

HHS ASPR/HHS COVID-19 Clinical Rounds



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About Providence & Disclosure



 **51**
HOSPITALS

 **1,085**
CLINICS

 **5m**
UNIQUE
PATIENTS
SERVED

 **119k**
CAREGIVERS

 **38k**
NURSES

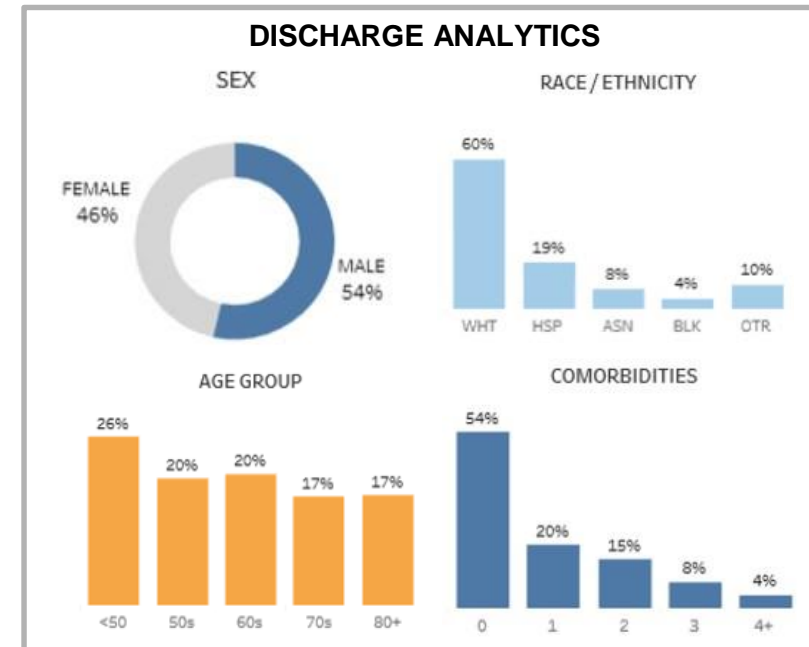
