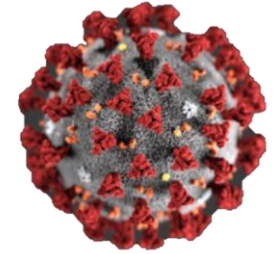


New Hampshire Coronavirus Disease 2019 Weekly Call for Healthcare Providers and Public Health Partners



January 28, 2021

*Ben Chan
Elizabeth Talbot
Beth Daly
Lindsay Pierce*

Thursday noon-time partner calls will focus on science, medical, and vaccine updates geared towards our healthcare partners

Agenda

- Epidemiology Update
- [Lancet Publication](#): 6-month consequences of COVID-19 in patients discharged from hospital: a cohort study
- [medRxiv Study](#): Efficacy of Colchicine in Non-Hospitalized Patients with COVID-19
- Questions & Answers (Q&A)

CDC COCA Webinar (2-3 pm today)

Treating Long COVID: Clinician Experience with Post-Acute COVID-19 Care

Presenters

Alfonso C Hernandez-Romieu, MD, MPH

LCDR, U.S. Public Health Service

Late Sequelae Unit, Clinical Team

COVID-19 Response

Centers for Disease Control and Prevention

Jennifer Possick, MD

Associate Professor, Section of Pulmonary, Critical Care and
Sleep Medicine

Department of Internal Medicine

Yale University School of Medicine

Allison Navis, MD

Assistant Professor, Division Neuro-Infectious Diseases

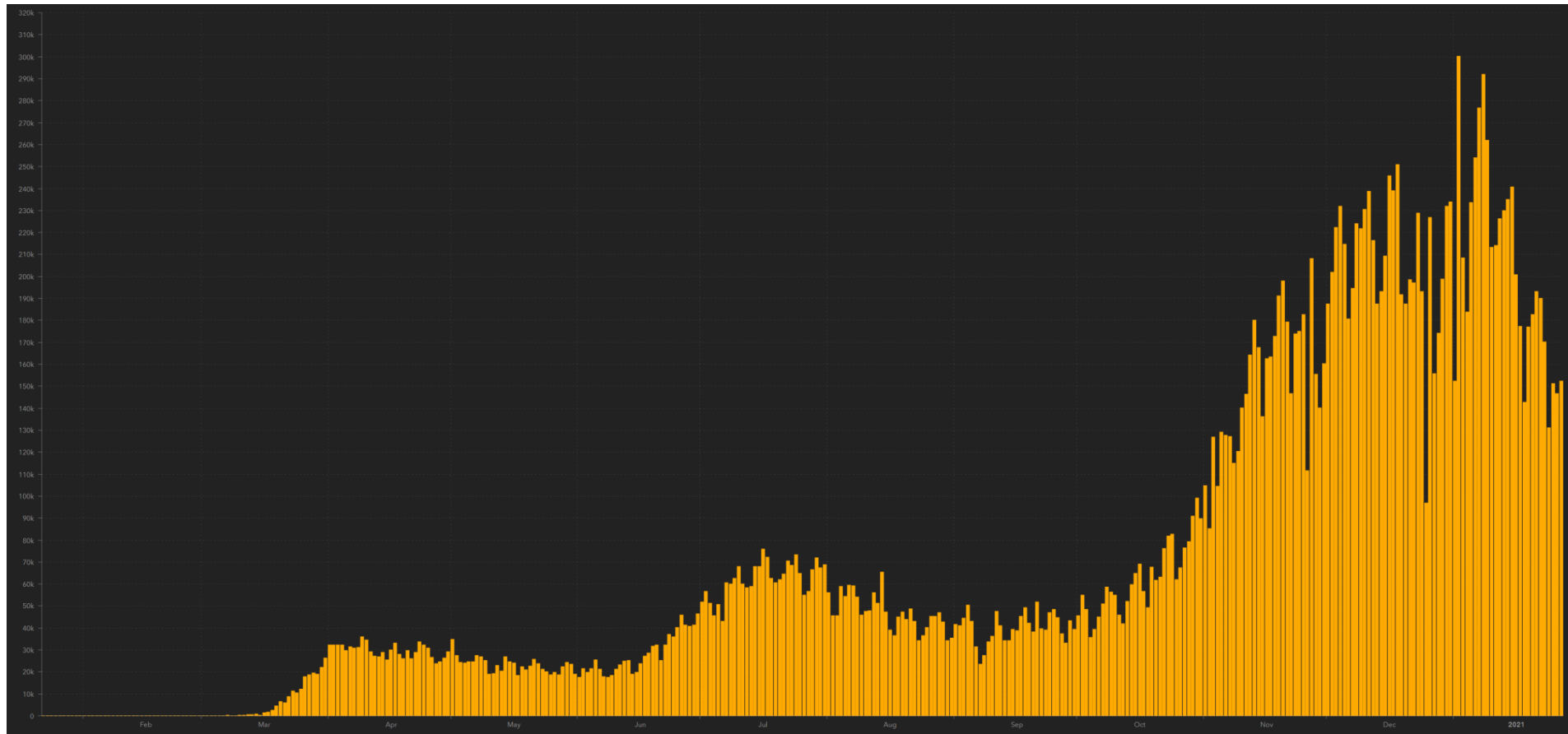
Icahn School of Medicine at Mount Sinai

Mount Sinai Health System

<https://emergency.cdc.gov/coca/calls/2021/index.asp>

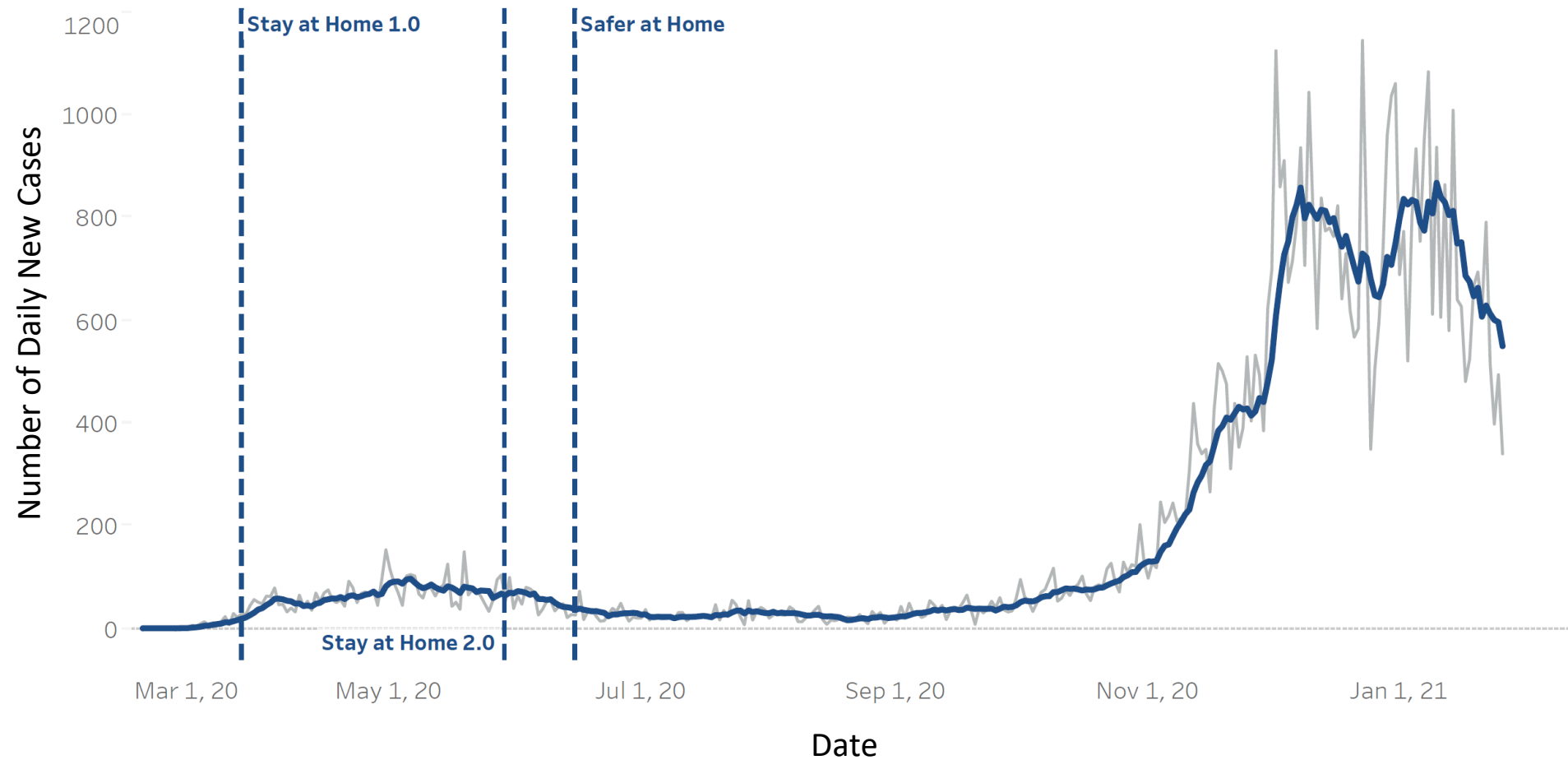


National Daily Incidence of COVID-19



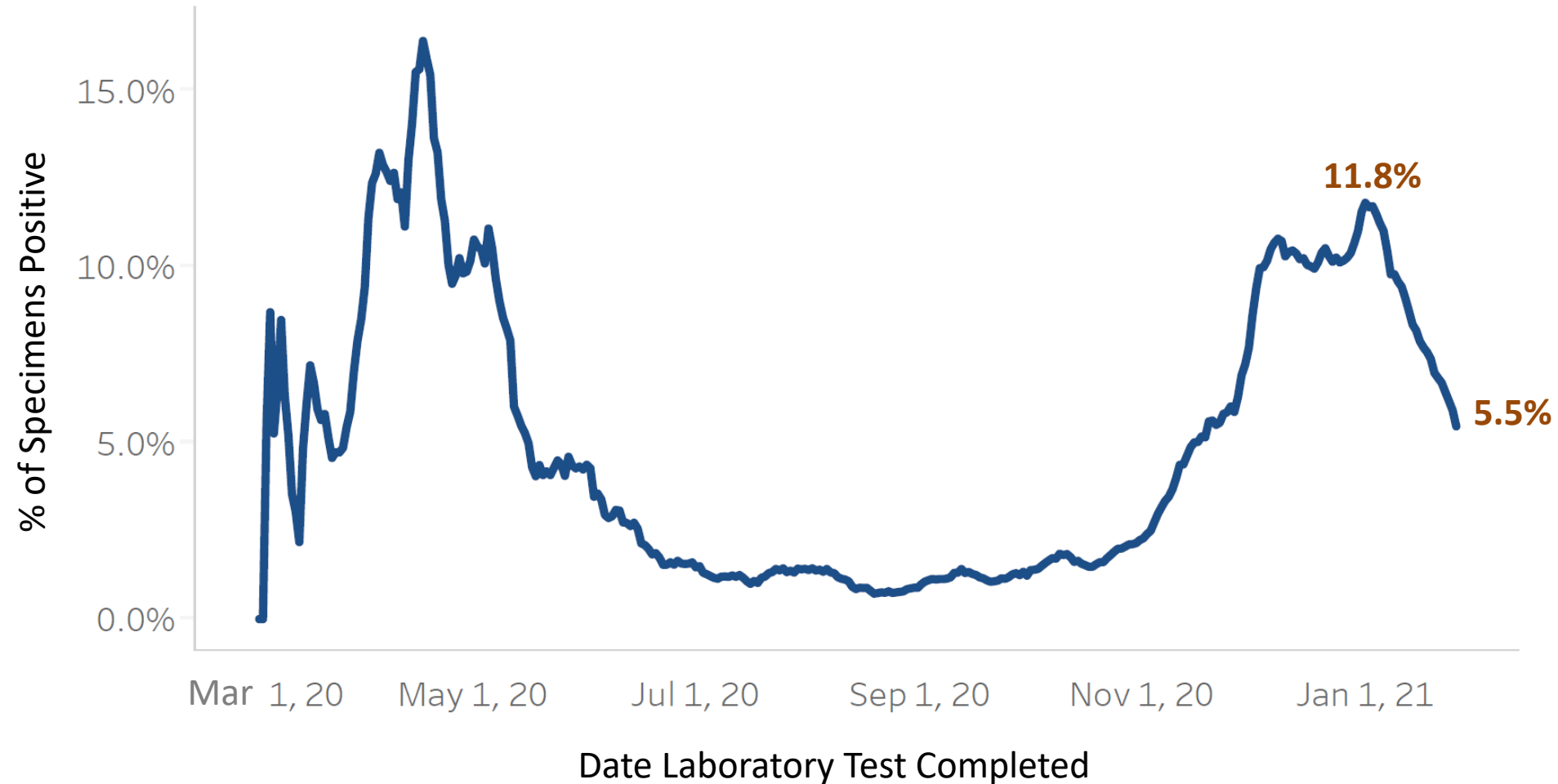
- More than 25.6 million cumulative cases in the U.S. (25% of all global infections)
- More than 429,000 deaths in the U.S. from COVID-19 (20% of all global deaths)

