

HSE Critical Care Major Surge Preparedness Planning Framework 2021

HSE Critical Care Major Surge Committee, Acute Operations HSE, Jan 2021



**CRITICAL
CARE**

Summary Risk Assessment:

| Hospital critical care clinical risk profile | Adult critical care capacity | Clinical activity | Hospital clinical risk profile |
|--|--|---|---|
| Green 287, 8 th Oct | Established, funded, operational adult critical care capacity = base capacity (Ireland 30/9/20: n = 276) | Normal variance | Normal critical care clinical risk profile |
| Amber Up to 350 | Additional critical care contingency capacity – staff, space and equipment – identified, allocated and available in the Hospital | Clinically manageable clinical activity surge | Critical care clinical risk managed by additional staff resource allocation |
| Red More than 350 | Additional staff or space or equipment not available | Clinically unmanageable, overwhelming clinical activity surge | Unsafe clinical risk scenario Evacuate from Hospital to Hospital |

Table. Critical care capacity – Clinical Risk Stratification Table (based on NOCA ICU-BIS ICU Bed Capacity Census, May 2020)

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1. INTRODUCTION

The HSE Critical Care Major Surge Preparedness Planning Framework describes a structured approach to, and Critical Care service capacity resource requirements for, Critical Care Major Surge Preparedness Planning in acute Hospitals and Hospital Groups in the event of an escalation in volumes of critically ill patients.

Escalation may occur over minutes or hours as in a civil Major Emergency or Major Incident or may occur over days or weeks as in infectious diseases e.g. influenza A (H1N1) pandemic 2009, surge 2010 or COVID-19 2020.

This Framework describes the structured approach i.e. the governance required for integrated HSE Acute Operations, and Critical Care Service Surge structures and functions.

This Framework was prepared through the HSE Critical Care Major Surge Committee and is issued by HSE Acute Operations in collaboration with the Critical Care Programme.

2. DEFINITION AND LEVELS OF CRITICAL CARE MAJOR SURGE

A **Critical Care Major Surge** is defined as an increase in the volume of critically ill patients in a Hospital or Hospital Group that **overwhelms** the critical care capacity of a Hospital. The available supply of Critical Care beds cannot meet the needs of critically ill patients. The decision to escalate (or de-escalate) between Major Surge levels is informed by the Duty ICU Consultant and is made by the Hospital and Hospital Group Clinical Directorate clinical operation structures and functions.

Operational Surge (in contrast to Major Surge) is a day-to-day operational feature of ICU/HDU activity where a Critical Care Service (CCS) can 'flex up' from 80% to 100%.

There are a number of operational states of Major Surge-

Existing capacity - Current critical care facility staffed with capacity for operational surge to 100% occupancy of current opened commissioned and staffed beds.

Major Surge 1 - Opening of all commissioned and non-commissioned critical care beds irrespective of reasons for current closure.

Major Surge 2 - If transmissible disease, critical care beds accessible but isolation no longer an option due to patient numbers and cohorting the next option

Major Surge 3 - Acceptance that neither isolation nor in-ICU care an option. Need to utilise potential to provide critical care outside walls of ICU, but in areas of high dependency - e.g. High Dependency Units, Special Care Units, Theatre Recovery/PACU.

Major Surge 4 - Further Critical Care expansion into non-ICU areas having exhausted above potential. May include Theatres if deemed appropriate, specific wards, commissioning of temporary or modular critical care facilities.

Critical Care Major Surge Escalation

Time-scale:

Days/weeks- operational surge e.g. infectious disease- influenza A (H1N1) pandemic 2009, surge 2010, EVD, COVID-19

Major Emergency e.g. terror event

It is recognized that a Critical Care Major Surge is an institutional high-risk state and consequently a high-risk environment for the critically ill patient, possibly severely critically ill.

3. MAINTENANCE AND INCREASE OF REQUIRED CRITICAL CARE CAPACITY

Each Hospital and Hospital Group should plan, allocate resources and maintain the critical care bed capacity required to meet the needs of its critically ill patients so that normal and operational surge volumes of critically ill patients gain timely access to ICU. The capacity for ICU and HDU beds which are required by each Hospital and Hospital Group should be estimated and resourced.

