

COVID19



Keeping Up with a Moving Target



CME Information

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The faculty reported the following financial relationships or relationships they or their spouse/life partner have with commercial interests related to the content of this continuing education activity:

Name of Faculty or Presenter	Reported Financial Relationship
Paul G. Auwaerter, MD, MBA, FIDSA	JNJ: Ownership equity Scientific Consulting: Verily, EMD Serono DMSB: Humanigen

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, including monoclonal antibodies, baricitinib, and several vaccine platforms.

All activity, content, and materials have been developed solely by the activity directors, planning committee members, and faculty presenters, and are free of influence from a commercial entity.



CME Information

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Learning Objectives

- Describe the effect of vaccination on the incidence of COVID-19 and hospitalization rates associated with the delta variant.
- Discuss the efficacy of casirivimab/imdevimab when used as post-exposure prophylaxis.



Thank You

This activity is supported by educational grants from Gilead Sciences, Inc., Regeneron Pharmaceuticals, and Eli Lilly and Company.

All activity content and materials have been developed solely by the activity directors, planning committee members, and faculty presenters.

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



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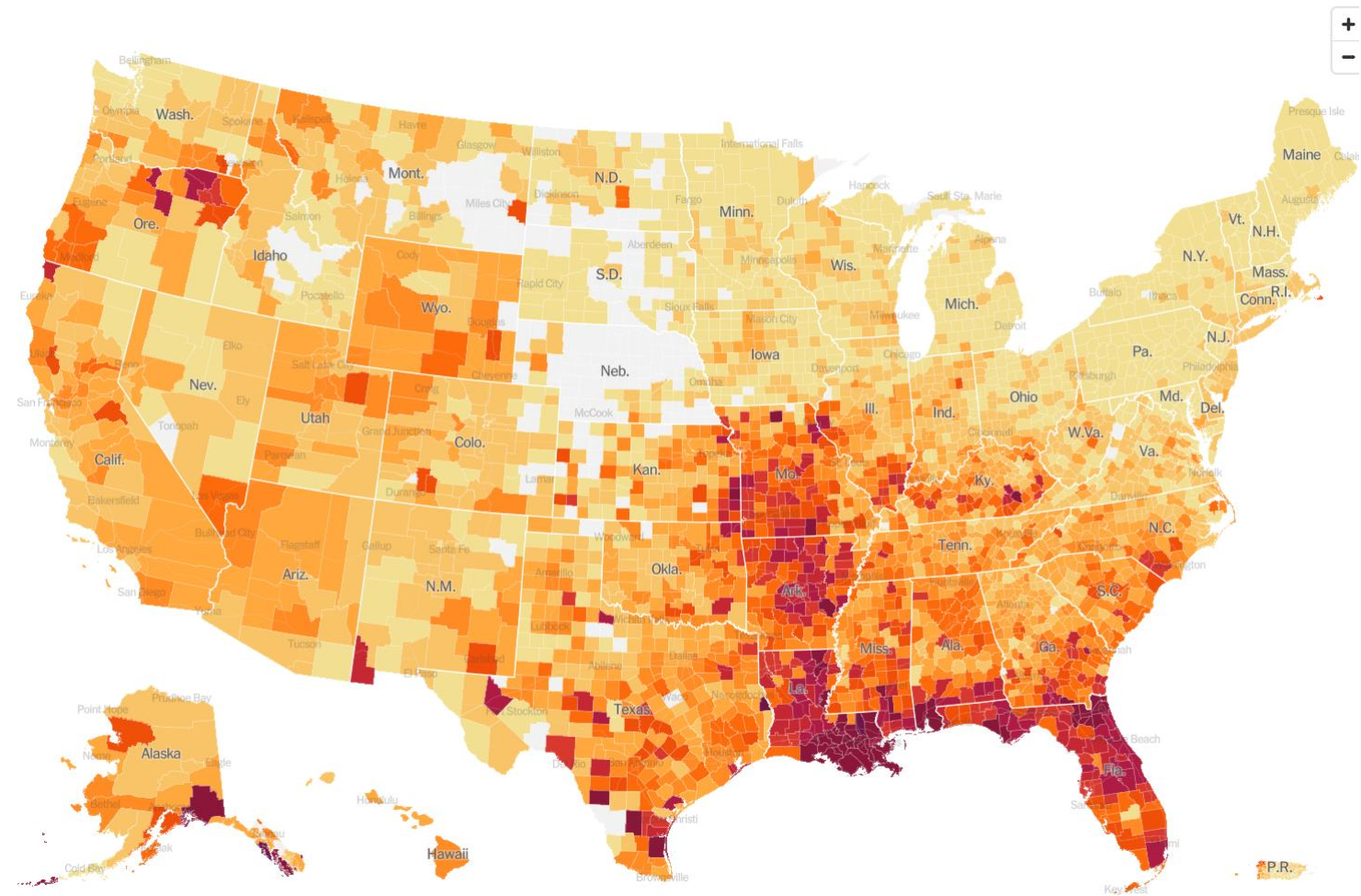
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Johns Hopkins University School of Medicine

