

# COVID-19: What Have We Learned?

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# Disclosures

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# Disclosures

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## **April Morris, FNP-C**

Speaker Bureau: Gilead Sciences, Clinical Area-HCV

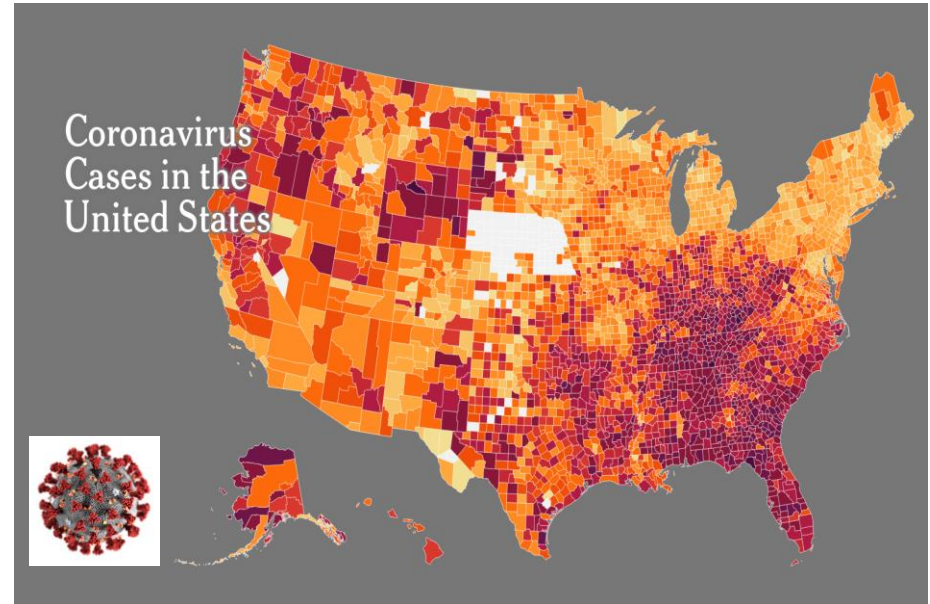
Speaker Bureau: Intercept, Clinical Area- PBC

Consultant: Intercept Pharmaceuticals, Clinical Area- PBC

Consultant: AbbVie, Clinical Area- HCV

# COVID Is Real

- Global
  - Infections: 271,558,771
  - Deaths: 4,517,240
- United States
  - Infections: 38,923,013
  - Deaths: 634,320

