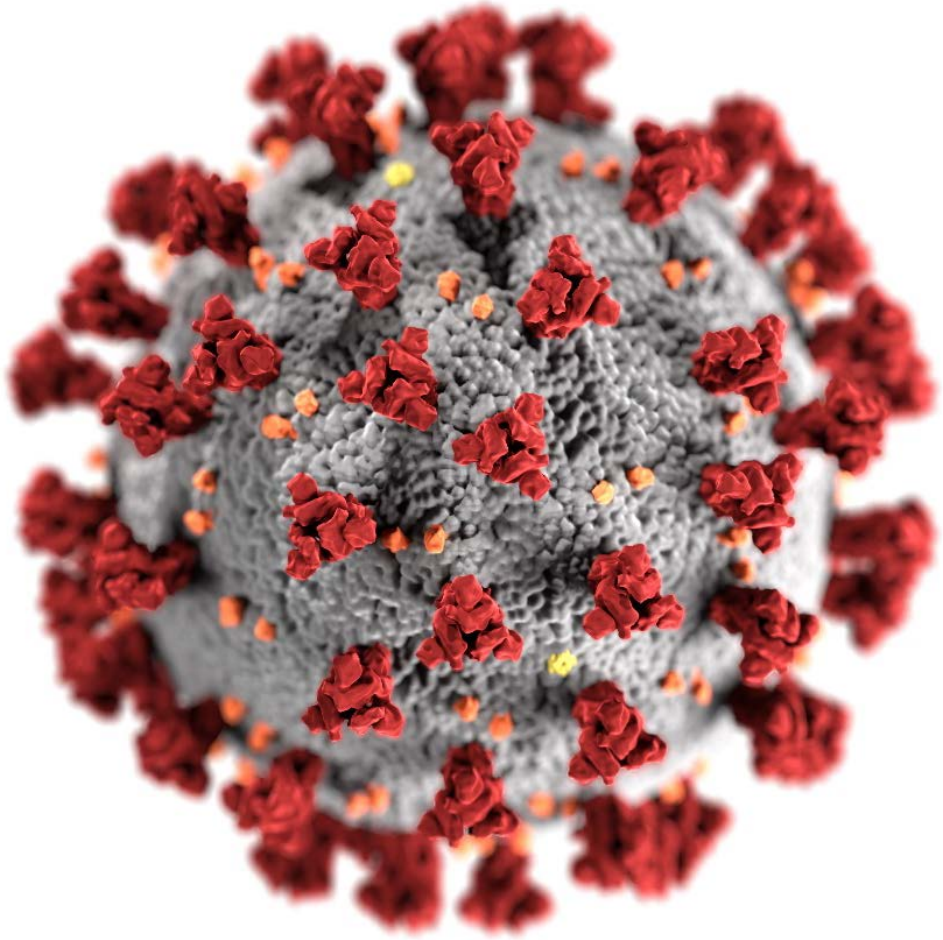
CDC Coronavirus Disease 2019 Response

COVID-19 Epi Update
ACIP Meeting Summary



Sara Oliver, MD MSPH
ACIP Work Group Co-Lead

August 27, 2020