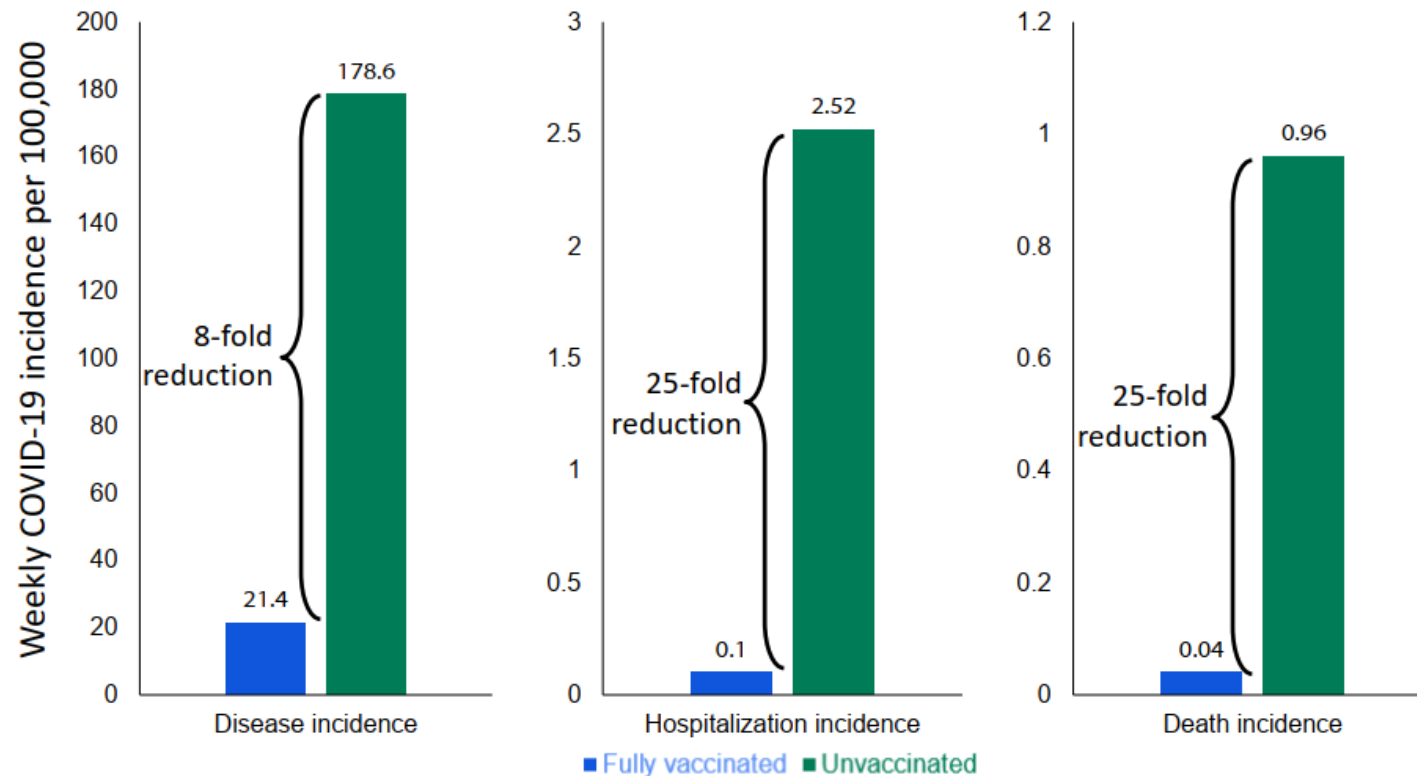
COVID-19 Hot Spots

Hot spots



National Estimates for Hospitalization and Death: Unvaccinated vs. Vaccinated

Greater risk of disease, hospitalization and death among unvaccinated vs. vaccinated people: National estimates

