Centre universitaire de santé McGill — McGill University Health Centre

Title:	**MUHC: COVID-19 CODE BLUE ADULT PROCEDURES** **Focused Update on CODE BLUE Procedures**
This document is attached to:	1. Covid-19 infection control management and prevention of transmission 2. Elevator Patient Transportation During COVID-19 Outbreak at the MUHC 3. MUHC Hand Hygiene Policy

Protected Code Blue Procedure:

Don Personal Protective Equipment
↓
Defibrillation (if appropriate) → Asystole: STOP
↓
Intubation
↓
CPR
↓
Continue ACLS → If uncorrectable PEA: STOP

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Note: Adult Patients who are not suspected for COVID-19

- For patients without COVID-19 isolation precautions, oxygen can be increased as ordered (no need for N95 mask).
  - o MD should be notified of all patients with increasing oxygen demands.
- Procedures involving oral secretions (i.e. mouth care or suctioning) should be performed while wearing a procedure mask with visor
- **If the patient further deteriorates and requires a code blue intervention (CPR, manual ventilation, or intubation) the following code blue protocol applies.**

1. Introduction and the need for protection

Based on the experience with SARS and the COVID 19 experience worldwide, emergent intubation and cardiac arrest resuscitation constituted the highest risk for Health Care Worker (HCW) infection; all measures should be taken to avoid such a situation. The use of personal protective equipment, defibrillation, expert intubation and timely advanced cardiac life support (ACLS) are paramount.

All patients at the MUHC requiring code blue interventions should be considered potentially COVID-19 positive.

Risk to Health Care workers. COVID19 is transmitted by droplets and is not airborne. However, there is a risk of aerosolization when aerosol generating procedures are performed.

Aerosol Generating Procedures (AGP)	
Intubating a patient	Cardio-Pulmonary Resuscitation (CPR)
Extubating a patient	Open circuit suctioning in intubated patients
High frequency oscillatory ventilation	Nebulization
Tracheostomy and care of tracheostomy	Manual ventilation (bagging) before intubation
Sputum induction	Bronchoscopy/ Laryngoscopy
Nasopharyngeal aspirate in children	Upper gastrointestinal endoscopy
Non-invasive ventilation (includes high-flow supplemental oxygen, positive pressure ventilation like BiPAP and CPAP) *Non-rebreather mask is not an AGP*	

Airborne + Droplet + Contact precautions are required for ALL code blue procedures

The safety of MUHC employees, staff, and physicians is always the priority

2. Why are these changes necessary?

<u>COVID-19 infection can lead to cardio-respiratory arrest</u>. Manifestations of the disease are primarily respiratory; If patients deteriorate to cardiac arrest it will most likely be as a result of respiratory failure. The best way to prevent respiratory decompensation and cardiac arrest is to closely monitor the respiratory status and intervene earlier with intubation and mechanical ventilation. There should be <u>early</u> consultation to ICU in patients with signs of respiratory failure.

<u>Limited resources</u>. In the context of the pandemic**,** our focus must shift from *duty to care for individual patients* to focus on doing *the greatest good for the greatest number.* This updated CODE BLUE procedure reflects a *significant discrepancy* informed by the current institutional duties and responsibilities inherent in the COVID-19 pandemic response, specifically:
- o To reduce exposure and transmission *(public health)*
- o To protect the workforce *(access to care)*
- o To increase ICU surge capacity and availability *(distributive justice)*
- o To ensure the number of patients who are negatively affected by these changes does not exceed that which is necessary to respond to the increased risk of transmission   (*proportionality*)

   For ethical discussion see **Appendix 1: Ethical Issues**

3. Clinical Flags- Before the Code

► *The aim should be to make cardiac arrest of a COVID 19 patient in an unmonitored bed a "never event".*
► Level of Intervention should be discussed and documented for all patients

Early and low threshold for Senior MD notification and ICU consult: **Detecting Early Warning Signs of Deterioration and taking action as soon as possible is essential**

Updated Early Warning Signs Medical Emergency Activation Criteria for COVID-19 ADULT Patients
Contact the <u>Fellow/Senior Resident (or Attending Staff MD) immediately</u> if patient appears to be deteriorating and/or you notice any acute changes in:
Airway: - Obstructed Airway   - Noisy breathing or stridor   **Breathing:**   - Any difficulty breathing   - Respiratory rate: less than 10/min or greater than 23/min   - SpO2 less than 90% with 4L/min of oxygen via NP   **Circulation:**   - Systolic blood pressure: less than 90 mmHg or greater than 200 mmHg   - Pulse rate: less than 40/min or greater than 120/min   **Conscious State:**   - Decreased or Altered Level of Consciousness   - Fever or Temperature less than 35.5^{o}C   **OR**   **Serious Concern** – such as sudden bleeding, unexplained change in condition, or significantly reduced urine output

