1.0 Executive Summary

Purposes and goals of this protocol (see 2.0):

- developed to apply to an influenza pandemic, when demand for critical care needs outstrips available resources
- supports decision-makers and care providers in a time of stress
- protects patients and community against arbitrary or biased decision-making through a transparent and consistent process
- based on assumptions that a pandemic (at its peak) will result in a shortage of health care providers, and a 170% increase in demand for ICU beds
- supports ethical resource allocation decisions in a worst case scenario when critical care resources are so overwhelmed that clinical triage tools provided by Ontario Health Plan for an Influenza Pandemic (OHPIP) are not sufficient

Steps in responding to a surge in resource demand (see 4.1):

- step 1 builds surge capacity (i.e. redeploying staff, opening new beds, etc.)
- step 2 adjusts the type of care provided to mass critical care
- step 3 initiates clinical critical care triage
- step 4 allows for use of supplementary triage criteria (as needed) by Triage Team
- step 5 involves the ongoing review of critical care needs and triage decisions

OHPIP Critical Care Triage Process (see 4.2):

- if after steps 1 and 2, the system still overwhelmed, the VP Medicinal authorizes clinical critical care triage as described in the OHPIP
- Sequential Organ Failure Assessment score [SOFA] is Ontario’s standard triage tool, which includes 4 components:
  - inclusion criteria: identifies patients who may benefit from critical care, with a focus on respiratory failure
  - exclusion criteria: excludes patients with a poor prognosis
  - prioritization of patients: uses a colour scheme to rank patients for potential admission to ICU
  - minimal qualifications for survival: involves reassessment to identify patients not improving and appropriate for discharge from ICU
- appointed triage officers in Emergency Department and hospital wards will complete a two step triage process:
  1. complete OHPIP Criteria Worksheet;
  2. if patient qualifies for critical care also complete Critical Care Pandemic Triage Worksheet (including SOFA score)
- MRP reviews and confirms all patients’ SOFA scores; refers appropriate patients (Red and Yellow) to nearest ICU for consideration for trial of critical care
- most responsible ICU physician will review SOFA scores of all current ICU patients

Critical care resource allocation process (see 4.4):

- SOFA is the best triage tool available, but in some scenarios decisions may not be
based on SOFA alone

- at such times, a Triage Team makes decisions using supplementary criteria only after clinical triage is completed
- triage process must support human rights and avoid discriminatory decision-making
- Supplementary triage criteria:
  - multiplier effect – priority given to those who have the skills/abilities to help others
  - HCP/essential service workplace exposure – priority given to those with high probability that they contracted the illness at work
  - caregivers – priority given to those with dependents residing with them
  - fair innings/life-cycle principle – priority given to those at an earlier stage of the life-cycle relative to other patients currently requiring critical care

The Triage Team (see 5.0 and 6.0):

- VP Medical appoints 3 members at each ICU:
  - Senior ICU physician
  - Critical Care health professional (non-physician, such as RN or RT)
  - Chair of Triage Team (non-ICU professional, appointed by VP Medical)
- Team makes decisions by consensus using criteria outlined in the Critical Care Pandemic Triage Worksheet; if consensus cannot be reached, a transparent, unbiased process of random selection shall take place
- Team Chair helps communicate and document decisions and participates in ongoing quality review with the Central Triage Committee

2.0 Purposes & Goals

This protocol was developed for specific application to an influenza pandemic resulting in a significant surge in the need for critical care in the Hamilton community, with inadequate resources to meet the demand. It may also be applied to other mass casualty events (e.g. natural disasters, other outbreaks) resulting in a prolonged surge (longer than about 3 days without the likelihood of external assistance).

This protocol outlines a clear, consistent and principled process for the allocation of critical care resources during a prolonged surge resulting from influenza pandemic. It presumes that a pandemic will so overwhelm available critical care resources that even the clinical triage tools provided in the OHPIP will not be sufficiently refined to determine which patients should receive critical care and which patients should receive medical or palliative care. In this worst-case scenario, these decisions will no longer be purely clinical decisions, but will be resource allocation decisions with ethical and social dimensions.

Note: This protocol applies to all adult patients (over age 18) assessed for critical care, regardless of the etiology of their illness (i.e. includes flu and non-flu patients).

By clearly articulating the roles, processes and criteria for allocating potentially life-saving treatments in a pandemic, this protocol has several goals:

1. to support decision-makers and care providers in a time of almost unimaginable stress to make the best possible decisions under the circumstances.
2. to detail a procedure for making critical care triage decisions in a pandemic.
3. to protect patients and the community by creating a fair and transparent decision-making protocol, to safeguard against arbitrary or biased decision-making.
4. to protect the community by supporting evidence- and principle-based stewardship of critical care resources, to maximize benefits (i.e. save the most lives) and
minimize harms (i.e. avoidance of unnecessary loss of life and social disruption).

The Ontario Health Plan for an Influenza Pandemic (OHPIP, August 2008) is based on the following assumptions:

- The attack rate for Health Care Providers (HCP) could be as high as 50%, even with appropriate use of personal protective equipment (PPE); this is substantially higher than the community attack rate of 35% (see Gardam et al. 2007). During a pandemic, the availability of HCP could be reduced by up to one-third or more due to personal illness, absenteeism and family caregiving responsibilities. A shortage of HCP will result in a decrease in usual services.
- In the first pandemic wave, at least one-third of deaths are likely to be people under age 65 (compared to less than 5% of deaths in interpandemic years).
- At its peak, influenza patients will use an estimated 170% of ICU beds and 117% of ventilators. These figures represent the additional critical care needs of flu patients, and do not include the “usual business” of ICUs (trauma, post-op, cardiac disease, etc.)
- Once an emergency is declared, the Emergency Management and Civil Protection Act (1990) becomes the prevailing legislation. The Emergency Management and Civil Protection Act (s.7.1) authorizes the Lieutenant Governor in Council to make appropriate orders when, in the opinion of the Lieutenant Governor in Council, victims of an emergency or other persons affected by an emergency need greater services, benefits or compensation than the law of Ontario provides or may be prejudiced by the operation of the law of Ontario. The Lieutenant Governor in Council in these circumstances, may, by order made on the recommendation of the Attorney General, temporarily suspend the operation of a provision of a statute, regulation, rule, by-law or order of the Government of Ontario; and if it is appropriate to do so, set out a replacement provision to be in effect during the temporary suspension period only. In this context, the enactment of the OHPIP, under the direction of the Chief Medical Officer of Health and the VP Medical, will modify the requirements of the Health Care Consent Act (1996) such that consent will not be required from patients or Substitute Decision-Makers (SDMs) to triage patients and withdraw patients from critical care if they are no longer eligible according to the provisions of the OHPIP.

This process for allocating critical care resources in a pandemic is aligned with the following resources and standards:

- the ethical principles and triage protocol outlined in the OHPIP (August 2008)
- the Ontario Human Rights Code
- current bioethics theory
- research on triage and pandemic planning
- stakeholder feedback (both internal and external)

For further information on the principles of triage, and the procedural and substantive ethics involved in pandemic planning and critical care triage, see Appendix A.

3.0 Equipment/Supplies
OHPIP Criteria Worksheet (Appendix B)
Critical Care Pandemic Triage Worksheet: Initial Assessment (Appendix C)
48 hour Reassessment Pandemic Triage Worksheet (Appendix D)
120 hour Reassessment Pandemic Triage Worksheet (Appendix E)
Pandemic Triage Team Patient Data Worksheet (Appendix H)

4.0 Policy
4.1 Critical Care Triage Process Overview
Steps in Responding to the Surge:

The response to a surge in demand for critical care resources is expected to occur in a
graduated fashion, according to the OHPIP. The Ministry of Health will determine the
pandemic status across the province and coordinate response with local public health
officials and organizations. The response will unfold in the following steps:

**Step 1:** Build surge capacity. When an influenza pandemic triggers a surge in the need for
critical care in Hamilton, the ICU team will work with HHS management and
provincial/LHIN/city authorities to enhance capacity to help all patients get the treatment
they require (e.g. through redeployment of staff, team management of critical care
patients, canceling non-urgent care, opening new critical care beds, etc.). At this time
patients not requiring acute care will begin to be discharged to alternate locations in
accordance with the City of Hamilton’s pandemic plan, as the hospital transitions to
focusing on providing mass influenza treatment.