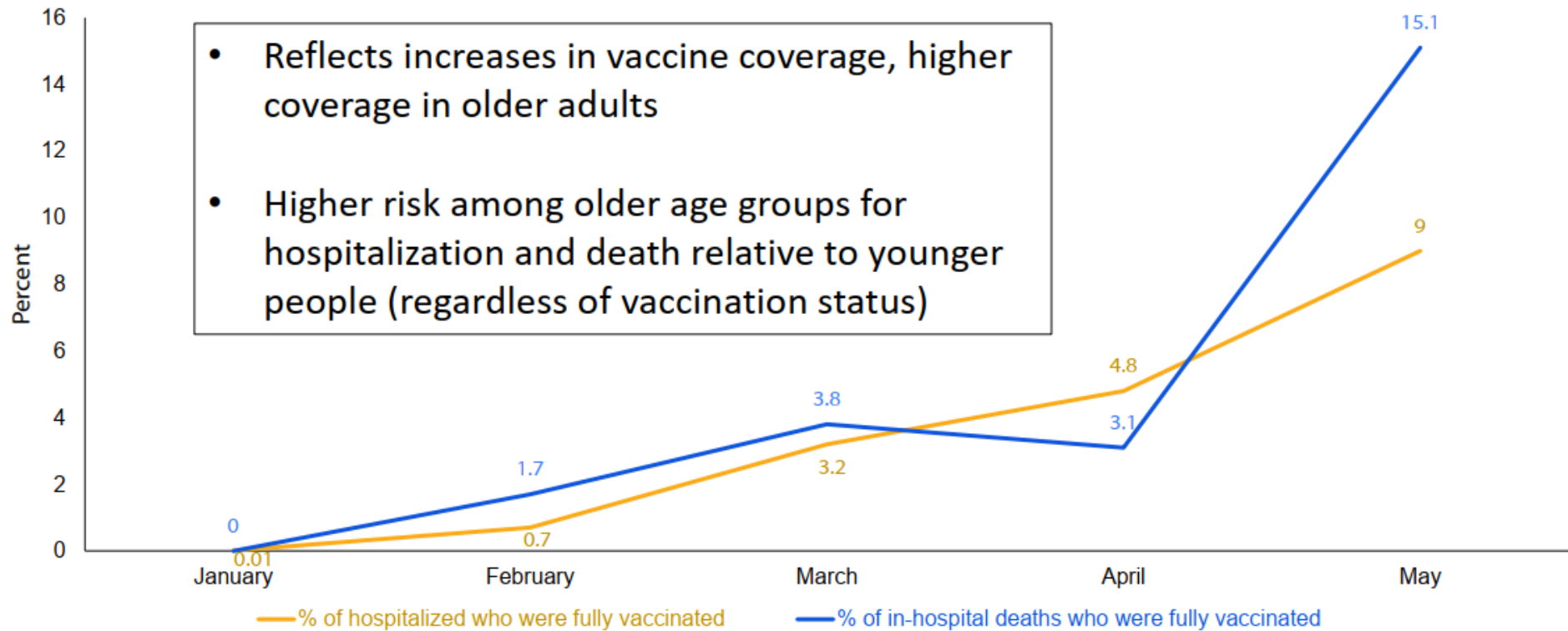


At current incidence, 35,000 symptomatic infections per week among 162 million vaccinated Americans

Data from COVID Tracker as of July 24, 2021. Average incidence 100 cases per 100,000 persons per week. Vaccine effectiveness against symptomatic illness = 88% (Lopez Bernal et al. [NEJM 2021](#)), where risk is $[1 - VE]$ or 12%. Vaccine effectiveness hospitalization (or death) = 96% (Stowe et al. [PHE preprint](#)), where risk is $[1 - VE]$ or 4%. Rate in unvaccinated = Community rate/ $[(1 - \text{fully vaccinated coverage}) + (1 - VE) * \text{fully vaccinated coverage}]$. Rate in fully vaccinated = $(1 - VE) * \text{Rate in unvaccinated}$. Fully vaccinated coverage proportions were from COVID Data Tracker as of July 24, 2021 (50% for US).