*From Protocol: Early Warning Signs (EWS) for Medical Emergency Activation (ADULT Population)

Early Detection/Intervention for Deteriorating MUHC patients in Context of COVID-19 (Appendix 2)

4. First Responder:

- For Severe Respiratory Distress, Loss of Consciousness, or Cardiac Arrest: Call a Code Blue: DO NOT HESITATE
  - Push button in room if you are inside, call for help from colleagues
- Check for a carotid pulse if trained to do so; do not put your face close to patient's to check breathing
- **Do not start CPR until you are wearing appropriate PPE**
- **CPR should not start until the patient is intubated with N100 filter**
- Minimize personnel entering the room
- Apply supplemental oxygen as appropriate
  - In the context of a code blue: apply non-rebreather at 15 L/min
- Gather necessary equipment
- Prepare the Room for Code Blue team
  - Pull the bed away from the wall
  - Push unnecessary equipment to the side
  - Clear tables to use a work surface
  - Ensure oxygen and suction are functional
  - Place bed in CPR position with CPR board (if patient unconscious and multiple nurses available)
  - Ensure IV is patent
- Prepare the hallway (can be done by colleagues outside the room)
  - Bring Unit Based Emergency Cart (UBEC) 1-2 m from room door
  - Bring at least one clean table to outside the room door
- In a multi-bedded room, the other patients should be removed from the room prior to starting any code blue AGP

Code Team Arrives

- Give report on patient
  - Include Clinical History and events leading up to deterioration (SBAR)
- Help the code team members who will be inside the room to don code blue Personal Protective Equipment (PPE) **(See appendix 3)**
  - For Code Blue: N95 mask, Face shield, Impermeable Gown, Gloves
  - If you were already in the room and not wearing proper PPE, you must doff completely then re-don with full code blue PPE
- Assist code team to place CPR board and perform CPR as needed.
- Inside the antechamber, a nurse can act as runner between the hallway and inside the room, ensuring doors are not open at same time (wearing contact/droplet precautions)
- When no antechamber is available, the nurse acting as the runner between the hallway and the patient room should wear contact/droplet precautions. A table may be used outside of the door to pass supplies between inside and outside of room.
- Minimize opening and closing of room door(s)
- Once Code Blue Team is in the room and it has been determined that the unit nurse's assistance is not required, they may leave and assist from outside of the room.
- Stay nearby to get materials and answer questions
- Should the unit nurse(s) assistance be required inside the room, the unit nurse(s) must wear code blue PPE and pass the N95 mask fit check before entering the room

See Appendix 4: Code Blue: One pager

5. CODE BLUE and Intubation SWAT team

DON Personal Protective Equipment

⬇

Defibrillation (if appropriate) → **Asystole : STOP**

⬇

Intubation

⬇

CPR

⬇

→ **If uncorrectable PEA**

Continue ACLS (Volume, Airway): STOP

Code Blue Team Members	
Minimize the number of personnel in the room	
Inside Room (wearing code blue PPE)	**Outside Antechamber*/Room**
(1) MD Leader (Can monitor pulse)	(1) MD as backup support
(1) Code Blue RN for applying monitor/pads, and administering medications	(1) Code Blue RN for recording, managing cart, and preparing medications
(1-2) Airway managers (RT/ Anesthesiologist) for airway and ventilation management	(1-2) Runners to grab supplies not on crash cart and transport materials
(2) trained health care workers for CPR (if needed) (If LUCAS is available, it should be used)	(1) PPE monitor to help with donning and supervise doffing to avoid self-contamination (optional)
(1) Procedure MD (if needed)	(1) Pharmacist (during business hours)
	(1) Security
* Inside the antechamber, a nurse can act as runner between the hallway and inside the room, ensuring doors are not open at same time (wearing contact/droplet precautions) When no antechamber is available, the nurse acting as the runner between the hallway and the patient room should wear contact/droplet precautions. A table may be used outside of the door to pass supplies between inside and outside of room. (1) RT back-up may wear Code Blue PPE in the antechamber (if needed)	

- Important Note: Some unit staff members may not be fit tested and/or pass the fit check for the N95 masks and will not be able to enter the room

See Appendix 5: Example of physical set-ups

Unwitnessed cardiac arrest: The decision to resuscitate or not should be taken by the attending MD or the CODE BLUE team, taking into account the very poor outcomes in such circumstances. During the Covid-19 pandemic the guideline is to NOT attempt resuscitation on an unwitnessed arrest unless the physician judges there is a strong reason to believe the patient could recover.

