Children's Hospital at London Health Sciences Centre
Clinical Guideline for Protected Code PINK for the Resuscitation of Paediatric Patients During the COVID-19 Pandemic

Rationale

Careful attention must be paid to the management of paediatric patients with suspected or confirmed COVID-19 during resuscitation due to the increased risk of transmission to healthcare workers (HCWs) from aerosol generating medical procedures (AGMPs). At Children's Hospital at London Health Sciences Centre (LHSC), resuscitation is performed by a team of well-equipped and trained individuals who wear appropriate personal protective equipment (PPE).
This guideline addresses resuscitation situations for all paediatric patients for the duration of the COVID-19 pandemic.
This document is intended to supplement the Corporate Procedure CODE PINK.

Protected Code Pink for COVID-19

A Code Pink in PUI/PC should be performed in an isolation room with negative pressure (when available) or private room by a competent team, with minimum number of staff and with strict adherence to infection control measures. To ensure the safety of responding staff, all Code Pink calls will be treated as "Protected Code Pink" with enhanced PPE at the present time.
As with other patients, the early identification of a PUI/PC with clinical deterioration is essential. The Paediatric Critical Care Outreach Team (PCCOT) should be activated for these situations.

Activation Process

Identification

PUI/PC will be identified with the assistance of Infection Prevention & Control (IPAC) and isolation/PPE requirements will be affixed in the hallway (clean area) or anteroom if the patient is within a negative pressure room. The anteroom must be designated as the clean space if donning of PPE is to occur there.

Activation

In case of a cardiac arrest in a PUI/PC, the Code must be activated by calling extension 55555 and stating **"Code Pink"** and the location of the arrest as in usual practice. All calls will be treated as a Protected Code Pink.

Switchboard will make an overhead announcement of "Code PINK" and fan out BEEP notifications to the designated team members (see "Personnel") who will attend the arrest.

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Preparation for Entering the Patient Room

Personal Protective Equipment (PPE)

Enhanced PPE will be available in all units in which PUI/PC are being cared for.

While recognizing that resuscitation from cardiac arrest is a time-sensitive intervention, prioritizing the meticulous donning of appropriate PPE for all staff before entering a paediatric patient room is particularly crucial in a Protected Code PINK. Maintaining the safety of our staff is of the utmost importance.

All PUI/PC will be under droplet/contact precautions while admitted to Children's Hospital at LHSC. When available, these patients will be in a negative pressure room. As with standard care, strict hand hygiene practices should be followed. Additionally, the following PPE must be worn by all HCWs entering a patient room for resuscitation:

- Level 3 gown or greater (non-sterile, fluid resistant, long-sleeved)
- Extended cuff gloves
- N95 respirator (fit tested)
- Full face shield
- Bouffant Hair Net
- Goggles/eye protection

Other notes regarding PPE:

- A Safety Leader should be designated at each resuscitation to supervise the donning and doffing of team member PPE and to monitor for any potential breaches/exposures (Charge RN or other member of the unit caring for patient)
- Do not take any personal items into the room (stethoscope, jewellery, phone, clipboard, PCCOT bag, etc)

Preparation for Code Team Arrival

As with standard Code PINK procedure, preparing the patient for the arrival of the Code Team in a Protected Code PINK is expected. When a provider identifies a PUI/PC who requires resuscitation, they:

1. **Press code button** from within room
2. **Do not** perform Aerosol Generating Medical Procedures AGMP (See Appendix I) unless Enhanced PPE is donned.
3. **Perform** initial non-AGMP procedures (e.g. obtaining vital signs, ensuring secure IV access, providing MDI, fluid bolus)
4. **Additional** providers should:

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a. Call 55555: "**CODE PINK"**
b. Two providers (RN/RT/MD) don Enhanced PPE in preparation to enter patient care space.
c. Another provider should get the nearest arrest cart and bring it to the doorway outside the patient care space. This provider can be responsible for handing cart items to the runner inside the room (see Personnel).
d. Once two providers have donned full PPE, they may enter the patient room. They are to bring the Zoll defibrillator from the arrest cart.
e. Original responder (in D&C PPE) can leave room to don Enhanced PPE.
f. One provider in the room will begin CPR if indicated while the other attaches the Zoll leads to the patient. Continue until Protected Code Pink Team arrives to take over care.

Personnel

General Considerations

- Personnel in the room should be limited to the number required to safely perform the resuscitation.
- The most experienced HCWs for the tasks required who are also trained in appropriate use of necessary PPE should be involved in the resuscitation.
- Learners should be involved in resuscitations of PUI/PC at the discretion of their clinical faculty/supervising clinician and based on the skill level of the trainee. While residents and fellows will likely play key roles on the Protected Code PINK Team, medical, respiratory, and nursing students should not be involved in care or in the room as observers.
- All team members should identify themselves and their role clearly at the outset of the resuscitation.

Code Pink Team in the patient room

a) PCCOT MD (2 of, in order of preference): attending PCCU physician, PCCU fellow, or senior paediatric resident)
b) PCCOT RN
c) PCCOT RRT
d) +/- Pediatric ED attending MD (call for airway help early if anticipate need)
e) Bedside providers as listed above (minimum necessary, one assigned to family member)

Personnel Outside the Patient Care Space

a) Two to three RNs – one to draw medications and get supplies from cart, one to be runner to provide meds/supplies to team, one to chart/document*
b) One Safety Leader** to assist with donning and doffing of PPE, observe for any breach in PPE, and maintain staff log of all personnel entering room

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c) Security officer to control crowds and prevent entry of any non-essential personnel into area and room
d) Additional person to act as runner to assist with transportation of samples to lab, etc.
e) Most Responsible Physician (MRP) or delegate to provide information on chart, contact family, etc.