For more information: **www.cdc.gov/COVID19**

Overview of U.S. COVID-19 Epidemiology

United States COVID-19 Cases by County

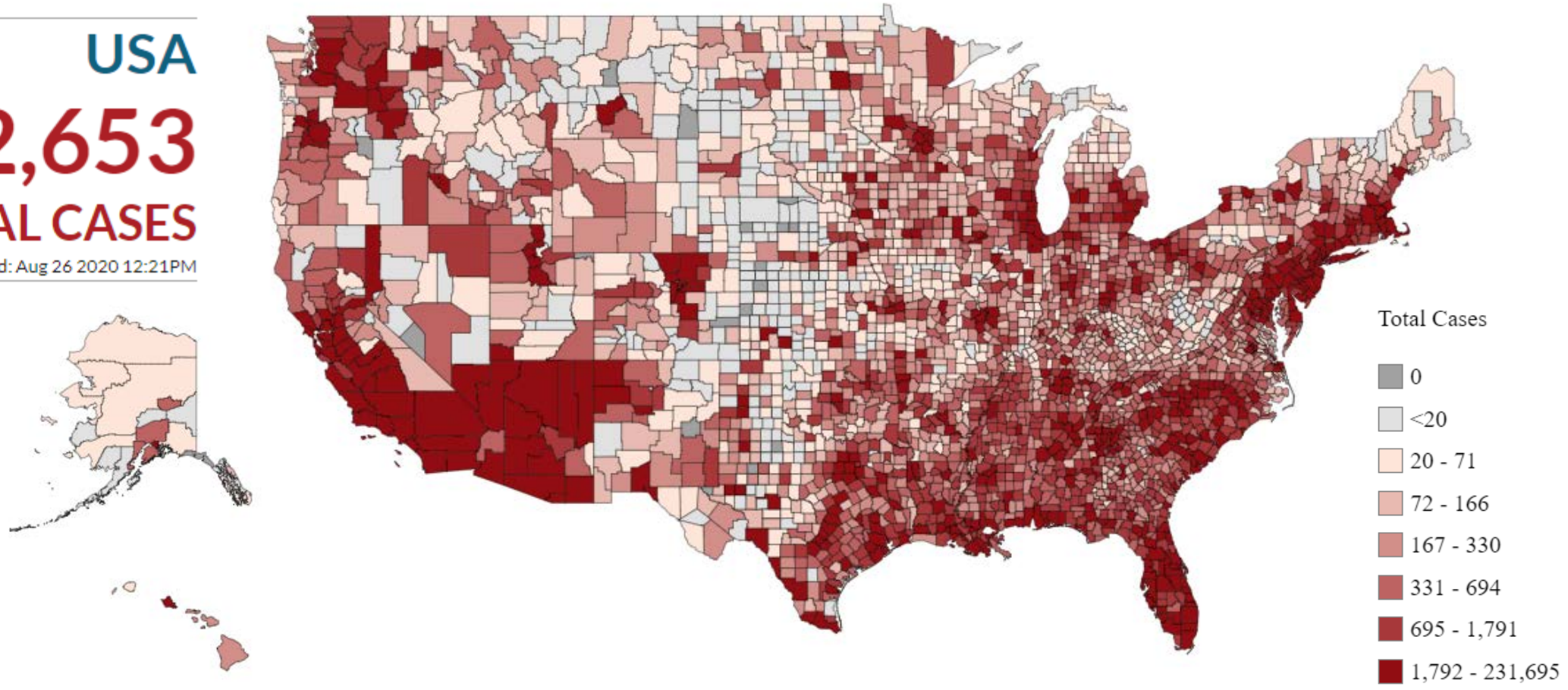
January 21 to August 26, 2020

USA

