Ontario's Critical Care Strategy

Surge Capacity Management Toolkit

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Ontario

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Background

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Background

Ontario's battle with Severe Acute Respiratory Syndrome (SARS) revealed significant weaknesses in Ontario's health care system, including a limited ability to manage Critical Care resources across hospitals in response to a sudden spike in demand.

Following SARS, the Ministry of Health and Long-Term Care (MOHLTC) asked a group of system leaders, including hospital administrators and health care providers, to conduct a comprehensive review of Ontario's Critical Care services. This process culminated in the release of the Ontario Critical Care Steering Committee's Final Report in March 2005 (available online at www.health.gov.on.ca /criticalcare). This seminal report sets out a blueprint for the transformation of Ontario's Critical Care services. Five of the Report's 33 recommendations put forward an approach for improving hospital, Local Health Integration Network (LHIN) and provincial management of surges in demand for Critical Care services.

Acting on this report, in January 2006, the Minister of Health and Long-Term Care announced Ontario's Critical Care Strategy, a seven-fold strategy to improve access, quality and system integration. As a further evolution of this strategy, the Critical Care Secretariat is supporting the implementation of a provincial program that will provide Ontario hospitals with a standardized practice for surge capacity planning and management. In September 2007, as a first step in this implementation, MOHLTC partnered with the Champlain LHIN (also referred to as the 'LHIN Demonstration Project'). The lessons learned and resources produced through this demonstration project have been used to structure the next stage of the Surge Capacity Management Program.

Building on the successes of the LHIN Demonstration Project in the Champlain LHIN, on January 19, 2009, the Minister of Health and Long-Term Care announced a provincial roll-out of Ontario's Surge Capacity Management Program. The Surge Capacity Management Program will give hospitals and staff the tools they need to better handle increases in volume of patients who are in life-threatening situations. When fully implemented by 2010, the plan will ensure integrated communications plans, streamlined use of information technology and predetermined plans for human resources. In addition, it will strengthen the capabilities to address surge events within hospitals, across the LHINs and throughout the province.

The purpose of this toolkit is to give each participating hospital access to information on strategies required to implement a surge capacity plan and management framework. This toolkit has been developed to ease the implementation process and provide a consistent approach in the application of the surge capacity planning and management strategies. This will standardize the way hospitals across the province manage Critical Care surge events, and will help to improve communication between hospitals and LHINs. Participating hospitals will be given access to an interactive electronic version of the toolkit, available online.

Understanding Critical Care Surge Capacity Management

Surge capacity management incorporates standardized guidelines to manage minor, moderate and major surges. We continue to struggle daily with minor surges of patients into individual hospitals. The hospital system is desensitized to surge as it has become a daily reality. This impedes any development of new and creative solutions to address surge. Access to Critical Care services cannot be ensured if patient volumes exceed the Critical Care bed capacity.

Alternative measures must be coordinated within organizations and the regional LHIN system to accommodate for an increase patient volumes.

In Canada, particularly in the province of Ontario, a large focus for the healthcare system has been on addressing major surge events such as pandemics. Pandemic planning involves addressing large scale infection processes, and it is a specific subset of major surge system capacity planning. The Pandemic Plan in Ontario utilized the principles of major surge capacity planning in its proposal.

Although, the MOHLTC has made capacity investments, the lack of consistent strategic elements to manage these resources leaves the system vulnerable to minor surge as a daily occurrence, and even more vulnerable to moderate and major surge events.

This toolkit will establish definitions and metrics that provide a common vocabulary for addressing surges and demand for Critical Care services (please refer to the glossary for terms found in this document). Surges are classified as “minor” if they can be managed by a single hospital, “moderate” if they require the collaboration of several hospitals across a LHIN and “major” if the response requires Critical Care resources from across the LHINs, province or nationally, and may involve EMAT (Emergency Medical Assistance Team).

Key Elements for Surge Management

Critical Care Surge Capacity Management requires the consistent application of five key surge management principles across all levels of surge:

- Management:

  Identify who is accountable for oversight of the surge event.
  Define the level of response that is required.

- Human Resources:

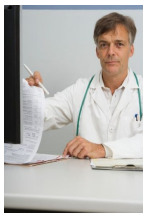
  Establish pre-determined plans for utilization of human resources to meet the patient needs in a surge event.
  Build enhanced Skill Sets to meet the patient needs in surge events.

- Equipment & Technology:

  Establish pre-determined plans for utilization of equipment and resources to meet the patient needs in a surge event.

- Physical Plant:

  Establish pre-determined plans for utilization of alternative physical space to meet the increased demand in patient volumes.



- Processes to Address Surges:

  Establish processes that will address each level of surge.

A more detailed explanation of these elements and the associated strategies for implementing them can be found in Appendix A. It is worth noting that the use of these elements and response principles will become the common practice for all levels of surge across the province. Application of a consistent approach with common principles enables the health care system to a have well-built infrastructure in responding to surge events. This common practice facilitates each level of surge planning to become a rehearsal for the next; minor surge responses become the rehearsals for large scale responses that are required for moderate and major surges. This preparation becomes the key success factor in managing surge events.

Surge capacity planning is a relatively new focus in health care. The management of surges in health care has demanded reviews from mathematicians, researchers and health systems across the country. Implementation of consistent guiding principles will ensure we provide a continuum of coordinated care. This process will further develop and strengthen the LHIN system by providing coordinated efforts in surge capacity planning. Common principles and strategies implemented across the Critical Care Network will strengthen communication, improve partnerships and provide access to Critical Care services for patients.

In utilizing industrial principles of system analysis and flow mapping methodology, this program will quickly identify process improvement needs of each organization and throughout the system. The Critical Care Surge Capacity Management Program will encourage hospital ownership and accountability for surge capacity planning.

Establishing preparedness is the key to survival of hospitals during dynamic surges into the system. Critical care surge capacity planning becomes a part of each hospitals overall emergency response planning but with a specific focus on meeting the needs of critically ill patients.

Direct Benefits of Critical Care Surge Capacity Management

1. Patients will gain access to safe and timely Critical Care services when they require delivery of care.

2. Critical Care units will have designated plans to handle minor, moderate and major surges.

3. Hospitals will have established plans to manage minor, moderate and major surge events. This process will help mitigate the demand on the Critical Care service and decrease the incidence of minor surge occurrences. Establishment of a prepared system will ensure appropriate and cost efficient resource allocations.

4. The LHIN will have established organized systematic surge capacity plans that will enable coordinated efforts to ensure timely access to care.

5. The Ministry of Health and Long-Term Care will be prepared for the growing need for Critical Care services.

Building a Surge Management Framework: a Step by Step Guide

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Building a Surge Management Framework: A Step by Step Guide

IMPORTANT - How to use this guide:

Please read through the manual before starting your Surge Capacity Planning.

This toolkit will take the reader through a step by step process for the implementation of a surge capacity management framework. Each objective is aligned to the principles of surge capacity management and will identify the transformation map activities needed to meet the objectives.

The transformation map that follows (in Appendix I) will summarize the strategic elements of the program in one document and outline the required timeline for completion of the activities.

Please contact your MOHLTC Project Officer with any questions you have throughout the process.



Objective 1: Establish Corporate Sponsor and Steering Committee

Surge capacity planning is very complex in nature. This transformation will require organizations to embody surge capacity management in their infrastructure. This initiative requires corporate support and commitment to be successful. A senior leader will play a pivotal role in supporting and facilitating change management. Corporate commitment will communicate the need for change, establish priorities and give direction to the process. Embedding this commitment in the organizational culture will give the necessary drive to change at the frontlines and provide the required ownership to make surge capacity planning a priority for the organization. A champion has the ability to define expectations of all medical and frontline staff for compliance with the initiative. Lastly corporate commitment is essential for accountability in the organization for this initiative and it will further expand to new relationships being built with LHIN partners. This accountability will ensure standardization in the application of surge capacity management principles across the province.

Complete the following transformation map activities to identify your Corporate Sponsor:

- Identify a Corporate Sponsor as the designated champion for this initiative
- Ensure the Corporate Sponsor has received training on the Critical Care Strategy and Surge Capacity Management principles to ensure consistency in communication

A key factor in closing the gap between best practice and common practice is the ability of health care providers and their organizations to rapidly spread innovations and new ideas[1]. Creation of organizational champions will enhance communication to varied departments and frontline staff. Our champions will ensure a collaborative approach is taken as our project partners build organizations that have the ability to manage surges. This process will give an aerial view of what organizations require to integrate services and create a system that delivers access to services when patient volumes exceed normal capacity.

Critical Care patients are complex and require a system-wide management model to ensure improved outcome or survival. To be effective, implementing system-wide change requires coordinated and collaborative efforts from multi-disciplinary teams. Therefore, surge capacity management champions from across the organizational infrastructure are required to communicate with the frontline staff to ensure seamless coordination of services for critically ill patients. This can be achieved by participation on a Corporate Steering Committee. If a similar committee already exists in your organization consider this committee as the forum for communicating the project objectives to other departments.

Complete the following transformation map activities to enhance communication with all areas and departments:

- Identify a champion from all of the following departments to participate on the Corporate Steering Committee
    - Medicine (Chief of Staff or Representative from Internal Medicine)
    - Nursing Administration
    - Peri-operative Services
    - Emergency Department
    - Infection Control
    - Material Management
    - Organized Labour Representatives
    - Front line staff Champions- Critical Care
- Members to provide an in-service training to their respective areas on the surge capacity management principles

[1] Massoud MR, Nielsen GA, Nolan K, Schall MW, Sevin C. *A Framework for Spread: From Local Improvements to System-Wide Change.* IHI Innovation Series white paper. Cambridge, MA: Institute for Health care Improvement; 2006. (Available on www.IHI.org)

Objective 2: Establish a Critical Care Surge Resource Team to Implement Surge Capacity Strategies and Coordinate Future Surge Events

The Surge Capacity Management Framework and required processes will come from the provincial surge team at the Critical Care Secretariat for the MOHLTC. Each organization will develop a nucleus group that will be responsible for implementing the strategic elements of the plan to establish preparedness within their own organization. The teams will be referred to as the Critical Care Surge Resource Teams. Teams will vary in size and composition depending on the availability of staff and the composition of the Critical Care units. Each organization will build a team to suit its own needs. A suggested framework for the teams is listed below.

The Critical Care Surge Resource Team will aim to establish preparedness in the organization by addressing all five of the principles of surge capacity management. The team will be charged with completing their Transformation Map within the assigned timeframe. The success of this project will depend on including the right people on the team who will champion the cause not only in the Critical Care environment but also throughout the organization. Teams will partner with their Corporate Sponsor to ensure accountability is maintained.

The overarching goal of this program is to ensure access to service in a timely manner for patients who require Critical Care. Each hospital is encouraged to be innovative with their communication plans and techniques; however to ensure sustainability for the provincial program a consistent application of each principle is needed.

Complete the following transformation map activities to begin implementation of the surge capacity management strategies:

- Identify a Physician who will be the Gatekeeper for Critical Care Capacity
    - The Physician Gatekeeper will co-chair the Corporate Steering Committee with the Corporate Sponsor
    - The Physician Gatekeeper is accountable for managing Critical Care Capacity for surge events

- Assemble a Critical Care Surge Resource Team. Submit a contact list for the resource team to your project officer The suggested framework for the team includes the following members:
    - Physician Champion
    - Nurse Manager
    - Nurse Educator
    - Four front line staff (mix to include 2 senior RN, 1 junior RN, and 1 RRT)

Complete the following transformation map activities to implement surge capacity strategies:

- When the team is formed, identify the roles and responsibilities and who will perform each task on the assigned Transformation Map
- Designate one member as the Site Lead
- Schedule a regular meeting time for your Critical Care Surge Resource Team
- Prepare a checklist for the Medical Director/designate
- Prepare a checklist for Nurse Manager/designate of Critical Care unit to facilitate in a time of surge. Refer to Appendix L for sample checklists

Objective 3: Complete Comprehensive Hospital Assessments

Surge capacity is the ability to expand care in response to rapid or more prolonged demand in health care services. Prior to beginning any action plan or process improvement map it is critical to assess and document the current hospital state. A key component to surge capacity management and forecasting is a quality indicator program. Quality indicators provide information that allows process improvement and evaluation. This data will allow your organization to identify, review, analyze and feedback on areas for improvement.

Deliverable	Description	Delivery Method	Frequency	Owner	Audience
Monthly Project Report	Monthly report on deliverables	Electronic	Monthly	Site Team	Project Officer MOHLTC
Data Reports	Monthly report	Electronic	Monthly	Site Team	Project Officer MOHLTC/ Critical Care LHIN Leaders
Minor Surge Event Forms	Form to be completed in the event of each minor surge	Electronic	On occurrence	Site Team	Project Officer MOHLTC

The data collection framework involves the following assessments:
(Note: Timelines can be found in Appendix I)

A. **Hospital, Capacity, and Service Assessment**

This initial assessment will give a clear and defined overview of the capacity and capability of your Critical Care unit and the organization. This initial building block will establish the framework for surge capacity plans in your organization. The purpose of the assessment is to identify existing plans and services in the organization and build on this infrastructure to ensure consistency and standardization of surge planning with organizations, across LHINs and the Province.

B. **Flow Mapping Process**

The next critical piece for surge capacity management is to determine the flow of patients from the point of admission to the clinical area to discharge. Flowcharts allow you to visualize a picture of the way a process actually works so that you can understand the existing process and clarify complex processes. The goal of flow mapping in surge capacity planning is to identify system processes and improve system efficiencies.

C. **Patient Flow Monitor**

The final piece of the hospital baseline assessment is the patient flow monitor. This form will enable a snapshot view of the patient flow activities in the corresponding unit. Our goal in this process is to improve efficiency while maintaining patient safety.

D. **Surge Event Reporting**

In the event of a minor surge, organizations will complete a Minor Surge Event Form through the Surge Capacity Management Online Toolkit (See Appendix J for a sample of the Minor Surge Event Worksheet).

E. **Access to Care Critical Care Services**

Throughout this implementation plan there will be data that is reviewed through the Critical Care Information System and some additional elements that are gathered from other hospital departments to identify challenges in accessing Critical Care services. The data collection process will require a phased approach allowing hospital teams to establish the required partnerships to ensure the data obtained is accurate.

