Critical Care Load-Balancing Operational Template

The critical care load-balancing operational template provides a framework for indicators and triggers that may assist states that are implementing Medical Operations Coordination Cells (MOCC). The goal of the MOCC toolkit is to assist regional, state, local, tribal and territorial (SLTT) governments to ensure load-balancing across healthcare facilities and systems so that the highest possible level of care can be provided to each patient during the coronavirus disease 2019 (COVID-19) pandemic. Load-balancing may involve prehospital distribution of patients among area healthcare facilities, transferring patients from overwhelmed healthcare facilities to ones with more capacity (space, staffing, and equipment), or moving resources to support an overwhelmed facility. This template is designed to help load-balance regional/healthcare coalition capacity through hospital-to-hospital patient transfer coordination.

Suggested elements in the template are provided to encourage a consistent approach for the health systems, SLTT governments and regional emergency management responsible for developing and implementing load-balancing policies and procedures. Elements in this template may need modification based on local resources, processes, and systems. For example, in some regions, the "contingency" state described below may be daily operating conditions and the thresholds adjusted accordingly. The MOCC supports, but does not supplant, load-balancing efforts that may already be occurring within healthcare systems, including those that may overlap coalition and state borders. These on-going intersystem efforts can contribute significantly to maintaining system equilibrium and are encouraged. Ideally, MOCCs should obtain data on the number of both routine and COVID-19-related interfacility patient transfers occurring during the COVID-19 pandemic.

Many other considerations affect these load-balancing operations and the successful provision of care, including appropriate emergency medical services (EMS) transportation, hospital staffing, and availability of personal protective equipment (PPE) and medical care supplies, including medications and equipment such as ventilators that may also be managed through healthcare coalition and/or state processes. However, the MOCC function primarily is patient movement coordination with a focus on critical care as considered below.

Critical Care Load-Balancing by Hospital Capacity and Utilization

	Conventional	Contingency	Crisis
System status	• Usual capacity and operations	• A few facilities are significantly over usual capacity and implementing contingency plans – load-balancing may be required to support those facilities	• Regional capacity is saturated and load-balancing required to maintain a consistent standard of care. Movement of patients to another region may be considered

Triggers for initiating load-balancing of critical care	• >10% available ICU beds across coalition • Usual ICU units used • Usual staffing ratios	• 5-10% of ICU beds available across coalition for 72 hours • Surge ICU beds used (Post Anesthesia Care Unit (PACU), intermediate care) at any facility • Staffing ratios adjusted; non-traditional but appropriate staff used for critical care extension at any facility • EMS "hand-off" times at ED	• <5% of ICU beds available across coalition • Surge ICU extends to monitored units/other areas • Staffing model changes to tiered approach and/or substitute staff without background in critical care used • Average 2 or more ICU admits boarding in ED
Step down trigger	• >15% available ICU beds across coalition for > 48 hours; AND • Case counts declining	• Surge ICU beds are confined to appropriate overflow areas and decreasing number • Staff are appropriate to provide critical care • 7 day case count averages plateauing or falling	
Elective procedures	No restrictions	• Consider restricting non-emergency cases that require inpatient resources after procedure	• Restrict non-emergency procedures that require inpatient care after procedure. May need to restrict other procedures based on need to divert staff and space to surge care
Referral management	Per usual referral means	• MOCC (with central call number/hotline) available as needed, rotational assignment of receiving hospital for transfers (note that the MOCC may be used for all transfers or restricted to medical ICU depending on the local policy) • Attempt to refer transfers outward rather than into saturated area if possible	• MOCC manages all transfers • Assignment of transfers based on rotational list of hospitals • In-place telehealth critical care consultation for pending/held transfers in hospitals without critical care services • Utilization of telemedicine for critical care consultation and support

		dependent on patient needs and resources (e.g., pediatric, burn may still need to go to saturated areas for specialty care)	• Consider expanded scope of services in community hospitals/rural facilities (e.g., ventilator weaning after care at referral center, local care of conditions such as sepsis, diabetic ketoacidosis, with appropriate telemedicine support
Load-balancing	On hospital request only (e.g., trauma center requires assistance unloading to accommodate major trauma)	• As per conventional AND • Balance to keep hospitals at roughly same % of ICU capacity/surge • Balancing includes use of pediatric resources for care of selected adults	• As per contingency AND • Balance number of ventilated patients as % of capacity • Balance staff/direct additional staff to maintain rough equivalent strategies across major hospitals
Coordination Calls – Hospital/system patient placement and critical care representatives	Weekly	Daily	Twice daily and as needed to broker transfers that do not have any available ICU destination
Data submission - hospitals	• Census o Add % of average and % of conventional maximum if possible • Medical/Surgical beds available • Medical/Surgical beds unstaffed • ICU beds in use and % of conventional total • ICU beds available	• Conventional AND • ICU non-traditional surge beds in use* • ICU beds available • Ventilators in use	• Contingency AND • Ventilators available
Critical care group – representatives of critical care from each system/hospital	Weekly	Daily – share staffing and care practices	Daily and as needed to discuss transfers and crisis care decision-making including staffing and patient care
Policy Group – healthcare coalition and healthcare system leadership, public health, EMS	Every other week • Review/update protocols • Review data	Weekly • Review/update protocols • Review data	Daily • Review/update protocols • Review data

authority, consider emergency management and Governor's office, health legal/regulatory	• Communicate/update stakeholders • Troubleshoot data/operations issues	• Communicate/update stakeholders • Troubleshoot data/operations issues	• Review conditions, actions, needs (CAN) • Liaison with coalition/emergency management on CAN issues to address or balance disproportionate effects (move patients, divert patients, move resources, move staff) • Document inter-action and after-action issues • Communicate/update stakeholders • Troubleshoot data/operations issues • Provide framework for any triage decision-making/crisis standards of care application to transfer requests if required
Medical Operations Coordination Center (MOCC)	On-call coordinator	Virtual activation • Coordinator • Medical advisor • EMS liaison	Virtual/in-person activation • Coordinator • Operator(s) • Medical advisor • EMS liaison • Liaisons (PH, EM, hospital association) as needed
Data collected/reported – MOCC	• Submitted data analyzed for trends • Transfer data • Calls received o Calling party/facility o Emergency or load-balancing transfer o Bed available at time of request?	• Per conventional AND • Daily coordination call availability data • Daily staffing situation/strategies (from critical care call) • Conditions, actions, needs of regional relevance (from critical care call)	• Per contingency AND • Documentation of "in place" clinical support when transfer times are prolonged • Document any non-emergency load-balancing (e.g., transfers of stable patients from tertiary facility to community hospital)

	○ Online data used for placement/accurate? ○ Rotation-based placement used? ○ Clinical consultation required? ○ Group resource decision-making needed? ○ Accepting physician/hospitalist? ○ Disposition - bed found (what hospital) ○ Time from call to bed found ○ Issues with transfer/finding bed? ○ Patient on ventilator? ○ Other notes/process issues? ○ Transport used - agency/mechanism • Reasons for load leveling documented • Other calls/issues logged	• Situation report (SITREP) produced daily	

*ICU contingency beds reflect areas where critical care is **often or easily** provided – e.g., intermediate care units, PACU – including appropriate care environment and equipment. ICU crisis beds reflect areas that would not generally be suitable for critical care – including cardiac telemetry units, endoscopy/outpatient procedure areas. This determination must be made at the facility level based on their spaces, suitability, and staffing.

** Abbreviations: Intensive Care Unit (ICU); Post-anesthesia care unit (PACU); Emergency Medical Services (EMS); Emergency Department (ED); Public Health (PH); Emergency Management (EM).