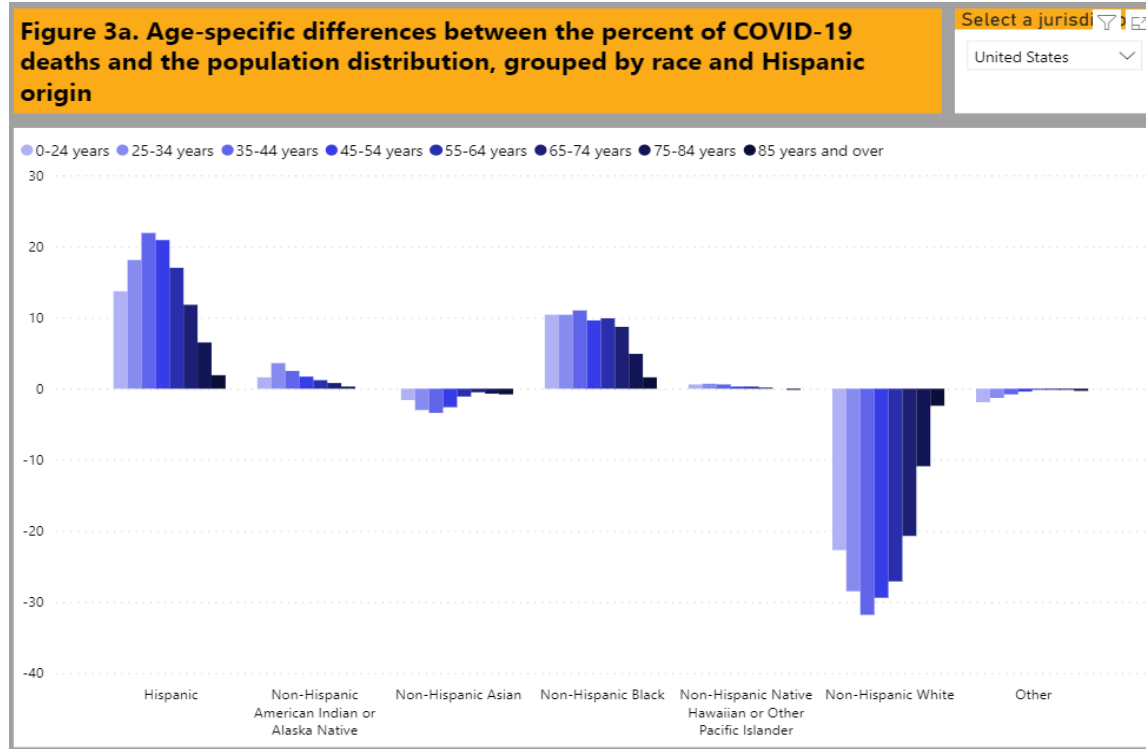


# COVID Care Costs

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- Projected \$202.6 billion lost revenue to US hospitals and health systems
- Projected global growth will shrink by 8%
- UN projects global economic cost of \$2 trillion

# COVID Highlights Healthcare Disparities



# COVID Disproportionately Impacts BIPOC

<b>Rate ratios compared to White, Non- Hispanic persons</b>	<b>American Indian or Alaska Native, Non-Hispanic persons</b>	<b>Asian, Non- Hispanic persons</b>	<b>Black or African American, Non- Hispanic persons</b>	<b>Hispanic or Latino persons</b>
Cases	1.7x	0.7x	1.1x	1.9x
Hospitalization	3.4x	1.0x	2.8x	2.8x
Death	2.4x	1.0x	2.0x	2.3x

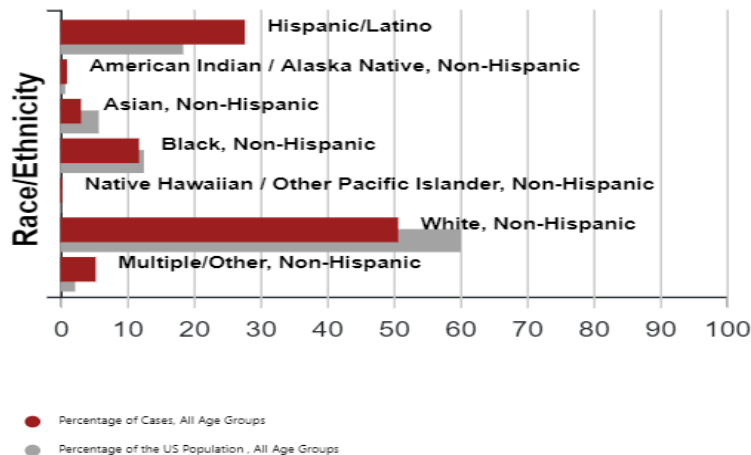
BIPOC: Black, Indigenous People of Color

<https://www.cdc.gov/coronavirus/2019-ncov/covid-data/investigations-discovery/hospitalization-death-by-race-ethnicity.html>.

