COVID-19 HEALTHCARE PROVIDER UPDATE

JULY 24, 2020

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Our understanding of COVID-19 is evolving rapidly.
This presentation is based on our knowledge as of July 23, 2020, 5 PM.

OUTLINE

WHERE WE ARE NOW

RECENT EPIDEMIOLOGY OF COVID-19 IN NYC

IMPROVING DATA FOR A BETTER PUBLIC HEALTH RESPONSE TO COVID-19

CLINICAL UPDATE: VITAMIN D AND COVID-19

QUESTIONS AND DISCUSSION

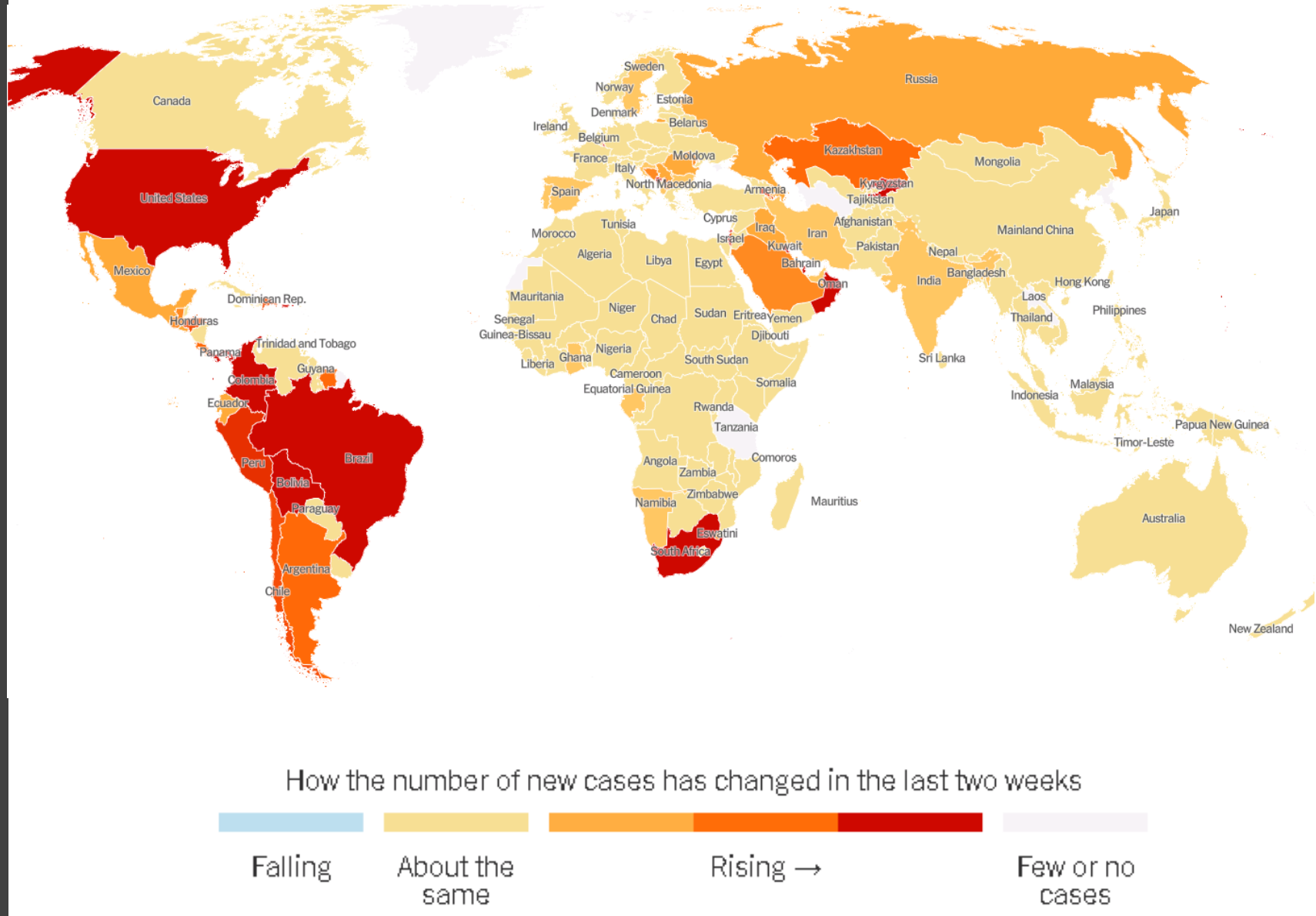
WHERE WE ARE NOW

- Over 15 million cases and 623,000 deaths due to COVID-19 confirmed worldwide
- Cases are surging in many regions, with some areas seeing second or third waves of infections
- Daily case counts are increasing in much of the United States; some areas are re-opening while others impose restrictions
- New York City (NYC) began Phase Four of reopening on July 20
- Indicators of viral circulation in the community are being monitored closely to gauge success of suppression measures