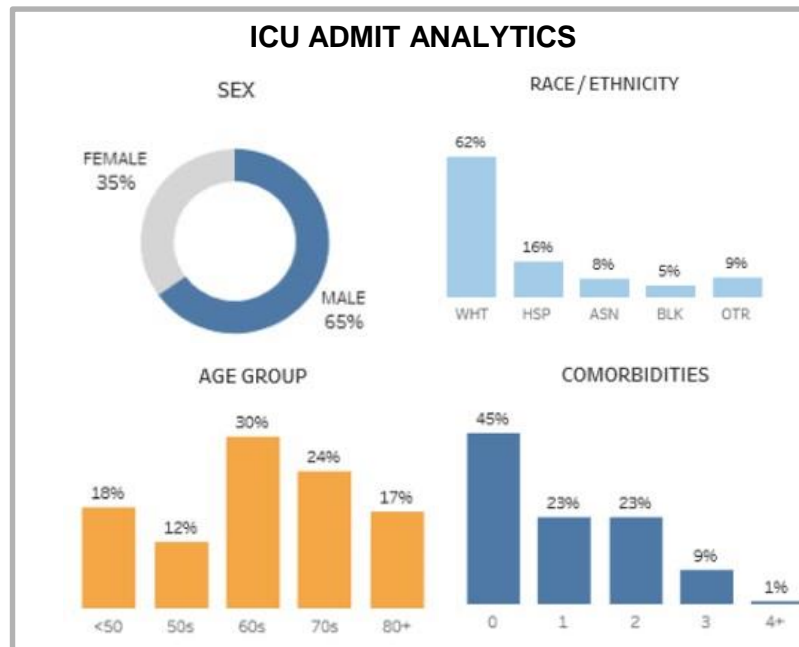
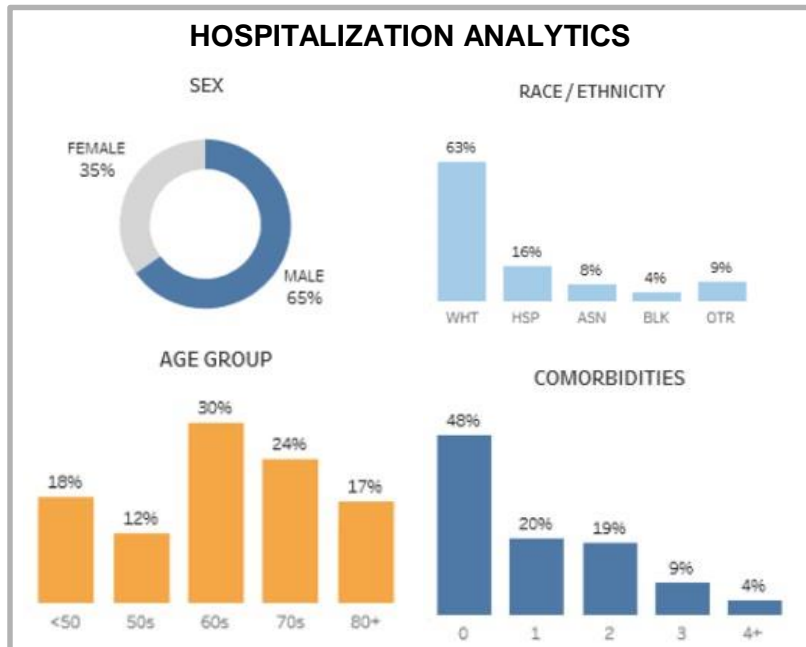
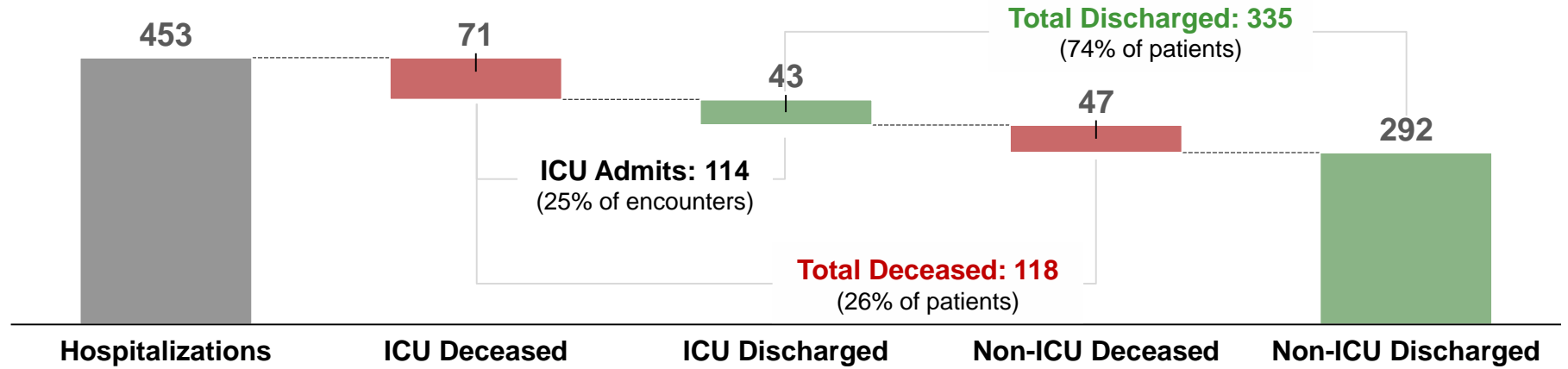
 **25k**
PHYSICIANS



Providence discloses the following COVID-19 learnings in the spirit of information sharing only.