5,752,653

TOTAL CASES

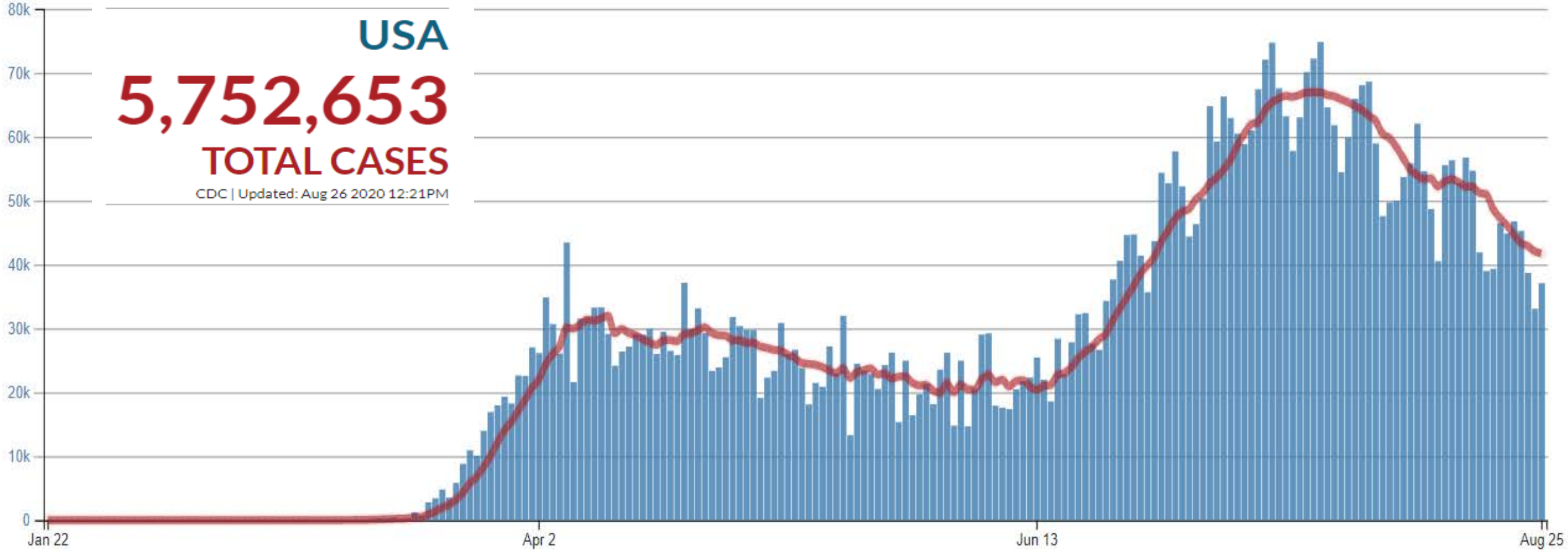
CDC | Updated: Aug 26 2020 12:21PM



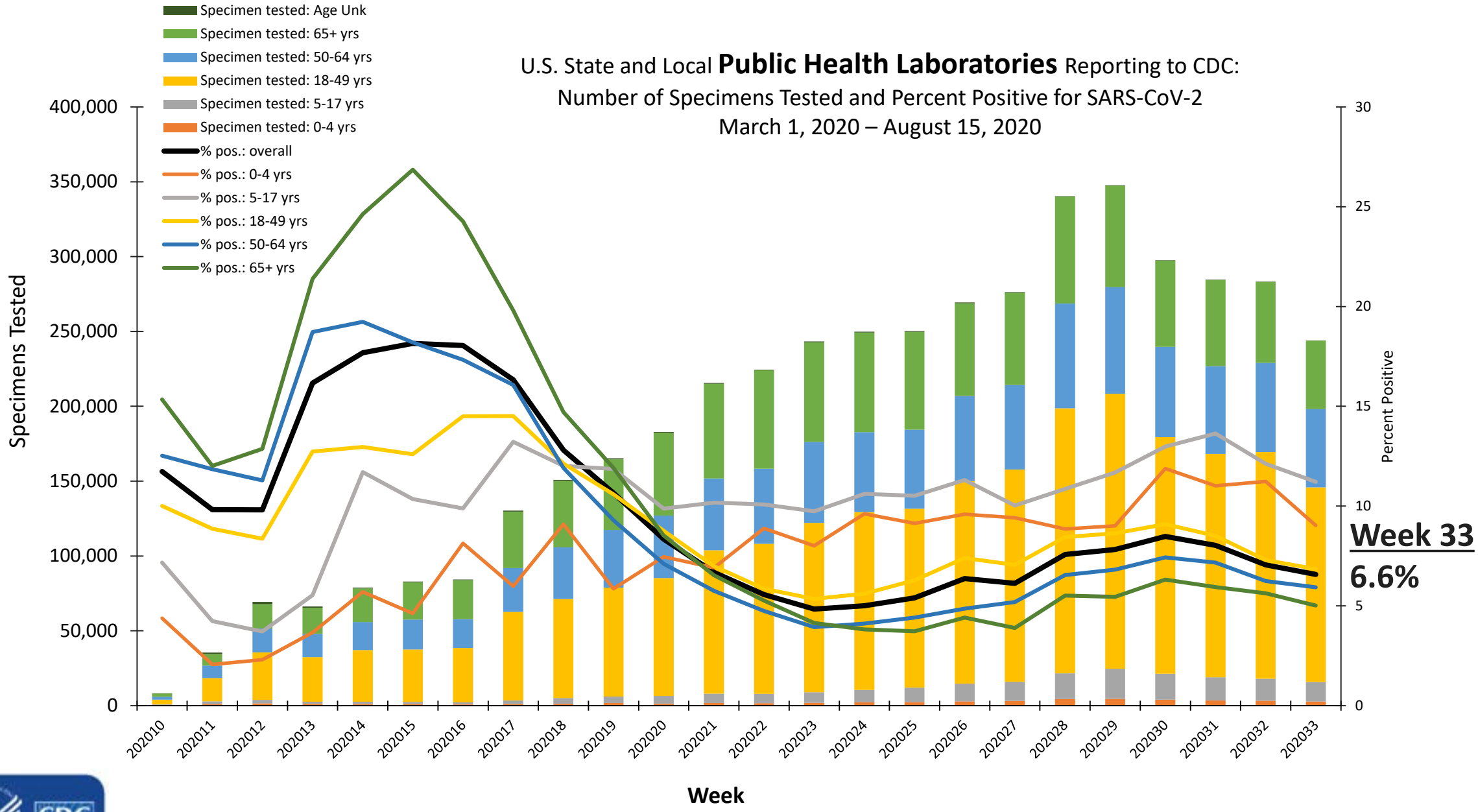
https://www.cdc.gov/covid-data-tracker/index.html

