Thunder Bay Regional Health Sciences Centre Policies, Procedures, Standard Operating Practices		No. EMER-140
Title: Code Blue/Pink/NRP - Cardiac Arrest Response (Adult, Child, Neonate)	☒ **Policy** ☒ **Procedure** ☐ **SOP**	
Category: General **Sub-category:** Emergency Plan	**Distribution:** Organization Wide	
Endorsed: President & CEO **Signature:**	**Approval Date:** **Reviewed/Revised Date:** **Next Review Date:**	Sept. 1998 Dec. 15, 2021 Dec. 15, 2024

Cross References: (CS 136) Cardiac Arrest Response Form, (IPC-1-18) Routine Practices and Additional Precautions, (IPC-2-16) Management of Novel Respiratory Infections.

1. PURPOSE

Provide direction for cardiac arrest response (CAR) in Thunder Bay Regional Health Sciences Centre (the Hospital).

2. DEFINITIONS

Aerosol generating medical procedure (AGMP) is 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. (See IPC-2-16 Management of Novel Respiratory Infections for list of AGMPs).

Code Blue is an emergency response protocol for any person over the age of 16 and for labouring or postpartum mothers under the age of 16 who require cardiopulmonary resuscitation.

Code Pink is an emergency response protocol for infant and paediatric patients up to and including the age of 16 years who require cardiopulmonary resuscitation.

Code NRP is called overhead for any infant needing 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.

3. 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":

i. Any available physician(s)
ii. Critical Care CAR Team: Responds to ALL areas, excluding ED
iii. Emergency Department (ED) CAR Team: Responds to ED only
iv. Registered respiratory therapist (RRT)
v. 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":

i. Any available physician(s)
ii. On-call paediatrician
iii. Neonatal Intensive Care Unit (NICU) response team: Responds to ALL areas

This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.

iv. Critical Care CAR Team: Responds to ALL areas, excluding ED
v. ED CAR Team: Responds to ED only
vi. 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 Program "Code NRP"

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

i. NICU Response Team
ii. RRT
iii. On-call Paediatrician
iv. Any available midwife
v. Any available physician trained in neonatal resuscitation and/or neonatal intubation
vi. 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 come 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.

4. PROCEDURE

4.1 CODE NOTIFICATION / ACTIVATION

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)" 3 times and continue to announce every 30 seconds until the "all clear" is announced, and:
2. Contact Paediatrician on call stat (Code Pink/NRP).

B. If Overhead Paging System Is Down

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

This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.

A. RESPONSE INSTRUCTIONS (BLUE/PINK/NRP) – See Appendix A for Code Blue/Pink Algorithm (does not apply to NRP)Cardiac Arrest Response Team:

1. Designated personnel will respond as members of the CAR team for the corresponding code.
2. CAR team members will not run to arrest location.
   All responders within two meters of patient must wear a gown and gloves (located on crash cart – set of 4 for code team), appropriate N95 mask, and goggles or face shield. Refer to policy and procedure Infection Control: Routine Practices (ICP-1-18). Those individuals not in protective apparel will be replaced immediately by individuals properly protected.
3. Under no circumstances will the CAR team enter the magnetic resonance imaging (MRI) scan room or bring the crash cart into the scanner room—it is metal and may become a potentially lethal projectile, staff must always wait until the MRI staff remove the subject from the instrument.
6. Under no circumstances will the CAR team or emergency personnel defibrillate a patient on the linear accelerator table top.
7. When CAR Team and physician have arrived on scene, a member of the CAR team will instruct a staff member to call Switchboard at "55" to announce **"*Code name*, All Clear"** three times overhead**.**
8. Individuals from the public/out-patient areas who have collapsed and the code team has responded to 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).

B. Staff of code location:

1. Retrieve PPE and airway box from the designated department location and ensure it is available to staff and the CAR team.
2. All staff to perform a point of care risk assessment prior to entering patient area.
3. All staff to wear gown, gloves, appropriate N95 mask, goggles or face shield within two-meters of patient.
4. Direct CAR responders to code location.
5. Department staff not needed at the site of resuscitation will care for the patients of those staff that are busy with resuscitation measures.
6. Ensure that the patient's chart and medication administration record (MAR) are brought to the location of the cardiac arrest (if applicable).
7. Call or page the most responsible physician (MRP).
8. Call family and /or care partner.
9. Staff of areas adjacent to code location to offer assistance as required.

