

**Wisconsin State  
Laboratory of Hygiene**  
UNIVERSITY OF WISCONSIN-MADISON



# Update on COVID-19 Diagnostic Testing

04-29-20

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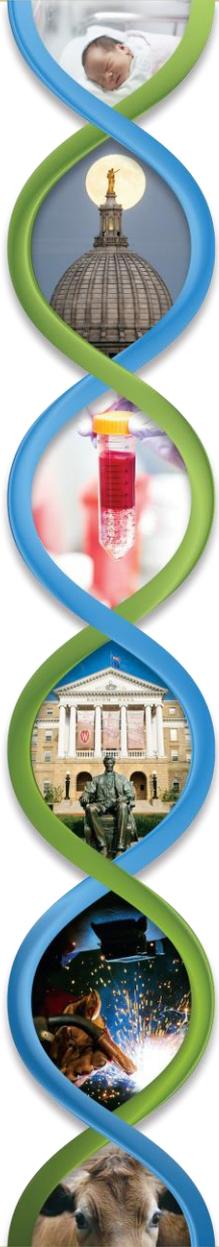
Communicable Disease Division

Wisconsin State Laboratory of Hygiene



# Contents

- Situation Update
- Survey update
- COVID-19 potpourri
- Q and A





# Notice

This information is subject to rapid change.

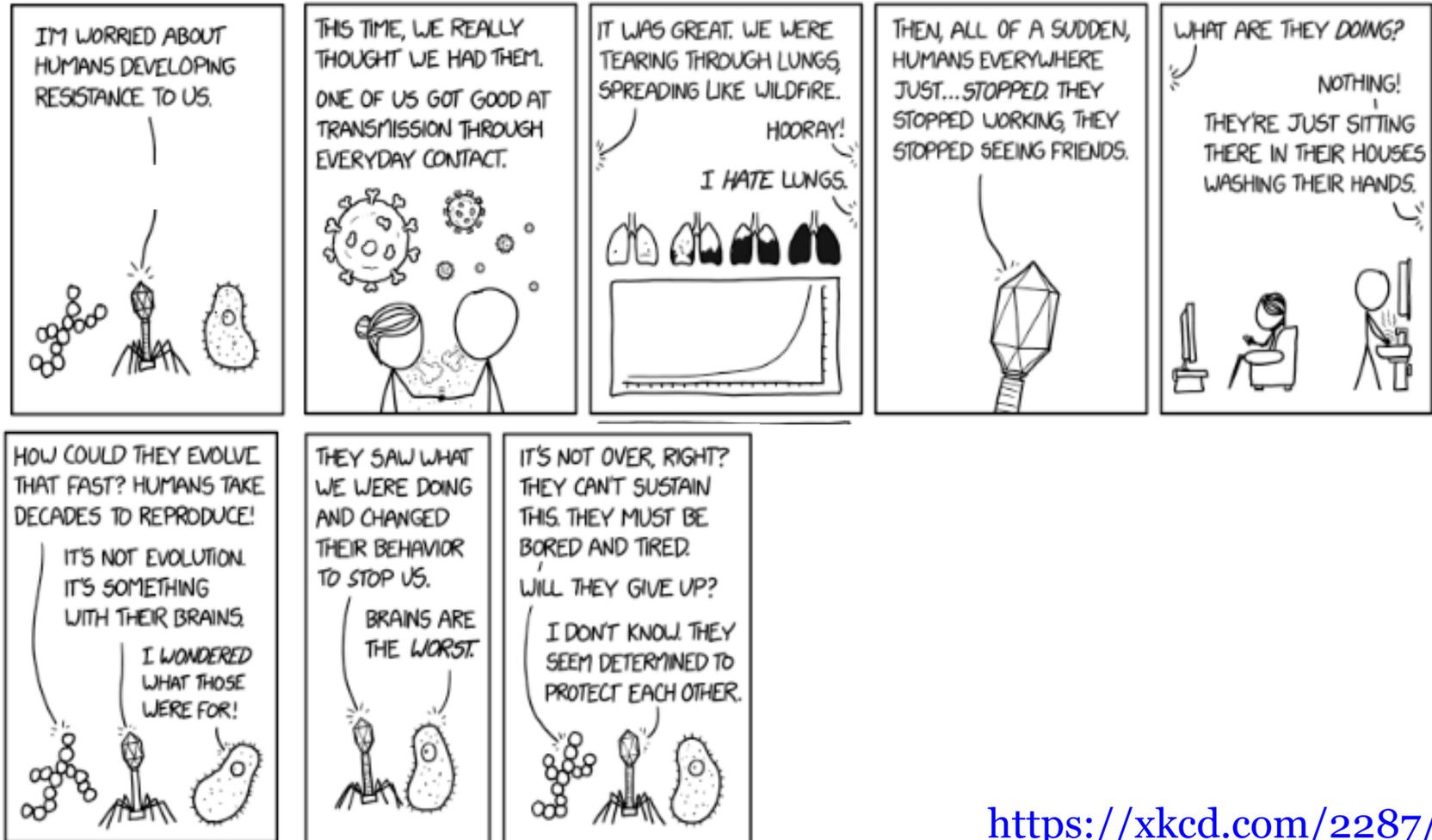
Please refer to our webpage for the most up to date guidance

<http://www.slh.wisc.edu/clinical/diseases/covid-19/>

The WSLH does not endorse any products



# A moment of humor



<https://xkcd.com/2287/>



# Global Impact



COVID-19 Dashboard by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University ...



