



# Coronavirus COVID-19

BC Centre for Disease Control | BC Ministry of Health



## Infection Prevention and Control (IPC) Protocol for Surgical Procedures During COVID-19: Adult

Updated: May 21, 2020

### Guiding Principles:

Provider Safety  
Patient Safety  
PPE Conservation

### Approach to IPC Includes:

Patient COVID-19 Assessment  
Surgical Risk Assessment  
PPE Recommendation  
PPE Allocation Framework<sup>1</sup>

### Background/Current Status

Through effective public health measures the COVID-19 pandemic curve has reached its peak and is on the downward slope. As a result, B.C. is now in a position to ease restrictions on surgical services. This is to ensure that we avoid the unintended consequences of prolonged delay of access to surgical services. Likewise, other health care services will gradually be reintroduced.

The protection of health care workers will continue to be foremost as B.C. moves forward, and is in keeping with the ethical guidelines established for the management of the pandemic. Health care facilities should continue to ensure that they meet all public health and infection prevention and control (IPC) pandemic recommendations. This applies to all staff, patients, relatives, and visitors.

**Based on the current epidemiology of COVID-19 in B.C.<sup>2</sup>, people who are scheduled for surgery and do not have risk factors for or symptoms of COVID-19 should not be considered suspect cases.** This is based on the advice of the BC Centre for Disease Control (BCCDC), the Office of the Provincial Health Officer (PHO) and the Provincial Infection Control Network of BC (PICNet), and is key to easing restrictions on surgical services. BCCDC, PHO, and PICNet review the epidemiology on a regular basis and will amend or update this advice as required.

As such, the decision to proceed with surgical procedures and the appropriate personal protective equipment (PPE) to be used should be based on an individual COVID-19 patient risk assessment which includes: assessing risk factors, screening for symptoms, and COVID-19 testing if clinically indicated. In

<sup>1</sup> COVID-19: Emergency Prioritization in a Pandemic Personal Protective Equipment (PPE) Allocation Framework, Provincial COVID-19 Task Force: <https://www2.gov.bc.ca/gov/content/health/about-bc-s-health-care-system/office-of-the-provincial-health-officer/current-health-topics/covid-19-novel-coronavirus>

<sup>2</sup> Epidemiologic considerations: daily case counts; test positivity rate; incidence rate; point prevalence.



most cases, patients who do not have risk factors for, or symptoms consistent with COVID-19 do not require a COVID-19 test.

The guidance provided here includes a patient screening tool and classification of patients based on a Patient Risk Categorization into green, yellow, and red categories. **The entire surgical team including anesthesiologist, surgeon, assistant, nurses, etc., is responsible for deciding the Patient Risk Category together.** It then provides appropriate direction for PPE for those providing care, those providing aftercare, and those responsible for cleaning and preparing the operating room (OR). Guidance is also included for different anesthesia approaches and for surgeries with risk of aerosolization.

Given this guidance and the current low incidence and prevalence of COVID-19 in B.C., the risk of infection or transmission to health care workers when protocols are followed is extremely low.

## Scope

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This protocol does not apply to maternity or pediatric patient populations. There is separate provincial guidance available regarding specific pediatric and obstetrical surgical protocols.

### A. Urgent/Emergent/Elective Surgical Procedures

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- Urgent or emergent surgical procedures should proceed as medically indicated, regardless of the patient's COVID-19 status, and should not be delayed for testing or test results.
- For urgent or emergent surgical procedures, patients reporting new symptoms consistent with COVID-19 should undergo pre-operative COVID-19 testing.
- Elective surgical patients should self-monitor for symptoms prior to surgery and phone their surgeon's office if they develop any signs or symptoms consistent with COVID-19<sup>3</sup> (see Appendix 1) or have contact with any confirmed COVID-19 individuals.
- Elective surgical procedures for confirmed COVID-19 patients and those patients who have had contact with, or an exposure to, a known COVID-19 patient or COVID-19 outbreak should be delayed until the patient is deemed recovered and non-infectious according to the provincial protocols, or the surgical procedure becomes urgent or emergent.
- Elective surgical patients reporting new symptoms consistent with COVID-19 should be tested as per provincial testing guidelines.

### B. Pre-surgical Patient Assessment

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- For scheduled surgical procedures, the COVID-19 Surgical Patient Assessment Form (see Appendix 1) should be completed 24 to 72 hours prior to scheduled surgical procedure, by the pre-admission unit (nurse, medical office assistant or anesthesiologist) over the phone, and then repeated in person when the patient arrives at the hospital on the day of surgery<sup>4</sup>.
- Procedures performed under local or regional anesthesia should be performed under droplet precautions. For cases where a patient is classified as yellow or red, the risk of conversion to general anesthesia must be discussed at the huddle to help guide appropriate PPE under Section E.

<sup>3</sup> As defined by the BCCDC. See <http://www.bccdc.ca/health-professionals/clinical-resources/covid-19-care/lab-testing> for more information.

<sup>4</sup> Every attempt should be made to assess the patient in their preferred language.