Number of New COVID-19 Cases per Day in NH

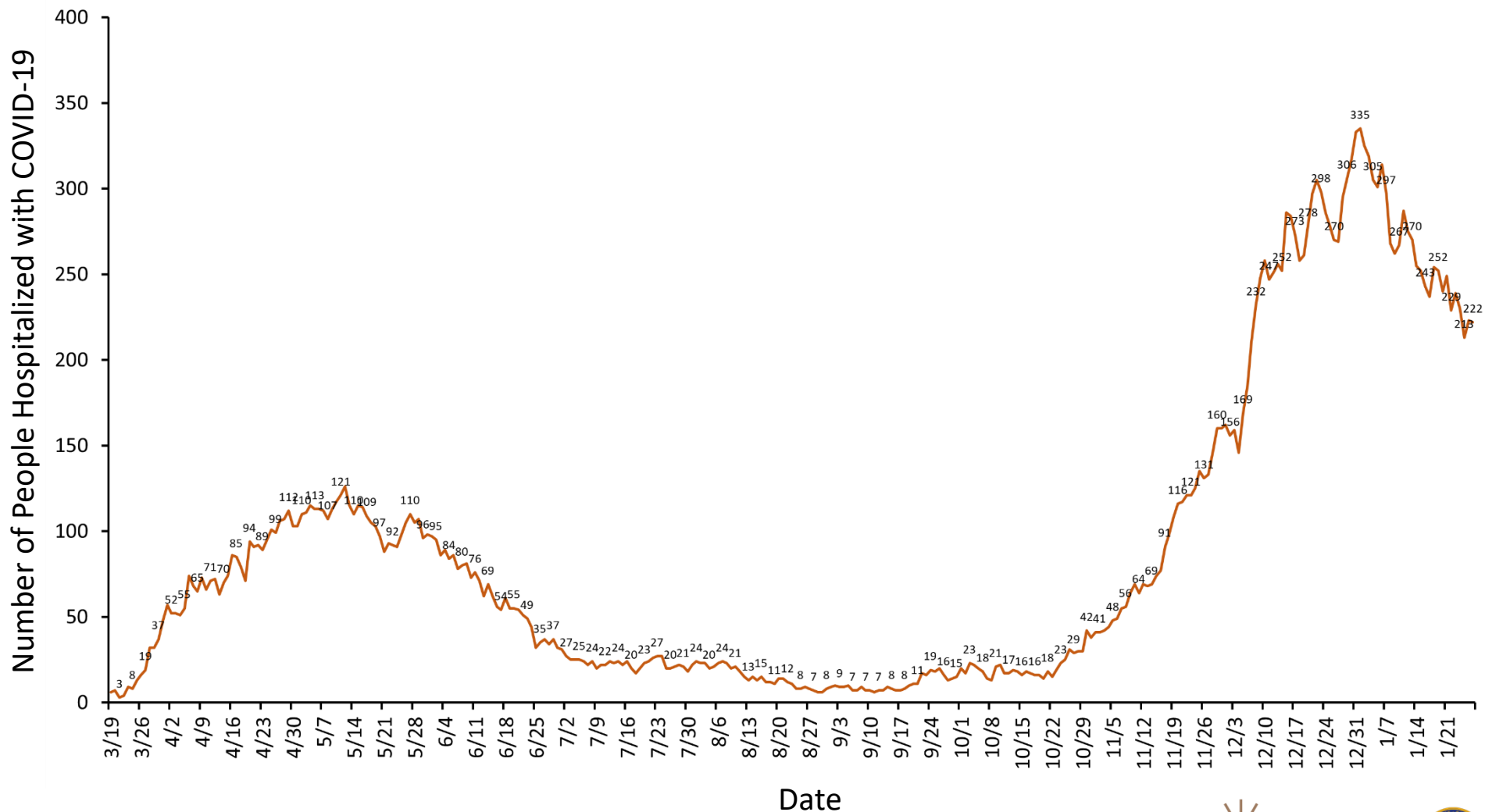


<https://www.nh.gov/covid19/dashboard/overview.htm#dash>

% of Tests (Antigen and PCR) Positive for COVID-19 (7-Day Average)



