

Session 9: Learning lessons

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Report different severity levels of COVID-19 infection

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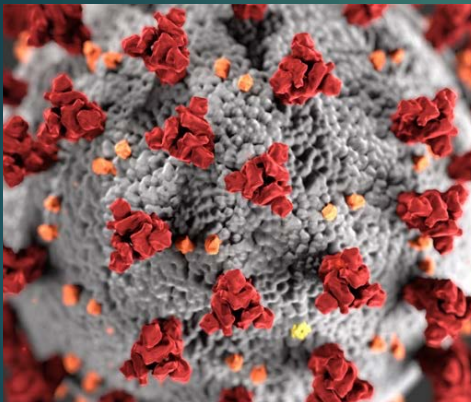
Describe interventions for COVID-19

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Know basic approaches to monitoring and treating COVID-19 in SNF

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COVID-19 impact

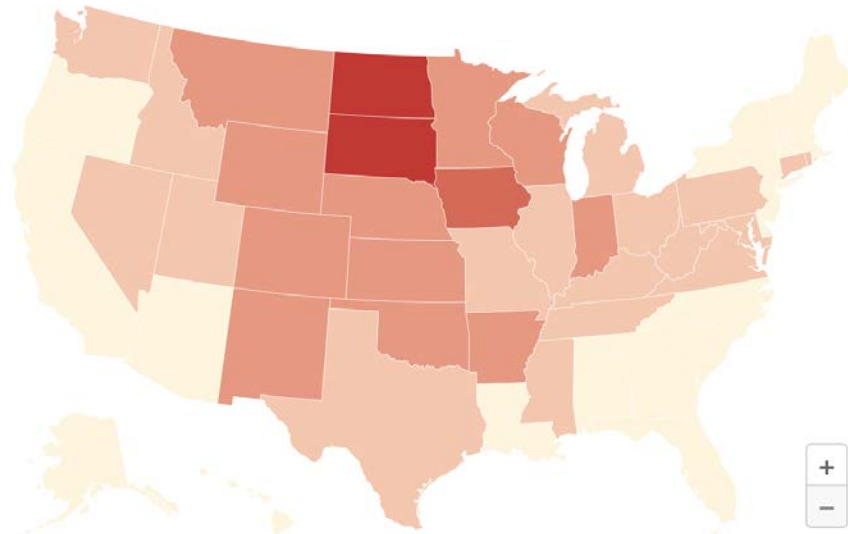


- ▶ 15 – 20 % mortality rate in Nursing Homes
- ▶ COVID death every 8 minutes in California

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COVID-19 Death Rate Among U.S. Nursing Home Residents

Rate of COVID-19 deaths of residents between Nov. 16 and Dec. 6 by state.



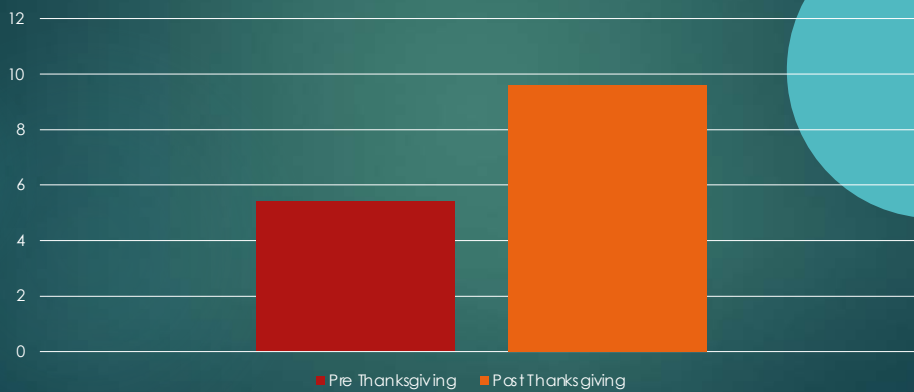
The national death rate is 1.53 deaths per 4 weeks per 100 residents

< 1.18 1.18-2.36 2.36-3.55 3.55-4.73 ≥ 4.73

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SNF death rate per 100 residents

Holidays doubled the NH resident death rate



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University of Chicago study

- ▶ Spread of COVID-19 in nursing homes is **independent** of CMS 5 Star rating
- ▶ COVID-19 spread is largely through asymptomatic people
- ▶ NH outbreaks are proportional to community COVID-19 prevalence

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COVID infections are causing unexpected problems

- ▶ Stroke in young people
- ▶ Heart attacks
- ▶ Secondary pneumonia
- ▶ Kidney failure
- ▶ Chronic encephalitis / chronic fatigue
- ▶ Long haul COVID
 - ▶ Fatigue
 - ▶ Myalgias / arthralgias



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In the chat box, list your top reasons for difficulties in preventing COVID-19 outbreaks in nursing homes

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Difficulties facing nursing homes with COVID-19