Complete the following transformation map activities to assess the current hospital state:

- The Critical Care Surge Resource Team to complete the Hospital, Capacity, and Service assessment worksheets online (Forms A, B, and C; See also Appendix B)
- The Critical Care Surge Resource Team to complete a flow mapping exercise (a guide and sample worksheets can be found in Appendix C)
    - encourage input from all members of the Critical Care team
    - Complete a process mapping report online to when the process is complete
- Complete the patient flow monitor record on a daily basis, for a period of three months (Form D; Templates available online, see also Appendix D for example)
    - Forms to be submitted weekly for three months to the Online Toolkit. Your Project Officer at the Critical Care Secretariat will conduct analysis and aggregate the data
- When the comprehensive hospital assessments are completed, it is very important to identify any barriers or implications that would affect change management
    - Monthly progress reports to be submitted online

Objective 4: Establish a System that is Knowledgeable about Surge Capacity Management

System change relies on communication within all levels of the organization. Care of the critically ill patient population requires coordination of services across the spectrum of care. In adopting the concept of seamless coordination of services for critically ill patients, each organization will establish a communication plan that will convey the understanding of the surge principles. The communication plan is the first step in management of surge events. With the proper tools, frontline staff will be prepared to coordinate care for critically ill patients at all levels of surge. The communication plan must involve all members of the organization ranging from frontline staff to medical staff.

The communication campaign that is recommended with this project is divided into two phases. Phase one will focus on education of frontline staff, administrator and medical staff on the surge capacity management framework. Phase two will focus on implementation of techniques and process that will strengthen communication during crisis or surge events.

Complete the following transformation map activities to establish a system that is knowledgeable about surge capacity management:

- Create a communications campaign that educates all frontline staff, administrative, and medical staff on:
    - The surge capacity management plan
    - Implementation strategies
    - The benefit to patients, families, staff, organizations and LHINs

- Consider using existing publications, newsletters, emails, lunch and learn and existing meetings and your individual communication departments (see starter package with templates on toolkit website)

- Conduct information sessions for the following groups:
    - Medical Advisory Committee (MAC)
    - Senior Team
    - Front Line Staff
    - Other departments i.e. Surgical Services and Emergency Room

Objective 5: Establish a Critical Care Communication System

Critical Care is a complex and dynamic environment that can be challenging as patients require extensive monitoring and life saving interventions. This environment can produce many stressors for both patients and staff. A strong communication process and plan can minimize uncertainty in daily functioning and during surge events. Effective communication and teamwork are essential for delivering high quality patient care and maintaining patient safety.

Communication failures are a common cause of errors resulting in inadvertent patient harm. The complexity of medical care, coupled with the inherent limitations of human performance, make it critically important that clinicians have standardized communication tools, create an environment in which individuals can speak up and express concerns, and share common ''critical language'' to alert team members to unsafe situations.[2] Establishing a standardized communications system in a Critical Care environment will provide a consistent mechanism of reporting between team members.

It is essential to establish a mechanism that quickly communicates the status of the Critical Care unit as a whole. To ensure a consistent approach to this communication method, it is necessary to triage patients daily on the basis of their acuity to provide a standardized practice in Critical Care units. This triage process will be communicated via the communication board (commonly know as the white board) that will be in a central location in the Critical Care unit. It will identify which patients could potentially be transferred out of the unit, which patients must remain in the unit and lastly those patients that could be reassessed and potentially be transferred out of the unit. The following is the triage methodology/traffic light system that will be used for this program:

RED: Patient remains in ICU as they require life sustaining interventions

AMBER/YELLOW: Possibility of transfer within a 36 hours timeframe

GREEN: Patient can safely be transferred from Critical Care

Complete the following transformation map activities to establish a Critical Care communication system :

- Utilize a white board and communication protocols to:
  - Triage patients daily utilizing a colour code to identify acuity
  - Identify the date the patient was placed for discharge to the ward
- Implement a communication tool (such as SBAR model) to be utilized on admission and discharge in normal capacity and in crisis and surge events
- Identify communication plans to notify all levels of organization during surge events (such as management/senior team, medical staff, frontline staff, patients and families, general public etc)
- Develop algorithms for Critical Care staff

[2] M Leonard, S Graham, D Bonacum The human factor: the critical importance of effective teamwork and communication in providing safe care, Qual Saf Health Care 2004; 13(Suppl 1):i85–i90.

Objective 6: Identify Essential Services and Functions Required to Sustain the Critical Care Service

Critical Care Medicine is a specialty that provides comprehensive and continuous care for adult and paediatric patients who are critically ill and who can benefit from treatment. This essential service can sustain and maintain life at critical moments of illness. The objective of surge capacity management is to establish preparedness prior to a surge event; ensuring health care providers have a controlled environment to provide care. This process will ensure patient safety is maintained.

To understand what resources are required, it is essential to understand what patient populations are served by each Critical Care unit in the organization. This information will provide the necessary information in planning for resource allocation to care for these patients, especially in minor, moderate and major surge events.

Note: Review flow mapping process outcomes (from objective 3) before beginning these steps.

Complete the following transformation map activities to identify essential services and functions required to sustain the Critical Care Service:

- Establish admission process for Critical Care patients
  - Review flow mapping process
  - Identify how patients gain access to Critical Care
  - Develop an algorithm for the Critical Care Staff on the admission process

- Identify the discharge process for Critical Care patients
  - Identify who determines patients are ready for transfer
  - Document the transfer process inclusive of inter-unit transfer and discharge from the organization
  - For trending follow the data collection to identify delays in discharge
  - Differentiate the transfer process for minor surge events
  - Coordinate early discharge planning for expediting the discharge of patients in minor surge events. Note: partner with Community Care Access Centres and Social Work to facilitate the process

- Develop criteria for shifting patients to alternative space to accommodate for surge events

Objective 7: Establish System Preparedness for Human Resource Capacity

Human resource compliments are the vital element to successful surge capacity management. An aging nursing workforce, financial constraints in healthcare, hospital restructuring and consistent challenges in nursing recruitment and retention have contributed to shortages within the hospital-based nursing workforce. The effects of these shortages require organizations to plan for human resource demands for average day-to-day operations. Surge capacity management requires pre-existing plans for human resources to manage in a time of crisis. Identification of staff skill sets in both Critical Care and Acute Care will allow organizations to maximize and build on existing skill sets to secure staff resource for surge events.

In addition, documentation of existing skill sets will ensure organizations, staff, and patients are protected. This process will reduce the risk of a precarious response to surge events. Information on staff skill sets becomes vital information, especially when the surge event requires reallocation of staff to alternative space to manage patients. This information should be readily available to Nurse Managers.

Complete the following transformation map activities to review and maximize human resource capability and capacity:

- Identify who is accountable for staffing during a minor surge
- Define Normal Staffing Capacity
- Estimate and document minimum number and categories of personnel needed to care for a single patient or a small group of patients on a given day for each specific department
- Complete Staffing Inventory
- Document each staff member's Skill Set in ICU, CCU, PACU, and ER
- Define the necessary Critical Care Skill Set
- Identify an enhanced Skill Set that can be utilized in minor surge events
- Collaborate with local collective bargaining unit in defining the terms of the enhanced Skill Set
- Identify key strategies in implementing the educational process to establish an enhanced Skill Set
- Establish an alternative staffing model to increase staff complement during minor surge
- Introduce cross-training of personnel to provide for essential patient care areas at times of severe staffing shortages (e.g. ER, ICU or medical units)
- Define the role of multidisciplinary team members in a minor surge event
- See Appendix E Planning for Human Resources
- Prepare a checklist to assist with the management of human resource compliment in a surge event. Refer to Appendix L for a sample checklist

Objective 8: Establish System Preparedness for Alternative Physical Space for Surge Events

When Critical Care reaches capacity limits, alternative physical areas must be considered depending on the level of surge response that is required. Organizations should have pre-determined and documented alternative space where patients can over-flow to if necessary in a surge event. The alternative space can be utilized for a temporary or prolonged time-frame as deemed necessary. The critical piece in establishing alternative spaces for surge events is to pre-determine the functionality of these areas. Early identification of how this process will work, who will work in the area, where will the supplies come from and who will be the resource person for this area are key elements to this becoming a successful tool. It is recommended that the organization prepare portable supply carts, containing all the necessities to provide patient care, which can be mobilized quickly to alternative areas.

Complete the following transformation map activities to establish preparedness for alternative physical space for surge events:

- Include key stakeholders in the planning of alternate space areas including Infection control, plant operations/facilities planning etc
- Identify areas for alternative physical space to be utilized in minor surge events
- If pre-determined areas exist assess the current functionality of the designated area, particularly as it relates to patient care, work area/storage, equipment, supplies and utilities
- Identify the shared governance between Critical Care unit and this alternative space
- Establish where the equipment resource will come from
- Prepare an algorithm of the transfer process of patients to this area
- Implement an education plan for frontline staff on alternative physical space
- See Appendix F for example on managing equipment for alternative space
- Prepare a checklist to ensure the functionality of the Alternative physical space in a time of surge. Refer to Appendix L for a sample checklist

Objective 9: Establish System Preparedness for Equipment and Resources for Surge Events

Critical Care Medicine is concerned with the provision of life support or organ support to patients who are critically ill and who usually require intensive monitoring. Equipment and supplies are essential pieces of the puzzle in providing care for critically ill patients. Equipment and technology can ensure that patient care is delivered in a safe environment and quality of care is maintained.

Common equipment that can be found in an intensive care unit may include the following: ventilators, monitoring equipment; intravenous lines for drug infusions, nasogastric tubes, suction pumps, drains and catheters; and a wide array of drugs including inotropes, sedatives, broad spectrum antibiotics and analgesics. In some Critical Care units, hemofiltration equipment for acute renal failure is used to sustain organ function.

For a surge event to be managed successfully, it is vital the organization pre-establish inventories of equipment and supplies. This inventory will provide health care providers with an understanding of the capability of the hospital to provide safe care to patient populations and recognize the capability of the organization.

This pre-established inventory will also provide information on what resources are available at the time of the surge event. It is recommended that organizations prepare equipment carts that can be mobilized quickly to alternative areas which contain all the necessities to provide patient care.

Complete the following transformation map activities to establish preparedness of equipment and resources during surge events:

- Establish an inventoried cache of equipment
- Set-up a portable supply cart that can moved to the surge area
- Identify how equipment is monitored for functionality
- Identify the location and accessibility of equipment for surge events. See Appendix F for example on managing equipment for alternative space
- Prepare an organization resource checklist to be utilized to access equipment in minor surge events. See Appendix L for sample checklist
- Collaborate with the LHIN to understand what regional equipment resources exist in other centers and how they can be accessed in surge events (Optional)

Objective 10: Establish System Preparedness by Defining a Decantation Process for Surge Events

A debate that weighs on many hospital administrators is whether surgical cases should be cancelled to manage surges into the system. The answer is to establish flexibility in the system by predetermining surgical volumes and making accommodations for a sudden increase in patients requiring intensive care.

In surge events, some patients will potentially be discharged early to their own homes or alternative organizations to accommodate for the increase in demand. Activities such as routine surgery and procedures will be reduced or eliminated to free staff and beds. Priorities and pathways need to be determined for each organization. It is recommended, that each organization establish a decantation process to be used for surge events.

The specific recommendations to develop a decantation process and for building community partnerships that allow for coordination of services for patients who meet early discharge criteria, can be found in Appendix G.

Complete the following transformation map activities to establish system preparedness, particularly for decantation processes:

- Establish a system in which planned expected date of discharge (EDD) is documented on all patients charts
- Establish daily distribution to all Clinical Managers of patient lists indicating who may be discharged that day (based on EDD)
- Establish a discharge process to be utilized during minor surge events in Critical Care and Acute Care Areas
- Prepare an organization checklist for decantation process in minor surge (See Appendix L for a sample checklist)
- Identify how transport services will be utilized during the decantation process

Objective 11: Build Partnerships to Determine How Patient Volumes from Other Clinical Areas Impact Critical Care

Partner with Surgical Services

In healthcare today we have an increased responsibility to ensure services to the populations we serve. The Wait Time Strategy is a promise from the Ministry of Health to ensure Ontarians have access to care in a timely manner. In recognition of the pressure on organizations to strive to achieve wait time targets for surgical cases, the impact of surgical cases on Critical Care becomes clear. From the other perspective, it becomes vital to know how the lack of Critical Care capacity affects surgical services. Therefore, it is important to partner with surgical departments to identify potential barriers in accessing Critical Care services.

Complete the following transformation map activities to determine the required capacity of surgical services:

- Designate a champion from the Operating Room (OR) team to the Corporate Steering Committee (OR Manager/Director suggested)
- Partner with Operating Room Services to determine required surgical access to Critical Care beds based on service and surgical procedure
  - Identify and document routine method of booking Critical Care beds
  - Review surgical cases requiring Critical Care service post-operation
  - Develop a standardized booking process that will enable planning for Critical Care capacity
  - Establish necessary timelines for booking of Critical Care beds
- Determine a daily capacity for post-operative cases requiring Critical Care beds consider staffing, holidays, and resource availability (for example 3 OR cases maximum daily)
- Determine a process in which surgical cases are cancelled in minor surge events
- Determine who cancels surgical cases in a minor surge event
- Establish a collaborative process between Critical Care and Operating theatre to evaluate the required daily Critical Care capacity
- Complete data collection as identified in Appendix H to identify the barriers in accessing Critical Care Services

Partner with Emergency Department.

Often, the Emergency Department (ER) can be the initial point of entry for the Critical Care patient. A process should be delineated for these patients to be stabilized and transferred to the Critical Care environment as soon as possible. This process will ensure the ER is decanted and available for other patients who require access. In addition, this process will ensure that Critical Care patients have the appropriate level of care. In a surge event it is critical to know the source of the influx of patients to ensure the appropriate response is activated for the organization.

