

Phase 2: COVID-19 Pandemic Planning Critical Care Health Human Resources (HHR)

Expanding Team Based Models of Care

February 2021

*Supplement: Guidance Document for Healthcare Organizations: Team Based Models of Care

Overview

- This document is based on the Critical Care Response Wave 2 COVID-19 Health Human Resource (HHR) Plan (September 21, 2020) released by the Ontario Critical Care Command Centre.
- The purpose is to provide guidance for organizations about activating Team Based Models of Care in response to growing COVID-19 pressures.
- Increasing the need for critical care capacity is requiring hospitals to expand both the HHR pipeline and approaches to team based models of care.
- Expanding team based models will include integrating new team members with clinical and non clinical experience, from internal and external pipelines, as well as progressing team processes and workflow.
- The following includes tools and resources to support a common provincial approach.
- A Guidance Document for Healthcare Organizations has been created to supplement these slides.

Health Human Resource (HHR) Staged Response Framework

HHR Staged Response Framework

	Hospital Response	Regional Response
CONVENTIONAL Potential Triggers <ul style="list-style-type: none">• < 100% - 115% critical care occupancy• Planned staffing available	<ul style="list-style-type: none">• Utilize current staffing models with surge protocols including re-distribution of critical care patients (with Ontario Critical Care COVID Command Centre support)• Prepare and practice team-based models• Establish thresholds/markers (i.e., # of hubs/teams per critical care unit, # of staff required and skill sets)• Provide regular updates to regional leadership	<ul style="list-style-type: none">• Provide updates on the status of critical care capacity and required actions• Critical care patient re-distribution activated as required (with support from Critical Care IMS structures)
CONTINGENCY Potential Triggers <ul style="list-style-type: none">• >115% – 125% critical care occupancyAnd/or• Requirement of 10-15% additional nursing to support the response	<ul style="list-style-type: none">• Implement team-based models to expand critical care staffing• Consider a reduction in scheduled activity and redeploy staff to support critical care staffing• Notify the region/IMS that additional critical care capacity and/or HHR support may be required• Increase # critical care beds in addition to surge protocols supported by team-based models	<ul style="list-style-type: none">• Hospitals within a region take action to support stabilization of critical care capacity• Regional leadership updates Ontario Critical Care COVID Command Centre regarding critical care capacity pressures and identifies a plan to support the index hospital and or region• Notification of IMS structures where applicable
CRISIS Potential Triggers <ul style="list-style-type: none">• > 125% critical care occupancy within region/hospital with significant surge of COVID- 19 critical care patientsAnd/or• a significant shortage of critical care nursing staff with a requirement of > 15% than baseline	<ul style="list-style-type: none">• Reduce scheduled activity to support skills-based staff redeployment• Notify the region that additional critical care capacity or HHR support may be required• Consider implementation of triage protocols	<ul style="list-style-type: none">• Multi-region response and coordination most likely required (via IMS structures where applicable)• Seek input and direction from the Ontario Critical Care COVID Command Centre• Contemplate redeployment of staff across institutions/regions