Total Confirmed

**3,115,977**

Confirmed Cases by  
Country/Region/Sovereignty

- 1,012,517** US
- 232,128** Spain
- 201,505** Italy
- 169,053** France
- 162,350** United Kingdom
- 159,912** Germany
- 114,653** Turkey
- 93,558** Russia
- 92,584** Iran
- 83,938** China

Admin0  
Last Updated at (M/D/YYYY)  
**4/28/2020, 8:32:25 PM**

**185**  
countries/regions

*Lancet Inf Dis* Article: [Here](#). Mobile Version: [Here](#).  
Lead by JHU CSSE. Automation Support: [Esri Living Atlas team](#) and [JHU APL](#). [Contact US](#). [FAQ](#).



Esri, FAO, NOAA

Total Deaths

**217,132**

- 27,359 deaths Italy
- 23,822 deaths Spain
- 23,660 deaths France
- 21,678 deaths United Kingdom
- 17,682 deaths New York City **New York US**

Deaths

Recovered

Total Test Results in US

**5,795,728**

- 844,994 tested New York US
- 577,608 tested California US
- 366,875 tested Florida US
- 300,384 tested Texas US
- 254,500 tested Massachusetts US

US total tests



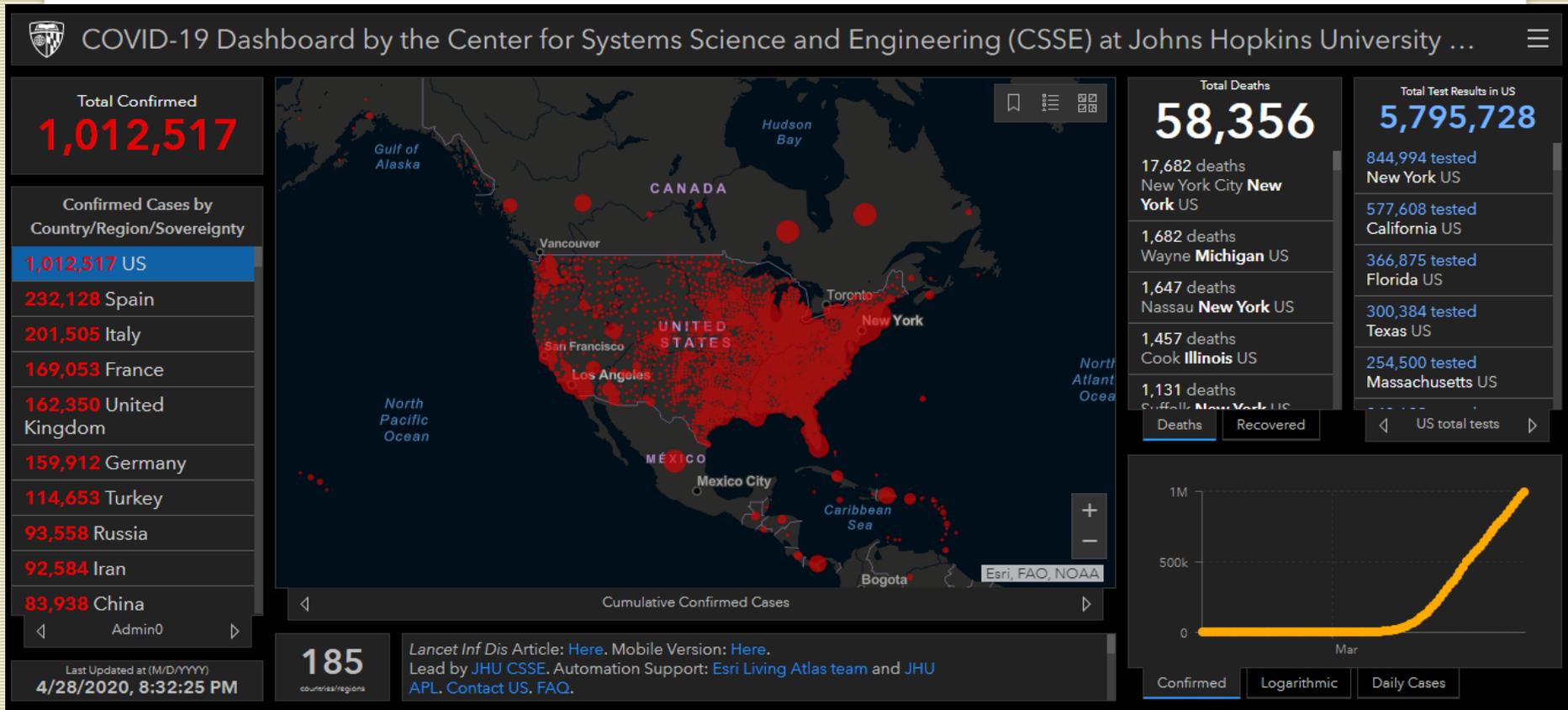
Confirmed Logarithmic Daily Cases

Johns Hopkins University Global Coronavirus Tracking:

<https://gisanddata.maps.arcgis.com/apps/opsdashboard/index.html#/bda7594740fd40299423467b48e9ecf6>