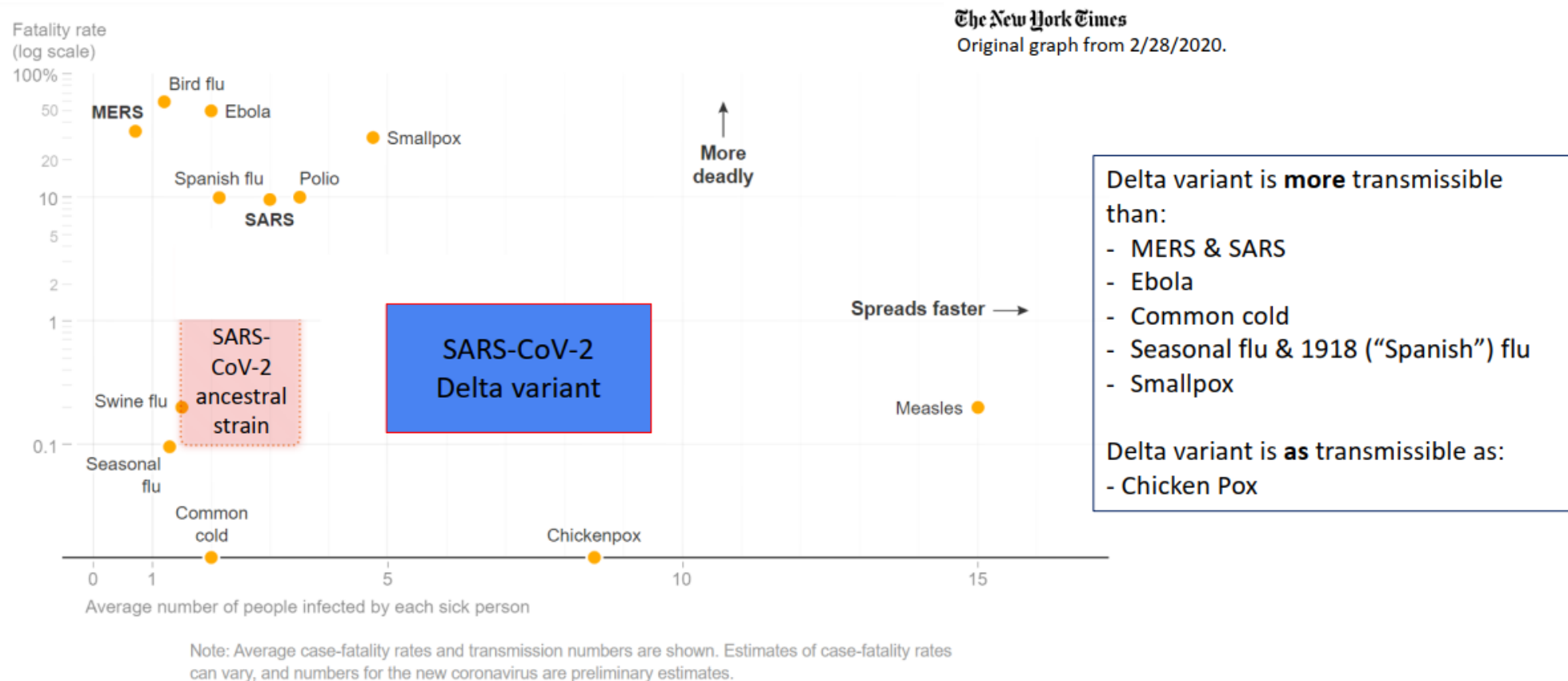
Vaccine Coverage and Hospitalization

Increasing percentage of vaccinated persons among those hospitalized in COVID-NET



COVID-19 Variant Transmissibility

Transmission of Delta variant vs. ancestral strain and other infectious diseases



COVID-19 Outbreak Trends

Centers for Disease Control and Prevention
MMWR

Morbidity and Mortality Weekly Report

Early Release / Vol. 70

July 30, 2021

Outbreak of SARS-CoV-2 Infections, Including COVID-19 Vaccine Breakthrough Infections, Associated with Large Public Gatherings — Barnstable County, Massachusetts, July 2021