**Step 2:** If demand still exceeds capacity, hospitals will adjust the type of care being
provided to focus on key critical care interventions (i.e. *mass critical care*), including:
- basic modes of ventilation
- hemodynamic support
- antibiotics
- disease specific countermeasures (e.g. thrombolysis)
- prophylaxis (e.g. DVT)

**Step 3:** If the system is still overwhelmed, initiation of *clinical* critical care triage using the
OHPIP triage process (i.e. SOFA scale) and this protocol will be authorized by the VP
Medical in consultation with the Chief of Critical Care.

**Step 4:** In the event that there are insufficient resources to make ICU admission/discharge
decisions based on the OHPIP critical care triage process alone, decisions will be made by
the site Triage Team, using the Supplementary Triage Criteria (detailed below), with prior
authorization of the VP Medical.

**Step 5:** Ongoing review of critical care needs and triage decisions will be conducted by the
Central Triage Committee to ensure the consistent application of this protocol, the quality
of decision-making, and to adjust the triage process based on the most up-to-date
epidemiological/clinical evidence available.

4.2 OHPIP Critical Care Triage Process Overview
The goal of clinical triage is to optimize the effectiveness of clinical decision-making so that
every patient who needs and receives critical care survives.

The Ontario government has endorsed the Sequential Organ Failure Assessment score
(SOFA) as the standard critical care triage tool for the province. SOFA is not disease-
specific; it uses general physiologic parameters that can be applied to a wide variety of
conditions commonly found in the ICU.
The SOFA scale includes four components:

(1) **Inclusion Criteria** identifies patients who may benefit from admission to critical care. The inclusion criteria primarily focus on respiratory failure because the ability to provide ventilatory support is what will differentiate the ICU from other acute care areas.

The patient must have 1 of criteria **A or B**

**A.** Requirement for invasive ventilatory support:
- Refractory Hypoxemia (SpO2 < 90% on non-rebreather mask/ FiO2 > 0.85).
- Respiratory Acidosis with pH < 7.2.
- Clinical evidence of impending respiratory failure.
- Inability to protect or maintain airway.

**B.** Hypotension:
- Hypotension (SBP < 90 or relative hypotension) with clinical evidence of shock (altered level of consciousness, decreased urine output, or other end organ failure) refractory to volume resuscitation requiring vasopressor/inotrope support that cannot be managed on the ward.

(2) **Exclusion Criteria** includes patients in three categories:

a) People who currently have a very poor prognosis/chance of survival even when treated aggressively in an ICU.

b) People who will need a level of resource that simply cannot be met during a pandemic.

c) People with significant and advanced underlying medical illnesses that have a poor prognosis with high short-term mortality, even without their current concomitant critical illness (i.e. influenza).

The patient is excluded from admission/transfer to Critical Care if **ANY** of the following are present:

- Severe trauma (ISS score >16).
- Severe burns:
  - A patient with any two of the following:
    - i. Age > 60 years old.
    - ii. TBSA > 40%.
    - iii. Inhalation injury.
- Cardiac Arrest:
  - Unwitnessed cardiac arrest.
  - Witnessed cardiac arrest not responsive to electrical therapy (defibrillation, cardioversion, or pacing).
  - Recurrent cardiac arrest.
- Severe cognitive impairment:
  - A patient resides in a retirement or nursing home with this primary diagnosis.
  - Requires significant assistance with ADLs.
- Advanced untreatable neuromuscular disease.
- Incurable metastatic malignancy.
- Advanced & irreversible immunocompromise:
  - Example: HIV with CD4 <200.
- Severe and irreversible neurologic event/condition.
- Endstage organ failure meeting following criteria:
  - Cardiac:
(3) **Prioritization of Patients:** The aim of SOFA is to find a balance between those who are sick enough to require critical care and will do poorly if they do not receive it, and those who are unlikely to recover even if they do receive intensive care. Patients are prioritized according to the following color scheme:

- **Blue** patients are those who fall into the expectant category and should not receive critical care. Depending on their condition and medical issues, the patient may either continue to have curative medical care or palliative care.
- **Red** patients are highest priority for ICU admission and a ventilator if required. Patients with a single organ failure, particularly those with respiratory failure due to influenza, and who otherwise have a very low SOFA score, are included in the red category (if they have no exclusion criteria).
- **Yellow** patients are very sick and may or may not benefit from critical care. They should receive care if the resources are available but not at the expense of denying care to someone in the red category who is more likely to recover. At the reassessment points (48 and 120 hours after admission to ICU), patients who are improving are given highest priority (red) for continued care, while those who are not showing signs of improvement or are worsening are prioritized as yellow.
- **Green** patients are well enough to be considered for transfer out of/diversion from the ICU.

(Paraphrased from Ontario Health Plan for an Influenza Pandemic August 2008; Chapter 17: Acute Care Services. See also Chapter 17A: Tools)
(image from OHPIP 2008, p.17A-3; © Queen's Printer for Ontario, 2008)

(4) **Minimum Qualifications for Survival (MQS):** The Ontario triage protocol requires patients to be reassessed at **48** and **120 hours**, as well as an ongoing ceiling if a patient ever develops a SOFA score of \( \geq 11 \) or any other exclusion criteria. The MQS attempts to identify patients who are not improving and are likely to have a poor outcome.

**Clinical Triage (SOFA) Procedure:** (See Appendix F for overview)

If capacity for managing the critical care surge has been maximized across all sites, transfer options are exhausted and there are still inadequate critical care resources to meet the need, the Chief of Critical Care shall consult with the VP Medical. The VP Medical is responsible for authorizing the enactment of this protocol, notifying the Command Centre and ensuring communication to all wards/units that the protocol is in effect.

**Triage in the Emergency Department:**
- ED physician or appropriate designee evaluates patient for exclusion criteria using OHPIP Criteria Worksheet (see Appendix B). Any patients meeting exclusion criteria will be managed medically and palliatively or discharged, as appropriate.
- Patients meeting inclusion criteria and no exclusion criteria will be moved into an acute care bed if one is available; medical treatment is initiated. The ED physician or designee will complete as much as possible of the Critical Care Triage Worksheet: Initial Assessment ("Triage Worksheet", see Appendix C) and send this to the nearest ICU.
- If a patient requires urgent intubation/critical care, the ED physician or delegate will call the ICU to inquire whether/when a bed is available.
- Eligible patients who require intubation in the ED will not be intubated/ventilated unless there are resources available in the ICU either immediately or in a reasonably short period of time.
- If an ICU bed is available, the patient is intubated/ventilated and transferred to the ICU. If no ICU bed is available, the patient is treated medically and palliatively as appropriate.
Triage in hospital wards/units:
Each ward/unit will appoint one or two persons with appropriate clinical skills (resident, APN, etc.) to act as triage officers during a shift. Triage officers will perform triage for patients whose condition is worsening and who may require critical care within 24 hours, following these steps:

1. The triage officer completes the OHPIP Criteria Worksheet (See Appendix B).
2. If the patient meets inclusion criteria and has no exclusion criteria, the triage officer then completes the Critical Care Pandemic Triage Worksheet: Initial Assessment (Appendix C).
3. A senior physician reviews and confirms the patients’ triage scores on the Triage Worksheet:
   - All patients triaged BLUE are treated medically or palliatively as appropriate.
   - All patients triaged GREEN are treated medically or discharged as appropriate.
   - For all patients triaged RED or YELLOW, the Triage Worksheet should be faxed to the nearest ICU, or completed in the electronic health record (if available).

Triage in the ICU:

- When this protocol is enacted by the VP Medical, the most responsible ICU physician at each site will assess the exclusion criteria and SOFA scores of all current ICU patients, using the OHPIP Criteria Worksheet (Appendix B) and then the Critical Care Triage Worksheet: Initial Assessment (see Appendix C).
- Those patients who do not qualify for critical care (i.e. are not RED or YELLOW) will have critical care treatment withdrawn and be discharged to other wards/units as required to make room for incoming patients who are triaged RED or YELLOW.