# COVID-19 Cases and Deaths by Race/Ethnicity

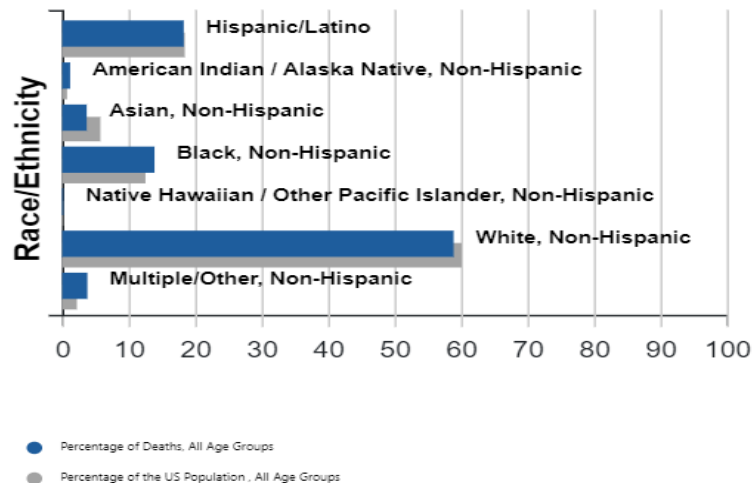
## Cases by Race/Ethnicity:

Data from 31,349,273 cases.  
Race/Ethnicity was available for  
20,193,105 (64%) cases.



## Deaths by Race/Ethnicity:

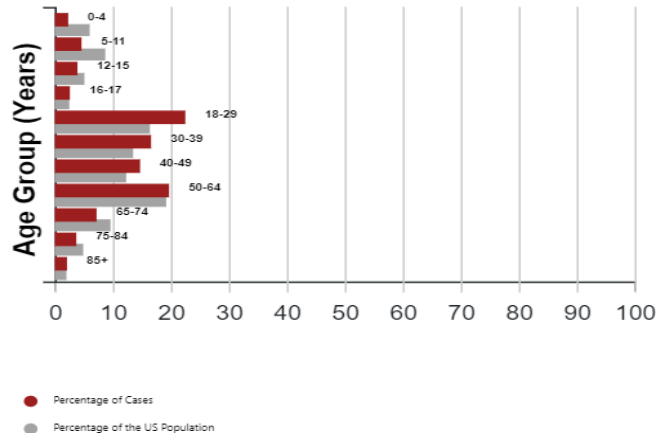
Data from 530,922 deaths.  
Race/Ethnicity was available for  
443,938 (83%) deaths.



# COVID-19 Cases and Death by Age Group

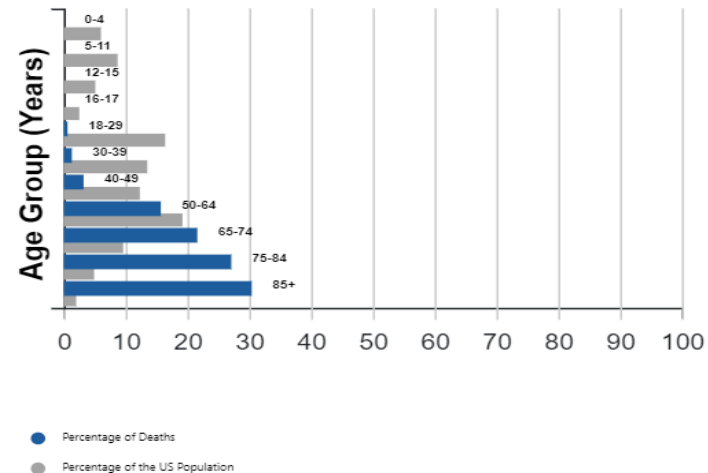
## Cases by Age Group:

Data from 31,349,273 cases. Age group was available for 31,017,756 (98%) cases.



## Deaths by Age Group:

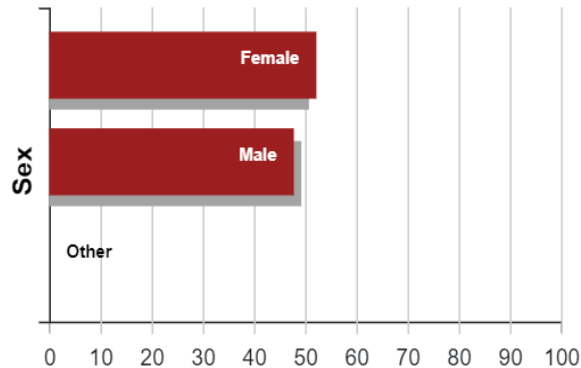
Data from 530,922 deaths. Age group was available for 530,871 (99%) deaths.



