



COVID-19: KEEPING UP WITH A MOVING TARGET

July 15, 2020 UPDATE

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Paul G. Auwaerter, MD, MBA, FIDSA	Scientific Advisor: DiaSorin, Shionogi Inc. JNJ: Ownership equity

Dr. Auwaerter has indicated that he will be referencing the unlabeled or unapproved use of agents currently being investigated in on-going studies and trials. These include hydroxychloroquine/chloroquine, hydroxychloroquine/chloroquine in combination with azithromycin, lopinavir plus ritonavir, tocilizumab, corticosteroids, and COVID-19 convalescent plasma.

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CME Information

To attest for CME/CE/AAPA credit, please visit
COVID19.dkbmed.com





Learning Objectives

- Discuss the current national status of the pandemic
- Describe dermatologic and ocular findings in patients with COVID-19
- Discuss the current status of the mRNA-1273 vaccine





Thank You

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Please see **COVID19.DKBmed.com** for additional resources and
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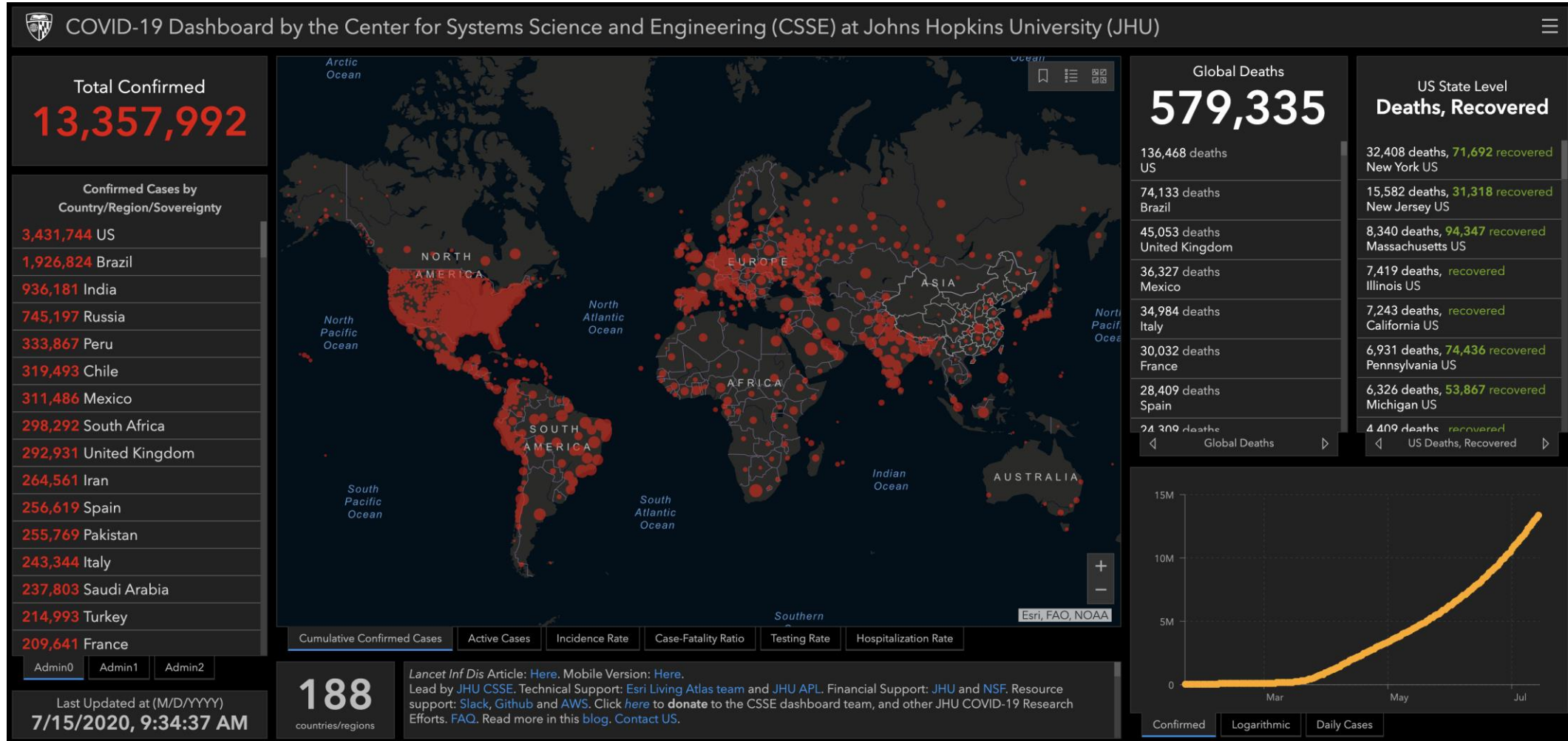