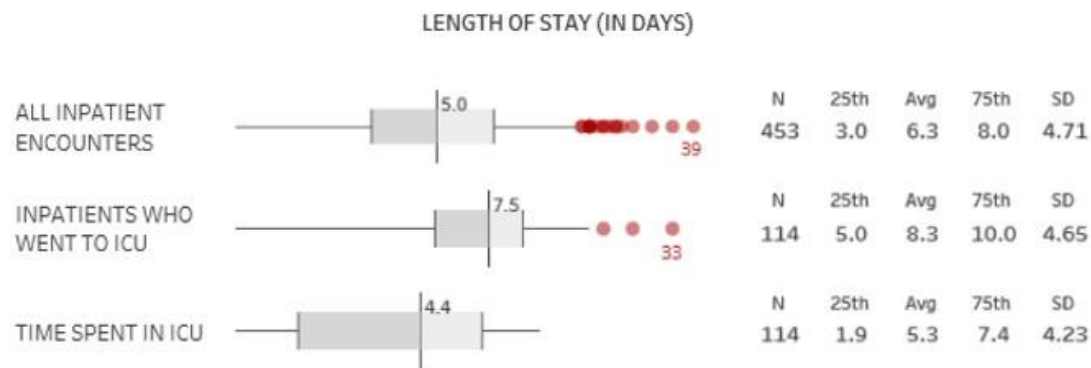
Inpatient Outcomes and Analytics | Providence CoVERED Tool

Objective: Provide key metrics and insights from COVID-19 inpatient encounters between February 5th and April 4th, 2020



Inpatient Outcomes and Analytics | Key Insights

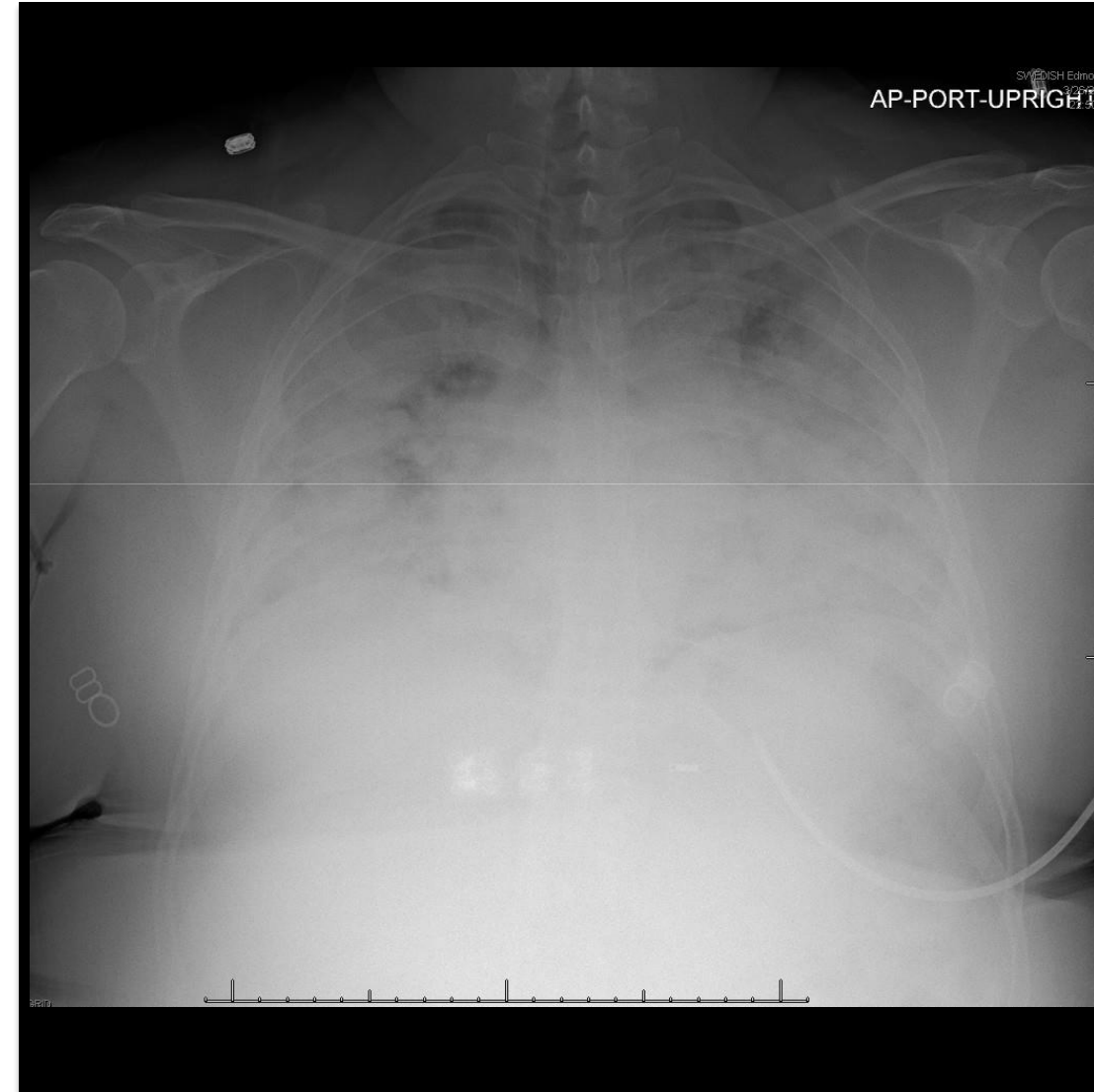
- ▶ There is roughly a **25% mortality** in our hospitalized patients
- ▶ Approximately **2/3 of people needing an ICU died** in our early experience
 - Studies of several drugs/devices underway may change this
 - Early intubation and early proning helps
- ▶ **Average LOS is 6.3 days** for all patients
 - 8.3 days for patients needing the ICU
- ▶ Younger, healthier patients have significantly higher odds of surviving an ICU stay