Catherine M. Brown, DVM¹; Johanna Vostok, MPH¹; Hillary Johnson, MHS¹; Meagan Burns, MPH¹; Radhika Gharpure, DVM²; Samira Sami, DrPH²;
Rebecca T. Sabo, MPH²; Noemi Hall, PhD²; Anne Foreman, PhD²; Petra L. Schubert, MPH¹; Glen R. Gallagher PhD¹; Timelia Fink¹;
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Deirdre Arvidson, MSN⁴; Taylor Brock-Fisher, MSc⁵; Molly Dunn, DVM⁵; Amanda Kearns⁵; A. Scott Laney, PhD²

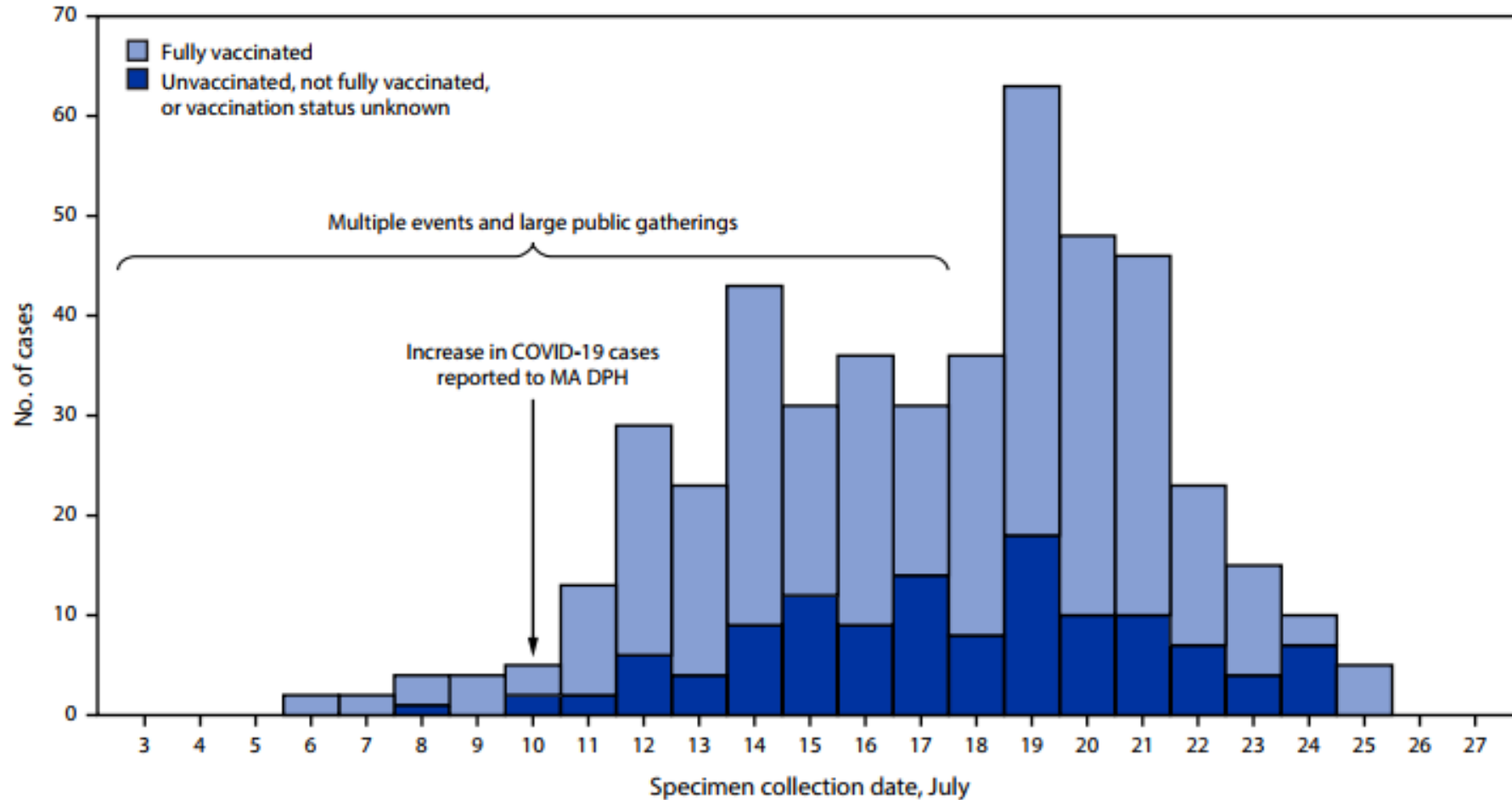
July 2021: 469 COVID-19 cases (many occurred in out-of-towners)

