Health Industry Advisor, llc

"Strategic Advice in an Era of Unprecedented Change"

Covid-19 "Vital Signs"

Issue # 291

February 26, 2021

Covid-19
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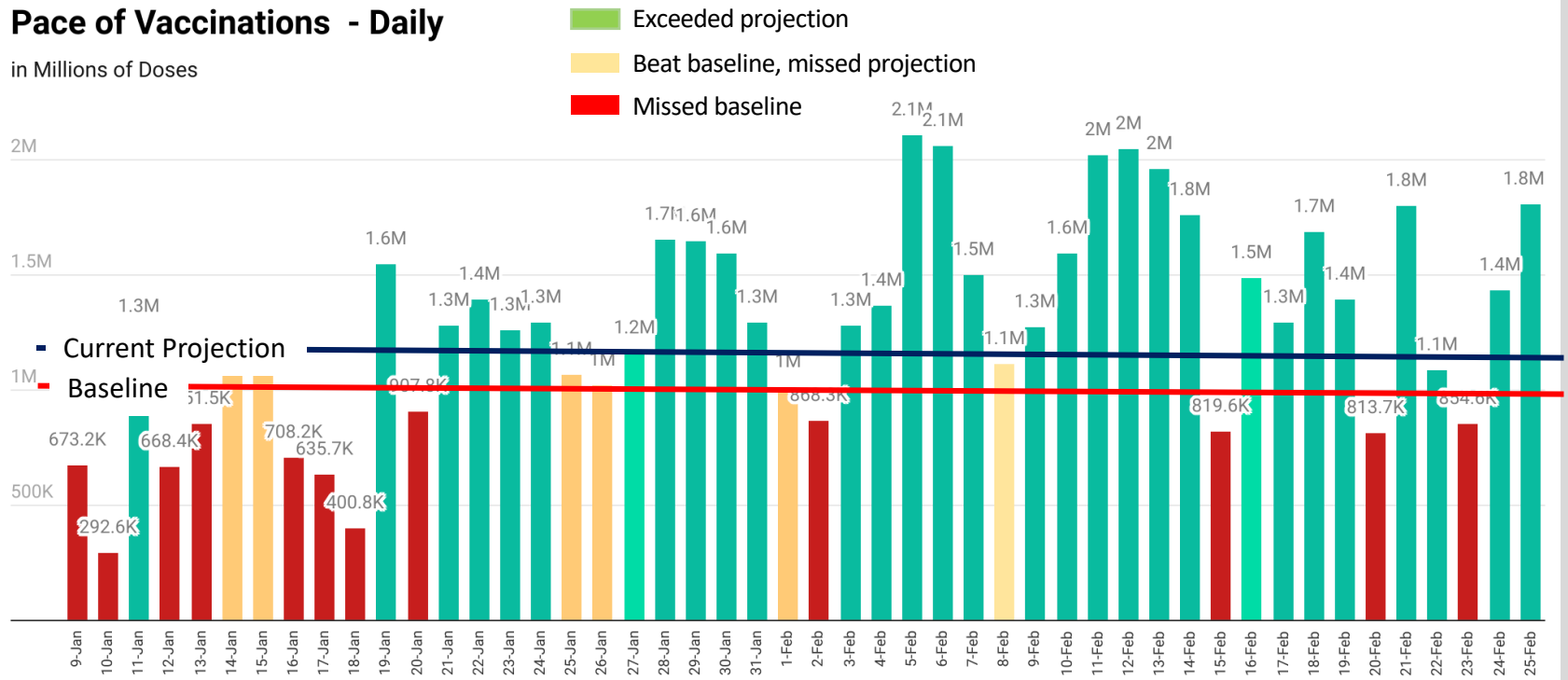
Pace of Vaccinations

The US jabbed 1.4 and 1.8 million citizens on Wednesday and Thursday as it recovers from last week's distribution challenges.



Baseline: 100 Million Doses in 100 Days Current Projection: Ramped-Up Vaccinations; Additional 100M Pfizer and Moderna doses; and JNJ vaccine available on 3/1

Chart: Health Industry Advisor LLC • Source: Bloomberg • Created with Datawrapper

"Current projection" is from Health Industry Advisor's vaccination model, reflecting recent developments: increase pace of vaccinations; increase in Pfizer and Moderna doses to 300 million each; and anticipated availability of JNJ vaccine

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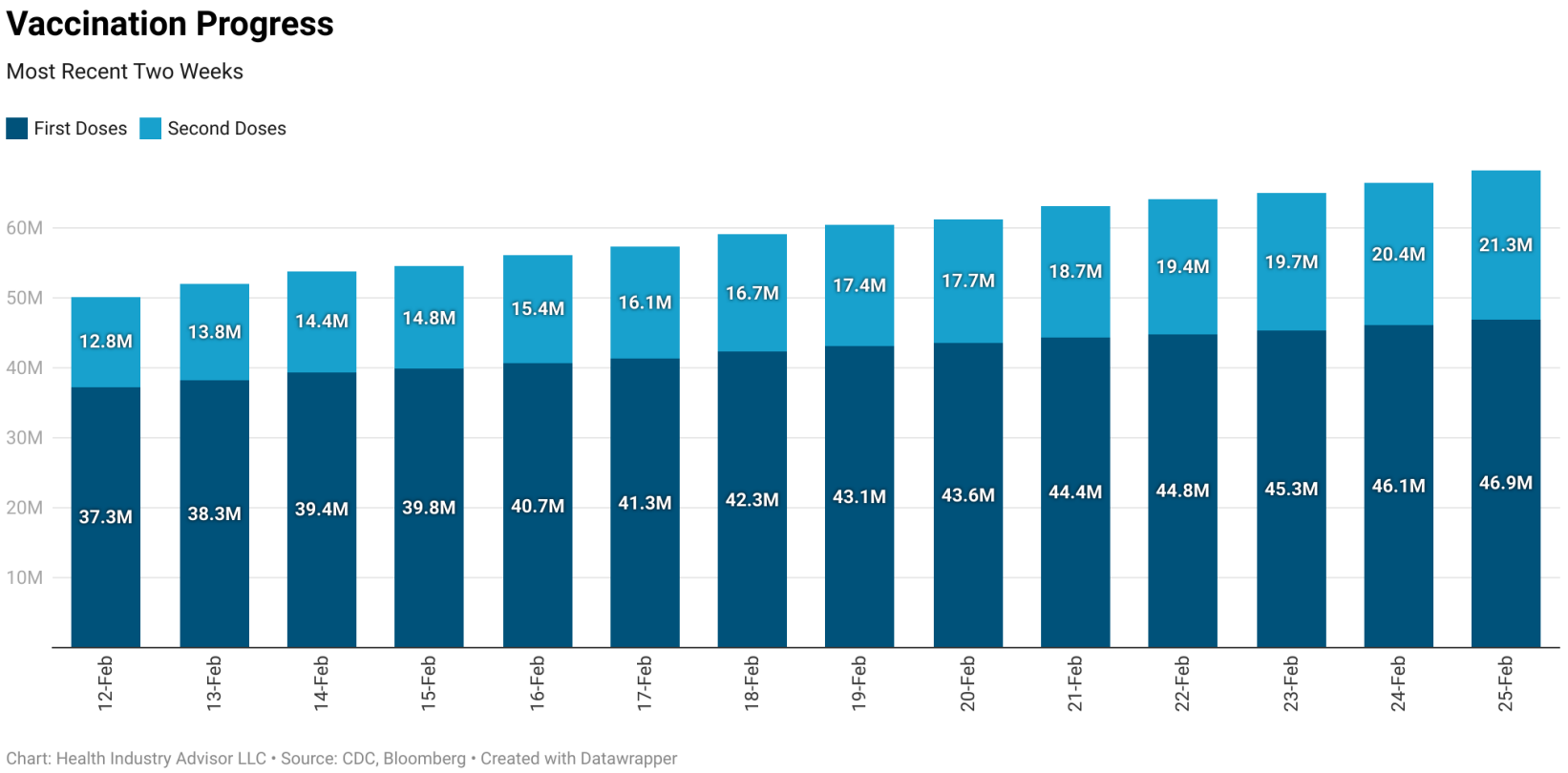
Vaccine Tracking

To date, the US has administered 68 million doses, with 21.3 million people jabbed twice.



Vaccine data from: Centers for Disease Control and Prevention and Bloomberg Vaccine Tracker

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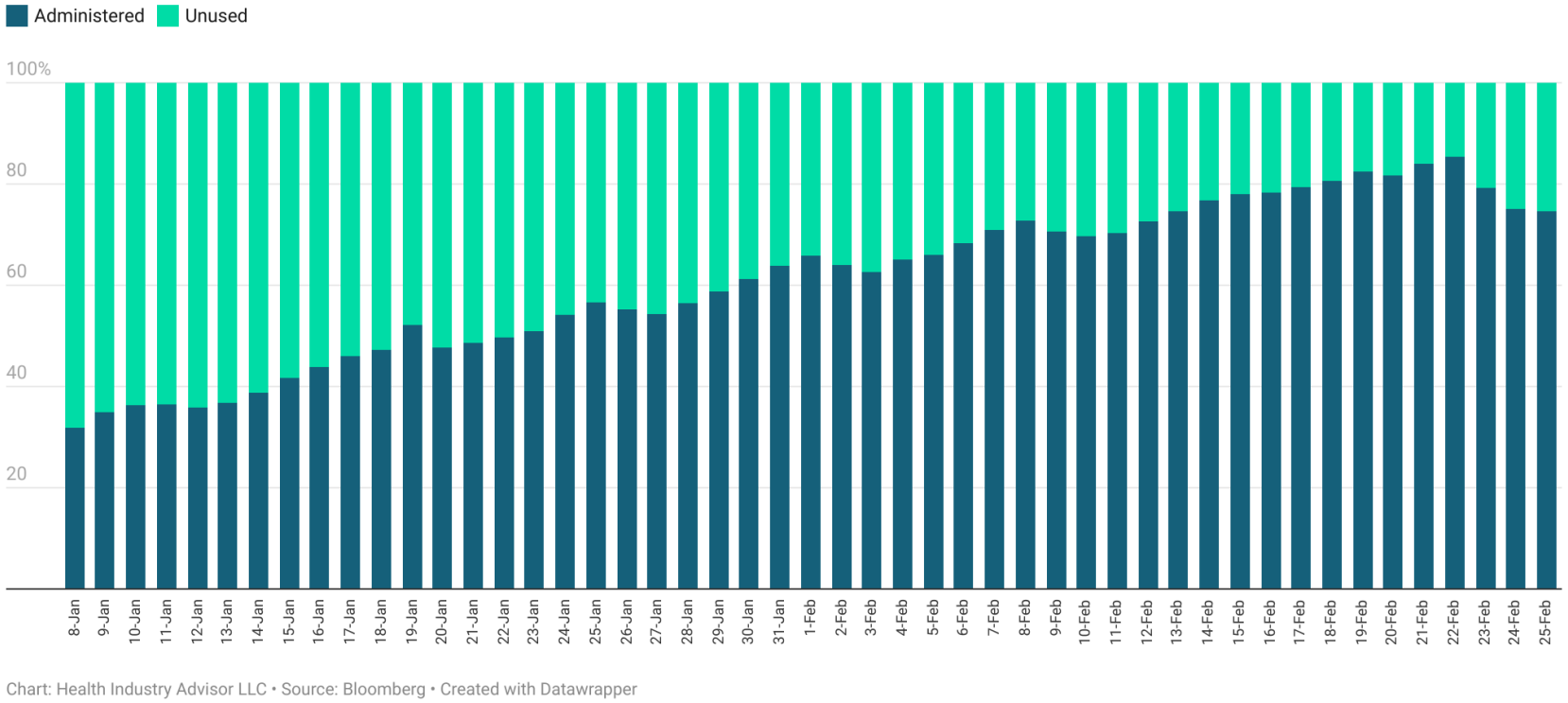
Vaccines Distributed v. Unused

The US distributed an astounding 16.4 million additional doses in the last three days, setting up the likelihood of strong vaccine administration over the next several days.



