TECHNICAL BRIEF

Interim Infection Prevention and Control Measures based on COVID-19 Transmission Risks in Health Care Settings

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This document outlines interim recommendations that are based on the best available evidence and expert opinion, where evidence is lacking. Health care settings should adhere to legislative requirements applicable to their organization/setting. As additional evidence emerges these interim recommendations will be updated.

Key Messages

- As the pandemic continues to evolve, increased vaccination rates and knowledge regarding effective SARS CoV-2 infection prevention and control (IPAC) and public health measures have strengthened our ability to manage new pandemic waves.

- During the course of the pandemic, several additional IPAC measures have been implemented in healthcare settings in order to minimize infection transmission and preserve operations.

- As COVID-19 community incidence and epidemiology changes, the additional IPAC measures used within healthcare settings can be safely adjusted during periods of increasing or decreasing transmission risk with the goal of reducing transmission within the health care facility, preventing harm to vulnerable patients/clients/residents and preserving operational capacity of the health care system.

- Routine Practices are required for ALL clinical interactions, independent of any concern for the possibility of COVID-19 or other infectious diseases, and therefore remain important at all stages of the COVID-19 pandemic.
Purpose and Scope

This technical brief focuses on additional IPAC considerations in the hierarchy of hazard controls to be applied only within the context of the ongoing COVID-19 pandemic through periods of increasing and decreasing transmission risk.

This document is intended for IPAC and occupational health professionals in acute health care settings to provide an overview of the practical implementation of IPAC measures during the COVID-19 pandemic. It is acknowledged that these principles may be applied to other settings where healthcare is provided including pre-hospital care, long-term care, primary care, ambulatory care clinics and community care, including home care. While those outside of acute care using the document are advised to consult with local public health and those with IPAC and occupational health expertise to understand risk assessment and application in their setting, comments have been provided throughout the document about considerations when adapting to other settings.

This document presents a framework for adjusting IPAC measures in the context of:

- high immunization rates among health care workers (HCW)
- continued efficacy of vaccines
- COVID-19 community incidence

In situations where COVID-19 incidence is rapidly increasing, and there is evidence of frequent or severe outbreaks occurring within health care settings, additional measures can be added to those outlined in this document.

For the purposes of this document, the term “patient” is used to encompass all recipients of health care and is inclusive of residents of long-term care homes.

Hierarchy of Hazard Controls

IPAC practices can reduce the risk of infection transmission to patients/residents, health care providers, as well as other staff and visitors, in all settings where health care is delivered. A Hierarchy of Hazard Controls (HOC) is used in healthcare settings (and other workplaces) to reduce the risk of transmission of infectious diseases.

Vaccination, with all recommended doses, is one of the most effective preventive measures and is strongly recommended for all HCWs. Recommendations on HCW vaccination policy is out of scope for this document.

Routine Practices

**Routine Practices** are required for ALL clinical interactions, independent of any concern for the possibility of COVID-19 or other infectious diseases.¹

Personal protective equipment (PPE) is an important layer of protection for which recommendations are provided in the Public Health Ontario (PHO) *Interim IPAC Recommendations for Use of Personal Protective Equipment for Care of Individuals with Suspect or Confirmed COVID-19*.²
Background

Over the course of the pandemic, several IPAC measures have been implemented in addition to Routine Practices in healthcare settings in order to further minimize infection transmission and preserve operations. These additional IPAC measures may include but are not limited to vaccination policies for staff and visitors, visitor restrictions, active and passive screening for visitors, staff and patients, distancing and cohorting of staff and patients, universal masking and routine eye protection use.

These measures work best in combination as a layered strategy. During the course of the pandemic, as the community incidence COVID-19 changes, it is important to revisit and adjust the additional IPAC measures in health care facilities based on changing epidemiology with the goal of decreasing transmission within the health care facility and preserving operational capacity of the health care system. A more cautious approach to adjusting IPAC measures, than that being taken in the community, is recommended given the vulnerable populations in healthcare settings and the significant impact of outbreaks on patients, health care workers and healthcare operations.

As IPAC measures are adjusted in the healthcare setting through the various periods of risk, change management will be critical given varying risk thresholds of healthcare staff and the general public. An important component of this includes communication around the rationale for adjustments using a clear framework for weighing the risks and benefits to healthcare staff and patients.

