COVID-19 SURGE IN MY ICU: CHALLENGES AND SUCCESSES

THE SINAI-GRACE HOSPITAL EXPERIENCE

HICHAM KRAYEM, MD FCCP
CLINICAL ASSOCIATE PROFESSOR/WAYNE STATE UNIVERSITY
CHIEF/INTERNAL MEDICINE DEPARTMENT
SINAI-GRACE HOSPITAL/DMC
OUTLINE

About Sinai-Grace

COVID surge in Detroit

Challenges and Successes: the 5 S:
- space, staff, stuff, science and synchronization
ABOUT SINAI-GRACE HOSPITAL

• 334 beds full service adult Hospital, Northwest Detroit
• Part of the Detroit Medical Center: the DMC, owned by Tenet
• Teaching hospital
• Newly built state of the art ICU and ED: 20 MICU and 20 SICU beds
• Level II trauma center, with >100,000 patient visits/year
THEN COMES COVID-19!!!

• First case in Michigan: March 10th
• March 31: 7615 cases
• April 20th: 32000 cases with 2468 deaths
  – Detroit city: 7736 cases, with 629 mortalities
• Our ICU:
  – rapid increase in volume: March 20-27
  – Peaked at 75 COVID/PUI between April 5-10
STAFF

CHALLENGES

• Nurses: ICU, Dialysis
  – Preexisting shortages
  – Sickness/quarantine
  – Child care (no schools!)
• Respiratory therapists
• Residents
• Intensivists

TACTICS

• Intrahospital, interhospital mobilization (DMC) and System: Tenet
• Reducing exposure: labs/vitals/medications administration, extension tubing (pumps outside rooms)
• Dialysis duration cut in half!
• Residents schedule changes/rounds/cross coverage/
• more intensivists; SICU and anesthesia help
CHALLENGES

• 20 MICU beds; total 40 ICU beds → 75 COVID patients

• Throughput issues: difficulty with hospital discharges → delayed transfers out of ED and ICU

TACTICS

• All ICU beds turned into COVID ICUs.

• Stepdown: repurposed

• PACU repurposed into non-COVID ICU patients

• Double up patients in ICU rooms

• Goals of care discussions

• All elective procedures cancelled
STUFF

CHALLENGES

• PPEs
• Ventilators
• Medications: sedatives, opioids, NM blockers, antibiotics
• Testing kits

TACTICS

• Reallocated PPE inter and intra hospital (closed centers..)
• Reduced traffic by changing operations: closed ICU
• adapt, substitute, conserve, reuse
• used NPPV units (V60 Respironics units) to deliver invasive ventilation
• Ventilators from other hospitals
• Pharmacy helping with alternative medications
SCIENCE

CHALLENGES
• Large system
• Too many cooks
• little evidence
• (Mis)information overload!!

TACTICS
• Subcommittees
• Treatment Guidelines with updates
  – Hydroxychloroquine
  – Biologics: Tocilizumab
  – Remdesivir
  – Steroids
  – Anticoagulation
  – Things to avoid as “solely” for COVID (Ivermectin, azithromycin, melatonin, zinc, certain lab tests, etc)
• Ventilation strategies, proning, high flow cannulas, NPPV
SYNCHRONIZATION

Spread of information

Updates

Coordinating resource use

Identifying important issues and addressing
- Staffing
- Science related
- Placement
- Tracheostomies; discharges;
- LTACs, etc
- Logistics, support to healthcare workers, etc.

Communication, communication communication...