Thunder Bay Regional Health Sciences Centre Policies, Procedures, Standard Operating Practices	No. EMER-140
Title: Code Blue/Pink/NRP - Cardiac Arrest Response (Adult, Paediatric, Neonate)	☒ **Policy** ☒ **Procedure** ☐ **SOP**
Category: General **Sub-category:** Emergency Plan	**Distribution:** Organization Wide
Endorsed: President & CEO **Signature:**	**Approval Date:** Sept. 1998 **Reviewed/Revised Date:** Sept. 30, 2024 **Next Review Date:** Sept. 30, 2027

Cross References: (CS 136) Cardiac Arrest Response Form, (IPC-1-18) Routine Practices and Additional Precautions, (IPC-2-16) Management of Novel Respiratory Infections, (PAT-5-178) Code OB – Obstetrical Emergency, (EMER-200) Emergency Planning & Response to External Buildings

1. PURPOSE

To provide direction for staff in how to respond to a person who has an altered level of consciousness and/or cardiac arrest and/or requires airway management within the Thunder Bay Regional Health Sciences Centre (the Hospital).

2. SCOPE

A timely response by the appropriate staff is vital in attempting to provide life saving measures to any person within the Hospital (980 Oliver Rd). Having the ability to initiate a Code Blue/Pink/NRP allows for quick access to the correct medical team.

3. DEFINITIONS

Aerosol generating medical procedure (AGMP): a medical procedure that may significantly increase risk of infection to health care workers within close range of the procedure and thus N95 respirators and eye protection are required as a minimum level of protective equipment (refer to *Management of Novel Respiratory Infections* (IPC-2-16) for list of AGMPs)

Code Blue: an emergency response protocol for any person over the age of 16, as well as labouring or postpartum patients under the age of 16, who have an altered level of consciousness and/or require airway management and/or may require cardiopulmonary resuscitation. If an individual requiring medical assistance remains alert and able to communicate or otherwise express themselves, e.g., talking, gesturing, crying, a Code Blue should *not* be called, refer to Alert 99 and Alert 99-Trauma (EMER-120).

Note: Code OB will be called for any obstetrical emergency, refer to Code OB – Obstetrical Emergency (PAT-5-178); however, if a pregnant person requires immediate airway management or cardiac resuscitation, a Code Blue should be called.

Code Pink: an emergency response protocol for infant and paediatric patients up to and including the age of 16 years who have an altered level of consciousness and/or may require cardiopulmonary resuscitation and/or may require airway management.

Code NRP: an emergency response protocol for any new born requiring resuscitation during or immediately following the delivery.

Point of Care Risk Assessment (PCRA): prior to each interaction with a patient or their environment, the patient's status and the health care worker's personal risk are assessed to determine what interventions and controls are required to prevent the spread of infection.

Worker: staff, professional staff, learners, volunteers, contractors, and any other person working on behalf of the Hospital.

4. CARDIAC ARREST RESPONSE TEAM

Any physician is expected to respond to a Code Blue or Code Pink. Any physician trained in neonatal resuscitation and/or neonatal intubation is expected to respond to Code NRP. It is understood that occasions may occur where a physician in-house may not be able to respond in a timely manner.

A. Cardiac Arrest Response – Adult Resuscitation "Code Blue"

The following designated personnel will respond to a "Code Blue":

- Any available physician(s)
- Critical Care CAR Team: Responds to ALL areas, excluding ED
- Emergency Department (ED) CAR Team: Responds to ED only
- Registered respiratory therapist (RRT)
- Cardiac Catheterization Lab: Responds to procedure induced cardiac arrests, but calls "code blue" overhead for persistent arrest or when additional code blue response team members required.

B. Cardiac Arrest Response – Paediatric Resuscitation "Code Pink"

The following designated personnel will respond to "Code Pink":

- Any available physician(s)
- On-call paediatrician
- Neonatal Intensive Care Unit (NICU) response team: Responds to ALL areas
- Critical Care CAR Team: Responds to ALL areas, excluding ED
- ED CAR Team: Responds to ED only
- RRT

When Critical Care, ED, and NICU attend the same arrest, determine the appropriate expertise and communicate with each other who will manage the arrest.

C. Cardiac Arrest Response – Neonatal Resuscitation "Code NRP"

The following designated personnel will respond to "Code NRP":

- NICU Response Team
- RRT
- On-call Paediatrician
- Any available midwife
- Any available physician trained in neonatal resuscitation and/or neonatal intubation
- Labour and Delivery nurse when possible

If Code Pink is called on CAMHU or Paediatrics, one available staff from each of the remaining Women and Children's (W&C) units must assist with the code or help care for existing patients. When a Code NRP is called, one available staff from each of the remaining W&C's units must go to NICU to help care for existing patients. In all scenarios, the release of this staff to support the code depends on if the department is able to safely accommodate this.

5. PROCEDURE

See Appendix A for Code Blue/Pink Algorithm for In-Patient (does not apply to NRP)

5.1 Activation

Any worker may activate a Code Blue/Pink/NRP for any non-responsive individual or child. However, the Emergency Department, Critical Care Services, and Cardiac Catheterization Lab may opt to not page overhead at their discretion when there are appropriate personnel immediately available to respond.