- For urgent or emergent surgical procedures, the COVID-19 Surgical Patient Assessment Form shall be completed upon arrival to the pre-operative area.
- There needs to be a mechanism in place within each facility or surgical unit to ensure the COVID-19 Surgical Patient Assessment Form is included in the patient chart.
- IPC risk categories have been developed to guide PPE use before, during, and after a surgical procedure:
  - Low or no risk (green) – a patient with no risk factors for COVID-19, and/or no symptoms or signs of COVID-19, and/or a negative COVID-19 RNA test where relevant
  - Unknown risk (yellow) – a patient where the risk factors history and symptomatology are unknown, and a COVID-19 RNA test result is pending or unknown.
  - Moderate to high risk (red) – a patient with risk factors for COVID-19, and/or symptoms or signs of COVID-19, and/or a COVID-19 RNA test result is pending or unknown, OR a lab confirmed COVID-19 RNA test.

### C. Pre-surgical Procedure Huddle

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- The pre-surgical huddle, when the full surgical team is engaged (anesthetist, surgeon, assistant, nurses, etc), is one of the strongest determinants for achieving the highest levels of safety and quality in surgical environments. All of the other usual elements of the surgical checklist should also be discussed at this time.
- The Patient Risk Category is determined based on information gathered from the COVID-19 Patient Risk Assessment Form (see Appendix 1).
- Surgical team members must agree on the Patient Risk Category (see Appendix 1).
- Recommended PPE to be used during the surgical procedure is provided in Section E: Algorithm for Management of Adult Surgical Patients below.
- Consider alternatives to general anesthesia whenever possible. Procedures performed under local or regional anesthesia, including spinal and epidural, can be performed using contact and droplet precautions.

### D. Air Clearance Post AGMP

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- Airflow considerations, including appropriate times for air clearance post-AGMP, should be made for each OR suite in consultation with local infection prevention and control (IPAC), and facilities, maintenance and operations (FMO).
  - In most ORs and post-operative areas, the relative humidity (RH) is kept between 40% and 45% which aids in reducing the amount of virus or bacteria in the air.
  - Raising the RH not only causes more rapid fallout of particles below the respiratory zone, but also has been documented to be beneficial for clearing respiratory secretions and hydrating mucous membranes with associated improved outcome.
  - Increased RH decreases viral survival. The air exchange rate (or air changes per hour – ACH) is kept between 18 and 23 in most ORs (higher in positive pressure rooms).
  - Between the increased RH and the ACH, the potential for bioaerosol spread will be reduced by over 95% within 10-12 minutes following aerosol creation (extubation).
- The AGMP should be performed with the door(s) closed. Limiting the number of personnel and equipment in the room and minimizing door openings is a key element in environmental infection control.



## E. Protocol for Management of Surgical Patients - Adult

Infection Prevention & Control Risk Category			
	Green	Yellow	Red
<b>Intubation Team</b> <b>Recommended PPE</b> <i>Limit personnel in the OR to anesthesiologist, RN +/- AA</i>	All staff in OR suite don: • Surgical mask • Eye protection • Gown/Gloves	All staff in OR suite don: • fit-tested N95 respirator • Eye protection • Gown/Gloves	All staff in OR suite don: • fit-tested N95 respirator • Eye protection • Gown/Gloves
<b>Surgical Team</b>	All staff in OR suite don: • Surgical mask • Eye protection • Gown/Gloves	All staff in OR suite don: • fit-tested N95 respirator* • Eye protection • Gown/Gloves	All staff in OR suite don: • fit-tested N95 respirator • Eye protection • Gown/Gloves
<b>Extubation Team</b> <i>Limit personnel in the OR to anesthesiologist, RN +/- AA</i>	All staff in OR suite don: • Surgical mask • Eye protection • Gown/Gloves	All staff in OR suite don: • fit-tested N95 respirator • Eye protection • Gown/Gloves	All staff in OR suite don: • fit-tested N95 respirator • Eye protection • Gown/Gloves
<b>Phase 1 Recovery</b>	• In the post-anesthesia recovery (PAR) droplet/contact precautions • No need to delay moving patient to PAR following extubation.	• In the post-anesthesia recovery (PAR) using droplet/contact precautions • Patient may be moved to PAR after appropriate air exchanges.	• Recover in the OR suite until ready to move to appropriate isolation room. • Patient may be moved to appropriate isolation room after appropriate air exchanges.
<b>Air Exchange</b>	• No need to wait to begin cleaning	• No need to wait to begin cleaning	• Begin cleaning and disinfection after period of appropriate air exchanges
<b>Cleaning and Disinfection Staff</b>	All cleaning staff in OR don: • Surgical mask • Eye protection • Gown/Gloves	All cleaning staff in OR don: • Surgical mask • Eye protection • Gown/Gloves	All cleaning staff in OR don: • Surgical mask • Eye protection • Gown/Gloves
<b>Disposition</b>	Return patient to appropriate inpatient unit.	Return patient to appropriate inpatient unit based on further patient risk assessment.	Return patient to appropriate COVID-19 ward if confirmed positive or isolation room if unknown.

\*At the discretion of the surgical team, surgical masks may be used in place of N95 respirators after appropriate air exchanges.



