WESTERN CAPE CRITICAL CARE TRIAGE TOOL

Referral of any patient to ICU (COVID-19 & non-COVID-19)

Does the patient require critical care and ventilatory support?

Has the patient expressed wishes NOT to be admitted to ICU?

Is the patient likely to benefit from being admitted to ICU?

Discuss with referral center at earliest opportunity

RE-REFER

DETERIORATION

Management
Non-COVID: High Care/ Ward
COVID: Isolation ward

Management Plan (excluding ICU)
e.g. Isolation COVID-19 ward.
Advise on O2 therapy, IPC
e.g. non-COVID-19 patient in HCU/ward
Early end-of-life discussion with next-of-kin
Refer to Palliative Care Team if available
Refer to Association of Palliative Care Practitioners guidelines

No response or worsening

Improvement in clinical status and/or resource availability

Reassess daily for changes in resource availability or changes in clinical condition

Transfer to Appropriate Site
• COVID-19 patients in isolation ward
• Non-COVID-19 patients in high care/other site

Management Plan excl. ICU
• Medical care incl. intensive symptom management
• Advise on O2/Rx, IPC
• Psychosocial support

Transfer to Palliative Care

End-of-life care
Palliative Care Team to provide additional support/advice

Admit referrals sequentially from red to orange to yellow to green priority categories. If there are ties within a specific category, tiebreakers will be used to prioritize patients:

1) Number of co-morbidities: Preference to the patient with the least number of co-morbidities.
2) Patient age groups (years) in following order: 12-40; 41-60; 61-75; >75. Preference to the patient who have completed the least number of life-cycles.
3) Individuals whose work supports provision of healthcare and essential services to others.

ICU ADMISSION TRIAGE

Calculate Priority Score = Point in A + B + C + D
Max = 15 points. Minimum = 1 point

Co-Morbidity: Only 1x score given for the worst co-morbidity

<table>
<thead>
<tr>
<th>ICU Admissions Triage</th>
<th>Calculate Priority Score</th>
<th>A. Acute Illness Score</th>
<th>B. Baseline Functionality Score</th>
<th>C. Co-Morbidity Score</th>
<th>D. Co-Morbidity Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Worst priority for ventilatory support</td>
<td>RED 1-3</td>
<td>1</td>
<td>Yes</td>
<td>No score</td>
<td>Co-morbidities</td>
</tr>
<tr>
<td>Intermediate priority for ventilatory support</td>
<td>ORANGE 4-6</td>
<td>2</td>
<td>Yes</td>
<td>No score</td>
<td>ECOG 1</td>
</tr>
<tr>
<td>Lowest priority for ventilatory support</td>
<td>GREEN 10-15</td>
<td>3</td>
<td>Yes</td>
<td>Clinical Frailty Scale = 4 or ECOG 2</td>
<td>Chronic lung disease mMRC 2, Chronic renal failure (GFR 31-50 ml/min), Chronic cardiac failure (NYHA 2), Patient on chronic immunosuppressive drugs, Macro-vascular disease with symptoms: IHD (Angina, PVD, TIA), Previous cardiac surgery requiring regular follow up, Malignancy with ≥10 year expected survival, Burns (ABSI 6-7)</td>
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<td>Lowest priority for ventilatory support</td>
<td>GREEN 10-15</td>
<td>4</td>
<td>Yes</td>
<td>Clinical Frailty Scale ≥5 (Exclusion ≥6) or ECOG 3</td>
<td>Severe life-limiting conditions (death likely within 1 year) Chronic lung disease mMRC 3, Severe PVD (including non-traumatic amputation), myocardial infarction, stroke, &gt;75 years with hip fracture, HIV: Detectable viral load, CD4 ≤ 200, Malignancies with ≤5 year expected survival, Chronic end-stage renal disease (GFR 16 - 30 ml/min), Liver cirrhosis with history of decompensation, Burns (ABSI 8-9)</td>
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Management Plan
• End-of-life care
• Palliative Care Team to provide additional support/advice

Patients triaged to not receive ICU bed/ventilation

SOFA < 6

SOFA 6

SOFA 9

SOFA 9-11

SOFA 12

SOFA ≥12

Acute illness

• Is the patient likely to benefit from being admitted to ICU?