NOTE: RED patients always have priority for critical care resources.
- The ICU charge nurse will collect all Triage Worksheets received (from ICU, ED and hospital wards/units) and redact them as appropriate for the Triage Team. (See Appendix H - Pandemic Triage Team Patient Data Worksheet).
- If there are sufficient critical care resources for all eligible patients (RED and YELLOW), the senior ICU physician and charge nurse will work together to coordinate admission of new patients. It is the duty of the charge nurse to contact the Emergency Department [ED] and inform them if a bed becomes available.
- If there are insufficient resources to admit all eligible patients, or there is uncertainty about the prioritization of patients for admission, triage decisions are referred to the site Triage Team.

Urgent Triage:
If a patient urgently requires critical care, and there is no time to complete a SOFA score, the OHPIP Criteria Worksheet should be completed. If the patient has no known exclusion criteria, and the treating physician believes the patient would have a good chance of survival based on his/her clinical judgment, the physician should complete as much of the Triage Worksheet as possible and notify the ICU charge nurse to ask the Triage Team to consider the case on an urgent basis. Human resource constraints may not allow for functioning Code Blue or rapid response teams. Patients who “code” or deteriorate rapidly will be provided appropriate medical and palliative care if intensive care is not an option.

4.3 Human Rights: Prohibited Grounds for Decision-Making
In order to promote public trust, triage protocols should make decision-making processes
and principles transparent to avoid “invisible rationing”—situations in which decisions are based on unspoken biases (see DeCoster 2006). Triage protocols must support human rights and avoid (even the perception of) discriminatory decision-making. The Ontario Human Rights Code (“the Code”) provides protection from discrimination in the provision of services, goods and facilities, including hospital care.

Prohibited grounds of discrimination

The Code recognizes that discrimination occurs most often because of a person's membership in a particular group in society. These are the sixteen prohibited grounds for discrimination:

- **race**: common descent or external features such as skin colour, hair texture, facial characteristics;
- **ancestry**: family descent;
- **place of origin**: country or region;
- **colour**: associated with race;
- **ethnic origin**: social, cultural or religious practices drawn from a common past;
- **citizenship**: membership in a state or nation;
- **creed**: religion or faith;
- **sex**: discrimination can be sexual in nature, or because of gender or pregnancy. Sex also includes the notion of gender identity, which includes: transsexual, transgender and intersex persons, cross-dressers, and other people whose gender identity or expression is, or is seen to be, different from their birth-identified sex.
- **sexual orientation**: includes lesbian, gay, bisexual or heterosexual;
- **disability**: covers a broad range and degree of conditions, some visible and others not. A disability may have been present from birth, caused by an accident, or developed over time. It includes physical, mental, and learning disabilities, mental disorders, hearing or vision disabilities, epilepsy, drug and alcohol dependencies, environmental sensitivities, as well as other conditions;
- **age**;
- **marital status**: married, single, widowed, divorced or separated and the status of living with a person in a conjugal relationship outside marriage;
- **family status**: the parent/child relationship;
- **receipt of public assistance**: and
- **record of offenses**: provincial offenses or pardoned federal offenses.

None of the above grounds should influence the allocation of critical care or medical resources; triage decisions should be based solely on the criteria included in this protocol.

### 4.4 Critical Care Allocation Process:

**Limitations of SOFA:**

While SOFA represents the best available triage tool to date, it has the following drawbacks:

- SOFA was validated on cohorts and is less accurate in predicting outcomes of individual patients.
- SOFA has not been validated in a pandemic situation.
- SOFA requires lab values; depending on the lab resources available in a pandemic, this could delay triage decision-making by some hours.
- SOFA does not indicate how to distinguish between patients who have the same
triage code (Blue, Red, Yellow or Green). If two patients are scored RED but only one ventilator is available, SOFA gives no indication of which patient should be given priority. Only a substantial difference (for example 25%) in predicted survival advantage would justify removing one patient from a ventilator and giving it to another. SOFA is neither sufficiently sensitive nor validated to do this. (See Hicks, 2007)

During the peak of a pandemic influenza surge, decisions about how to allocate scarce critical care resources likely cannot be made based on SOFA alone. For example:

- There may not be enough critical care beds/ventilators to accommodate all patients triaged RED.
- There may not be time to perform the lab tests necessary to complete the SOFA score for critically ill patients who have no exclusion criteria and require immediate ventilation.
- Once all RED patients receive treatment, there may be multiple YELLOW patients vying for limited beds without sufficient evidence to determine which YELLOW patients are most likely to benefit from critical care.

In such cases, critical care resource allocation decisions will no longer be purely clinical (objective), but are ethical and social decisions. Human rights can best be protected if clear criteria and processes for such decisions are followed.

In circumstances where critical care resource allocation decisions cannot be determined by the SOFA scale alone, these decisions will be made by a Triage Team so that the burden is not shouldered by one individual, and so that potential conflicts of interest are managed appropriately.

This section describes the supplementary criteria which may be considered by the Triage Team in making critical care resource allocation decisions for a cohort of patients with roughly the same likelihood of survival/benefit (with critical care), according to the best available evidence (SOFA score). **At all times clinical triage must be completed first (as allowed by the time and resources available under the circumstances) before consideration is given to the supplementary criteria.**

Defining allowable criteria to supplement clinical triage in allocating scarce critical care resources supports the procedural values of Reasonableness, Openness and Transparency and Accountability; it also supports the ethical values of Trust, Equity and Stewardship (see Appendix A).

**Admission to ICU Process:**

It is the responsibility of the ICU charge nurse to know the current bed census as well as the current demand for ICU resources by collecting and collating current the Triage Worksheets from all areas of the hospital. The Triage Team will gather all current Triage Worksheets for patients awaiting admission, as well as updated SOFA scores for current ICU patients. They will make decisions about which patients will be admitted for a trial of critical care or continue critical care based upon the following considerations (in order):

1. Eligible patients’ SOFA scores: RED patients will be given priority over YELLOW patients.
2. Supplementary Triage Criteria (below) may be applied by the Triage Team if not all RED patients with good prognoses can receive critical care. Supplementary Triage
Criteria may also be used to choose between YELLOW patients if resources are available.

3. Any patient who develops a SOFA of >11 or develops an exclusion criteria should be discharged immediately. All, patients should be re-triaged at 48 hours and 120 hours (approximately) using the appropriate SOFA scoring tools (see Appendices D and E).

Supplementary Triage Criteria:

The following criteria are not listed in order of priority. Italics indicate the supporting ethical values from the OHP (Chapter #2: Roles, Responsibilities and Frameworks for Decision Making, August 2008).

1. **Multiplier effect:** The goal of triage is utilitarian: to save the most lives possible. The multiplier effect is the idea that certain persons have the skills and knowledge necessary to save others in a given situation; saving a “multiplier’s” life could (down the road) enable that person to save the lives of others, multiplying the net benefit to society by reducing mortality and morbidity within a population (see Gardam et al. 2007; Sztajnkrycer, Madsen, & Baez 2006). In a flu pandemic “multipliers” would include: vaccine developers, public health workers, health care workers, and essential service workers (including firefighters, ambulance/EMTs and police). Because pandemic influenza will occur in waves over the course of months or years, it is possible that a multiplier could become sick, require critical care, and recover in time to provide care to others in later waves (with a high degree of immunity to later waves). Giving priority to a multiplier is acceptable as long as it is reasonable to assume the person could recover sufficiently to return to their duties. This supports the values of **Equity, Stewardship, and Reciprocity**.

2. **HCP/Essential Service Workplace Exposure:** Although the flu pandemic will be a community acquired infection, current projections indicate that HCPs will likely suffer an attack rate (up to 50%) that is significantly higher than that of the general public (35%), even if they follow PPE protocols. Therefore, if there is reasonable evidence that a HCP or other essential service worker contracted the flu in the course of providing health care or other essential services, the values of Reciprocity and Equity would support prioritizing critical care resources to these persons. This may also have a positive effect by acting as an incentive for HCP/essential service workers to report to work, knowing that if they get seriously ill, they will be given priority access to critical care (though not guaranteed). Encouraging HCP/essential service workers to come to work (and protecting their health on the job) is in the public interest as studies indicate these strategies can significantly reduce morbidity and mortality rates in a pandemic (Gardam et al. 2007).

