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

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Guiding Principles:

Provider Safety
Patient Safety
PPE Conservation

Approach to IPC Includes:

Patient COVID-19 Assessment
Surgical Risk Assessment
PPE Recommendation
PPE Allocation Framework[1]

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

[1] COVID-19: Emergency Prioritization in a Pandemic Personal Protective Equipment (PPE) Allocation Framework, Provincial COVID-19 Task Force, March 25, 2020: https://www2.gov.bc.ca/assets/gov/health/about-bc-s-health-care-system/office- of-the-provincial-health-officer/covid-19/ppe_allocation_framework_march_25_2020.pdf

[2] Epidemiologic considerations: daily case counts; test positivity rate; incidence rate; point prevalence.

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 anesthesist, 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

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

- 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[3] (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 COVID-19 patient (known and being followed by public health officials) 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

- 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[4].
- 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.

[3] As defined by the BCCDC. See http://www.bccdc.ca/health-professionals/clinical-resources/covid-19-care/lab-testing for more information.
[4] Every attempt should be made to assess the patient in their preferred language.

C. Pre-surgical Procedure Huddle

- The pre-surgical huddle, when the full surgical team is engaged (anesthesist, 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.
- Because of the potential risk of difficult intubations, the anesthesiologist may choose to don an N95 respirator for any patient, regardless of Patient Risk Category.
- Additionally, any member of the surgical team may choose an N95 respirator for high risk procedures[5] where aerosol generation is anticipated, regardless of Patient Risk Category. Individual decisions shall be respected by the surgical team, but need not change the PPE used by other team members.
- 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

- 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).
- Limiting the number of personnel and equipment in the room and minimizing door openings is a key element in environmental infection control.

[5] High risk procedures include: nasopharyngeal, oropharyngeal, open lung surgery, any surgery involving sinus cavity/skull base.

E. Protocol for Management of Surgical Patients - Adult

	Infection Prevention & Control Risk Category*		
	Green	**Yellow**	**Red**
Intubation Team Recommended PPE *Limit personnel in the OR to anesthesiologist, RN +/- AA*	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
Surgical Team	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
Extubation Team *Limit personnel in the OR to anesthesiologist, RN +/- AA*	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
Phase 1 Recovery	• 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 the appropriate isolation room after appropriate air exchanges.
Air Exchange	• No need to wait to begin cleaning	• No need to wait to begin cleaning	• Begin cleaning and disinfection after period of appropriate air exchanges
Cleaning and Disinfection Staff	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
Disposition	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.

* Because of the potential risk of difficult intubations, the anesthesiologist may choose to don an N95 respirator for any patient, regardless of Patient Risk Category. Additionally, any member of the surgical team may choose an N95 respirator for high risk procedures[6] where aerosol generation is anticipated, regardless of Patient Risk Category. Individual decisions shall be respected by the surgical team, but need not change the PPE used by other team members.

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

[6] High risk procedures include: nasopharyngeal, oropharyngeal, open lung surgery, any surgery involving sinus cavity/skull base.

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, got 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?

24 to 72 hours prior – Date/Time: _____		Day of surgery – Date/Time: _____	
Fever	□ Yes □ No	Fever	□ Yes □ No
Cough	□ Yes □ No	Cough	□ Yes □ No
Shortness of breath	□ Yes □ No	Shortness of breath	□ Yes □ No
Diarrhea	□ Yes □ No	Diarrhea	□ Yes □ No
Nausea and/or vomiting	□ Yes □ No	Nausea and/or vomiting	□ Yes □ No
Headache	□ Yes □ No	Headache	□ Yes □ No
Runny nose/nasal congestion	□ Yes □ No	Runny nose/nasal congestion	□ Yes □ No
Sore throat or painful swallowing	□ Yes □ No	Sore throat or painful swallowing	□ Yes □ No
Loss of sense of smell	□ Yes □ No	Loss of sense of smell	□ Yes □ No
Loss of appetite	□ Yes □ No	Loss of appetite	□ Yes □ No
Chills	□ Yes □ No	Chills	□ Yes □ No
Muscle aches	□ Yes □ No	Muscle aches	□ Yes □ No
Fatigue	□ Yes □ No	Fatigue	□ Yes □ No

Screened by: **Signature:** **Screened by:** **Signature:**

PHYSICIAN 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: _____
Type of anesthesia to be used	□ General	□ Local/Regional

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 Symptoms/ Signs	COVID-19 Exposures/ Contacts	COVID -19 Test Results (if applicable)	Risk Category
NO	NO	NOT REQUIRED	GREEN
NO	NO	NEGATIVE	GREEN
NO	YES	NEGATIVE	GREEN
UNKNOWN	NO	NEGATIVE	GREEN
YES	NO	NEGATIVE	GREEN
YES	YES	NEGATIVE	GREEN
UNKNOWN	UNKNOWN	UNKNOWN/PENDING	YELLOW
NO	YES	UNKNOWN/PENDING	RED
YES	NO	UNKNOWN/PENDING	RED
YES	YES	UNKNOWN/PENDING	RED
-	-	**POSITIVE**	RED

PATIENT RISK CATEGORY (CIRCLE ONE):

GREEN	YELLOW	RED

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