COVID-19 WORLDWIDE

>15 million cases
>623,000 deaths

7/23/20

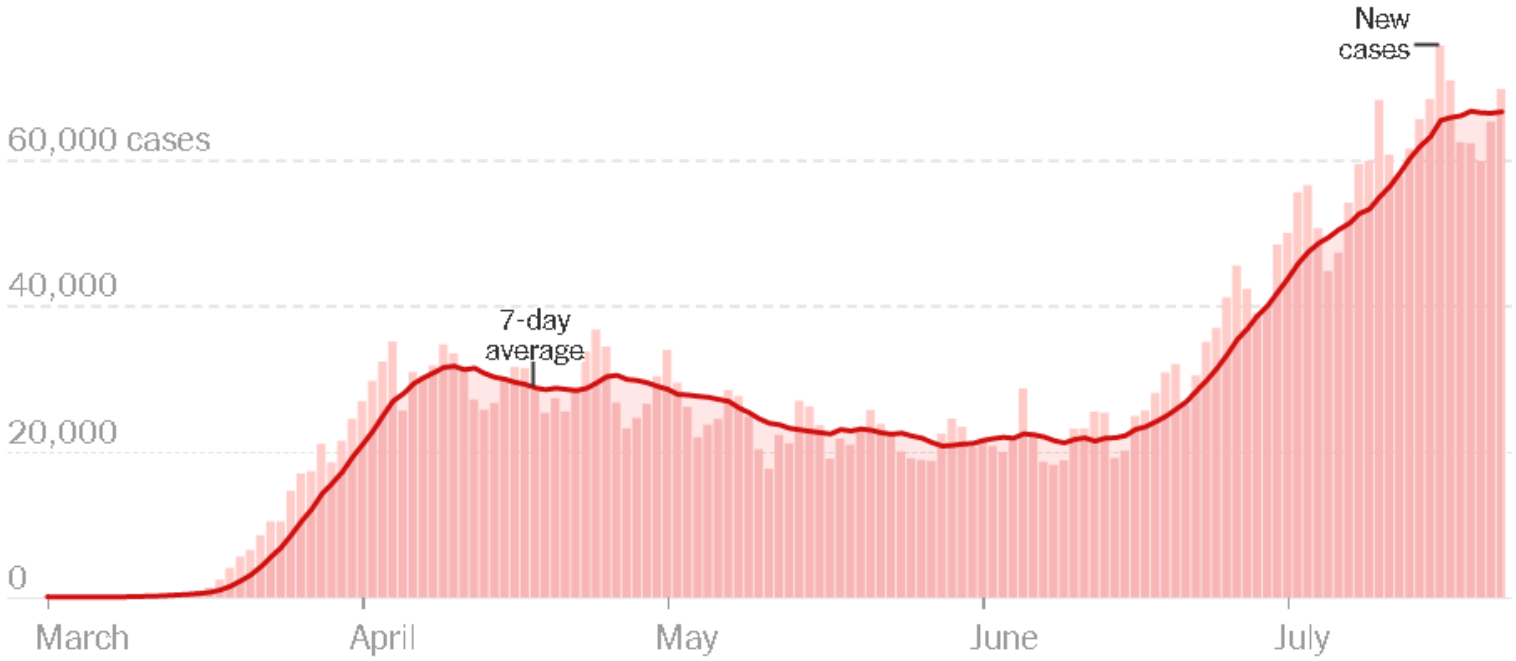


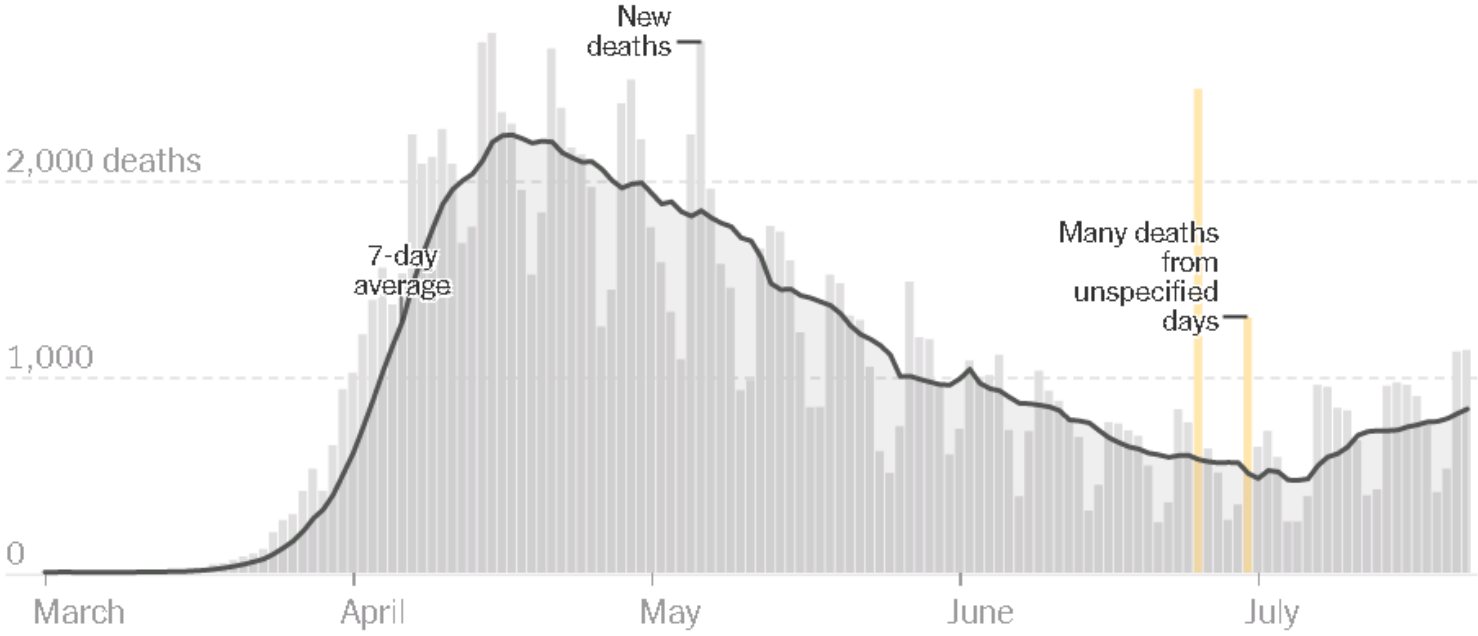
New York Times. Coronavirus map: tracking the global outbreak
https://www.nytimes.com/interactive/2020/world/coronavirus-maps.html