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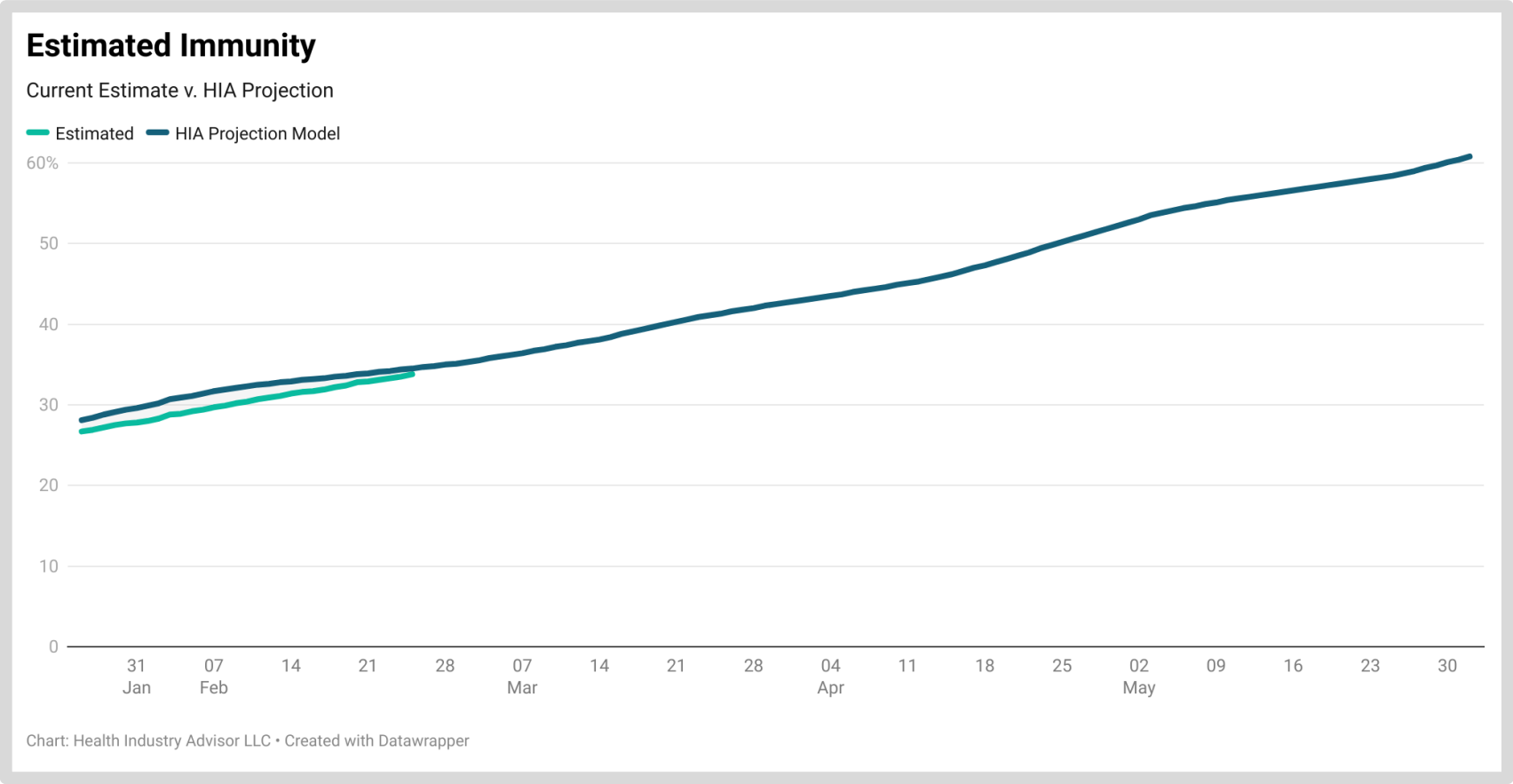
Immunity: Projected v. Estimated

Estimated immunity levels are tracking closely to our " Current Projection" model. This model estimates 60% of the U.S. will be immune by May 30 and 70% by July 1.



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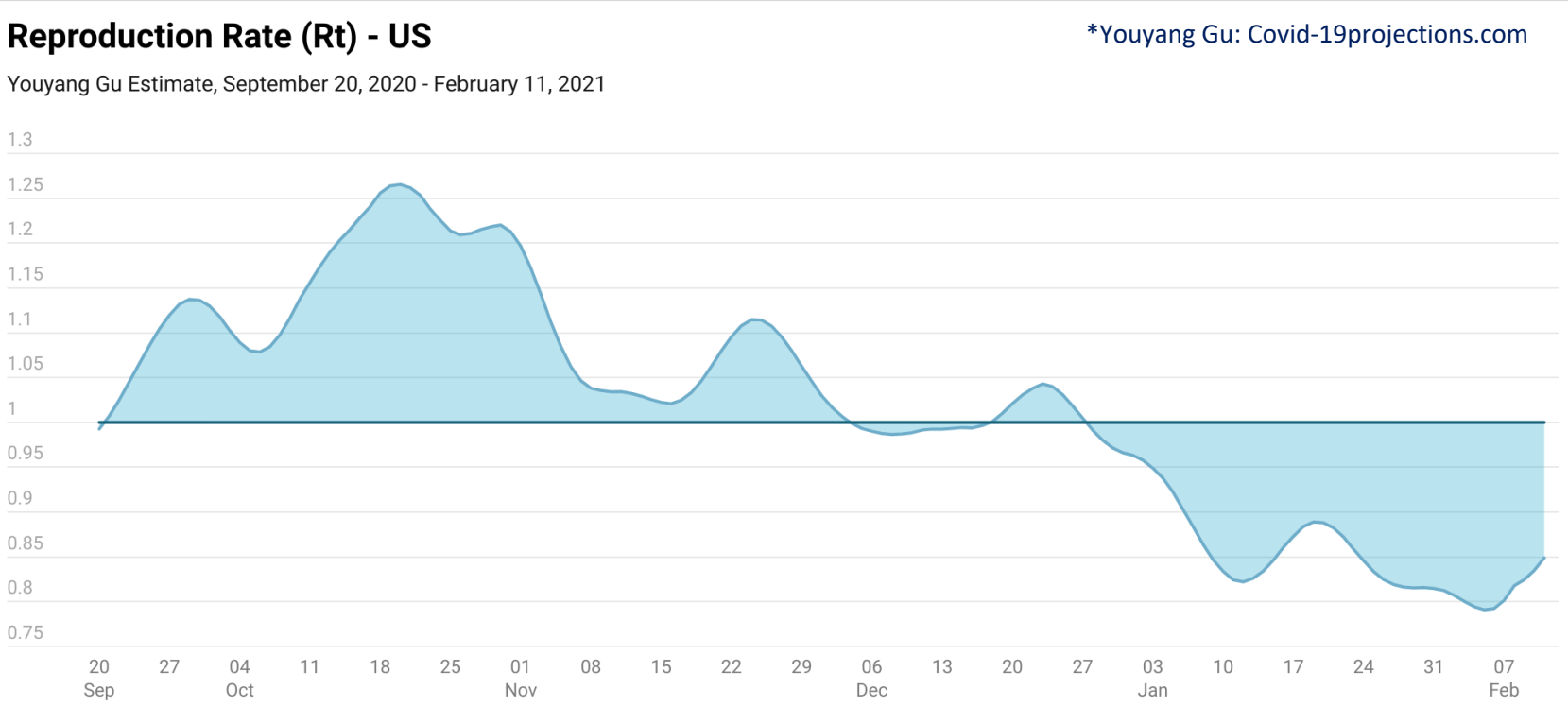
Reproduction Rate (R_t) – Gu* Model

Gu's R_t estimate signals a prolonged slowdown in infection spread.



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Estimated Daily Infections & New Case Rates

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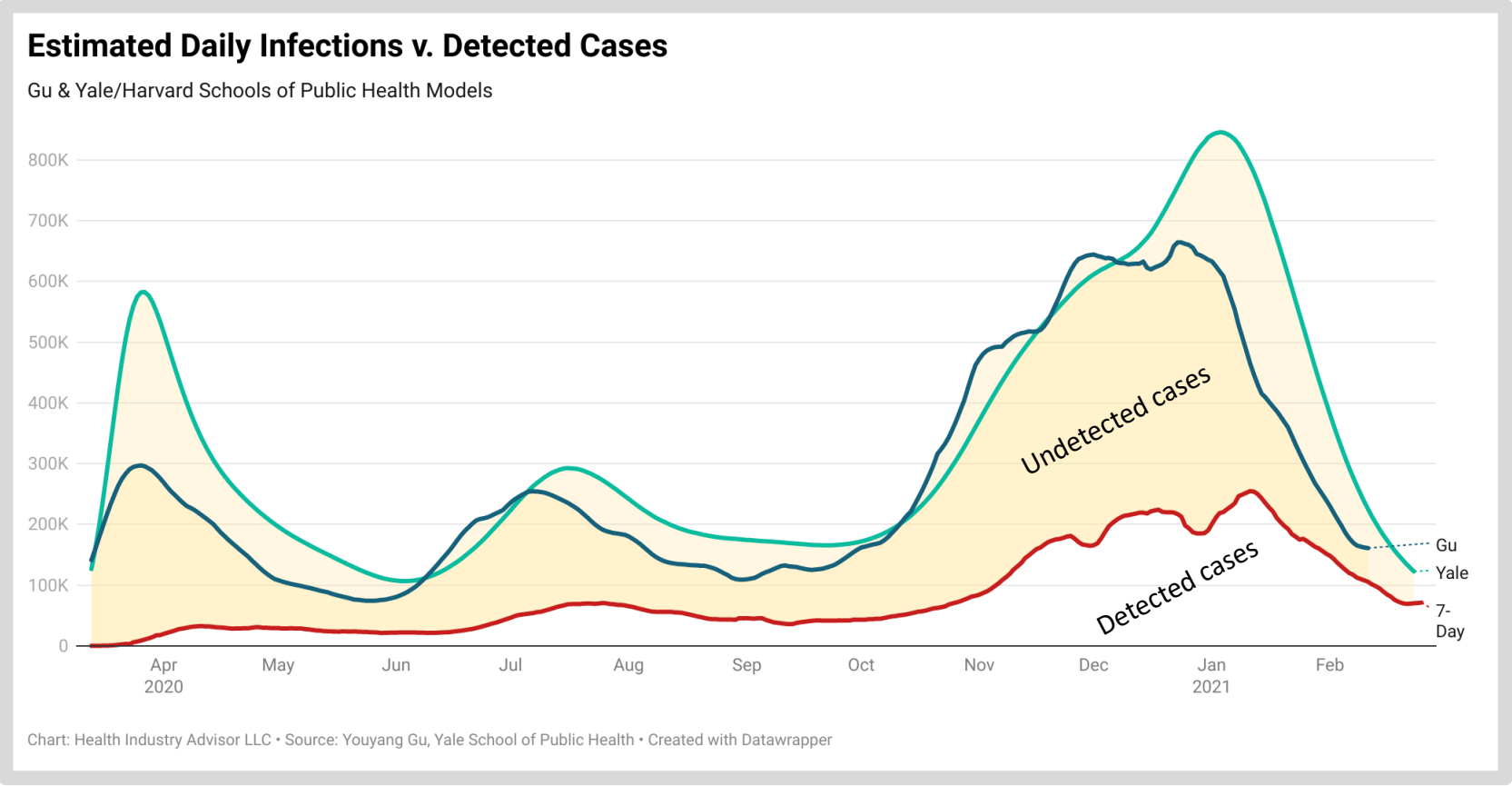
Estimated new infections and reported cases are plunging in the US. The Yale/Harvard model suggests that the infections have plummeted 87% since peaking in early-January; Gu estimates a 76% decline



Two models:

- Youyang Gu: https://covid19-projections.com, lags by two weeks
- Yale School of Public Health: https://covidestim.org

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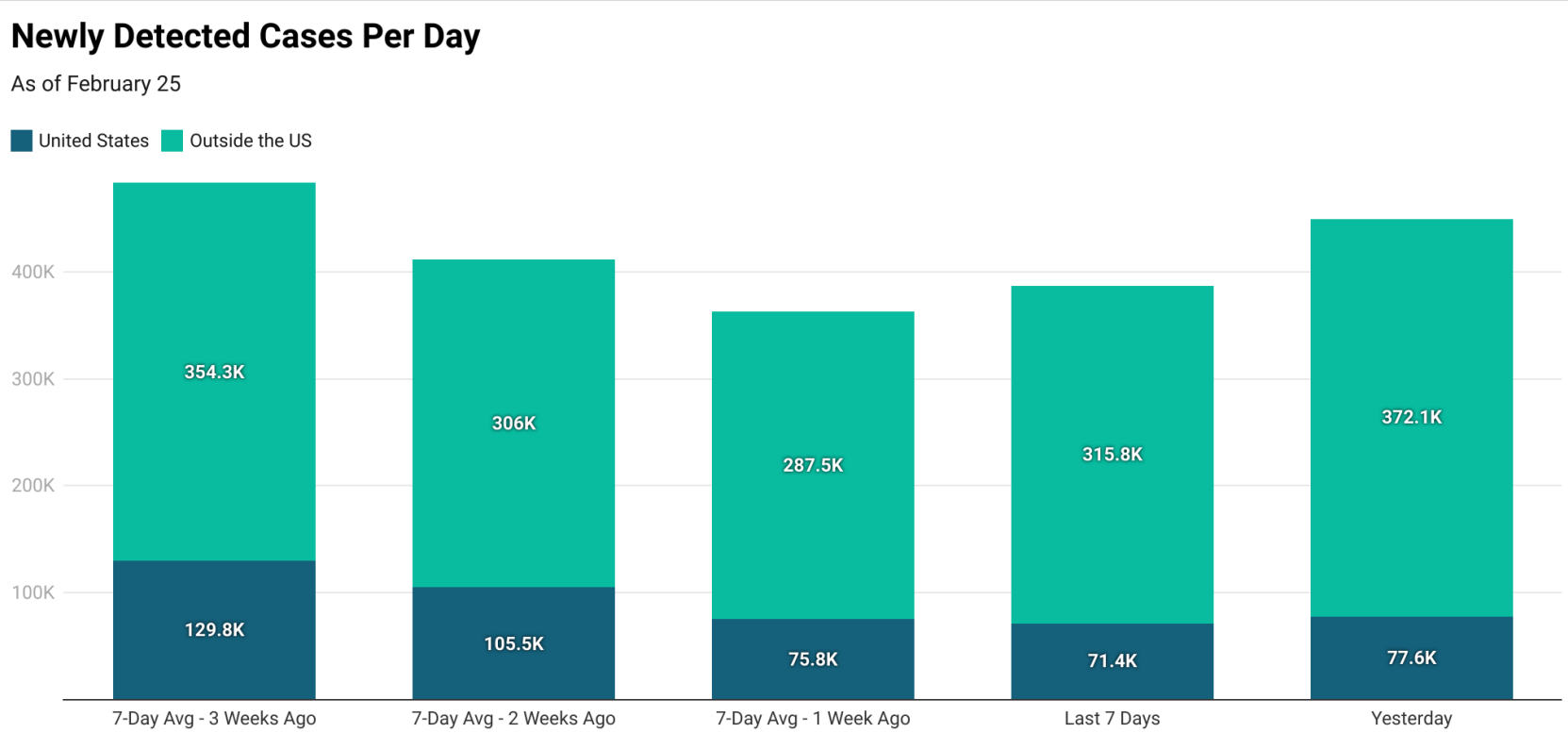
Newly Detected Cases Per Day

In the US, 7-day new case rates dropped during each of the past three weeks, plunging 45% during that time. Outside the US, rates increased week-over-week.