Witnessed cardiac arrest: The decision to resuscitate or not should be taken by the attending MD or the CODE BLUE team, based on a consideration that there is a reasonable chance of recovery. A shockable or treatable rhythm (V. Fib or V. Tach, rapid AF, AV block), a correctable cause of hemodynamic instability (volume status) or respiratory difficulty (mucous plugging) present the best hope for meaningful recovery.

MUHC: COVID-19 CODE BLUE ADULT PROCEDURES

Priorities for the code blue team should be:
    1) PPE (to re-emphasize: no personnel should enter the room without full PPE for AGP)
    2) Assess for shockable rhythm or bradycardia (shock/intervene if appropriate)
    3) Intubation by skilled intubator (or blind intubation with the LMA iGel airway device; please see https://www.intersurgical.com/info/igel for video and schematic)
    4) Ensure N100 viral filter is placed before ventilating the patient

- Do not perform BVM ventilation prior to intubation
- Chest compressions should **only** be performed when wearing appropriate PPE.
- **Chest Compressions should not be started prior to intubation.**

Cardio-Pulmonary Resuscitation (CPR)

CPR is an aerosol generating procedure and should only be performed when all personnel in the room have donned the required PPE for a code blue or aerosol generating procedures. The time needed to don PPE may delay CPR. However, any aerosol generating procedures performed without the correct PPE will subject the rescuer to risk of infection and jeopardize our ability to take care of patients. For this reason, the current position of the Code Blue Committee is:

    ► **Chest Compressions should not be started prior to intubation.**

    ► **Intubation with an ETT should be prioritized, however if delays exists, placement of LMA iGel with a N100 filter can be used in order to start chest compression and manual ventilation.**

    ► CPR and any form of intubation should not be performed in an open space - this means that a patient in cardiac arrest, for whom resuscitation is appropriate, should be moved to an appropriate closed space prior to CPR and airway maneuvers being performed.

Exceptional Circumstances. In *rare* circumstances, CPR prior to intubation may be considered when ALL of the following criteria are met:

The RIGHT decision maker → Code blue team Leader (Fellow or higher)
For the RIGHT patient → High chance of benefit from CPR
For the RIGHT reason → Significant delay to advanced airway
With the RIGHT team → The Code Blue Team
In the RIGHT place → A single bedded closed room
With the RIGHT equipment → Full code blue PPE properly donned and fit checked performed

If an exceptional decision to start CPR is made, the burden will be on the Code Blue team leader to justify that it was appropriate given the circumstances. This decision will be open to quality review by the code blue committee.

Should the exceptional circumstances to perform CPR prior to intubation occur, one of the following options **MUST** be used to reduce the aerosols to the room:
- LMA iGel supraglottic airway with a N100 filter (First choice)
- Covering mouth with physical barrier (procedure mask)
- Bag Mask Valve 2-person technique with a N100 filter and small tidal volumes by the airway team
- BiPAP mask secured with straps and a N100 filter and ambu bag, giving only small tidal volume by the airway team

Defibrillation
Defibrillate shockable rhythms rapidly with highest recommended energy; may perform up to 3 sequential shocks if required - the early restoration of circulation may prevent the need for airway and ventilatory support.

==**Airway Management:**==
==Please refer to the most up to date airway management guidelines. The following section reflects general principles for airway management. Depending on availability, the SWAT intubation team may be present to assist with airway management.==

Ventilation and Oxygenation Non-Invasive;
BIPAP and high-flow O2 present a higher risk of aerosolization and therefore should be avoided. *Bag-valve-mask pre-oxygenation should be avoided*, if possible, since it increases the risk of aerosolization. RT may apply bag-valve-mask over the patients' nose and mouth to provide supplemental oxygen only. A N100 filter must be used. Special attention made to forming an effective seal around mouth and nose.

Intubation
Intubation is the modality of choice. **It should be performed by the most experienced intubator ==(SWAT Intubation Team when available)==**. Video laryngoscope is the preferred method.
- Sedation and paralytics should be used to prevent coughing (refer to the intubation document)
- After intubation a N100 filter must be used when providing manual ventilation. A patient should be switched to a closed-circuit ventilator with a N100 filter, as soon as possible.
- No medication should be placed inside the ETT.

Administration of inhaled medications
As for any other respiratory tract infection, metered dose inhaler (MDI) are always preferred to aerosolized medications.