Transmission Risk Framework

The following transmission risk framework for adjusting IPAC measures can be used as a starting point to develop an organizational plan taking into account local epidemiology, transmission risk, and the unique needs of a health care setting or organization. It outlines IPAC recommendations based on level of transmission risk within the healthcare settings, which is largely dependent on community incidence. Indicators such as COVID-19 hospitalizations, outbreaks and staff positivity and absenteeism (e.g., awaiting testing, due to high risk exposure) within healthcare settings can be considered a proxy of community incidence, which can be difficult to accurately assess using overall community case counts when testing is not broadly available (e.g. restricted PCR testing eligibility) and/or reported (e.g. rapid antigen test results).

[SARS-CoV-2 related metrics of community incidence](e.g., community positivity rate, wastewater surveillance) and disease severity (e.g., hospitalizations, ICU admissions), are key independent metrics to consider in defining risk level, as they are anticipated to be influenced by vaccination rates and by the emergence of immune escape variants that cause disease in both unvaccinated and vaccinated individuals. Specific thresholds for infection rates and disease rates for each period have not been defined as there is no evidence to support a specific qualitative threshold/cutoff and risk tolerance will differ based on multiple dynamic factors (e.g., local epidemiology, population at risk, immunization coverage, etc.). There may be differences in the weighting of individual criteria in a quantitative or qualitative population-level risk assessment by jurisdiction and healthcare setting, depending on their unique circumstances.

Table 1 provides a suggested approach to define the transmission risk period that can be implemented at the level of the organization, health care setting, local public health unit, region and province.
Table 1: Framework for Transmission Risk Periods during the COVID-19 Pandemic

<table>
<thead>
<tr>
<th>Transmission Risk Periods during Pandemic</th>
<th>High Risk Period</th>
<th>Transitional Period</th>
<th>Low Risk Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19 outbreaks in healthcare facilities</td>
<td>Frequent and ongoing</td>
<td>Occasional</td>
<td>Rare</td>
</tr>
<tr>
<td>Hospitalizations and ICU admissions*</td>
<td>High and/or upward trajectory</td>
<td>Moderate with slowly changing trajectory</td>
<td>Low and stable trajectory</td>
</tr>
<tr>
<td>Community transmission**</td>
<td>High and increasing</td>
<td>Moderate with slowly changing trajectory</td>
<td>Low</td>
</tr>
</tbody>
</table>

*may include local or provincial context depending on organization. Metrics to consider as a proxy for disease severity include hospitalized COVID-19 cases or daily number of hospitalizations per 100,000 community population.

**metrics to consider as a proxy for community transmission include:
1. Community positivity rates
2. Staff metrics including staff positivity rates and absenteeism (these may be more representative of community epidemiology given limited testing criteria in the general public)
3. Wastewater surveillance trends

SARS-CoV-2 related metrics are key factors to consider in defining a risk level for an organization, health care setting or region. Provincial, regional and local public health unit metrics including vaccination rates, outbreaks in health care facilities, hospitalizations, ICU admissions, community incidence including wastewater surveillance data can be found in the following resources:

Public Health Ontario COVID-19 Data and Surveillance
Science Table Ontario Dashboard
Local Public Health Units
Recommended IPAC Practices by Risk Level

Routine Practices

Transmission from unrecognized cases (e.g., asymptomatic, pre-symptomatic) led to the implementation of extra IPAC measures incorporated into the existing Routine Practices during the pandemic. These added IPAC measures were applied in all clinical care and in some circumstances, were applied throughout healthcare setttings (e.g. in staff-only areas).

There is a significant body of evidence suggesting that universal masking for source control in healthcare settings is associated with reduced transmission of COVID-19. There is only limited evidence suggesting that the universal use of eye protection, outside of the provision of direct care, reduces COVID-19 transmission.

The following table summarizes the recommended use of masking for source control and routine eye protection in healthcare settings for varying periods of transmission risk during the pandemic. The use of masks and eye protection as PPE for the care of patients with COVID-19 is summarized in the PHO’s Interim IPAC Recommendations for Use of Personal Protective Equipment for Care of Individuals with Suspect or Confirmed COVID-19.