Complete the following transformation map activities to determine the required Critical Care capacity of the emergency department:

- Designate a champion of the ER team to the Corporate Steering Committee (ER Manager/Director suggested)
- Partner with the ER delegate to identify barriers in accessing Critical Care services

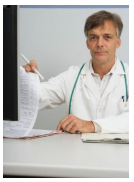
Objective 12: Evaluation

Upon completion of the Surge Capacity Management Framework, each organization will:

- Conduct rehearsals to test the efficiency of the plan
  - One hospital rehearsal
  - One LHIN rehearsal
- Identify areas for improvement
- Have a yearly update to review and renew the policy procedures
- Complete a final report, and submit documentation of completed transformation map activities to the designated Project Officer, which could include:
  - Evaluation of successes, challenges, and potential risks
  - Results of rehearsal tests
  - Significant accomplishments (e.g. innovations, partnerships)
  - Next steps, and lessons learned





Appendix

A

Appendix A

Surge Capacity Management Elements

The Critical Care Surge Capacity Management Plan will adapt and refer to the definitions in the following tables:

Element	Minor Surge	Moderate Surge	Major Surge
Definition	An Acute increase in demand for Critical Care services- up to15% beyond the normal capacity, which is localized to an individual hospital.	A larger increase in demand for critical services that impacts on a LHIN/ Region.	An unusually high increase in demand that overwhelms the health care resources of individual hospital and regions for an extended period of time.
Management Level of Response	A local response at the individual hospital level is sufficient.	An organized response at the LHIN/ Regional Network level is required.	An organized response at the provincial or national level is required.
Management Accountability (Oversight)	Individual hospital boards are accountable for overseeing the surge response.	LHINs or Critical Care networks are accountable for overseeing the surge response.	The Chief Medical Officer of Health has powers in emergency situations but the Deputy Minister of Health and Long-Term Care is ultimately in charge.
Human Resources	Human resources working in the hospital's Critical Care services should be sufficient to meet the surge. In some instances, more assistance may be provided by other hospital staff members who have received additional Acute and Critical Care training. All local staff who have volunteered and been trained in the EMAT will provide an excellent "pool" of human resources for the local hospital.	Human resources working in Critical Care services within the LHIN or network's hospitals may be sufficient to meet demand. These staff will need to be mobile throughout the region. More assistance may be provided by other hospital staff members who have received additional Acute and Critical Care training. All local staff who have volunteered and been trained in the EMAT will provide an excellent "pool" of human resources for the local hospital.	Human resources that work in Critical Care services are not sufficient to meet demand. More assistance will be provided by hospital staff across the provinces who have received additional Acute and Critical Care training. All staff across the province who have volunteered and been trained in the EMAT will provide an excellent "pool" of human resources.

Element	Minor Surge	Moderate Surge	Major Surge
Equipment and Technology	Supplies in Critical and Acute Care services will be sufficient to meet demand.	Supplies in Critical and Acute Care services may not be sufficient to meet demand. Specialized equipment and medications should be stockpiled to meet moderate surges. These caches should be centrally stored in the LHIN and have a structured process for access and maintenance. Technologies will be used to disseminate knowledge and skills as broadly as possible (e.g., digital radiography, tele/video consultation, eICU).	Supplies in Critical and Acute Care services will not be sufficient to meet demand. Specialized equipment and medications should be stockpiled to meet major surges. These caches should be centrally stored in the province and have a structured process for access and maintenance. The existing capabilities of EMAT will provide much of this cache, complemented by the EMU. Technologies will be used to disseminate knowledge and skills as broadly as possible (e.g., digital radiography, tele/video consultation, eICU). EMAT has its own medical equipment and supplies.
Physical Plant	Physical plant resources in the hospital will be sufficient to meet demand, however, the use of alternate space within the facility should be considered (e.g., PACU, emergency departments, and intermediate units). It is necessary for hospitals to evaluate, prepare and equip this space prior to a surge event.	Physical plant resources in a LHIN/ Critical Care network will be sufficient to meet demand; however, the use of alternate space should be considered (PACU, emergency departments, intermediate units). It is necessary for LHINs /region to evaluate, prepare and equip this space prior to surge events. A high degree of communication and collaboration between hospitals and transport medicine systems are necessary for the LHINs/regions to leverage the region's resources during surge events.	Physical plant resources in a LHIN/Critical Care network are not sufficient to meet demand. Additional physical plant resources are needed through Emergency Medical Assistance Teams (EMAT). A high degree of communication and collaboration between hospitals and transport medicine systems are necessary for the province to leverage its provincial resources.
Processes to Address Surge	Process check list will be used to help address minor surges. E.g., • Alternate physical spaces, such as PACU, ED, Acute Care floor beds/step-down units have been accessed; • Critical Care admit and discharge criteria	Process check list will be used to help address moderate surges. Similar to minor surge checklist, as well as other items.	Process to address major surge: • The Ministry of Health and Long-Term Care's Emergency Management Unit alerts the CEO of Ontario Air Ambulance about a request for help. The Ministry ensures all deployment criteria have been met and then directs the

Element	Minor Surge	Moderate Surge	Major Surge
	have been implemented; • The potential to delay electives has been evaluated thoroughly taking into account the risks and benefits to overall patient care; • Delays transferring to wards have been addressed; • Alternate level of care patients have been transferred to long-term care or other appropriate facility; • Transport systems have been appropriately engaged to support the above, where appropriate; • Use of alternate staff have been considered; and • Cache of appropriate equipment to support surge is available.		CEO to dispatch EMAT. • EMAT will assess, treat and triage cases. In the first 72 hours, EMAT will manage patients and transfer those most critical to a lead LHIN hospital. • EMAT may continue to manage patients in the field, as necessary, but will begin to transfer patients.

Appendix

B

Appendix B

Section I: Hospital Assessment Worksheet (Form A)

Please complete on the Online Toolkit

1. Who is the Critical Care Medical Director?

Name:
Contact Number:
Email Address:

2. Who is the Critical Care Nursing Director or Nurse Manager?

Name:
Contact Number:
Email:

3. Identify the person or group, who is currently accountable for planning responses for surge events in your organization (this is not the Critical Care Surge Resource Team you have just formed)? (Please include name and title for each):

4. Identify what disciplines are currently involved in surge capacity planning in your organization?

5. Describe the current organizational strategy to manage surge events (Include the name and a brief description of all policies and procedures related to surge management)

6. Identify what communication mechanisms are currently utilized in your organization as part of surge management?

7. Describe how the Critical Care unit currently manages a surge of critically ill patients in your organization?

8. Identify what would constitute a minor surge in your organization?

9. In relation to minor surge, identify the process in place to manage the elements of:

A. Human Resources

B. Physical Plant or Capacity

C. Equipment and Technology

10. Describe how your organization manages when there is a lack of Critical Care resources, specifically for:

A. Human Resources

B. Physical Plant or Capacity

C. Equipment and Technology

11. Identify how the organization gains access to resources outside of your hospital?

Human Resource Capacity

12. Identify your organization's Critical Care Skill Set:

13. How is this Critical Care Skill Set maintained on a yearly basis?

14. Identify number of staff with existing Critical Care Skill Set (to provide care of Level III patients:	
15. Identify number of staff with existing Skill Set to provide care for Level II patients:	

Patient Population Assessment:

Identify the Top 10 Case Mix Groupings (CMGs) for the last year
1.
2.
3.
4.
5.
6.
7.
8.
9.
10.

Section II: Capacity Assessment Worksheets (Form B)

Part I: Current Staffed Bed Capacity

Use this worksheet to help gather the required data. Please visit the Critical Care Online Toolkit to complete the form online.

Types of Beds	Total number of beds that are routinely equipped and staffed	Number of these beds in rooms with negative air pressure and HEPA filter	Number of staff required for these beds for a 24 hour period						
			MDs	Admin	RNs	RPNs	PCAs	RRTs	Other
ED									
Adult Critical Care									
Paediatric ICU / NICU									
Step-Down/Telemetry Adult or Peds									
General Beds Med/Surg									
General Beds Peds									
Nursery									

Part II: Immediately Available Surge Capacity

Types of Beds	Total number of beds that are routinely equipped and staffed	Immediate Bed Capacity that can be expanded to manage a minor surge event	Number of additional staff required to activate these beds for each 24 hr period (assume two 12-hour shifts per day)						
			MDs	Admin	RN	RPNs	PCAs	RRTs	Other
ED									
Adult Critical Care									
Other ICU Areas									
Step-Down/Telemetry Adult or Peds									
General Beds Med/Surg									
General Beds Peds									
Nursery									
Negative Pressure Beds									
Isolation Beds									
PACU									
OR									
Day Surgery									
Renal Dialysis									
Other Areas:									

Section III: Clinical and Support Services Inventory (Form C)

This worksheet documents urgent and emergent medical and support/diagnostic services available at each hospital site, the hours of operation for these services, and the current/preferred referral pattern for each hospital. Your assistance in collecting and submitting this information for your hospital is invaluable and will help to ensure Ontario is well prepared to care for critically ill patients.

Through the **Online Toolkit**, please complete this form.

1. Indicate whether or not your hospital site provides the service and the hours of operation, in particular if the service is available to assist with urgent and emergent consultations

*Hours of Operation Options include:

a) 24/7 = 24 hours x 7 days/wk
b) Business Hours = (e.g. 0800 to 1600), Monday to Friday
c) After Hours = (e.g. 0800 to 2000), 7 days/wk
d) N/A = Not applicable, this hospital site does not offer the service. If you choose this option please make sure to indicate which hospital you refer patients from your hospital to, in the next column.

2. Indicate the other hospitals where you normally refer patients from your hospital for the service. Use this option if the service is not offered at your site or in circumstances when the service is unavailable.

Clinical Services	Hours of Operation*	Preferred Referral Option	2nd Referral Option
Anaesthesia			
Burns			
Cardiac Surgery			
Cardiac Surgery: Angioplasty			
Cardiac Surgery: Temporary Pacemakers			
Cardiac Surgery: Permanent Pacemakers			
Cardiac Surgery: Balloon Pump			
Cardiology			
ICU -Level 2			

ICU -Level 3			
ENT			
Gastroenterology			
General Surgery			
Clinical Services	**Hours of Operation***	**Preferred Referral Option**	**2nd Referral Option**
Hyperbaric Chambers			
Internal Medicine			
Neonatology Level 1			
Neonatology Level 2			
Neonatology Level 3			
Nephrology			
Nephrology Haemodialysis			
Nephrology Peritoneal dialysis			
Neurology			
Neurosurgery			
Obstetrics			
Ophthalmology			
Orthopaedics Surgery			
Paediatrics Neurosurgery			
Paediatrics Trauma			
Paediatrics Surgery			
Paediatrics Cardiac			
Paediatrics ICU			
Plastic Surgery			

Psychiatry			
Respirology			
Clinical Services	**Hours of Operation***	**Preferred Referral Option**	**2nd Referral Option**
Spinal			
Telestroke			
Thoracic Surgery			
Trauma			
Urology			
Vascular Surgery			
Support Services	**Hours of Operation**	**Preferred Referral Option**	**2nd Referral Option**
Computerized Tomography			
Magnetic Resonance Imaging			
Echocardiogram			
Catheterization lab			
Angiography			
PACS (picture archiving communication system)			
ERCP(endoscopic retrograde cholangropancreaticgraphy)			
IVC filters (inferior vena cava filter)			
TIPS (transjugular intrahepatic portosystemic shunt)			
Gluing (GI)			
Banding (GI)			

Appendix

C

Appendix C

Section I: Flow Mapping Process

I. Why use the flow mapping process?

Flow, value stream or process mapping is a useful tool to give a graphic view of how care is provided from the patient perspective or how other work processes flow into and out of your unit/organization. The goal of the exercise is to improve efficiency and quality by reducing or eliminating errors, defects, unnecessary or non-value adding steps, delays, constraints and bottlenecks, duplications and rework.

A flow mapping process can:

- Increase productivity
- Improve patient care
- System Integration
- Streamline flow
- Identify opportunities for assistive technologies
- Identify personnel who are responsible for operations
- Confirm cross-functional or cross-departmental links or associations
- Validate the current process and identify areas that would benefit most from change

Specifically **flow** refers to the progressive movement of products, information and people through a sequence of processes (NHS – Scotland)

> *"Without a clear understanding of the processes of care there is a risk of changing parts of a process which will not improve the service from the patients perspective and will actually lead to more waits and delays for patients*" – NHS Scotland.

II. How do we prepare?

Define the Process you want to improve

This step is most likely already complete, however questions you may consider are:

- Is there anything that is currently time consuming?
- Does your organization have existing processes?
- Do your existing processes have notable errors?
- What has a strong potential for improvement?
- What will help build morale?
- Will fixing this process pave the way for mapping other processes?
- What are the limits of the process map i.e. the start and end points or the scope?
- What you are trying to achieve?

Assemble the team

In order to consider all viewpoints of the flow or process, all staff levels who are involved in operations should be included. The team should be given support and authority from Senior Management to also make changes in a timely fashion. Using existing teams that are working on other improvement projects may work, again as long as the membership includes people with a strong knowledge base on the process that is being mapped. Process mapping can be the first step in the improvement process and can inform the measures required for the improvement project as a whole.

Book Time, Venue and Equipment

The mapping exercise should take one day to complete. Share the responsibilities of the activity across the team as it will take some time to transcribe some of the information in between steps.

Book a room that will accommodate the team as well as enough room to move around and see the walls. "Post-it" notes, pens, flipchart paper and tape are useful as well as a laser projector and computer to display important pieces of information.

III. Mapping the Current Workflow:

Day 1 - Create the Map

Step 1: Decide on team roles – recorders, facilitators etc.

Step 2: Show examples of what flow maps looks like and decide whether you will need to do a detailed or a high level map or both

Step 3: Decide what the first step and the last step in the process is (your terminals) and get consensus

Step 4: Identify the next steps in between the terminals in order using post-its

- Do tasks/activities/operations first, then go back and add in time spent, distance traveled, decision making branches, documentation, databases, etc.
- Use the basic shapes directory to guide your thoughts about what needs to be included.
- Some steps happen at the same time and some in parallel.

Step 5: Review the flow map process with team members to ensure there are no missing steps

Step 6: Assign someone to transcribe and draw the flow "picture" into a flowchart using a program that supports flow diagrams and shapes/symbols consider Excel, Visio, Smart Draw, UML, Edraw Flowchart Software, OpenOffice.org Draw).

- Note: For a how-to guide in excel go here: www.breezetree.com/articles/how-to-flow-chart-in-excel.htm
- Refer to attached chart for commonly used symbols and their meaning
- Use clouds for unfamiliar steps.
- Do the branches last.

Day 2 - Validate and Analyze the Map

Step 1: Walk the team through the process again to check that all events are included.

- The process map must always depict the total number of steps taken ***as well as*** the number of people involved, the total time taken to perform the process step, and all documents used (NHS-Scotland).

- It may benefit the team to have the flowchart enlarged at a print shop in panels so that it can be posted on the wall.

Step 2: Identify the problem areas. Ask each other and yourself the following questions:

- Where are there significant delays/waits? Where are they built into the process? Which are the longest?
- Where are the bottlenecks?
- What steps do not add value?
- What activities/documents etc. are being reworked or done more than once?

- Is there any unnecessary storage?
- Are there any unnecessary inspection steps?
- What is approximate time between each step?
- What is the approximate time between the first and last step?
- How many steps are there?
- Is work being batched?'
- Is there an inappropriate amount of staff working on an activity? Too many? Too little?

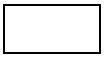
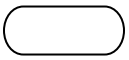
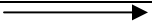
Step 3 (Concurrent with Step 2): Flag activities with different coloured "stickies" that a) do not add direct value or are unnecessary, b) cause waits or delays, c) are reworks, d) are timely, e) staffing issues.
Step 4: Summarize the improvement areas from your process mapping and simplify them into manageable tasks (see references below).

