# Eligibility for mobilization

## Objective

* Restrict the analysis to the first 72 hours of intubation and business hours (8am-5pm).
* Determine the windows of opportunity to mobilize patients on ventilators per three criteria (Patel et al. ,TEAM and Yellow).

## Criteria Definition

### Patel et a. criteria

All of the below requirements should be satisfied during that hour for the encounter to be eligible for mobilization.

* Cardio
  + Mean arterial blood pressure: 65-110 mm Hg
  + Systolic blood pressure: ≤ 200 mm Hg
  + Heart rate: 40-130 beats per minute
* Respiratory
  + Respiratory rate: 5-40 breaths per minute
  + Pulse oximetry: ≥ 88%

### TEAM criteria

Similar to Patel et al, all of the below requirements should be satisfied during that hour

* Cardio
  + Heart rate: ≤ 150 bpm
  + Most recent lactate: ≤ 4.0 mmol/L
  + Noradrenaline infusion rate: 0.1-0.2 mcg/kg/min (inclusive) (Used calculated NE)
* Respiratory
  + Sufficient respiratory stability:
    - FiO2: ≤ 0.6
    - PEEP: ≤ 16 cm H2O (use peep\_observed)
  + Current respiratory rate: ≤ 45 (use resp\_rate\_obs)

### Yellow criteria

**Any of the green or yellow requirements and no red criteria** should be satisfied to be eligible under the yellow criteria

* Green Criteria
  + Respiratory
    - Saturation 90% and
    - Respiratory rate ≤ 30 breaths/min
    - Current FiO2 ≤ 0.6 and
    - PEEP≤ 10cm H20
  + Cardiovascular:
    - Blood pressure greater than lower limit of target range (MAP 65+) while on no or low level of support (low support- define as <0.1 μg/kg/min of Norepi equivalents)
    - Heart rate <120 beats/min
    - lactate < 4mmol/L
    - HR > 40
* Yellow Criteria
  + Respiratory
    - Sat >= 90%
    - Current FiO2 >0.6
    - Respiratory rate >30breaths/min
    - PEEP >10cm H20
  + Cardiovascular
    - Blood pressure greater than lower limit of target range (MAP 65+) while receiving moderate level of support (medium-define as 0.1–0.3 μg/kg/min of Norepi equivalents)
    - Heart rate 120-150 beats/min
    - Shock of any cause with lactate >4mmol/L
    - HR > 40
* Red Criteria
  + Respiratory
    - Sat <90%
  + Cardiovascular
    - Below target MAP despite support (MAP <65) or
    - greater than lower limit MAP (MAP 65+) but on high level support (high defined as >0.3 μg/kg/min of Norepi equivalents)
    - IV therapy for hypertensive emergency (SBP >200mmHg or MAP >110 and on nicardipine, nitroprusside, or clevidipine gtt)
    - HR >150 bpm
    - Bradycardia <40

### Cohort

**Study period:** March 1, 202 to March 31, 2022

A screenshot of a flowchart

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**Table 1: Cohort Characteristics**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| Criteria | Overall | Met criteria ever during business hours in first 72hours | | |
| Patel | TEAM | Yellow |
| Total N | 4736 | 4567 | 1759 | 4572 |
| Median Age (IQR) | 60.0 (25.0) | 61.0 (24.0) | 61.0 (22.0) | 60.0 (24.0) |
| Sex (n, %) |  | | | |
| Female | 1907 (40.27)% | 1819 (39.83)% | 680 (38.66)% | 1820 (39.81)% |
| Race (n, %) |  | | | |
| Black | 2966 (62.63%) | 2858 (62.58%) | 1104 (62.76%) | 2854 (62.42%) |
| White | 1253 (26.46%) | 1219 (26.69%) | 453 (25.75%) | 1226 (26.82%) |
| Other | 504 (10.64%) | 477 (10.44%) | 194 (11.03%) | 479 (10.48%) |
| Missing | 13 (0.27%) | 13 (0.28%) | 8 (0.45%) | 13 (0.28%) |
| Percentage of encounters meeting criteria |  | 96.43 | 37.14 | 96.54 |
| **Cardiovascular** |  | | | |
| Pressor Non-missing (n,%) | 2402 (50.72%) | 2271 (49.73%) | 1759 (100.0%) | 2246 (49.13%) |
| Pressor Median [IQR] | 0.03 [0.1] | 0.03 [0.08] | 0.02 [0.05] | 0.02 [0.07] |
| **Respiratory** |  | | | |
| PEEP Median [IQR] | 5.0 [0.0] | 5.0 [0.0] | 5.0 [0.0] | 5.0 [0.0] |
| FiO2 Median [IQR] | 0.4 [0.1] | 0.4 [0.1] | 0.4 [0.0] | 0.4 [0.1] |

### Results

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**Figure 1 Percentage of encounters satisfying each criterion**

A graph of a bar chart

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**Figure 2 Average percentage of business hours each criterion was satisfied**A graph of a chart

Description automatically generated with medium confidence**Figure 3 Average percentage of business hours criterion not satisfied, by failure type**

Other results:

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***A graph of a bar chart

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***A graph of a number of individuals

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***A graph of different colored lines

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***A graph with different colored squares

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***A graph with multiple colored bars

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***A graph with different colored squares

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**A graph of different colored bars

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A group of blue rectangular bars

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