3. **Caregivers:** Care-giving for dependents is work that is essential to the functioning of a society and requires significant personal sacrifices (loss of sleep, income, leisure time, etc.) for caregivers. The death of a caregiver has substantial negative effects beyond the loss of that individual; surviving dependents may have to become wards of the state or others who are less dedicated to caregiving, and the loss of a primary caregiver may have long-term psychological/physical sequelae for the dependent. The values of Stewardship and Protection of the Public from Harm suggest that resources should be allocated in ways that maximize benefits and minimize harms to society at large. This extends the utilitarian principle of triage,
with a goal of not just saving the most lives, but also minimizing suffering and harm to communities and families.
Thus, priority for critical care may be given to those who are caregivers for dependents residing with them, including (in order of priority):

- Pregnant women (pregnancy is known to increase mortality from influenza)
- Children under 18 years of age
- Disabled adults (under 65 years of age; those with significant disabilities and chronic illnesses)
- Elders (over 65 years of age)

The above three criteria can be determined from a brief interview with the patient/SDM and/or the patient’s medical record, and documented on the Triage Worksheets (Appendices C, D, E).

4. **Prognosis:** Is there any evidence that this patient is significantly more likely (>25%) to survive an ICU admission and return to a reasonable functional status than the other eligible patients who currently require critical care? The patient’s relative prognosis is included here as a supplementary criterion because it is not certain that such evidence will be available, especially in the early days of a pandemic. In addition, it is not likely that Triage Team members will have the time and opportunity to clinically examine all patients eligible for admission to ICU and will have to rely upon the data contained within the triage worksheet and electronic medical records. In this context, determining prognosis is likely to be more subjective and less accurate.

5. **Fair innings or life-cycle principle:** “Death seems more tragic when a child or young adult dies than an elderly person—not because the lives of older people are less valuable, but because the younger person has not had the opportunity to live and develop through all stages of life” (Emanuel & Wertheimer 2006). The “fair innings” or “life-cycle principle” recognizes this intuition and supports prioritizing resources to those who are at an earlier stage in the life-cycle in comparison to those at a later stage of the life-cycle. This principle does not favor younger persons over older persons in absolute terms, but rather those in an earlier phase in the life-cycle relative to other patients with the same prognosis. For example, a 32 year-old would not get priority over a 35 year-old, but a 20 year-old may get priority over a 65 year-old as these patients would be at different stages in their life-cycle. This principle supports the value of Equity by enabling younger persons to have the same life opportunities older persons have had; it also supports the value of Stewardship as saving the life of the 20 year-old may result in a net gain of roughly 55 years (if they live an average lifespan) while saving the life of a 65 year old may result in a net gain of only about 10 years. (See Emanuel & Wertheimer 2006; Gostin 2006; Sztajnkrycer, Madsen, & Baez 2006).

The Prognosis and Fair-innings/Life-cycle criteria can only be judged relative to the prognoses and ages of other patients who currently require critical care; therefore these criteria can only be applied by the Triage Team.

These criteria have several advantages over idiosyncratic decisions based on the independent judgment of clinicians:

1. **Factual:** although there are some subjective elements to these criteria, they are predominantly based on knowable facts (age, dependents, occupation, etc.) rather
than subjective assessments such as quality of life or contribution to society. Criteria can be formulated into YES/NO/UNCERTAIN questions for clarity.

2. **Common values:** these criteria reflect widely held values (such as those in the OHPIP and WHO documents) and moral intuitions.

3. **Utilitarian:** these criteria support and extend the utilitarian premise of triage, considering benefits/harms beyond the absolute number of lives saved, with a goal of maximizing total benefits to society and minimizing total harms (such as the orphaning of children).

### 5.0 Procedure for Critical Care Triage

#### 5.1 The Triage Team

Triage is challenging both clinically and psychologically; those responsible for assessing patients and making triage decisions must have proper support in allocating scarce, life-saving resources. In addition, the hospital has an ethical obligation to ensure that resource allocation decisions consistently reflect values and principles, and are not made idiosyncratically. A Triage Team will be appointed at each ICU by the VP Medical to support evidence-based and ethical critical care resource allocation decisions. Triage Team members are not appointed indefinitely, but will require relief. Ideally, the Team would be available around the clock. (See Devereaux et al. 2007)

The Triage Team shall be comprised of 3 people, including:

- Senior ICU physician
- Critical Care health professional (non-physician, such as RN or RT)
- Chair of Triage Team (non-ICU professional)

Triage Team members would ideally not be responsible for the clinical care of current ICU patients, but should be relieved of their clinical duties to participate on the Triage Team. This will help to avoid conflicts of interest (i.e. advocacy for Team members’ own patients).

**Roles of the Chair of the Triage Team:**

- Third-party facilitation of the decision-making process.
- Support consistent, fair and principled critical care resource allocation decisions using the best available clinical facts, application of the OHPIP clinical triage tools and ethical framework, and the Supplementary Criteria outlined above.
- Document the decisions of the Triage Team (including reasons, referencing the ethical framework/criteria above) in the appropriate locations and manner.
- Support the communication of decisions to ward/unit/ED triage officers; manage requests for appeals.
- Report on the activities of the Triage Team to the Central Triage Committee and VP Medical at appropriate intervals (e.g. daily).
- Report significant challenges/issues and requests for appeals to the VP Medical.
- Participate in periodic quality review processes.

**Triage Team Chair Qualifications:**

- familiarity with critical care environment
- strong facilitation/mediation skills
- ethical reasoning skills
- fair-minded
- resilient and courageous
- able to facilitate reasoned decisions under pressure and apply this protocol consistently
5.2 Triage Team Decision-Making

Depending on the circumstance, the Triage Team may meet at regular intervals throughout the day (such as after morning and evening rounds) and/or as needed to review current critical care utilization and make decisions regarding new admissions. Information from the collected Triage Worksheets may be collated and redacted for ease of use (see Appendix H).

The Triage Team will consider the following questions for each patient eligible for critical care using the Critical Care Pandemic Triage Worksheets as guides (Appendices C, D or E):

- What is the clinical status of the patient, SOFA score and triage priority (RED/YELLOW)?
- Does the patient meet any of the allowable supplementary criteria:
  
  1. **Multiplier effect:** Is the patient an essential service worker? Does the patient currently practise a profession that could help care for future patients? (including: health care professional [HCP], public health worker, first responder [ambulance, fire, EMTs, police]) **YES/NO/UNCERTAIN**
     - Occupation: ____________________________

  2. **HCP/Essential Service Workplace exposure:** Is it likely the patient became exposed to influenza during the course of their professional duties as an essential services worker (i.e. is there evidence they have worked in a high-risk environment)? **YES/NO/UNCERTAIN**

  3. **Caregiver:** Is the patient a caregiver for the following dependents (residing with the patient):
     - Is the patient pregnant? **YES/NO/UNCERTAIN**
       - How many weeks pregnant? _____
     - Children under 18? **YES/NO/UNCERTAIN**
       - How many? _____
     - Disabled adult or elder dependents? **YES/NO/UNCERTAIN**

  4. **Prognosis:** Is there any evidence that this patient is significantly more likely to survive an ICU admission and return to a reasonable functional status than the other eligible patients who currently require critical care? **YES/NO/UNCERTAIN**

  5. **Fair innings or life-cycle principle:** Is the patient in an earlier stage of the life-cycle relative to other patients requiring critical care? **YES/NO/UNCERTAIN**

Deliberation Process:
Ideally, the Triage Team would have time and opportunity to rigorously deliberate over the selection of eligible patients for a trial of intensive care. However, if time does not allow for this, the Triage Team may use the criteria more crudely, adding up the number of “YES” answers (based on current available information) for each patient and offering the resource to the person with the largest number.