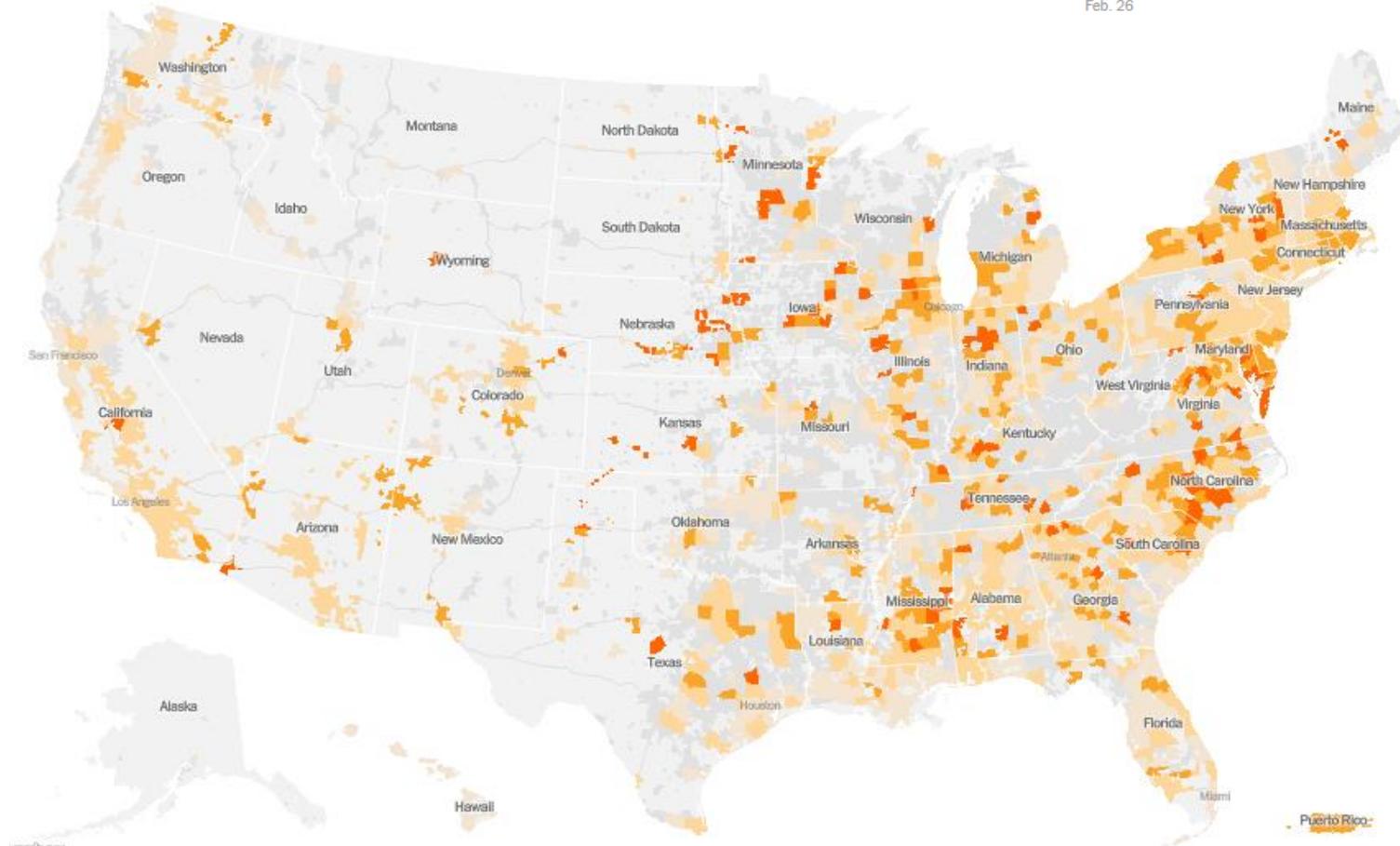
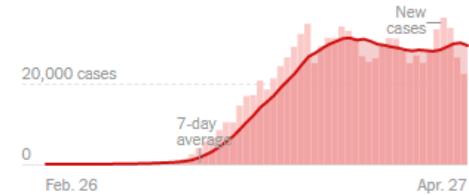
# COVID-19 in the US