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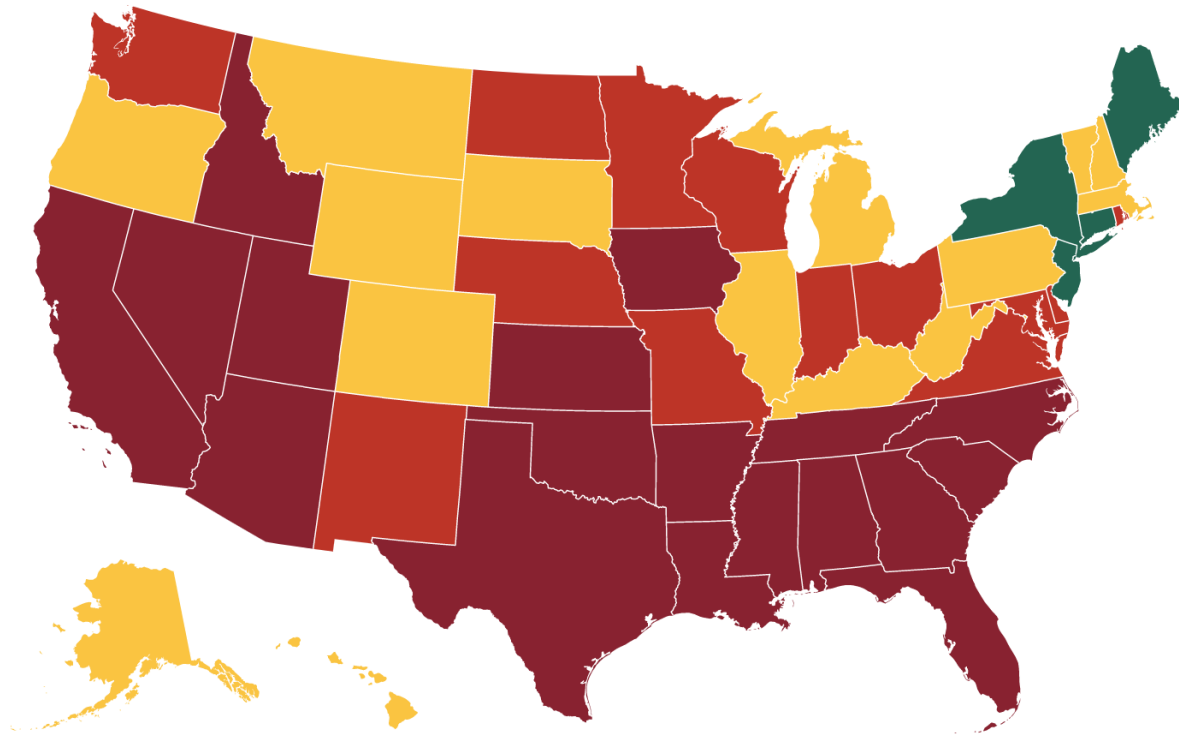
Total Global Cases (7/15/20)



coronavirus.jhu.edu/map.html



COVID-19 in the US



- 68,000 single day record in new cases
- More cases now than in early phases of the pandemic

How to turn around?

Likely need to return to Phase 1 at a minimum

Close bars, indoor restaurants, etc.

Emphasize social distancing, mask wear

Testing insufficient in many areas
--contact tracing/self-isolation

Covidexitstrategy.org (7/15/20)

