for patient care to minimize cross-contamination with multiple-resistant microorganisms
- Restrict movement and traffic through reprocessing area to only those assigned to area for applicable job duties

Post-Contact

10. LINEN MANAGEMENT

Pre-Contact

- Develop a plan for the collection, handling, treatment, shipment and/or terminal disposal of linen
- Train staff in handling linen and following all procedures related to wearing and removing PPE
- Prepare step- by- step guidelines
- Create zones to identify contaminated versus non contaminated areas
- Remove all upholstered furniture and decorative curtains from patient rooms before use
- Consider the use of disposable fabrics and textiles versus durable goods, where risk warrants and appropriate to do so
- Use linen bags and containers that are appropriately labelled and leak resistant (covers are not needed on contaminated textile hampers in patient-care areas)
- Ensure adequate supply of bags and containers

- Ensure that if laundry chutes are used, they are properly designed, maintained, and used in a manner to minimize dispersion of aerosols from contaminated laundry
- Establish a facility policy to determine when textiles or fabrics should be sorted in the laundry facility (i.e., before or after washing)
- Follow recognized best practice standards and processes for laundry facilities and equipment
- Follow manufacturers' recommendations for cleaning and disinfecting fabric products, including those with coated or laminated surfaces
- Package, transport, and store clean textiles and fabrics by methods that will ensure their cleanliness and protect them from dust and soil during interfacility loading, transport, and unloading
- Use only a mattresses and pillows with plastic or other covering that fluids cannot get through

Contact

- Launder or dispose of workers' personal protective garments or uniforms that are contaminated with blood or other potentially infectious materials
- To reduce exposure among staff to potentially contaminated textiles (cloth products) while laundering consider discarding all linens, where practical and economically feasible
- Do not stick needles into a mattress through the cover
- Bag or otherwise contain contaminated textiles and fabrics at the point of use
- Handle contaminated textiles and fabrics with minimum agitation to avoid contamination of air, surfaces, and persons
- Do not sort or pre-rinse contaminated textiles or fabrics in patient-care areas
- Decontaminate outside of linen containers before moving them from contaminated to non- contaminated areas
- Do not use laundry chutes where the risk is high
- Clean and disinfect mattress covers by using EPA-registered disinfectants that are compatible with the materials to prevent the development of tears, cracks, or holes in the covers
- Maintain the integrity of mattress and pillow covers
- Dispose or launder pillow covers and washable pillows in the hot-water cycle between patients or when they become contaminated with body substances

Post Contact

11. WASTE MANAGEMENT

Pre contact

- Develop a plan for the collection, handling, predisposal treatment, storage, transport, and/or shipping for disposal of regulated medical wastes
- Ensure adherence to local, provincial and federal waste management legislative requirements
- Train staff in handling waste and following all procedures related to wearing and removing PPE
- Prepare step- by- step guidelines
- Ensure adequate supply of waste containers and supplies

Contact

- Ensure adherence to local, provincial and federal waste management legislative requirements
- Use waste containers that are appropriately labelled, leak resistant and prevent development of noxious odors
- Use a rigid waste receptacle designed to support the bag to help minimize contamination of the bag's exterior
- Create zones to identify contaminated versus non contaminated areas
- Decontaminate outside of waste containers before moving them from contaminated to non-contaminated areas
- Transport waste using the most direct route which minimizes risk to exposure to the public and staff
- Minimize agitation during disposal and handling of waste

Post Contact

- Do not reopen waste containers after closed
- Decontaminate bulk blood and body fluids using approved inactivation methods (e.g., autoclaving or chemical treatment) before disposal, where appropriate and safe to do so
- Store and secure regulated medical wastes awaiting treatment in a properly ventilated and cool areas inaccessible to vertebrate pests
- Transport regulated medical wastes in closed, impervious containers to the on-site treatment location or to another facility for treatment as appropriate if treatment options are not available at the site where the medical waste is generated.