CUMULATIVE CASES AND DEATHS, U.S.
7/23/20

> 4 million cases
(~27% of confirmed global cases)

> 143,000 deaths
(~23% of reported global deaths)

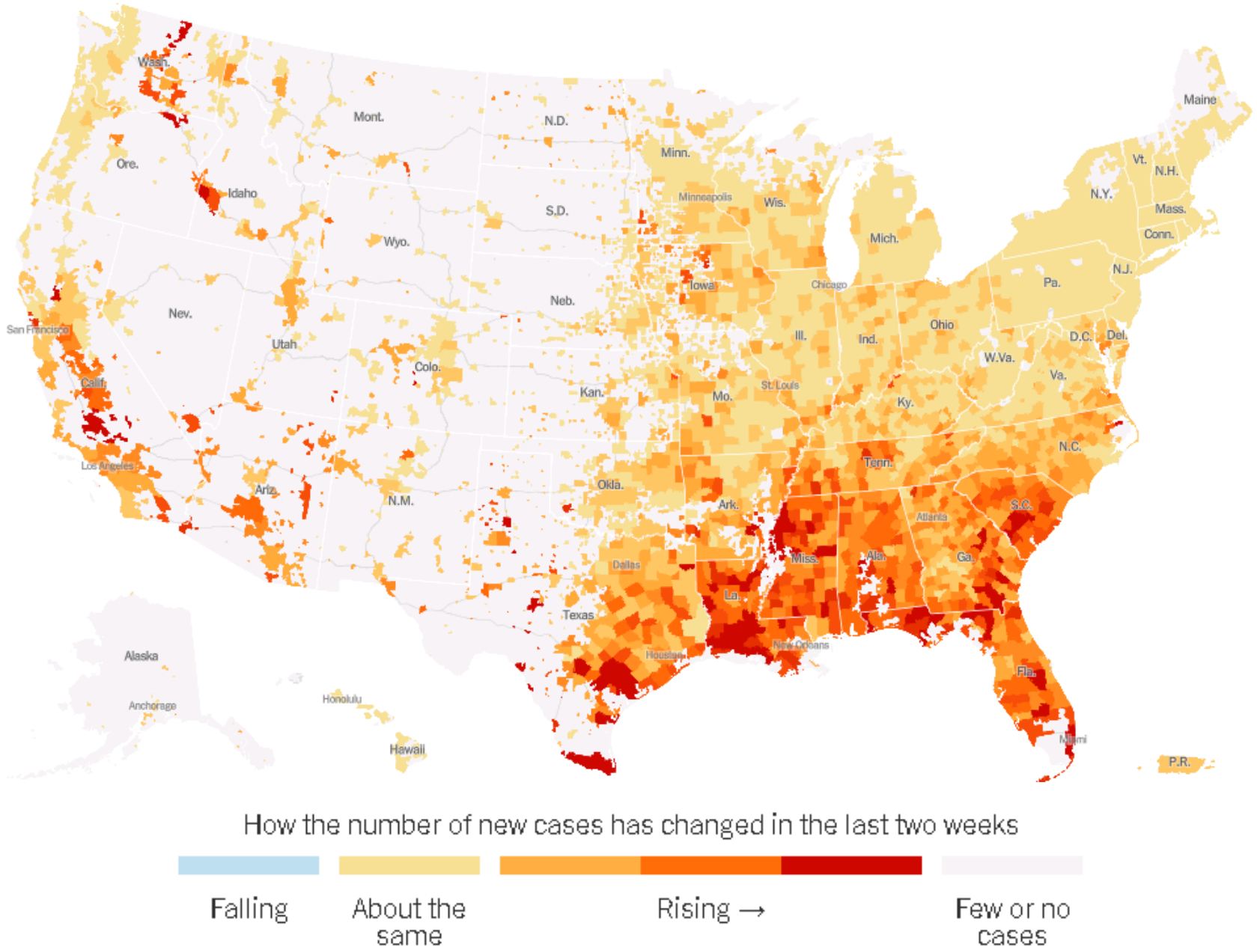




New York Times. Coronavirus in the U.S.: latest map and case count.
https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html

CHANGE IN NUMBER OF NEW CASES IN THE U.S. IN THE PAST TWO WEEKS

7/23/20



New York Times. Coronavirus in the U.S.: latest map and case count. https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html

CHARACTERISTICS OF PERSONS WHO DIED WITH COVID-19, UNITED STATES

- Understanding demographic and clinical characteristics of persons who died due to COVID-19 can inform prevention efforts
- Study sample: decedents with laboratory-confirmed infection with COVID-19, February 12-May 18, 2020
- Data sources
  - Standardized CDC COVID-19 case reports from 57 jurisdictions
  - Supplementary data from 15 states and NYC (Feb 12-Apr 24, 2020)
    - Race/ethnicity
    - Underlying medical conditions
    - Clinical course
    - Location of death

Wortham JM, et al. Characteristics of Persons Who Died with COVID-19 — United States, February 12–May 18, 2020. *MMWR Morb Mortal Wkly Rep.* 2020;69(28):923-929. http://dx.doi.org/10.15585/mmwr.mm6928e1