A. To activate a Code Blue/Pink/NRP response:

1. Use the nearest telephone (e.g., patient room), dial "55" and state ***"Code Blue/Pink/NRP + location + age (Code Pink) + room number*** (if applicable)**"**.
2. During a code if there is no physician respondent and or the intensivist is not available, at the direction of the code team staff will dial "55" and instruct Switchboard to:
   Announce **"*Code Blue/Pink/NRP -any physician and location + age (Code Pink) + room number*** (if applicable)**"** to indicate to physicians that no physician has responded to the code.

Switchboard:

1. Announce overhead ***"Code Blue/Pink/NRP + location + age (Code Pink) + room number*** (if applicable)" (3x) and continue to announce every 30 seconds.
2. Contact Paediatrician on call stat (Code Pink/NRP).
3. Press "Code Blue Button" to call four pagers (ED clerks to page manually after hours): RTs (x2) and ICU (x2)

B. If Overhead Paging System Is Down

1. Switchboard will phone RRT cell phone (807-630-1765) to notify of Code Blue/Pink/NRP.
2. The ward staff will call ICU direct at ext. 6366 to notify of Code Blue/Pink and location.
3. Ward staff considers sending a runner to ICU to notify of Code Blue/Pink and location.

C. Telephone System Down

1. Call ICU fail safe phone (807-346-8074) to notify Code Blue/Pink and location.
2. Call RRT cell phone (807-630-1765) to notify of Code Blue/Pink/NRP and location.
3. Ward staff will send a runner to ICU to notify of Code Blue/Pink and location.

5.2 Response Roles and Responsibilities

RESPONSIBLE INDIVIDUAL	CODE BLUE/PINK/NRP
CAR TEAM	1. Personnel respond as per the corresponding code (see Sec. 4). 2. Do not run to arrest location. 3. Wear a gown and gloves (located on crash cart – set of 4 for code team), appropriate N95 mask, and goggles or face shield if within 2 m of the individual. 4. Responders not in protective apparel will be replaced immediately by responders properly protected. *Refer to policy and procedure Infection Control: Routine Practices (ICP-1-18).* 5. Under no circumstances will responders enter the magnetic resonance imaging (MRI) scan room or bring the crash cart into the scanner room (it is metal and may become a lethal projectile), responders must always wait until the MRI staff remove the subject from the instrument. 6. Under no circumstances will responders defibrillate a patient on the linear accelerator table top. 7. When all responders are on scene, a member of the CAR team will instruct a staff member to call Switchboard at "55" to announce the "all clear." 8. Individuals from the public/out-patient areas will be brought to the Emergency Department for admission following stabilization. 9. Following completion of code procedures, recorder to complete Cardiac Arrest Response Form (CS-136).
SWITCHBOARD	1. Announce "Code Blue/Pink/NRP + location + age (Code Pink) + room number (if applicable)" (3x). – For any penthouse related response also advise "to stay off the B intersection elevator until the all clear is announced." – Continue to announce every 30 seconds until the "all clear" is announced.

	2. Contact Paediatrician on call stat for Code Pink/NRP. 3. Press “Code Blue Button” to call four pagers (ED clerks to page manually after hours): RTs (x2) and ICU (x2) 4. Announce “Code [Blue/Pink/NRP] All Clear” (3x) overhead as instructed.
CODE LOCATION	1. Retrieve PPE and airway box and ensure it is available to responders (see Appendix C for ward air way box locations). 2. All workers to perform a point of care risk assessment prior to entering patient area. 3. All workers to wear gown, gloves, appropriate N95 mask, goggles or face shield within two-meters of patient. 4. Direct CAR responders to code location and provide traffic control if needed. 5. Workers not needed at the site of resuscitation will care for the patients of those staff that are busy with resuscitation measures. 6. If individual is a patient, ensure their chart and medication administration record (MAR) are brought to the location of the cardiac or respiratory arrest (if applicable). 7. Call or page the most responsible physician (MRP). 8. If individual is a patient, call their family and/or care partner. 9. Staff of areas adjacent to code location to offer assistance as required. 10. Reassure and inform patients and visitors as necessary.

5.3 Cardiac Arrest Occurring Outside the Hospital

1. Workers are to call 911 for any individual who collapses outside of the Hospital.
2. The CAR team may proceed outdoors if the individual is in close proximity to the building and may provide Basic Life Support (BLS) while awaiting Emergency Medical Service (EMS) arrival.
3. Responders to perform a point of care risk assessment and wear appropriate PPE when responding.
4. Only the airway box will be taken outdoors when providing BLS.
5. The CAR team must collaboratively consider safety, environmental conditions and how equipment may react before initiating Advanced Cardiac Life Support (ACLS) interventions outdoors.
6. The CAR team must consider transporting the individual to a controlled safe indoor environment.
7. The CAR team will delegate a bystander to retrieve a stretcher from the nearest location.
8. If any responder does not feel safe proceeding with ACLS resuscitation outside the building they may opt to not participate and notify the ICU charge nurse for a replacement team member if possible. Responders who feel safe may proceed outdoors while waiting for a replacement team member.
9. If it is deemed that EMS is no longer required on scene, phone 911 and cancel.
10. If proceeding to the ED, delegate a bystander to notify by calling ext. 6125.