5. CARDIAC ARREST OCCURRING OUTSIDE THE HOSPITAL BUILDING

1. Hospital staff to call 911 for any individual(s) who collapse 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. Responding staff 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 code team member does not feel safe proceeding with ACLS resuscitation on the HSC grounds they may opt to not participate and notify the ICU charge nurse for a replacement team member if possible. Team members who feel safe may proceed outdoors while waiting for 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 emergency department, delegate a bystander to notify by calling ext. 6125.

This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.

6. CODE BLUE PENTHOUSE (4TH FLOOR) FOR STAFF MEMBER COLLAPSE

1. Call 911 if environmental hazard observed or person requires extraction from confined space.
2. Resuscitation proceeds when the environment determined clear of hazard (i.e. confined spaces, water, electrical)
3. Critical Care Unit CAR team (RN, RRT and MD only) has key access to 'B' Intersection elevator to access penthouse.
4. Security meets the team at elevator on 4th floor to direct to location of collapsed staff.

7. EQUIPMENT

A. CRASH CARTS – See Appendix B for locations and routes to access carts.

Locations:

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

Crash Cart Management:

1. Nurses in the Emergency Department (ED) will maintain ED crash carts, not the CAR team.
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. Critical Care Unit out-cart equipped with trauma elevator key and Level 3B crash cart 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 3-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.

B. 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.

This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.

- 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.

C. EMERGENCY AIRWAY BOX

The cardio/respiratory department supplies each department with an emergency airway box for basic airway management.

8. DOCUMENTATION

- Cardiac Arrest Response Form (CS-136).

9. DRILLS

For training and improvement purposes, Code Blue, Pink & 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.

10. 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, April 10). Focus ON COVID-19: Aerosol Generation from Coughs and Sneezes. PHO. www.publichealthontario.ca

This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.

APPENDIX A: Code Blue/Pink Algorithm (December, 2021)

Code Blue/Pink Algorithm

Patient determined to be pulseless / non-responsive

All staff to perform a point of care risk assessment (PCRA) prior to entering patient environment

Responder 1:

- Activate code response from room.
- Begin chest compressions.

Responder 2 and 3: Contact-Droplet-Airborne PPE

- Retrieve PPE and airway box and bring to patient's room.
- Enter room to continue with resuscitation.
- **Responder 1** to exit room, then don contact-droplet-airborne PPE and re- enter room.
- Perform ventilations using a BVM with viral filter following BLS guidelines.

Contact-Droplet-Airoborne PPE:

Properly fitted N95 mask
Gown
Gloves
Goggles or Face shield

Code Team: Contact-Droplet-Airborne PPE

- Primary nurse to provide patient history.
- Cardiac Arrest Response Team to don PPE prior to entering patient room.
- Limit personnel entering patient environment.

INTUBATION:

- Attempt to pre-oxygenate for 5 minutes (BVM with viral filter)
- The most proficient at intubation should intubate.
- If patient not in full arrest; **RSI is optimal** unless contraindicated.
- If able, use video laryngoscope.
- If unable to intubate, ventilate with a BVM with a tight AND effective seal.
- **If patient has an unknown, suspected, or confirmed respiratory illness, intubation should ideally be performed in a negative pressure room.**

Family Presence:

- Designate staff member to don **contact-droplet-airborne PPE** to support family member at bedside.
- Depending on individual, family member may remain at bedside.
- If individual chooses to leave bedside, bring family member to empty room.
- If patient has an unknown, suspected, or confirmed respiratory illness, family member to leave room for intubation.