# NY Times website



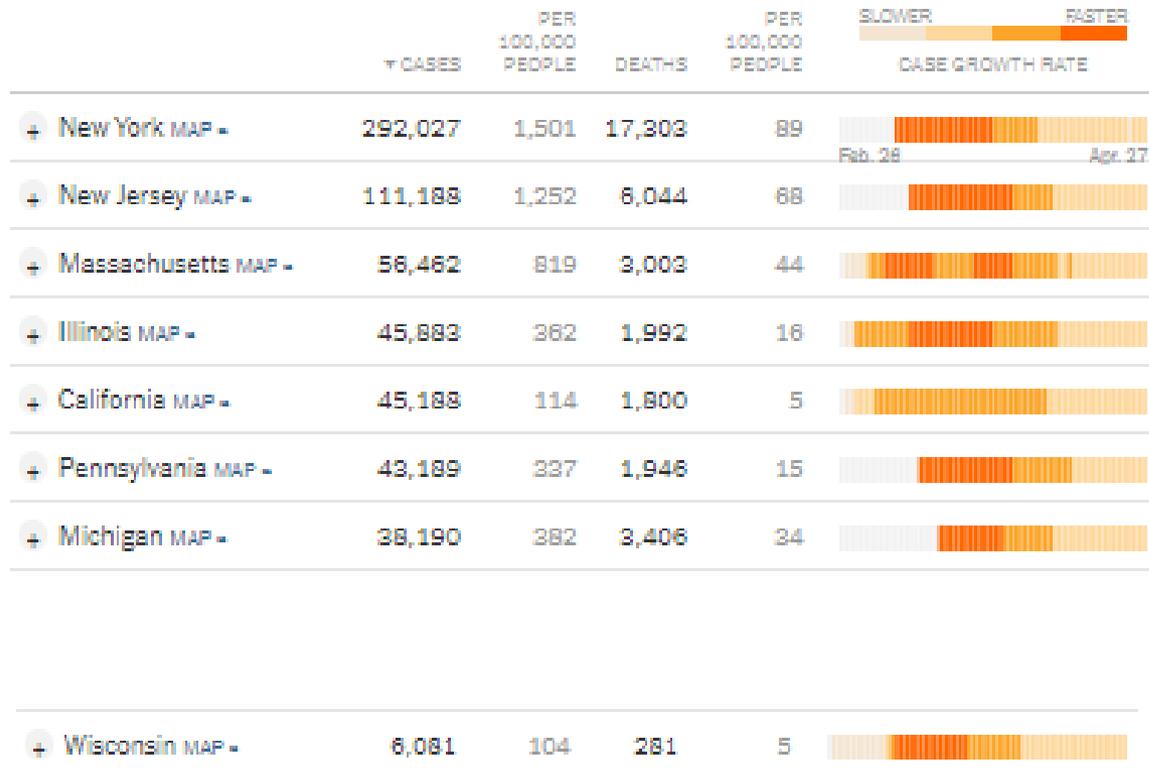
## Where cases are rising fastest



apbox



# NY Times website

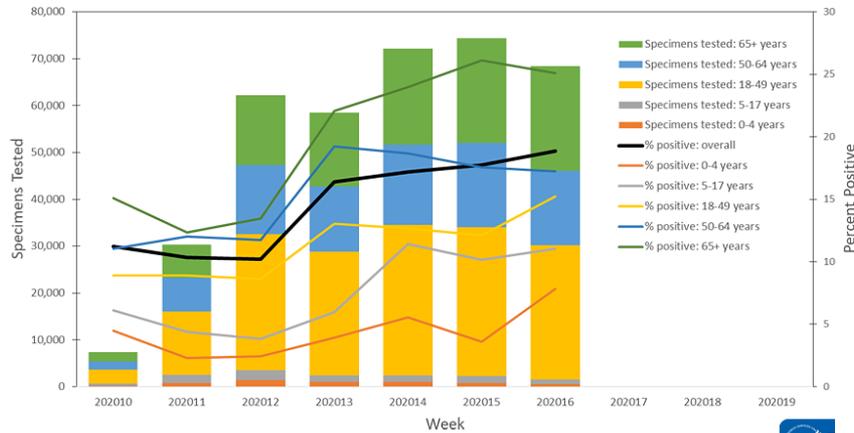


<https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html>

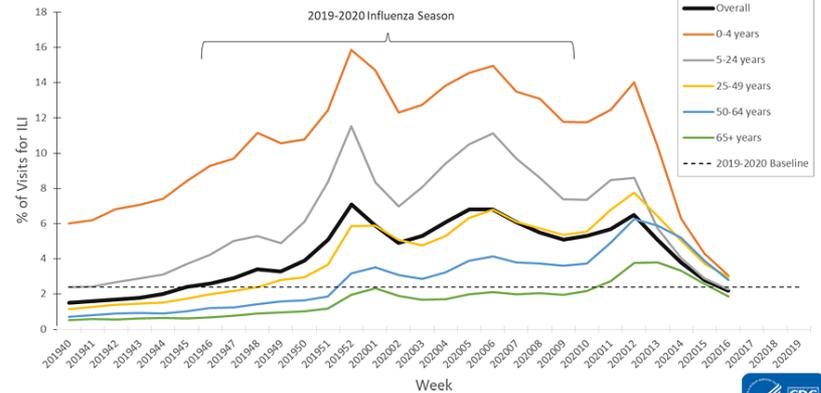


# COVIDView

U.S. State and Local Public Health Laboratories Reporting to CDC:  
Number of Specimens Tested and Percent Positive for SARS-CoV-2  
March 1, 2020 - April 18, 2020



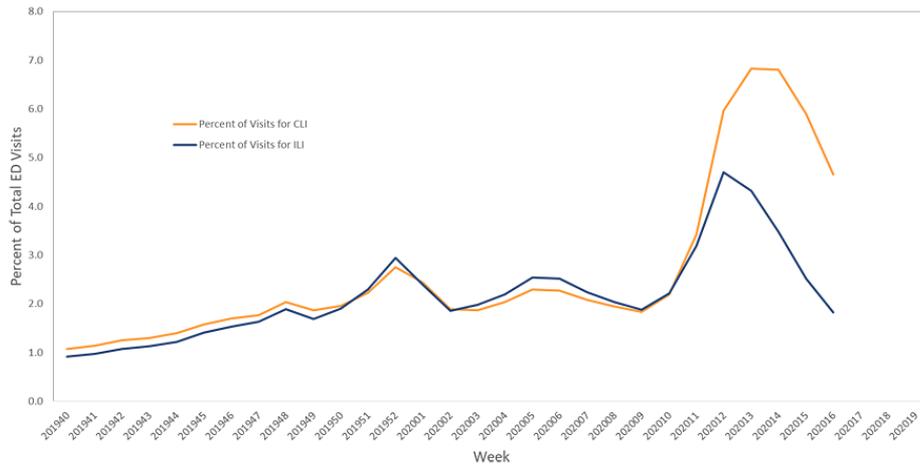
Percentage of Visits for Influenza-Like Illness (ILI) Reported by  
the U.S. Outpatient Influenza-like Illness Surveillance Network (ILINet),  
Weekly National Summary, September 29, 2019 - April 18, 2020