## Appendix 1: COVID-19 Surgical Patient Assessment Form - Adult

Health Authority LOGO

### Patient Information

Name:  
Date of Birth:  
Language:  
PHN:

#### NURSE OR MEDICAL OFFICE ASSISTANT SCREEN:

Able to obtain patient history?  Yes  No If No, go to Physician Screen section

#### **Does the patient have a risk factor for COVID-19 exposure? In the last 14 days has the patient:**

Returned from travel outside of Canada?  Yes  No When? Date: \_\_\_\_\_

Been in close contact with anyone diagnosed with lab confirmed COVID-19?  Yes  No When? Date: \_\_\_\_\_

Lived or worked in a setting that is part of a COVID-19 outbreak?  Yes  No When? Date: \_\_\_\_\_

Been advised to self-isolate or quarantine at home by public health?  Yes  No Contact info: \_\_\_\_\_

#### **Does the patient have new onset COVID-19 like symptoms in the last 14 days?**

24 to 72 hours prior – Date/Time: \_\_\_\_\_ Day of surgery – Date/Time: \_\_\_\_\_

Fever	<input type="checkbox"/> Yes <input type="checkbox"/> No	Fever	<input type="checkbox"/> Yes <input type="checkbox"/> No
Cough	<input type="checkbox"/> Yes <input type="checkbox"/> No	Cough	<input type="checkbox"/> Yes <input type="checkbox"/> No
Shortness of breath	<input type="checkbox"/> Yes <input type="checkbox"/> No	Shortness of breath	<input type="checkbox"/> Yes <input type="checkbox"/> No
Diarrhea	<input type="checkbox"/> Yes <input type="checkbox"/> No	Diarrhea	<input type="checkbox"/> Yes <input type="checkbox"/> No
Nausea and/or vomiting	<input type="checkbox"/> Yes <input type="checkbox"/> No	Nausea and/or vomiting	<input type="checkbox"/> Yes <input type="checkbox"/> No
Headache	<input type="checkbox"/> Yes <input type="checkbox"/> No	Headache	<input type="checkbox"/> Yes <input type="checkbox"/> No
Runny nose/nasal congestion	<input type="checkbox"/> Yes <input type="checkbox"/> No	Runny nose/nasal congestion	<input type="checkbox"/> Yes <input type="checkbox"/> No
Sore throat or painful swallowing	<input type="checkbox"/> Yes <input type="checkbox"/> No	Sore throat or painful swallowing	<input type="checkbox"/> Yes <input type="checkbox"/> No
Loss of sense of smell	<input type="checkbox"/> Yes <input type="checkbox"/> No	Loss of sense of smell	<input type="checkbox"/> Yes <input type="checkbox"/> No
Loss of appetite	<input type="checkbox"/> Yes <input type="checkbox"/> No	Loss of appetite	<input type="checkbox"/> Yes <input type="checkbox"/> No
Chills	<input type="checkbox"/> Yes <input type="checkbox"/> No	Chills	<input type="checkbox"/> Yes <input type="checkbox"/> No
Muscle aches	<input type="checkbox"/> Yes <input type="checkbox"/> No	Muscle aches	<input type="checkbox"/> Yes <input type="checkbox"/> No
Fatigue	<input type="checkbox"/> Yes <input type="checkbox"/> No	Fatigue	<input type="checkbox"/> Yes <input type="checkbox"/> No

Screened by:

Signature:

Screened by:

Signature:





**PHYSICIAN/SURGEON SCREEN:**

COVID-19 NP test performed  Yes  No Date: \_\_\_\_\_  
 Result:  Negative  Positive

If test has not been performed, do you recommend testing patient?  Yes  No Reason: \_\_\_\_\_

Unable to perform swab?  Yes  No Reason: \_\_\_\_\_

**Screened by:** \_\_\_\_\_ **Signature:** \_\_\_\_\_ **Date/Time:** \_\_\_\_\_

**FINAL SURGICAL TEAM ASSESSMENT:**

COVID-19 risk factor (travel, contact, outbreak)?  Yes  No  Unknown

COVID-19 like symptoms that cannot be explained by another medical or surgical diagnosis?  Yes  No  Unknown

COVID-19 test result?  Yes  No  Unknown  N/A

**PATIENT RISK CATEGORY TABLE:**

COVID-19 Risk Factors	COVID-19 Symptoms	COVID -19 Test Results	COVID-19 Risk Category
NO	NO	NOT REQUIRED	GREEN
NO	NO	NEGATIVE	GREEN
YES	NO	NEGATIVE	GREEN
NO	UNKNOWN	NEGATIVE	GREEN
NO	YES	NEGATIVE	GREEN
YES	YES	NEGATIVE	GREEN
UNKNOWN	UNKNOWN	UNKNOWN/PENDING	YELLOW
YES	NO	UNKNOWN/PENDING	RED
NO	YES	UNKNOWN/PENDING	RED
YES	YES	UNKNOWN/PENDING	RED
-	-	POSITIVE	RED

**PATIENT RISK CATEGORY (CIRCLE ONE):**

GREEN	YELLOW	RED
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## Key Informants

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