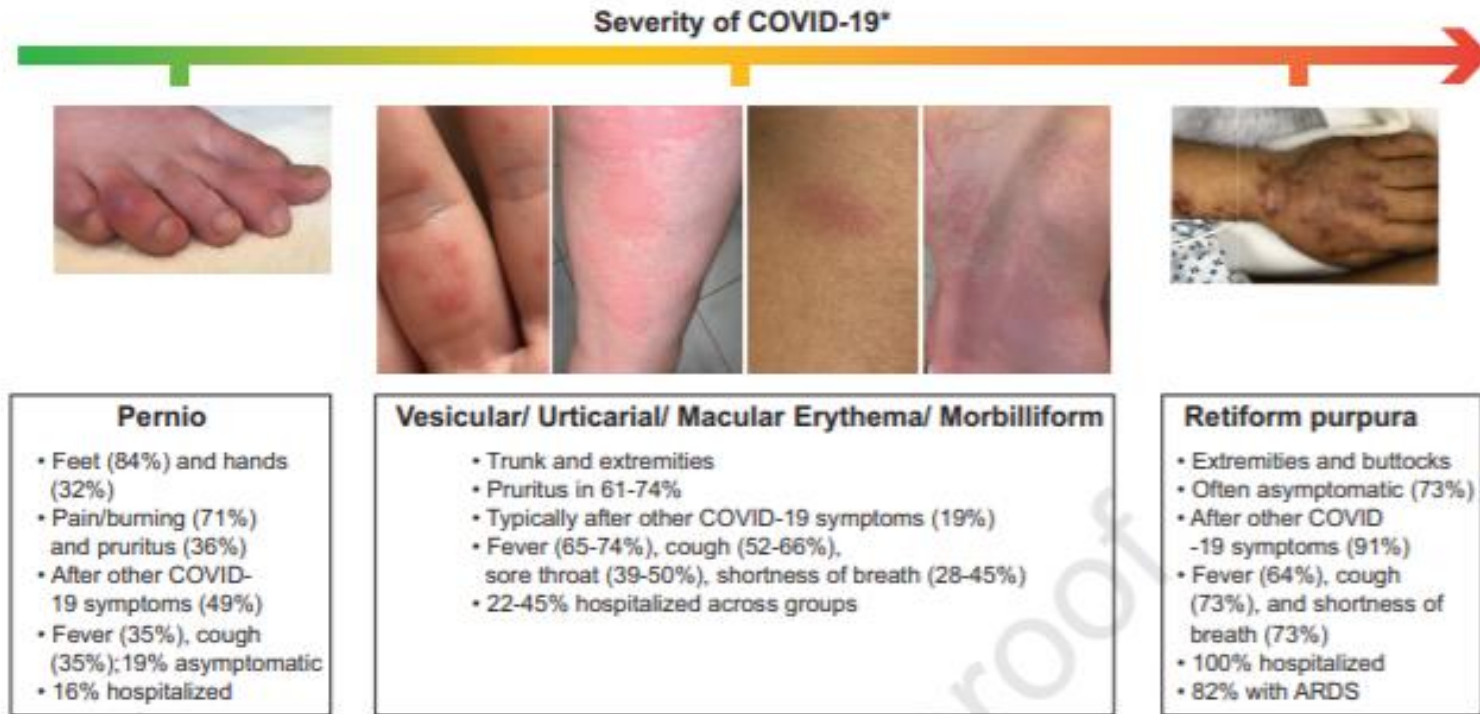




Clinical COVID-19 Beyond the Respiratory Tract



Some COVID-19 Dermatologic Manifestations



*Severity calculated based on percentage of patients hospitalized for COVID-19

Int'l Registry, 171 patients
Freeman E, J Am Acad Derm June 2020





The Dermatology of COVID-19

- Range of findings, non-specific and not unique to COVID-19
- Typically cutaneous findings, commiserate with illness onset
 - 12% lesions occurred before other symptoms
- Pernio seen most commonly--painful erythematous-to-violaceous acral lesions
 - aka Chilblains (classically following cold exposure)
 - Note: not lupus pernio aka cutaneous sarcoid

Int'l Registry, 171 patients

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Ocular Findings in COVID-19

Table 2. Characteristics of 12 Patients With Ocular Manifestations

Patient No./ Sex/Age, y	Temperature at ocular examination, °C	Respiratory symptoms	Clinical type ^a	Ocular manifestations	SARS-CoV-2 RNA test result	
					Nasopharyngeal swab	Conjunctival swab
1/F/80s	38.0	Dyspnea	Severe	Chemosis, epiphora	Positive	Negative
2/M/70s	38.0	Cough, expectorate	Critical	Secretion	Positive	Negative
3/M/50s	39.9	Cough, expectorate	Critical	Conjunctival hyperemia, secretion	Positive	Positive
4/F/80s	39.0	Dyspnea	Severe	Conjunctival hyperemia, chemosis, epiphora, secretion	Positive	Negative
5/F/60s	36.8	Cough	Critical	Chemosis, epiphora	Positive	Positive
6/M/60s	38.7	Cough, expectorate	Critical	Chemosis, epiphora, secretion	Positive	Negative
7/F/80s	36.5	None	Moderate	Chemosis, epiphora, secretion	Positive	Negative
8/F/70s	38.0	Cough	Critical	Chemosis, epiphora, secretion	Positive	Negative
9/M/60s	38.1	None	Critical	Chemosis, secretion	Positive	Negative
10/M/30s	39.6	Chest tightness	Moderate	Chemosis	Positive	Negative
11/M/40s	37.1	Cough	Moderate	Conjunctival hyperemia	Negative	Negative
12/M/70s	36.9	None	Moderate	Epiphora	Positive	Negative

Abbreviations: F, female; M, male; SARS-CoV-2, severe acute respiratory syndrome coronavirus 2.