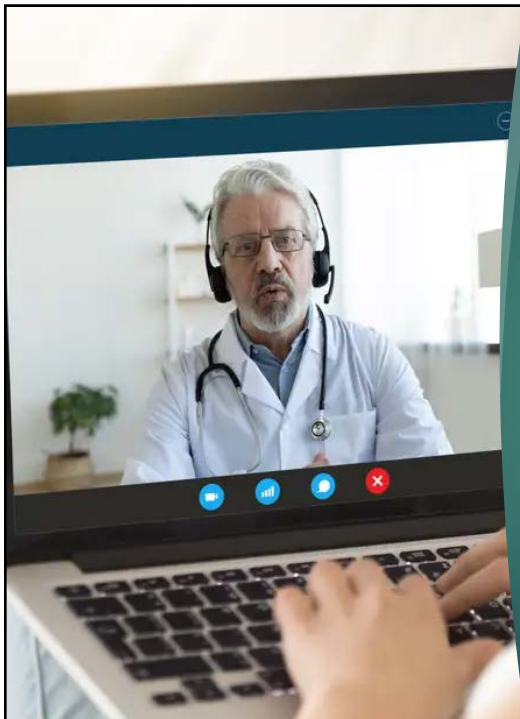
- ▶ Double occupancy rooms
- ▶ Shared bathrooms
- ▶ Off site labs and COVID-19 test turn around time
- ▶ Daily staff exposure of > 15 minutes daily with no social distancing
- ▶ Provider access
- ▶ Staffing gaps
- ▶ Resident, staff and family stress

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In the chat room, indicate whether your facility has had + antigen tests among staff.



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How well has provider telehealth worked in your facility ?

In the chat box, indicate if telehealth worked

- ▶ A) as well as face – to – face rounds
- ▶ B) better than face to face rounds
- ▶ C) inferior than face to face rounds

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Can we prevent severe Covid-19 disease ?

- ▶ Reduce viral exposure is NUMBER 1
- ▶ Vaccinate is NUMBER 2
- ▶ Optimize serum vitamin D levels (50 ng/dL)
- ▶ Optimize vitamin C
- ▶ Zinc supplementation is controversial

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Supplements

- ▶ If not on vitamin D, give 50,000 units one time and supplement with 1,000 units daily
- ▶ Vitamin C 500 – 1000 mg twice daily
- ▶ Zinc either 50 mg twice daily or 220 mg daily

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Theoretically

- ▶ Nitric Oxide from beet juice inhibits COVID-19 (cell culture)
- ▶ 1/2 to 1/3 cup twice daily lowers older adult blood pressure by 5 mm Hg
- ▶ Several studies on – going at Mass General Hospital on twice daily nitric oxide inhalation therapy for prophylaxis



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Severity of Covid-19 infections in SNF

Symptoms	Mild	Moderate	Severe
Fever	√		
Cough	√		
Fatigue	√		
GI	√		
Dyspnea		√	
CXR infiltrates		√	√
Delirium		√	√
Hypoxemia <94%			√
O ₂ supplement			√
Falls	√	√	√

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Hospital definition of COVID-19 severity

	Mild	Moderate	Severe	Very Severe
Nasal canula O2	1 – 3 LPM	4 – 10 LPM	> 10 LPM	Ventilation
CXR		+	+	+

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Triage COVID residents

Palliative Care

Do not hospitalize but treat

Hospitalize / day hospital

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Treatment of COVID-19 infections in the nursing home

- ▶ Confirmed PCR test + for COVID-19
- ▶ Transfer to COVID unit
- ▶ Daily monitoring of vitals, pO₂, and labs (if oxygen supplementation)
- ▶ IV hydration if unable to take > 1.5L orally
- ▶ DVT Prophylaxis (next slide)
- ▶ Deprescribe (next slide)
- ▶ Assess for 2nd ary bacterial infection
 - ▶ Pro-calcitonin
 - ▶ CXR infiltrate

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Non critically ill COVID-19

DVT prophylaxis

- ▶ Enoxaparin 40mg subcut q24h
- ▶ BMI > 40: enoxaparin 40 mg SQ Q12h
- ▶ CrCl 15-30 ml/min: enoxaparin 30 mg SQ q24h
- ▶ CrCl <15 ml/min or AKI: UFH 5,000 units SQ q8h
- ▶ If bleeding risk, use intermittent pneumatic compression boots

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Deprescribing with COVID19 ?

Medication	Recommendation	Caveats
Inhaled steroids	Stop unless asthma or COPD with brochospasm	
Oral steroids	Continue as directed	
NSAIDs	Avoid if possible	Tylenol as anti pyretic
Statins	No change	Stop if LFTs > 2X
ACE / ARB	No change	Reduce dose or d/c if acute renal injury or hypotension

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SNF COVID UNIT

Category	Intervention	Comments
What Matters	Redefine health goals, POLST	Continuous revision
Testing	COVID, Influenza, CXR, ECG, CBC, Chem, troponin, CPK, procalcitonin, CRP, ESR, ferritin, d-dimers, BNP / PRO-BNP, PT, PTT, Mg++, Consider blood cultures	rising LDH, ferritin, CRP indicate respiratory failure LFTs often elevated Lymphopenia common Procalcitonin = bacterial pneumonia Medications that prolong QT = macrolides, anti-psychotics, SSRIs, phenothiazines
Venous Catheter	Mid or long line	Recurrent blood sampling