# COVID-19 Cases and Death by Sex

## Cases by Sex:

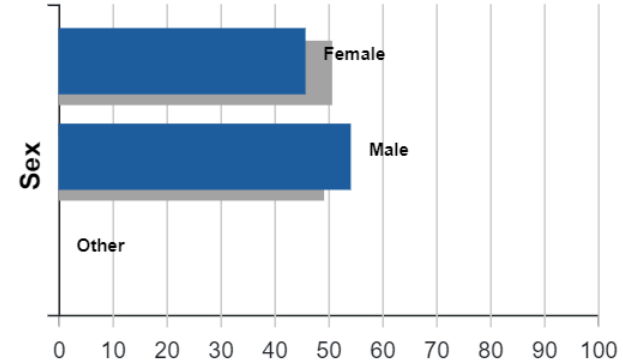
Data from 31,349,273 cases. Sex was available for 30,992,193 (98%) cases.



● Percentage of Cases, All Age Groups  
● Percentage of the US Population, All Age Groups

## Deaths by Sex:

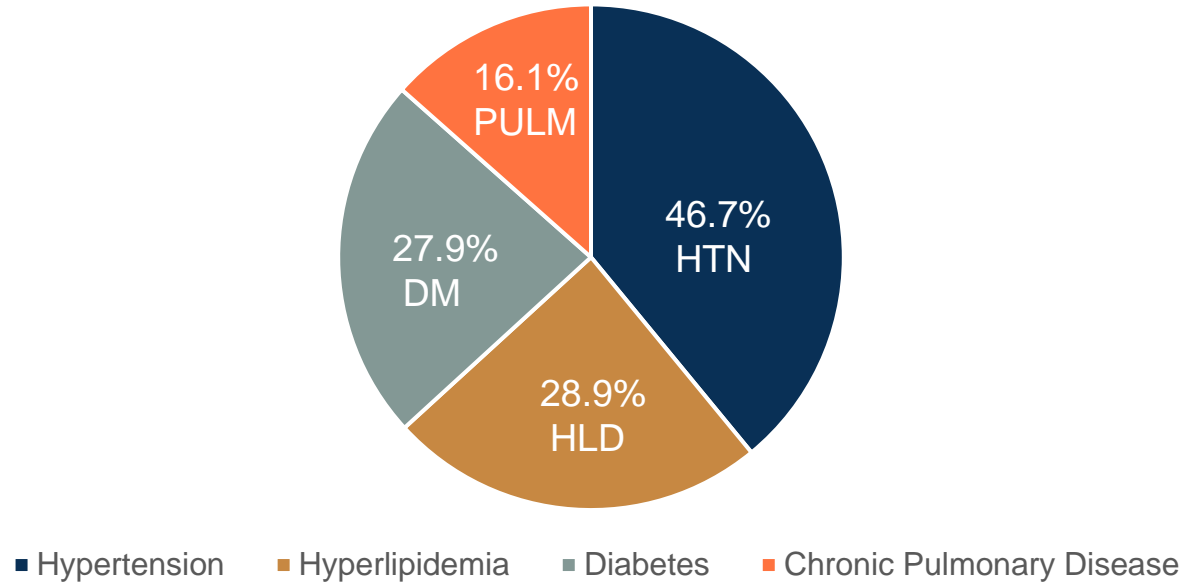
Data from 530,922 deaths. Sex was available for 529,722 (99%) deaths.