For medical emergencies occurring inside an external building follow Emergency Planning & Response to External Buildings (EMER-200).

5.4 Code Blue Penthouse (4th Floor)

1. Call 911 if there is an environmental hazard observed or the person requires extraction from a confined space.
2. Response will proceed if/when the environment is determined to be clear of hazards (e.g., confined spaces, water, electrical)
3. Both Code Teams and one outreach nurse are to respond; Team 1 will take the 3B cart which has key access to the 'B' Intersection elevator (EL:08) to access the penthouse.
4. Designated worker from ICU will bring a stretcher to the penthouse.
   Note: a backboard is hung adjacent to EL:08.
5. Security will report to the location of the individual needing medical assistance and provide first aid.
6. Security will be positioned at the elevator to meet response team members and support their access to the penthouse (as there is only one key associated with the 3B cart), as staffing allows.

7. Security will provide wayfinding between the elevator and the location of the individual requiring medical assistance, as staffing allows.

6. EQUIPMENT

Crash carts are located throughout the Hospital for the CAR team to retrieve in the following areas:

- Level 1 – 1A, Medical Oncology
- Level 2 – 2B, Medical
- Level 2 – Radiation Therapy, Cancer Centre
- Level 3 – 3B, Surgical
- Level 3 – Critical Care (out-cart and in-cart)
- Level 3 – Chemotherapy, Cancer Centre

See Appendix B for locations and routes to access carts.

6.1 Crash Cart Management

1. Nurses in the Emergency Department (ED) will maintain ED crash carts.
2. No equipment, supplies, and/or medication(s) may be added or removed from the crash carts without the approval of the Critical Care Operations Team and/or the Pharmacy & Therapeutics Committee.
3. Crash carts will be secure, covered with a nylon cart cover, and plugged into the emergency electrical outlet when not in use.
4. The Critical Care Unit out-cart is equipped with trauma elevator key, while the Level 3B crash cart is equipped with elevator B key to access Penthouse.

MAINTENANCE OF CRASH CARTS – ROLES & RESPONSIBILITIES	
RESPONSIBLE GROUP	**ACTION**
CAR Team	• Immediately following use, the nurse will replenish all used equipment, supplies, and medication(s) in the crash cart, and reseal the crash cart drawers • Ensure suction canister, tubing, and yankauer is replaced
ED Nurses	• Immediately following use, the ED nurse will replenish all used medications, and equipment in the crash cart and reseal crash cart drawers
Respiratory Therapist (RRT)	• Immediately after use, the RRT will exchange the used airway box with a sealed airway box • Maintain intubation and airway equipment in the airway boxes (i.e., endotracheal tube, laryngoscope, blades, etc.) and seals the box • After each use, ensure that the oxygen tank, bag valve mask are replaced
Pharmacy Technician	• Check crash carts every three months for expired IV solutions or medications and replace expired supplies as required • Date and sign log book after completing check
Biomedical Department	• Conduct preventative maintenance checks on defibrillators according to manufacture guidelines • Conduct yearly preventable maintenance to portable suction

6.2 Emergency Carts

Emergency carts are located on designated units for managing pre-arrest and cardiac arrest incidents until the CAR team arrives with crash cart.

- Departments (i.e., Operating Room, Cardiac Catheterization Laboratory, Stress Lab, Paediatrics, NICU, and Labour and Delivery) with an internal emergency cart are responsible for maintaining and replacing supplies, equipment, and medications.
- Any emergency cart with a defibrillator will have a quality assurance (QA) check performed daily. QA checks must be documented (e.g., in a logbook or Zoll Dashboard).
- The department must remove their emergency cart when the CAR crash cart arrives.

If any unit has their own designated “emergency equipment cart”, not mentioned above, that department is responsible for maintaining regular checks of the equipment and remove this cart once the CAR crash cart arrives.

6.3 Wards Airway Box

The Respiratory Services supplies designated departments with an emergency airway box for basic airway management. See Appendix C for the list of locations.

7. DOCUMENTATION

All documentation will take place on the Cardiac Arrest Response Form (CS-136) for Code Blue and Code Pink and the Newborn Delivery/Resuscitation Record (CS-216) for Code NRP.