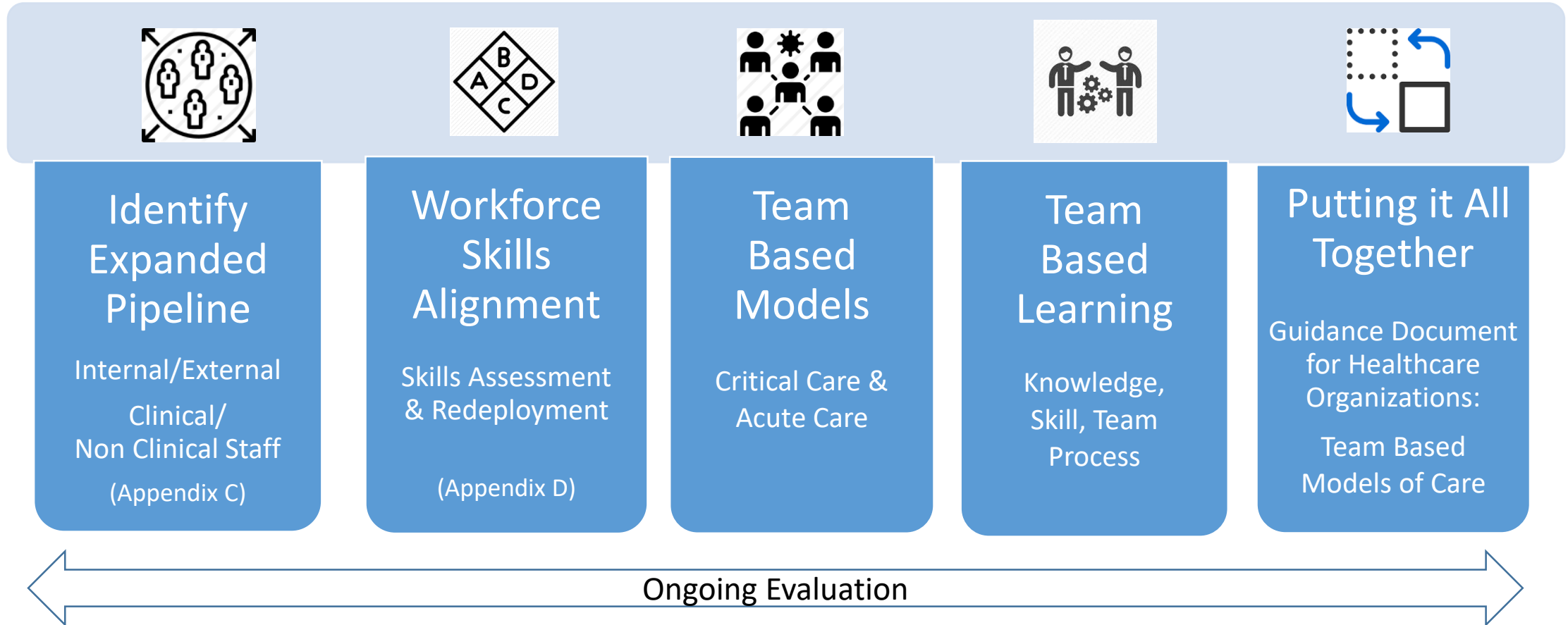
HHR Planning Assumptions
Appendix A

HHR Guiding Principles
Appendix B

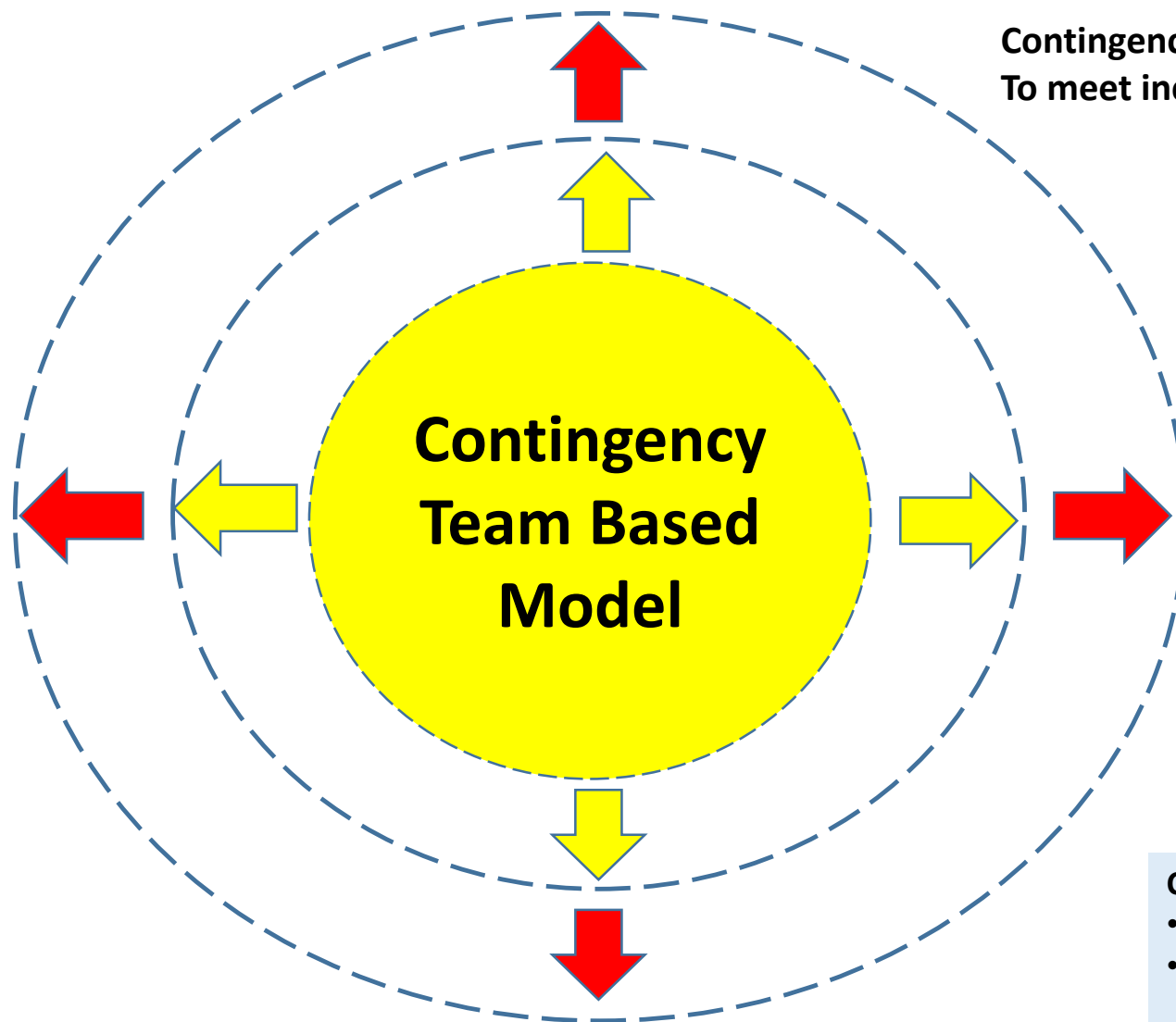
Ontario Critical Care COVID-19 Command Centre released the **HHR Staged Response Framework** to guide hospitals, regions and the province to ensure a coordinated response during future waves of COVID activity.

Contingency Phase

Health Human Resource Planning



Preparing for a Crisis Response: Expanding the Pipeline for Team Based Models



Contingency Team Based Models are currently in place, in varying degrees. To meet increasing ICU capacity need, it is now time to:

- 1** Maximize internal pipeline with clinical and non clinical redeployment ('get ready')
- 2** Maximize external pipeline with clinical learners
 - Externs (e.g. nursing, medical learners, respiratory therapy, paramedic trainees)
- 3** Leverage cross sector and regional deployment of both clinical and critical care trained staff
 - e.g. community care provider, nurses, respiratory therapists, physicians

*Appendix C for more examples

Complete Skills Assessment (Appendix D) for Alignment and Redeployment:

- Categorize all HHR by A,B,C, D skills
- Align staff to:
 - Critical Care
 - Acute Care, enabling staff release for Critical Care
 - "Helper" role in either setting

Staffing Progression from Contingency to Crisis Phase

STEP 1: Determine Staff Numbers Required to Support Progression from Conventional to Crisis Stage

- a) Determine the number of FTE's required to support critical care patient volumes in all stages of the framework (Conventional, Contingency, Crisis)
- b) Determine the number of critical care staff RN FTE's currently employed in your unit and utilize that as baseline number available in all stages of the Response Framework (Conventional to Crisis)
- c) Determine the RN Gap by subtracting (a) – (b) from above. Additionally consider, expansion of the team to include broader interprofessional roles.