Step 5: Brainstorm about solutions in groups.

- There are no "bad" ideas in brainstorming i.e. there is no evaluation component in this step.
- If the team is large enough and there are many areas for improvement, break out into smaller groups for brainstorming session.

Step 6: Groups will be given an opportunity to share their flow mapping process with other like centers.

Commonly used Symbols for Process Mapping:

Symbol	Description
	Activity/operation/process
	Decision/Question or Branch
	Wait or Delay
	Database
	Data
	Unknown
	Permanent Storage
	Terminator
	Document
	Connector
	Flow Line

References: Centre for Change and Innovation www.cci.scot.nhs.uk; T he Modernisation Agency: www.modern.nhs.uk; The Institute for Health care Improvement: www.ihi.org; Toolpack Consulting www.toolpack.com; FlowBreeze Flowchart Software www.breezetree.com

Section II: Flow Mapping Process Worksheet

Use this worksheet to help gather the required data. Please visit the Critical Care Online Toolkit to complete the Flow Mapping Process Form online.

Flow mapping can show how processes actually happen at the ground level. This helps to illuminate the roles of those involved, and it enables those participating to see each others' perspectives. It can also help with diagnosis of problems within the process, and can aid in the identification of areas for improvement. The goal of flow mapping in surge capacity planning is to identify system processes and improve efficiencies within the system. Identify the process strengths and barriers at each of the stages defined below:

Hospital Name	
Site Name	
Unit(s)	

Flow Mapping Process due: June 30 2009

Term	Definition
Inputs	The processes associated with the entry points for patients into the Critical Care unit. What areas of the hospital do the patients come from? I.e. ER, OR, PACU, Wards What is the admission process to the Critical Care unit?
Throughputs	The processes involved in providing care for the Critical Care patients? i.e. Staffing, rounds, care pathways etc
Outputs	The processes associated with discharge process from the Critical Care unit. Where are your patients discharged to? Who is involved in the discharge process?

Inputs:

Strengths	Barriers

Throughputs:

Strengths	Barriers

Outputs:

Strengths	Barriers

Appendix

D

Appendix D

Patient Flow Monitor Worksheet (Form D)

To be completed for three months, Aug 1-Oct 31 2009 (data submitted weekly online)

Begin Date: ____/____/____ End Date: ____/____/____
mm dd yy mm dd yy

This form will enable a snapshot view of the patient flow activities in the Critical Care units. The goal of this data collection process is to improve efficiency while maintaining patient safety.

Use this worksheet template to gather the required data daily. Please visit the Online Toolkit to submit your data for each unit on a weekly basis. This exercise will occur for three months of the project. Templates for weekly data collection are also available on the Online Toolkit website.

Daily Patient Flow Monitor Form	
To be completed by Team Leader/Charge Nurse daily for each participating Critical Care Area at 21:00 to reflect the prior 24 hours	
Today's date:	**Critical Care unit:**
For the last 24 hours:	
Identify the number of RNs required (in the Critical Care unit)	
Identify the actual RNs available (in the Critical Care unit)	
Identify number of RN utilized from other sources (other areas of the hospital, or agency staff)	
Identify the number of patients needing 1:1 care	
Identify the number of OR Cases that were cancelled due to lack of Critical Care capacity.	
Of the total number admissions from the PACU or OR how many were delayed for ≥ 4 hours	
Total number of ER patients admitted to the ICU	
Of the total number admissions from the ER how many were delayed for ≥ 4 hours	
How many admissions were from the WARD? Note: for organizations who have a CCRT this information will be identified from your CCIS indicators.	
If there was a delay (greater than four hours) in admission to the Critical Care unit, identify the reason for delay i.e. capacity, staffing processes (waiting other patients to be discharged from the unit, housekeeping, porter system, other) :	

** **For questions that are not applicable to your organizations place (N/A) for your answer.**
***Form adapted from VHA's 2002 Research Series- A practical Guide to measuring performance on the intensive care unit

The Critical Care Secretariat will aggregate the above information with the following CCIS indicators to identify challenges in managing surge capacity:

ICU Census, Admission Indicators, Bed closure information, Discharge Indicators, LOS Information, Bed Spacing Information, Number of Surgical Cases requiring Critical Care Services post-operatively (Number of Scheduled Surgeries with Scheduled ICU admission), Number of ICU Conservable Days

Appendix

E

Appendix E

Planning for Human Resources

- ❑ Document minimum number and categories of personnel needed to care for a single patient or small group of patients on a given day for each specific department. (Normal Staffing Capacity)
- ❑ Complete Staffing Inventory and document each staff member's Skill Set
- ❑ Document existing standard Critical Care Skill Set*

**** Example:*** Existing Standard Critical Care RN Skill Set includes basic & advanced nursing skills:

- Advanced airway management (Suctioning, ventilator parameters, ETT management, ABG interpretation etc)
- Arrhythmia & Pacing interpretation/monitoring
- Hemodynamic monitoring
- IV drug administration including the titration of vasoactive drugs
- Arterial, central venous & PA line management
- Comprehensive head to toe patient assessment
- ICP drain management
- Emergency arrest response
- Must include a complement of staff with additional advanced training such as CRRT & IABP

- ❑ Identified other sources of available staff with existing standard Critical Care Skill Set* (e.g. former Critical Care staff, agency, other hospital Critical Care unit staff etc.)
- ❑ Establish an enhanced skill** set in Acute Care Staff

***** Example:*** Enhanced Critical Care RN Skill Set (Staff with trained emergency response (EMAT pool), Operating Room, level 1&2 Intensive Care units, telemetry experience, and previous Critical Care unit staff) includes basic & few advanced nursing skills:

- Arrhythmia interpretation
- Arterial & central venous line management
- Basic airway maintenance (Non-ventilated)
- IV drug administration
- Basic vital signs assessment (HR, BP, Temp, RR, O_2 Sat),
- IV insertion & Phlebotomy

- ❑ Document key strategies and educational partners to implement enhanced Skill Set**
- ❑ Establish an alternative staffing model*** to increase staff complement during minor surge events

****** Example:*** Alternate staffing models are tiered systems where Critical Care staff expertise is used to oversee staff with non-Critical Care Skill Sets & provide advanced care needs to multiple patients

- Critical Care RN oversees 2 Telemetry floor staff & each with two Critical Care patients
- 1 Intensivist oversees up to 4 non-Intensivists

The above listed examples of Skill Sets are <u>recommendations</u> only. Each organization will be required to define a Critical Care Skill Set that is specific to their organization and dependent on the level of care that is required. Further more, each organization will be required to analyze the Acute Care staff and their skills and decide what enhanced Skill Set can be built from existing Skill Sets to enhance the organization cache of human resources.

Appendix

F

Appendix F

Managing Equipment and Facilities for Alternative Space

Conduct a walk-about in all patient areas in the organization to assess each area for the following elements:

- Human Resources availability
- Consideration for use of Alternative Physical Space
- Equipment and technology supplies availability
- Determine normal capacity for each area
- Determine the resource requirements to sustain a surge event that escalates up to 15% above normal capacity

Essential Transport Supplies:

Transport supplies should be available for transports between units and decantation outside of hospital.

Essential Patient Area Environmental needs:

- Ability to directly or indirectly view patient
- Patient call system
- Adequate lighting
- Adequate space to accommodate equipment and personnel to meet patient needs.
- Cardiac arrest equipment
- Emergency alarm system
- Bed/stretcher bed, over bed table, chair

Essential Utilities required:

- Electrical power – adequate outlets for needs
- Oxygen- 2 outlets per bed
- Compressed air- one outlet per bed
- Vacuum system- 3 outlets per bed
- Water supply- hand washing sinks, toilet
- Lighting- adequate for patient care, emergencies and charting

Essential Patient Care Equipment/Supplies:

- Rapid retrieval of crash cart and portable monitor/defibrillator
- X-Ray viewing system- station or computer
- Physiologic monitoring with recording capability (ECG, 3 pressure lines, O2 sat monitor)
- Thermometers, Glucometers, Urine qualification devices
- Access to laboratory specimen transport –pneumatic tube, system, porter, Point of Care systems etc.
- 2 IV poles per bed, IV pumps/IV administration equipment
- Non-invasive blood pressure cuffs
- Required Respiratory equipment – ventilators, O2 delivery equipment, intubation trays, suction equipment

Essential Work Area/Storage Needs:

- Portable cart for supplies
- Supplies for patient care
- Linen
- Medications including refrigerator for pharmaceuticals, double locking safe for controlled substances
- Medication preparation area
- A sink with hot and cold running water
- Telephone and/or other intercommunication system
- Computer access
- Space and seating for medical record charting by both nurse and physician.
- Access to dirty utility room/hopper
- Bio-Medical support available

Appendix

G

Appendix G

Building a Decantation Process

Recommendations for Building a Decantation Process

1. Identify and document processes for triaging patients. Identify who qualifies for early discharge during an anticipated minor surge event or a minor surge event

2. Approve the decantation process by patient care and medical advisory committees

3. Implement a Triage Color Coding on all electronic patient charts and in collaboration with Information Technology department

4. Establish a system in which planned expected date of discharge (EDD) is documented on all patients charts

5. Daily distribution to all Clinical Managers of patient list indicating who will be discharged that day (based on EDD)

6. Review current discharge practices

7. Review current transfer practices and inter-unit coordination with a focus on Critical Care

8. Establish Mock exercises to examine barriers in discharging patients

9. Establish a discharge “team “ of nurses, bed manager, social workers, and senior clinical decision makers to facilitate discharges during surge events

10. Facilitate a method to ensure contact numbers for family members/ significant others are documented

Recommendations for Building Community Partnerships

1. Establish a process to contact Community Care Access Center (CCAC) staff to expedite community care for discharged patients

2. Establish agreements with CCAC to provide service within 24 hours of discharge during surge

3. Distribute a call back list for CCAC off hour service

4. Establish processes and algorithms for Inter-facility air and land transport in surge events within the LHIN

5. Contact external resources to establish collaborative relationships within the LHIN
    a. Municipalities
    b. Emergency management agencies
    c. Regional Hospitals and Long Term Care Facilities
    d. Public Health Agencies

6. Establish agreements with local EMS (Emergency Medical Services) and private Inter-facility providers to facilitate transport of patients requiring paramedic care and non-ambulatory patients that are otherwise stable to other health care facilities or home during surge events

7. Establish a memoranda of understanding with EMS, inter-facility providers and Taxicab companies (can be part of existing contract) for rapid response (1-2 hour) during surge events

8. Review and/or establish agreements with local long term care homes, complex continuing care centers and rehabilitation facilities to waive standard admission criteria at predefined surge threshold, in order to expedite placement of designated ALC patients

9. Review and establish polices and procedures for rapid placement of patients (same day) during surge events

Appendix

H

Appendix H

Section I: Data Collection

A key component to program management and future forecasting is the quality indicator measurement and management program. Quality indicator management provides the tools for continuous process improvement and evaluation. The following quality indicators are required for the Critical Care Surge Capacity Management Program Reporting, and are to be submitted through the Online Toolkit. Data will also be aggregated with related CCIS indicators. This methodology will give access to data immediately, allowing for analysis and immediate feedback.

Meet with your team to discuss the following questions:

a. *Who will collect the data?*

Members of your Critical Care Resource Team will collect the data associated with the indicator. The data must be submitted as per the monthly timetable through the Online Toolkit.

b. *What data will be collected?*

Baseline data will be collected to assist in the understanding of current services and procedures. Data will also be collected to enable understanding of patient flow, and to aid in identifying barriers that prevent patient populations for accessing Critical Care services. Additionally, data will be collected in a surge event to identify process improvement opportunities for the future. See the list below for details.

c. *When will the data be collected?*

Data collection will start in phases to give organizational teams an opportunity to understand the indicator groupings. If the organization enters into a minor surge, the organization will be required to submit the Minor Surge Event form. **Please see the submission summary below.**

d. *How will the data be collected?*

The data will be collected by designated champions within your Surge Resource Team, and Critical Care unit. In addition, data from CCIS will be extracted by the Surge Capacity Project Officers, and collated with monthly submissions to provide baseline data for the purpose of planning and identifying bottlenecks. The Project Officers have created templates for you to assist in data collection, available in the Online Toolkit. All data is to be submitted using the forms in the Online Toolkit.

Form Submission Summary

Form	Submission Date(s)	# of Submissions	Other Submission Details
Form A – Hospital Assessment	**June 15, 2009**	**One**	--
Form B – Capacity Assessment	**June 15, 2009**	**One**	--
Form C – Clinical and Support Services Inventory	**June 15, 2009**	**One**	--
Form D – Patient Flow Monitor Worksheet	**Aug 1st to Oct 31st (Last submission by Nov 6th)**	**Weekly Submissions** **Collect data from Aug 1st - Oct 31st**	Patient Flow to be gathered/completed daily but submitted on a weekly basis for a period of three months beginning in August (Begin completing Form D on Aug 1st and first weekly submission on Aug 7th)
Minor Surge Event Form	**Within 48 hours of a minor surge event**	**One for each minor surge event**	To be completed immediately following a minor surge
Flow Mapping Process Worksheet	**June 30, 2009**	**One**	To be completed following your flow mapping exercise
Monthly Project Status Report	**First Report Due: July 15, 2009**	**Monthly Submissions** Complete reports during June 2009-March 2010	Reports due 2 weeks following the end of the month (eg. June 2009 Report due on July 15, 2009)

All data to be submitted using the Online Toolkit.