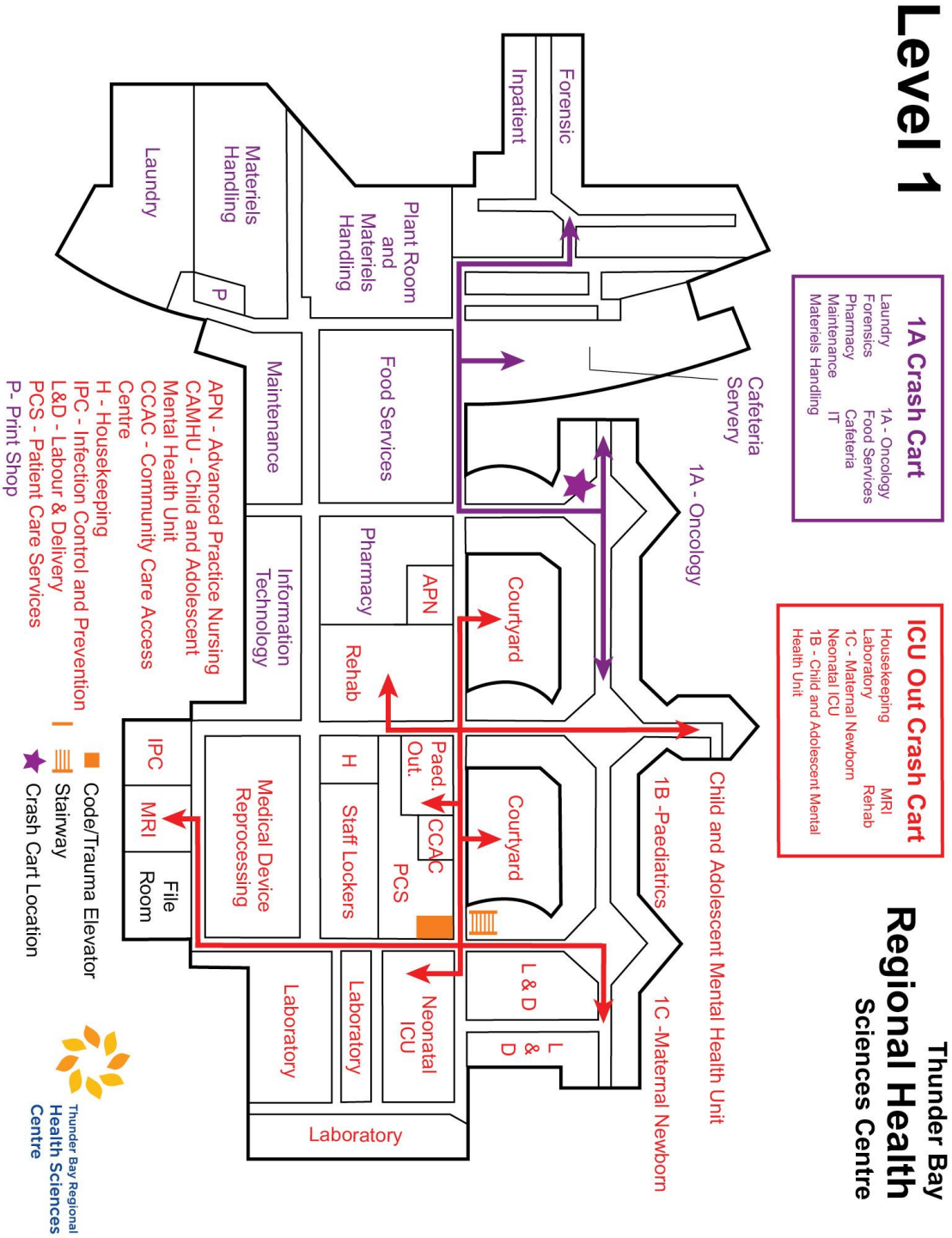
PLAN TRANSFER:

- When bed available in ICU/NICU, transfer with closed circuit.
- Staff who are continuing to manage patient care during transfer do not have to doff PPE.
- Disconnect any non-essential equipment.