* At least 1 RN in anteroom (or outside room) should be donned in Enhanced PPE, in case needs to relieve RN inside room
** One additional health care provider assigned to ensure there are no breaches in PPE

Equipment

Equipment to Take into Patient Care Space

- Zoll/defibrillator
- Arrest drugs
- Intubation equipment
- Backboard
- Intraosseous (IO) drill and needle if IV access lost or unable to be established
- Additional equipment deemed necessary

Guidelines for Resuscitative Care

A Protected Code Pink has the following variations from standard resuscitative protocols (PALS):

- The provider with the most airway expertise should perform the intubation early to limit attempts and team exposure.
- The bag-mask valve may be applied with a two-handed seal for oxygen delivery if patient is making some respiratory effort, but **bagging should be avoided**. If there is no respiratory effort, apneic oxygen delivery should be by nasal prongs at 6L/min or filtered non-rebreather until definitive airway established.
- If, in a very rare case, a patient absolutely requires BMV, use two-handed seal with viral filter and small tidal volumes delivered by a second person.
- If safe to do so and patient not in full arrest, rapid sequence intubation (RSI) is optimal to avoid manual ventilation of the patient and aerosolization.
- In cardiac arrest, intubate patient early and hold CPR during intubation to minimize aerosolization and optimize chance of first-pass success.
- Unless contraindicated, always paralyze the patient. This reduces coughing aerosolization.
- When available and familiar to intubating staff, use video laryngoscopy for intubation.
- After intubation and confirmation of ETCO2, immediately apply viral filter between endotracheal tube and ventilator circuit/bag and inflate cuff.

Considerations for Leaving the Patient Room

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- Excess medications should be discarded at the end of the resuscitation.
- Staff performing procedures during the code must ensure all contaminated disposable equipment is discarded.
    - Laryngoscopy blade should be placed in a biohazard bag and labelled COVID prior to sending to cleaning (or disposal of Glidescope blade)
    - Laryngoscopy handle (or Glidescope) should be wiped down and placed in biohazard bag (RRT to take with them)
- Team members should begin doffing PPE inside room in a staggered fashion to avoid crowding, while communicating clearly to avoid contaminating each other.
- Safety Leader will supervise doffing of PPE to monitor for any possible contamination. They will also ensure any reusable contaminated equipment is collected for disinfection.
- Staff who believe they have been contaminated/exposed should attempt to decontaminate the affected area (change clothes, wash, etc), perform hand hygiene, don a surgical mask, report to their supervisor, and contact Occupational Health for further guidance and assistance.
- If resuscitation successful, at least one team member should remain in the room in PPE to monitor patient until transport.
- Environmental Services must be contacted to clean the room as per protocol.

Patient Transportation

- Patients surviving a Protected Code Pink outside of Paediatric Critical Care Unit (PCCU) should be transported to PCCU as soon as possible.
- Any Code Team member who will continue to care for the patient during transport must first doff PPE, exit the room, and don new PPE prior to transport.
- Clean Team for paediatric patients transporting from Children's Emergency Department (CED) to PCCU (Link to Standard Work for Clean Team document)
- Transport team should ideally consist of one MD, one RN, and one RT.
- In the unlikely event the patient is not intubated, continue to use oxygen mask with viral filters during transport to reduce contamination of the environment.
- Security should clear all non-essential people in the path of patient transport to PCCU. Security should have a service elevator waiting for transport team if needed to move floors.
- The elevator buttons and any other contacted surfaces must be cleaned by Environmental Services after patient has been transported.
- If resuscitation is unsuccessful, patient remains should be handled as per usual process with the addition of double bagging the body. Link to document – care of body after death

Appendix I

<u>Aerosol-Generating Medical Procedures**</u>

- Intubation
- Extubation

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- Code Blue (NB – CPR itself is no longer considered AGMP; however, procedures associated with CPR, such as emergent intubation and manual ventilation are AGMP)
- Non-invasive ventilation (e.g., CPAP, BiPAP)
- Manual ventilation
- High frequency oscillation ventilation/jet ventilation
- High-flow oxygen (i.e., AIRVO, Optiflow)
- Open suctioning (e.g. "deep" insertion for naso-pharyngeal or tracheal suctioning, not inclusive of oral suction)
- Bronchoscopy
- Induced sputum (e.g. inhalation of nebulized saline solution to liquify and produce airway secretions, not natural coughing to bring up sputum)
- Large volume nebulizers for humidity
- Chest tube insertion for trauma (where air leak likely)
- Autopsy
- Nasopharyngoscopy
- Oral, pharyngeal, transphenoidal and airway surgeries (including thoracic surgery and tracheostomy insertion).
- Breath stacking

**** only perform if medically indicated**

Not Considered Aerosol-Generating Medical Procedures

- Collection of nasopharyngeal or throat swab
- Ventilator circuit disconnect
- Chest tube removal or insertion (unless in setting or emergent insertion for ruptured lung/pneumothorax)
- Coughing
- Oral suctioning
- Oral hygiene
- Gastroscopy or Colonoscopy
- Laparoscopy (GI/pelvic)
- ERCP
- Cardiac stress tests
- Caesarian section or vaginal delivery of baby done with epidural
- Any procedure done with regional anesthesia
- Electroconvulsive Therapy (ECT)
- Transesophageal Echocardiogram (TEE)
- Nasogastric/nasojejunal tube/ gastrostomy/ gastrojejunostomy /jejunostomy tube insertion
- Bronchial artery embolization

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- Chest physiotherapy (outside of breath stacking)
- Oxygen delivered as more than 6L by nasal prongs, venturi masks, HiOx masks, non-rebreather masks

*Unknown risk: High frequency oscillation ventilation and needle thoracostomy

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