Phase I: Defining the Critical Care Service			
Objective	**Indicator**	**Definition**	**Data Capture**
Identify existing plans and capacity in the organization	Describe the existing processes, plans, and capacity already in place in your organization	**Identify existing plans in the organization. This initial assessment will give a clear and defined overview of the capacity and capability of your Critical Care unit(s) and the organization.**	**<u>Complete online baseline assessment forms</u>** • Form A: Hospital Assessment Worksheet • Form B: Capacity Assessment Worksheet (part I, and II) • Form C: Clinical and Support Services Inventory • CCIS data variables to be collated with above assessments by Project Officers
Phase II: Surge Capacity Planning			
Objective	**Indicator**	**Definition**	**Data Capture**
Identify the cause of Surge events for each organization	A. Identify the number of times (within the month) that the hospital has an acute surge of up to 15% beyond normal Critical Care capacity B. In the event of a minor surge: • Complete the Minor Surge Event Form. Describe what interventions were taken to manage the surge event (i.e. mobilization of alternative space, staffing and use of additional equipment and technology to support the surge event) • In the event of a minor surge, identify barriers if	**<u>Minor Surge</u>** An Acute increase in demand for Critical Care services up to 15% beyond normal Critical Care capacity that is localized to an individual hospital **<u>Moderate Surge</u>** A larger increase in demand for critical services that impact on a LHIN/ Region **<u>Major Surge</u>** An unusually high increase in demand that overwhelms the healthcare resources of individual hospital and regions for an extended period of time	**<u>Complete online Minor Surge Event Form (as required)</u>** • Number of times (within the month) that the hospital had an acute surge up to 15% beyond normal Critical Care capacity. • In the event of a minor surge, complete the Minor Surge Event Form online

	any in controlling the surge event; Identify interventions that were implemented during the surge event but were not effective		
Phase III: Access to Critical Care Services			
Objective	**Indicator**	**Definition**	**Data Capture**
Identify admission and discharge delays	A. Identify delays in admission to the Critical Care environment that facilitate (pre-empt) a surge event (patient populations that are not able to gain access to Critical Care services as there is a backlog of patients waiting for discharge) B. Document delays in discharge for Critically ill patients (Conservable days)	This will enable a snapshot view of the patient flow activities in the corresponding unit(s). The goal is to improve efficiency while maintaining patient safety. Proactively identifying delays in discharge will facilitate analysis of barriers enable process improvement and potentially preventing surges into Critical Care.	**<u>Complete online Patient Flow Monitor</u>** • Form D: Patient Flow Monitor o Monitor the patient flow for three months for your Critical Care unit(s) and submit your data weekly -the Project Officers will collate the indicators with information from CCIS o Identify the reason for delay in admission to the Critical Care unit. I.e., capacity, staffing, processes (discharge from the unit, housekeeping, porter system, other)

Section II: Project Status Monthly Report Submission

Project Status Report

The objective of this form is to document lessons learned during the program, to help the team to discover the root causes of problems that occurred and to enable them to avoid those problems in later stages of the project or future projects. This section will gather all relevant information for better planning, improving implementation and preventing or minimizing risks for all projects partners. In addition monthly teleconferences will provide an opportunity to implementation successes and barriers. **This form is to be submitted online by the 15th of the following month (ie. June report submitted by July 15th).**

Identify the top three project successes this month	What made them successful?
a.	a.
b.	b.
c.	c.

Identify project barriers this month	What are the recommended solutions?
a.	a.
b.	b.
c.	c.

Additional comments on the project implementation this month:

Appendix

I

Appendix I

Section I: Surge Capacity Management Program Transformation Map (Level 3)

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
OBJECTIVE 1: Establish Corporate Sponsor and Steering Committee			
a. **Identify** a Corporate Sponsor as the designated champion for this initiative	MAY 15 2009		
b. **Ensure** the Corporate Sponsor has received training on the Critical Care Strategy and Surge Capacity Management principles to ensure consistency in communication	MAY 15 2009		
c. **Identify** a champion from all of the following departments to participate on the Corporate Steering Committee: • Medicine • Nursing Administration • Emergency Department • Peri-operative Services • Infection Control • Material Management • Local Bargaining Unit • Front line staff Champions- Critical Care **Note:** If a similar committee exists, this committee could be utilized as the forum for communicating the plan	JUNE 15 2009		
d. Each Member of the steering committee to begin to **provide** an in-service on the surge management principles in their departments	JULY 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
OBJECTIVE 2: Establish a Critical Care Surge Resource Team			
a. **Identify** a Physician who will be the Gatekeeper for Critical Care Capacity • The Physician Gatekeeper will co-chair the steering committee with the Corporate Sponsor. • The Physician Gatekeeper is accountable for managing Critical Care capacity for surge events	MAY 15 2009		
b. **Assemble** a Critical Care Surge Resource Team **Submit** a contact list for the Resource Team **Proposed Framework**: • Physician Champion: • Nurse Manager: • Nurse Educator: • four front line staff (mix to include 2 senior RN, 1 junior RN, and 1 RRT)	MAY 15 2009		
c. **Hold a meeting with your** Critical Care Surge Resource Team • When the team is formed, identify the roles and responsibilities and who will perform each task on the assigned transformation map. Designate one member as the Site Lead • Agree on a regular meeting time for your Critical Care Surge Resource Team	MAY 15 2009		
d. **Prepare** a checklist for the Medical Director/designate of Critical Care unit to facilitate in a time of surge (see Appendix L for example)	DEC 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
e. **Prepare** a checklist for the Nurse Manager/ designate of Critical Care unit to facilitate in a time of surge (see Appendix L for sample checklists)	DEC 15 2009		
OBJECTIVE 3: Complete Comprehensive Hospital Assessments			
a. The Critical Care Surge Resource Team to **complete** the hospital, capacity, and services assessment worksheets (**Forms A, B, and C**; Appendix B) and submit them online ▪ When the comprehensive hospital assessments are completed, it is very important to identify any barriers or implications that would affect change management	JUNE 15 2009		
b. The Critical Care Surge Resource Team to **complete** a flow mapping exercise (a guide and worksheet can be found in Appendix C) • Encourage input from all members of the Critical Care team • Complete a process mapping worksheet/report and submit it online to your MOHLTC Project Officer when the process is complete	JUNE 30 2009		
c. **Complete the patient flow monitor record** on a daily basis, for a period of three months (Refer to **Form D**, Appendix D for the patient flow monitor worksheet) • Submit the form online weekly through the online toolkit	NOV 6 2009 AUG 1- OCT 31 2009 (SUBMIT WEEKLY ONLINE)		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
OBJECTIVE 4: Establish a system that is knowledgeable about surge capacity management			
a. **Create/design** a communications campaign that educates all frontline staff, administrative, and medical staff on: ■ The surge capacity management principles, information on the LHIN Demonstration Project, and the benefit to patients, families, staff, organizations and LHINs Consider using existing publications, newsletters, emails, lunch and learn and existing meetings; see communications starter kit on toolkit website	JUNE 15 2009		
b. **Conduct** information sessions for the following groups: a. Medical Advisory Committee (MAC) b. Senior team c. Front line staff d. Other departments i.e. Surgical Services and Emergency Room	OCT 15 2009		
OBJECTIVE 5: Establish a Critical Care communication system			
a. **Utilize** a white board and communication protocols to: a. Triage patients daily utilizing a colour code to identify acuity b. Identify the date the patient was placed for discharge to the ward **Note: Consider patient confidentiality** ▪ **Red**-Patient remains in ICU ▪ **Yellow**-Possibility of transfer under 36 hours ▪ **Green**-Patient can be transferred	SEPT 15 2009		
b. **Implement** a communication tool to be utilized on admission and discharge in normal capacity and in crisis and surge events • Consider Situational Briefing Model-SBAR (see Appendix K on Situational Briefing Model)	NOV 30 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
c. **Identify** communication plans to notify all levels of organization during surge events (such as management/senior team, medical staff, frontline staff, patients and families, general public etc)	OCT 15 2009		
d. **Develop** algorithms for Critical Care staff to utilize in surge events • Identify how the surge plan is activated	NOV 30 2009		
OBJECTIVE 6: Identify essential services and functions required to sustain the Critical Care service Note: Review flow mapping process result prior to beginning this section			
a. **Establish** admission process for Critical Care patients • Review flow mapping process • Identify how patients gain access to Critical Care • Develop an algorithm for the Critical Care staff on the admission process	AUG 14 2009		
b. **Identify** the discharge process for Critical Care patients • Identify who determines patients are ready for transfer • Document the transfer process inclusive of inter-unit transfer and discharge from the organization • For trending review the data collection to identify delays in discharge • Differentiate the transfer process for minor surge events • Coordinate early discharge planning for expediting the discharge of patients in minor surge events. Note: partner with Community Care Access Centres and Social Work to facilitate the process	AUG 14 2009		
c. **Develop** criteria for shifting patients to alternative space to accommodate for surge events	NOV 30 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
OBJECTIVE 7: Establish System preparedness for Human Resource Capacity (See Appendix E for information on Planning for Human Resources for Surge events)			
a. **Complete Minor Surge Event Worksheet** Visit the Online Toolkit website to complete the Minor Surge Event Worksheet (See Appendix J) as needed	ONGOING AS REQUIRED		
b. **Identify** who is accountable for staffing during a minor surge	JULY 15 2009		
c. **Define** Normal Staffing Capacity	JULY 15 2009		
d. **Estimate and document** minimum number and categories of personnel needed to care for a single patient or small group of patients on a given day for each specific department	JULY 15 2009		
e. **Define** the necessary Critical Care Skill Set	JULY 15 2009		
f. **Complete** Staffing Inventory (template available in Online Toolkit)	JULY 15 2009		
g. **Document** each staff member's Skill Set in ICU, CCU, PACU, and ER	AUG 14 2009		
h. **Identify** an enhanced Skill Set that can be utilized in minor surge events	AUG 14 2009		
i. **Collaborate** with local collective bargaining unit in defining the terms of the Enhanced Skill Set	AUG 14 2009		
j. **Identify** key strategies in implementing educational process to establish an Enhanced Skill Set	AUG 14 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
k. **Establish** an alternative staffing model to increase staff complement during minor surge	AUG 14 2009		
l. **Introduce** cross training of personnel to provide for essential patient care areas at times of severe staffing shortages (e.g. ER, ICU or medical units)	AUG 14 2009		
m. **Define** the role of multidisciplinary team members in a minor surge event	AUG 14 2009		
n. **Prepare** a checklist to assist with the management of human resource compliment in a surge event (see Appendix L for a sample checklist)	DEC 15 2009		
OBJECTIVE 8: Establish system preparedness for alternative physical space for surge events (See Appendix F for examples on managing equipment for alternative space)			
a. **Include** key stakeholders in the planning of alternate space areas including Infection control, plant operations/facilities planning etc.	SEPT 15 2009		
b. **Identify** areas for alternative physical space to be utilized in minor surge events	SEPT 15 2009		
c. If pre-determined areas exist **assess** the current functionality of the designated area, particularly as it relates to patient care, work area/storage, equipment, supplies and utilities	SEPT 15 2009		
d. **Identify** the shared governance between Critical Care unit and this alternative space	SEPT 15 2009		
e. **Establish** where the equipment resource will come from	SEPT 15 2009		
f. **Prepare** an algorithm of the transfer process of patients to this area	SEPT 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
g. **Implement** an education plan for frontline staff on alternative physical space	SEPT 15 2009		
h. **Prepare** a checklist to ensure the functionality of the Alternative physical space in a time of surge (See Appendix F for example; see Appendix L for sample checklist)	SEPT 15 2009		
OBJECTIVE 9: Establish system preparedness for equipment and resources for surge events (See Appendix F for examples on how to manage equipment for alternative space)			
a. **Establish** an inventoried cache of equipment	SEPT 15 2009		
b. **Set-up** a portable supply cart that can moved to surge area	SEPT 15 2009		
c. **Identify** how equipment is monitored for functionality	SEPT 15 2009		
d. **Identify** the location and accessibility of equipment for surge events	SEPT 15 2009		
e. **Prepare** an organization resource checklist to be utilized to access equipment in minor surge events (See Appendix L for sample checklist)	SEPT 15 2009		
f. **Collaborate** with the LHIN to understand what regional equipment resources exist in other centers and how they can be accessed in surge events (Optional)	MAR 16 2010		
OBJECTIVE 10: Establish system preparedness by defining a decantation process for surge events (See Appendix G for recommendations on building a decantation process)			
a. **Establish** a System in which planned expected date of discharge (EDD) is documented on all patients charts	OCT 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
b. **Establish daily distribution** to all Clinical Managers of patient lists indicating who may be discharged that day (based on EDD)	OCT 15 2009		
c. **Establish** a discharge process to be utilized during minor surge events in Critical Care and Acute Care areas	NOV 16 2009		
d. **Prepare** an organization checklist for decantation process in minor surge	NOV 16 2009		
e. **Identify** how community and transport services will be utilized during the decantation process	(By the end of project)		
OBJECTIVE 11: Build Partnerships to determine how patient volumes from other clinical areas impact Critical Care			
a. **Designate** a champion from the Operating Room (OR) team to the Corporate Steering Committee (OR Manager/Director suggested)	JUNE 15 2009		
b. **Partner** with your Operating Room Services delegate to determine required surgical access to Critical Care beds based on service and surgical procedure ▪ Identify and document routine method of booking Critical Care beds ▪ Review surgical cases requiring Critical Care service post-operation ▪ Develop a standardized booking process that will enable planning for Critical Care capacity ▪ Establish necessary timelines for booking of Critical Care beds	JULY 15 2009		
c. **Determine** a daily capacity for post-operative cases requiring Critical Care beds consider staffing, holidays, and resource availability (for example 3 OR cases maximum daily)	JULY 15 2009		
d. **Determine** a process in which surgical cases are cancelled in minor surge events	JULY 15 2009		
e. **Determine** who cancels surgical cases in a minor surge event	JULY 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 3 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy):**
f. **Establish** a collaborative process between Critical Care and Operating Room to evaluate the required daily Critical Care capacity	JULY 15 2009		
g. **Designate** a champion of the ER team to the Corporate Steering Committee (ER Manager/Director suggested)	JUNE 15 2009		
h. Partner with the ER delegate to identify barriers in accessing Critical Care services	JULY 15 2009		
OBJECTIVE 12: Evaluation			
a. Upon completion of the Surge Capacity Management Framework, each organization will: • Conduct rehearsals to test the efficiency of the plan • Identify areas for improvement • Have a yearly update to review and renew the policy procedures • Complete a final report, and submit documentation of completed transformation map activities to their designated Project Officer, which could include: ○ Evaluation of successes, challenges, and potential risks ○ Results of rehearsal tests ○ Significant accomplishments (e.g. innovations, partnerships) ○ Next steps, and lessons learned	MAR 16 2010		

Section II: Surge Capacity Management Program Transformation Map (Level 2)