8. DRILLS

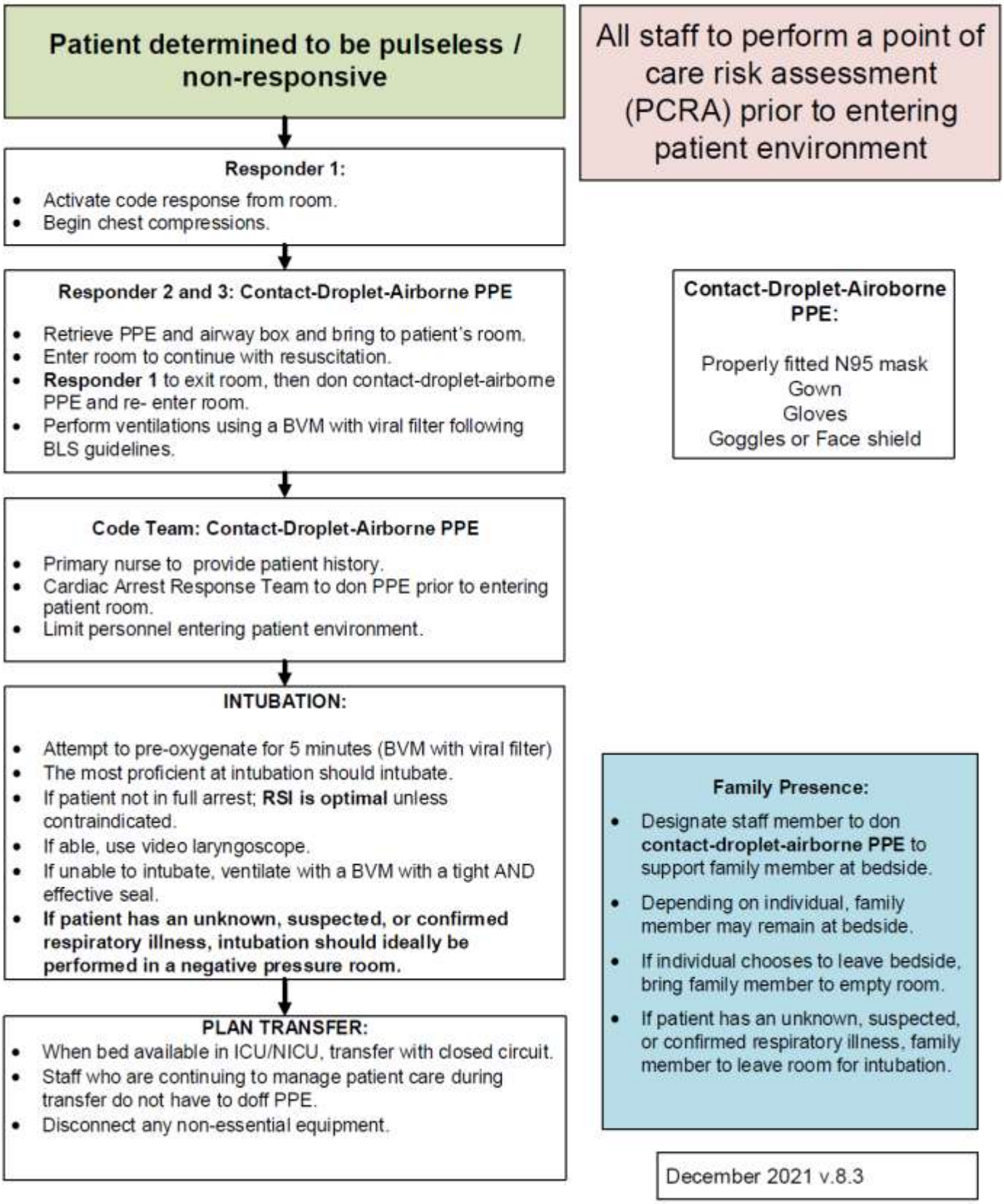
For training and improvement purposes, Code Blue, Pink and NRP drills to follow a formalized drill schedule that is determined by the Emergency Preparedness Committee in consultation with the Code Blue/Pink/NRP Working Group and relevant stakeholders. Staff participating in drills are expected to meet all participation requirements.