The Triage Team shall make decisions by consensus. If consensus cannot be reached in a reasonable amount of time, the decision shall be made by a transparent and unbiased process of random selection, to ensure fairness (Tabery & Mackett 2008).

Any resource allocation decision that reflects a substantive change in policy/process or deviation from the criteria above must automatically be referred to the VP Medical.

**Conflicts of Interest:**

The Triage Team will attempt to make their decisions based on the criteria above, blinded to the identities of eligible patients (for this reason, patient names are not included on any worksheets). However, Triage Team members must recuse themselves from any cases that involve known:

- Relatives (by birth or marriage) or friends
- Close professional colleagues
- Any situation in which they feel they have a bias that predetermines their analysis (i.e. they cannot judge on the basis of the above criteria)

**Communication of Decisions:**

The Triage Team Chair will assist ICU staff in communicating the resource allocation decisions and reasons for their decisions to the referring units/wards in a timely manner. *When patients are admitted to ICU, staff will emphasize that this constitutes a trial of critical care only, and that their eligibility for continued critical care will be reassessed regularly.* Patients who are discharged from the ICU will be placed in an appropriate care setting (i.e. flu ward) to ensure palliative/medical treatment and mitigate infection risk to others.

**5.3 Quality Review**

The VP Medical (or his/her delegate) is responsible for gathering the most recent epidemiological/clinical information (i.e. from Ministry of Health or Public Health Officer) to share with the Triage Teams.

The Chairs of the Triage Teams, along with a senior critical care physician (preferably one from each ICU), will meet daily (or as appropriate). This group comprises the Central Triage Committee and is chaired by the VP Medical. Other ad hoc members may be appointed by the Chair.

The purpose of this reporting process is to review:

- current demands for critical care amongst all sites
- recent and emerging epidemiological/clinical information about the outbreak
- consistency of the decisions and application of the OHPIP and Supplementary Criteria (within and across sites)
- documentation and communication processes
• outcomes of the process
• challenges of the process
• recommended changes to the process to adapt to changing realities

Changes to this protocol may be warranted on the basis of this quality review process; any changes must be authorized by the VP Medical. The VP Medical is responsible for reporting on the activities of the Triage Teams to the Command Centre.

6.0 Documentation
The Triage Team Chair is responsible for documenting the deliberations and decisions of the Triage Team. A log of Triage Team meetings shall be kept, recording:
• Date and location of meeting
• Triage Team members present
• Patients reviewed (identified by Meditech # or OHIP #)
• Which patients were approved for critical care, which were not
• Reasons for approving eligible patients (using criteria above)

The log will be kept in a designated Shared Drive with access to Triage Team members and the VP Medical only.

7.0 Definitions
Central Triage Committee - Comprised of all Triage Team Chairs and one senior physician from each site, chaired by the VP Medical. The Central Triage Committee is responsible for quality review of triage processes.

Emergency/Essential Service Workers - Workers whose labor is necessary for the public's health and safety, including: first-responders (ambulance, fire, EMTs), security (police, military), emergency products/services (vaccination producers), public health officials/workers. (Gostin, 2006)

SOFA - Sequential Organ Failure Assessment, provincial standard critical care triage tool. See OHPIP Acute Care Services Plan (2008).

Triage Officer - A HCP with clinical skills and judgment to complete OHPIP Criteria Worksheet and the Critical Care Pandemic Triage Worksheet (SOFA score).

Triage Team - Team of 3 persons located in the ICU who are authorized by the VP Medical to make triage decisions during a surge when there are more eligible patients than available critical care resources.

8.0 Cross References
Duty to Care Policy (TBD)
IC - Airborne Precautions - Procedure
IC - Droplet Precautions - Procedure
IC - Droplet/Contact Precautions Protocol
IC - Febrile Respiratory Illness (FRI) Surveillance Protocol
IC - Hand Hygiene Protocol
IC - High Risk Respiratory Precautions For Performing Aerosol Producing Procedures
IC - Influenza Management Policy
IC - Information on Infections Link to Patient Education Website
IC - Negative Pressure Rooms and High Efficiency Particulate Air Filters - Care Storage Maintenance
IC - Outbreak Investigation and Management Policy
IC - Respiratory Hygiene, Cough Etiquette in Healthcare Settings

9.0 External References

Emergency Management and Civil Protection Act, R.S.O. 1990, c. E.9


10.0 **Developed By**
Clinical & Organizational Ethicist
Pandemic Influenza Planning Committee

11.0 **In Consultation With**
Human Rights Specialist
Regional Bioethics Group
Chief of Critical Care
Legal Counsel
Clinical Executive
Board of Governors

12.0 **Approved By**
Clinical Ethics Committee
Professional Affairs Committee
Medical Advisory Committee

13.0 **Appendices**
Appendix A: The Ethics of Triage
Appendix B: OHPIP Criteria Worksheet
Appendix C: Triage Worksheet – Initial Assessment
Appendix D: Triage Worksheet – 48 hour Reassessment
Appendix E: Triage Worksheet – 120 hour Reassessment
Appendix F: Triage Process Overview
Appendix G: Triage Team Overview
Appendix H: Pandemic Triage Team Patient Data Worksheet

**Keyword Assignment**
Pandemic, triage, critical care, flu, sofa, SOFA

**END OF DOCUMENT**
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Appendix A: The Ethics of Triage

Decisions in a pandemic context are more likely to be ethically rigorous and publicly acceptable if the decision-making processes demonstrate the procedural and substantive principles outlined in the OHPIP, excerpted below.

These procedural principles are:

- **Open and transparent** – The process by which decisions are made must be open to scrutiny and the basis for decisions should be explained.
- **Reasonable** – Decisions should be based on reasons (e.g. evidence, principles, values) and be made by people who are credible and accountable.
- **Inclusive** – Decisions should be made explicitly with stakeholder views in mind and stakeholders should have opportunities to be engaged in the decision-making process.
- **Responsive** – Decisions should be revisited and revised as new information emerges, and stakeholders should have opportunities to voice any concerns they have about decisions (i.e. dispute and complaint mechanisms).
- **Accountable** – There should be mechanisms to ensure that ethical decision-making is sustained throughout the response.

Ontario’s pandemic plan also utilizes the following substantive ethical values. These ethical values may be in conflict with one another, and require analysis to determine how to weigh them in specific circumstances.

**Individual Liberty.** Individual liberty (i.e. respect for autonomy) is a value enshrined in our laws and in health care practice. During a pandemic, it may be necessary to restrict individual liberty in order to protect the public from serious harm. Individual liberty can be preserved to the extent that the imposed limits and the reasons for them are transparent. In the context of critical care triage, this value is relevant in that patient/SDM consent for withdrawal or withholding of ICU treatment may not be required, but the reasons for the denial of treatment must be made transparent.

**Protection of the Public from Harm.** Public health authorities have an obligation to protect the public from serious harm, including minimizing serious illness, death and social disruption.

**Equity.** All patients have an equal claim to receive the health care they need. This will not be possible in a pandemic. In these circumstances, decision-makers will ensure the fair distribution of benefits and burdens by:
- striving to preserve as much equity as possible between the needs of influenza patients and patients who need urgent treatment for other diseases or injuries.
- establishing fair decision-making processes/criteria.

**Duty to Provide Care.** Health care workers have an ethical duty to provide care and respond to suffering.
Appendix A: The Ethics of Triage (cont’d)

**Reciprocity.** Society has an ethical responsibility to support those who face a disproportionate burden in protecting the public good. During a pandemic, the greatest burden will fall on public health practitioners, essential service workers, health care workers, and patients’ families. Health care workers will be asked to take on expanded duties and may suffer physical and emotional stress, and be isolated from peers and family. Health care organizations have an obligation to provide appropriate support to help their HCWs cope with the extraordinary stress of a pandemic.