ICU Experience | Clinical Care and Strategies

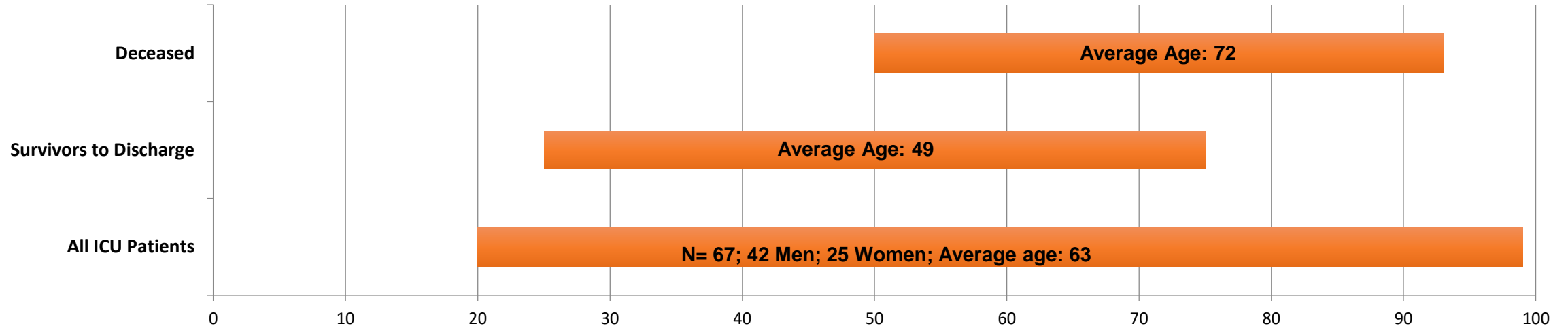
33 years old woman with 3 weeks of cough