● Percentage of Deaths, All Age Groups  
● Percentage of the US Population, All Age Groups

# Underlying Medical Conditions Associated with High Risk for Severe COVID-19

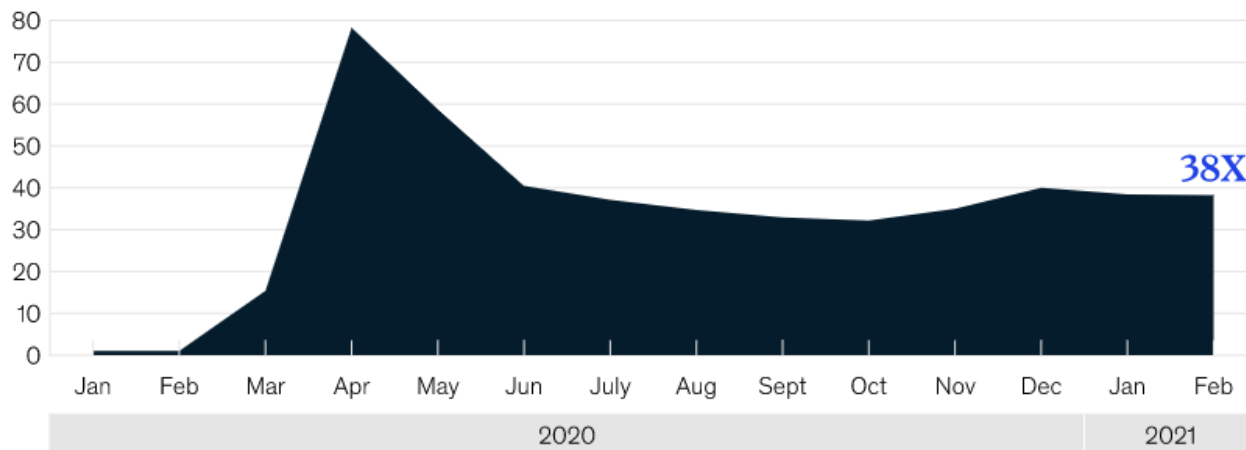
Most Common Comorbidities



# Telehealth to the Rescue?

- CMS eliminated restrictions and enhanced reimbursement for telehealth March 6, 2020

Telehealth claims volumes, compared to pre-Covid-19 levels (February 2020 = 1)<sup>1</sup>



# Telehealth Disparities

- 4/10 adults without internet in their home
- 3/10 adults earning \$30,000 or less do not own smartphone
- Adults over 65 owning smart phone or home broadband= 55-60%
- Rural broadband access= 63%
- BIPOC broadband access= 61-66%
- Approximately 14.5 million in US without internet access

<https://www.pewresearch.org/fact-tank/2021/06/22/digital-divide-persists-even-as-americans-with-lower-incomes-make-gains-in-tech-adoption/>;

<https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0123>; <https://healthpolicy.duke.edu/covid-19-and-rise-telehealth>.

# COVID Vaccination

- Emergency authorization US:
  - December 11, 2020 Pfizer-BioNTech COVID-19 Vaccine
  - December 18, 2020 Moderna COVID-19 Vaccine
  - February 27, 2021 Janssen COVID-19 Vaccine