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

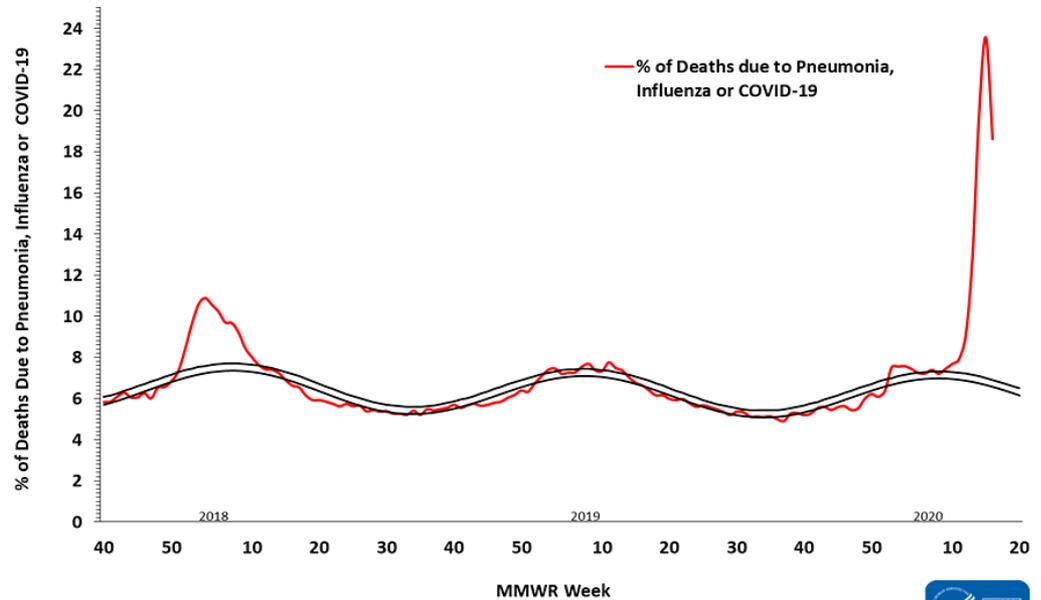


NSSP: Percentage of Visits for Influenza-Like Illness (ILI) and COVID-19-Like Illness to Emergency Departments  
Weekly National Summary, September 29, 2019 - April 18, 2020



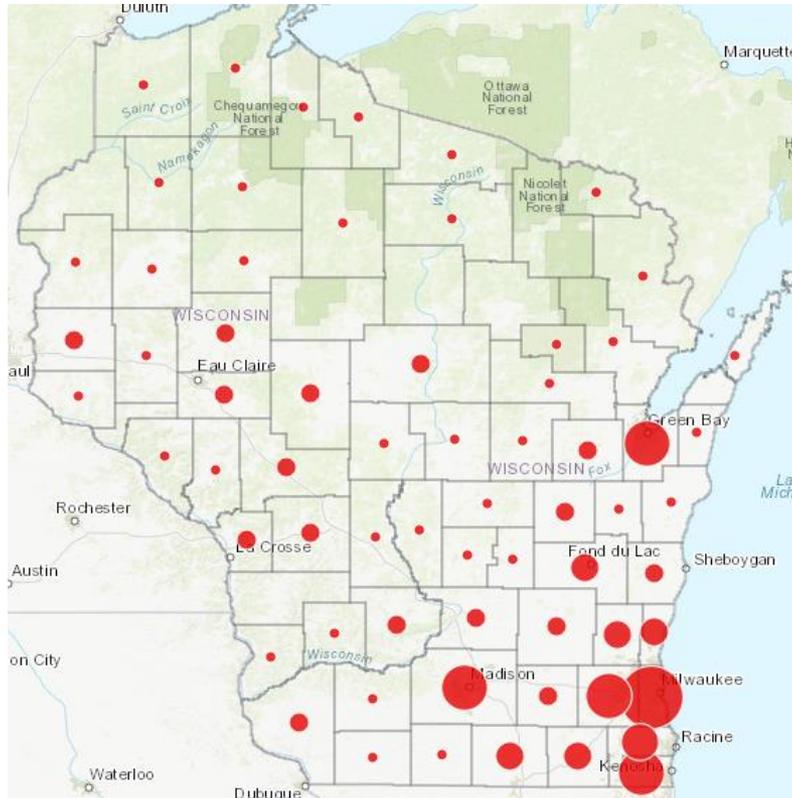
# COVIDView

NCHS Mortality Reporting System:  
Pneumonia, Influenza and COVID-19 Mortality  
Data through the week ending April 18, 2020, as of April 23, 2020





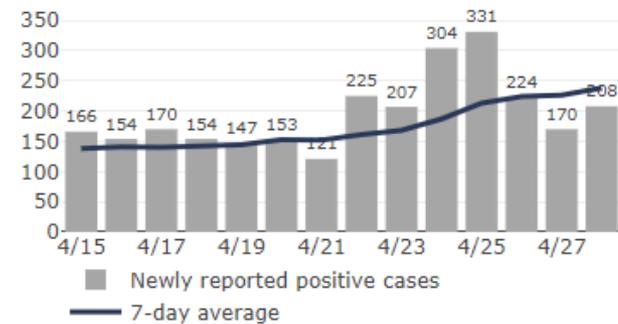
# Wisconsin



Status	Number (%) of People as of 4/28/2020
Negative Test Results	63,535
Positive Test Results	6,289
Hospitalizations	1,456 (23%)
Deaths	300

Number of newly reported COVID-19 cases, by day, and 7-day average (last 14 days)