Trends in Number of COVID-19 Cases in the US

January 21 to August 26, 2020

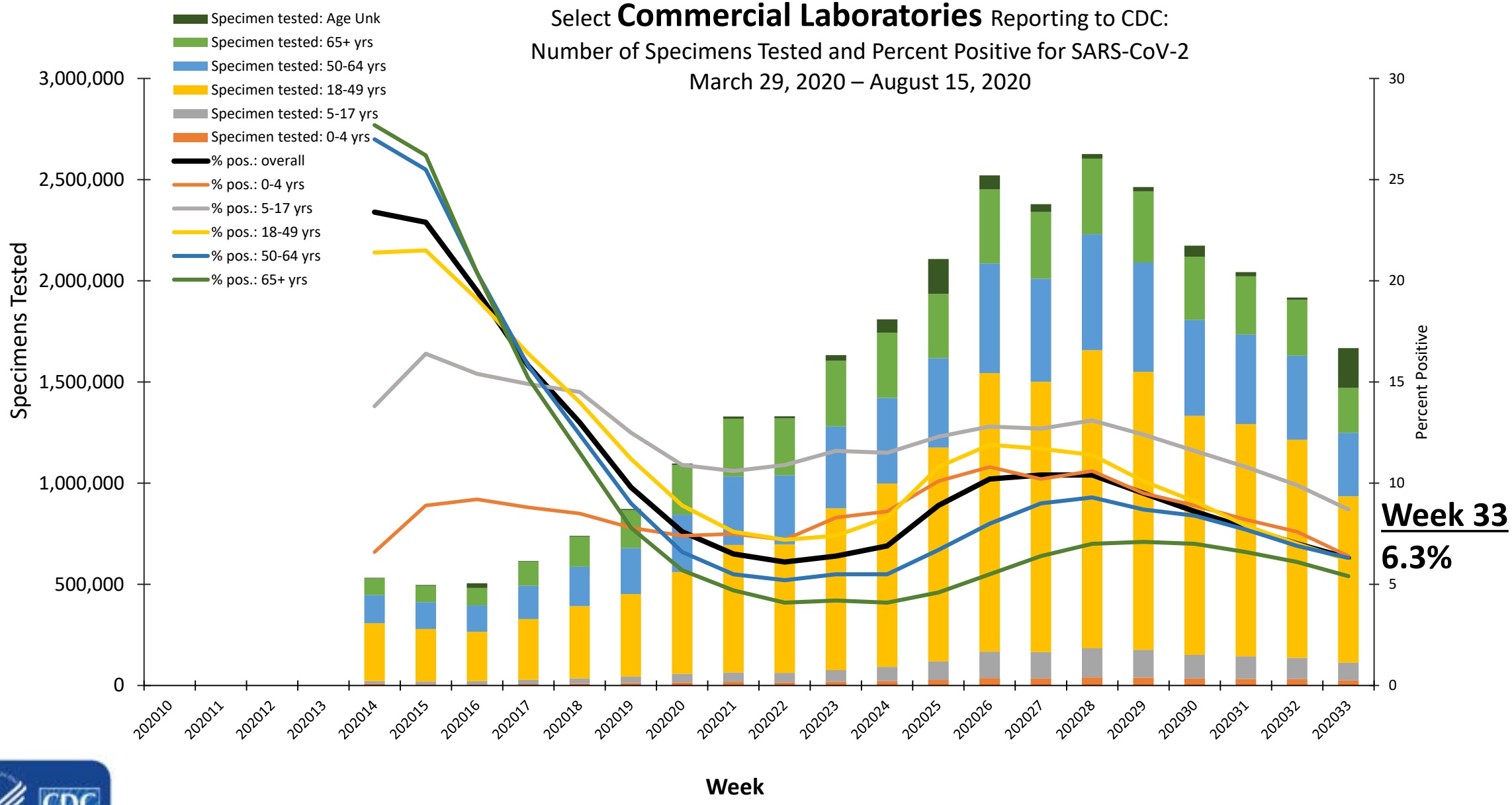


https://www.cdc.gov/covid-data-tracker/index.html#trends

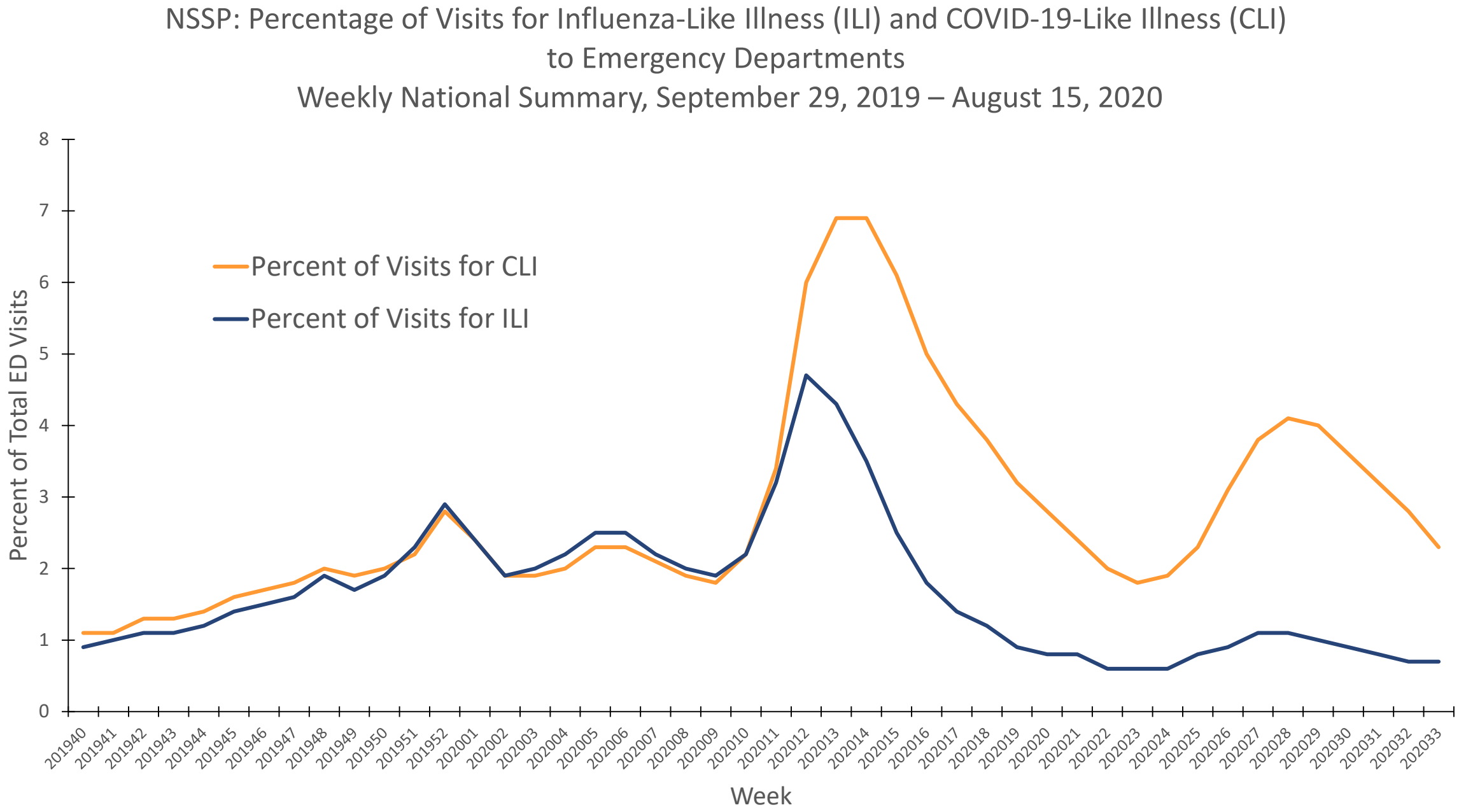


https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

Select **Commercial Laboratories** Reporting to CDC:
Number of Specimens Tested and Percent Positive for SARS-CoV-2
March 29, 2020 – August 15, 2020