- 74% occurred in fully vaccinated
- 90% of those tested had the Delta variant

Many at public gatherings

Transmission from Large Public Gatherings

FIGURE 1. SARS-CoV-2 infections (N = 469) associated with large public gatherings, by date of specimen collection and vaccination status* — Barnstable County, Massachusetts, July 2021



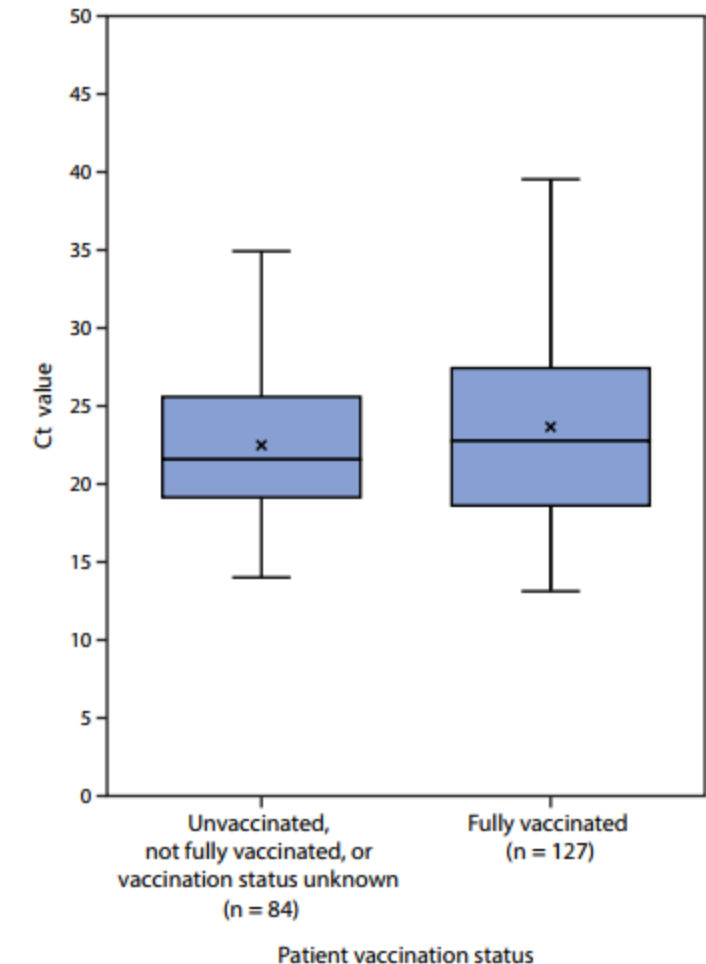
Delta Variant and Implications

Delta is highly transmissible, do only a small proportion of vaccinated exposed develop (1%)

Only 7 hospitalized, immunized suggests continued protection from severe disease

Viral carriage similar among immunized and unimmunized → masking, social distancing, avoiding larger gatherings, indoors with capacity limits

FIGURE 2. SARS-CoV-2 real-time reverse transcription-polymerase chain reaction cycle threshold values* for specimens from patients with infections associated with large public gatherings, by vaccination status† — Barnstable County, Massachusetts, July 2021[§]



Casirivimab/imdevimab EUA for Post-exposure prophylaxis (7/30/21)