Table 2: Routine Practices for Risk Periods

<table>
<thead>
<tr>
<th>Routine Practices for COVID-19</th>
<th>High Risk Period</th>
<th>Transition Period</th>
<th>Low Risk Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>HCW Masking in non-clinical areas</td>
<td>Recommend</td>
<td>Recommend</td>
<td>Consider</td>
</tr>
<tr>
<td>HCW Masking in clinical areas</td>
<td>Recommend</td>
<td>Recommend</td>
<td>Recommend</td>
</tr>
<tr>
<td>Eye protection when within 2 meters of any unmasked patient</td>
<td>Recommend</td>
<td>As per Routine Practices</td>
<td>As per Routine Practices</td>
</tr>
<tr>
<td>Patient masking*</td>
<td>Recommend when ambulatory.</td>
<td>Recommend when ambulatory.</td>
<td>Consider when ambulatory</td>
</tr>
<tr>
<td></td>
<td>Consider when in bedspace while receiving care.</td>
<td>Consider when in bedspace while receiving care.</td>
<td></td>
</tr>
<tr>
<td>Visitors/essential caregiver masking**</td>
<td>Recommend</td>
<td>Recommend</td>
<td>Recommend</td>
</tr>
</tbody>
</table>

*Patient masking is not recommended for paediatric patients 2 years of age or younger or for any patient unable to tolerate masking for medical reasons.

**Masking is recommended within all areas of the facility. When within the patient bed space/room, for essential caregivers who are household contacts rooming in with patients (e.g., parent or labouring partner) or for essential caregivers in non-acute care settings (e.g., LTCH, home care) masking of the essential caregiver is recommended only when patient is receiving care by staff (but can be considered at all times).
Environmental Controls

Environmental controls can reduce COVID-19 transmission through achieving adequate ventilation, physical distancing, and the selective use of physical barriers. Some environmental controls are difficult to implement in a timely manner and are not amenable for targeted use in a particular risk period. Other environmental controls are beneficial even outside the context of a pandemic and should not be limited to a pandemic transmission risk period.

Table 3: Environmental Controls for Risk Periods

<table>
<thead>
<tr>
<th>Environmental Controls</th>
<th>High Risk Period</th>
<th>Transition Period</th>
<th>Low Risk Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Portable air cleaners or ‘air scrubbers’ to optimize</td>
<td>Consider</td>
<td>Consider</td>
<td>Consider</td>
</tr>
<tr>
<td>ventilation in clinical areas that do not meet CSA</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>standards*</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waiting areas designed for 2m physical distancing**</td>
<td>Recommend</td>
<td>Recommend</td>
<td>Consider</td>
</tr>
<tr>
<td>Maximum occupancy of multi-bedded rooms</td>
<td>Limit occupancy</td>
<td>Limit occupancy</td>
<td>Limit occupancy</td>
</tr>
<tr>
<td></td>
<td>when possible</td>
<td>when possible</td>
<td>when possible.</td>
</tr>
<tr>
<td></td>
<td>when occupancy</td>
<td>when occupancy</td>
<td></td>
</tr>
<tr>
<td></td>
<td>greater than 2,</td>
<td>greater than 2,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>risk mitigation</td>
<td>risk mitigation</td>
<td></td>
</tr>
<tr>
<td></td>
<td>strategies** are</td>
<td>strategies** are</td>
<td></td>
</tr>
<tr>
<td></td>
<td>to be used.</td>
<td>to be used.</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical Distancing**</th>
<th>Recommend</th>
<th>Recommend</th>
<th>Consider</th>
</tr>
</thead>
</table>

*Considerations when using portable air cleaners include: Appropriate clean air delivery rate for the size of room; factors that affect appropriate placement; level of noise; whether it can be configured to exhaust to the outdoors; ability to comply with manufacturer instructions on filter changes, maintenance and performance testing including expert consultation as needed; safety considerations including trip hazard and production of ozone.

**Physical distancing is applied in combination with universal masking protocols. Physical distancing recommendations may be adapted to the unique needs of a health care setting or organization.

***Patient placement at least 2 metres apart facilitated by physical barriers; minimize supplies brought into room; optimize ventilation; dedicated toileting facility (e.g., commode) if possible; sufficient alcohol based hand rub available at point of care for each patient.

Vaccination

COVID-19 vaccination series with all recommended doses is an evidence-based intervention that has been proven to reduce COVID-19 incidence, and prevent severe disease. Therefore, it is strongly recommended for all eligible health care workers, patients and visitors to be vaccinated and receive all recommended doses. For overall safety of staff, patients and visitors, exclusion of unvaccinated health care workers from the healthcare setting may be considered.
Screening

Active (through a form of attestation) or passive (no requirement for attestation) screening for COVID-19 (and other infectious symptoms) for patients and visitors is required in all pandemic phases as is daily (or twice daily) screening of inpatients for COVID-19 symptoms. While active screening is ideally performed at the point of entry into the facility, consideration can be given to passive screening at entry and then active screening performed upon arriving at the unit or clinical destination.