9. REFERENCES

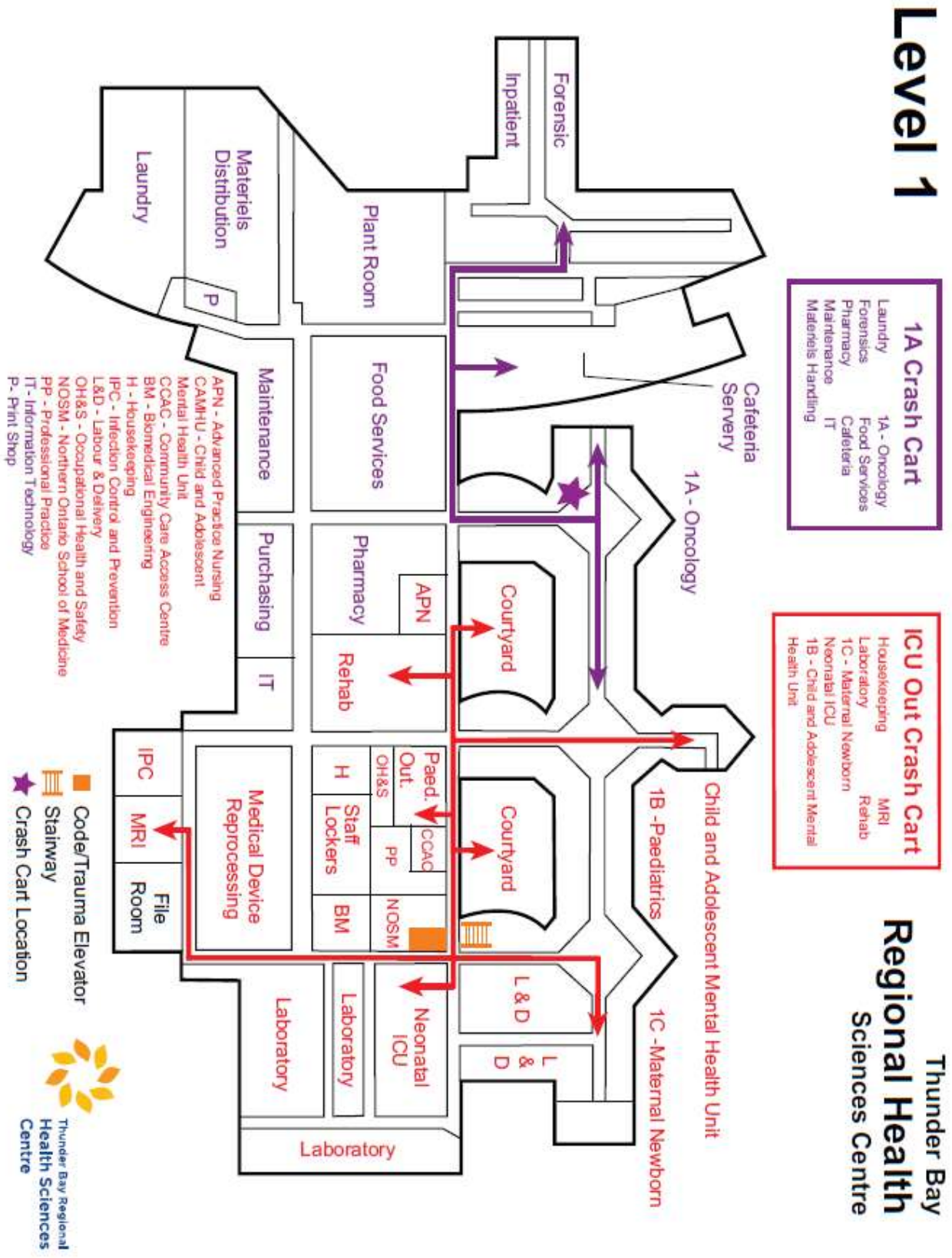
Hsu, A., Sasson, C., Kudenchuk, P. J., Atkins, D. L., Aziz, K., Becker, L. B., Berg, R. A., Bhanji, F., Bradley, S. M., Brooks, S. C., Chan, M., Chan, P. S., Cheng, A., Clemency, B. M., de Caen, A., Duff, J. P., Edelson, D. P., Flores, G. E., Fuchs, S., … Topjian, A. (2021). 2021 Interim guidance to health care providers for basic and advanced cardiac life support in adults, children, and neonates with suspected or confirmed COVID-19. *Circulation: Cardiovascular Quality and Outcomes*, *14*(10), e008396. https://doi.org/10.1161/CIRCOUTCOMES.121.008396