It is known where a Critical Care Service (CCS) operates at more than 75% of capacity, there is a significantly increased probability of delayed access or no access for critically ill patients to ICU beds. This is associated with increased mortality or poor outcome.

The Adult Critical Care Model of Care and the NOCA Irish National ICU Audit Reports are information to HSE and Government Departments to identify critical care capacity requirements for Hospitals and Hospital Groups to meet the needs of critically ill patients during operational surges and potentially in Major Surges.

HSE Service Plan 2018 identifies- 'There are critical care capacity deficits in hospitals across the country. Following the organisation of hospitals into Hospital Groups, it is clear that critical care capacity building is required in the 'hub' hospitals to meet the on-going and increasing critical care requirements of complex, multi-specialty, severely critically ill patients'.

4. GOVERNANCE- HSE Acute Operations, Hospital Group and Hospital Management and Operations

Each Hospital and Hospital Group operates its Major Surge Plan, an operational structure and function to meet the need including the Duty ICU Consultant and Clinical Director according to the Hospital's Critical Care Major Surge Plan.

It is recognized a Critical Care Major Surge episode escalates the Hospital and the Hospital Group to an institutional high-risk and patient high-risk state.

Hospital Critical Care services operating at 100% of capacity corresponds to Major Surge Stage 1 demand.

Major Surge Stage 2 occurs with transmissible disease where patients are cohorted. Cohorting arrangements follow Hospital Infection Prevention and Control advice and precautions.

A Hospital / Hospital Group may escalate to Major Surge Stage 3 or Stage 4 in a Major Emergency or Major Incident or during Infection Outbreak.

Structured inputs to the Hospital's Critical Care Major Surge response include:

1. Duty ICU Consultant, Clinical Director
2. Hospital Operations, COO, CEO
3. Director of Nursing, Critical Care Senior Nurse Management,
4. Hospital Infection Prevention and Control

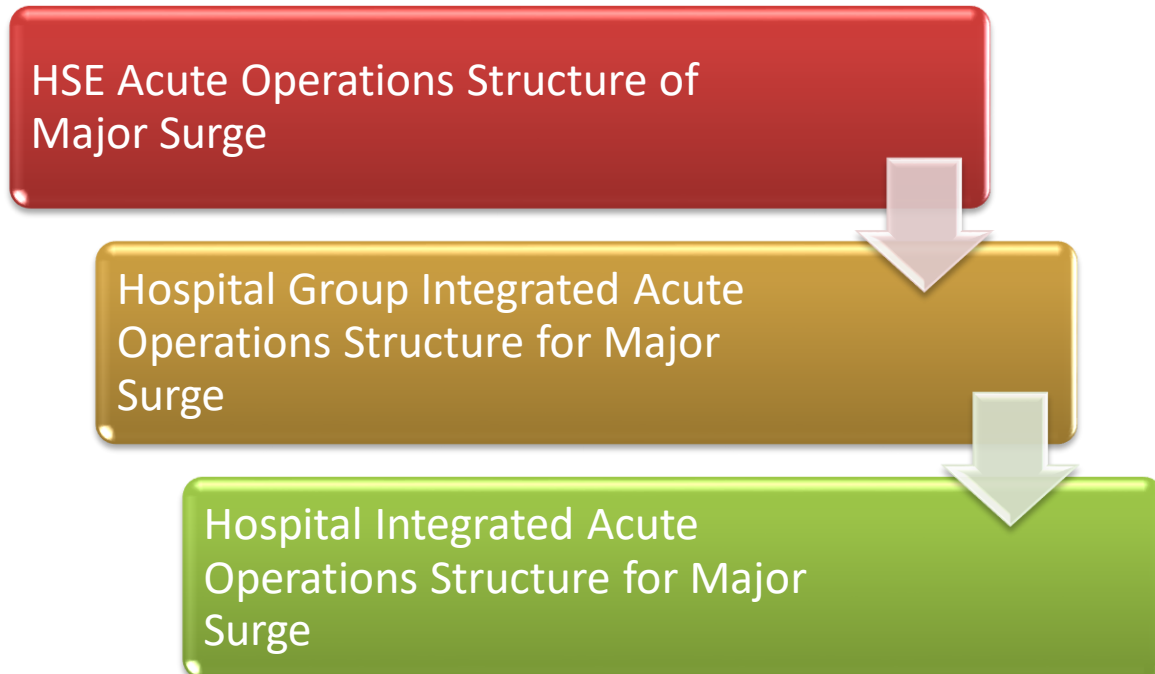


Figure 1 - Integrated Major Surge Acute Operations and Critical Care Service structures organogram