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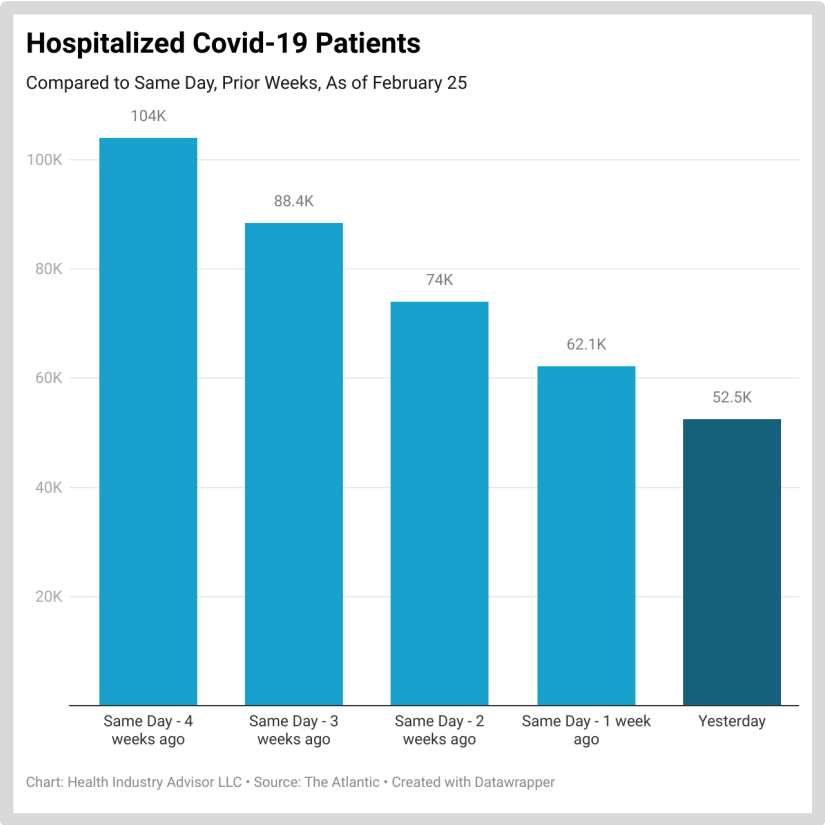
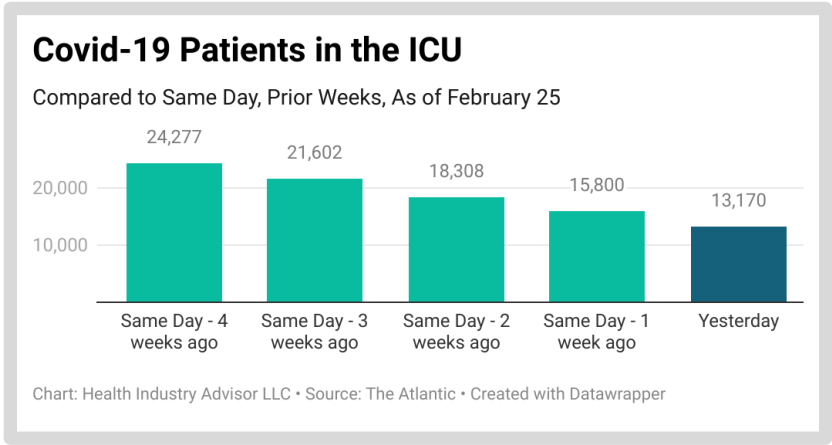
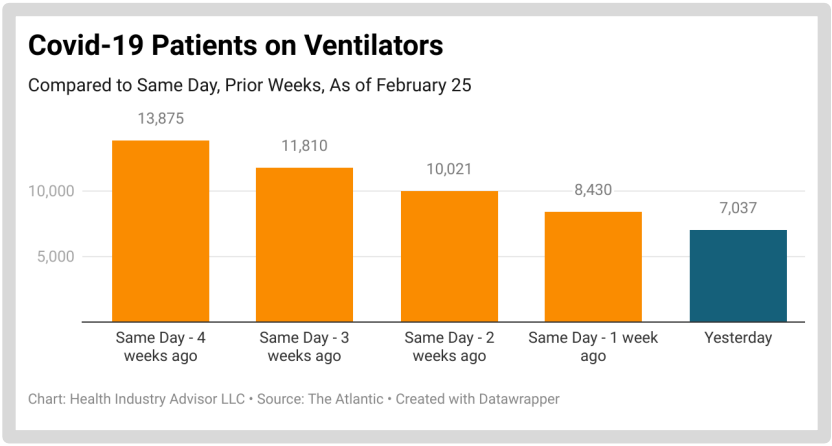
Covid-19 Hospitalizations

Covid-19 hospitalizations plunged over the past month, with 80,000 fewer patients yesterday than on January 6 (60% decline). ICU and ventilator days declined each of the past three weeks.







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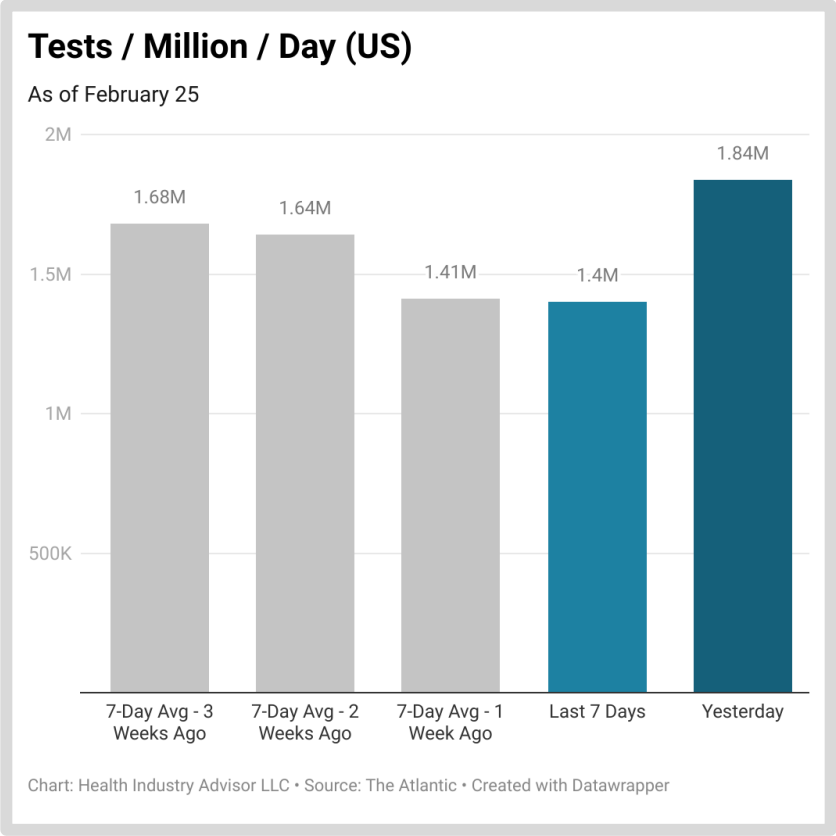
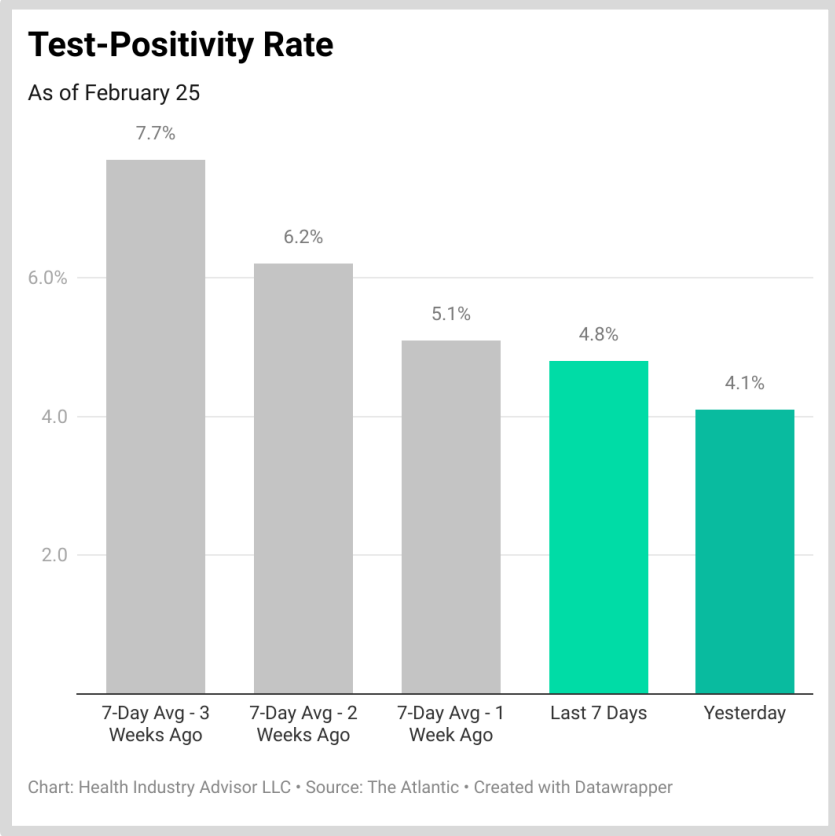
Testing (US)

Test volume stabilized week-over-week and showed a solid increase yesterday. Test-positivity improved over the three preceding weeks and was quite low yesterday with the strong volume. Test-positivity is now below the WHO guideline, reinforcing the view that infections are waning.





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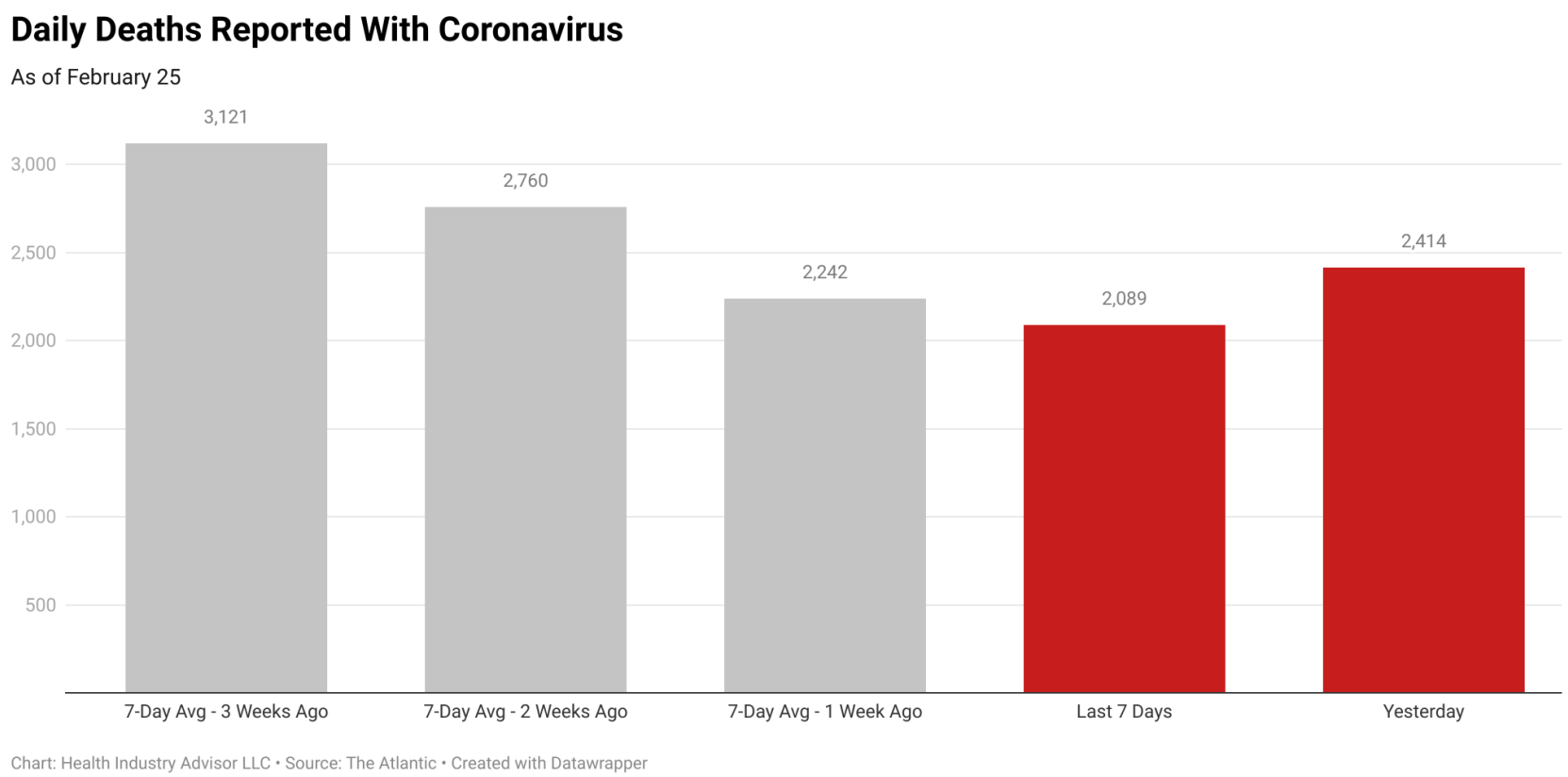
Deaths Reported With Coronavirus

The 7-day average death rate fell each of the past three weeks.