https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html


NSSP: Percentage of Visits for Influenza-Like Illness (ILI) and COVID-19-Like Illness (CLI) to Emergency Departments
Weekly National Summary, September 29, 2019 – August 15, 2020
Percent of Total ED Visits
Percent of Visits for CLI
Percent of Visits for ILI
0
1
2
3
4
5
6
7
8
201940
201941
201942
201943
201944
201945
201946
201947
201948
201949
201950
201951
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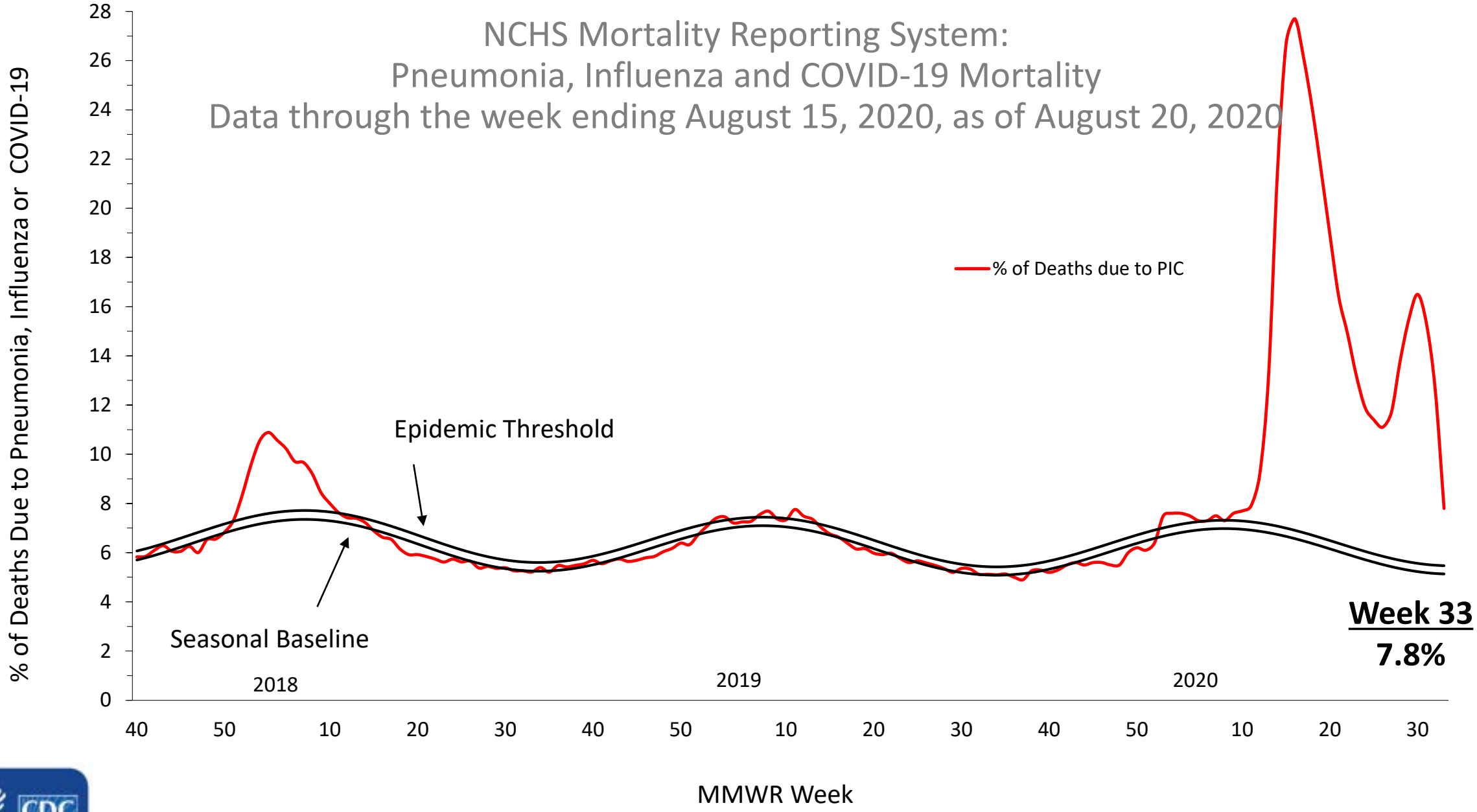
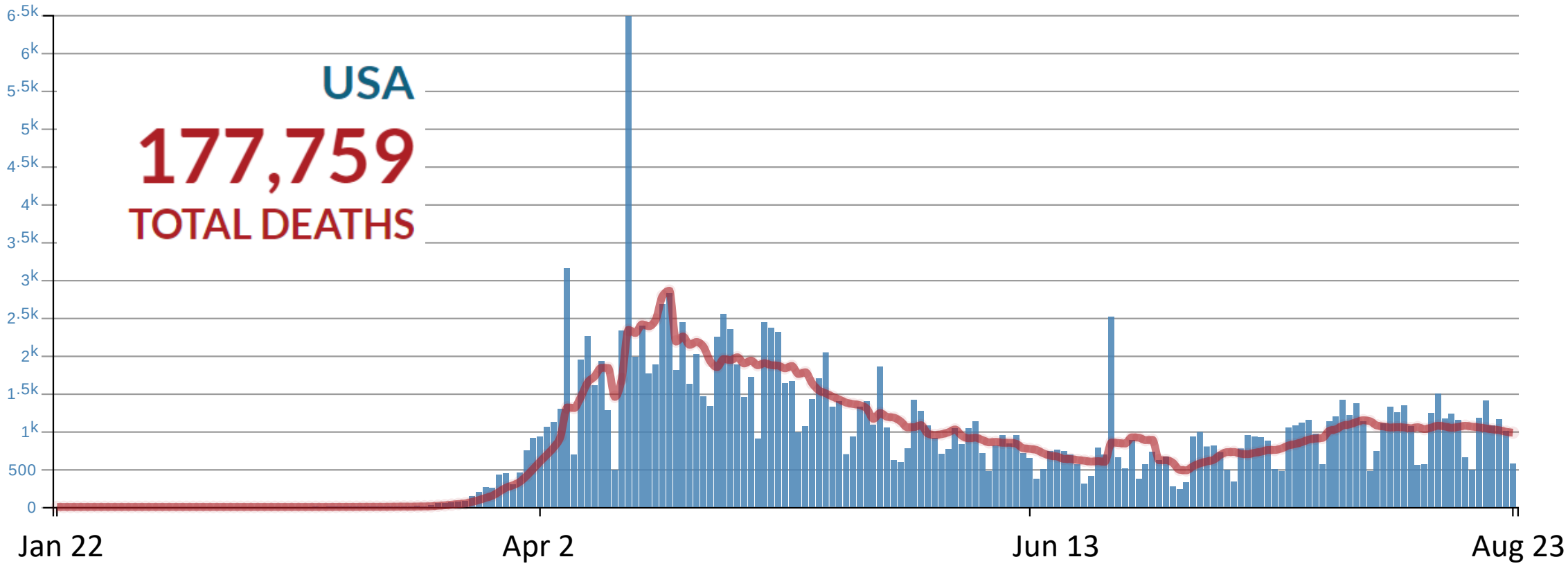