Number of People Hospitalized with COVID-19 Each Day in NH (Hospital Census)

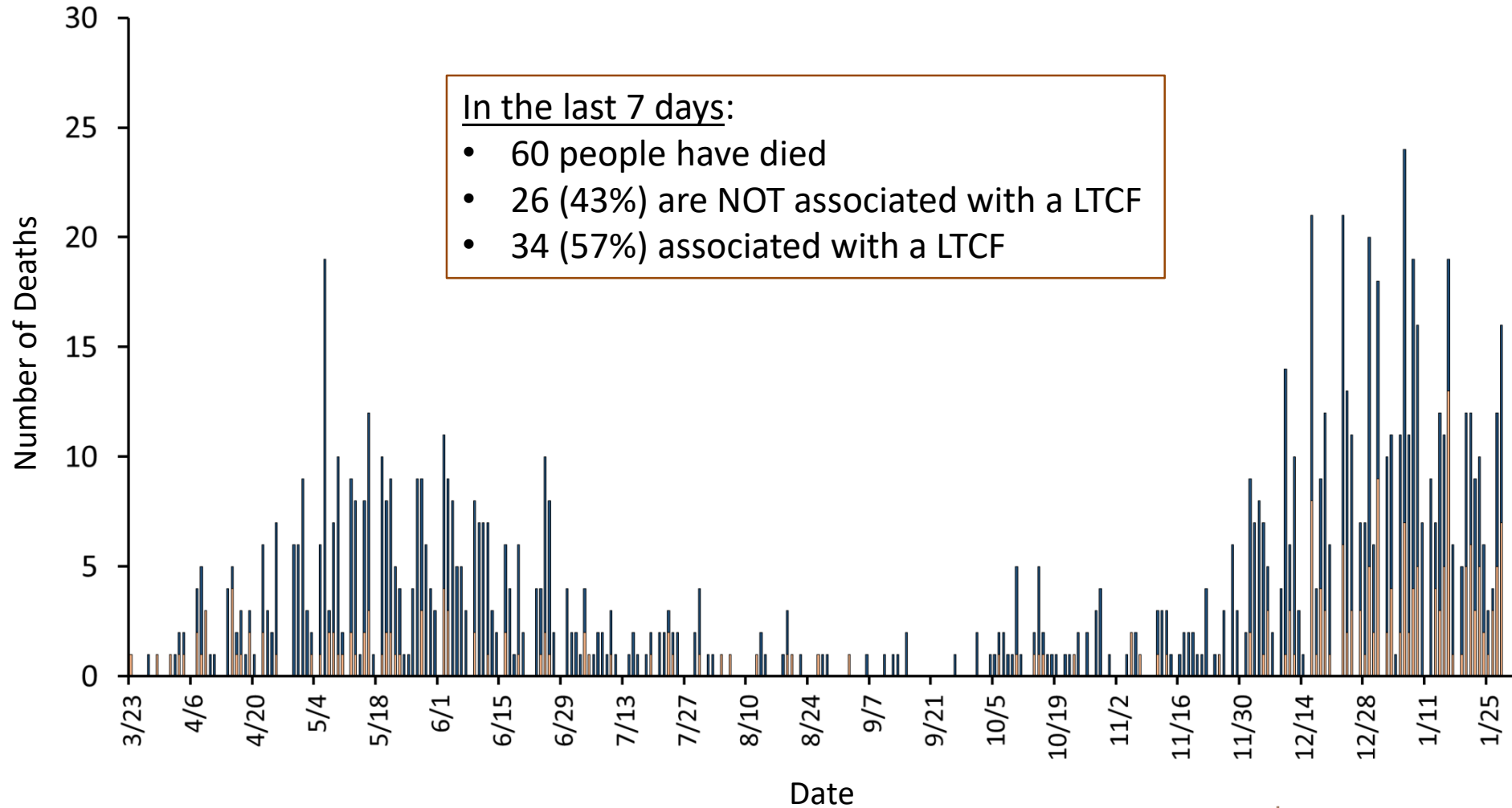


Number of COVID-19 Deaths in NH by Report Date

■ Non-LTCF Associated ■ LTCF Associated

In the last 7 days:

- 60 people have died
- 26 (43%) are NOT associated with a LTCF
- 34 (57%) associated with a LTCF



Long COVID

Potential Long-Term Health Consequences of COVID-19 (Long COVID)

- Fatigue and malaise
- Shortness of breath
- Joint pains
- Chest pains
- Myocardial injury (myocarditis, arrhythmias)
- Thromboembolic disease
- Pulmonary dysfunction
- Headache
- Vertigo
- Loss of taste/smell
- Encephalitis & seizures
- mood swings, brain fog
- Emotional health

6-month consequences of COVID-19 in patients discharged from hospital: a cohort study

Chaolin Huang, Lixue Huang*, Yeming Wang*, Xia Li*, Lili Ren*, Xiaoying Gu*, Liang Kang*, Li Guo*, Min Liu*, Xing Zhou, Jianfeng Luo, Zhenghui Huang, Shengjin Tu, Yue Zhao, Li Chen, Decui Xu, Yanping Li, Caihong Li, Lu Peng, Yong Li, Wuxiang Xie, Dan Cui, Lianhan Shang, Guohui Fan, Jiuyang Xu, Geng Wang, Ying Wang, Jingchuan Zhong, Chen Wang, Jianwei Wang†, Dingyu Zhang†, Bin Cao†*

- Cohort study of patients hospitalized with confirmed COVID-19 at Jin Yin-tan Hospital (first designated hospital for patients with COVID-19 in Wuhan, China)
 - Discharged: 1/7/20 – 5/29/20
 - Follow-up: 6/16/20 – 9/3/20
- 1,733 participated
- 736 excluded →

736 patients excluded

- 347 subjective rejection
- 65 living in a nursing or welfare home
- 63 osteoarticular disease
- 62 unable to be contacted
- 56 dementia or psychotic disease
- 51 living outside Wuhan city
- 33 died
- 30 immobile before discharge
- 25 readmitted to hospitals
- 4 immobile after discharge (3 with ischaemic stroke and 1 with pulmonary embolism)

Assessment of Participants (N=1,733)

- Self-reported symptom questionnaire
- modified British Medical Research Council (mMRC) scale: scale to characterize level of dyspnea with physical activity
- EQ-5D-5L questionnaire: evaluate patient quality of life
- EQ-VAS scale: subjective assessment of generic health
- Ischemic stroke and cardiovascular event registration form
- Physical examination
- 6-minute walking test
- Laboratory tests: CBC, creatinine, HgA1c
- A subset (N=390) underwent PFTs, ultrasound of the Les, ultrasound of the abdomen, high-res chest CT

Outcomes

- Primary Outcomes:
 - Symptoms
 - Exercise capacity
 - Health-related quality of life
 - Lung function and chest CT pattern
- Secondary Outcomes:
 - Extra-pulmonary organ function (renal function, HgA1c, DVTs, ultrasonography of abdominal organs)
 - Antibody titers and seropositivity (checked in a subset)
- Stratify outcomes by disease severity

Participant Characteristics

- Median length of hospital stay: 14 days
- # Requiring ICU admission: 76 (4%)
- Median time from symptom onset to follow-up: 186 days (~6 months)
- Median time from discharge to follow-up: 153 days (~5 months)

Age, years	57.0 (47.0–65.0)
Sex	
Men	897 (52%)
Women	836 (48%)
Education	
College or higher	499/1558 (32%)
Middle school or lower	1059/1558 (68%)
Cigarette smoking	
Never-smoker	1585/1731 (92%)
Current smoker	102/1731 (6%)
Former smoker	44/1731 (3%)
Comorbidities	
Hypertension	505 (29%)
Diabetes	207 (12%)
Cardiovascular diseases	128/1732 (7%)
Cerebrovascular diseases	47/1732 (3%)
Malignant tumour	44 (3%)
Chronic obstructive pulmonary disorder	31 (2%)
Chronic kidney disease	27 (2%)
Highest seven-category scale during hospital stay	
3: admitted to hospital, not requiring supplemental oxygen	439 (25%)
4: admitted to hospital, requiring supplemental oxygen	1172 (68%)
5: admitted to hospital, requiring HFNC or non-IMV or both	112 (6%)
6: admitted to hospital, requiring ECMO or IMV, or both	10 (1%)