Updated: 4/28/2020

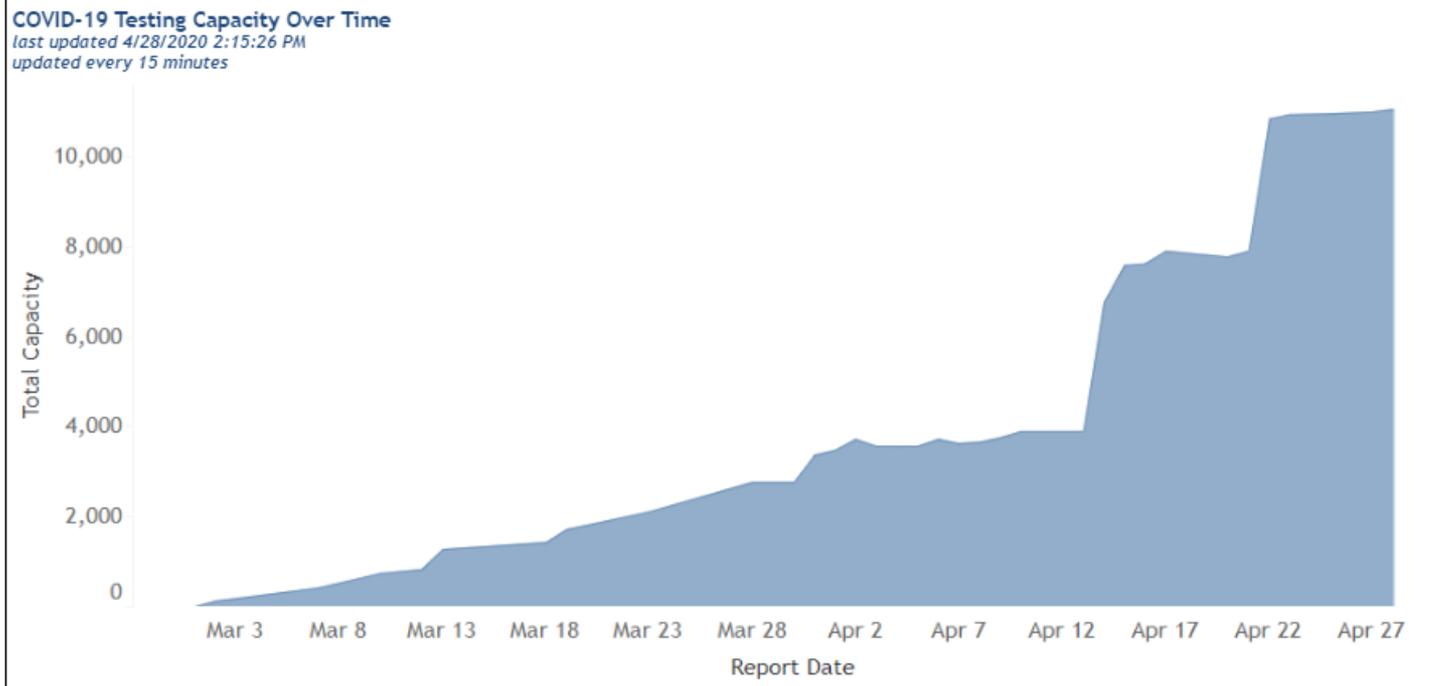


<https://www.dhs.wisconsin.gov/covid-19/data.htm>



# Survey Results

<b>Laboratories actively testing</b>  <b>50</b>	<b>Laboratories planning to test</b>  <b>37</b>	<b>Current state capacity (tests/day)</b> <i>Last Updated: 4/28/2020 2:15:25 PM</i>  <b>11,040</b>
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Data collected by voluntary reporting from public, private, and commercial laboratories in Wisconsin. All data are estimates and do not reflect actual number of tests performed in the state. Capacity is dependent on availability of test supplies and adequate staffing

[https://bi.wisconsin.gov/t/COVID19\\_Analytics/views/LabDashboards/PublicDashboard?:origin=card\\_share\\_link&embed=y&isGuestRedirectFromVizportal=y](https://bi.wisconsin.gov/t/COVID19_Analytics/views/LabDashboards/PublicDashboard?:origin=card_share_link&embed=y&isGuestRedirectFromVizportal=y)



# Reminder to Update the Survey

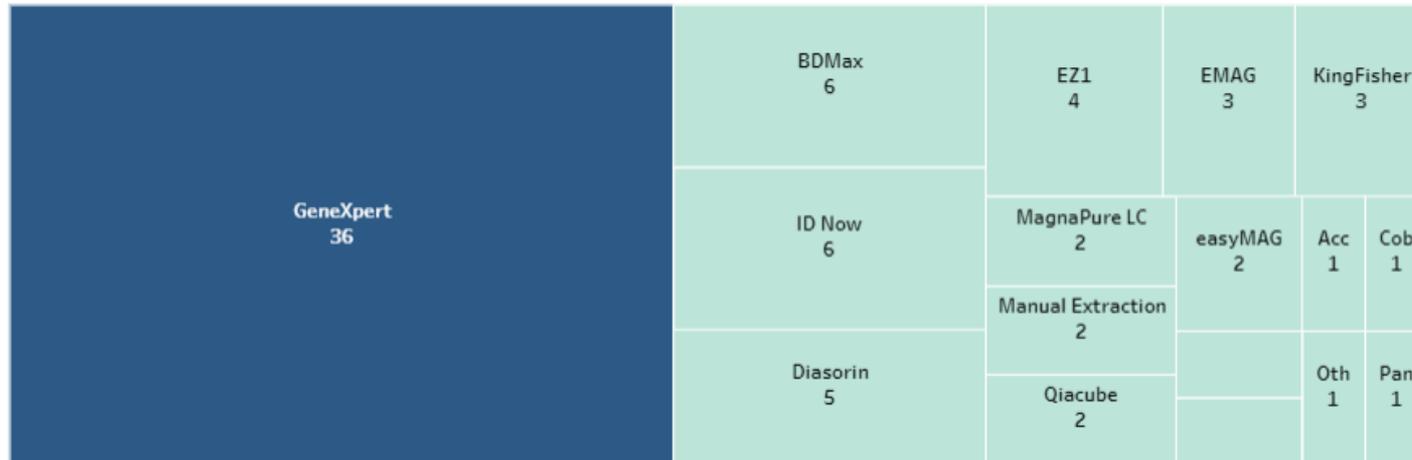
- First time to check for accuracy
- Update when there is a change in testing
  - Start testing for the first time
  - Add or change testing methods
  - Increase or decrease in testing capacity
  - Report major reagent/supply limitations
    - Collection kits
    - Testing components
  - Remove a shortage report