https://www.cdc.gov/coronavirus/2019-ncov/covid-data/covidview/index.html

Trends in Number of COVID-19 Deaths in the US

January 21 to August 26, 2020



https://www.cdc.gov/covid-data-tracker/index.html#trends

COVID-19 Epidemiology among At-Risk Populations

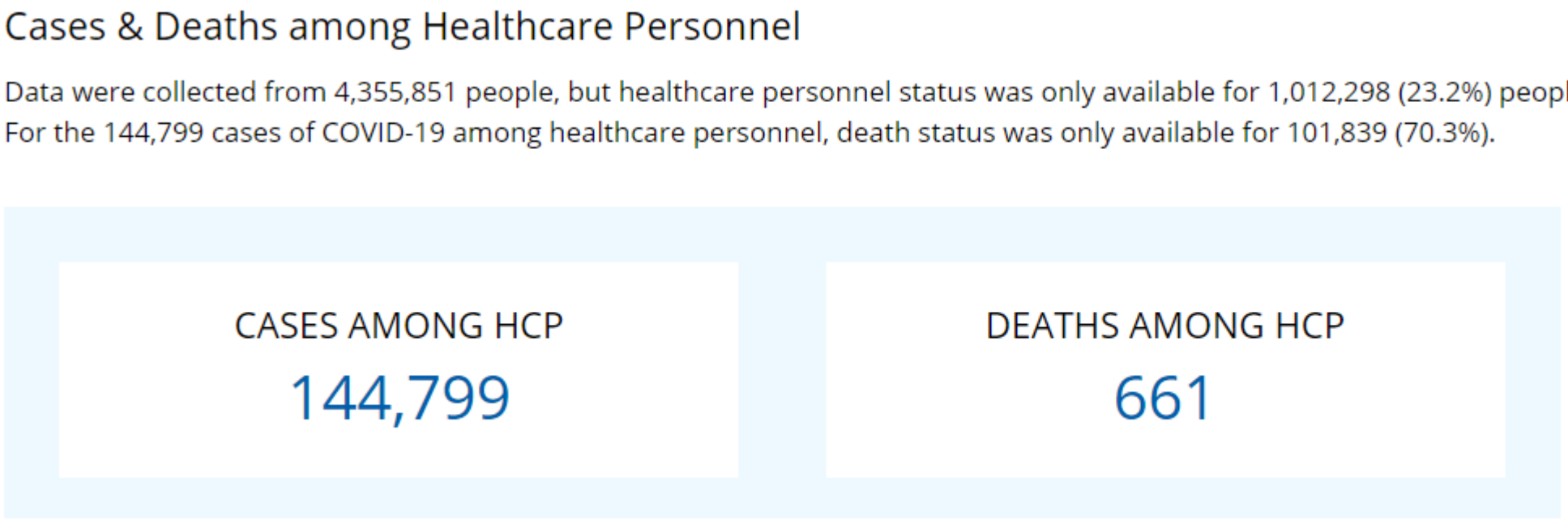
Healthcare Personnel

- **Healthcare Personnel** (HCP) are essential workers defined as **paid** and **unpaid** persons serving in healthcare settings who have the potential for direct or indirect exposure to patients or infectious materials

Cases among Healthcare Personnel

- CDC reports and routinely updates cases and deaths among healthcare personnel on the CDC website
  - Likely an underestimate

As of August 26th



https://www.cdc.gov/coronavirus/2019-ncov/cases-updates/cases-in-us.html

Healthcare Personnel within COVID-NET

March 1 to July 11, 2020

- Healthcare Personnel Type: N=512
  - Respiratory Therapist: 3 (<1%)
  - Physician: 23 (5%)
  - Nurse: 125 (24%)
  - Other: 276 (54%)
  - Not specified: 85 (17%)