^a Graded by the National Guideline on Prevention and Control of the Novel Coronavirus Pneumonia.⁴

Wu, JAMA Ophth 2020;138(5):575-578





Ocular Findings in COVID-19

- 12 of 38 COVID-19 patients with eye findings
 - Conjunctivitis
 - Chemosis
 - Epiphora
 - Increased secretions
- Typically found in patients with more severe disease

Wu, JAMA Ophth 2020;138(5):575-578





COVID-19: GI Symptoms

- Systematic review of clinical studies
 - Nausea and vomiting
 - Diarrhea in 2 to 50% of cases
 - Overall pooled percentage 10.4%
 - May precede respiratory illness or occur after onset of cough
- Viral RNA in feces, questions whether cause of infection

D'Amico, Clin Gastro Hepato 2020;18:1663-72





COVID-19: Loss of Taste and Smell

- In some, first and only symptom
 - Small studies suggest 20-90% of COVID-19 hospitalized patients have some loss of taste/smell
 - 89% in mild disease
- Note: background problems--age > 40 yrs, U.S.
 - 12.4% hyposmia
 - 3.0% anosmia
- Respiratory viral infections may have similar effects
 - Not specific for COVID-19, but appears more common
- Appears most have early recovery

Boscolo-Rizzo, JAMA Oto Head Neck Surg 7/2/20





COVID-19: Neuropsychiatric Complications in Hospitalized Patients

- 125 hospitalized patients in the U.K.
 - CVA 77 (62%), 82% > age 60
 - Altered mental status 39 (31%)
 - 50% < 60 years
 - Presentations
 - ❖ Encephalopathy 9
 - ❖ Encephalitis 7
 - ❖ Psychiatric disorders 23 (59%)
 - Psychosis
 - Neurocognitive syndrome
 - Affective disorders
 - Exacerbated prior mental illness 2

Roy-Byrne, Lancet Psychiatry 2020 Jun 25





Neuro & COVID-19

- Other neuro series—encephalitis rare
- MRI series
 - White matter hyperintense changes, hemorrhagic and microhemorrhagic changes most commonly in temporal lobe
 - 1 of 37 patients with SARS-CoV-2 RNA in CSF (from blood?).
- Autopsy series
 - 18 patients with neuro findings
 - All had hypoxic changes
 - No findings of encephalitis, virus or viral changes

Kremer, Radiol, June 16, 2020
Solomon, NEJM June 2020





Prevention

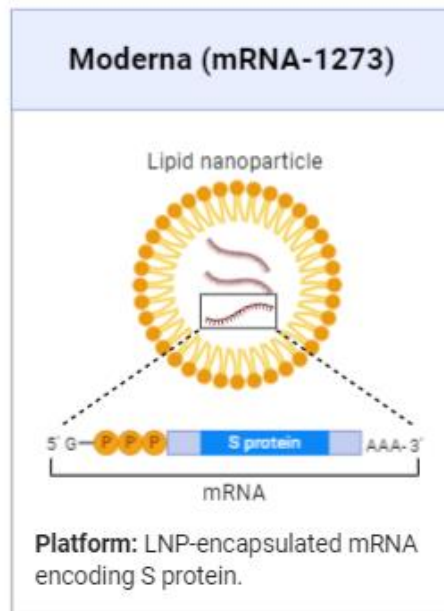


Moderna Vaccine

ORIGINAL ARTICLE

An mRNA Vaccine against SARS-CoV-2 — Preliminary Report

Lisa A. Jackson, M.D., M.P.H., Evan J. Anderson, M.D., Nadine G. Rouphael, M.D., Paul C. Roberts, Ph.D., Mamodikoe Makhene, M.D., M.P.H., Rhea N. Coler, Ph.D., Michele P. McCullough, M.P.H., James D. Chappell, M.D., Ph.D., Mark R. Denison, M.D., Laura J. Stevens, M.S., Andrea J. Pruijssers, Ph.D., Adrian McDermott, Ph.D., [et al.](#), for the mRNA-1273 Study Group*



Article Figures/Media

Metrics

July 14, 2020

Novel mRNA vaccine, potential for rapid manufacturer scaling

Phase 1 trial, 3 doses (dose-finding trial), 45 enrolled

Mild adverse reactions

Antibodies generated against both full-length S-2P & receptor-binding domain by first dose

Neutralizing antibodies needed booster, higher dose (100 ug)

Phase II trial (600 pp) 50 ug 100 ug by end of summer 2020

<https://www.nejm.org/doi/full/10.1056/NEJMoa2022483>





To submit your own question, please email QA@dkbmed.com





Are there any updates on patients who have recovered from COVID-19, can they be considered medically immune? At least for this “season” or a limited duration of time?





Is there any association between the BCG vaccine and risk of COVID-19?





Do you think evidence supports acknowledgement of a larger role of aerosol transmission of the virus?





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