<https://covidlabsurvey.wi.gov>

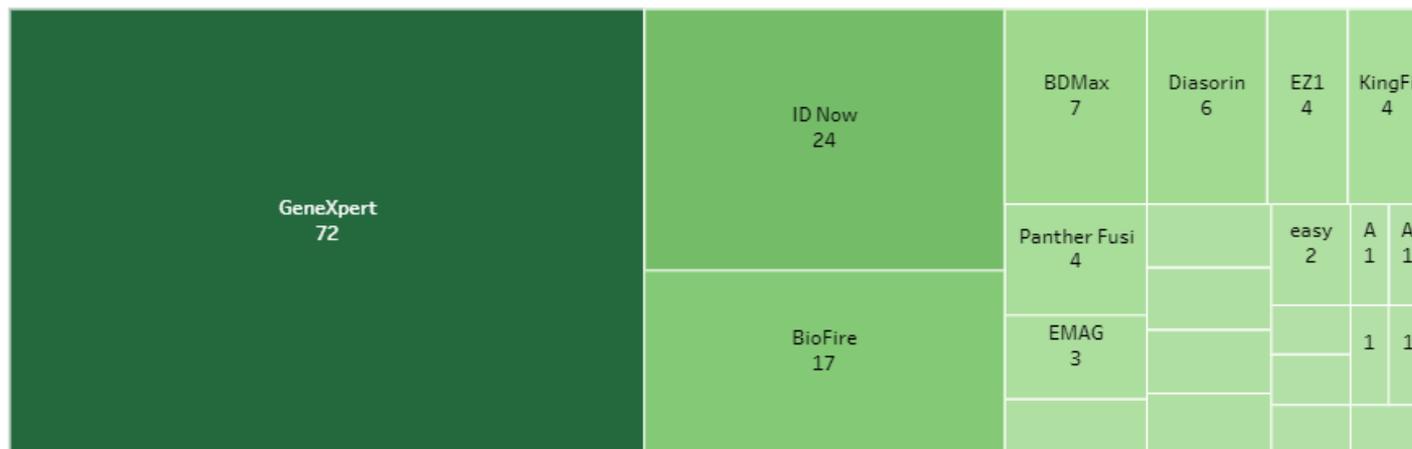


# What Tests are Being Used?

## Active Test Methods Statewide



## Current and Planned Methods





# What are the Challenges?

# of reports	Problems
45	GeneXpert cartridges
17	Collections Kits (NP swab and/or VTM)
13 / 2	Abbott ID Now cartridges / instruments
11	BioFire supplies
4	EMAG/EasyMAG supplies
4	BD Max supplies
1	PPE

\*Please continue to submit these updates!



# Wisconsin Reference Laboratories

In addition to national reference labs, Wisconsin laboratories that accept outside specimens for PCR testing include:

## **Coppe Laboratories**

Phone: 262-574-0701

Email: [info@coppelabs.com](mailto:info@coppelabs.com)

Webpage: [www.coppelabs.com](http://www.coppelabs.com)

## **Exact Sciences**

Phone: 844-570-9730

Email: [COVIDCustomerAccountSet-up@exactsciences.com](mailto:COVIDCustomerAccountSet-up@exactsciences.com)

## **Midwest Respiratory Virus Program**

Dr. Kelly Henrickson

Phone: 262-391-3993

Email: [khenrick@mcw.edu](mailto:khenrick@mcw.edu) and [henrickson@aol.com](mailto:henrickson@aol.com)

## **Wisconsin Diagnostic Laboratories**

Phone: 414-702-0401

Email: [SChristel@wisconsindiagnostic.com](mailto:SChristel@wisconsindiagnostic.com)

Webpage: [https://www.wisconsindiagnostic.com/healthcare\\_providers/work\\_with\\_us/](https://www.wisconsindiagnostic.com/healthcare_providers/work_with_us/)



# Ordering Supplies from SEOC Distribution Center

**NEW** - SEOC Web Portal Available Now:

<https://covid19supplies.wi.gov/Testing>

- For clinical laboratorians and hospital system medical professionals
- For local public health large outbreaks (>50 specimens collected)
- Order swabs and viral transport media for COVID-19 testing
  - Commercial Kits: specimen collection materials including commercial M4 room temperature stable viral transport media (VTM) and a nasopharyngeal (NP) swab. *NOTE:* these are currently in very limited supply.
  - Cold Kits: specimen collection materials including VTM (CDC protocol) and an FDA approved NP swab. *NOTE:* materials require refrigerated storage.
  - Exact Sciences Kits: specimen collection materials including room temperature stable saline and a nasal swab. *NOTE:* Supplies intended for testing performed at Exact Sciences. For more information go to: Exact Sciences. Public Health approved fee exempt testing available.
  - Swab Only: NP swab alone, FDA approved.
  - VTM Only: CDC protocol VTM. *NOTE:* materials require refrigerated storage.



# Ordering Supplies from WSLH Clinical Orders Department

**Call WSLH Clinical Orders M-F between 7:45 AM and 2:45 PM to request supplies at 800-862-1088**

- For local public health
  - Order small numbers of collection kits (6 or 12)
  - Order packaging and shipping supplies
- For clinical labs
  - Order packaging and shipping supplies
  - Order WSLH Requisition (A) Form 4105
- Leave a message if call outside of listed hours
  - Facility name, address, supply requested and # needed
  - If requesting small order of VTM, can you store at 2-8°C
  - WSLH will fill the orders we can and triage to SEOC those we are unable to fill



# Specimen Types for PCR

- Validated at WSLH (other labs may differ)
  - Nasopharyngeal (NP)
  - Oropharyngeal (OP)
  - Sputum
  - BAL
- CDC/FDA Preferred: NP
- CDC/FDA acceptable alternatives: OP, mid-turbinate swab, anterior nares (nasal swab)

<https://www.fda.gov/medical-devices/emergency-situations-medical-devices/faqs-diagnostic-testing-sars-cov-2>

<https://www.cdc.gov/coronavirus/2019-ncov/lab/guidelines-clinical-specimens.html>

- FDA: “More data are necessary on the validity of buccal swabs, saliva specimens, or other specimen types.”
- Don’t forget about flu and other respiratory pathogens!