**Trust.** Trust is an essential part of the relationship between government and citizens, between health care workers and patients/families, between organizations and their staff, and among organizations within a health system. During a pandemic, some people may perceive measures to protect the public from harm (such as limiting access to certain health services) as a betrayal of trust. In order to maintain trust during a pandemic, decision-makers must:
- take steps to build trust with stakeholders before the pandemic occurs
- ensure decision-making processes are ethical, consistent and transparent

**Stewardship.** In our society, both institutions and individuals will be entrusted with governance over scarce resources, such as vaccines, antivirals, ventilators, hospital beds and even health care workers. Those entrusted with governance should be guided by the notion of stewardship, which includes protecting and developing one’s resources, and being accountable for public well-being. To ensure good stewardship of scarce resources, decision-makers will consider both the benefit to the public good and equity (i.e. fair distribution of both benefits and burdens).

**Solidarity.** This value encourages decision-makers to move beyond medicine’s traditional focus on the rights or interests of individuals, to put aside notions of self-interest or territoriality. It considers the health of the general public and health care workers as resources worth protecting through coordinated efforts between stakeholders.

**Principles of Triage:**

- In the interpandemic setting, critical care triage generally gives priority to those patients who are sickest. Even very ill or injured patients, with minimal chance of meaningful recovery, are frequently admitted to the ICU for a trial of treatment. Traditional medical ethics has tended to focus on the physician’s duty to care/advocate for the sick individual; care plans are negotiated with the patient/SDM/family based on the patient’s wishes, values and best interests. Consent from the patient/SDM is almost always sought before a life-saving treatment is withheld or withdrawn. In the event of a minor or moderate surge in the need for critical care resources, patients are often transferred to other units within the hospital or to other hospitals in the province, to ensure they get the care they need.
- The goal of pandemic triage is to “do the greatest good, for the greatest number”; this reflects a utilitarian model of distributive justice. However, utilitarianism must also be balanced against a more egalitarian model of justice, to ensure that vulnerable groups in our community are protected (see Zimmerman, 2007). Thus Health Care Providers will be required to balance the needs of individual patients with the needs of other patients and society.
Appendix A: The Ethics of Triage (cont’d)

- The OHPIP pandemic triage process turns conventional critical care triage on its head in the following ways (see Hick, 2007):
  - priority is given to patients who are most likely to benefit from critical care and recover to discharge within a few days; these will not be the sickest patients but patients who are relatively healthy compared to others
  - critical care physicians’ primary duty will be to allocate resources to ensure the most lives are saved, rather than advocating for individual patients
  - demand for care may so exceed supply that decisions cannot be based on clinical criteria/judgment alone
  - the triage process is founded on the presumption that the decisions of triage officers hold sway, and that consent of patients/SDMs is not required to withhold or withdraw treatments; this requires rigorous and transparent criteria to avoid bias and ensure consistency and fairness
  - in a worst-case scenario, all hospitals in the province could be overwhelmed with patients, with nowhere to transfer critically ill patients
- A triage protocol for critical care is not aimed at deciding who will or will not receive care. All patients will be cared for. Every human life is valued and every human being deserves respect, caring and compassion. However, this does not mean that all patients will or should receive critical care. Those who do not receive critical care will not be abandoned; they will continue to receive alternative levels of care.
- Triage decisions in a pandemic are more likely to be ethically rigorous and publicly acceptable if the decision-making processes demonstrate the procedural and substantive principles outlined in the OHPIP.

(See Ontario Health Plan for an Influenza Pandemic August 2008; Chapter #2: Roles, Responsibilities and Frameworks for Decision Making)
## Appendix B: OHPIP Criteria Worksheet

Patient’s Meditech #: _______________ OR Patient’s OHIP #: _______________

**Age:** _____  **Sex:** _____

**Inclusion Criteria** identifies patients (over age 18) who may benefit from admission to critical care. The inclusion criteria primarily focus on respiratory failure because the ability to provide ventilatory support is what will differentiate the ICU from other acute care areas.

<table>
<thead>
<tr>
<th>Inclusion Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>The patient must have 1 of criteria <strong>A or B</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>A. Requirement for invasive support:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Refractory Hypoxemia (SpO2 &lt; 90% on non-rebreather mask/FiO2 &gt; 0.85)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Respiratory Acidosis with pH &lt; 7.2</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Clinical evidence of impending respiratory failure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Inability to protect or maintain airway</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>B. Hypotension:</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Hypotension (SBP &lt; 90 or relative hypotension) with clinical evidence of shock (altered level of consciousness, decreased urine output, or other end organ failure) refractory to volume resuscitation requiring vasopressor/inotrope support that cannot be managed on the ward</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If patient has A or B above, complete section below.

<table>
<thead>
<tr>
<th>Exclusion Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Severe trauma (ISS score &gt;16)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Severe burns</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• A patient with any two of the following:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Age &gt; 60 years old.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. TBSA &gt; 40%.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. Inhalation injury.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Cardiac arrest:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Unwitnessed cardiac arrest.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Witness cardiac arrest not responsive to electrical therapy (defibrillation, cardioversion, or pacing).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Recurrent cardiac arrest.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Severe cognitive impairment</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Resides in a retirement or nursing home with this primary diagnosis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Requires significant assistance with ADLs.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Advanced untreatable neuromuscular disease</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• example: ALS, MS, Muscular dystrophy, etc.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Incurable metastatic malignancy</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7. Advanced &amp; irreversible immunocompromise</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• example: HIV with CD4 &lt;200.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Appendix B: **OHPIP Criteria Worksheet** (Page 2)

<table>
<thead>
<tr>
<th>Exclusion Criteria</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>8. Severe and irreversible neurologic event/condition</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9. End stage organ failure meeting following criteria:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Cardiac:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. NYHA class III or IV heart failure.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. Hx of recurrent CHF.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Lung:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. COPD with FEV1 &lt;25% predicted, baseline PaO2 &lt;55 mmHg, or secondary pulmonary hypertension.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. CF with postbrochodilator FEV1 &lt;30% or baseline PaO2 &lt;55 mmHg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. Pulmonary fibrosis with VC or TLC &lt;60% predicted, baseline PaO2 &lt;55, or secondary pulmonary hypertension.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv. Primary pulmonary hypertension with NYHA class III – IV heart failure, or right atrial pressure &gt;10 mmHg, or mean pulmonary arterial pressure of &gt;50 mmHg.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>v. On home oxygen.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>vi. On transplant list.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Liver:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Child Pugh Score ≥ 7.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ii. On transplant list.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iii. History of refractory ascites.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>iv. History of hepatic encephalopathy.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Kidney:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>i. Receiving dialysis.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10. Age &gt; 85 years old.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11. Requirement for transfusion of &gt; 6 units PRBC within 24 hour period.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12. Elective palliative surgery</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13. DNR or “Allow Natural Death” in place.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15. History of CVA with major disability</td>
<td></td>
<td></td>
</tr>
<tr>
<td>• Example: hemiplegia</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

If patient has any above exclusion criteria, patient will receive medical or palliative care as appropriate.

**If patient has no exclusion criteria but meets inclusion criteria, proceed to further assessment using the **Critical Care Pandemic Triage Worksheet: Initial Assessment**.  

**Health care practitioner information:**

Name: _____________________________________________________________________

Prof. designation: ____________________________________________________________

Contact info: ________________________________________________________________

Signature: __________________________________________________________________

Date/time worksheet was completed: ____________________________________________
Appendix C: Critical Care Pandemic Triage Worksheet: Initial Assessment

Patient’s Meditech #: ____________ OR Patients OHIP #: ____________
Patient location: ____________ Age: _____ Sex: _____
Reason for hospital admission: ____________________________________

NOTE: Complete OHIP Criteria Worksheet first.