- ▶ History of obesity and hypertension
- ▶ 7 days of progressive dyspnea prior to ED presentation:
 - SpO2 was in 60's at triage
 - Cyanotic extremities and respiratory distress
 - Intubated in ED
- ▶ Rapidly moved to ICU on 100% FiO2 PEEP 18
 - Paralytics given, prone positioning initiated
- ▶ Escalated to ECMO needs on HOD #2
 - She is one of 2 ECMO survivors at Swedish Medical Center
 - 9 out of 30 (30%) ECMO patients discharged alive as of 4/9/2020

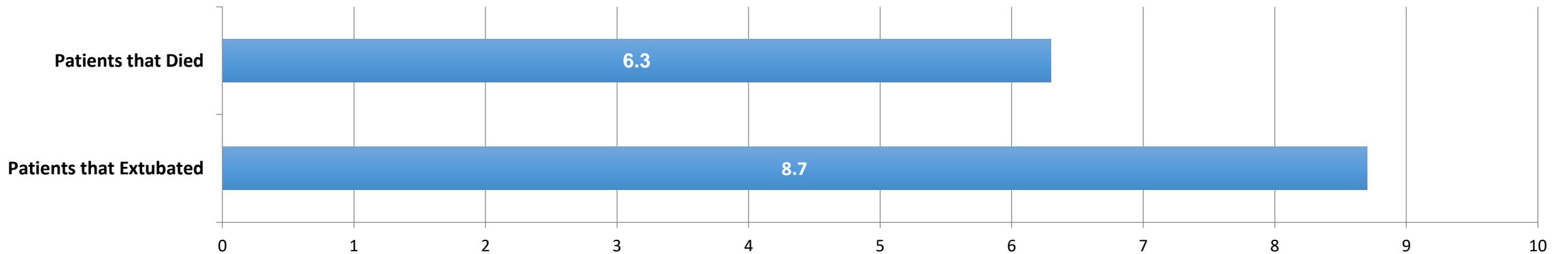


ICU Swedish (Seattle) Experience | Key Characteristics

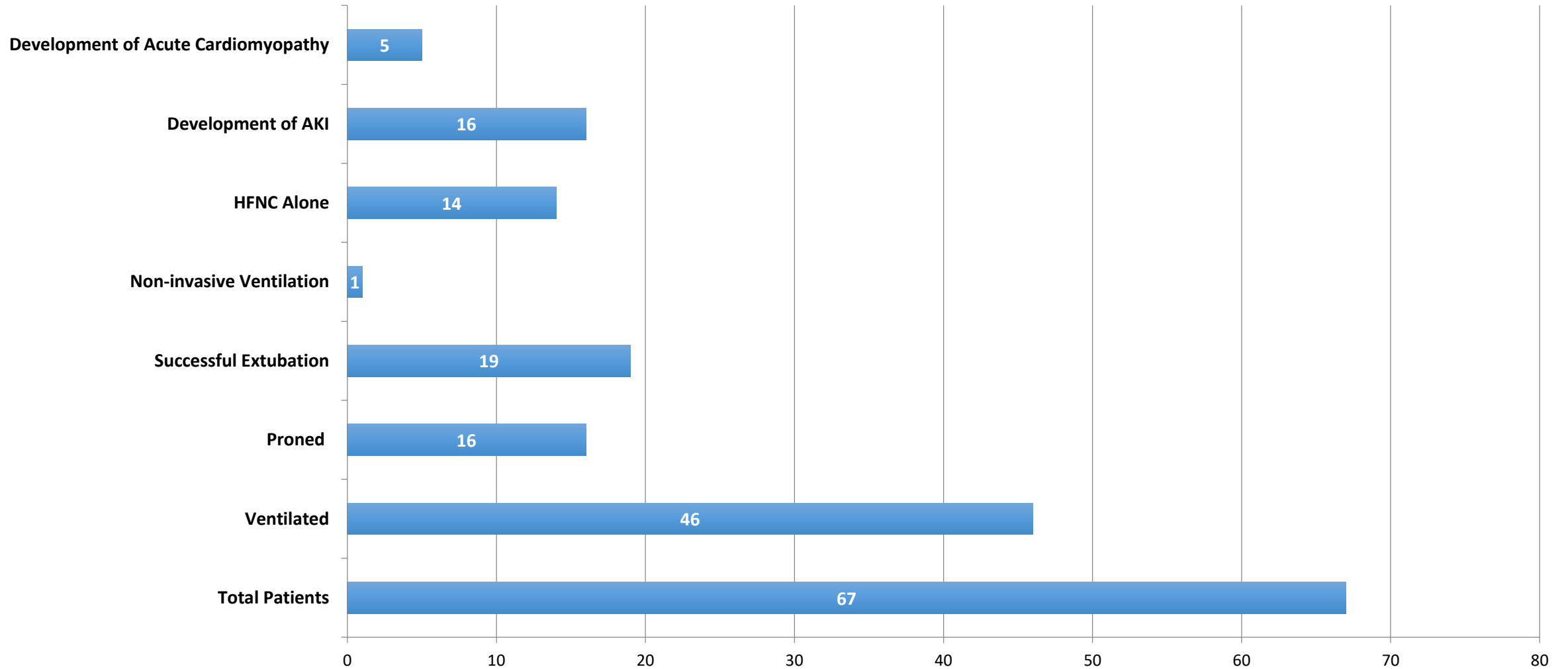
Age Ranges of ICU Patients



Days on Invasive Mechanical Ventilation



ICU Experience | Additional Observations and Data



ICU Experience | How We Prepared

- ▶ Developed Respiratory Care Guidelines
 - Re-evaluated often to see where we were ahead vs behind
 - Kept High Flow O2, Non-invasive and Invasive Ventilated patients in airborne precautions
- ▶ Reviewed all supplies
 - Create alternatives for standard medications
- ▶ Up-staff with Intensivists to deliver hands-on care
- ▶ Prepare for tiered staffing model with non-ICU extenders
- ▶ Plan to convert any available room to ICU capable
 - We were able to double/potentially triple capacity
- ▶ Create Scarce Resource Triage Team

ICU Hacks | Adapting to the Needs



- ▶ Environmental Controls
 - All ICU rooms converted to neg pressure
 - Up to 12 air changes/hour (ACH)
 - -2.5 Pa pressure



- ▶ Use extension tubing to place pumps outside of ICU rooms