ECMO
ECMO is rarely indicated in the treatment of COVID19 for respiratory failure. The ECMO team should be consulted early for intubated patients showing signs of respiratory failure. Members of the MSSS working group consider that in the context of a pandemic, eCPR (i.e. V-V ECMO in cardiac arrest) is not recommended in COVID patients.

6. After the CODE BLUE

After Code:
- If the patient passes away during the code blue procedure, please refer to the Focused Update on COVID-19 postmortem care
- Once transferred, the patient's nurse will need to give report on the receiving unit.
- Room is considered a high contamination zone, if AGP were performed during the code
- HCW entering that room must wear Airborne PPE until sufficient time has passed to allow for maximal removal of airborne virus-containing aerosols (refer to Appendix 2 in MUHC Clinical Protocol Control and Prevention of Mycobacterium Tuberculosis). Afterwards, HCW can wear procedure mask with visor, gown and gloves.
    - General guidelines:
        - 3 hours for regular room
        - 60 minutes for regular room at the Glen
        - 35 minutes for negative pressure room
- Call housekeeping and inform of discharge

Transferring between departments
Prior to a transfer, a discussion with the intensivist about patient disposition is required so that the appropriate transfer can be made. The patient should be placed in a single room with a door, negative pressure if available.
- For non-intubated patients, a surgical mask should be used overtop of any supplemental oxygen, as tolerated
- Once the ETT is inserted by the airway team then a N100 filter should be used directly on the Ambu bag or on the expiration port of the ventilator
- For patients with a trach, a N100 filter should be used directly on the Ambu bag or on the expiration port of the ventilator
- LMA iGels should be exchanged for an ETT prior to transport
- Closed circuit ventilator is recommended for transport
- Reference the Transport of COVID-19 (positive or suspected) In-patient with stretcher or bed (Critically ill INTUBATED patent) for guidelines on transportation and AGP inside of an elevator

See Appendix 6: Recommendations for Code Blue Cart

7. References

(Adapted from the guidelines for COVID-19 in the MUHC ED)

Poirier, D. (Présidente), (2020 -03-19). Guide de procédures techniques : SOINS INTENSIFS SARS-CoV-2 :(COVID-19). Sous-comité ministériel COVID-19 des soins critiques et adopté par le Comité directeur clinique COVID-19. Ministère de la Santé et des Services sociaux

Poirier, D. (Présidente), (2020 -04-06). Annexe 5 : Prise en charge d'un arrêt cardio-respiratoire. Extrait du Guide de procédures techniques : SOINS INTENSIFS SARS-CoV-2 :(COVID-19). Sous-comité ministériel COVID-19 des soins critiques et adopté par le Comité directeur clinique COVID-19. Ministère de la Santé et des Services sociaux

MUHC. (March 25, 2020). How to protect yourself in COVID-19 clinical situations?

Wax, R., & Christian, M. (2020). Practical recommendations for critical care and anesthesiology teams caring for novel coronavirus (2019-ncov) patients. *Canadian Journal of Anesthesia, (2020).* doi:10.1007/s12630-020-01591-x

Schwartz, B., Jayaraman, D., & Warshawsky, P. (2013). Survival from in-hospital cardiac arrest on the internal medicine clinical teaching unit. *The Canadian Journal of Cardiology, 29*(1), 117-21. doi:10.1016/j.cjca.2012.03.024

Fei Shao Shuang, Xu Xuedi, Ma Zhouming, Xu Jiayou, Lyu Michael, Ng Hao, Cui Changxiao, Yu Qing Zhang, Peng Sun Ziren Tang In-hospital cardiac arrest outcomes among patients with COVID-19 pneumonia in Wuhan, China Resuscitation 2020, in press
https://doi.org/doi:10.1016/j.resuscitation.2020.04.005

Covid-19 infection control management and prevention of transmission :
https://www.mymuhc.muhc.mcgill.ca/node/52535

https://www.cdc.gov/coronavirus/2019-ncov/infection-control/control-recommendations.html?CDC_AA_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019-ncov%2Fhcp%2Finfection-control.html

http://www.crto.on.ca/pdf/PPG/Infection_Control_CBPG.pdf

https://www.resus.org.uk/media/statements/resuscitation-council-uk-statements-on-covid-19-coronavirus-cpr-and-resuscitation/covid-healthcare/

http://policy.nshealth.ca/site_published/DHA9/document_render.aspx?documentRender.IdType=5&documentRender.GenericField=&documentRender.Id=11216

https://www.zoll.com/codecommunicationsnewsletter/ccnl06_08/codecommunications06_08.pdf

https://first10em.com/covid-airway-management-sas-consensus-statement/

March 29th Reviewed by:

Dr. Genest, Cardiology, Code Blue Co-Lead	L. Craigie, Advanced Practice Nurse, Code Blue Co-Lead
Dr. Melanson, Critical Care and Emergency Medicine	M. Sills, Nurse Manager RVH CCU/C7
Dr. Jayaraman, Critical Care and Internal	J. de Boer, Nurse Manager MGH CCU/11E

Medicine	
Dr. Frenette, Infection Prevention and Control	M. McQuirter, Nursing Professional Development Educator
Dr. Donatelli, Anesthesia	C. Patterson, Infection Control
M. Giroux, Assistant-Chief Respiratory Therapy	S. Fukanizu, Nurse
L.Wade, Clinical Ethicist	

April 10-21st Reviewed by:

Dr. Genest, Cardiology, Code Blue Co-Lead	L. Craigie, Advanced Practice Nurse, Code Blue Co-Lead
Dr. Kornbluth, Cardiology, Code Blue Committee	E. Fagen, Nurse, Code Blue committee
Dr. Razek, Intensivist, Trauma Surgeon	F. Paquet, Nurse Practice Consultant
Dr. Rajda, Infection Prevention and Control	A. Turner, Medicine Mission Associate Director of Nursing
L.Wade, Clinical Ethicist	M. Giroux, Assistant-Chief Respiratory Therapy

Committees		**Date approved** [yyyy-mm-dd]
☒ Ethics Review		2020/03/27 Rev 2020/04/19
☒ CCMU		2020/04/21
☒ Direction of professional services		2020/03/23 Rev 2020/04/19
☒ Nursing		2020/03/27 Rev 2020/04/21

8. Appendices

Appendix 1:
Ethical Issues:
With the increased risk of transmission to staff from providing CPR to COVID-19 patients, *how do we ensure safety of staff (reduce transmission) while also ensuring access to high quality care?*
- In addition to contributing to the spread of the virus, we could face a scarcity of health care workers, reducing access to care for the collective, if we do not take aggressive measures to reduce staff exposure.
- However, enforcing stricter safety procedures creates delays in patient access to potentially life-saving treatment, which could negatively impact patient outcomes.

Ethics Analysis:
In the context of the pandemic, our focus must shift from *duty to care for individual patients* to focus on doing *the greatest good for the greatest number.* This updated CODE BLUE procedure reflects a *significant discrepancy* informed by the current institutional duties and responsibilities inherent in the COVID-19 pandemic response, specifically:
  - To reduce exposure and transmission *(public health)*
  - To protect the workforce *(access to care)*
  - To increase ICU surge capacity and availability *(distributive justice)*
  - To ensure the number of patients who are negatively affected by these changes does not exceed that which is necessary to respond to the increased risk of transmission (*proportionality*)

The above updated guidelines to the CODE BLUE procedure (defibrillation prior to intubation; no CPR if unwitnessed arrest or asystole) are justified based on the following:
- Given the growing number of COVID-19 positive cases identified by public health in the community and in the institution, any patient requiring a code blue intervention must be considered suspected for COVID-19
- Code Blues consists of high risk AGP and poses a risk of contamination for staff
- Recent data from a McGill affiliated teaching hospital demonstrated that unwitnessed cardiac arrest of an admitted patient has a 0% survival
- Witnessed cardiac arrests were shown to have a 2% survival to discharge
- Most important indicator of benefit from CPR is the presence of a shockable rhythm, rates of recovery from asystolic arrest with CPR are very low.
- Although there is not a high level of certainty on the risk of transmission of Covid-19 to staff during CPR (especially when the patient is not a suspected or confirmed COVID-19 case), because there is new evidence that transmission may have occurred beyond the pool of suspected COVID-19 patients and due to the fact that the consequences of an under reaction at this time could have potentially devastating effects –risking transmission to staff, and subsequently,

the healthcare system and public spread— **reducing transmission is the top priority**.

- Without optimum access to CPR (which will occur as a result of PPE etc), already low rates of medical benefit (asystole) become unjustifiably low when compared against risk of transmission to staff.
- Moreover, in context of the pandemic, where access to ICU level care is being maximized for critically ill Covid-19 patients, there is an obligation to withhold CPR for patients whom physicians judge to have no reasonable hope for meaningful medical recovery.
- Notwithstanding the recommendations above, the final decision to resuscitate should be made by the attending or senior CODE BLUE physician, taking into account the clinical circumstances and the previously established values and preferences of the patient or the substitute decision maker.