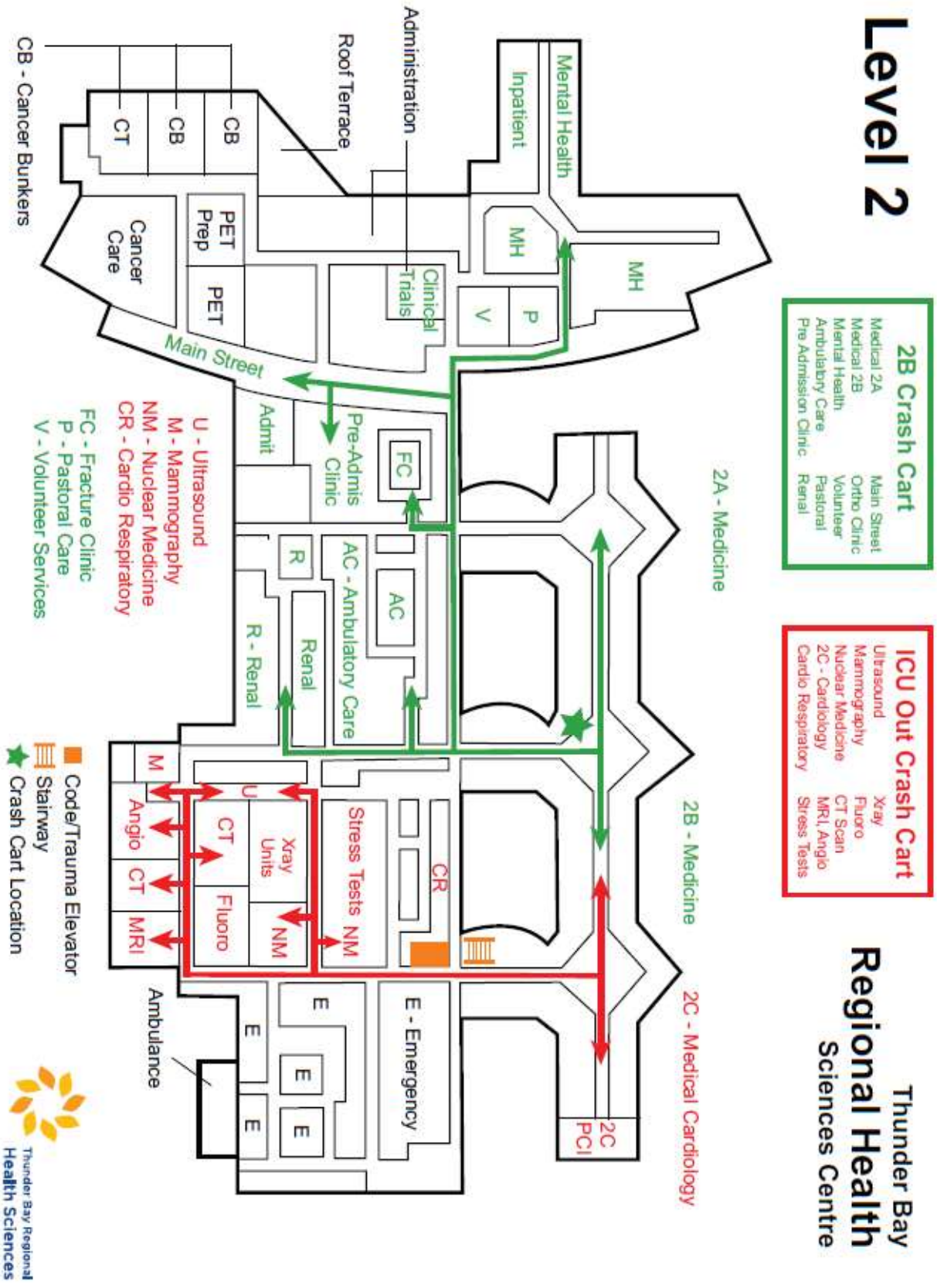
Public Health Ontario. (2020). *Focus on COVID-19: Aerosol generation from coughs and sneezes.* PHO. www.publichealthontario.ca

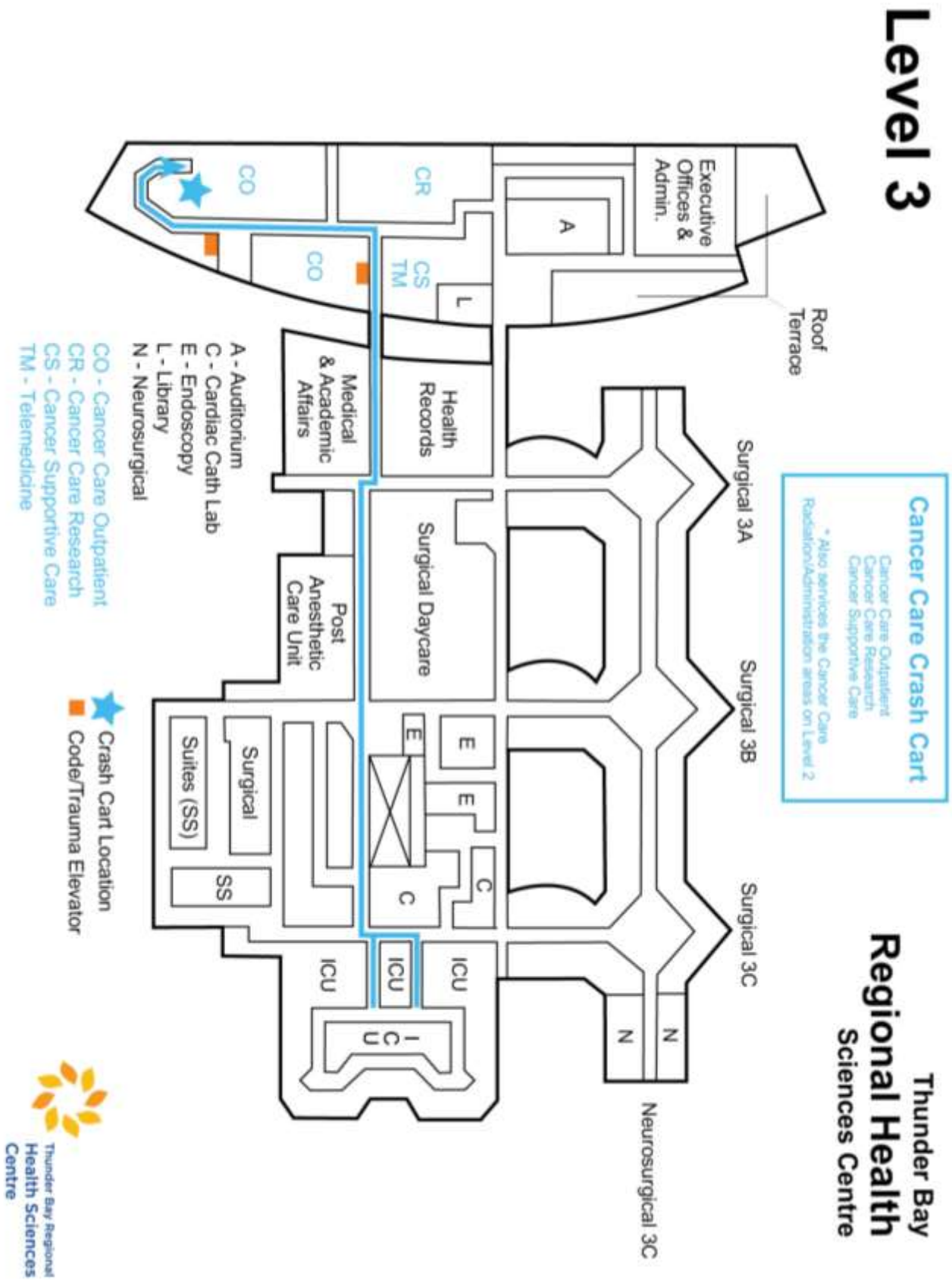
Appendix A: Code Blue/Pink Algorithm for In-Patient