• Review exclusion criteria

Non-COVID

Morbidity: Only 1x score given for the worst co-morbidities

Mortality: Only 1x score given for the worst co-morbidities (+/−) morbidities: Preference to the patient with the least number of co-morbidities. Frost cycles.
IN-ICU DECISION TOOL:
Re-assess all patients admitted to ICU at 48 hours and at 120 hours after admission.
Reclassify the PRIORITY CATEGORY using; 1) Baseline SOFA score at admission, 2) SOFA after 48 hours, 3) SOFA after 120 hours.

Principles of re-assessment:
1) Once a patient has been accepted into the ICU (guided by the PRIORITY CALCULATOR FOR ADMISSION above), progression IN-ICU is now monitored by using the initial SOFA score as baseline in relation to the follow-up SOFA scores (delta-SOFA). The SOFA score can STAY THE SAME (not ideal), IMPROVE (desired) or DETERIORATE (worst).
2) After re-assessment (at 48 hours and 120 hours after admission) the patient can only stay in the SAME PRIORITY CATEGORY if the SOFA has IMPROVED.
3) If the SOFA score stays THE SAME in a re-assessment, the patient must move to the next LOWER PRIORITY CATEGORY.
4) If the SOFA IMPROVES, the patient can either stay in the SAME PRIORITY CATEGORY, or move into a HIGHER PRIORITY CATEGORY, depending on the amount of SOFA score improvement.

SOFA < 6
Highest priority for continued ICU support

SOFA 6-8
Intermediate priority for continued ICU support

SOFA 9-11
Low priority for continued ICU support

SOFA 12 and more
Lowest priority for continued ICU support

When the patient moves into a lower priority after reassessment, the highest category patient will get preference. If there is no competition for resources, care will continue as is. It is highly recommended that a decision-making team or SPECIALIST ICU UNIT help facilitate this process.

End-of-life care
Withdrawal of ventilatory support as per guidelines
Palliative Care Team to provide additional support/advice

Exclusion criteria for admission to ICU
- Patient expressed wish not to be admitted to ICU / advance directive
- Clinical Fraility Scale ≥6 and more
- ECOG score 4 (Eastern Cooperative Oncology Group)
- < 6 months life-expectancy
- Unwitnessed cardiac arrest
- Severe and irreversible neurological injury (GCS<6: motor score <4)
- Irreversible age-specific hypotenion unresponsive to fluid resuscitation and vasopressor therapy
- Severe baseline cognitive impairment (inability to perform ADL)
- Chronic respiratory disease with poor functional capacity – mMRC 4
- Cardiovascular disease - NYHA 4 or known poor ejection fraction on maximal medical therapy
- HIV/AIDS with an AIDS defining illness
- CD4 ≤100 and/or VL ≥10 000 c/ml
- Severe burns with high predicted mortality (ABSI ≥ 12)
- Liver cirrhosis - Child Pugh ≥7 or MELD ≥20
- Advanced untreatable neuromuscular disease
- Chronic kidney failure in patient not eligible for dialysis
- End stage organ failure and not a candidate for transplantation

Sequential (Sepsis Related) Organ Failure Assessment

<table>
<thead>
<tr>
<th>Score</th>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
</tr>
</thead>
<tbody>
<tr>
<td>Respiratory</td>
<td>PaO2/FiO2, mmHg</td>
<td>Normal</td>
<td>&lt;400 (53.3)</td>
<td>&lt;300 (&lt;40)</td>
<td>&lt;200 (26.7) with respiratory support</td>
</tr>
<tr>
<td>Coagulation</td>
<td>Platelets x10/mm³</td>
<td>Normal</td>
<td>&lt;150</td>
<td>&lt;100</td>
<td>&lt;50</td>
</tr>
<tr>
<td>Liver</td>
<td>Bilirubin, μmol/l (mg/dL)</td>
<td>Normal</td>
<td>20-32 (1.2-1.9)</td>
<td>33-101 (2.0-5.9)</td>
<td>102-204 (6.0-11.9)</td>
</tr>
<tr>
<td>Cardiovascular</td>
<td>Hypotension (mg/dl/min)</td>
<td>Normal</td>
<td>MAP&lt;70 mmHg</td>
<td>Any dose Dobutamine</td>
<td>Adrenaline &lt;0.1 or Noradrenaline &lt;0.1</td>
</tr>
<tr>
<td>Central Nervous System</td>
<td>Glasgow Coma Score</td>
<td>Normal</td>
<td>13-14</td>
<td>10-12</td>
<td>6-9</td>
</tr>
<tr>
<td>Renal</td>
<td>Creatinine, μmol/l (mg/dL) or Urine output</td>
<td>Normal</td>
<td>110-170 (1.2-1.9)</td>
<td>171-299 (2.0-3.4)</td>
<td>300-440 (3.5-4.9) or &lt;500 mL/day</td>
</tr>
</tbody>
</table>
Clinical Frailty Scale