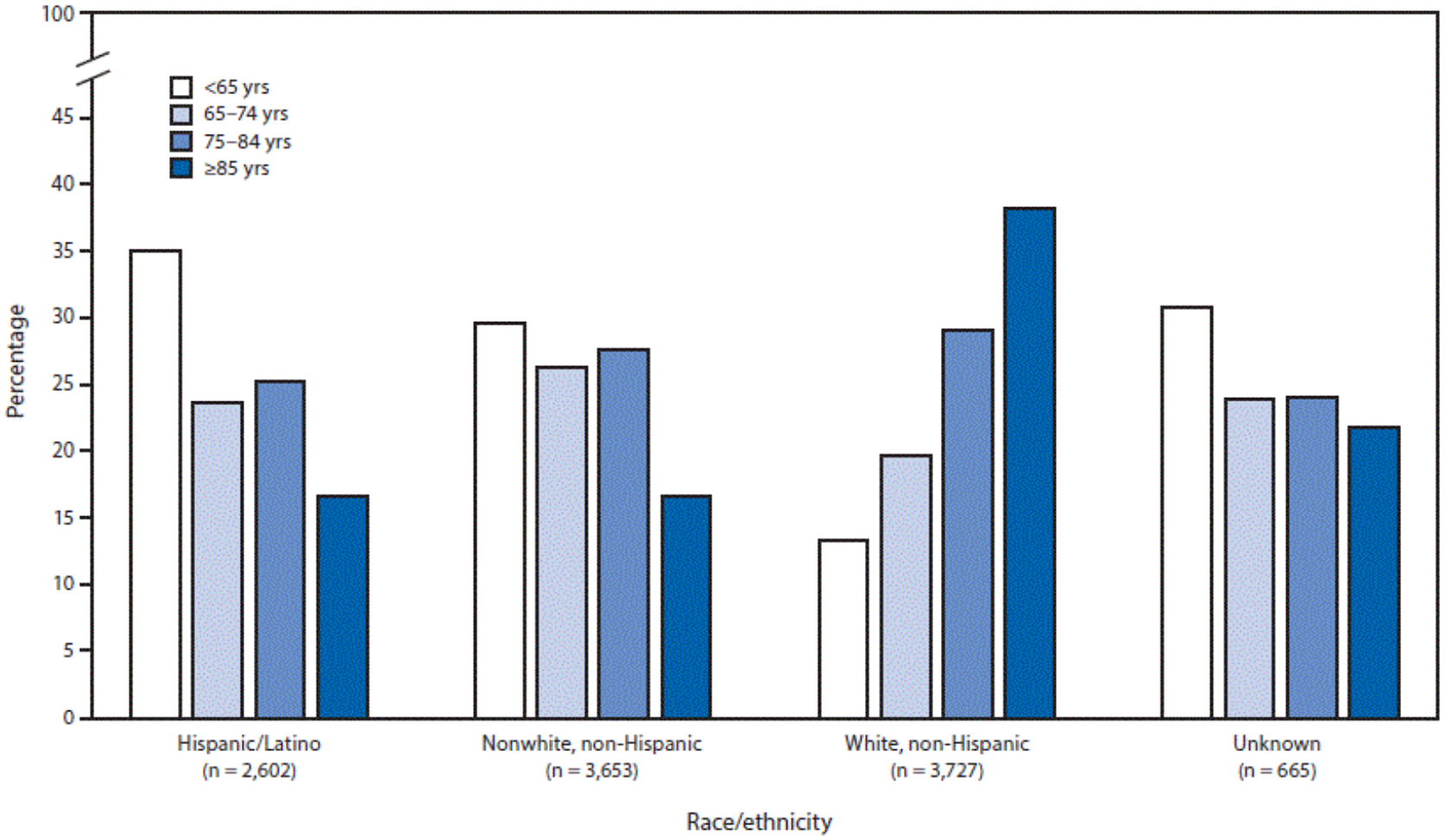
CHARACTERISTICS OF DECEDENTS

Characteristic	Case-based surveillance N= 52,166	Supplemental surveillance N=10,647*
Age, years (median, IQR)	78 (67-87)	75 (64-84)
Sex		
Male	55%	61%
Female	44%	39%
Other/unknown	1%	<1%
Race/ethnicity		
White	40%	35%
Black	21%	25%
Hispanic/Latino	14%	24%
Asian	4%	6%
Multiracial/other	3%	3%
Unknown	18%	6%

* 9,997 (93.9%) resided in New York City, New Jersey, or the state of Washington

Wortham JM, et al. *MMWR Morb Mortal Wkly Rep.* 2020;69(28):923-929. http://dx.doi.org/10.15585/mmwr.mm6928e1