Findings after a Median 6 Months of F/U

- 76% of patients reported at least one persistent symptom (symptom questionnaire):
 - Fatigue or muscle weakness (63%)
 - Sleep difficulties (26%)
- Quality of life assessment (EQ-5D-5L questionnaire):
 - Pain or discomfort (27%)
 - Anxiety or depression (23%)
- >50% had residual CT abnormalities (in all severity groups)
 - Ground-glass opacities in 40-50% of participants
- Impairment in pulmonary diffusion capacity (on PFTs)
 - 22% of people hospitalized but NOT requiring oxygen therapy
 - 56% of patients requiring high-flow oxygen, non-invasive ventilation or IMV
- No DVTs; abdominal ultrasounds were normal

Study Findings

EQ-5D-5L questionnaire†

Mobility: problems with walking around	113/1622 (7%)
Personal care: problems with washing or dishing	11/1622 (1%)
Usual activity: problems with usual activity	25/1611 (2%)
Pain or discomfort	431/1616 (27%)
Anxiety or depression	367/1617 (23%)

Symptoms

Any one of the following symptoms	1265/1655 (76%)
Fatigue or muscle weakness	1038/1655 (63%)
Sleep difficulties	437/1655 (26%)
Hair loss	359/1655 (22%)
Smell disorder	176/1655 (11%)
Palpitations	154/1655 (9%)
Joint pain	154/1655 (9%)
Decreased appetite	138/1655 (8%)
Taste disorder	120/1655 (7%)
Dizziness	101/1655 (6%)
Diarrhoea or vomiting	80/1655 (5%)
Chest pain	75/1655 (5%)
Sore throat or difficult to swallow	69/1655 (4%)
Skin rash	47/1655 (3%)
Myalgia	39/1655 (2%)
Headache	33/1655 (2%)
Low grade fever	2/1655 (<1%)

Limitations

- Study limited to hospitalized patients – excluded outpatients with more mild illness
- Limited to one hospital in one city/country
- No baseline (pre-COVID) assessment of pulmonary function and patient signs/symptoms
- No assessment of trajectory of symptoms
- Impaired pulmonary function and exercise capacity cannot be directly attributed to COVID-19
- Lack of thorough cardiac function or neurologic evaluation

CDC COCA Webinar (2-3 pm today)