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 2 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy) :**
OBJECTIVE 1: Establish governance for surge events			
a. **Identify** a corporate sponsor for this initiative	MAY 15 2009		
b. **Identify** a Medical lead for this initiative	MAY 15 2009		
c. **Identify** a Nursing lead for this initiative	MAY 15 2009		
OBJECTIVE 2: Establish a System that is knowledgeable about surge capacity management.			
a. **Create/design** a communications campaign that educates all frontline staff, administrative, and medical staff on: ■ The surge management principles, information on the LHIN Demonstration Project, and the benefit to patients, families, staff, organizations and LHINs Consider using existing publications, newsletters, emails, lunch and learn, and existing meetings; see communications starter package on toolkit website	JUNE 15 2009		
b. **Conduct** information sessions for the following groups: e. Medical Advisory Committee (MAC) f. Senior Team g. Front line staff h. Other departments i.e. Surgical Services and Emergency Room	OCT 15 2009		
c. **Initiate** strategies in the Critical Care unit to enhance communications in surge events • Display a white board in the unit • Identify the date the patient was placed for discharge to the ward • Triage patients daily utilizing the following colour scheme : **Red**-Patient remains in ICU **Yellow-**Possibility of transfer under 36 hours **Green-**Patient can be transferred **Note: Consider patient confidentiality**	SEPT 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 2 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy) :**
d. **Implement** a communication tool that can be utilized in crisis and surge situations Consider: Situational Briefing Model-SBAR (Refer to Appendix K on Situational Briefing Model)	NOV 30 2009		
OBJECTIVE 3: Identify essential services and functions required to sustain the Critical Care service			
a. **Establish** hospital baseline through data collection to identify essential services a. Hospital Assessment form (Form A) b. Capacity Assessment form (Form B) c. Clinical and Support Services Inventory (Form C) d. Flow Mapping Process (Optional) • Prepare a flow map with your team (See Appendix C)	JUNE 15 2009		
b. **Establish** admission and discharge processes for Critical Care unit : • Review flow mapping process (if applicable) • Identify how patients gain access to Critical Care, and who determines transfer process • Develop an algorithm for the Critical Care Staff on the admission and discharge process	AUG 14 2009		
OBJECTIVE 4: Establish System preparedness for Human Resource capacity			
a. **Identify** who is accountable for staffing during a minor surge	JULY 15 2009		
b. **Define** Normal Staffing Capacity	JULY 15 2009		
c. **Estimate and document** minimum number and categories of personnel needed to care for a single patient or small group of patients on a given day for each specific department	JULY 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 2 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy) :**
d. **Define** the necessary Critical Care Skill Set	JULY 15 2009		
e. **Complete** Staffing Inventory	JULY 15 2009		
f. **Document** each staff member's Skill Set in ICU, CCU, PACU, and ER	AUG 14 2009		
g. **Identify** an Enhanced Skill Set that can be utilized in minor surge events	AUG 14 2009		
h. **Establish** an alternative staffing model to increase staff complement during minor surge (optional)	AUG 14 2009		
OBJECTIVE 5: Establish system preparedness for alternative physical space for surge events (See Appendix F for examples on managing equipment for alternative space)			
a. **Identify** areas for alternative space to be utilized in minor surge events	SEPT 15 2009		
b. **Include** key stakeholders in the planning of alternate space areas including Infection control, plant operations/facilities planning etc	SEPT 15 2009		
c. If pre-determined areas exist **assess** the current functionality of the designated area as it relates to patient care, work area/storage, equipment, supplies and utilities	SEPT 15 2009		
d. **Establish** where the equipment resource will come from	SEPT 15 2009		
e. **Implement** an education plan for frontline staff on alternative physical space	SEPT 15 2009		
f. **Prepare** an algorithm of the transfer process of patients to this area	SEPT 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 2 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy) :**
OBJECTIVE 6: Establish system preparedness for equipment and resources for surge events (See Appendix F for examples on how to manage equipment for alternative space)			
a. **Establish** an inventoried cache of equipment	SEPT 15 2009		
b. **Set-up** a portable supply cart that can moved to surge area	SEPT 15 2009		
c. **Define** how equipment is monitored and ensured functioning on a regular basis	SEPT 15 2009		
d. **Identify** the location and accessibility of equipment for surge events	SEPT 15 2009		
e. **Prepare** an organization resource checklist to be utilized to access equipment in minor surge events (see Appendix L for sample checklist)	SEPT 15 2009		
f. **Collaborate** with the LHIN partners to understand what regional resources can be accessed in surge events (Optional)	MAR 16 2010		
OBJECTIVE 7: Establish system preparedness by defining a decantation process for surge events (OPTIONAL)			
a. **Establish** a System in which planned expected date of discharge (EDD) is documented on patients charts	OCT 15 2009		
b. **Distribute** daily patient lists indicating who may be discharged that day to all Clinical Managers of (based on EDD)	OCT 15 2009		
c. **Identify** how transport services will be utilized during the decantation process	MAR 16 2010		
OBJECTIVE 8: Build Partnerships with other departments to determine how patient volumes from other clinical areas impact Critical Care **(OPTIONAL)**			
a. **Partner** with the Operating Room services to determine required surgical capacity/access to Critical Care beds based on service and surgical procedure	JULY 15 2009		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 2 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy) :**
b. **Review** patient populations requiring Critical Care service post-op.	JULY 15 2009		
c. **Identify and document** routine method of booking Critical Care beds	JULY 15 2009		
d. **Develop** a standardized booking process that will enable planning for Critical Care capacity	JULY 15 2009		
e. **Establish** necessary timelines for booking of Critical Care beds	JULY 15 2009		
f. **Determine** a daily capacity for post- op cases requiring Critical Care beds (consider staffing, holidays, and resource availability - i.e. committing maximum of 3 OR cases daily)	JULY 15 2009		
g. **Determine** a process in which surgical cases are cancelled in minor surge events	JULY 15 2009		
h. **Determine** who cancels surgical cases in a minor surge event	JULY 15 2009		
i. **Establish** a collaborative process between Critical Care and Peri-Operative services to evaluate the required daily Critical Care capacity	JULY 15 2009		
j. **Partner** with Emergency Department to identify barriers in accessing Critical Care services. Identify source of influx of critically ill patients to ensure the appropriate response is activated for the organization	JULY 15 2009		
OBJECTIVE 9: Establish process to manage surge events			
a. **Complete** Minor Surge Event Worksheet • Use the Online Toolkit to complete the Minor Surge Event Worksheet as required (see Appendix J)	ONGOING AS REQUIRED		

SURGE CAPACITY MANAGEMENT TRANSFORMATION MAP (LEVEL 2 HOSPITAL)			
Activities	**Completion Deadline**	**Person Completed By:**	**Completed (mm/dd/yyyy) :**
b. **Prepare** a checklist to use in Minor Surge Events (see Appendix L for sample)	DEC 15 2009		
c. **Prepare** a checklist for the Medical designate of Critical Care unit to facilitate in a time of surge (see Appendix L for sample checklists)	DEC 15 2009		
d. **Prepare** a checklist for the Nurse Manager/ designate of Critical Care unit to facilitate in a time of surge (see Appendix L for sample checklists)	DEC 15 2009		
e. **Prepare** a checklist to assist with the management of human resources in a surge event (see Appendix L for sample checklists)	DEC 15 2009		
f. **Prepare** a checklist to ensure the functionality of the Alternative physical space in a time of surge (see Appendix L for sample checklists)	SEPT 15 2009		
g. **Prepare** an organization checklist for decantation process in minor surge	NOV 16 2009		
OBJECTIVE 10: Documentation and Evaluation			
a. **Prepare** a final report and submit to MOHLTC along with documentation upon completion of transformation map	MAR 16 2010		

Appendix

J

Appendix J

Minor Surge Event Worksheet

Use this worksheet to gather the required data. Please visit the Online Toolkit to complete the Minor Surge Event form online.

Name and Title:

Surge Event

Surge Event Start date:_____ Approximate time:_____
Surge Event End date:_____ Approximate time:_____

In the space provided below, please describe the surge event.
(Including the length of the event, cause, and who was notified of the events occurrence from designated leadership groups.)

Patient Populations

In the space provided below, please describe the patient populations that brought about the surge event.

Surge Interventions Please indicate the interventions completed to accommodate for the up to 15% above capacity.
Use of alternative space to accommodate for the surge event: (This includes bed spacing patients to other areas from Critical Care i.e. CCU, Step-down)
Use of human resource compliment to accommodate for the surge event:
Use of equipment cache to accommodate for the surge event:

Did the surge event require a delay or cancellation of surgeries? Yes or No
If yes, what type of surgeries?

Major Risks and Issues

Describe the barriers in accommodating for the surge event. Describe the impact of the event and any actions taken:

Identify interventions that were implemented during the surge event but were not effective:

Recommendations and requests for decisions and support

In the event that barriers exist, identify what would have been helpful in overcoming the barriers to accommodate for the surge event:

RAG STATUS: RED/AMBER/GREEN	
Red Capacity Requirement exceeds institutional capability Both Capacity and Sustainability are at risk	•
Amber Capacity Required ≤ 15% Normal Capacity (115%) Patient volumes remain under 115% capacity Sustainability of Critical Care Resource at risk Remedial actions in place	•
Green Normal level of attention Normal Capacity No actions required Sustainable Critical Care Service with Institutional tolerance	•

Appendix

K

Appendix K

SBAR: A Situation Briefing Model

Communication failures are a common cause of errors, resulting in inadvertent patient harm. The complexity of medical care, coupled with the inherent limitations of human performance, make it critically important that clinicians have standardized communication tools, create an environment in which individuals can speak up and express concerns, and share common ''critical language'' to alert team members to unsafe situations.[3] Effective communication and teamwork are essential for delivering high quality patient care and maintaining patient safety. A strong communication process and plan can eliminate uncertainty in daily functioning and during surge events.

SBAR

SBAR is a communication technique that helps members of the health care team organize and present critical information about a patient's condition in an efficient and effective way. The SBAR tool consists of a script template in which the patient's information is entered. The script is then used to guide the conversation between members of the health care team about a patient requiring a clinician's immediate attention and action.

SBAR is an acronym for:

- **S**ituation
- **B**ackground
- **A**ssessment
- **R**ecommendation

Situation	What is happening with the patient at the present time? This should include identifying yourself, the patient, and a statement of your concerns.
Background	What is the key clinical background leading up to this situation? The background is brief and pertinent history of the patient and may include admission diagnosis, treatment to date, current mediations or lab results.
Assessment	What do I think the problem is? Identify the key factors from your assessment.
Recommendation	What actions do we take to correct the problem? The recommendation should include any tests that need to be done and any issue that needs to be addressed immediately.

[3]M Leonard, S Graham, D Bonacum The human factor: the critical importance of effective teamwork and communication in providing safe care, Qual Saf Health Care 2004;13(Suppl 1):i85–i90.

Modify the SBAR tool template for your organization

The SBAR tool can be modified to include information that is specific to and necessary for quality patient care in a Critical Care setting.

Using the SBAR tool

The SBAR tool is used most often when a nurse is communicating to a physician.

a. Prior to calling the physician, the nurse should:
   - Assess the patient
   - Know the admitting diagnosis and date of admission

b. Have available:
   - Patient's chart
   - List of medications
   - Lab results
   - Code status

c. Call the physician and follow the SBAR process
d. Document the discussion in the patient's chart

References:

HCPro, Inc. (2006) SBAR: Situation, Background, Assessment, Recommendation A Communication Handbook for All Staff.

Suggested Readings:

- Visit the Institute for Health care Improvement website at www.ihi.org and search for a sample SBAR tool.
- Haig, K.et al. (2006) SBAR: A Shared Mental Model for Improving Communications Between Clinicians. Journal on Quality and Patient Safety 32:167-175

Appendix

L

Appendix L

Section I: Minor Surge Event Checklist Template

PROCESS CHECKLIST IN MINOR SURGE
Minor Surge Defined **An Acute increase in demand for Critical Care services, up to 15% above normal capacity, that is localized to an individual hospital for which:** ○ A local level response at the individual hospital is sufficient ○ Individual hospital boards are responsible for overseeing the surge responsibility ○ Human Resources in the hospital are sufficient to meet demand ○ Supplies in Critical Care and Acute Care services will be sufficient to meet the demand ○ Resources in the hospital are sufficient to meet the demand ○ Physical Space resources meet the needs of the event ○ Use of alternative space is considered **Checklist will be used to address minor surge events**

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR MINOR SURGE EVENT
DEFINING SURGE		
		❑ Do you meet the above criteria for defining minor surge? ☐ YES NO ❑ Identify the cause of the surge event _____ _____ _____ ❑ Document the start/onset of the surge event _____ _____ _____ ❑ Prospectively define duration of the event _____ _____ _____

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR MINOR SURGE EVENT
ACTIVATE MINOR SURGE PROCESSES		
		❑ Appoint a lead to be accountable for the Critical Care unit during the surge event
		❑ Implement communication plan to alert organization of the escalation to minor surge
		❑ Activate Incident Command System per Hospital Policy
		❑ If the event is related to an infectious disease process: o Ensure notification of Infection Disease Department and activation of appropriate existing Infectious Disease plans o Ensure appropriate notification of Local Public Health o Communicate findings to patients when confirmed by public health authorities
		❑ Distribute Checklists for Critical Care unit Physician and Critical Care unit Manager to follow during minor surge process o ICU Medical Director/Delegate (Appendix L – Section III) o ICU Manager/Delegate (Appendix L – Section II)
DIRECT CAREGIVER PROTECTION		
		❑ Provide caregivers the highest necessary personal protective equipment and associated training
		❑ Provide support to meet mental health and personal needs of caregivers
		❑ Initiate communication process to ensure the frontline staff have access to information and are updated frequently regarding surge event
EVALUATE AND ASSESS THE CRITICAL CARE UNIT		
		❑ Assess the existing patient population in the Critical Care unit
		❑ Document expected admissions & discharges from the Critical Care unit: o Identify which patients are the priority & who is ready for transfer, using traffic light acuity system
		❑ Communicate the transfer process including inter-unit and out of hospital coordination o Initiate transfers if required

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR MINOR SURGE EVENT
		❑ Assess and address transfer delays in and out of the Critical Care area
		❑ Adhere to admission and discharge criteria for minor surge events
		❑ Reassess and verify all admission and discharge of patients
		❑ Clearly identify and communicate surge admitting privileges in the Critical Care unit
ASSESS HUMAN RESOURCE CAPACITY		
		❑ Assess the Staffing needs of the Critical Care unit ○ Consider available staff ○ Consider alternate staffing/shift lengths
		❑ Access Inventory of Human Resource Capacity
		❑ Assess & access staff available from other Intensive Care Areas (if applicable)
		❑ Assess & access staff available with Floating Skill Set (ED, Step-down units, PACU, Cath Labs, OR etc.)
		❑ Consider alternative staffing
PATIENTS AS THE PRIORITY		
		❑ Maintain the ability to provide safe and routine care to patient populations
		❑ Establish effective modes of direct communication for staff, patients and families
SUPPLIES		
		❑ Distribute Supply and Equipment Checklist to delegate to ensure supply meets demand