STEP 2: Getting the “non Critical Care” Team Ready

- a) Work with Human Resources to identify staff in the system that can be redeployed to support the critical care team. (e.g. Level 2 RN's, PACU, Endoscopy, Cath Lab, CCU, MDs and other health professionals etc.)
- b) Complete Skills Assessment (Appendix D) of staff that will support the Gap
- c) Provide upskill or refresh training dependent on Skill Assessment results
- d) Divide identified non critical care RN's, MDs and health professionals into “Phases” in order of redeployment (Suggestion: spread redeployment of staff over several clinical programs to minimize burden on any one clinical area)
- e) Communicate resource impacts to Clinical Programs where staff have been identified to support the critical care surge plan

STEP 3: Moving into Teams (Critical Care + non Critical Care Staff)

- a) Identify the need to move into teams (Trigger–when staffing is becoming challenging: number of patients outnumbered staff available to meet the demand)
- b) Work with Human Resources to redeploy staff in Phase 1 (2,3 and so on) – develop shift rotation for non critical care team members that have been redeployed
- c) Consider patient acuity, location of patient (e.g. inside unit or surge space outside of unit), number of patients an area (Bay, Pod, Hub etc.), staff experience, interprofessional and alternate care providers on team
- d) Assign staff daily to meet the patient needs and staff skill level
- e) Readjust, Re-evaluate and Repeat; Readjust, Re-evaluate and Repeat....

Team Based Learning

Critical Care
LEARNING

COVID Care
LEARNING

COVID and Critical Care Learning is online education that bridges knowledge from one's current practice to the requirements to care for those impacted by COVID-19, and other critical care patients, at <https://criticalcarelearning.ca>

Critical Care Multiprofessional Role Matrix

	Pharmacy	Respiratory Therapy	Anesthesia Assistant	Physiotherapy	Nursing	Physician/ Medicine
Basic oxygen/ gas administration (includes Oxygen, Compressed Air)		✓	✓	✓	✓	✓
Advanced oxygen/gas Administration (includes High Flow, Specialty Gases)		✓	✓		✓	✓
Airway Management Endotracheal Intubation and Extubation		✓	✓			✓
Airway Management/Suctioning Endotracheal, Oropharyngeal, Basic Tracheostomy		✓	✓	✓	✓	✓
Airway Management Advanced Tracheostomy, Oral & Nasal Airway Insertion, Nasogastric Tube Insertion		✓	✓		✓	✓
Mechanical Ventilation Basic Invasive and Non-Invasive Ventilation,		✓	✓		✓	✓
Mechanical Ventilation Advanced Modes Ventilation		✓	✓			✓
Manual Ventilation Bag-Valve-Mask		✓	✓	✓	✓	✓
Diagnostic Testing Spirometry		✓			✓	✓
Diagnostic Testing Pulmonary Functioning Testing		✓			✓	✓
Invasive Vascular Procedures Injections, Line Insertions	✓	✓	✓		✓	✓
Medication Administration	✓	✓	✓		✓	✓
Mobility/Positioning				✓	✓	
Patient/Family/Caregiver Education	✓	✓	✓	✓	✓	✓

Educating Teams for Success
During Wave 2 COVID-19

Simulation-Based Education
for Alternate Models of Care

Sunnybrook Canadian
Simulation Centre



- Simulation-based education prepares teams to practice and “put it all together” prior to real patient events.
- Ontario hospital teams are invited to participate in a virtual simulation program designed to help communicate effectively within a Team Based Model.
- These programs are offered by Sunnybrook Canadian Simulation Centre. If you are interested to participate or would like more information, please contact [Agnes Ryzynski](mailto:agnes.ryzynski@sunnybrook.ca), agnes.ryzynski@sunnybrook.ca.