SOFa Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Raw Value</th>
<th>SOFA Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>PaO2/FIO2 mmHg</td>
<td>&gt;400</td>
<td>≤ 400</td>
<td>≤ 300</td>
<td>≤ 200</td>
<td>≤ 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Platelets, x 10^9/L (x 10^3/L)</td>
<td>&gt; 150</td>
<td>≤ 150</td>
<td>≤ 100</td>
<td>≤ 50</td>
<td>≤ 20</td>
<td>(≤ 100)</td>
<td>(≤ 50)</td>
</tr>
<tr>
<td>Bilirubin, mg/dL (µmol/L)</td>
<td>&lt; 1.2</td>
<td>1.2-1.9</td>
<td>2.0-5.9</td>
<td>6.0-11.9</td>
<td>&gt; 12</td>
<td>(&gt; 203)</td>
<td></td>
</tr>
<tr>
<td>Hypotension</td>
<td>None</td>
<td>MABP &lt; 70 mmHg</td>
<td>Dop ≤ 5</td>
<td>Epi ≤ 0.1</td>
<td>Dop &gt; 0.1</td>
<td>Dop ≤ 0.1</td>
<td>Epi ≤ 0.1</td>
</tr>
<tr>
<td>Glasgow Coma Score</td>
<td>15</td>
<td>13–14</td>
<td>10–12</td>
<td>6–9</td>
<td>&lt; 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creatinine, mg/dL (µmol/L)</td>
<td>&lt; 1.2</td>
<td>1.2-1.9</td>
<td>2.0-3.4</td>
<td>3.5-4.9</td>
<td>&gt; 5</td>
<td>(&gt; 434)</td>
<td></td>
</tr>
</tbody>
</table>

Dopamine [Dop]. epinephrine [Epi]. norepinephrine [Norepi] doses in µg/kg/min

Critical Care Triage Tool
(Initial Assessment)

<table>
<thead>
<tr>
<th>Colour Code</th>
<th>Criteria</th>
<th>Priority/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>Exclusion Criteria* or SOFA &gt; 11*</td>
<td>Medical Mgmt +/- Palliate &amp; d/c from CC</td>
</tr>
<tr>
<td>Red</td>
<td>SOFA ≤ 7 or Single Organ Failure</td>
<td>Highest</td>
</tr>
<tr>
<td>Yellow</td>
<td>SOFA 8 – 11</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Green</td>
<td>No significant organ failure</td>
<td>Defer or d/c, reassess as needed</td>
</tr>
</tbody>
</table>

* If exclusion criteria or SOFA > 11 occurs at anytime from initial assessment to 48 hours change triage code to Blue and palliate.
CC = critical care
d/c = discharge

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Appendix C: **Critical Care Pandemic Triage Worksheet: Initial Assessment (Page 2)**

**Supplementary Criteria:**

1. **Multiplier effect:** Is the patient an essential service worker? Does the patient currently practise a profession that could help care for future patients? (including: health care professional [HCP], public health worker, first responder [ambulance, fire, EMTs, police])
   - YES/NO/UNCERTAIN
   - Occupation: ______________________________________

2. **HCP/Essential Service Workplace exposure:** Is it likely the patient became exposed to influenza during the course of their professional duties as an essential services worker (i.e. is there evidence they have worked in a high-risk environment)?
   - YES/NO/UNCERTAIN

3. **Caregiver:** Is the patient a caregiver for the following dependents (residing with the patient):
   - Is the patient pregnant?  YES/NO/UNCERTAIN
     - How many weeks pregnant? _____
   - Children under 18?  YES/NO/UNCERTAIN
     - How many? _____
   - Disabled adult or elder dependents?  YES/NO/UNCERTAIN

---

**Triage Officer**

Name: __________________________________________

Prof. Designation: __________________________________________

Contact Info: __________________________________________

Date/Time Triage was completed: __________________________________

**MRP or Senior Physician**

Name: __________________________________________

Contact Info: __________________________________________

---

**FAX to nearest ICU**

For ICU Triage Team use ONLY:

4. **Prognosis:** Is there any evidence that this patient is significantly more likely to survive an ICU admission and return to a reasonable functional status than the other eligible patients who currently require critical care?  YES/NO/UNCERTAIN

5. **Fair innings or life-cycle principle:** Is the patient in an earlier stage of the life-cycle relative to other patients requiring critical care?  YES/NO/UNCERTAIN

- TOTAL NUMBER OF ‘YES’ ANSWERS: _________
- Patient admitted for trial of intensive care: YES/NO
- Triage Team decision reasons:
  - __________________________________________
  - __________________________________________
  - __________________________________________

Triage Team members: __________________________________________

Triage Chair Signature: ________________________ Date/Time: ___________
Appendix D: **Critical Care Pandemic Triage Worksheet: 48 hour Reassessment**

Patient’s Meditech #: __________
Patient location: _______________ Age: _____ Sex: _____
Reason for hospital admission: ________________________________

**NOTE:** Complete OHPIP Criteria Worksheet first. Refer to Initial Assessment worksheet for Supplementary Criteria.

**Patient initial assessment SOFA score = _____**

**SOFA Scale**

<table>
<thead>
<tr>
<th>Variable</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Raw Value</th>
<th>SOFA Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>PaO2/FiO2 mmHg</td>
<td>&gt;400</td>
<td>300</td>
<td>200</td>
<td>100</td>
<td>100</td>
<td>PaO2/FiO2 mmHg</td>
<td>SOFA Score</td>
</tr>
<tr>
<td>Platelets, x 10^9/µL (x 150, &gt;150)</td>
<td>150</td>
<td>150</td>
<td>100</td>
<td>50</td>
<td>20</td>
<td>Platelets, x 10^9/µL (x 150, &gt;150)</td>
<td>SOFA Score</td>
</tr>
<tr>
<td>Bilirubin, mg/dL (µmol/L)</td>
<td>≤1.2 (&lt;20)</td>
<td>1.2-1.9 (20-32)</td>
<td>2.0-5.9 (32-100)</td>
<td>6.0-11.9 (101-203)</td>
<td>&gt;12</td>
<td>Bilirubin, mg/dL (µmol/L)</td>
<td>SOFA Score</td>
</tr>
<tr>
<td>Hypotension</td>
<td>None</td>
<td>MAP &lt; 70 mmHg</td>
<td>Dop &lt; 5</td>
<td>Dop &gt; 5, Epi &gt; 0.1, Noepi ≤ 0.1</td>
<td>Dop &gt; 15, Epi &gt; 0.1, Noepi &gt; 0.1</td>
<td>Hypotension</td>
<td>SOFA Score</td>
</tr>
<tr>
<td>Glasgow Coma Score</td>
<td>15</td>
<td>13-14</td>
<td>10-12</td>
<td>6-9</td>
<td>3</td>
<td>Glasgow Coma Score</td>
<td>SOFA Score</td>
</tr>
<tr>
<td>Creatinine, mg/dL (µmol/L)</td>
<td>&lt;1.2 (&lt;106)</td>
<td>1.2-1.9 (106-168)</td>
<td>2.0-3.4 (169-200)</td>
<td>3.5-4.9 (201-243)</td>
<td>&gt;5</td>
<td>Creatinine, mg/dL (µmol/L)</td>
<td>SOFA Score</td>
</tr>
</tbody>
</table>

| SOFA TOTAL: |

**Critical Care Triage Tool**
(48 Hour Assessment)

<table>
<thead>
<tr>
<th>Colour Code</th>
<th>Criteria</th>
<th>Priority/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td>Exclusion Criteria or SOFA &gt; 11 or SOFA 8-11 no A</td>
<td>Palliate &amp; d/c from CC</td>
</tr>
<tr>
<td>Red</td>
<td>SOFA score &lt; 11 and decreasing</td>
<td>Highest</td>
</tr>
<tr>
<td>Yellow</td>
<td>SOFA &lt; 8 no A</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Green</td>
<td>No longer ventilator dependent</td>
<td>d/c from CC</td>
</tr>
</tbody>
</table>

Δ = change  
CC = critical care  
d/c = discharge

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**Patient’s SOFA score: ____ Circle: Decreasing Increasing No Change**
Circle patient’s triage colour code: GREEN YELLOW RED BLUE
Appendix E: **Critical Care Pandemic Triage Worksheet – 120 hour Reassessment**

Patient’s Meditech #: _____________
Patient location: ________________ Age: _____ Sex: ______
Reason for hospital admission: ___________________________________________