Hospital Critical Care Major Surge Response Enablers

1. Identification, validation and access to the Hospital's Airborne Infection Isolation Rooms (AIIRs).
2. Hospital activity prioritisation. The potential step-wise Critical Care capacity increases that could feasibly be implemented by the Hospital in the event of a Major Surge. This plan should include concomitant actions required to decrease or cease activity as appropriate to compensate for the increased requirement for Critical Care capacity through each Surge Level (Major Surge 1, 2, 3 & 4).
3. National Ambulance Service NAS – Critical Care & Retrieval Services CCRS – Mobile Intensive Care Ambulance Service MICAS – Dublin hub, Cork hub, Galway hub will undertake inter-ICU transports of critically ill patients according to normal clinical operational practice.
4. ICU Bed Information System (ICU-BIS) operated by NOCA INICUA and HSE OoCIO is in implementation and will provide a 'live' situation report or 'sit-rep' on ICU occupancy and activity.

Elective Services

Each hospital needs an agreed governance arrangement (and communication pathway) to mandate cessation / reduction of elective activity. It is suggested that the CEO, Clinical Director, and Critical Care Director are essential leaders in such decisions supported by Clinical Directors of Medicine, Surgery and Anaesthesia.

In preparation for such a decision, hospitals should have an agreed trigger e.g. occupancy or volume threshold where elective surgical and medical activities may be deferred in the event of a Major Surge.

5. Critical care Major Surge Workforce planning

In the event of a Major Surge, additional Critical Care medical and nursing staff will be required.

If Critical Care services are provided outside the existing ICU/HDU, senior medical and nursing staff should allocate patients and staff on the basis of clinical priority and clinical competency and skill-mix.

A sharp increase in Critical Care medical, nursing and Health and Social Care Professional (HSCP) staff is required during a Critical Care Major Surge and requires funding resource.

In a Critical Care Major Surge the Hospital identifies medical and nursing staff who can be reassigned to provide additional critical care support during a Major Surge, as needed as appropriate. Such allocation will inevitably impact on staffing in other clinical activity areas incl. Anaesthesia/OT services. This will require close cooperation with relevant other staff.

Preparedness:

Each hospital should identify nurses working outside ICU with Critical Care nursing experience (redeployment) and put in place a process to maintain their competencies to a level that will enable them to work under the direct supervision of a Critical Care Nurse in the event of a Major Surge or

act as a runner as decided locally. A database of these nurses should be maintained in each hospital and updated 3-6 monthly by Senior Critical Care Nursing Management.

Ideally, redeployment of any nurse should only take place at Major Surge Level 3 and it is important to note that there are supervisory requirements for reassigned nurses in an ICU Nurse led care delivery team. The supervisory requirements should be decided within the operational plan for each hospital.

There will also be a requirement for runners in the event of an escalation to Major Surge Levels 3 & 4 to enable fast access of resources such as PPE, medication including fluids, access, lines, intubation equipment, dialysis equipment, hygiene etc. These Nurses should be familiar with the Critical Care environment, rather than have the ability to care for critically ill patients.

It is important to put in place appropriate agreements with relevant medical and nursing managers for the reallocation of staff. In the event of a Major Surge, if activation is required, it is important that hospitals communicate widely the decision to reallocate staff to relevant Consultants and Clinical Managers who are affected.

As Major Surge escalates, a correlation in service slow down (e.g. Elective surgeries) will enable reallocation of staff with competencies relative to Critical Care (Theatre/ Anaesthesia/ Recovery) who can potentially be redeployed as deemed appropriate.

The potential to call back critical care nurses on leave (Career Break specifically but not exclusively) or retired should be explored.

The aim and intent is that patients receive the good critical care during Major Surge times and that nursing and medical staff giving this care receive the required support and assistance to enable this.

It is recognised there are limits to the potential increase in skilled Critical Care Nursing staff in the event of a Critical Care Major Surge. Nursing Staffing of existing Critical Care beds is already stretched. There are very few staff working in other areas who have recent Critical Care experience. Critical Care patients require 24-hour care on an ongoing basis which will quickly exhaust any potential reserves in staffing.