Treating Long COVID: Clinician Experience with Post-Acute COVID-19 Care

Presenters

Alfonso C Hernandez-Romieu, MD, MPH

LCDR, U.S. Public Health Service

Late Sequelae Unit, Clinical Team

COVID-19 Response

Centers for Disease Control and Prevention

Jennifer Possick, MD

Associate Professor, Section of Pulmonary, Critical Care and
Sleep Medicine

Department of Internal Medicine

Yale University School of Medicine

Allison Navis, MD

Assistant Professor, Division Neuro-Infectious Diseases

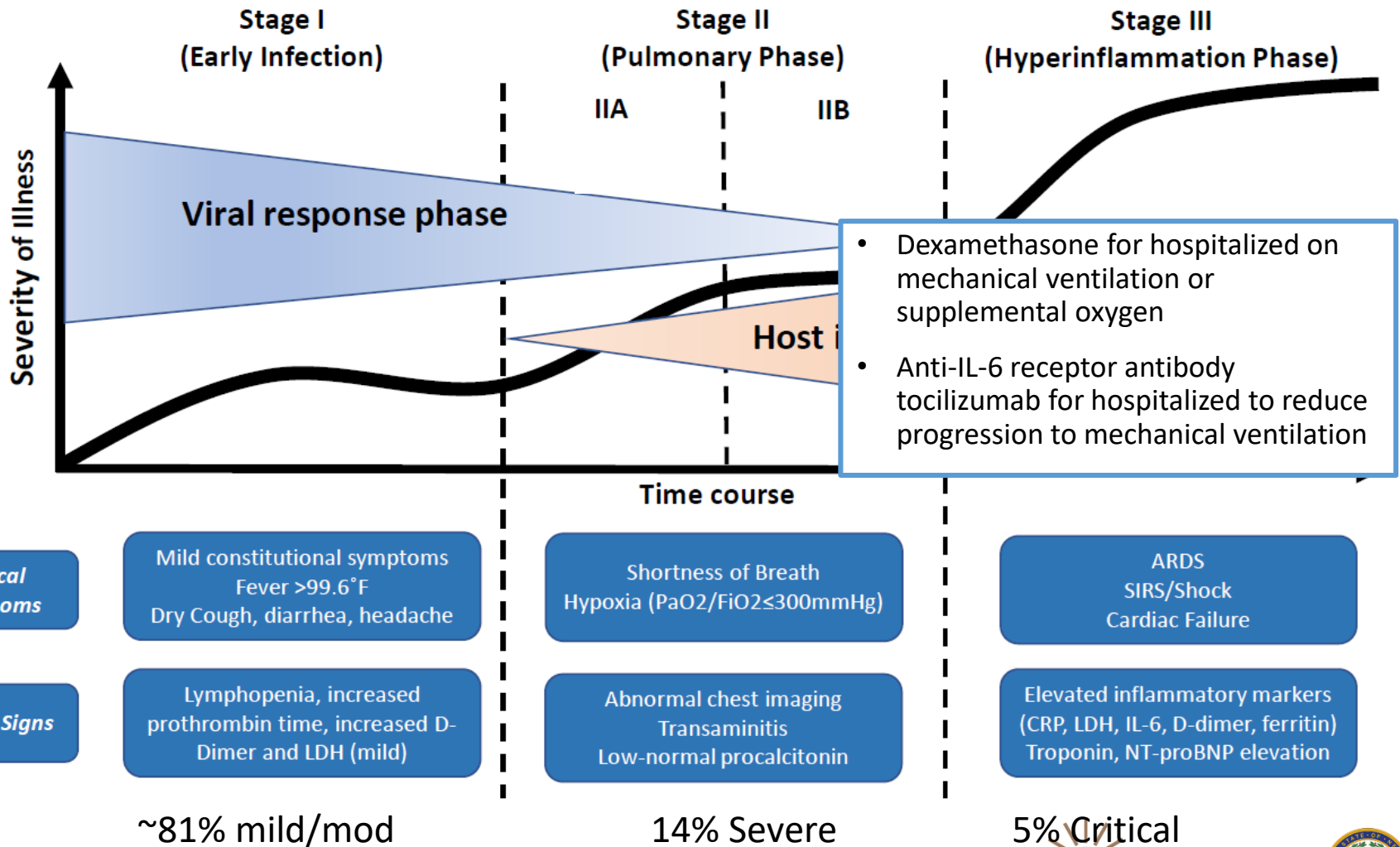
Icahn School of Medicine at Mount Sinai

Mount Sinai Health System

<https://emergency.cdc.gov/coca/calls/2021/index.asp>



Clinical Course of COVID-19



Siddiqi et. al 2020 Yang, Lancet Resp Med 2020



Plasma – neutralizing Ab's

Spike protein
Envelope protein

Membrane glycoprotein
RNA
Nucleocapsid protein

Anti-inflammatories
CQ/HCQ – TNF, IL-6
Steroids
Tocilizumab (anti-IL-6)

Camostat mesylate – inhibits TMPRSS2 (primes S protein)

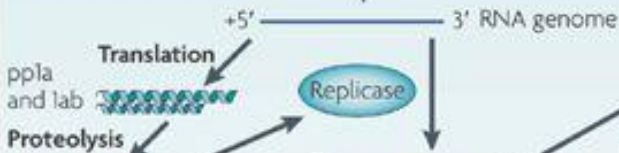
- [COLCORONA Trial](#)
- Colchicine orally administered, anti-inflammatory medication beneficial in gout, pericarditis
 - Inhibits tubulin polymerization
 - Studied for ARDs

SARS-CoV entry

Receptor ACE2
lungs, art

Membrane fusion and viral RNA release

CQ/HCQ – ?increase pH, compromise endosome and subsequent virus release



CQ/HCQ – ?alters glycosylation of receptors

HIV PI (Kaletra) – protease inhibitor (weak)

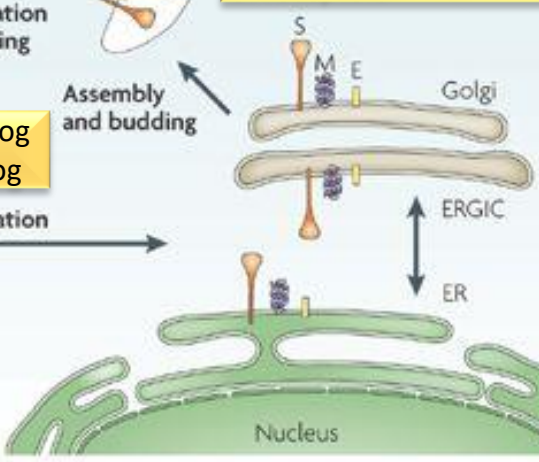
remdesivir – nucleotide analog
favipiravir – nucleoside analog