**NOTE:** Complete OHPIP Criteria Worksheet first. Refer to Initial Assessment worksheet for Supplementary Criteria.

**Patient 48 hour assessment SOFA score = _____**

### SOFA Scale

<table>
<thead>
<tr>
<th>Variable</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>Raw Value</th>
<th>SOFA Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>PaO2/FIO2 mmHg</td>
<td>&gt; 400</td>
<td>≤ 200</td>
<td>≤ 300</td>
<td>≤ 200</td>
<td>≤ 100</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plateletts. x 10^9/µL</td>
<td>&gt; 150</td>
<td>≤ 150</td>
<td>≤ 100</td>
<td>≤ 50</td>
<td>≤ 20</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(x 150)</td>
<td>(&gt; 150)</td>
<td>(≤ 150)</td>
<td>(≤ 100)</td>
<td>(≤ 50)</td>
<td>(≤ 20)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bilirubin, mg/dL</td>
<td>&lt; 1.2</td>
<td>1.2-1.9 (20-32)</td>
<td>2.0-3.9 (33-100)</td>
<td>6.0-11.9 (101-203)</td>
<td>&gt; 12</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(µmol/L)</td>
<td>(&lt; 20)</td>
<td>(20-32)</td>
<td>(33-100)</td>
<td>(101-203)</td>
<td>(&gt; 203)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hypotension</td>
<td>None</td>
<td>MABP &lt; 70 mmHg</td>
<td>Dop ≤ 5</td>
<td>Dop &gt; 5, Epi ≤ 0.1, Norepi ≤ 0.1</td>
<td>Dop &gt; 15, Epi &gt; 0.1, Norepi &gt; 0.1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Glasgow Coma Score</td>
<td>15</td>
<td>13 – 14</td>
<td>10 – 12</td>
<td>6 – 9</td>
<td>&lt; 6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Creatinine, mg/dL</td>
<td>&lt; 1.2</td>
<td>1.2-1.9 (105-166)</td>
<td>2.0-3.4 (169-300)</td>
<td>3.5-4.9 (501-433)</td>
<td>&gt;5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>(µmol/L)</td>
<td>(&lt; 106)</td>
<td>(105-166)</td>
<td>(169-300)</td>
<td>(501-433)</td>
<td>(&gt; 424)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Dopamine [Dop], epinephrine [Epi], norepinephrine [Norepi] doses in µg/kg/min
5t units in brackets

**SOFa TOTAL:**

---

**Critical Care Triage Tool (120 Hour Assessment)**

<table>
<thead>
<tr>
<th>Colour Code</th>
<th>Criteria</th>
<th>Priority/Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Blue</td>
<td></td>
<td>Palliate &amp; d/c from CC</td>
</tr>
<tr>
<td>Red</td>
<td>SOFA score &lt; 11 and decreasing progressively</td>
<td>Highest</td>
</tr>
<tr>
<td>Yellow</td>
<td>SOFA &lt; 8 minimal decrease (&lt; 3 point decrease in past 72h)</td>
<td>Intermediate</td>
</tr>
<tr>
<td>Green</td>
<td>No longer ventilator dependent</td>
<td>d/c from CC</td>
</tr>
</tbody>
</table>

* If exclusion criteria or SOFA > 11 occurs at anytime from 48-120 hours change triage code to Blue and palliate.

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**Patient’s SOFA score: _____ Circle: Decreasing Increasing No Change**

Circle patient’s triage colour code: **GREEN** **YELLOW** **RED** **BLUE**

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Appendix F: **Triage Process Overview**

**Step 1: Build surge capacity**
- cancel non-urgent care
- open new critical care beds
- redeploy staff

**Step 2: Adjust care provided**
- focus on key critical care interventions (i.e. mass critical care)

**Step 3: Clinical critical care triage**
- use of OHPIT triage process authorized by VP Medicine
- complete Worksheets by triage officers on wards/units/ED
- discharge ineligible ICU patients

**Supplementary triage criteria**
- if triage decisions cannot be reached after using clinical triage tools because demands by eligible patients outstrip supply, VP Medical can authorize Supplementary Criteria for use by the Triage Team

1. **Inclusion Criteria**
   - identifies patients who may benefit from admission to critical care
   - criteria primarily focus on respiratory

2. **Exclusion Criteria**
   - patient excluded from admission or transferred to critical care
   - patients not eligible for critical care receive palliative care

3. **Prioritization of Patients**
   - potential admission to ICU and ventilation using blue-red-yellow-green color tool

4. **Minimum Qualifications for Survival (MQS):**
   - attempts to identify patients who are not improving:
     - patients reassessed at 48 and 120 hours ...
Appendix G: **Triage Team Overview**

### VP Medical
- authorizes clinical triage protocol and usage of supplementary criteria
- reports activities of Triage Teams to Command Centre
- gathers most recent epidemiological information to share with Triage Teams

### Central Triage Committee
- Triage Team Chairs and senior ICU physicians comprise the Central Triage Committee, chaired by VP Medicine
- meets daily (or as needed) to ensure consistency of practice across sites
- review demands, outcomes, issues

### Triage Team
- make critical care resource allocation decisions by consensus in cases when:
  - not enough beds
  - multiple new admissions
  - no time for SOFA scale
  - use lottery process if consensus not reached in timely manner
  - supports transparent, consistent, evidence-based and principled resource allocation decisions during a surge that cannot be managed using clinical criteria alone
  - one Triage Team for each ICU
  - Team appointed by VP Medical, relieved of clinical duties
  - Team comprised of 3 people, including:
    - Chair of Triage Team (non-ICU professional, appointed by VP)
    - Senior ICU physician

### Team Chair Duties:
- Offer third-party facilitation of the decision-making process
- Document decisions of Triage Team (i.e. reasons, ethical frameworks)
- Communicate resource allocation decisions and reasons for the decisions to triage officer/ICU staff
- Participate in quality review of decision-making processes (Central Triage Committee)

### Triage Team Chair Qualifications:
- strong facilitation/mediation skills
- ethical reasoning skills
- fair-minded
- resilient and courageous
- able to make reasoned decisions under pressure
- able to appropriately document decisions and report decisions up the chain of command
- *not* a member of the critical care team (3rd party)

### Triage Team Duties:
- Make decisions in cases of similar likelihoods of survival (considering supplementary criteria)
- Initiate lottery process if decision consensus cannot be reached
- Interface with clinical teams
- Interface with palliative and supportive care services

### Central Triage Committee
- Chair and senior ICU physicians
- Meets daily to ensure consistency of practice across sites
- Reviews demands, outcomes, issues

### Team Chair
- Offer third-party facilitation of the decision-making process
- Document decisions of Triage Team (i.e. reasons, ethical frameworks)
- Communicate resource allocation decisions and reasons for the decisions to triage officer/ICU staff
- Participate in quality review of decision-making processes (Central Triage Committee)

### Triage Team Chair Qualifications:
- Strong facilitation/mediation skills
- Ethical reasoning skills
- Fair-minded
- Resilient and courageous
- Able to make reasoned decisions under pressure
- Able to appropriately document decisions and report decisions up the chain of command
- Not a member of the critical care team (3rd party)
### Appendix H: Pandemic Triage Team Patient Data Worksheet

**Information collated by (name and position):** ________________________________

**Date and Time of Triage Meeting:** ________________________________

*Remember to document Triage Team decisions on individual patient worksheets. Refer to triage worksheets for additional details.*

<table>
<thead>
<tr>
<th>Meditech# OR OHIP# (last 5 digits)</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pt Ref #</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| SOFA Score [0 to 4]                  |   |   |   |   |   |   |   |   |   |    |
| PaO2                                |   |   |   |   |   |   |   |   |   |    |
| Platelets                           |   |   |   |   |   |   |   |   |   |    |
| Bilirubin                           |   |   |   |   |   |   |   |   |   |    |
| Hypotension                         |   |   |   |   |   |   |   |   |   |    |
| Glasgow Coma Scale [GCS]            |   |   |   |   |   |   |   |   |   |    |
| Creatinine                          |   |   |   |   |   |   |   |   |   |    |

**TOTAL SOFA SCORE**

**RED OR YELLOW**

**AGE**

*Supplementary Criteria: (y/n/u)*

1. Multiplier Effect
2. HCP/Essential Service Workplace exposure
3. Caregiver
   • Pregnant
4. Relative Prognosis
5. Fair Innings/Life Cycle Principle

**YES TOTAL**

**ADMISSION TO ICU: Y/N**