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR MINOR SURGE EVENT
		❑ Assess medications and supplies required per designated unit; starting with Critical Care for sustainability of event
		❑ If the surge event continues activate stockpiling of necessary medications and supplies
		❑ Activate designated team to ensure supplies reach the appropriate units
		❑ Activate designated house keeping team to ensure beds turnover is less than 30 minutes
		❑ As appropriate assign a Pharmacy delegate to ensure medication supply meets the required demand
		❑ Track distribution of inventory and location of supplies
		❑ In prolonged events, activate agreements with external providers for continuous supply of essential goods and services I.e. food, medications, oxygen, biomedical services, lab and diagnostics as required
IDENTIFY ALTERNATIVE PHYSICAL SPACE FOR CRITICAL CARE PATIENTS		
		❑ Assess availability of pre-established areas within hospital for Critical Care overflow
		❑ Activate necessary processes to utilize alternative space(s): ○ Appropriate staffing**,** equipment and supplies ○ Transport needs
		❑ Refer to (Appendix L Section IV) Alternative Physical Space Functionality Checklist
		❑ Identify one staff member to be conduit for two-way communication between the designated area and the Critical Care area
EVALUATE THE SYSTEM		
		❑ Determine if other health services are experiencing similar surge events ○ Including clusters of staff illness (greater than 10% of staff ill)

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR MINOR SURGE EVENT
		❑ Define the surge event across the region
		❑ Initiate common template for communication with external sources (external to Critical Care & organization) related to: o Admissions and discharges o Patient Identifying information & demographics o Underlying disease & symptom presentation
		❑ Identify staff member who will be the lead for communication during the surge event
		❑ Increase Security measures as required
		❑ Initiate hospital-wide patient assessment and triage
ASSESS AND EVALUATE DEPARTMENT BED UTILIZATION- ALL REMAINING UNITS		
		❑ Identification of Senior Administrative Lead
		❑ Communicate with Critical Care unit Surge Capacity Lead
		❑ Review triaging of all in-hospital patients o Colour code patients charts to identify priority patients for transfer o Electronic coding through IT department

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR MINOR SURGE EVENT
		❑ Implement bed utilization review system **Example:** bed management meeting for a global bed utilization review to establish/implement the following as appropriate: ○ Placement of over census and off service patients ○ Access repatriation agreements with sending hospitals ○ Closed rooms that can be converted to a patient room ○ Convert private to a semi-private for overflow ○ Review methods to expedite discharges: ■ Review discharge plan for every patient ■ Identify processes that are delaying transfers ■ Facilitate early discharges (Discharge lounge(s); Social Work involvement for early discharge planning on all ALC patients etc.) ■ Early distribution of morning lists of patients who may be discharged that day (based on EDD) ■ 'Discharge team' of nurses, bed manager and senior clinical decision makers to be mobilized
		❑ **Implement Decantation to Community Procedures** ○ Review Community Care Access Centre (CCAC) and Long Term Care Home (LTCH) applications on patients charts ○ Contact CCAC staff to expedite community care for discharged patients ○ As per pre agreements with CCAC to provide service within 24 hours of discharge during surge initiate call back list for CCAC after hours service ○ Review agreements with local LTCH's, Complex Continuing Care Centers and Rehabilitation facilities to waive standard admission criteria at predefined surge threshold, to expedite Alternate Level of Care placement ○ Begin rapid placement of patients (same day) during surge ○ Initiate transport of Triaged Patient to other centers as per established guidelines with Local EMS and Private Medical Transport provider ○ If Transport of patients requires longer than 1-2 hour in surge event review documented memoranda and contact the transporting authority ○ Assign a delegate to contact family members of patients that are being transferred

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR MINOR SURGE EVENT
CONSIDER ELECTIVE SURGICAL DELAY		
		❑ **Reassess Critical Care unit capacity**
		❑ In collaboration with Chief of Surgery determine the priority of the surgical cases
		❑ Notify all Surgical teams of the delay
		❑ Establish a priority system to identify by patient who requires access to the available Critical Care beds
		❑ Identify the timeline for surgical cases to process
		❑ Identify if all cases are on hold until further notice

Section II: Checklist Template for ICU Manager

PROCESS CHECKLIST IN MINOR SURGE FOR ICU MANAGER
Minor Surge Defined **An Acute increase in demand for Critical Care services, up to 15% above normal capacity, that is localized to an individual hospital for which:** ○ A local level response at the individual hospital is sufficient ○ Individual hospital boards are responsible for overseeing the surge responsibility ○ Human Resources in the hospital are sufficient to meet demand ○ Supplies in Critical Care and Acute Care services will be sufficient to meet the demand ○ Resources in the hospital are sufficient to meet the demand ○ Physical Space resources meet the needs of the event ○ Use of alternative space is considered

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ICU MANAGER
DEFINING SURGE		
		☐ Do you meet the above criteria for defining minor surge? ☐ YES NO ☐ Identify the cause of the surge event: _____ _____ _____ ☐ Document the start/onset of the surge event: _____ _____ _____ ☐ Prospectively define duration of the event: _____ _____ _____

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ICU MANAGER
ACTIVATE MINOR SURGE PROCESSES		
		☐ Notify Nursing Administration of surge event in Critical Care
		☐ In collaboration with Medical Director / Intensivist communicate the surge status to all staff in Critical Care areas
		☐ Delegate assigned duties to all staff members
		☐ Designate a staff member to communicate updates to staff
		☐ Notify Admitting/ Registration department of existing surge event. Inform Admitting department Critical Care patients are being triaged for potential transfer
EVALUATE AND ASSESS THE CRITICAL CARE UNIT		
		☐ In conjunction with Medical Director/ Intensivist review all patients in ICU to determine if any patients can be transferred
		☐ Assign a delegate in conjunction with Medical Director to triage all Critical Care patients
		☐ Identify to Admitting/Registration all patients that have a transfer order written and are a priority for in-house bed placement
		☐ Review Human Resource capacity needs ☐ Delegate completion of Human Resource Capacity Checklist
		☐ Initiate Call-In of staff for surge event
		☐ Consider alternative staffing

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ICU MANAGER
		☐ Review requirement for Alternative Physical Space for ICU patients with Medical Director
		☐ Designate a staff member to begin the Alternative Space Area checklist to assess the functionality of the area
		☐ Consult with Intensivist or ICU Physician-in-Charge ○ Notify OR Manager of delay of internal cases ○ Coordinate with ER Manager to prioritize influx of patients

Section III: Checklist Template for ICU Medical Director/Designate

PROCESS CHECKLIST IN MINOR SURGE FOR ICU MEDICIAL DIRECTOR/DESIGNATE
Minor Surge Defined: **An Acute increase in demand for Critical Care services, up to 15% above normal capacity, that is localized to an individual hospital for which:** ○ A local level response at the individual hospital is sufficient ○ Individual hospital boards are responsible for overseeing the surge responsibility ○ Human Resources in the hospital are sufficient to meet demand ○ Supplies in Critical Care and Acute Care services will be sufficient to meet the demand ○ Resources in the hospital are sufficient to meet the demand ○ Physical Space resources meet the needs of the event ○ Use of alternative space is considered

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ICU MEDICAL DIRECTOR
DEFINING SURGE		
		❑ Do you meet the above criteria for defining minor surge? ☐ YES NO ❑ Identify the cause of the surge event _____ _____ _____ ❑ Document the start/onset of the surge event _____ _____ _____ ❑ Prospectively define duration of the event _____ _____

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ICU MEDICAL DIRECTOR
ACTIVATE MINOR SURGE PROCESSES		
		❑ Implement communication plan to alert organization of the escalation to minor surge
		❑ Activate Incident Command System as per Hospital Policy
		❑ If the event is related to an infectious disease process: o Ensure notification of Infection Disease Department and activation of appropriate existing Infectious Disease Plans o Ensure appropriate notification of Local Public Health o Communicate findings to patients when confirmed by Public Health authorities
		❑ Distribute Checklists for Surge Capacity Planning o ICU Medical Director/Delegate (Appendix L – Section III) o ICU Manager/Delegate (Appendix L – Section II) o Human Resource Capacity (Appendix L – Section V) o Equipment and Supplies (Appendix L – Section VI) o Alternative Physical Space (Appendix L – Section IV)
EVALUATE AND ASSESS THE CRITICAL CARE UNIT		
		❑ Collaborate with Nurse Manager
		❑ Document the existing patient population in the Critical Care unit
		❑ Document expected admissions and discharges from the Critical Care unit: o Identify what patients are the priority and who is ready for transfer o Triage patients with a colour code: ■ Red- Stays ■ Yellow–Possible transfer ■ Green-Go
		❑ Assess all current ICU patients with ICU Manager/delegate and write transfer orders
		❑ Assess the transfer process including inter-unit and out of hospital coordination

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ICU MEDICAL DIRECTOR
		❑ Assess and address transfer delays in and out of the Critical Care area
		❑ Consider alternative beds in the hospital
		❑ Review pre-assigned alternative areas for Critical Care patients to be placed
		❑ Delegate a transfer team to facilitate the transfer process
		❑ Adhere to admission and discharge criteria for minor surge events ▪ Review admission and discharge process with nursing staff
		❑ Reassess and verify all admission and discharge of patients
		❑ Clearly identify and communicate surge admitting privileges in the Critical Care unit
		❑ Notify all Medical departments of minor surge status
		❑ Determine physician Human Resource capacity and initiate call in of staff
		❑ Communicate with Chief of Surgery regarding the delay of internal elective cases
		❑ Assess repatriation of patients in the Critical Care unit (if Possible)
		❑ Notify Criti-Call of status of hospital and inability to receive external patients
		❑ Verify the checklists have been completed and assess status
		❑ Reassess surge situation with frequent reporting to staff

Section IV: Alternative Physical Space Checklist Template

PROCESS CHECKLIST FOR ALTERNATIVE PHYSICAL SPACE
Minor Surge Defined: **An Acute increase in demand for Critical Care services, up to 15% above normal capacity, that is localized to an individual hospital for which** ☐ A local level response at the individual hospital is sufficient ☐ Individual hospital boards are responsible for overseeing the surge responsibility ☐ Human Resources in the hospital are sufficient to meet demand ☐ Supplies in Critical Care and Acute Care services will be sufficient to meet the demand ☐ Resources in the hospital are sufficient to meet the demand ☐ Physical Space resources meet the needs of the event ☐ Use of alternative space is considered

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ALTERNATIVE PHYSICAL SPACE
DEFINING SURGE		
		☐ Do you meet the above criteria for defining minor surge? ☐ YES NO ☐ Identify the cause of the surge event _____ _____ ☐ Document the start/onset of the surge event _____ _____ _____ ☐ Prospectively define duration of the event _____ _____ _____

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ALTERNATIVE PHYSICAL SPACE
ASSESS ALTERNATE PHYSICAL SPACE FOR MINOR SURGE EVENTS		
		☐ Assess areas of the hospital that ICU patients can overflow to including post anaesthesia care units, areas adjacent to ICU, ED ☐ Assess the functionality of this area as it relates to patient area, work area/storage, equipment and supplies and utilities ☐ If pre-determined areas exist assess the current functionality of the designated area
ASSESS PATIENT CARE AREAS		
		Verify the following for the Patient Care Areas ☐ Ability to directly or indirectly view patient ☐ Patient call system ☐ Adequate lighting ☐ Adequate space to accommodate equipment and personnel to meet patient needs. ☐ Cardiac arrest equipment ☐ Emergency alarm system ☐ Bed/stretcher bed, over bed table, chair
ASSESS WORK AREA/STORAGE		
		Verify the following for Work Areas and Storage ☐ Portable cart for supplies ☐ Supplies for patient care ☐ Linen ☐ Medications including refrigerator for pharmaceuticals, double locking safe for controlled substances ☐ Medication preparation area ☐ A sink with hot and cold running water ☐ Telephone and/or other intercommunication system ☐ Computer access ☐ Space and seating for medical record charting by both nurse and physician ☐ Access to dirty utility room/hopper ☐ Bio-Medical support available

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ALTERNATIVE PHYSICAL SPACE
IN COORDINATION WITH BIO-MEDICAL ENGINEERING ASSESS UTILITIES		
		☐ Electrical power – adequate outlets for needs ☐ Oxygen- 2 outlets per bed ☐ Compressed air- one outlet per bed ☐ Vacuum system- 3 outlets per bed ☐ Water supply- hand washing sinks, toilet ☐ Lighting- adequate for patient care, emergencies and charting
ASSESS ACCESSIBILITY TO NECESSARY EQUIPMENT AND SUPPLY		
		☐ Rapid retrieval of crash cart and portable monitor defibrillator ☐ X-Ray viewing system- station or computer ☐ Physiologic monitoring with recording capability o ECG o 3 pressure line o O2 sat monitor ☐ Thermometers ☐ Glucometer ☐ 2 IV poles per bed ☐ IV pumps/IV administration equipment ☐ Non-invasive blood pressure cuffs ☐ Urine qualification devices ☐ Pulse oximeters ☐ Set-up a portable supply cart that can moved to surge area ☐ Required Respiratory equipment ☐ Review your up-to-date list of all current ICU equipment including old equipment in storage. This list should include number of ventilators including transport ventilators, BiPap machines, anaesthetic machines, transport monitors

Section V: Human Resource Capacity Checklist Template

PROCESS CHECKLIST FOR HUMAN RESOURCE CAPACITY
Minor Surge Defined: **An Acute increase in demand for Critical Care services, up to 15% above normal capacity, that is localized to an individual hospital for which:** ☐ A local level response at the individual hospital is sufficient ☐ Individual hospital boards are responsible for overseeing the surge responsibility ☐ Human Resources in the hospital are sufficient to meet demand ☐ Supplies in Critical Care and Acute Care services will be sufficient to meet the demand ☐ Resources in the hospital are sufficient to meet the demand ☐ Physical Space resources meet the needs of the event ☐ Use of alternative space is considered

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR HUMAN RESOURCE CAPACITY
DEFINING SURGE		
		☐ Do you meet the above criteria for defining minor surge? ☐ YES NO ☐ Identify the cause of the surge event _____ _____ _____ ☐ Document the start/onset of the surge event _____ _____ ☐ Prospectively define duration of the event _____

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR HUMAN RESOURCE CAPACITY
ASSESS HUMAN RESOURCE CAPACITY		
		☐ Estimate & document minimum number and categories of personnel needed to care for the current patient population
		❑ Assess the staffing needs ○ Consider available staff ○ Consider alternate shift lengths
		❑ By the approval of the Critical Care Manager call in available staff
		☐ Obtain Staffing Inventory assess Human Resource capacity
		☐ Identify Staff with the pre-determined Critical Care Skill Set*
		***Example:** Existing Standard Critical Care RN Skill Set includes basic & advanced nursing skills: ■ Advanced airway management (Suctioning, ventilator parameters, ETT management, ABG interpretation etc) ■ Arrhythmia & Pacing interpretation/monitoring ■ Hemodynamic monitoring ■ IV drug administration including the titration of vasoactive drugs ■ Arterial, central venous & PA line management ■ Comprehensive head to toe patient assessment ■ ICP drain management ■ Emergency arrest response ■ Must include a complement of staff with additional advanced training such as CRRT & IABP
		❑ Identify other sources of available staff with existing standard Critical Care Skill Set* (e.g. former Critical Care staff, agency, other hospital Critical Care unit staff etc.)
		❑ Review the floating skill set** in Acute Care staff