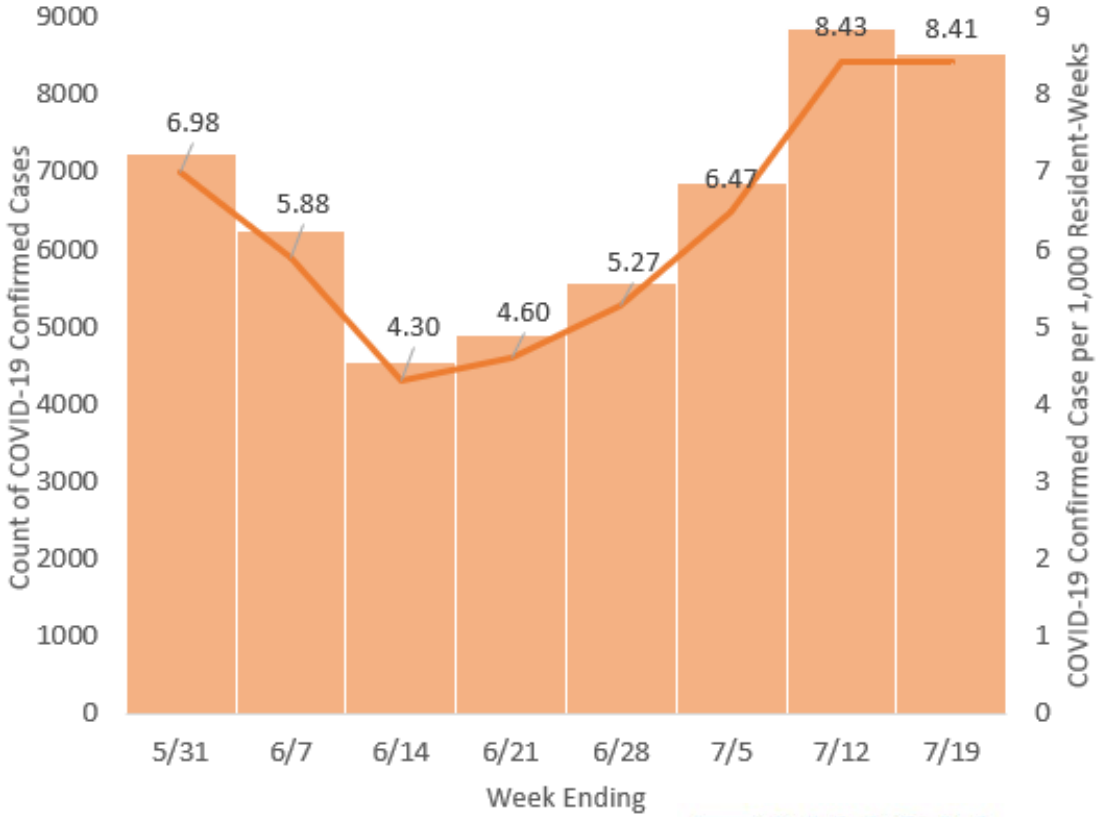
Hospital-based patient care support (e.g. nursing assistant)	73
Other patient care	21
Housekeeping/Environmental Services	20
Other nursing home/LTCF staff	17
Technicians	15
Management	12
Home health worker	12
Emergency medical personnel	10
Social work/counselor	10
Pharmacy	9
Food Services	8
Dentistry	6
Laboratory	6
Other	57

Long Term Care Facility Workforce

- Disproportionately lower-wage workers
- **39%** of workers are 50 years of age or older
- **82%** of workers are female, **26%** non-Hispanic Black persons
- Staff can be shared among multiple facilities
- In many instances, COVID-19 activity increases among LTCF **staff** first, and then residents

Cases among Staff at Skilled Nursing Facilities

Count and Incidence per 1,000 Resident Weeks



Data from NHSN LTCF module:
https://data.cms.gov/stories/s/COVID-19-Nursing-Home-Data/bkwz-xpvg/

NHSN NATIONAL HEALTHCARE SAFETY NETWORK

Workers in Food Processing and Agriculture

- Among 14 states reporting total number of workers in affected **meat and poultry processing plants** from April–May 2020, COVID-19 diagnosed in **9.1**% of workers
  - Among cases with race and ethnicity reported, **87**% occurred among racial or ethnic minorities

- Outbreaks have been reported in many **food production/agriculture** sectors
  - Multiple factors that increase workers' risk for exposure to SARS-CoV-2:
    - Prolonged **close workplace contact** with coworkers
    - Shared transportation and/or congregate housing
    - Lack of paid sick leave

Workers in Correction and Detention Facilities

- **Correction and detention** staff members can introduce the virus through their daily movements between the facility and the community

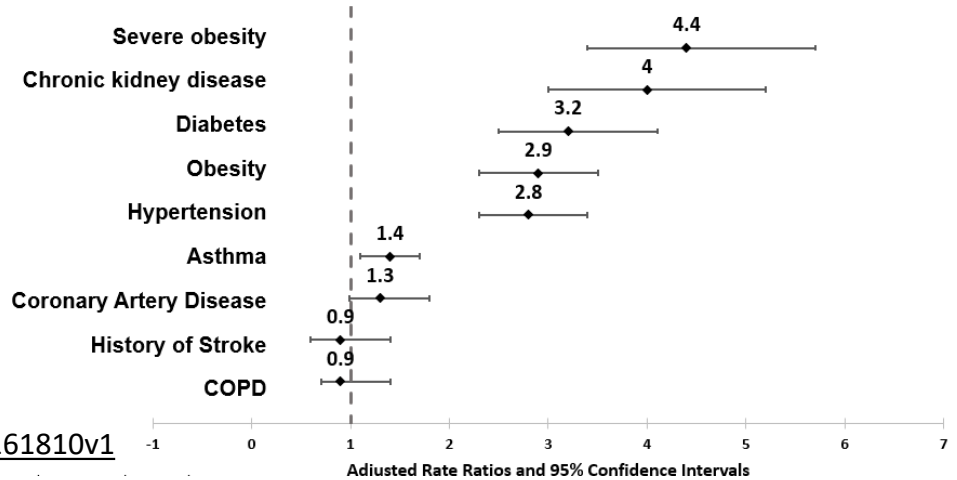
- In an analysis of 16 U.S. prisons and jails, more than half of the facilities identified their first case of COVID-19 among **staff** members[1]

