COVID-19

Responding to Challenges in the Care of Patients with COVID-19

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Goals For This Presentation

• Review the Clinical Presentation of COVID-19

• Understand the approach to treatment of COVID-19 patients with respiratory failure

• Understand coordination of clinical care for critically-ill COVID-19 patients

• Review implementation of COVID-directed treatment strategies available in our system
## COVID-19 Pandemic in number

<table>
<thead>
<tr>
<th></th>
<th>Cases</th>
<th>Deaths</th>
<th>Case Fatality Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-19</td>
<td>4.2 million</td>
<td>286,000</td>
<td>6.8%</td>
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<tr>
<td></td>
<td>1.4 million (USA)</td>
<td>~81,800 (USA)</td>
<td>~5.8% (USA)</td>
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<td>2,341 (Santa Clara County)</td>
<td>129 (Santa Clara County)</td>
<td>~5.5% (Santa Clara County)</td>
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<tr>
<td>1918 Spanish Flu</td>
<td>500 million</td>
<td>~50,000,000</td>
<td>10%</td>
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<tr>
<td>H1N1</td>
<td>1.5 billion</td>
<td>284,000</td>
<td>0.02%</td>
</tr>
<tr>
<td>SARS</td>
<td>8,098</td>
<td>774</td>
<td>~10%</td>
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https://www.healthline.com/health-news/how-deadly-is-the-coronavirus-compared-to-past-outbreaks#1918-influenza
COVID-19 Has a Varied Clinical Presentation

• Most patients with COVID-19 Present similarly to Patients with Influenza
  • Fever
  • Respiratory symptoms (cough, shortness of breath)
  • Myalgias
  • Fatigue
  • Anorexia
  • Diarrhea
  • Anosmia
  • Less common symptoms (headache, confusion, rhinorrhea, sore throat, hemoptysis, vomiting)

• Patients with Severe COVID-19 develop Sepsis and Organ Failure:
  • Respiratory failure requiring intubation and mechanical ventilation
  • Shock
  • Blood clots

• Time from Exposure to Presentation:
  • As long as 14 days
  • Median time is 5 days
  • An unknown amount of asymptomatic carriers
Treating COVID-19 Requires Good Supportive Care

**Outpatient:**
- Flu-like symptoms, no respiratory failure: Stay home and supportive care

**Admitted to the Hospital:**
- Most common reason by far is for respiratory failure:
  - Testing to diagnose COVID-19
  - Isolation
  - Supplemental Oxygen Therapy
  - Treatment for community acquired pneumonia is common

- **ICU level care:**
  - High flow nasal cannula oxygen supplementation
  - Intubation and Mechanical Ventilation
  - Salvage therapies for Refractory Respiratory Failure
SCVMC MICU Has Evolved to Meet the Challenge of COVID-19 Respiratory Failure

- **Patient Care**
  - COVID-Unit
  - Evaluation of Literature and Coordination with Anesthesia and Emergency Department to Use High-flow nasal cannula oxygen
  - Initiation of Proning as a therapy for Refractory Respiratory Failure
  - Use of Percussive ventilators, rarely used since H1N1 Pandemic

- **Education**
  - Lecture Series on COVID-19 Research
  - Weekly Grand Rounds with Stanford on COVID-19 Developments
  - Weekly Therapeutics Meetings: Infectious Disease, Pharmacy, Rheumatology

- **Logistics**
  - Coordination for Surge Planning with Hospital Medicine
COVID-19 treatment options

• Hydroxychloroquine

• Immune modulators
  • Anakinra
  • Tocilizumab

• Convalescent Plasma

• Remdesivir

• Steroids
Thank You