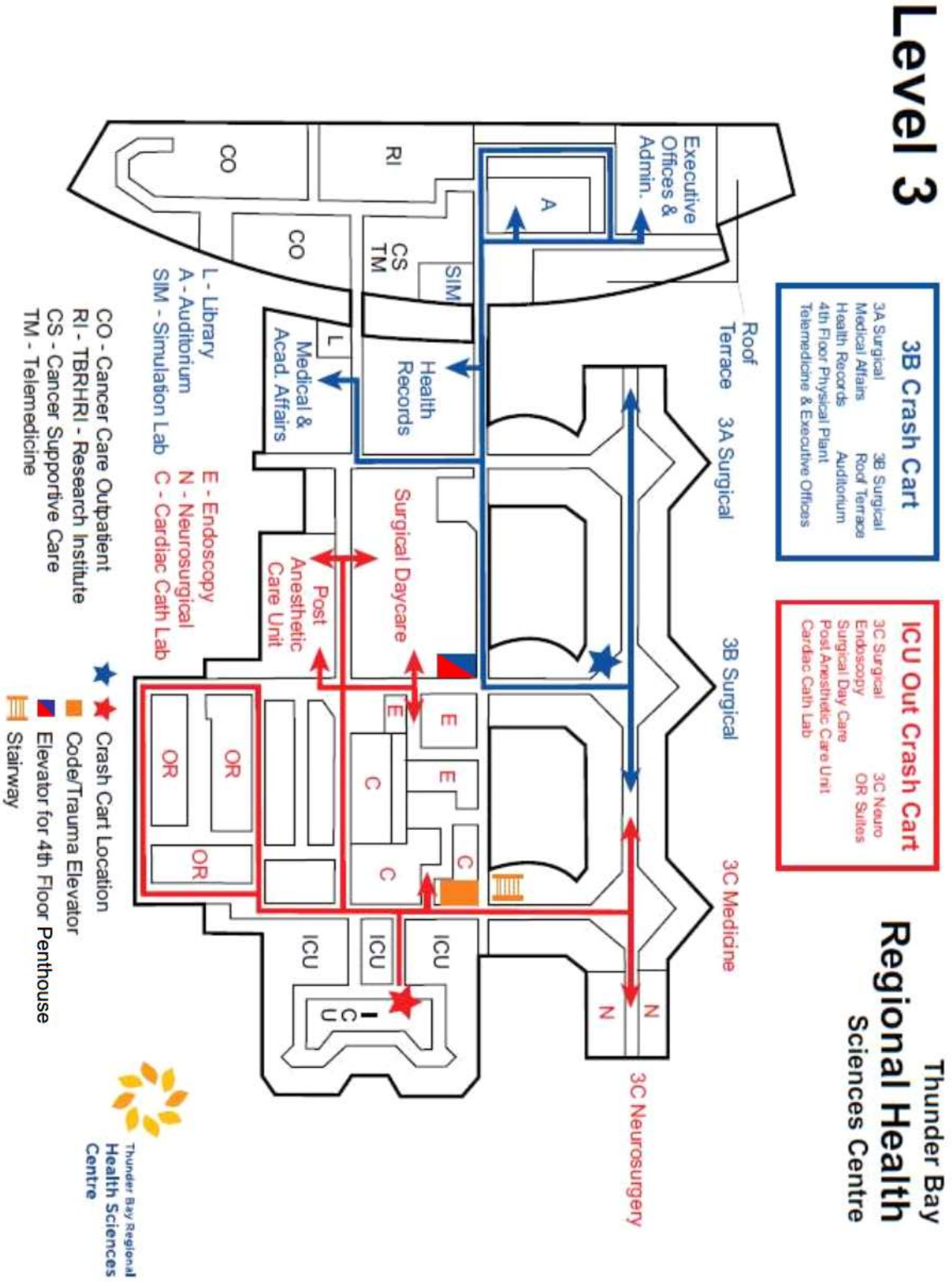


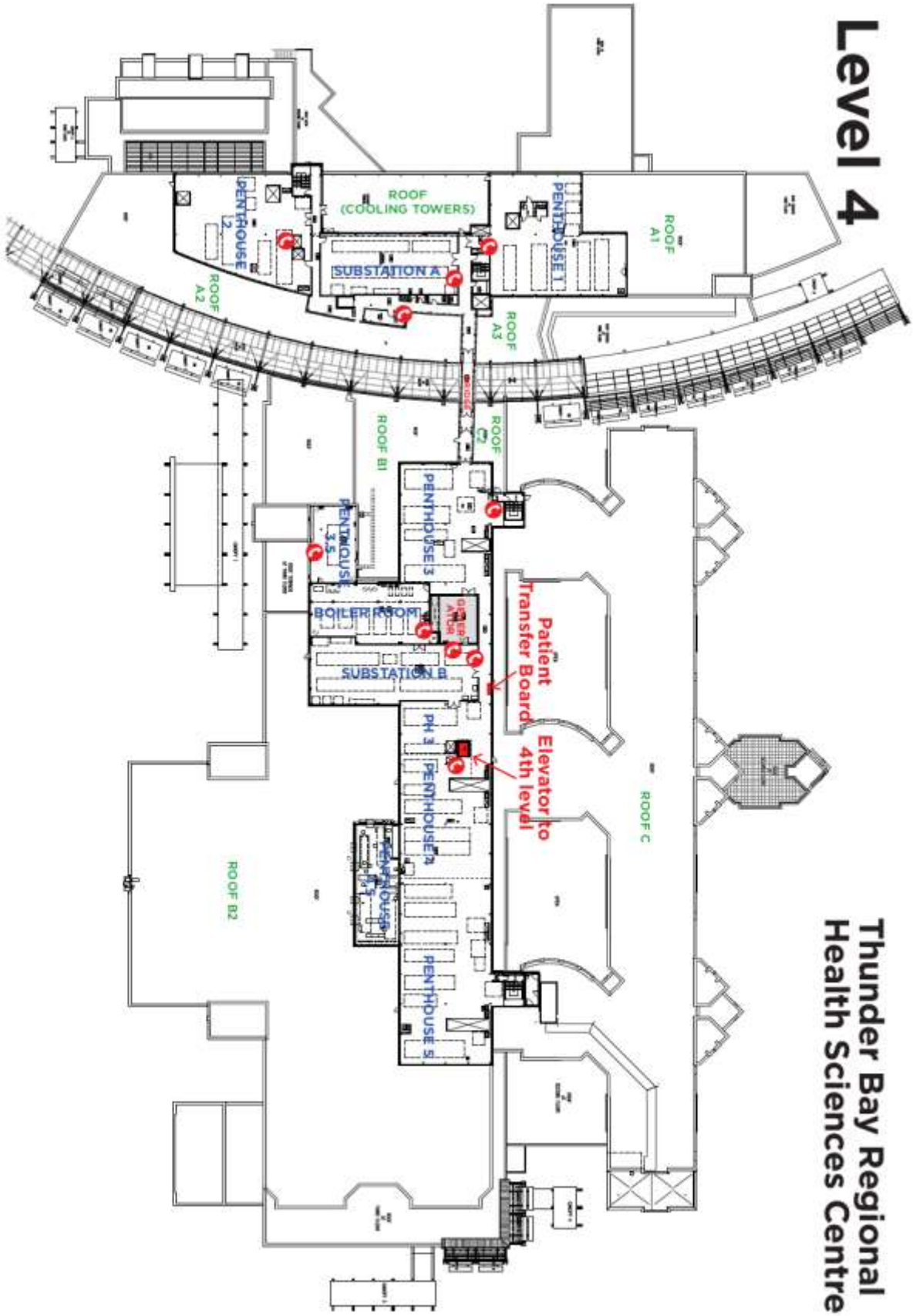
Appendix B: Code Blue Response Routes and Location of Crash Carts (October 2021)











Appendix C: Ward Airway Box Locations

Level 1	
1A	Nursing Station
1B	Nursing Station
1C	Nursing Station
Forensic Mental Health	Nursing Station
Rehabilitation & Physiotherapy	Rm #1433 (Main Gym)
Level 2	
2A	Nursing Station
2B	Nursing Station
2C	Nursing Station
Adult Mental Health In-Patient	Nursing Station
Ambulatory Care	Outside of Rm #2442
Cardio Respiratory	Rm #2511
Diagnostic Imaging	Cart in Recovery Hallway
Diagnostic Imaging - Angio	Rm #2721
Diagnostic Imaging - CT	Rm #2720-A
Diagnostic Imaging - MRI	Outside of Rm #2706
Diagnostic Imaging – X-Ray	Rm #2619
Fracture Clinic	Rm #2318
Preadmission Clinic	Rm #2340
Renal Services	Pod A Nursing Station
Level 3	
3A	Nursing Station
3B	Nursing Station
3C	Nursing Station
Cancer Centre - Chemotherapy	Nursing Station
Cardiac Cath Lab	Lab #1
Cardiac Cath Lab	Lab #2
Endoscopy	Outside of Rm #3611
Post Anesthetic Care Unit	Nursing Station
Surgical Daycare	Nursing Station