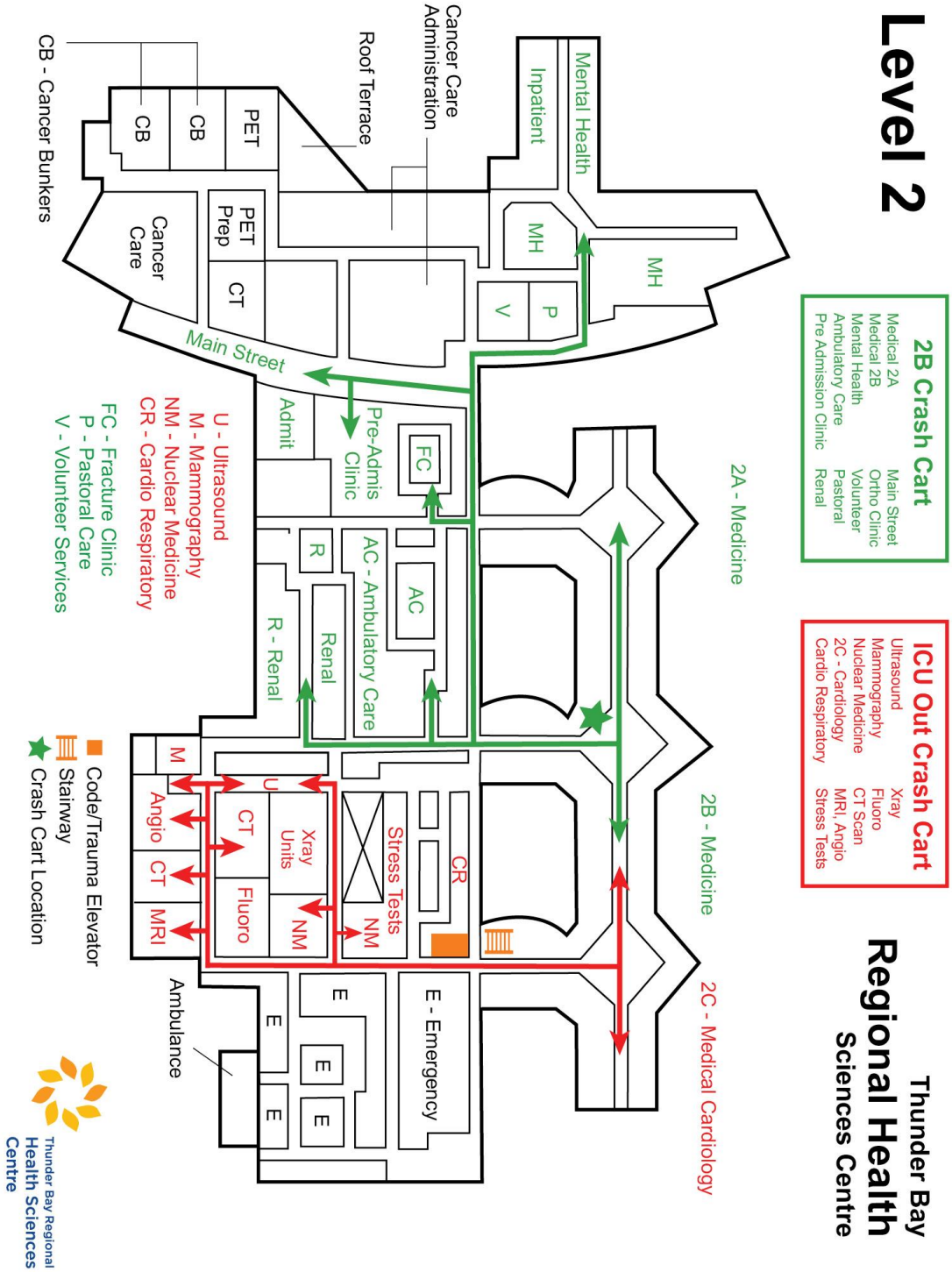
December 2021 v.8.3

This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.