In summary, there may be limited scope to mobilise any reserve Critical Care Nursing capacity in a system frequently running up to 100% of capacity.

ICU Nurse Care delivery Team

This is not a long term sustainable method of delivering critical care. The care of a critically ill patient is multi-disciplinary.

The recommendation for delivery of safe care in a critical care setting is a nurse patient ratio of 1:1. In surge the aim is to still provide 1:1 care.

However in order to respond to the increasing number of patients requiring critical care, the ratio may be 1:1 for Nurse (Non ICU) to patient, with supervisory role of a critical care nurse to patient of 1:1 or increasing to 1:2 or 1:4 as critical care settings reach maximum capacity. This means, a Critical

Care Nurse supervising Care delivery by Non ICU Nurses, whilst maintaining 1:1 Non ICU Nurse care ratio.

This will vary across sites with Clinical Risk still identified as per the Clinical Risk Stratification Table at the start of this document.

It is advised that a single roster be in place across all Critical Care units during a surge to enable safe skill mix with ICU and Non ICU nurses.

Rationale:

Staff working outside their normal practice area will require support from critical care nurses to allow safe patient care to be delivered to the best of their abilities. This supervision by their critical care colleagues will also ensure correct delegation of tasks and for supervision of the delivery of that care.

It is recommended that the 'team' approach includes a number of support assistants on each shift for turns/washes etc.

All critically ill patients should have 1:1 nursing care across all shifts. In normal operational circumstances, this would be a critical care nurse, but as capacity within a critical care setting is reached then this will need to be adjusted accordingly. Each designated critical care setting (established and newly formed surge units) should provide a designated critical care trained nurse-in-charge for each shift. This nurse should be supervisory for the effective provision of supervision, advice, support and co-ordination and possibly lead an ICU Nurse Led Critical Care Delivery team as Surge escalates

6. Guidance and communication

Clinical Guidance

Clinical Guidance is followed incl. HSE Acute Operations Guidance on the management of the critically ill COVID patient, Intensive Care Society of Ireland COVID Guidance and professional body guidance incl. JFICMI.

Communication and Consultation

Development and operation of a Hospital / Hospital Group Critical Care Major Surge Preparedness Planning Framework should include appropriate communication and consultation with relevant medical, nursing management and other relevant staff.

If a Major Surge response is initiated other hospital services will be impacted. Communication and information across Hospitals and Hospitals upon Major Surge activation is commenced, controlled and managed by hospital operations and includes key clinical stakeholders. Current contact details are maintained by hospital operations.

7. Critical Care Capacity in other hospitals e.g. private hospitals

A Hospital or Hospital Group may consider the use of Critical Care capacity in other hospitals during Major Surge events. Operations of a Hospital / Group may set up a SLA with a private providers so that Critical Care capacity may be accessed at short notice as needed as appropriate.

8. Operational feasibility of a Hospital or Hospital Group Critical Care Major Surge Capacity Plan

In developing and approving its Critical Care Major Surge Plan, a Hospitals and Hospital Group complete a realistic evaluation of each element of its proposed Plan based on the Levels outlined for Major Surge. For example, a hospital may find it cannot increase critical care capacity within the 'walls' of its ICU/HDU.

The major elements of the evaluation should include:

Current Critical Care bed capacity and the realistic ability of the hospital to rapidly increase current Critical Care capacity.

Current availability of medical and nursing staff to be redeployed (on a temporary basis) to staff additional Critical Care beds. This may be a mix of experienced staff working in non-ICU areas and the ability to familiarise other nursing staff to enable them to act as runners. The assessment should identify the total available complement of additional staff potentially available for redeployment and how many additional Critical Care beds could be opened based on agreed Critical Care staffing ratios.

Physical configuration and identified beds and locations that could be converted to become the additional Critical Care Surge Capacity within the hospital. Any additional equipment or other infrastructure requirements needed to realise this additional capacity should also form part of the assessment.

There may be other individual hospital factors (e.g. ability to cease elective services, tertiary or regional referral protection requirements, etc.) that also form of the assessment process. Each hospital must complete its own evaluation process according to its needs.

The conclusion of the evaluation process is communicated to the CEO and Clinical Director of the Hospital and Hospital Group as part of the Critical Care Major Surge Planning process.