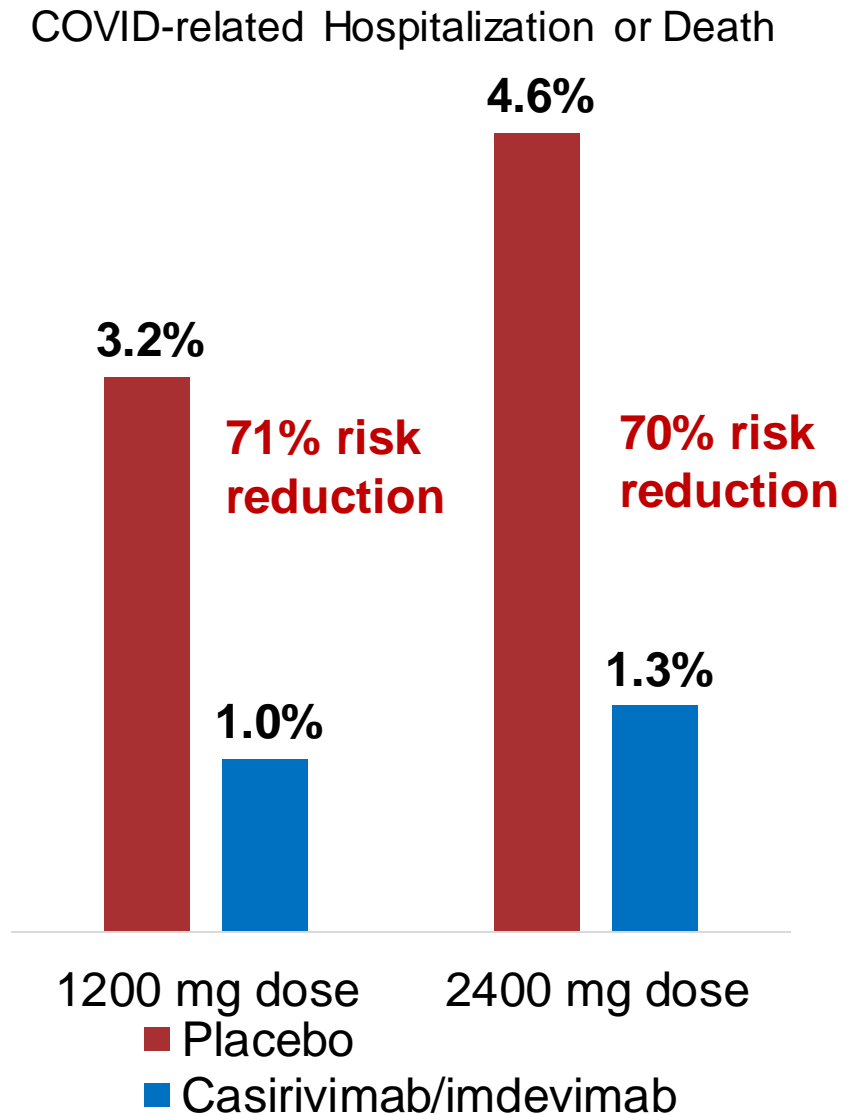
FDA authorizes REGEN-COV monoclonal antibody therapy for post-exposure prophylaxis (prevention) for COVID-19

Prophylaxis with REGEN-COV is not a substitute for vaccination against COVID-19

- Ages ≥ 12 yrs w/ exposure to SARS-CoV-2
- High risk for severe COVID-19
- Unvaccinated or expected inadequate immune response to vaccine
 - Individual exposure or group setting (prison, nursing home)
- Contact defined
 - w/i 6 ft x 15 minutes cumulatively over 24h confirmed COVID-19 individual
 - 81% reduction in illness from Phase III trial
- Dose: casirivimab 600 mg + imdevimab 600 mg both SQ
 - Option of repeat doses 300mg/300mg if ongoing exposure q 4 weeks

Casirivimab + Imdevimab mAb Cocktail

- Phase 3, n = 4,057 high-risk patients; obesity in 58%, CVD in 36%
- Diverse population: Hispanic 35%, Black 5%
- Also reduced time to symptom resolution (10 days vs 14 days, both doses)
- Jun 4: EUA at lower dose. Higher dose no longer authorized. May be administered SC when IV is not feasible or would delay treatment



COVID-19 “Weather” Forecasting

Pandemic is not over

Frustration over “reversals”

Vaccines offer protection against severe disease

Natural immunity does count but not as protective as vaccine-induced

Eventually, SARS-CoV-2 will become routine part of human viral infections





What percent of positive COVID-19 samples are actually tested for the variant? Are all labs required to test a certain percentage so that the sample is representative of both state and national levels?



Is the potency of natural immunity from previous SARS-CoV-2 infection related to severity of illness? (ie, would someone who had asymptomatic infection be considered immune?)



Thank You!

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- QA@dkbmed.com