DECEDENT RACE/ETHNICITY BY AGE GROUP



Among 10,647 decedents with supplemental data

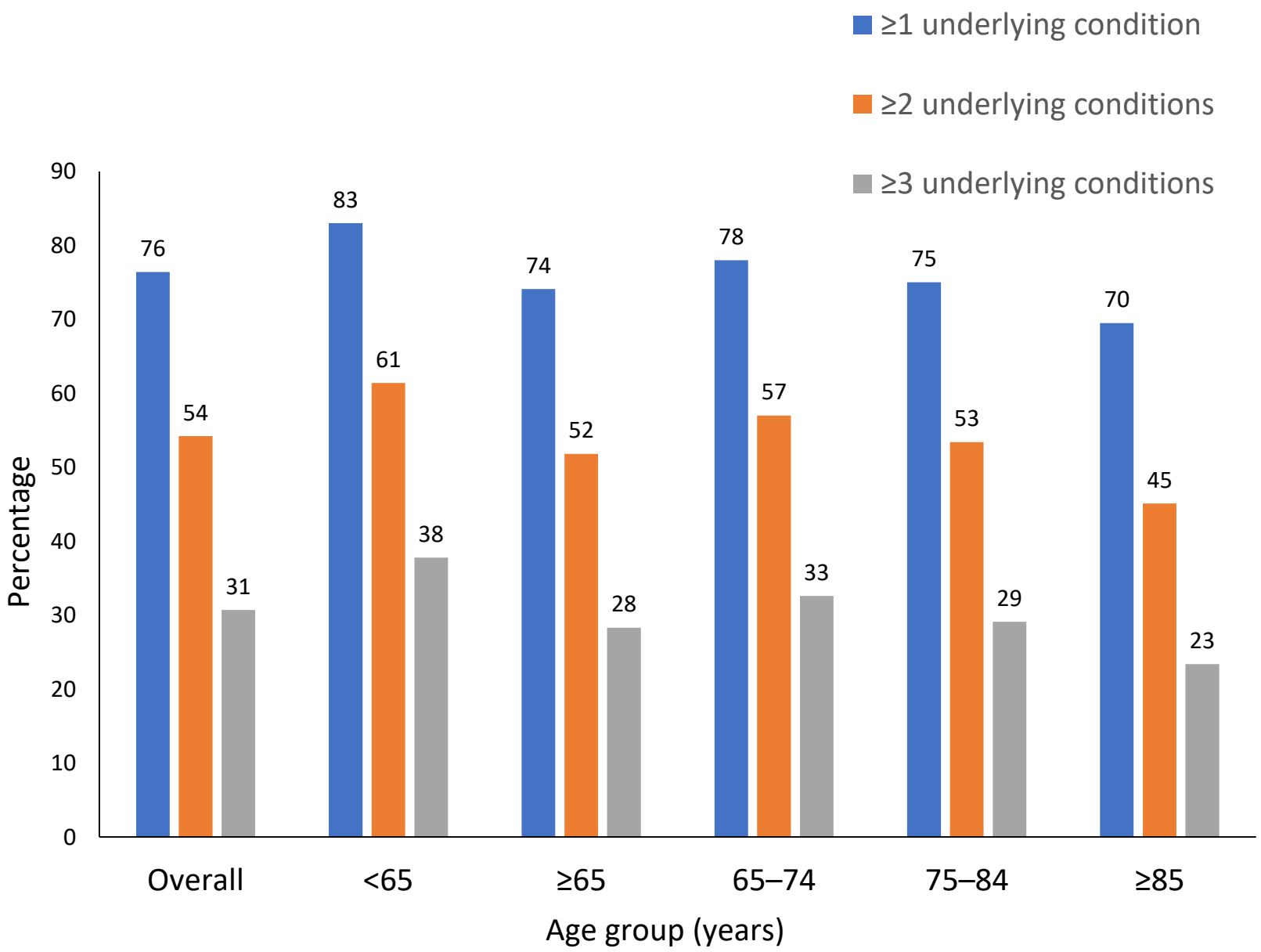
Wortham JM, et al. *MMWR Morb Mortal Wkly Rep.* 2020;69(28):923-929.
http://dx.doi.org/10.15585/mmwr.mm6928e1

UNDERLYING HEALTH CONDITIONS BY AGE GROUP

Most common conditions:

- Cardiovascular disease (61%)
- Diabetes (40%)
- Chronic kidney disease (21%)
- Chronic lung disease (19%)

Among 10,647 decedents with supplemental data



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CLINICAL COURSE

Characteristic	Age Group (years)					
	Overall	<65	≥65	65-74	75-84	≥85
	N=10,647	n=2,681	n=7,966	n=2,463	n=2,900	n=2,603
Median illness duration (days)	10	11	9	10	10	8
Hospitalized						
Yes	84%	89%	83%	88%	84%	76%
Unknown	16%	11%	17%	12%	16%	24%
Location of death						
Hospital	62%	59%	63%	66%	65%	58%
Long-term care facility	5%	1%	7%	2%	5%	13%
Emergency department	5%	7%	5%	5%	5%	4%
Home	1%	1%	1%	<1%	<1%	<1%
Hospice	<1%	<1%	<1%	<1%	<1%	<1%
Other/Unknown	27%	32%	25%	25%	24%	24%

Wortham JM, et al. *MMWR Morb Mortal Wkly Rep.* 2020;69(28):923-929. http://dx.doi.org/10.15585/mmwr.mm6928e1

LIMITATIONS

- Convenience sample (not representative)
- Data on clinical outcomes and location of death missing for high proportion of cases
- Statistical comparisons, calculations of rates, and assessment of interactions among factors (age, race/ethnicity, underlying conditions) were not possible

Wortham JM, et al. *MMWR Morb Mortal Wkly Rep.* 2020;69(28):923-929. http://dx.doi.org/10.15585/mmwr.mm6928e1

KEY POINTS

- Most decedents were aged ≥ 65 years
- Over 3/4 had ≥ 1 underlying medical condition
  - Diabetes prevalence among decedents aged < 65 years (50%) was higher than that reported previously among patients hospitalized with COVID-19 (35%) and persons aged < 65 years in the general population (< 20%)
- Over 1/3 of Hispanic decedents and nearly 1/3 of nonwhite, non-Hispanic decedents were aged < 65 years, whereas only 13% of White decedents were aged < 65 years
- Among decedents aged < 65 years, 8% died in the ER or at home
  - May reflect lack of health care access, delays in seeking care, diagnostic delays
  - Encourage patients, particularly those with underlying medical conditions, to seek medical care early in COVID-19 illness
  - Consider the possibility of severe disease among younger persons who are Hispanic, nonwhite, or have underlying medical conditions
- Understanding factors contributing to racial/ethnic mortality differences and out-of-hospital deaths might inform targeted, community-level mortality prevention initiatives