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State-By-State Scorecard: Scoring Grid

Designed to reflect five critical measures of a state's current experience with Covid-19

Worse ← → Better

Metric		Black	Red	Orange	Yellow	Green	Blue
7-Day Average New Daily Reported Infections per Capita	Greater than	450	350	250	150	50	0
Week-over-Week Change in Newly Reported Cases	Greater than	30%	20%	10%	0%	-10%	N/A
7-Day Average Viral Tests per 7-Day Average Newly Reported Cases	Less than	5	10	25	50	75	N/A
Covid-19 Inpatient Census as % of All Inpatient Beds	Greater than	50%	40%	30%	20%	10%	0%
7-Day Deaths per 1000 New Cases (14-day lag)	Greater than	25	20	15	10	5	0

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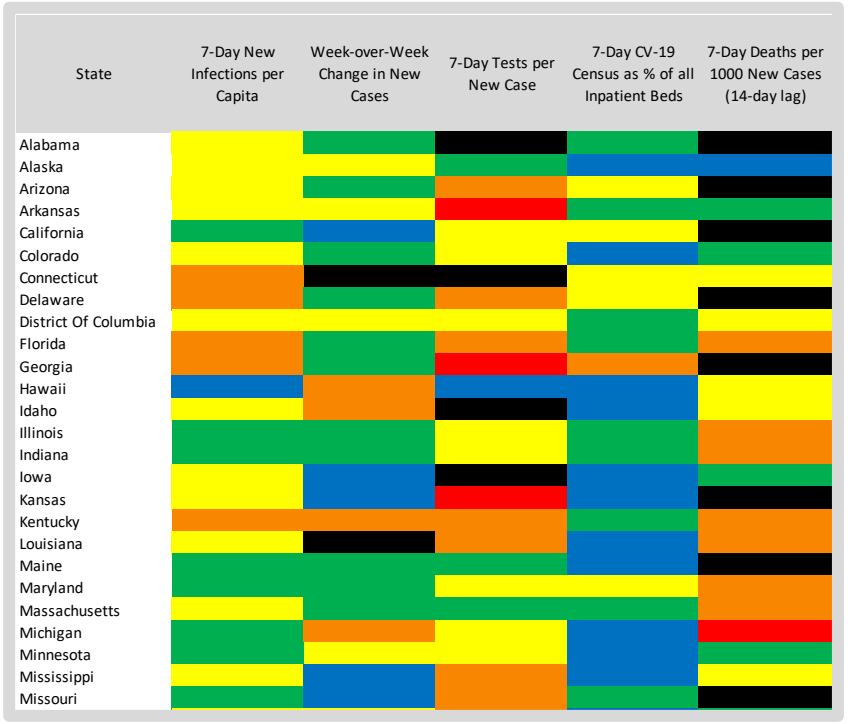
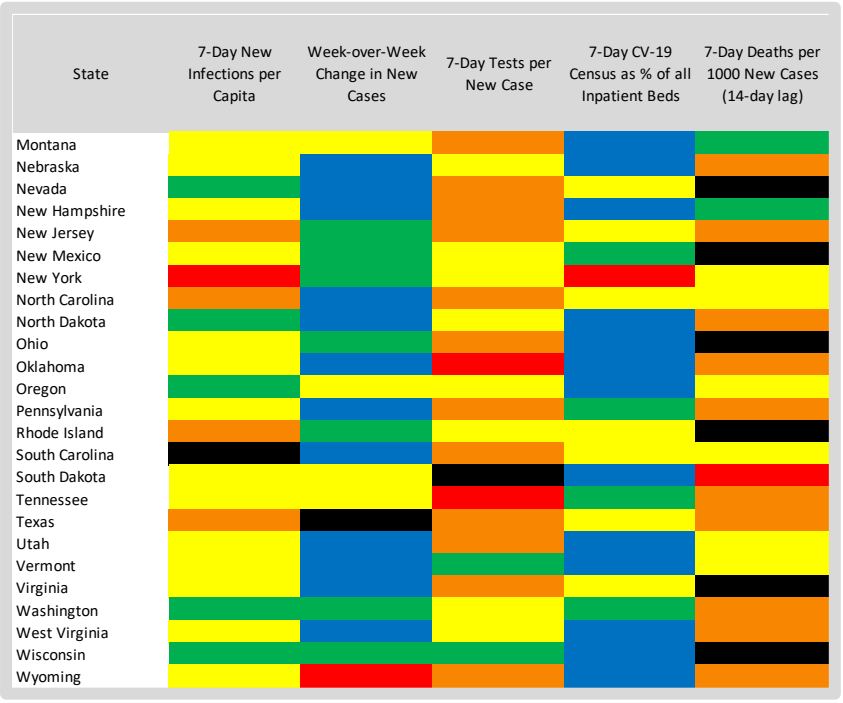
State-By-State Scorecard:

New case rates are "cautious" to "good" across many parts of the country; and the week-over-week changes in new cases are encouraging. The hospital crisis eased for most of the country.



State	7-Day New Infections per Capita	Week-over-Week Change in New Cases	7-Day Tests per New Case	7-Day CV-19 Census as % of all Inpatient Beds	7-Day Deaths per 1000 New Cases (14-day lag)
Alabama					
Alaska					
Arizona					
Arkansas					
California					
Colorado					
Connecticut					
Delaware					
District Of Columbia					
Florida					
Georgia					
Hawaii					
Idaho					
Illinois					
Indiana					
Iowa					
Kansas					
Kentucky					
Louisiana					
Maine					
Maryland					
Massachusetts					
Michigan					
Minnesota					
Mississippi					
Missouri					



State	7-Day New Infections per Capita	Week-over-Week Change in New Cases	7-Day Tests per New Case	7-Day CV-19 Census as % of all Inpatient Beds	7-Day Deaths per 1000 New Cases (14-day lag)
Montana					
Nebraska					
Nevada					
New Hampshire					
New Jersey					
New Mexico					
New York					
North Carolina					
North Dakota					
Ohio					
Oklahoma					
Oregon					
Pennsylvania					
Rhode Island					
South Carolina					
South Dakota					
Tennessee					
Texas					
Utah					
Vermont					
Virginia					
Washington					
West Virginia					
Wisconsin					
Wyoming					

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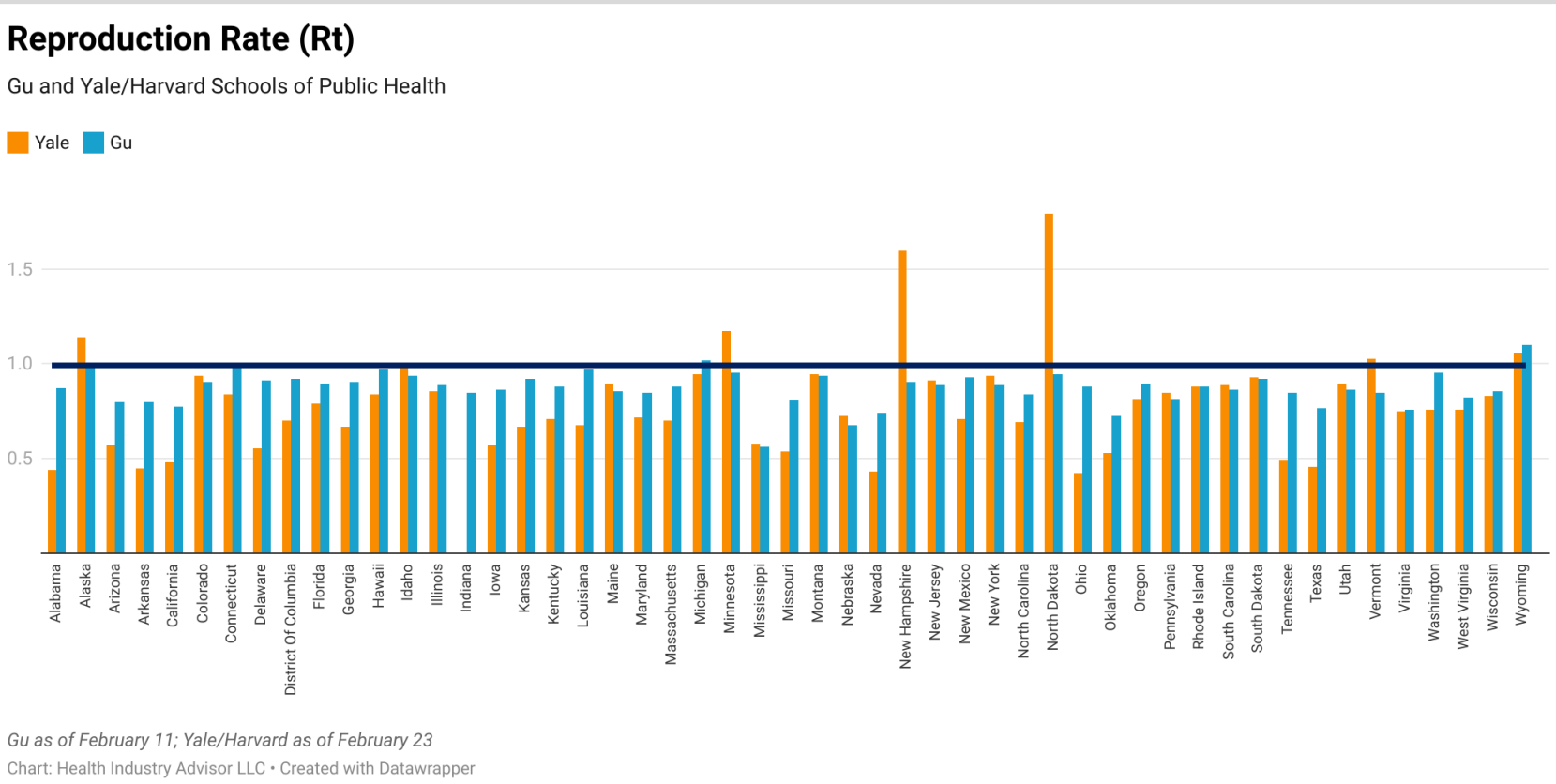
Reproduction Rate (R_t) Estimates By State

Estimated Reproduction Rates (Rt) suggest that infection spread is slowing across the US. Yale's estimate shows only Alaska, Minnesota, New Hampshire, North Dakota, Vermont, and Wyoming with increasing spread. Gu's estimate points only to only Michigan and Wyoming for increasing spread.