[1]Hagan et al. MMWR –August 21, 2020 https://www.cdc.gov/mmwr/volumes/69/wr/mm6933a3.htm?s_cid=mm6933a3_w

Adults with increased risk for severe COVID-19 disease

- Accounting for presence of individual underlying medical conditions, higher hospitalization rates were observed among **adults ≥65 years**

- Higher hospitalization rates observed for adults with **underlying medical conditions**, after accounting for age, race and ethnicity, and sex
  - Obesity
  - Chronic kidney disease
  - Diabetes
  - Hypertension



https://medrxiv.org/cgi/content/short/2020.07.27.20161810v1

Overview of ACIP Meeting

Information Reviewed by Work Group

- Phase I Immunogenicity data from 2 COVID-19 mRNA vaccines
- Phase I Safety data from 2 COVID-19 mRNA vaccines
- Overview/Plans for Phase II/III studies for 2 COVID-19 mRNA vaccines

Immunogenicity and Safety Information Reviewed by Work Group

mRNA1273 (Moderna) N=130

- **Immunogenicity**
  - Neutralizing antibodies (pseudovirus neutralization assay titers) and binding antibodies (ELISA) measured 7 days post-dose 2
  - Responses similar to or exceeded convalescent sera comparison
  - Th1-biased CD4+ T-cell response
  - **100µg** dose selected for Phase III clinical trials

- **Safety**
  - Local and systemic symptoms followed for 7 days post-vaccination
    - Pain, myalgia, fatigue most common symptoms reported
  - Reactogenicity symptoms higher after second dose
  - No vaccine-related serious adverse events (SAEs) reported

Immunogenicity and Safety Information Reviewed by Work Group

BNT162b2 (Pfizer/BioNTech) N=195

- **Immunogenicity**
  - Neutralizing antibodies (50% neutralization titers) measured 7 days post-dose 2
  - Responses similar to or exceeded human convalescent panel
  - CD4+ and CD8+ T cell response demonstrated
  - Th1-biased CD4+ T-cell response
  - **30µg** dose of BNT162b2 selected for Phase III clinical trials

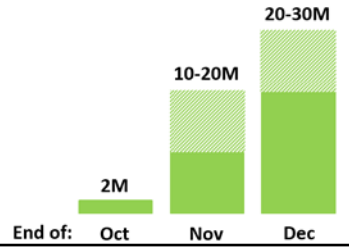
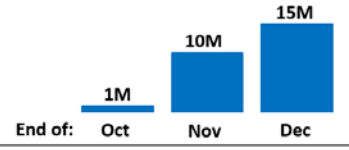
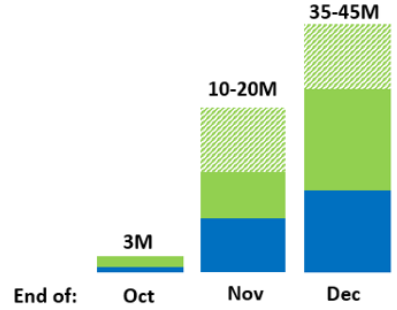
- **Safety**
  - Local and systemic symptoms followed after administration
    - Fatigue, headache and muscle pain most common
  - Reactogenicity symptoms lower in older population (65-85 years)

Plans for Phase III

- Both vaccine candidates currently enrolling large (~30,000 people) Phase III efficacy trials
- Primary endpoints: symptomatic, virologically confirmed COVID-19 disease
- Attempting to enroll diverse populations:
  - Race and ethnicity
  - Age (<65 years and ≥65 years of age)
  - Underlying medical conditions

Proposed scenarios for planning for D&A initial phase (Q4 2020)

Does not represent decisions; preliminary scenarios for planning

Scenario	Cumulative Doses available	Distribution requirements	Administration
1. **Vaccine candidate A** is the first to demonstrate safety & efficacy		• **Shipped direct at --70-80°C** on dry ice, to be used within 10 days	• Vaccine can be stored at 2-8°C for 24 hours • 6 hour shelf life at room temperature • Unique diluent / kit requirements • Only shippable to large admin sites
2. **Vaccine candidate B** is the first to demonstrate safety & efficacy		• **Central distro capacity at -20°C,** may be stored for months at -20°C	• Vaccine can be stored at 2-8°C for 7 days • 6 hour shelf life at room temperature
3. Vaccine candidates A and B demonstrate safety & efficacy		• As above	• Administration site considerations as above • Complexity increases significantly if sites are administering 2 products with different requirements and differing dose schedules

Summary: Groups for early phase vaccination

- Overlapping
- Significant heterogeneity
- Accounts for > half of U.S. adults
- Need for additional sub-grouping