Wortham JM, et al. *MMWR Morb Mortal Wkly Rep.* 2020;69(28):923-929. http://dx.doi.org/10.15585/mmwr.mm6928e1

SEROPREVALENCE OF ANTIBODIES TO SARS-COV-2

- Confirmed COVID-19 cases do not account for individuals who were not tested (recovered after mild or no symptoms or had limited access to testing)
- CDC partnered with commercial labs at 10 U.S. sites to conduct serologic testing on 16,025 de-identified blood specimens, including specimens collected for reasons unrelated to COVID-19 (e.g., routine visit)
  - Presence of antibodies to SARS-CoV-2 spike protein estimated using an enzyme-linked immunosorbent assay
  - Age- and sex-adjusted seroprevalence estimates were extrapolated to site populations to estimate overall number of infections
  - Estimates were divided by cumulative case counts reported to health departments

Havers FP, et al. Seroprevalence of antibodies to SARS-CoV-2 in 10 sites in the United States, March 23-May 12, 2020. *JAMA Intern Med*. Published online July 21, 2020. https://doi.org/10.1001/jamainternmed.2020.4130

SEROPREVALENCE OF ANTIBODIES TO SARS-COV-2

- Seroprevalence ranged from 1.0% in San Francisco Bay area (collected April 23-27) to 6.9% in NYC metropolitan area (collected March 23-April 1)
- Many limitations
  - Samples not representative of the populations studied
  - Factors including race/ethnicity and occupation not studied
  - Results are preliminary
- For most sites, including NYC metropolitan area, it is likely that > 10 times more infections occurred than the number of reported COVID-19 cases
- Nonetheless, only a minority of people across sites, including NYC, are estimated to have antibodies

Havers FP, et al. *JAMA Intern Med*. Published online July 21, 2020. https://doi.org/10.1001/jamainternmed.2020.4130

SEROPREVALENCE, NYC METRO AREA, APRIL 25-MAY 6, 2020

23.2% (95% confidence interval: 19.9 - 26.3%)
Age and sex standardized seroprevalence estimate

April 25 - May 6 2020
When samples were collected

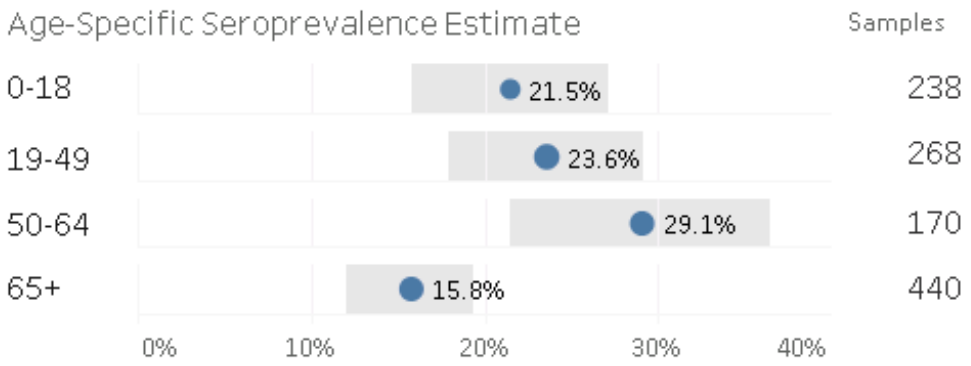
281,670
Cases reported by 5/6/2020

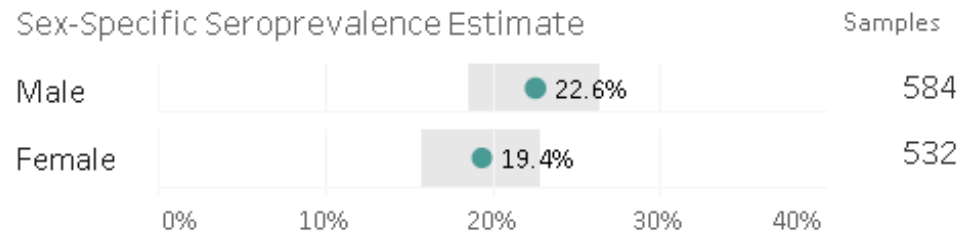
2,832,000
Estimated infections based on seroprevalence

At Least 10x higher
Difference between estimated number of infections based on seroprevalence and reported case counts

Catchment area: Suffolk, Kings, Queens, Nassau, New York, Westchester, Richmond, Bronx

Number of samples collected: 1,116





CDC. Interactive Serology Dashboard for Commercial Laboratory Surveys.https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/commercial-labs-interactive-serology-dashboard.html

EPIDEMIOLOGY OF COVID-19 IN NYC

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IMPROVING DATA FOR A BETTER PUBLIC HEALTH RESPONSE TO COVID-19

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ISSUES WITH COVID-19 DATA

- Due to historical, institutional, and structural oppression, Black, Brown, people of color, and LGBTQ+ people experience more health disparities[1]
- Data collection systems have not been collecting standard demographic information, and some haven't used current identity terms
- Race/ethnicity data are missing for roughly half of reported COVID-19 cases nationwide[2]
- Most state and federal data lack inclusive collection, analysis, and reporting of sexual orientation and gender[3]