 - Reduces PPE and allows for control outside
- ▶ RN and RT's alternating vent change care
- ▶ Aerogen adaptor for delivering nebulized meds without breaking the circuit
- ▶ Putting ventilator computers outside the room if able

ICU Experience | Lessons Learned

- ▶ Great critical care delivered by skilled Intensivists is working the best
- ▶ Too early to tell about pharmaceutical interventions
- ▶ Stop intubating early
 - Often people are “Happily Hypoxic” and can tolerate lower O2 sats
 - Watch for fatigue or distress as a sign to intubate
- ▶ COVID-19 based ARDS has better lung compliance than standard ARDS
 - Still applying 6cc/kg, however only need low PEEP
 - Paralyze and prone for refractory hypoxemia if needed
 - 16hrs prone, 8 hrs supine as tolerated: ABG’s to help determine need and de-escalation
- ▶ Volume resuscitation is not often needed
 - Transient hypotension, resolves with guarded fluids given

ICU Experience | It takes a Community to save a City

- ▶ Daily communication with regional ICU leaders
 - Formed a text string with all Regional Hospital ICU directors
- ▶ Offer help to each other as hospital ICU's reached capacity
 - Taking patients from other ED's
 - Offering to provide needed PPE
- ▶ Shared data and observations in real time with immediate feedback
- ▶ Shared strategies for care and staffing models
- ▶ Shared options for pharmaceutical therapies and studies
 - Collaborated on getting needed studies up and running
- ▶ Collaborative journal publications continue to come out spanning across hospitals