Expanding Team Based Models Considerations

Domain	Summary	Tools and Resources Examples
Patient Care Needs	Define patient needs that can be met by skills of alternate care providers Determine Staff Ratios (baseline number of Critical Care RN's, Patient to Nurse ratio, ratio of CCRN to non-CCRN, role of non nurse)	Critical Care Multi- Professional Role Matrix (Appendix E)
Role Clarity	Create defined roles with clear responsibilities and expectations, using Patient Skill Categories (Appendix D) where possible	Role Examples <ul style="list-style-type: none"> ○ Critical Care Nurse (Patient Skill Levels: A, B, C) ○ Alternate Care Provider, Safety Officer, Extern, Patient Helper (Patient Skill Levels C,D)
Professional Responsibility	Ensure redeployed health professionals have understanding of regulatory guidance for scope of practice and standards of care during COVID-19	e.g. CNO COVID-19 Practice Resources https://www.cno.org/en/trending-topics/covid-19-practice-resources/
Orientation/ Skill Development	Provide streamlined education ensuring integration of safety processes, including method for follow-up in new clinical context	COVID and Critical Care Learning, Simulation (Appendix E)
Working with Unregulated staff	Ensure clinical teams understand their responsibilities when working with unregulated care providers, including delegation	e.g. CNO Practice Guideline: Working with Unregulated Care Providers https://www.cno.org/globalassets/docs/prac/41014_workingucp.pdf
Team Based Processes	Provide local team training and standardized tools to support integration of new roles: communication strategies, safety processes and debriefing	e.g. SBAR, daily team huddles, intentional rounding, and safety checks
Leader Roles	Strategies to welcome and integrate new team members: identification of ongoing learning needs, gaps, safety concerns, team wellness	Team check-ins, leader rounding, communication strategy
Evaluation	Consistent evaluation of Pandemic Staffing Plan and Strategy with regular review of patient needs, team-based model processes	Monitor patient acuity, quality, safety, and workload

APPENDICES

Appendix A: HHR Planning Assumptions

1. A staged approach will ensure an integrated and coordinated provincial HHR response
2. Planning within regions* will ensure staged response is relevant and applicable within each geographic area
3. To inform each stage, hospitals and region will monitor triggers that include % critical care occupancy, patient acuity (e.g. NEMS), staffing capacity (determined by both % variation from incremental baseline of critical care staff), and conduct self-assessments
4. Nursing and other health disciplines are in-scope recognizing that there is an interdependency with the physician coverage model under development
5. The HHR framework will focus on an assessment of critical care HHR with key consideration for other variables that will inform a hospital and regional response such as supplies, equipment, technology and space requirements
6. Staff training will be aligned to the Canadian Standards for Critical Care Nursing Practice+
7. It is not realistic or appropriate to reduce all scheduled clinical activity. Some scheduled activity will continue and be balanced against critical care bed and HHR capacity requirements
8. Extreme COVID-19 surges may require a temporary net new increase in the number of critical care beds

*Regions can be self-identified in order to define how to action critical care HHR strategies for each of the five Ontario Health geographical areas
+<https://caccn.ca/wp-content/uploads/2019/05/STCACCN-2017-Standards-5th-Ed.pdf>

Appendix B: HHR Guiding Principles

- Patient and staff safety will remain a top priority
- Leverage existing HHR capacity to supplement critical care units
- Ensure roles and responsibilities are clear for team members, especially as teams expand
- Maintain sufficient levels of expertise in specialty areas; utilize team-based models and ensure expertise is available to less experienced staff
- Operational capabilities will be flexible, scalable and adaptable to support the response
- Partnerships among critical care units within individual hospitals and regions will be essential to support each other with equipment, personnel, decanting non-COVID patients, etc.
- Routine, standardized communication will ensure all team members are informed and aware of current needs, stage, and impact of the response
- Strategies to support staff wellness must be integrated in every stage of response
- Mechanisms are in place to support ongoing evaluation while models are in operation to ensure quality, patient and staff safety are top priority
- Readiness to act during all stages of surge will follow the Critical Care Surge Capacity Management Plan, <https://criticalcareontario.ca/solutions/surge-capacity-management-plan/>
- Implementation of proactive HHR approaches should contribute to the avoidance of hospital(s) and/or region(s) from going into crisis.
- Staff with advanced skill levels should be prioritized to support Critical Care teams given the higher patient acuity .
- Emergency Orders – Applicable components should be considered in HHR system planning (e.g. staff redeployment)

Appendix C: Maximizing Internal and External Pipeline: Examples

What internal hospital, regional and provincial levers/strategies could be implemented to expand Team Based Models?