# Vaccine Efficacy

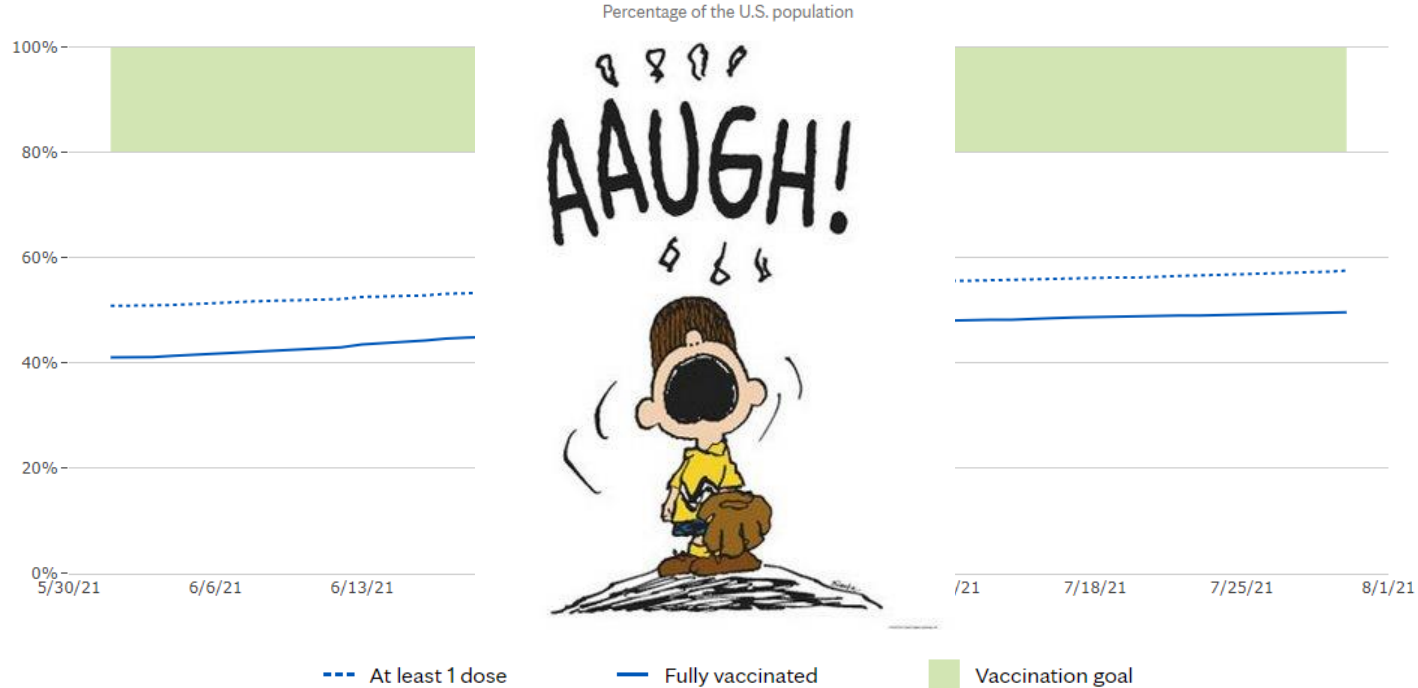
- Pfizer: 93.7% alpha
- Moderna: 94%
- Johnson & Johnson: 64% infection prevention
- Nearly 100% prevention of severe illness and hospitalization

**YES!**

# Vaccine Efficacy-Delta Variant

- Vaccine efficacy is maintained against symptomatic disease caused by Delta
- Observational data suggests there may be reduced efficacy against all infection with Delta, as low as 50-67%
  - Short timeframes
  - Difficult to control for confounding
  - Positive PCR without clinical symptoms may not be meaningful

# Vaccine Uptake Lags



# Vaccine Safety

- Anaphylaxis: 2-5/1,000,000
- Thrombosis with thrombocytopenia syndrome (TTS)
  - J & J
  - 44 confirmed/14.2 million doses
- Guillain-Barre: J & J, preliminary report of 176
- Myocarditis/pericarditis: mRNA vaccines; 1377 cases reported, 798 confirmed by CDC and FDA
- Deaths: 7218 reports via VAERS over 340 million doses = 0.0020%

# Recommended Therapies for COVID-19

## Out-Patient

- Monoclonal antibodies
  - Casirivimab-Imdevimab
  - Sotrovimab

## Not Recommended:

Hydroxychloroquine

Azithromycin

Ivermectin

Vitamin D

Convalescent plasma

## In-Patient

- Remdesivir
  - Antiviral, inhibits replication
- Dexamethasone
  - Corticosteroid, reduces inflammatory response
- Tocilizumab (alt. Baricitinib)
  - Anti-IL6 monoclonal antibody with additive anti-inflammatory activity

# COVID Lessons

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- COVID is real
- COVID is costly
- COVID vaccines are safe and effective
- COVID vaccine uptake needs to improve
- Telehealth can happen
- COVID highlights disparities