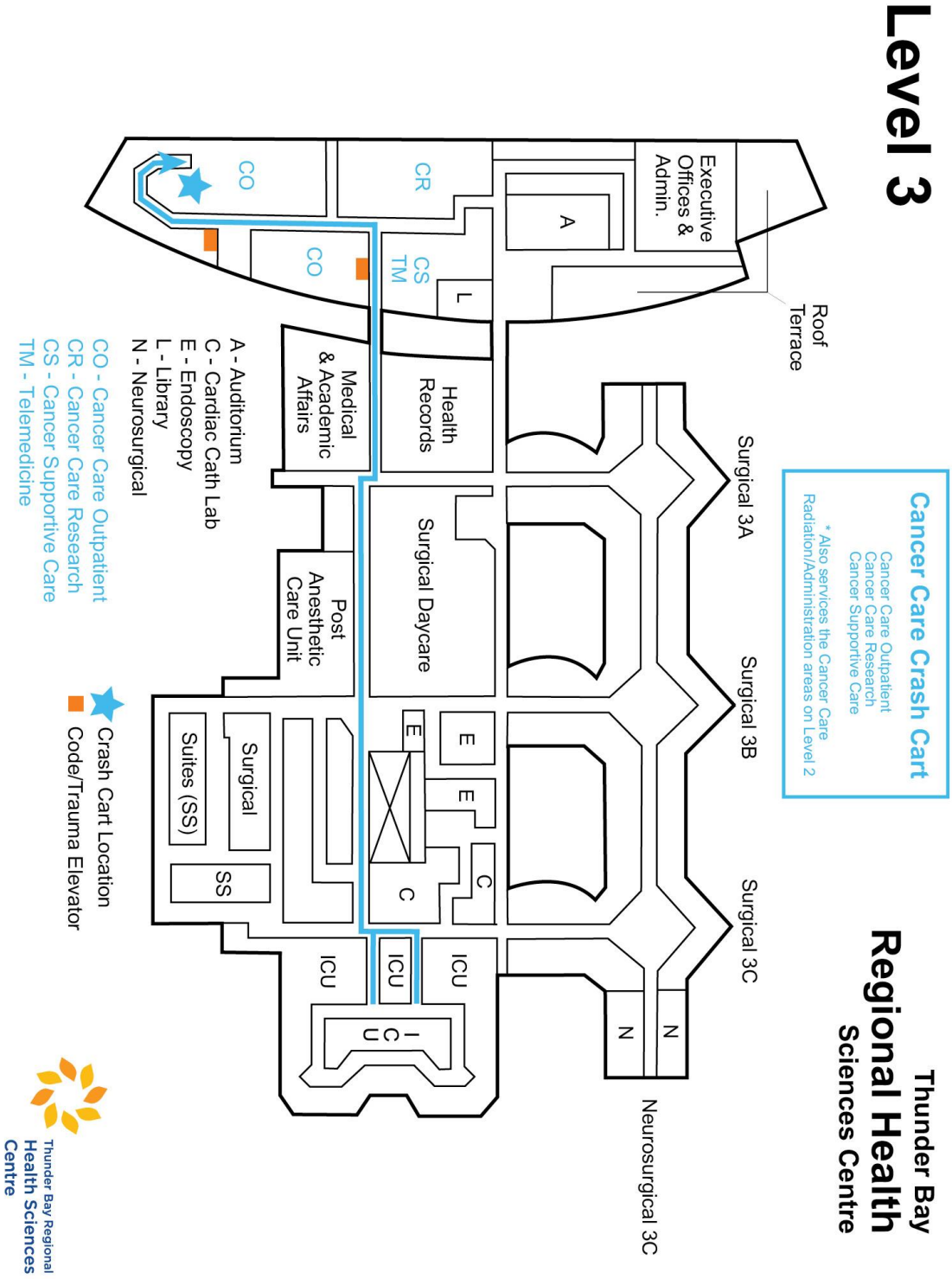
APPENDIX B: Code Blue Response Routes and Location of Crash Carts (31 October, 2021)