Staff should also be aware of their own symptoms and should report symptoms consistent with COVID-19 or other transmissible infections to occupational health and safety and should not attend work (except during periods of critical staff shortages and with the approval of occupational health and safety and facility leadership). To support staff reporting symptoms, facilities should provide access to testing and have supportive sick leave and work-from-home policies.

Table 4: Screening for Risk Periods

<table>
<thead>
<tr>
<th>Screening</th>
<th>High Risk Period</th>
<th>Transition Period</th>
<th>Low Risk Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Visitor / Essential caregiver</td>
<td>Active Screening</td>
<td>Active or Passive Screening</td>
<td>Active or Passive Screening</td>
</tr>
<tr>
<td>Patient Symptom Screening</td>
<td>Active Screening</td>
<td>Active Screening</td>
<td>Active Screening</td>
</tr>
<tr>
<td>Staff Screening*</td>
<td>Active or Passive Screening</td>
<td>Active or Passive Screening</td>
<td>Passive Screening</td>
</tr>
</tbody>
</table>

* When active staff screening is performed, it can be achieved through in-person entrance screening, the use of automated processes or apps, or through another form of attestation.

Testing for SARS-CoV-2

Molecular testing of patients with symptoms of COVID-19 who are hospitalized or meet other high risk criteria (as per case and contact management) is recommended regardless of risk period. Other testing considerations such as pre-operative testing, transfer testing and routine testing of asymptomatic staff outside of exposures and outbreak investigations should follow current provincial testing guidance.\(^\text{10}\)

Additional Precautions, Patient Placement and PPE

Additional Precautions are applied along with Routine Practices for patients who are known or suspected to be infected or colonized with transmissible organisms. They are required regardless of the current epidemiology for COVID-19 or risk period (i.e., if the patient is known to have COVID-19, use COVID-19 precautions regardless of the background incidence).

Patients with suspect or confirmed COVID-19 should ideally be cared for in a single room under Additional Precautions with access to their own toileting facility whenever possible. When there are critical staffing shortages and/or critical bed shortages, patient cohorting strategies may be considered.\(^\text{11,12,13}\) During periods of high risk of transmission and transition periods, consideration is to be given to prioritizing multi-bed rooms for cohorting patients with confirmed COVID-19.

The Point of Care Risk Assessment (PCRA) is necessary prior to any encounter, the appropriate selection and use of personal protective equipment is informed by the PCRA regardless of the current epidemiology or transmission risk period.\(^\text{2}\)
Considerations for Visitors and Essential Caregivers

Visitor access to the health care setting may be adjusted for the pandemic risk periods as described in Table 5.

Table 5: Visitor Access for Risk Periods

<table>
<thead>
<tr>
<th>Visitor Type</th>
<th>High Risk Period</th>
<th>Transition Period</th>
<th>Low Risk Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>Essential Caregivers</td>
<td>Limit to fully vaccinated*</td>
<td>Acceptable</td>
<td>Acceptable</td>
</tr>
<tr>
<td>General Visitors</td>
<td>Not recommended**</td>
<td>Consider limiting number of visitors per patient and to those fully vaccinated**</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

*Exceptions for those who meet organizational criteria (e.g. pediatrics)
** Exceptions for those who meet organizational criteria (e.g., at end of life) and may be adapted to the unique needs of a health care setting or organization.

In-person gatherings

For all in-person gatherings in the health care setting, occupancy should not exceed current public health guidelines. Consideration should be given to limit room occupancy to allow for physical distancing in all risk periods.

Table 6: Type of gatherings for Risk Periods

<table>
<thead>
<tr>
<th>Type of gatherings</th>
<th>High Risk Period</th>
<th>Transition Period</th>
<th>Low Risk Period</th>
</tr>
</thead>
<tbody>
<tr>
<td>In-person work</td>
<td>Limit</td>
<td>Limit (consider hybrid model)</td>
<td>Acceptable</td>
</tr>
<tr>
<td>Break rooms/Cafeteria</td>
<td>Limit occupancy to ability to distance</td>
<td>Limit occupancy to ability to distance</td>
<td>Limit occupancy to ability to distance.</td>
</tr>
<tr>
<td>In-person meetings</td>
<td>Limit to essential need*</td>
<td>Limit to essential need*</td>
<td>Acceptable</td>
</tr>
<tr>
<td>In-person social gatherings</td>
<td>Not recommended</td>
<td>Not recommended**</td>
<td>Acceptable</td>
</tr>
</tbody>
</table>

*e.g., in-service, education.
** Recommendations may be adapted to the unique needs of a health care setting or organization (e.g. size of function and location of the function relative to the rest of the facility).
References


Citation

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