This approach is supported by the current norms and standards that guide practice in Quebec during interpandemic times:

- Collège des Médecins du Québec/Barreau de Québec: «Quoi qu'il en soit, le médecin doit décider lui-même d'accepter ou non des demandes de soins qu'il juge inappropriés. S'il est convaincu le soin est préjudiciable pour le patient, il doit le refuser. Il doit aussi se sentir libre de **refuser un traitement qui n'est probablement pas bénéfique pour le patient, même s'il n'est pas préjudiciable**. » (Le médecin et le consentement aux soins, 2018)
- Code of Ethics of Physicians:
  - o Article 3: "A physician's paramount duty is to protect and promote the health and well-being of the persons he attends to, both individually **and collectively**."
  - o Article 12: "A physician must be judicious in his use of the resources dedicated to health care."
  - o Article 50: "A physician must only provide care or issue a prescription when these are medically necessary."
- In a recent FAQ on medical-legal questions pertaining to COVID-19 and potential resource constraints, the CMPA highlighted for physicians to assess what is a reasonable standard of care under such circumstances.

Appendix 2: Early Detection/Intervention for Deteriorating MUHC patients in Context of COVID-19

Quand dois-je consulter le médecin pour transférer mon patient COVID aux soins intensifs ?

When do I need to consult the MD about transferring my COVID patient to the ICU?

Consultez le médecin lorsque l'un de ces signes précurseurs de gravité est présent :

Consult the MD when any of these early warning criteria is present:

Fréquence respiratoire Respiratory Rate	4 L O₂ par canule nasale ou masque faciale de FIO2 35%	Tension artérielle Blood Pressure	Niveau de conscience altéré

Fréquence respiratoire
Respiratory Rate

$$\geq 24/min$$

4 L O$_2$ par canule nasale ou masque faciale de FIO2 35%
Est nécessaire pour obtenir
O$_2$ sat de plus de 90%

4 L O$_2$ per nasal prong or facial mask of FIO2 35%
Is required to obtain
O$_2$ sat of over 90%

Tension artérielle
Blood Pressure

$$<90_{mmHg}$$

Systolique/Systolic

Niveau de conscience altéré

Altered level of consciousness

Privilégiez l'utilisation de canules nasales via les narines. Pour les patients qui respirent par la bouche, des canules peuvent être placées entre les lèvres du patient. Le masque venturi peut aussi être utilisé.

Prioritize nasal prongs via nostrils. For mouth breather patients, prongs can be put between the patient's lips. The venturi mask can also be used.
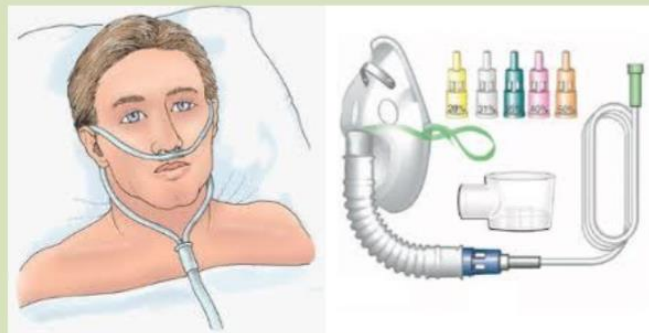
Direction des Soins infirmiers - Nursing Department   Mis-à-jour 14 avril 2020 / Updated April 14, 2020

Appendix 3: Personal Protective Equipment (PPE)

Fit testing
All physicians and staff need to be fit tested for the correct size of N95 mask to ensure there is no leak. Re-doing testing every two years is recommended. Beards interfere with mask seal. Physicians and staff should be clean shaven to ensure adequate fit.

Fit Check Procedure
Please refer to the Fit Check Procedure for the use of a new model of mask.
It is recommended to perform the fit check procedure prior to entering the room of the patient.
The procedure to follow is detailed in the video found here:
https://www.youtube.com/watch?v=sP5OtiEdVhE

PPE required for code blues:
- Gloves
- Impermeable Gown (Level 3)
- N95 mask
- Face shield
- No need for hat/shoe covers (shoes should be restricted to the work units)

Donning and doffing (done in the antechamber, if available) *Ideally PPE would be donned and doffed while supervised by another team member to ensure optimal compliance.* (See Appendix 1 & 2 in COVID-19 Infection Control Management and Prevention of Transmission Protocol)
- *Dress before* entering the room. Do not bring charts in the room
- Remove your gloves, gown, and visor before exiting the room, washing hands between each step.
- Wash hands before removing your mask outside the room

Other Resources:

Training donning/doffing PPE video: https://www.mymuhc.muhc.mcgill.ca/employee-toolbox/infection-control/coronavirus-2019-covid-19

French: https://www.youtube.com/watch?v=M_yJBBobclk&feature=youtu.be
English: https://www.youtube.com/watch?v=0o6ZvKg0QSw&feature=youtu.be