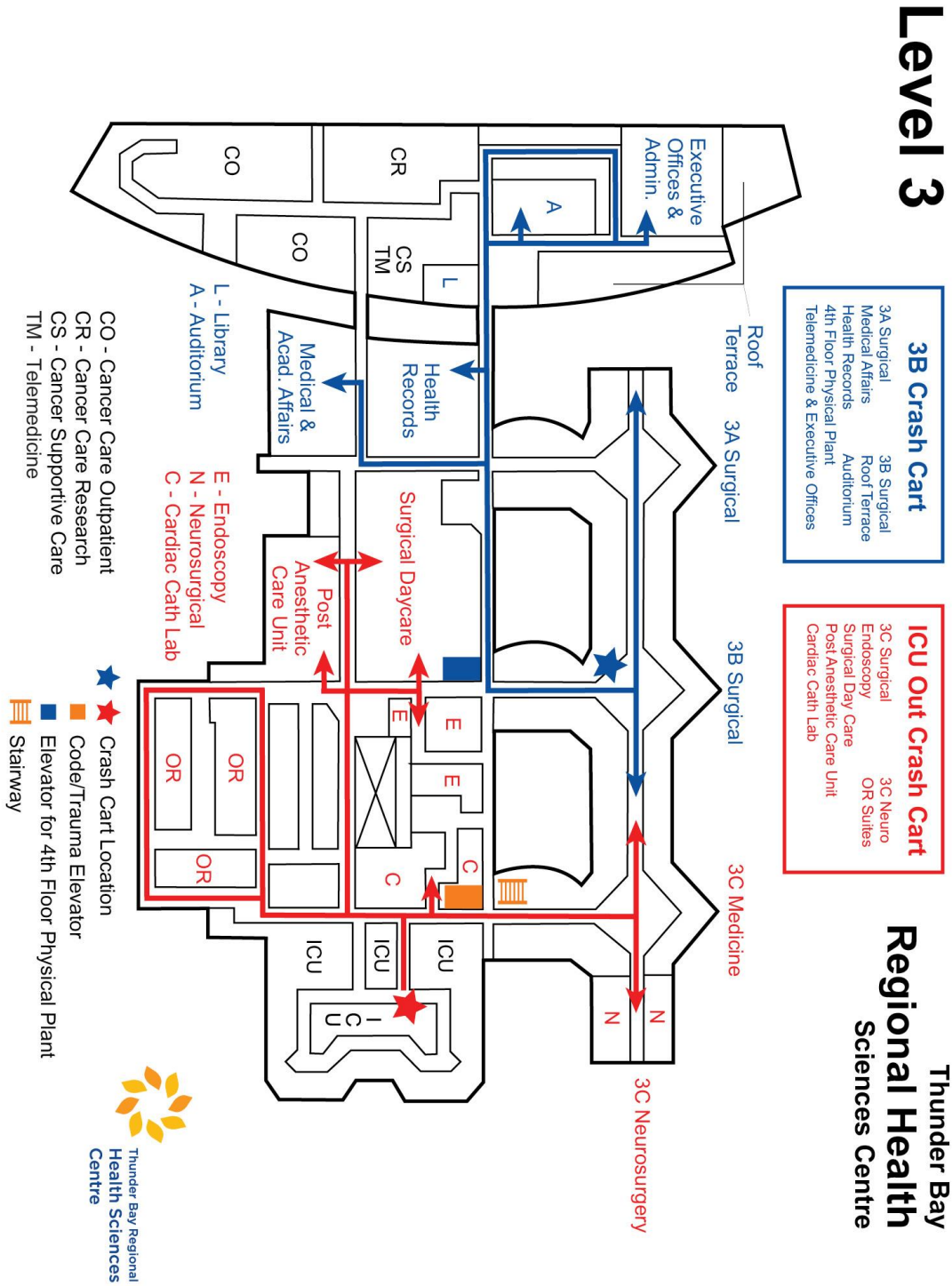
This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.



This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.



This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.



This material has been prepared solely for use at Thunder Bay Regional Health Sciences Centre (the Hospital). The Hospital accepts no responsibility for use of this material by any person or organization not associated with the Hospital. No part of this document may be reproduced in any form for publication without permission of the Hospital. A printed copy of this document may not reflect the current electronic version on the Hospital iNtranet.