REASONS FOR MORE INCLUSIVE AND EXPANSIVE DATA COLLECTION

- There is much more diversity within race/ethnicity and sexual orientation/gender identity than we capture; for example:
  - The US Census Bureau reports that **two-thirds** of persons living in NYC are Hispanic/Latino and/or do not identify as white[4]
  - Based on multiple studies, there are **~756,000** LGBTQ New Yorkers[5], of whom ~**50,000** may be transgender[6]
- Many people identify in more nuanced ways than we currently capture in race/ethnicity categories; for example:
  - The NYC Health Department found that, without being asked, **22%** of Latinos and **5%** of non-Latino persons residing in NYC volunteer additional identity information
- The NYC Health Department recommends systematic ascertainment of these data and is piloting new approaches in ongoing COVID-19 work

COVID-19: COLLECTION OF RACE, ETHNICITY, SEXUAL ORIENTATION, AND GENDER IDENTITY

- New race, ethnicity, sexual orientation and gender identity questions have been added to questionnaires, databases, data abstraction forms
- Interviewers received training on how to ask these questions and were provided with guides to explain terminology
- Questions are being used during COVID-19 case investigations, contact tracing, evaluation of social distancing, plasma donation, epidemiologic studies, and cluster investigations

COVID-19 RACE/ETHNICITY QUESTIONS

Do you identify as Hispanic, Latino or Latina? Please select one.

- ❑ Yes, Hispanic, Latino or Latina
- ❑ No, not Hispanic, Latino or Latina

Which of the following races do you identify as? You may select all that apply.

- ❑ Asian, including South Asian
- ❑ Black, including African American or Afro-Caribbean
- ❑ Native American or Alaska Native
- ❑ Native Hawaiian or Pacific Islander
- ❑ White
- ❑ I do not identify as any of these races

COVID-19 RACE/ETHNICITY QUESTIONS

Which specific ethnic or cultural groups do you identify as, if any? You may choose more than one.

- ❑ Arab
- ❑ Chinese
- ❑ Dominican
- ❑ Guyanese
- ❑ Haitian
- ❑ Indian
- ❑ Italian
- ❑ Jamaican
- ❑ Jewish
- ❑ Mexican
- ❑ Puerto Rican
- ❑ Russian
- ❑ Another group or groups. Please specify: _____
- ❑ I do not identify as any specific ethnic or cultural group

CAPTURING SEXUAL ORIENTATION, GENDER IDENTITY, AND SEX ASSIGNED AT BIRTH FIELDS

Among NYC REACH member hub practices using electronic medical records:

- **13%** of practices have used the sexual orientation field
- **17%** of practices have used the gender identity fields
- **19%** of practices have used the sex assigned at birth field

COVID-19 QUESTIONS: SEXUAL ORIENTATION, GENDER IDENTITY, AND SEX ASSIGNED AT BIRTH

How do you currently identify your gender? Please select the one that best describes you. Do you identify as a:

- ❑ Woman or girl
- ❑ Man or boy
- ❑ Transgender woman or Transgender girl
- ❑ Transgender man or Transgender boy
- ❑ Non-binary or genderqueer person
- ❑ A gender identity not listed above: _____

What sex were you assigned at birth? Please select one:

- ❑ Female
- ❑ Male
- ❑ Neither female nor male

Which of the following best describes your sexual orientation? Please select the one that best describes you:

- ❑ Gay or lesbian
- ❑ Straight or heterosexual
- ❑ Bisexual
- ❑ Queer
- ❑ Questioning or not sure
- ❑ A sexual orientation not listed above: _____

HOW TO ASK ABOUT SEXUAL ORIENTATION, GENDER IDENTITY, AND SEX ASSIGNED AT BIRTH[7]

Create a welcoming environment for LGBTQ+ people in general

- Routinely ask about all three categories
- When possible, use open-ended questions
- Ask sexual orientation or gender identity questions during the social or sexual history portion of the patient interview
- Ask only necessary or relevant questions and explain why you're asking them
- Normalize: *"This is something I ask all of my patients."*

RECOMMENDATIONS FOR PROVIDERS

- Promote inclusive data collection as an important issue
- Use more inclusive questions and terminology for race/ethnicity, sexual orientation, gender identity, and sex assigned at birth as a step towards ending health disparities
- Call the **Provider Access Line (PAL): 866-692-3641** with questions or concerns
- Learn more: Dear Colleague COVID-19 Updates Health Inequities and COVID-19

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CLINICAL UPDATE: VITAMIN D AND COVID-19

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VITAMIN D AND RESPIRATORY INFECTIONS

- Vitamin D insufficiency has been linked to acute respiratory infections in observational studies[1]
- Proposed mechanisms
  - Vitamin D activity in the lungs
  - Modulation of innate and adaptive immune responses[2]
  - Suppression of cytokine response may reduce risk for severe lung injury[3]
- Some studies have suggested a role for vitamin D supplementation in preventing respiratory illnesses
  - Evidence is currently insufficient to support routine supplementation for respiratory illness prevention[4]

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VITAMIN D AND COVID-19

- Lower vitamin D levels noted to be:
  - Common in older adults, persons who are obese, persons with diabetes
  - Common among patients with severe COVID-19[1]
  - Correlated with poorer outcomes in observational study of COVID-19[2]
- Some observational studies have noted a correlation between COVID-19 severity or mortality and latitude
  - Inverse correlation between mean national levels of vitamin D and poor COVID-19 outcomes in European countries has been reported[3]
- Retrospective review of 780 patients in Indonesia found association between low vitamin D and death, controlling for age, sex, and comorbidities[4]
- Study of > 500,000 UK Biobank participants, 449 who had confirmed COVID-19, did not find an association between vitamin D level measured in 2006-2010 and COVID-19