1 Very Fit – People who are robust, active, energetic and motivated. These people commonly exercise regularly. They are among the fittest for their age.
2 Well – People who have no active disease symptoms but are less fit than category 1. Often, they exercise or are very active occasionally, e.g. seasonally.
3 Managing Well – People whose medical problems are well controlled, but are not regularly active beyond routine walking.
4 Vulnerable – While not dependent on others for daily help, often symptoms limit activities. A common complaint is being “slowed up”, and/or being tired during the day.
5 Mildly Frail – These people often have more evident slowing, and need help in high order IADLs (finances, transportation, heavy household, medications). Typically, mild frailty progressively impairs shopping and walking outside alone, meal preparation and housework.
6 Moderately Frail – People need help with all outside activities and with keeping house. Inside, they often have problems with stairs and need help with bathing and might need minimal assistance (cuing, standby) with dressing.

mMRC Breathlessness Scale

This score should be used for patients diagnosed with COPD

<table>
<thead>
<tr>
<th>Grade</th>
<th>Grade Description of Breathlessness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>I only get breathless with strenuous exercise</td>
</tr>
<tr>
<td>1</td>
<td>I get short of breath when hurrying on level ground or walking up a slight hill</td>
</tr>
<tr>
<td>2</td>
<td>On level ground, I walk slower than people of the same age because of breathlessness, or have to stop for breath when walking at my own pace</td>
</tr>
<tr>
<td>3</td>
<td>I stop for breath after walking about 100 yards or after a few minutes on level ground</td>
</tr>
<tr>
<td>4</td>
<td>I am too breathless to leave the house or I am breathless when dressing</td>
</tr>
</tbody>
</table>

New York Heart Association (NYHA)

This score should be used for patients diagnosed with heart failure

<table>
<thead>
<tr>
<th>Class</th>
<th>Patient symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>No limitation of physical activity. Ordinary physical activity does not cause undue fatigue, palpitation, dyspnea (shortness of breath).</td>
</tr>
<tr>
<td>II</td>
<td>Slight limitation of physical activity. Comfortable at rest. Ordinary physical activity results in fatigue, palpitation, dyspnea (shortness of breath).</td>
</tr>
<tr>
<td>III</td>
<td>Marked limitation of physical activity. Comfortable at rest. Less than ordinary activity causes fatigue, palpitation, or dyspnea</td>
</tr>
<tr>
<td>IV</td>
<td>Unable to carry on any physical activity without discomfort. Symptoms of heart failure at rest. If any physical activity is undertaken, discomfort increases</td>
</tr>
</tbody>
</table>

ECOG Performance Status

This score should be used for patients diagnosed with a malignancy

<table>
<thead>
<tr>
<th>Class</th>
<th>Patient symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>Fully active, able to carry on all pre-disease performance without restriction</td>
</tr>
<tr>
<td>1</td>
<td>Restricted in physically strenuous activity but ambulatory and able to carry out work of a light or sedentary nature, e.g., light house work, office work</td>
</tr>
<tr>
<td>2</td>
<td>Ambulatory and capable of all selfcare but unable to carry out any work activities; up and about more than 50% of waking hours</td>
</tr>
<tr>
<td>3</td>
<td>Capable of only limited selfcare; confined to bed or chair more than 50% of waking hours</td>
</tr>
<tr>
<td>4</td>
<td>Completely disabled; cannot carry on any selfcare; totally confined to bed or chair</td>
</tr>
</tbody>
</table>

Acknowledgements:
- Critical Care Society of South Africa: Allocation of Scarce Critical Care Resources During the COVID-19 Public Health Emergency in South Africa. - April 2020
- Canadian study on Health and Ageing, Revised 2008