12. HANDLING HUMAN REMAINS

Pre-contact

- Prepare step- by- step guidelines
- Training in handling infected human remains and following all procedures related to wearing and removing PPE
- Create zones to identify contaminated vs non contaminated areas
- Use of 3 leakproof appropriately designed cremation compatible body bags

Contact

- Do not wash or clean the body
- Do not embalm the body
- Do not perform an autopsy
- Do not remove any inserted medical equipment from the body such as intravenous (IV) lines, endotracheal or other tubing, or implanted electronic medical devices
- Use Thermal sealer for sealing the second bag
- Use camera or mobile phone capable of securely transferring photographs electronically via Wi-Fi, e-mail, or text message

Post-Contact

- Do not open the body bag
- Cremate the body

REFERENCES

Australian Master OHS and Environmental Guide, 2nd Ed. (2007). PART C - OHS ESSENTIALS: What is OHS Risk Management? Publisher CCH Australia pp. 213.

Barbara Johnson, PhD, RBP (2001). *Understanding, Assessing, and Communicating Topics Related to Risk in Biomedical Research Facilities*, The American Biological Safety Association (ABSA) Anthology of Biosafety IV - Issues in Public Health, Chapter 10. http://www.absa.org/0100johnson.html. Accessed on April 5, 2017.

Canadian Standards Association (CSA). (2012). CSA Z1002-12: Occupational Health and Safety — Hazard Identification and Elimination and Risk Assessment and Control. Published in Ontario, Canada. www.csagroup.org

Edwards C. & Humphrey C. (2000). CLV Special Report. Due Diligence Under the Occupational Health and Safety Act: A Practical Guide. Published by Carswell Thomson Professional Publishing. www.carswell.com

Health Care and Residential Facilities Regulation, O. Reg. 67/93. Retrieved from http://www.e-laws.gov.on.ca/html/regs/english/elaws_regs_930067_e.htm

Ministry of Health and Long Term Care (MOHLTC). (2006). Building a Ready and Resilient Health System: Ebola Step-Down and Provincial Baseline Requirements for Infectious Disease Threats. http://www.health.gov.on.ca/en/pro/programs/emb/docs/Resilient_plan_2016_en.pdf Accessed on June 28, 2018.

Mulhausen, J. R. & Damiano, J. (1998). 2nd Ed. A Strategy for Assessing and Managing Occupational Exposures. American Industrial Hygiene Association. Published by AIHA Press. Fairfax, Virginia. pp 41-56. www.aiha.org

Occupational Health and Safety Act, R.S.O. (1990) c. O.1. Retrieved from http://www.e-laws.gov.on.ca/html/statutes/english/elaws_statutes_90o01_e.htm

Ontario Health Care Health and Safety Committee Under Section 21 of the Occupational Health and Safety Act. (2011). Guidance Note for Workplace Parties # 5: Application of Hazard Control Principles, including the Precautionary Principle to Infectious Agents https://www.pshsa.ca/wp-content/uploads/2012/11/Approved-Hazard-Control-Principles-PP-to-Infectious-Agents-eng-GN.pdf Accessed on June 28, 2018

Public Health Ontario. Provincial Infectious Diseases Advisory Committee (PIDAC). (2012). Routine Practices and Additional Precautions In All Health Care Settings, 3rd Ed. https://www.publichealthontario.ca/-/media/documents/bp-rpap-healthcare-settings.pdf?la=en Accessed on August 14, 2019.

The Canadian Centre for Occupational Health and Safety (CCOHS) (2017). OSH Answers Fact Sheets Risk Assessment. https://www.ccohs.ca/oshanswers/hsprograms/risk_assessment.html Accessed on June 28, 2018.

The Honourable Mr. Justice Archie Campbell (2006). The SARS Commission. Executive Summary. Spring of Fear. Vol. 1. http://www.archives.gov.on.ca/en/e_records/sars/report/v1-pdf/Volume1.pdf Accessed on June 28, 2018.

The International Organization for Standards (ISO). 2nd Ed.(2009). ISO 31000:2009: Risk Management – Principles and Guidelines. Published in Switzerland. www.iso.org

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