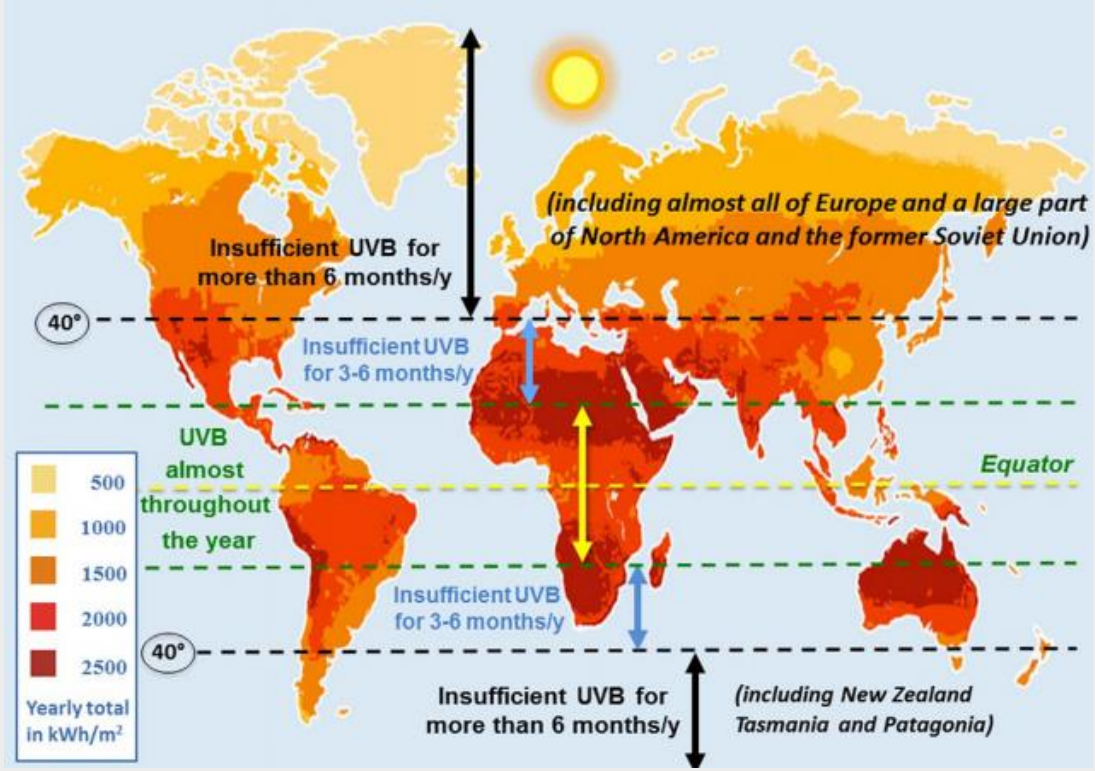

Image: Pierrot-Deseilligny C, Souberbielle J-C. Vitamin D and multiple sclerosis: an update. *Mult Scler Relat Disord.* 2017;14:35-45. https://doi.org/10.1016/j.msard.2017.03.014

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VITAMIN D AND COVID-19

- Reports to date are preliminary and observational
  - Correlation between vitamin D deficiency and poorer COVID-19 outcomes does not substantiate a causal relationship
- Reasonable to treat **vitamin D insufficiency** as per usual practice
  - Excess vitamin D can be toxic
- No current recommendation for vitamin D supplementation for COVID-19 prevention or treatment
  - Some papers have suggested dosages for supplementation in Vitamin D insufficiency in the context of COVID-19

TREATMENT OF VITAMIN D DEFICIENCY

- Treatment may include oral ergocalciferol (**vitamin D_2**) at 50,000 IU per week for eight weeks
- After **vitamin D** levels normalize, maintenance cholecalciferol (**vitamin D_3**) at 800 to 1,000 IU per day from dietary and supplemental sources

TABLE 1 Mayo Medical Laboratories Reference Ranges for Total Serum 25-hydroxyvitamin D [25(OH)D][a]

Severe deficiency[b]	<10 ng/mL
Mild to moderate deficiency[c]	10-24 ng/mL
Optimal[d]	25-80 ng/mL
Possible toxicity	>80 ng/mL

[a] SI conversion factor: To convert 25(OH)D values to nmol/L, multiply by 2.496.
[b] Could be associated with osteomalacia or rickets.
[c] May be associated with secondary hyperparathyroidism and/or osteoporosis.
[d] Levels present in healthy populations.

Bordelon P, et al. Recognition and management of vitamin D deficiency. *Am Fam Physician.* 2009;80(8):841-846. https://www.aafp.org/link_out?pmid=19835345

ADDITIONAL RESOURCES ON COVID-19

NYC Health Department

- Provider page: https://www1.nyc.gov/site/doh/covid/covid-19-providers.page
- Data page: https://www1.nyc.gov/site/doh/covid/covid-19-data.page
- Weekly webinars: Fridays, 2 p.m. (sign up on provider page)
- Dear Colleague COVID-19 newsletters (sign up for *City Health Information* subscription at: nyc.gov/health/register)
- NYC Health Alert Network (sign up at https://www1.nyc.gov/site/doh/providers/resources/health-alert-network.page)
- Provider Access Line: **866-692-3641**
- Neighborhood resource snapshots: https://www1.nyc.gov/site/doh/covid/covid-19-communities.page

NYC COVID-19 Citywide Information Portal

- Includes information on > 150 testing sites in NYC: NYC.gov/covidtest

Other sources

- CDC: https://www.cdc.gov/coronavirus/2019-ncov/index.html