Internal Hospital	Internal Pipeline <ul style="list-style-type: none"> • Inventory and up skilling of all clinically trained/non-bedside staff to fill defined needs and roles (i.e. Clinical Informatics, Professional Practice, etc.) • Nurses (RNs/RPNs) in Resource Teams, ambulatory care, and settings such as transitional care, rehab and palliative care, up skilled to support Acute Care • Team based models in acute care to release nurses to assume ICU Extender role • Non-hospital community physicians/specialists to support all adjunct clinical work – vaccination, COVID testing, ambulatory services, etc. (could they assume roles in the ED to shift ED physicians to Critical Care) • Assistance from hospital volunteers • Maximize part time/casual staff (to ICU or backfill to send staff to ICU). • Optimize teams in all L3, L2 for hospitals in moderate surge or hot spots • Utilize skills in CCU/Cardiology/Stroke to create capacity in ICUs by decanting select cardiac/stroke patients • Transition chronic ventilated patients home, with expanded community resources.
Regional & Provincial	External Pipeline – Clinical Externs <ul style="list-style-type: none"> • Broaden Extern Program to include senior level health disciplines students and medical residents • Enable shared Mentor roles between facilities • Rapid training of ICU externs or new graduate nurses (convert PT to FT) External Pipeline – Regional Deployment: <ul style="list-style-type: none"> • Regional Critical Care Response Teams – deployable across the province • Health Force Ontario campaign to identify short-assignment critical care nurses for deployment • Recruit retired health care providers in all disciplines • Recruitment of health care professionals working in educational institutions, correctional facilities, physicians offices, Family Health Teams, Community providers, military, private industry • Critical care paramedics redeployed to hospitals • Consider recruitment of non-traditional regulated roles (dental hygienists) who could perform some tasks • Recruitment of community providers (Primary Care physician, NPs, physiotherapists and nurses) to hospitals and LTC • Flexibility to move staff between care settings (LTC to LTC; hospital to hospital); and between regions • High school students to perform specific tasks under the direction of health care professionals • Red Cross resources for entrance screening • Internationally trained health care providers capable of working in modified or monitored clinical role

Appendix D: Skills Assessment Tool

- Skills Assessment Tool is distributed to nurses, respiratory therapists, physiotherapists, occupational therapists, clinical dietitians, and anesthesia assistants
- Categorizes nurses and health professions by level of skill (ABCD) to support redeployment and additional education

A	B	C	D
Full Scope Critical Care Able to work independently in a Critical Care environment (Level 3 Patients)	Critical Care Training with Limited Experience Able to support in a partnered model in a Critical Care environment (level 3) or independently work in with Level 2 Patients	Non Critical Care Staff in Critical Care Setting Able to support in a team-based model in a Critical Care environment (Level 2 or 3) OR able to work independently in an Acute Care environment	Acute Care Staff Able to support in a team-based model in an Acute Care environment
Key Competencies <ul style="list-style-type: none"> <input type="checkbox"/> Invasive ventilator care and maintenance <input type="checkbox"/> Cardiac Pacing <input type="checkbox"/> Invasive advanced physiological monitoring <input type="checkbox"/> Rapid sequence intubation – perform or assist <input type="checkbox"/> Targeted temperature management <input type="checkbox"/> Neuromuscular blockade <input type="checkbox"/> Critical Care Full Systems Assessment 	Key Competencies <ul style="list-style-type: none"> <input type="checkbox"/> Arterial Line care and maintenance <input type="checkbox"/> Cordis/PSI care and maintenance <input type="checkbox"/> Cardiac monitoring and rhythm interruption <input type="checkbox"/> Multiple Continuous IV vasoactive Infusion <input type="checkbox"/> Epidural Management and Maintenance <input type="checkbox"/> Inserting small bore Nasogastric (NG) Tube <input type="checkbox"/> Invasive basic physiological monitoring – invasive hemodynamics <input type="checkbox"/> Optiflow / BiPAP 	Key Competencies <ul style="list-style-type: none"> <input type="checkbox"/> Head-to-toe Systems-based Assessment – neuro, cardio, <input type="checkbox"/> Peripheral IV (PIV) care and maintenance – Insertion, medication admin, trouble shooting ,etc. <input type="checkbox"/> Drainage tube care and maintenance – Hemovac, Jackson-Pratt, etc. <input type="checkbox"/> Urinary catheter insertion, care and maintenance – ex. in-dwelling, intermittent and suprapubic catheters <input type="checkbox"/> Continuous Bladder Irrigation <input type="checkbox"/> Bowel care and maintenance <input type="checkbox"/> PEG tube/ feeding tube care and maintenance <input type="checkbox"/> Pain management and symptom management <input type="checkbox"/> Basic Skin and Wound Care – Aseptic wound care, Complex wound care – e.g VACs, , complex pressure injuries). <input type="checkbox"/> Continuous IV Infusion (NS, Heparin, insulin, etc.) with intermittent medication admin <input type="checkbox"/> Large bore NG tube insertion, care and maintenance <input type="checkbox"/> Central Line care and maintenance <input type="checkbox"/> Care and maintenance of an established Tracheostomy (including suctioning) <input type="checkbox"/> Medications Administration . <input type="checkbox"/> Patient Controlled Analgesia 	Key Competencies <ul style="list-style-type: none"> <input type="checkbox"/> Turning and Positioning <input type="checkbox"/> Hygiene care <input type="checkbox"/> Toileting and incontinence care <input type="checkbox"/> Nutrition care (including feeding patients with dysphagia) <input type="checkbox"/> ROM and mobilization <input type="checkbox"/> Braden Scale Risk Assessment <input type="checkbox"/> Falls Risk Assessment <input type="checkbox"/> CAM Assessment <input type="checkbox"/> Basic IV care and maintenance – i.e. bag change, monitoring site, tube change <input type="checkbox"/> Basic urinary catheter care and maintenance <input type="checkbox"/> Vital signs – BP, Pulse, SPO2, Temp., and Respiration rate, etc. <input type="checkbox"/> Admin of oxygen <input type="checkbox"/> Medication administration - Oral