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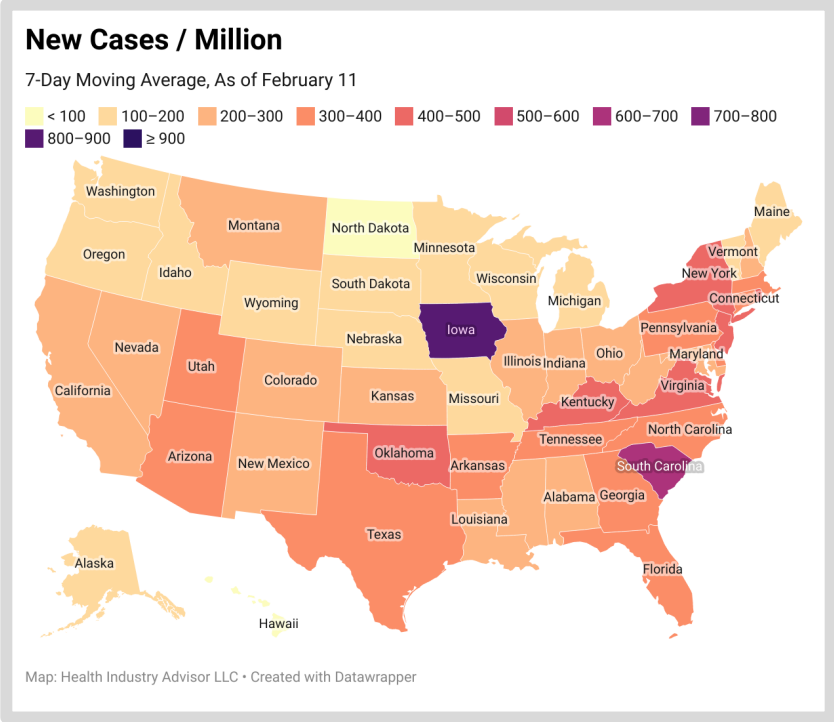
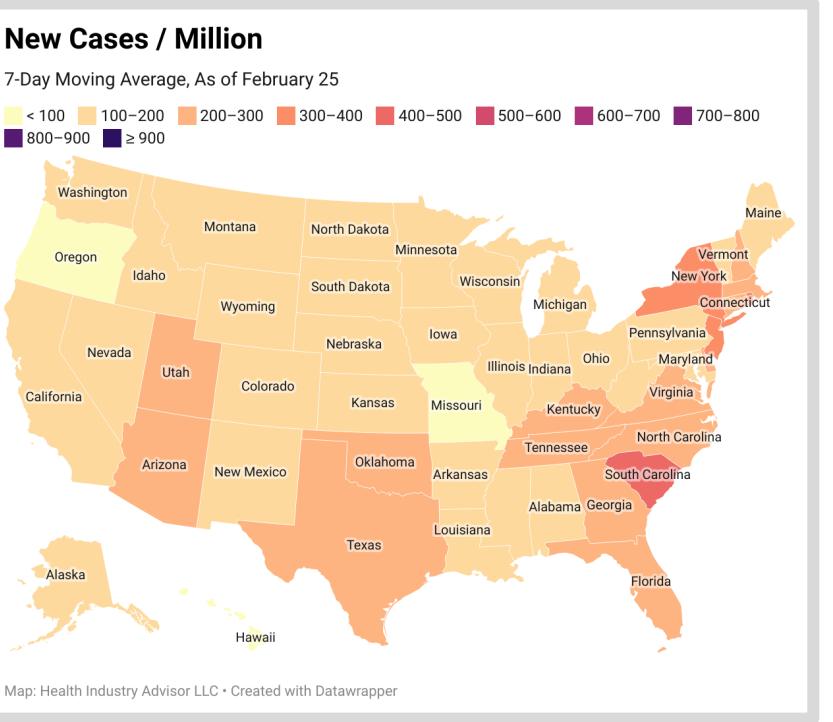
New Cases / Million

Much of the US rebounded from the high infection rates seen in early-January.

February 11	February 25





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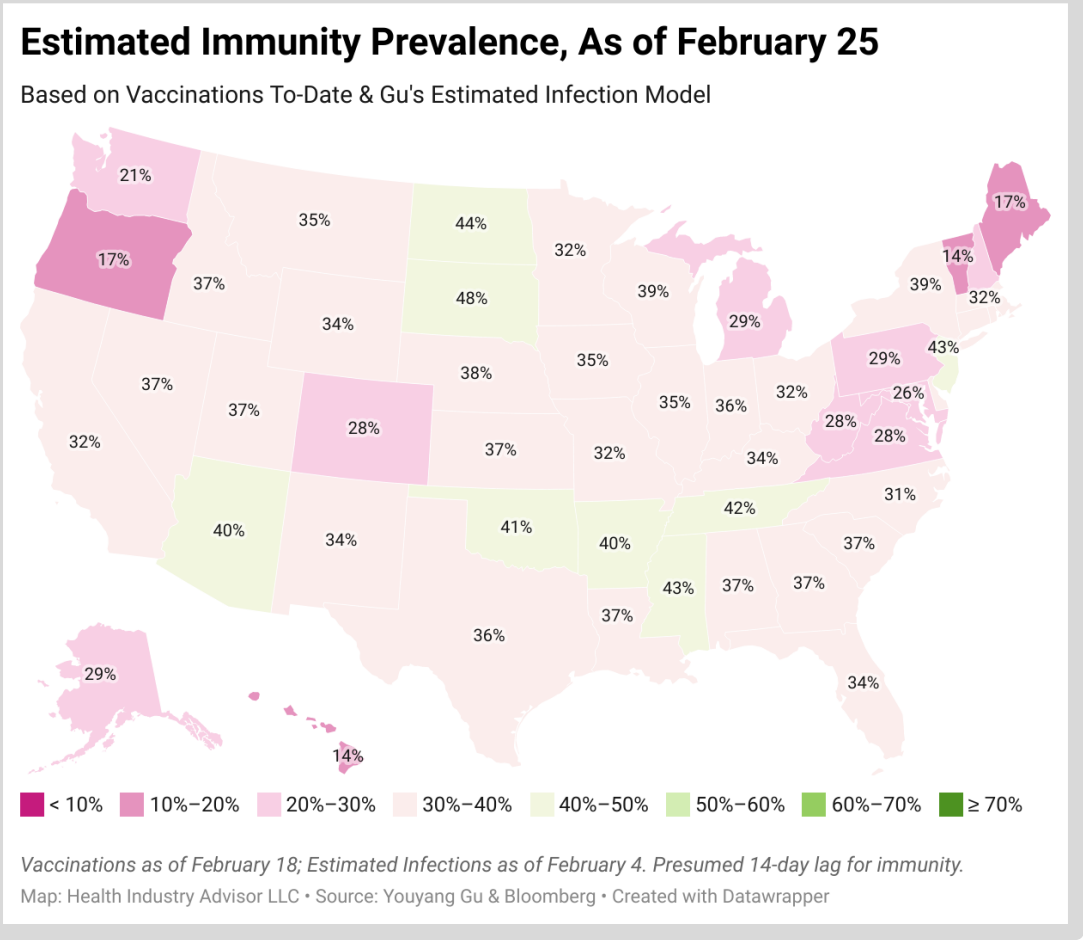
Estimated Immunity By State

Estimated immunity exceeds 40% in eight states – Arizona, Arkansas, Mississippi, New jersey, Oklahoma, South Dakota, and Tennessee

- Public health experts have suggested that 60-80% of the population would need immunity, for herd immunity to be reached
- Immunity could result from an infection or via vaccination
- It is not established how long immunity, from either infection of vaccination, will last
- For purposes of this illustration, we use both reported vaccination rates and Youyang Gu's* mean estimates of true infections

* https://covid19-projections.com



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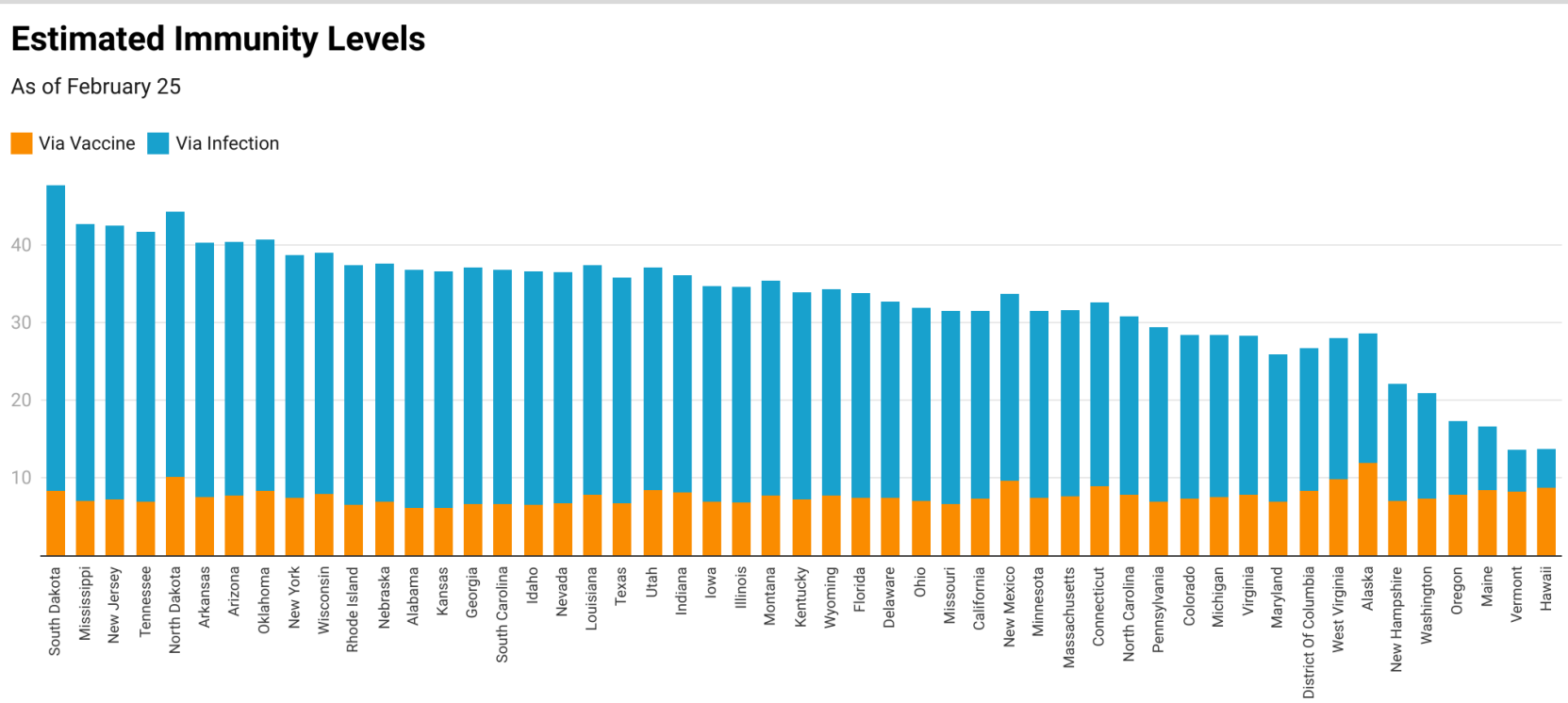
Estimated Immunity Levels By State

North and South Dakota continue to set the pace toward herd immunity. To-date, immunity is largely driven by prior infection rather than vaccinations. Alaska, Hawaii, and Vermont are exceptions, with immunity via vaccinations exceeding that from infection.



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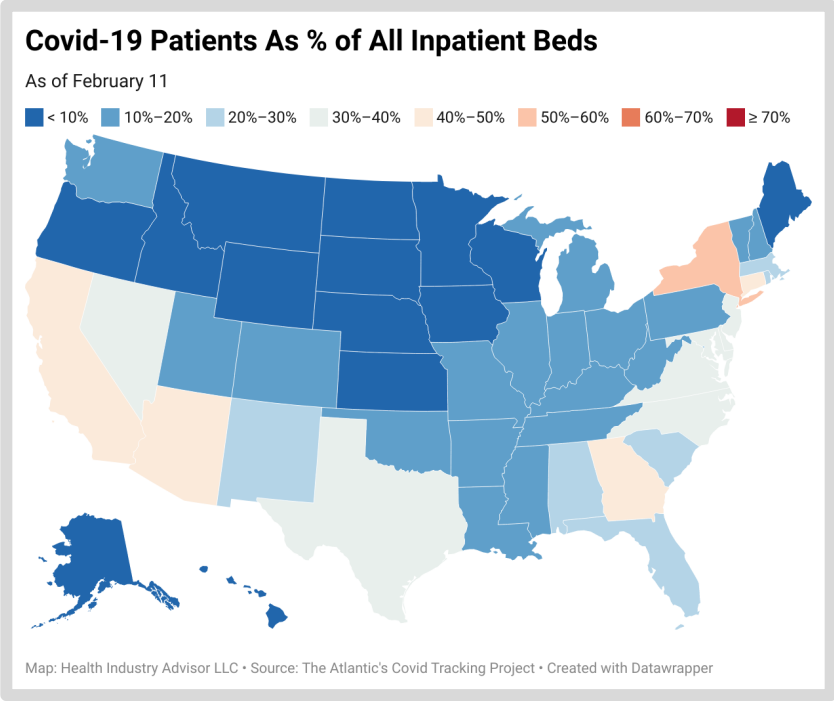
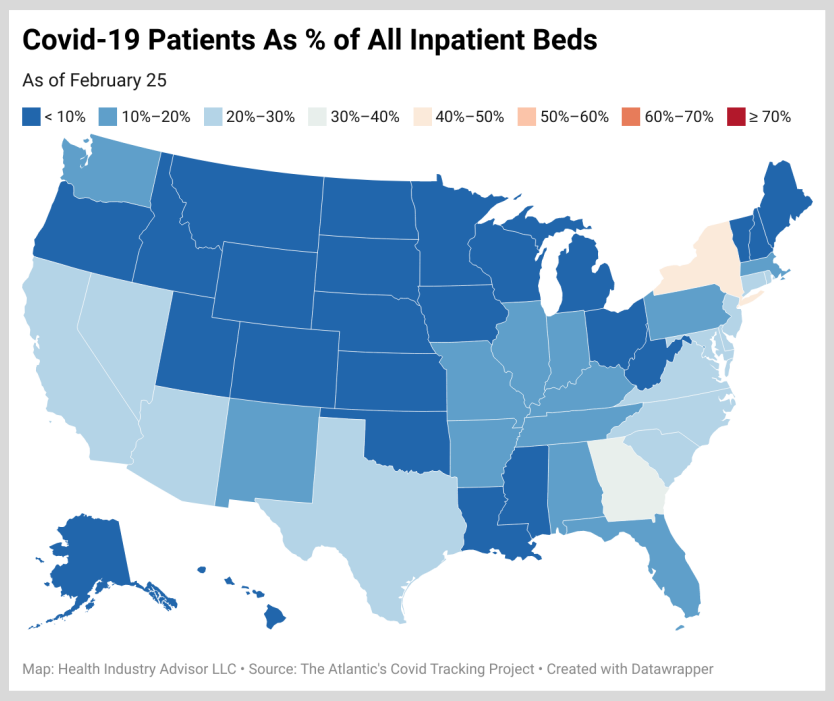
Covid-19 Hospitalizations

Covid-19 hospital census plunged in the past six weeks. Covid-19 patients occupied less than 17% of US beds yesterday versus 42% six weeks ago. Only New York is above 40% currently.