LMA iGel information & Training: https://www.intersurgical.com/info/igel

Appendix 4:
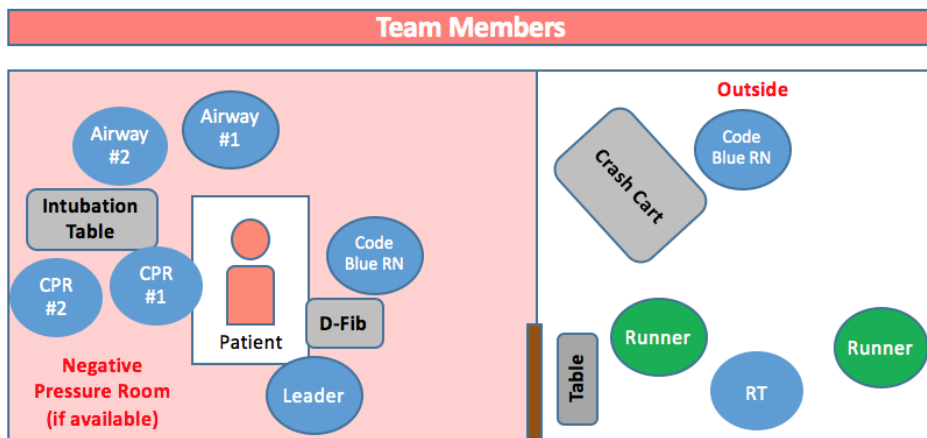Code Blue- One pager

CODE BLUE

1

Push Code Blue Button &
Call CODE BLUE ADULT overhead (55555)
DO NOT start CPR

2

Apply supplement OXYGEN
Non-rebreather mask, Flow at 15 L/min
Place the bed in CPR Position (if unconscious)

3

Prepare the room for CODE BLUE
Bring UBEC 1-2m from door
Pull bed away from the wall
Ensure that oxygen and suction are working
Push unnecessary equipment to the side
Clear tables to use as a work surface

4

Help the INSIDE Team Put on PPE
Personal Protective Equipment:
N95, Face shield, Impermeable Gown, Gloves

INSIDE

STAFF INSIDE the room for Code BLUE

1 MD Leader | 1 Code Nurse Monitors/pads/meds administration | 1-2 trained HCW for CPR OR LUCAS if available | 1-2 airway managers | PRN 1 procedure MD

OUTSIDE

STAFF outside the room for Code BLUE

1 Security | 1 Code Nurse Documentation / preparing meds | 1-2 runners to grab supplies | PRN 1 PPE monitor for help with donning/ doffing | 1 backup MD 1 backup RT 1 Pharmacist

Code Blue Procedure in the context of COVID-19 Pandemic (April 10th 2020)
Created by: MA. Jacques NPDE in MGH ED; Modified by: L. Craigie, E. Fagen, M. McQuirter

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Appendix 5: Example set-ups

Physical set-up (Antechamber)
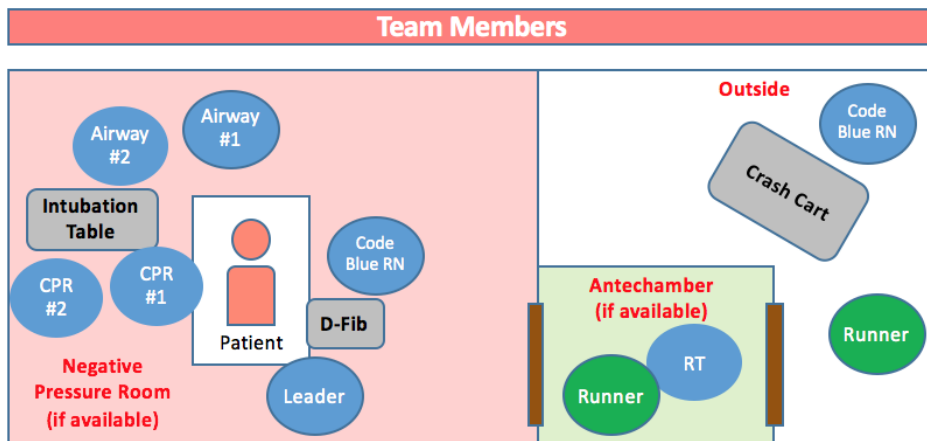
Physical set-up (With a Table)