Appendix E: Staffing Progression Model Example – London Health Sciences Centre

Phase A UH ICU					Phase B UH ICU					Phase C UH ICU				
UH	39 Beds = 100% Occupancy				UH	45 beds = 115% Beds				UH	49 Beds = 125% Occupancy			
	Day	Night	FTE	Total/24h		Day	Night	FTE	Total/24h		Day	Night	FTE	Total/24h
RN	33	33	132	66	RN	33	33	132	66	RN	33	33	132	66
non ICU RN	0	0	0	0	non ICU RN	5	5	20	10	non ICU RN	8	8	32	16
Charge Nurse	2	2	8	4	Charge Nurse	2	2	8	4	Charge Nurse	2	2	8	4
CCOT RN	1	1	4	2	CCOT RN	1	1	4	2	CCOT RN	1	1	4	2
CNS	1	0	1	1	CNS	1	0	1	1	CNS	1	0	1	1
PSW	2	2	8	4	PSW	3	3	12	6	PSW (or runner)	3	3	12	6
Unit Clerk	2	1	6	3	Unit Clerk	2	1	6	3	Unit Clerk	2	1	6	3
RRT	7	6	26	13	RRT	8	7	30	15	RRT	9	8	34	17
non exp. RRT	0	0	0	0	non exp. RRT	0	0	0	0	non exp. RRT			0	0
Senior RRT	1	0	1	1	Senior RRT	1	0	1	1	Senior RRT	1	0	1	1
Inventory Clerk	1	0	1	1	Inventory Clerk	1	0	1	1	Inventory Clerk	1	0	1	1
Staffing Clerk (1 in central not included)	1	0	1	1	Staffing Clerk (1 in central not included)	1	0	1	1	Staffing Clerk (1 in central not included)	1	0	1	1
Leaders	4.5	0	4.5	4.5	Leaders	4.5	0	4.5	4.5	Leaders	4.5	0	4.5	4.5
					* from baseline for 24h					* from baseline for 24h				

- Critical care staff used
- .8 RN per patient or 1.2 patient per RN
- 6 patients per RRT

- Staffing augmented with non critical care staff (e.g. Level 2 RN, PACU, ACP etc.)
- Same ratio for RN:Pt and RRT:Pt

- Staffing augmented with non critical care staff
- Same ratio for RN:Pt and RRT:Pt
- Continue to 200%