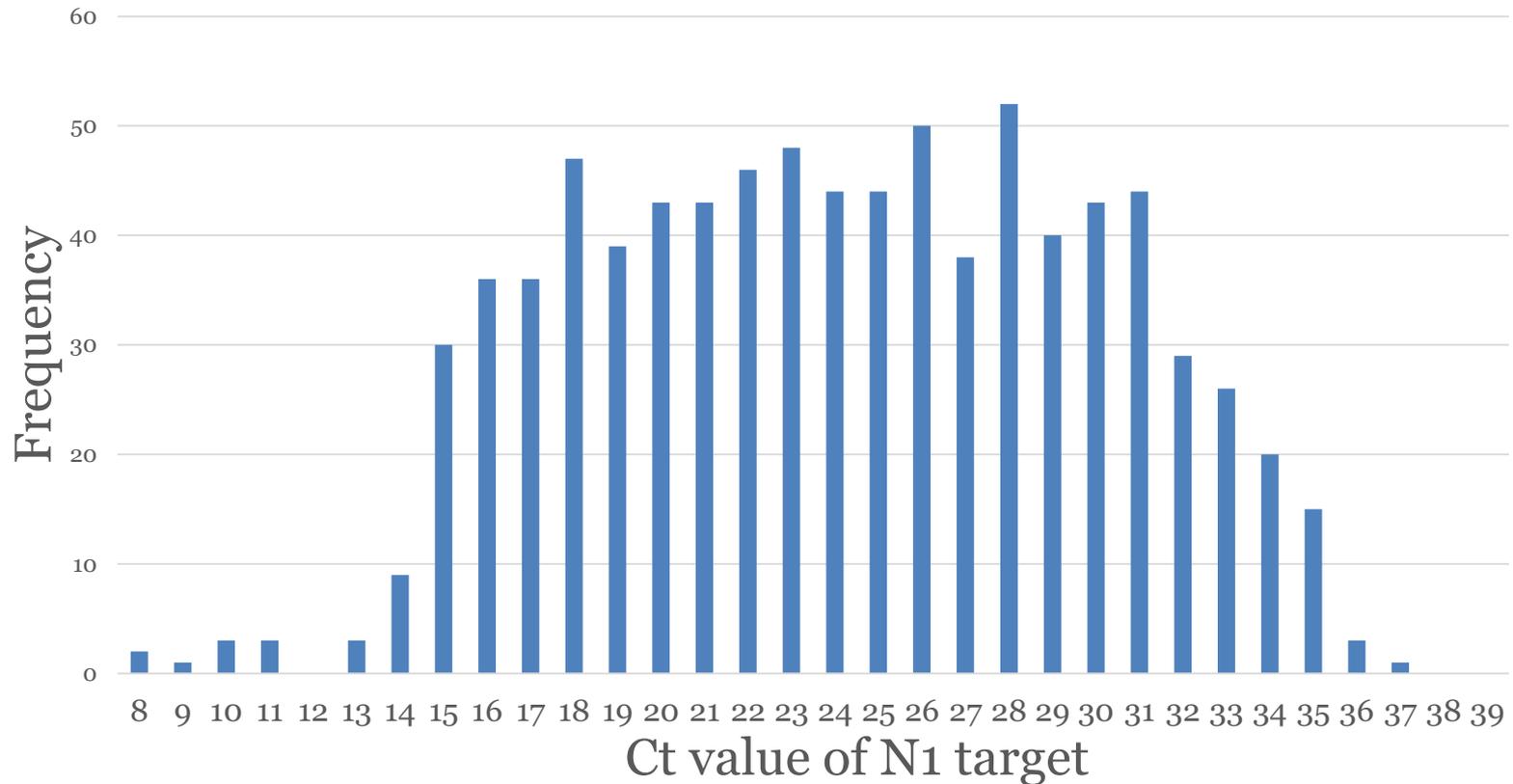
# New FDA EUA Assays

Date EUA Issued	Manufacturer	Diagnostic (Letter of Authorization)	Technology
04/27/2020	SEASUN BIOMATERIALS	U-TOP COVID-19 Detection Kit	Molecular
04/26/2020	Abbott Laboratories Inc.	SARS-CoV-2 IgG assay	Serology IgG only
04/24/2020	DiaSorin Inc.	LIAISON SARS-CoV-2 S1/S2 IgG	Serology IgG only
04/24/2020	Ortho-Clinical Diagnostics, Inc.	VITROS Immunodiagnostic Products Anti-SARS-CoV-2 IgG Reagent Pack	Serology IgG only
04/24/2020	Autobio Diagnostics Co. Ltd.	Anti-SARS-CoV-2 Rapid Test	Serology IgM and IgG
04/23/2020	SD Biosensor, Inc.	STANDARD M nCoV Real- Time Detection Kit	Molecular

<https://www.fda.gov/medical-devices/emergency-situations-medical-devices/emergency-use-authorizations>



# Distribution of Ct values at WSLH (CDC assay)



- 838 positives included in this analysis
- Shifted lower than influenza Ct values
- 25% have a Ct <20



# IDSA Serology Information



## IDSA COVID-19 Antibody Testing Primer

*Updated: April 22, 2020*

“The current antibody testing landscape is varied and clinically unverified, and these tests should not be used as the sole test for diagnostic decisions. Further, until more evidence about protective immunity is available, serology results should not be used to make staffing decisions or decisions regarding the need for personal protective equipment.”

<https://www.idsociety.org/globalassets/idsa/public-health/covid-19/idsa-covid-19-antibody-testing-primer.pdf>



# IDSA

Infectious Diseases Society of America

## **IDSA COVID-19 Antibody Testing Primer**

*Updated: April 22, 2020*

“Some FDA-authorized COVID-19 antibody tests are estimated to have 96-98% specificity, which would mean that a positive test result is more likely a false-positive result than a true positive result if the prevalence is 5% or less.”

<https://www.idsociety.org/globalassets/idsa/public-health/covid-19/idsa-covid-19-antibody-testing-primer.pdf>



**Next COVID-19 webinar: in 2 weeks?**



Please Type Your Questions in the  
Question Box!