Physical set-up (Without a Table)
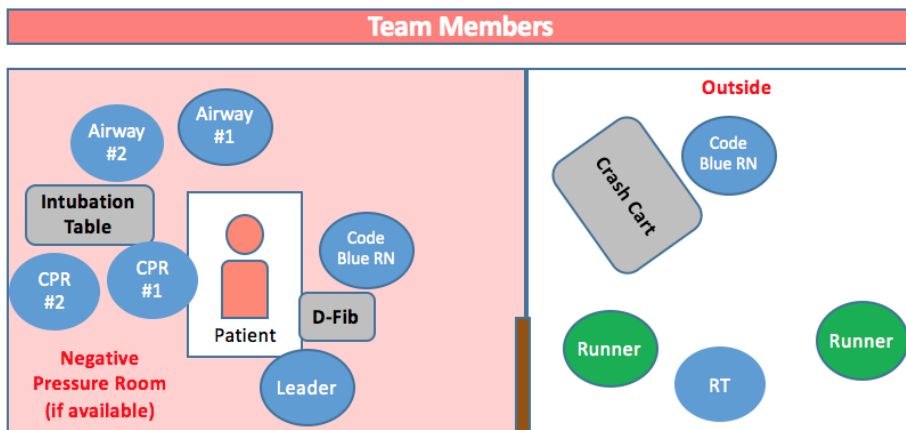
Appendix 6: Recommendations for Code Blue Cart

Regular runner crash carts have been adapted for the current COVID-19 situation

Modifications to Code Blue Crash Carts
- **Required airway items:**
  - McGRATH™ MAC video laryngoscope
  - N100 filters (GRM: 1013554)
  - LMA iGel size 3,4,5 (GRM: 1288203; 1288204; 1288205)
  - Non Vented Bipap mask (size L, M, S)
- **Personal Protective Equipment(PPE):**
  - The COVID prepared crash cart(s) will have
    - (1) box of gloves (Medium)
    - (5) face shields (GRM#20216)
    - (5) impermeable gowns (GRM#1009570)
    - (3) N95 of each size in labeled sealable plastic bags
    - (1) box of procedure masks

Code Blue Communication
- The team members inside the room will use phones or baby monitors to communicate to the team outside the room for documentation and preparation of medications and supplies.

Code Blue Cart and Documentation
- Code Blue Cart should **NOT** be placed in the room
  Rationale: To minimize contamination of the cart:
  - The cart should ideally be 1- 2 meters away from room door
  - Keep crash cart drawers facing away from the door
- Only the code blue nurse will manage the cart.
- Documentation is to be done in the hallway

Post Code Blue Cleaning
- Visibly soiled items must be cleaned with soap and water
- Disinfection can be done using disinfectant wipes
- Reusable equipment is to be disinfected <u>inside the isolation room</u>
- <u>All disposable materials brought into the room must be discarded</u>
- The outside surfaces of the crash cart should be disinfected after use

9. Frequently Asked Questions (FAQ)

How should we transport of patients post CODE BLUE?
Please refer to the most up to date Transport of COVID-19 (positive or suspected) In-patient with stretcher or bed (Critically ill INTUBATED patent) guidelines. As of April 14th, when transporting a critically ill patient, where AGP may be performed, it is recommended that all those in an elevator should wear an N95 mask, face shield, gown and gloves. Housekeeping and security are required for locking and cleaning of the elevator.
The C6 elevator at the Glen site is dedicated for COVID transport.
At the MGH elevator number 6 should be used.
There is no designated elevator at the other sites.

How many people should accompany the patient post CODE BLUE?
Code blue team (1) MD, (1) RT, (1) Code Blue RN, transport, security & housekeeping. The nurse of the patient should also go to the receiving department to give report.

What is the approach to follow in the case of a CODE BLUE in a public space (hospital entry, waiting rooms, parking, cafeteria, etc…) or an outpatient clinic/treatment area (Hemodialysis, oncology day center, specialized clinics) ?
Before approaching any patient requiring the assistance of the code blue team, the team members in contact with the patient should first don their code blue PPE. The team members at the crash cart should be 1-2 m away and do not require PPE. The CODE BLUE protocol should be followed, with the donning of PPE for the resuscitation team, simultaneous applying defibrillator pads and prompt intubation. Aerosol generating procedure should **NOT** be performed in a hallway, cafeteria or other open space. The patient should be first transported to a closed room, if available, or to the emergency department (ED). The transfer of a patient to the ED should follow the transport protocol. The ED must be notified that a patient is being brought to a resuscitation room.

Can defibrillation be performed prior to intubation?
Defibrillation can be performed prior to intubation, up to 3 sequential shocks, at the highest recommended energy.

What should be done if there is a code blue in multi-bedded room?
As part of the room preparation, the other patients should be removed from that room prior to any code blue AGP being performed.