February 11	February 25





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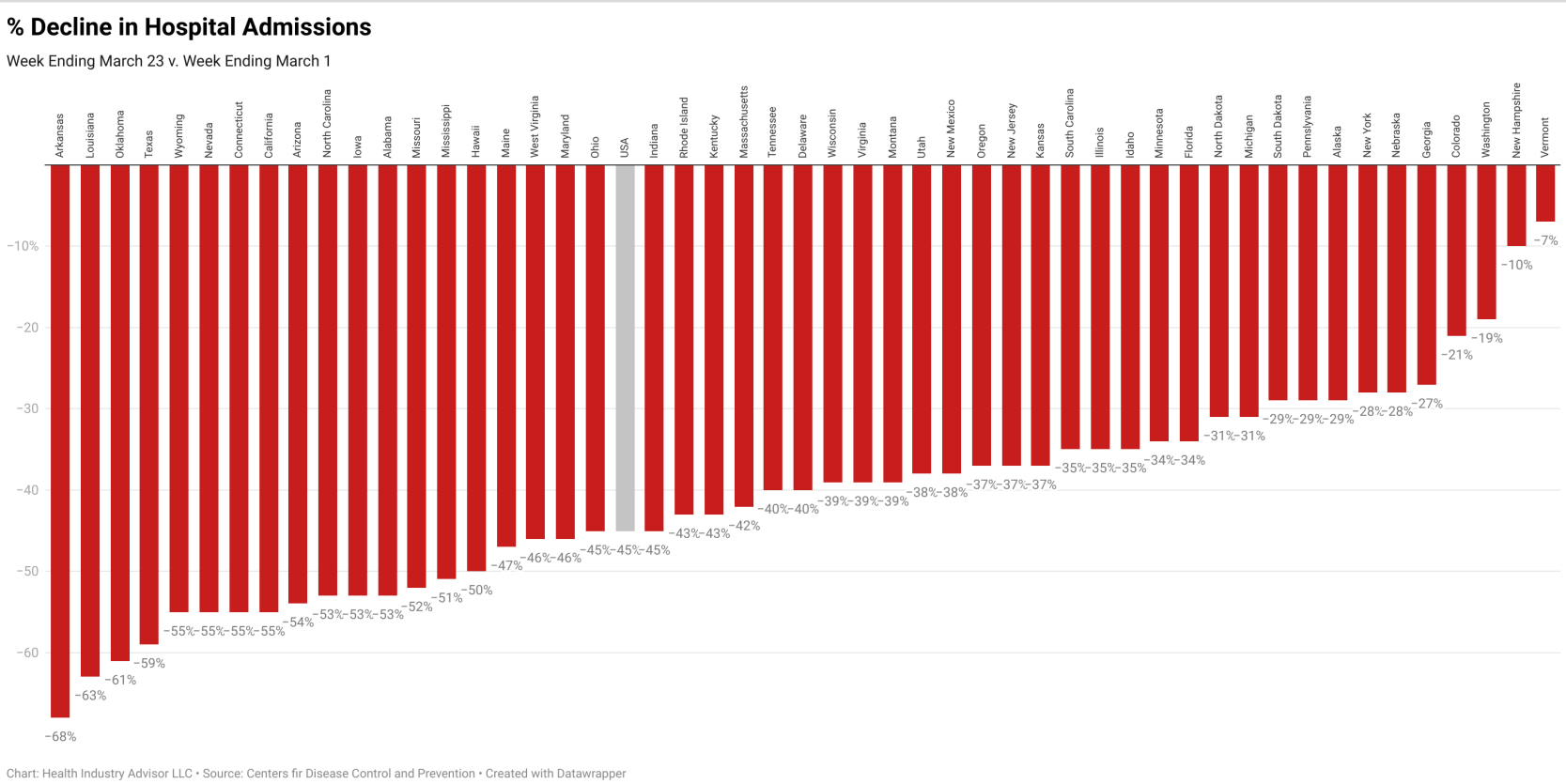
Covid-19 "Vital Signs"

Projected Covid-19 Admission Trends

Projected Covid-19 hospital admissions decline in every state over the next three weeks. For the U.S. overall, projected Covid-19 admissions drop 45% in this time.



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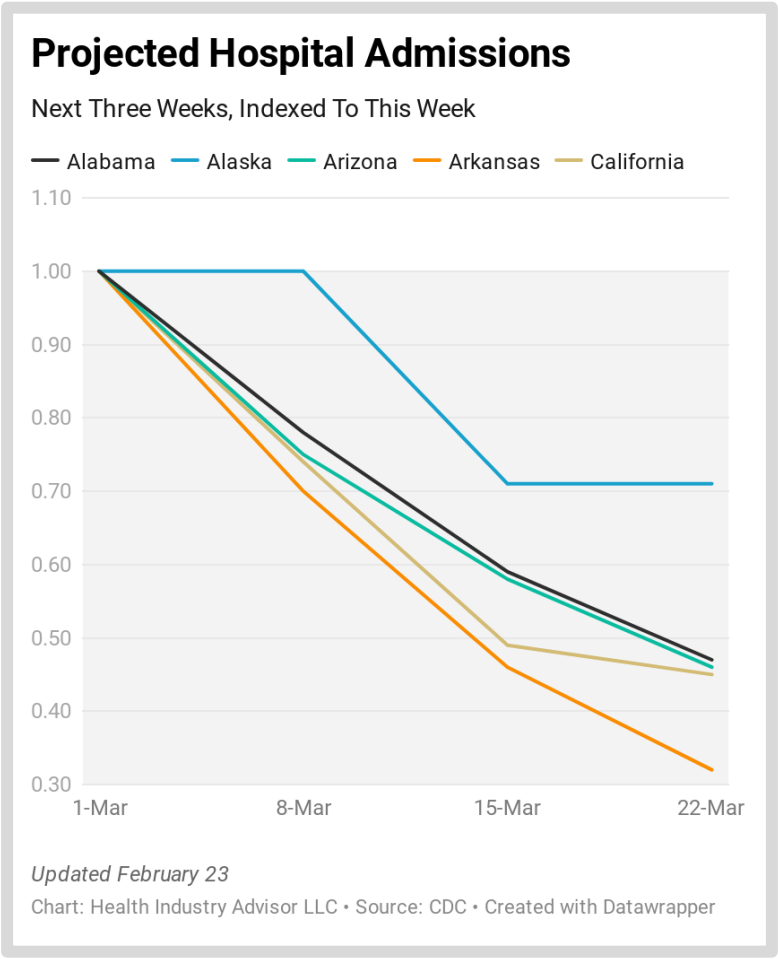
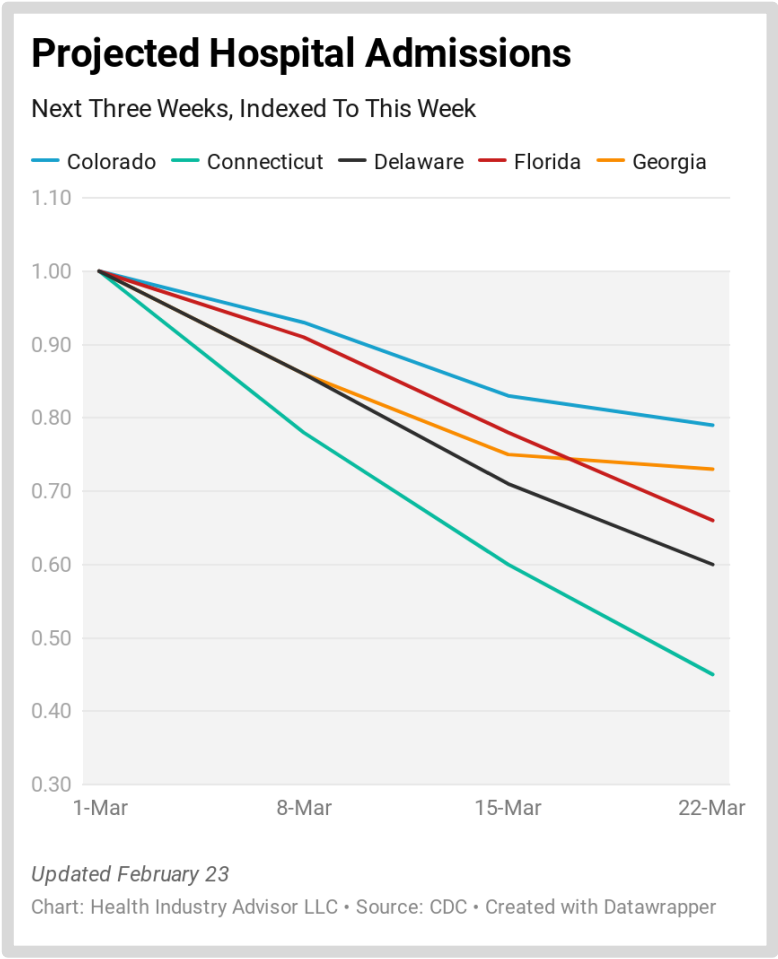
Projections of Hospital Admissions (US) – 1 of 5

Projected hospital admissions decline over the next few weeks in every state, in most cases by 30% or more.





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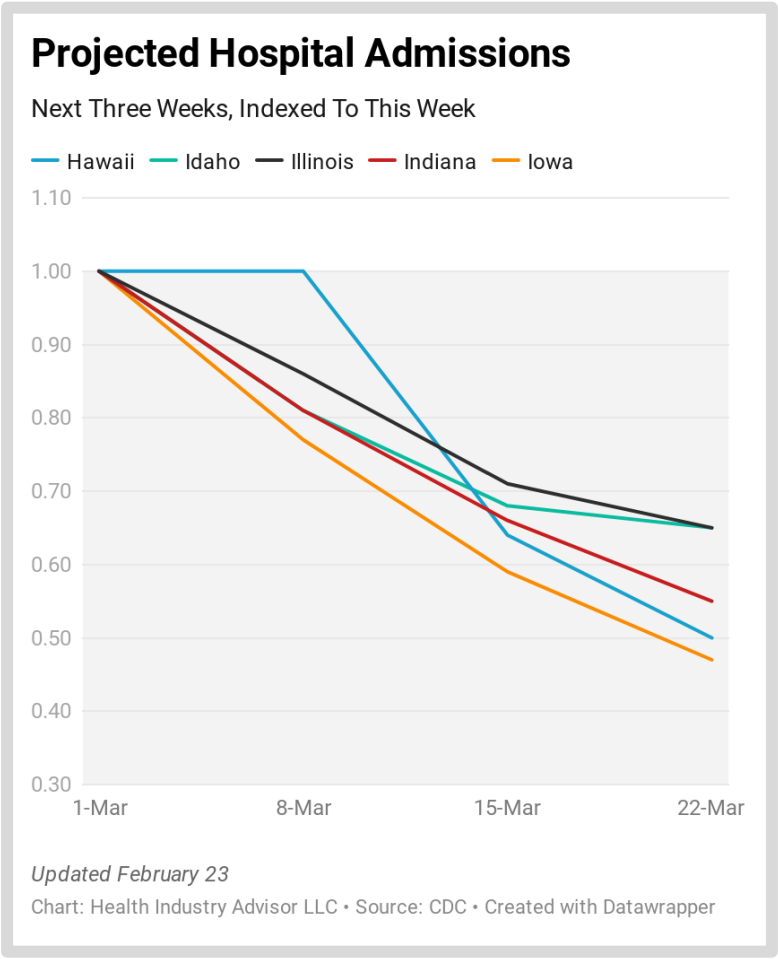
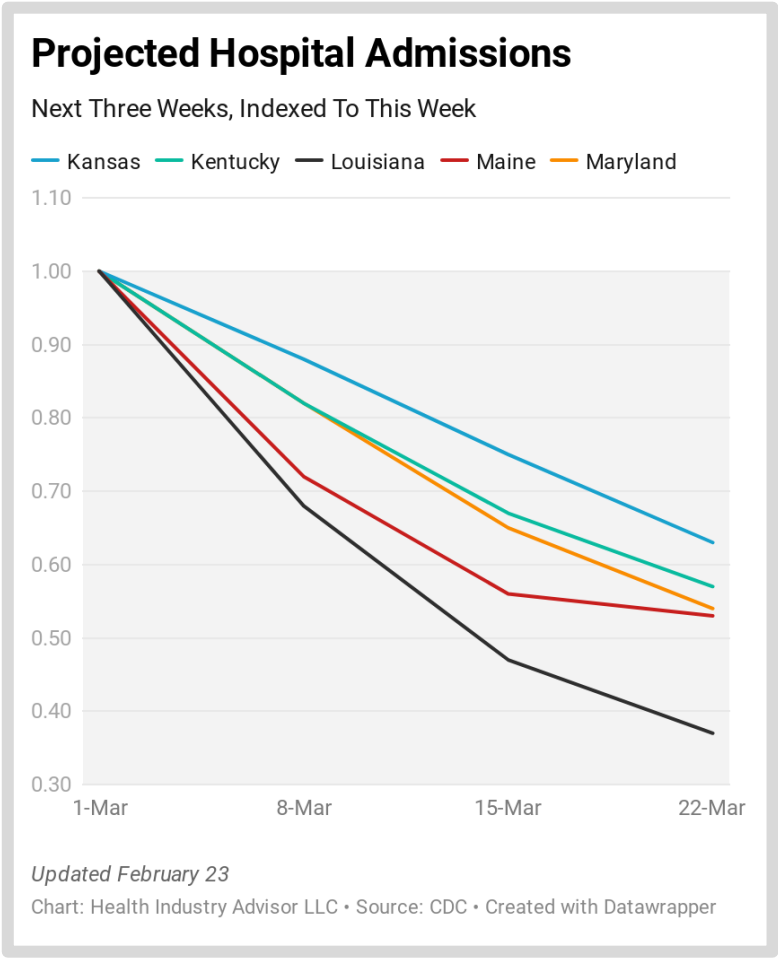
Projections of Hospital Admissions (US) – 2 of 5