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR HUMAN RESOURCE CAPACITY
		***** Example:*** Floating Critical Care RN Skill Set (Staff with trained emergency response (EMAT pool), Operating Room, level 1&2 Intensive Care units, telemetry experience, and previous Critical Care unit staff) includes basic & few advanced nursing skills: ▪ Arrhythmia interpretation ▪ Arterial & central venous line management ▪ Basic airway maintenance (Non-ventilated) ▪ IV drug administration ▪ Basic vital signs assessment (HR, BP, Temp, RR, O_2 Sat), ▪ IV insertion & Phlebotomy
		❑ Review if Human Resource capacity exceeds the patient care needs o Review staffing needs with Medical Director and Nurse Manager
		Consider Alternative Staffing ****** Example:*** Alternate staffing models are tiered systems where Critical Care staff expertise is used to oversee staff with non-Critical Care Skill Sets & provide advanced care needs to multiple patients ▪ Critical Care RN oversees 2 Telemetry floor staff & each with two Critical Care patients ▪ 1 Intensivist oversees up to 4 non-Intensivists
REPORT BACK TO MEDICAL DIRECTORY OF CRITICAL CARE AND NURSE MANAGER		
		❑ Report findings to Critical Care team

Section VI: Supplies and Equipment Checklist Template

PROCESS CHECKLIST FOR ASSESSING SUPPLIES AND EQUIPMENT
Minor Surge Defined: **An Acute increase in demand for Critical Care services, up to 15% above normal capacity, that is localized to an individual hospital for which:** ☐ A local level response at the individual hospital is sufficient ☐ Individual hospital boards are responsible for overseeing the surge responsibility ☐ Human Resources in the hospital are sufficient to meet demand ☐ Supplies in Critical Care and Acute Care services will be sufficient to meet the demand ☐ Resources in the hospital are sufficient to meet the demand ☐ Physical Space resources meet the needs of the event ☐ Use of alternative space is considered

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ASSESSING SUPPLIES AND EQUIPMENT
DEFINING SURGE		
		☐ Do you meet the above criteria for defining minor surge? ☐ YES NO ☐ Identify the cause of the surge event _____ _____ ☐ Document the start/onset of the surge event _____ _____ ☐ Prospectively define duration of the event _____ _____

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ASSESSING SUPPLIES AND EQUIPMENT
ASSESS CRITICAL CARE AREAS		
		☐ Assess medications & supplies required in Critical Care for sustainability of event ☐ If the surge event continues activate stockpiling of necessary medications and supplies ☐ Ensure supplies reach the appropriate units ☐ As appropriate, assign a Pharmacy delegate to ensure medication supply meets demand ☐ Collaborate with Housekeeping Supervisor to activate designated house keeping team to ensure bed turnover is less than 30 minutes ☐ Ensure special order equipment will remain available for patient care ☐ Evaluate the need for physical beds ☐ Ensure the physical beds are available or accessible for the duration of the surge event ☐ Implement a process to track distribution of inventory and location of supplies
ASSESS PATIENT CARE AREAS		
		Verify the following for the Patient Care areas: ☐ Ability to directly or indirectly view patient ☐ Patient call system ☐ Adequate lighting ☐ Adequate space to accommodate equipment and personnel to meet patient needs ☐ Cardiac arrest equipment ☐ Emergency alarm system ☐ Bed/stretcher bed, over bed table, chair

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ASSESSING SUPPLIES AND EQUIPMENT
ASSESS WORK AREA/STORAGE		
		☐ Portable cart for supplies ☐ Supplies for patient care ☐ Linen ☐ Medications including refrigerator for pharmaceuticals, double locking safe for controlled substances ☐ Medication preparation area ☐ A sink with hot and cold running water ☐ Telephone and/or other intercommunication system ☐ Computer access ☐ Space and seating for medical record charting by both nurse and physician. ☐ Access to dirty utility room/hopper ☐ Bio-Medical support available
IN COORDINATION WITH BIO-MEDICAL ENGINEERING ASSESS UTILITIES		
		☐ Electrical power – adequate outlets for needs ☐ Oxygen- 2 outlets per bed ☐ Compressed air- one outlet per bed ☐ Vacuum system- 3 outlets per bed ☐ Water supply- hand washing sinks, toilet. ☐ Lighting- adequate for patient care, emergencies and charting

DATE & TIME INTIATED	ASSIGNED DELEGATE	KEY ACTION ITEMS FOR ASSESSING SUPPLIES AND EQUIPMENT
ASSESS ACCESSIBILITY TO NECESSARY EQUIPMENT AND SUPPLY		
		☐ Rapid retrieval of crash cart and portable monitor defibrillator ☐ X-Ray viewing system- station or computer ☐ Physiologic monitoring with recording capability o ECG o 3 pressure line, o O2 sat monitor, ☐ Thermometers ☐ Glucometer ☐ 2 IV poles per bed ☐ IV pumps/IV administration equipment ☐ Non-invasive blood pressure cuffs ☐ Urine qualification devices ☐ Pulse oximeters ☐ Set-up a portable supply cart that can moved to surge area ☐ Required Respiratory equipment ☐ Review the up-to-date list of all current ICU equipment including old equipment in storage. This list should include number of ventilators including transport ventilators, BiPap machines, anaesthetic machines, transport monitors
REPORT BACK TO MEDICAL DIRECTOR OF CRITICAL CARE		
		☐ Report findings to Critical Care team

Appendix

M

Appendix M

Glossary of Terms

Algorithm -A type of effective method in which a list of well-defined instructions for completing a task will, when given an initial state, proceed through a well-defined series of successive states, eventually terminating in an end-state.

Champion –A champion provides leadership and has authority to affect change

Community Care Access Centre (CCAC) -Local organizations that can help patients access government-funded home care services and long-term care homes. CCACs help people to navigate the array of community support and health agencies in their communities.

Conservable Days - Hospital inpatient days that could have been avoided.

Corporate Sponsor – A representative from your Senior Management Team, at a minimum at the VP level, which holds corporate accountability for the success of the program in your hospital. They should be able to: help the Hospital Resource Team address barriers to implementing the program, be well versed in the 5 capacity management principles, have visibility as a champion of the program, and play a pivotal role in supporting and facilitating change management. They will work closely with the Site Lead and the Physician Champion.

Corporate Steering Committee –The Steering Committee will consist of champions from various departments related to Critical Care. The surge management champions from across the organizational infrastructure are required to communicate with the frontline staff to ensure seamless coordination of services for critically ill patients.

Critical Care - Critical Care Medicine is a specialty that provides comprehensive and continuous care for adult and paediatric patients who are critically ill and who can benefit from treatment. This essential service can sustain and maintain life at critical moments of illness.

Critical Care Information System (CCIS) - As the information management system for the Critical Care Strategy, CCIS collects data in real-time, providing clinicians, administrators, LHINs and the MOHLTC with secure and reliable information they can use to make better decisions about clinical practice and resource allocation.

Critical Care Skill Set –A determined collection of skills that the members of the Critical Care team must possess (i.e. Critical Care nursing skills).

Critical Care Strategy - Ontario's Critical Care Strategy is a seven-fold strategy to improve access, quality, system integration, and enhance the overall health system by addressing the policy, funding, and operational issues that contribute to wait times for Critical Care across the system. As a further evolution of this strategy, the Critical Care Secretariat is supporting the implementation of a provincial program that will provide Ontario hospitals with a standardized practice for Surge Planning and Management.

Critical Care Surge Resource Team - Each organization will develop a nucleus group that will be responsible for implementing the strategic elements of the plan to establish preparedness within their own organization. The teams will be referred to as the Critical Care Surge Resource Teams. Teams will vary in size and composition depending on the availability of staff and the composition of the Critical Care units. Each organization will build a team to suit its own needs.

Decantation Process –The preparation of additional physical space as required, often through a combination of early patient discharges, transfers, and through the collaboration and integration of services (such as with the OR, ER etc.).

Electronic Intensive Care Units (EICU) - The electronic intensive care unit or eICU is a new model of telemedicine that enables highly specialized Critical Care staff – such as nurses and physicians – to monitor patients admitted to Critical Care elsewhere in the province, and provide continuous support to clinical staff in "remote" units. The eICU uses telecommunication technologies, clinical information systems, care protocols, and best practices to leverage the limited supply of Critical Care providers over more patients and multiple locations. The eICU also supports continuity of care 24/7 where appropriate medical coverage is lacking.

Emergency Medical Assistance Team (EMAT) – EMAT is a mobile Acute Care field unit, fully-equipped with its own medical equipment and supplies, a communications centre, electricity and water. It is staffed by an on-call support team of healthcare professionals including physicians, paramedics, nurses, respiratory therapists and X-ray technologists who have volunteered to work on EMAT during an emergency. EMAT is only meant to be used in the event of a major surge or disaster. If any community in Ontario finds that it does not have the capacity to respond effectively to a health emergency, it can request that EMAT be sent. However, EMAT is deployed only after a community's own disaster plan has been activated and the community's systems are overwhelmed.

Flow Map -A process management tool that allows organizations to depict work/process flow. Also, it is a chart with a linear process map that shows the amount of traffic or flow within your hospital.

Gatekeeper – A gatekeeper is an individual who manages or constrains the flow of knowledge and information. They are also responsible for rationing out patient access to specialized and subspecialty doctors. For this programme, this individual will be responsible for co-chairing the steering committee with the Corporate Sponsor and will be accountable for managing Critical Care Capacity for surge events.

Green (triage) –Through the use of the triage methodology/traffic light system, patients identified and rated at the green level can be safely transferred from Critical Care.

Level 1 Critical Care Unit (acuity) –Patients at this level are at risk of their condition deteriorating, or are those recently relocated from higher levels of care, whose needs can be met on an Acute ward with additional advice and support from a Critical Care team.

Level 2 Critical Care Unit (acuity) –Patients at this level require more detailed observation or intervention, including support for a single failed organ system, short-term ventilation, post-operative care, or patients "stepping down" from higher levels of care.

Level 3 Critical Care Unit (acuity) – This level is composed of patients who require advanced or prolonged respiratory support alone, or basic respiratory support together with the support of at least two organ systems.

Local Health Integration Networks (LHIN) –In March 2006 the Ontario government passed legislation to create 14 LHINs across the province. The networks are not-for-profit corporations who work with local health providers and community members to determine the health service priorities of the regions. LHINs plan, integrate and fund local health services.

LHIN Demonstration Project –This was an initial pilot/demonstration project of surge management principles and techniques in the Champlain LHIN. The lessons learned and resources produced through this demonstration project were used to structure the current rollout of Surge Capacity Management Program across the remaining 13 LHINs.

Major Surge - An unusually high increase in demand that overwhelms the healthcare resources of individual hospital and regions for an extended period of time.

Medical Emergency Teams (METs) - Are made up of experienced healthcare professionals who provide Critical Care expertise beyond the walls of the traditional ICU. METs may be called at any time by anyone in the hospital to help care for a patient who appears acutely ill and in danger of an adverse event. METs also help shape demand by minimizing inappropriate utilization of Critical Care units and providing preventive measures before patients become critically ill. Teams provide continuity of care and help prevent readmission by following up with patients after they have been discharged from the ICU.

Ministry of Health and Long Term Care (MOHLTC) – In Ontario, the MOHLTC is responsible for establishing overall strategic direction and provincial priorities for the health system, developing legislation, regulations, standards, policies, and directives to support those strategic directions, monitoring and reporting on the performance of the health system and the health of Ontarians, planning for and establishing funding models and levels of funding for the health care system, ensuring that ministry and system strategic directions and expectations are fulfilled. The MOHLTC works in collaboration with the Local Health Integration Networks.

Minor Surge - An acute increase in demand for Critical Care services, up to 15% beyond the normal capacity that is localized to an individual hospital.

Moderate Surge - A larger increase in demand for critical services that impacts on a LHIN.

Online Toolkit – The Critical Care Secretariat has developed an interactive Online Toolkit to assist hospitals in completing their Transformation Maps. Sites will submit all data and complete all of their activities online. Project Officers will aggregate this data along with CCIS indicators, to formulate descriptive and useful monthly reports which will enable hospitals to monitor their progress and outcomes. The Toolkit also contains several interactive features which allow users to monitor their progress, receive important announcements, and access a wealth of resources to help with program implementation.

Pandemic - is an epidemic of infectious disease that spreads through populations across a large region

Physician Champion -The Gatekeeper for Critical Care Capacity at your site, who will also co-chair the Corporate Steering Committee with the Corporate Sponsor. The Physician Gatekeeper is accountable for managing Critical Care Capacity in surge events

Project Officers –To assist with program implementation, each LHIN has a Project Officer from within the MOHLTC Critical Care Secretariat. Your Project Officer will provide project management, and will provide help and assistance throughout the stages of implementation. Project Officers with facilitate monthly teleconferences, and they will monitor all data/Transformation map activity submissions.

Red (triage) - Through the use of the triage methodology/traffic light system, patients identified and rated at the red level remain in ICU as they require life-sustaining interventions

Severe Acute Respiratory Syndrome (SARS) - Is a respiratory disease in humans which is caused by the SARS coronavirus. Ontario's battle with SARS revealed significant weaknesses in Ontario's healthcare system, including a limited ability to manage Critical Care resources across hospitals in response to a sudden spike in demand.

Site Lead - The person who will lead the Surge Resource Team to complete the transformation map. They will be the main contact for disseminating any pertinent information for the rest of the hospital and be the main representative that the Ministry will contact for updates on progress, monthly teleconferences etc. This does not need to be a Physician as there is a role for a physician champion on the resource team.

Situational Briefing Model (SBAR) - A communication technique that helps members of the health care team organize and present critical information about a patient's condition in an efficient and effective way. The SBAR tool consists of a script template in which the patient's information is entered. The script is then used to guide the conversation between members of the health care team about a patient requiring a clinician's immediate attention and action.

Surge –Any situation where demand exceeds resources

Surge Capacity –Is the ability to expand care in response to rapid or more prolonged demand in health care services.

Transformation map – A map to help hospitals navigate their way through surge capacity management planning. The map will come together through the completion of transformational activities.

Triage - a process of prioritizing patients based on the severity of their condition. This facilitates the ability to treat as many patients as possible when resources are insufficient for all to be treated immediately.

Yellow/Amber (triage) - Through the use of the triage methodology/traffic light system, patients identified and rated at the amber/yellow level have a possibility of transfer within a 36 hours timeframe.