Ribavirin - mRNA

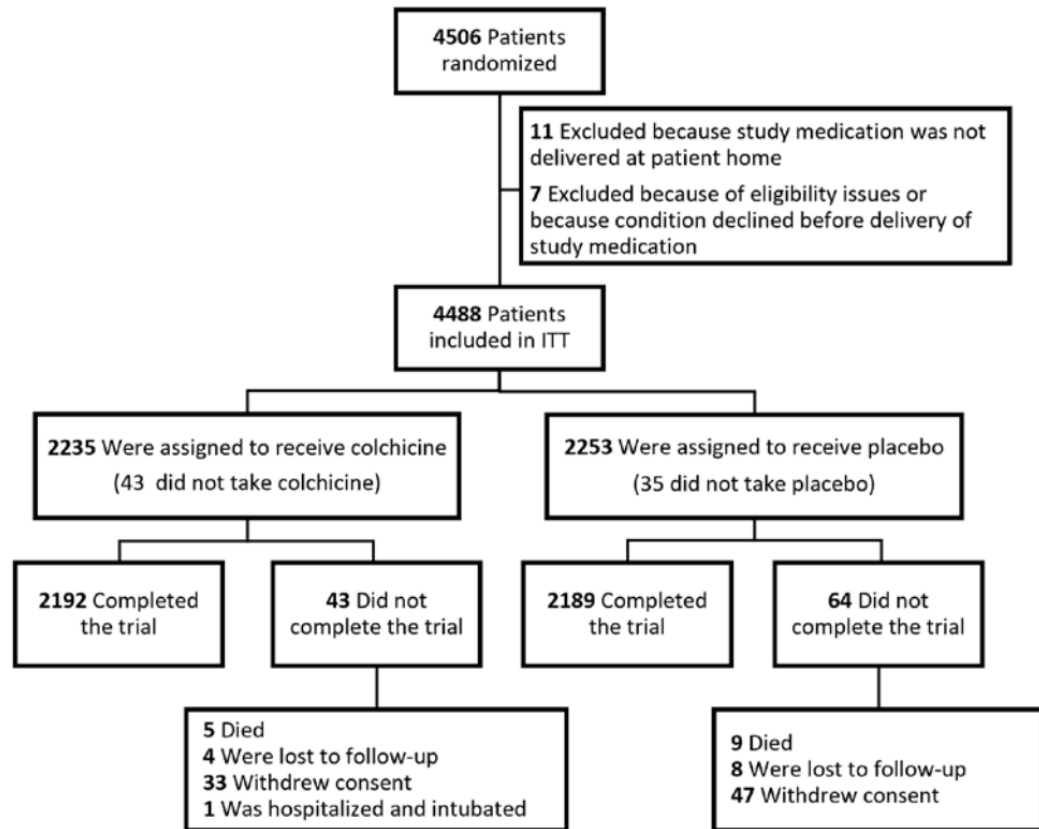
mRNAs

- E
- M
- 6
- 7a and 7b
- 8a and 8b
- N and 9b

Translation



Phase 3 RCT in
 PCR+ outpatients
 ≥40yo with ≥1
 high-risk
 criterion*
 colchicine 0.5 mg
 BID 3d and QD or
 placebo for 30d



≥70y, BMI ≥30 kg/m², DM, SBP ≥150 mm Hg, respiratory disease, heart failure, CAD;
 F_≥ 38.4°C within 48h, dyspnea at presentation, bicytopenia, pancytopenia, or high PMN and low lymphs

Trial Patients

Characteristic	Colchicine (N=2235)	Placebo (N=2253)
Age - years	54.4±9.7	54.9±9.9
Female sex - no. (%)	1238 (55.4%)	1183 (52.5%)
Caucasian - no. (%)	2086 (93.3%)	2096 (93.2%)
Body-mass index (kg/m ²)	30.0±6.2	30.0±6.3
Smoking - no. (%)	217 (9.7%)	212 (9.4%)
Hypertension - no. (%)	781 (34.9%)	848 (37.6%)
Diabetes - no. (%)	444 (19.9%)	450 (20.0%)
Respiratory disease - no. (%)	583 (26.1%)	605 (26.9%)
Prior MI - no. (%)	65 (2.9%)	72 (3.2%)
Prior heart failure - no. (%)	24 (1.1%)	18 (0.8%)

MI denotes myocardial infarction.

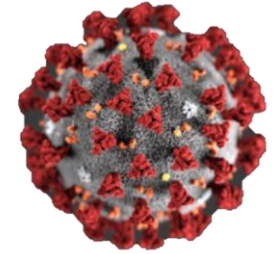
Clinical Outcome	Colchicine	Placebo	Odds Ratio (95% CI)	P Value
<u>ITT population</u>	N=2235	N=2253		
Primary composite endpoint - no. (%)	104 (4.7%)	131 (5.8%)	0.79 (0.61-1.03)	0.08
Components of primary endpoint:				
Death - no. (%)	5 (0.2%)	9 (0.4%)	0.56 (0.19-1.67)	
Hospitalization for COVID-19 no. (%)	101 (4.5%)	128 (5.7%)	0.79 (0.60-1.03)	
Secondary endpoint:				
Mechanical ventilation - no. (%)	11 (0.5%)	21 (0.9%)	0.53 (0.25-1.09)	

COLCORONA Results

Clinical Outcome	Colchicine	Placebo	Odds Ratio (95% CI)	P Value
<u>ITT population</u>	N=2235	N=2253		
Primary composite endpoint - no. (%)	104 (4.7%)	131 (5.8%)	0.79 (0.61-1.03)	0.08
Components of primary endpoint:				
Death - no. (%)	5 (0.2%)	9 (0.4%)	0.56 (0.19-1.67)	
Hospitalization for COVID-19 no. (%)	101 (4.5%)	128 (5.7%)	0.79 (0.60-1.03)	
Secondary endpoint:				
Mechanical ventilation - no. (%)	11 (0.5%)	21 (0.9%)	0.53 (0.25-1.09)	
<u>Patients with PCR-proven COVID-19</u>	N=2075	N=2084		
Primary composite endpoint – no. (%)	96 (4.6%)	126 (6.0%)	0.75 (0.57-0.99)	0.04
Components of primary endpoint:				
Death – no. (%)	5 (0.2%)	9 (0.4%)	0.56 (0.19-1.66)	
Hospitalization for COVID-19 no. (%)	93 (4.5%)	123 (5.9%)	0.75 (0.57-0.99)	
Secondary endpoint:				
Mechanical ventilation – no. (%)	10 (0.5%)	20 (1.0%)	0.50 (0.23-1.07)	

COLCORONA Results

New Hampshire Coronavirus Disease 2019 Weekly Call for Healthcare Providers and Public Health Partners



January 28, 2021

*Ben Chan
Elizabeth Talbot
Beth Daly
Lindsay Pierce*

Thursday noon-time partner calls will focus on science, medical, and vaccine updates geared towards our healthcare partners