Projected hospital admissions decline over the next few weeks in every state, in most cases by 30% or more.





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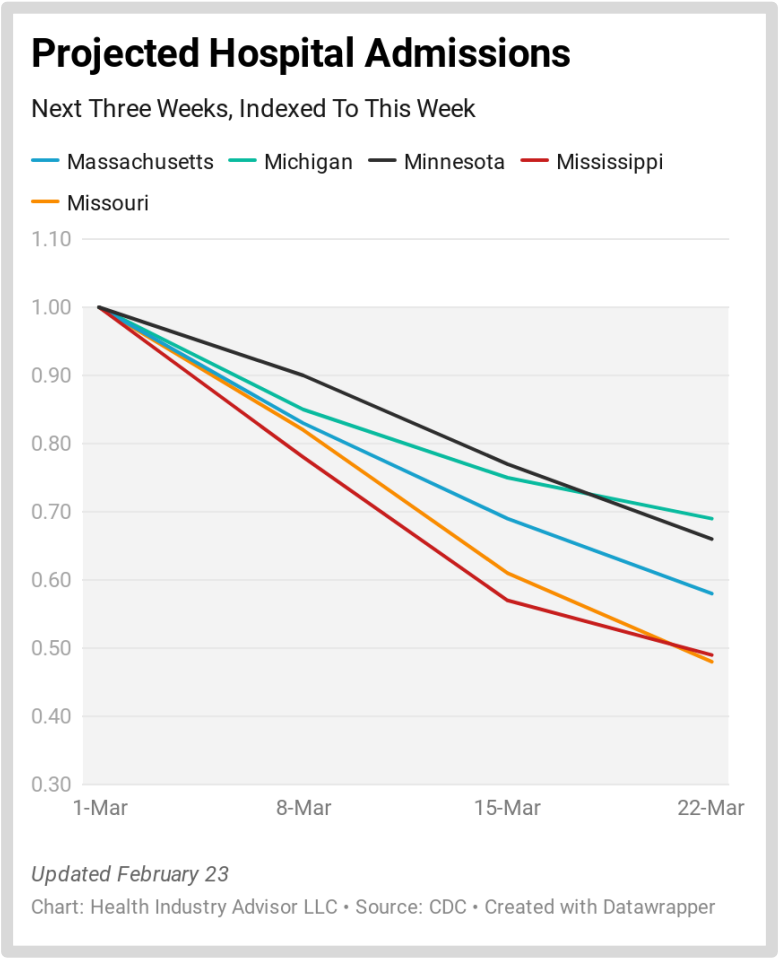
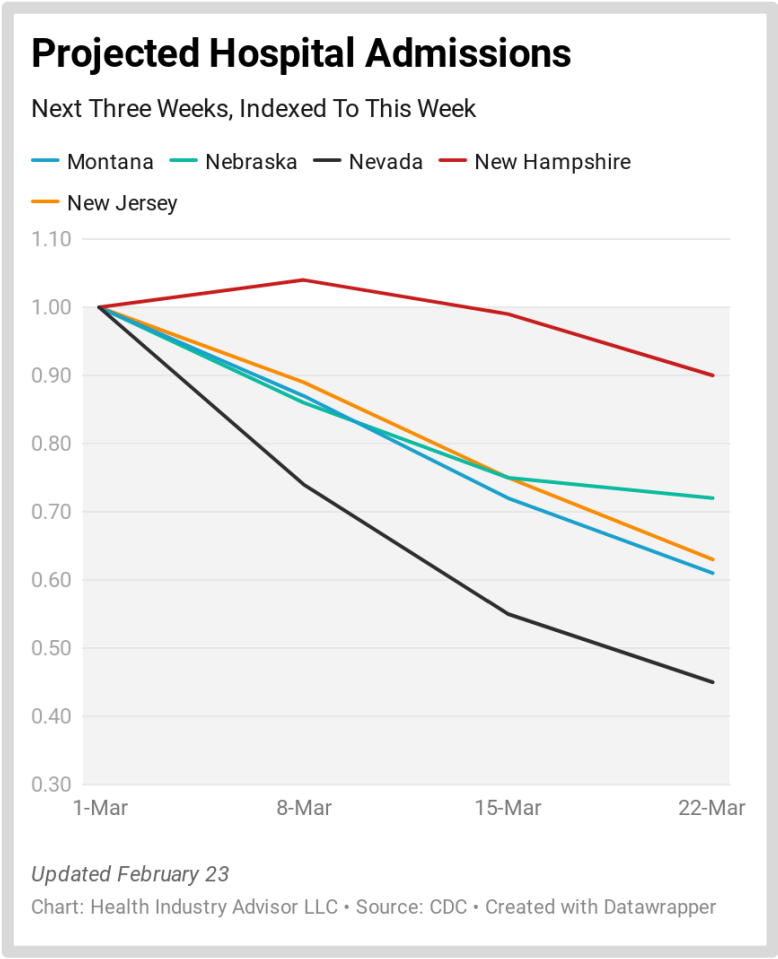
Projections of Hospital Admissions (US) – 3 of 5

Projected hospital admissions decline over the next few weeks in every state, in most cases by 30% or more.





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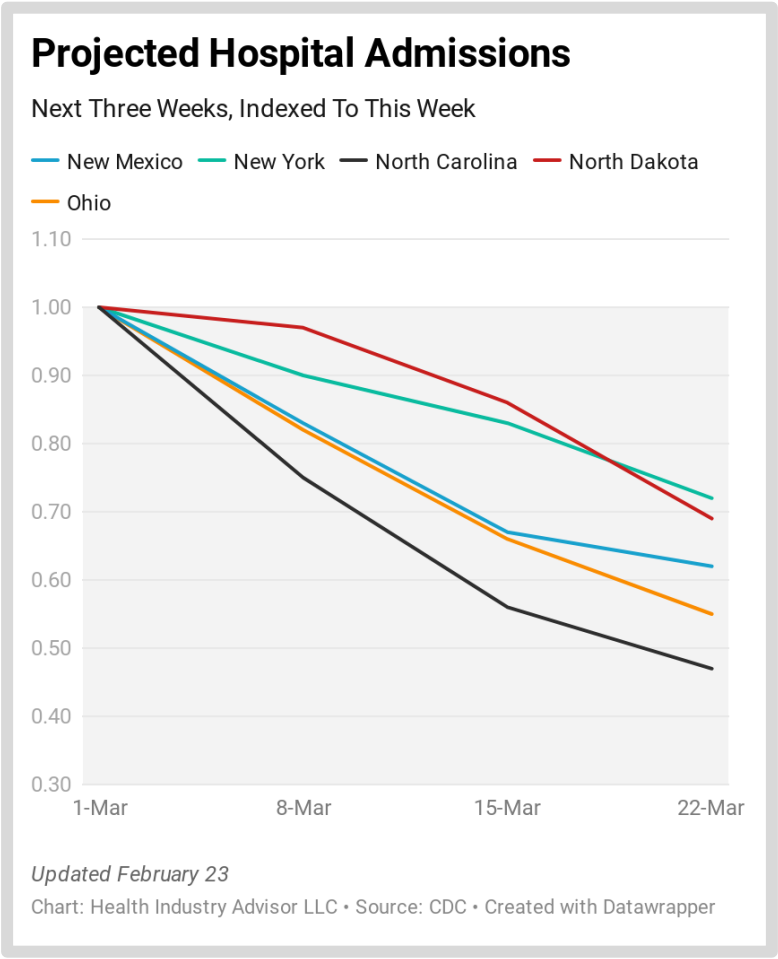
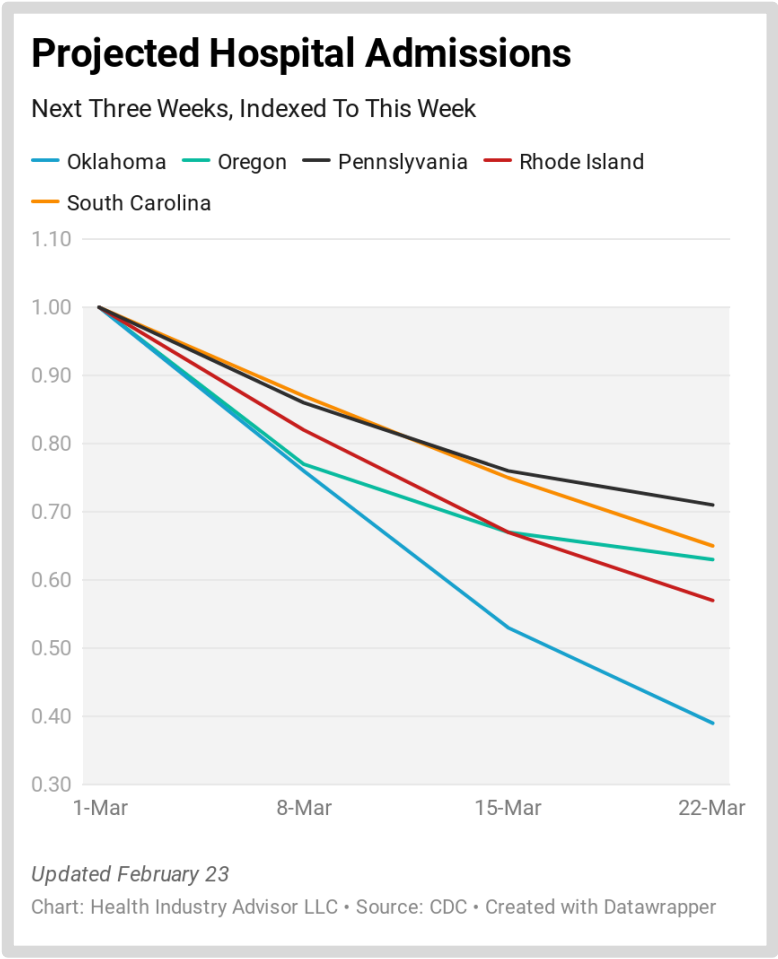
Projections of Hospital Admissions (US) - 4 of 5

Projected hospital admissions decline over the next few weeks in every state, in most cases by 30% or more.