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Regeneron mAb infusion



- ▶ At SNF (best)
- ▶ At infusion center

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If need to transfer to hospital:



- ▶ Confirm patient wishes
- ▶ Provider → provider hand-off
- ▶ Report code and POLST status
- ▶ Identify family contact

- ▶ Mask patient for transfer
- ▶ Notify EMS of COVID-19 status

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Clinical course of COVID-19 treated within nursing homes

Survivors

- ▶ 25% with malaise / fatigue, but mostly asymptomatic
- ▶ 75% with vacillating symptoms

Decedents

- ▶ 2/3 with steady, slowly worsening course
- ▶ 1/3 with rapid transition and decline

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Lessons learned

- ▶ Constant assessments
- ▶ Low threshold for additional testing
- ▶ Note: ventilatory drive from low blood O₂ in elderly is blunted and you may not see reactionary tachycardia and tachypnea until near respiratory failure

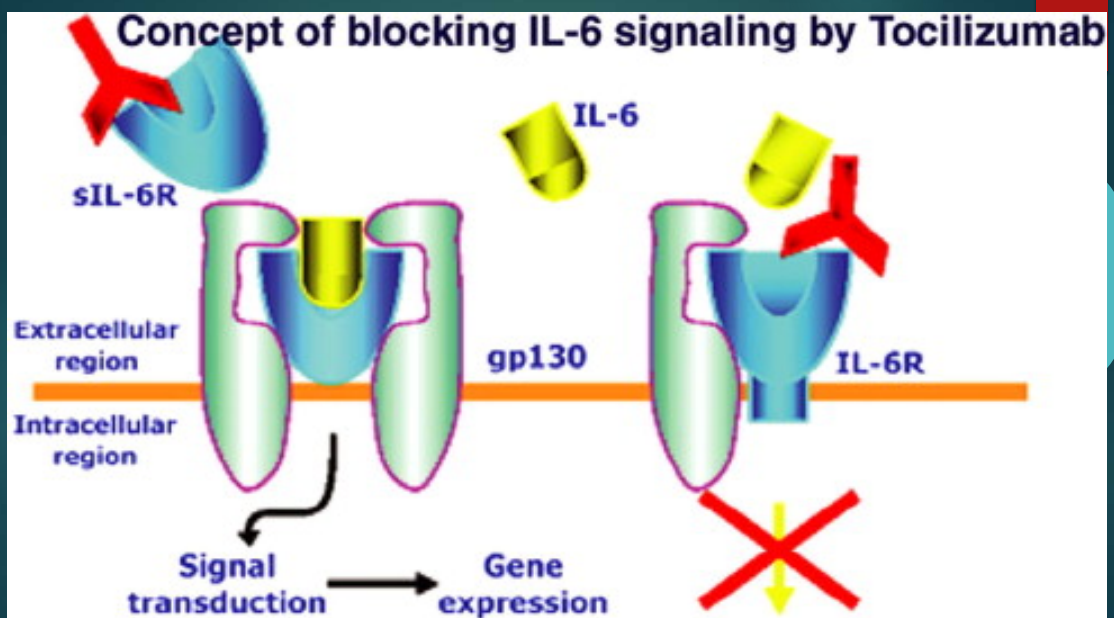
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Update on new treatment options in the hospital



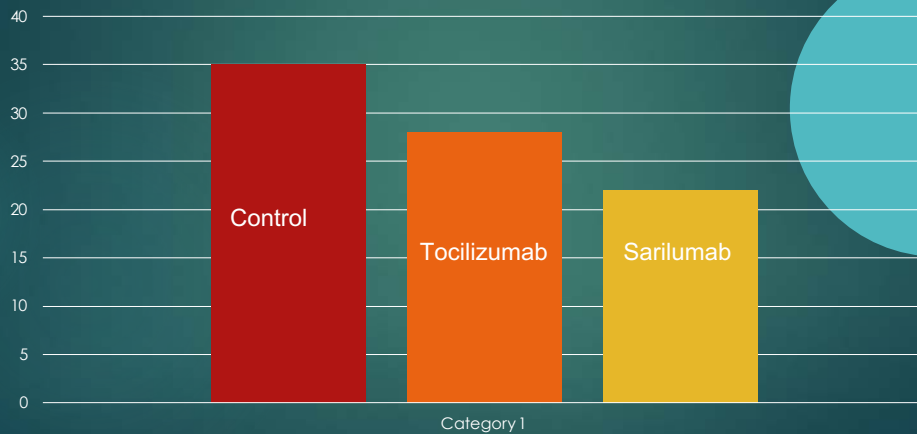
- ▶ Favorable reports on monoclonal antibodies as IL-6 antagonists
- ▶ Nitric Oxide gas as an antiviral treatment

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Mortality reduction in ICU COVID-19 patients by IL-6 receptor inhibitors



doi: <https://doi.org/10.1101/2021.01.07.21249390>

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Key points

- ▶ Nursing homes have unique challenges to infection control
- ▶ Time will tell if vaccination prevents spread
- ▶ Advance Care planning is a recurrent process
- ▶ COVID-19 Treatment strategies are evolving

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