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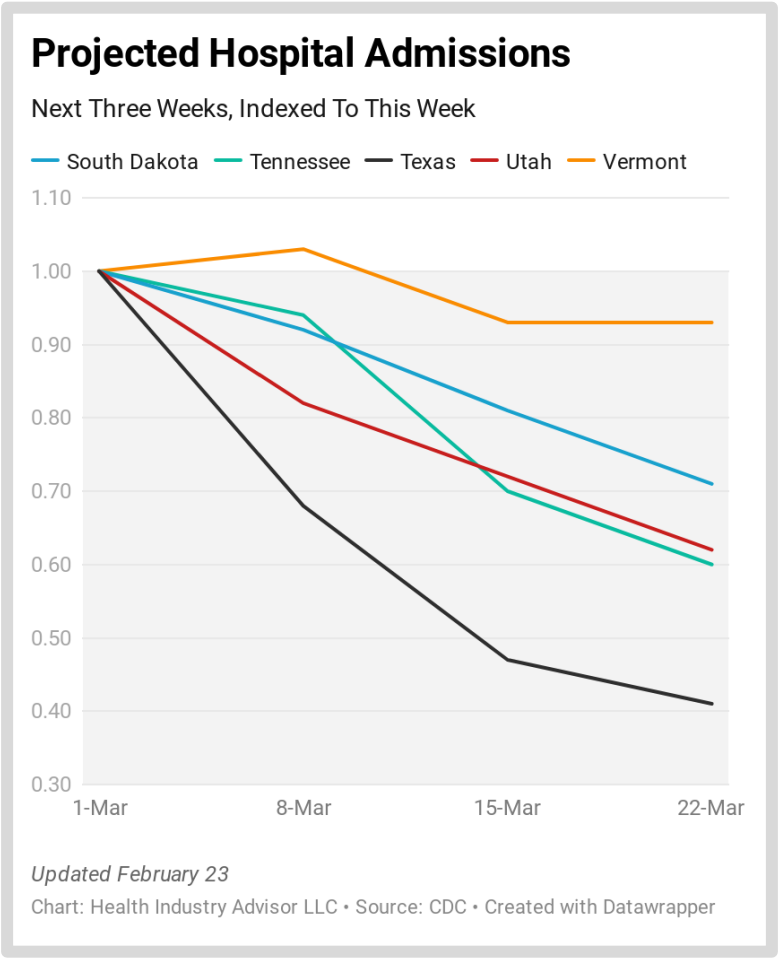
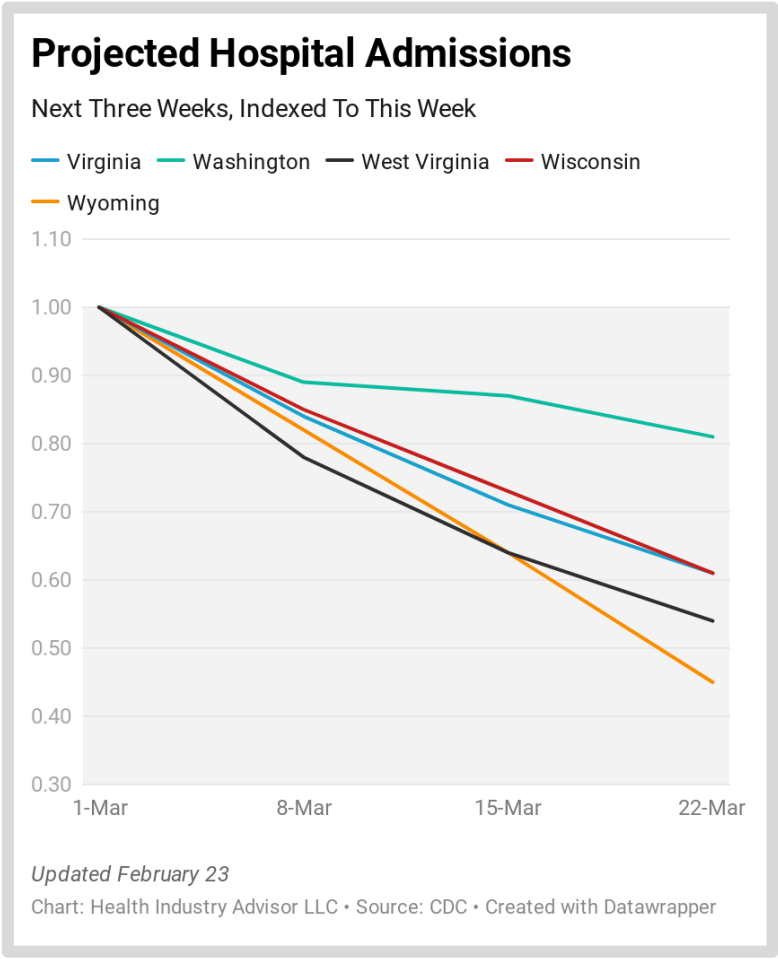
Projections of Hospital Admissions (US) – 5 of 5

Projected hospital admissions decline over the next few weeks in every state, in most cases by 30% or more.





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State-By-State Data Table (1 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths /1000 New Cases , 14-Day Lag
Alabama	10.0%	2,005	956	20.6%	197	5	13%	-1%	42
Alaska	7.6%	392	10,073	1.7%	171	59	7%	0%	1
Arizona	11.2%	2,173	4,771	4.4%	210	23	23%	-4%	28
Arkansas	10.5%	1,788	1,549	11.2%	174	9	10%	8%	9
California	9.0%	1,300	4,736	2.9%	148	32	25%	-21%	38
Colorado	7.4%	1,029	4,777	3.8%	180	27	9%	-6%	7
Connecticut	7.8%	2,136	-5,078	-5.7%	291	-17	28%	34%	14
Delaware	8.8%	1,444	5,275	5.4%	286	18	30%	-1%	30
District Of Columbia	5.7%	1,424	5,767	2.9%	166	35	15%	7%	11
Florida	8.8%	1,419	4,290	6.4%	283	15	20%	-1%	19
Georgia	9.4%	1,620	2,180	12.7%	278	8	31%	-5%	29
Hawaii	1.9%	307	3,170	1.2%	36	88	4%	10%	14
Idaho	9.5%	1,032	689	22.4%	156	4	8%	11%	10
Illinois	9.3%	1,784	5,721	2.5%	141	40	10%	-2%	17
Indiana	9.8%	1,856	5,344	2.7%	147	36	11%	-4%	19
Iowa	11.5%	1,724	586	20.5%	180	3	5%	-74%	6
Kansas	10.1%	1,622	955	21.2%	174	5	4%	-21%	33
Kentucky	9.0%	1,023	2,949	9.8%	288	10	14%	1...	15

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Covid-19
"Vital Signs"

State-By-State Data Table (2 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths /1000 New Cases , 14-Day Lag
Louisiana	9.2%	2,057	4,389	4.1%	180	24	9%	32%	18
Maine	3.3%	521	6,856	1.6%	109	63	6%	-1%	30
Maryland	6.3%	1,291	4,749	2.7%	130	37	24%	-10%	16
Massachusetts	8.3%	2,299	13,440	1.8%	247	54	18%	-5%	17
Michigan	6.4%	1,646	3,455	3.7%	127	27	8%	19%	21
Minnesota	8.5%	1,156	4,300	3.3%	140	31	5%	1%	8
Mississippi	9.8%	2,222	2,212	7.1%	157	14	9%	-33%	13
Missouri	8.5%	1,383	1,990	4.2%	85	23	15%	-42%	39
Montana	9.3%	1,263	3,880	4.6%	180	22	5%	7%	8
Nebraska	10.3%	1,066	4,220	3.6%	152	28	5%	-32%	15
Nevada	9.5%	1,602	2,493	5.1%	128	20	24%	-21%	27
New Hampshire	5.5%	855	5,228	4.4%	228	23	10%	-22%	5
New Jersey	8.8%	2,606	4,405	7.5%	330	13	26%	-7%	16
New Mexico	8.8%	1,751	5,214	3.1%	159	33	14%	-3%	29
New York	8.5%	2,442	11,141	3.3%	388	29	44%	-1%	13
North Carolina	8.1%	1,062	4,406	6.0%	266	17	21%	-15%	13

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"Vital Signs"

State-By-State Data Table (3 of 3)

State-By-State Comparisons

State	Infection Prevalence	Deaths per 1 Million Population	Tests per 1M Population Past 7 days	Test-Positive % (7-Day Moving Average)	New Daily Cases Per 1M Population (7-Day M.A.)	Tests / New Case	Covid-19 Census % of All Beds	Week-Over-Week Change in New Cases	7-Day Deaths /1000 New Cases , 14-Day Lag
North Dakota	13.1%	1,891	2,967	3.7%	110	27	2%	-14%	19
Ohio	8.2%	1,465	2,482	7.4%	184	14	9%	-6%	25
Oklahoma	10.7%	1,087	1,906	10.8%	205	9	9%	-20%	15
Oregon	3.7%	523	3,194	3.0%	96	33	7%	8%	15
Pennsylvania	7.2%	1,872	2,831	6.7%	190	15	14%	-19%	17
Rhode Island	11.8%	2,356	15,418	2.0%	314	49	21%	-6%	42
South Carolina	9.9%	1,640	5,009	9.1%	458	11	20%	-12%	13
South Dakota	12.7%	2,116	766	23.0%	177	4	6%	8%	24
Tennessee	11.3%	1,657	1,955	10.3%	202	10	15%	4%	17
Texas	9.1%	1,498	2,696	8.6%	250	11	24%	37%	19
Utah	11.5%	590	2,575	8.7%	224	11	9%	-14%	11
Vermont	2.4%	325	9,758	1.6%	158	62	6%	-23%	13
Virginia	6.7%	933	2,521	8.7%	219	12	23%	-23%	35
Washington	4.5%	658	3,185	3.4%	107	30	11%	-8%	18
West Virginia	7.3%	1,281	4,587	3.6%	164	28	9%	-12%	16
Wisconsin	9.7%	1,098	5,545	2.3%	109	51	7%	-4%	26
Wyoming	9.4%	1,159	3,988	4.2%	166	24	2%	22%	18

Table: Health Industry Advisor LLC • Created with Datawrapper

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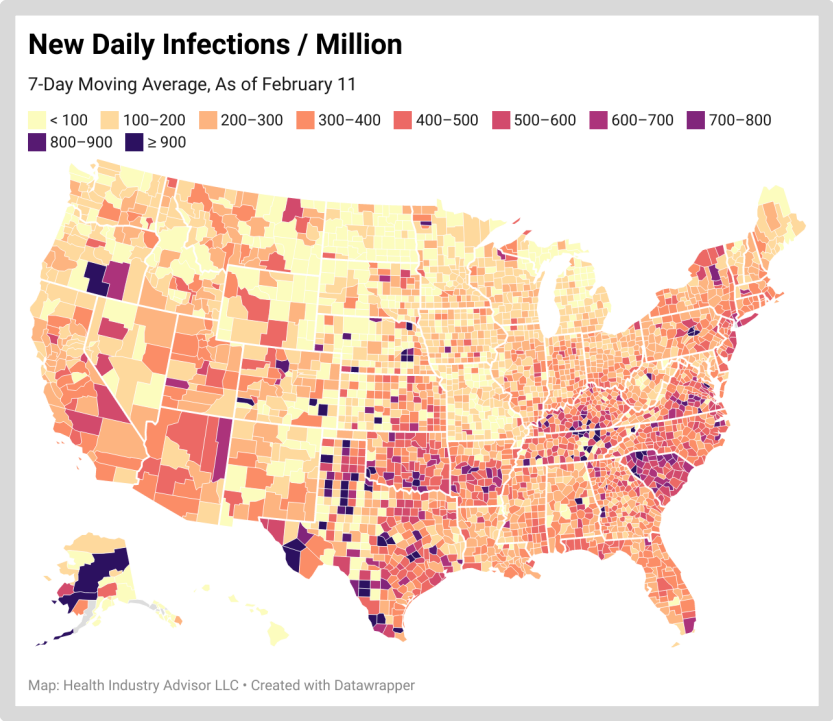
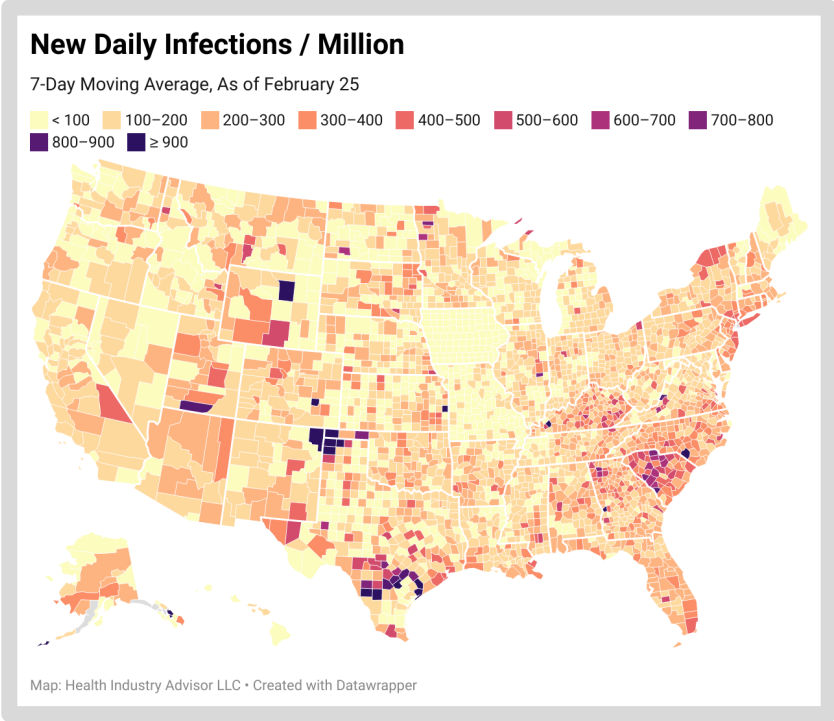
Metro Areas in the US

The improved case rate over the past several weeks can be seen at the Metro Area-level

February 11	February 25





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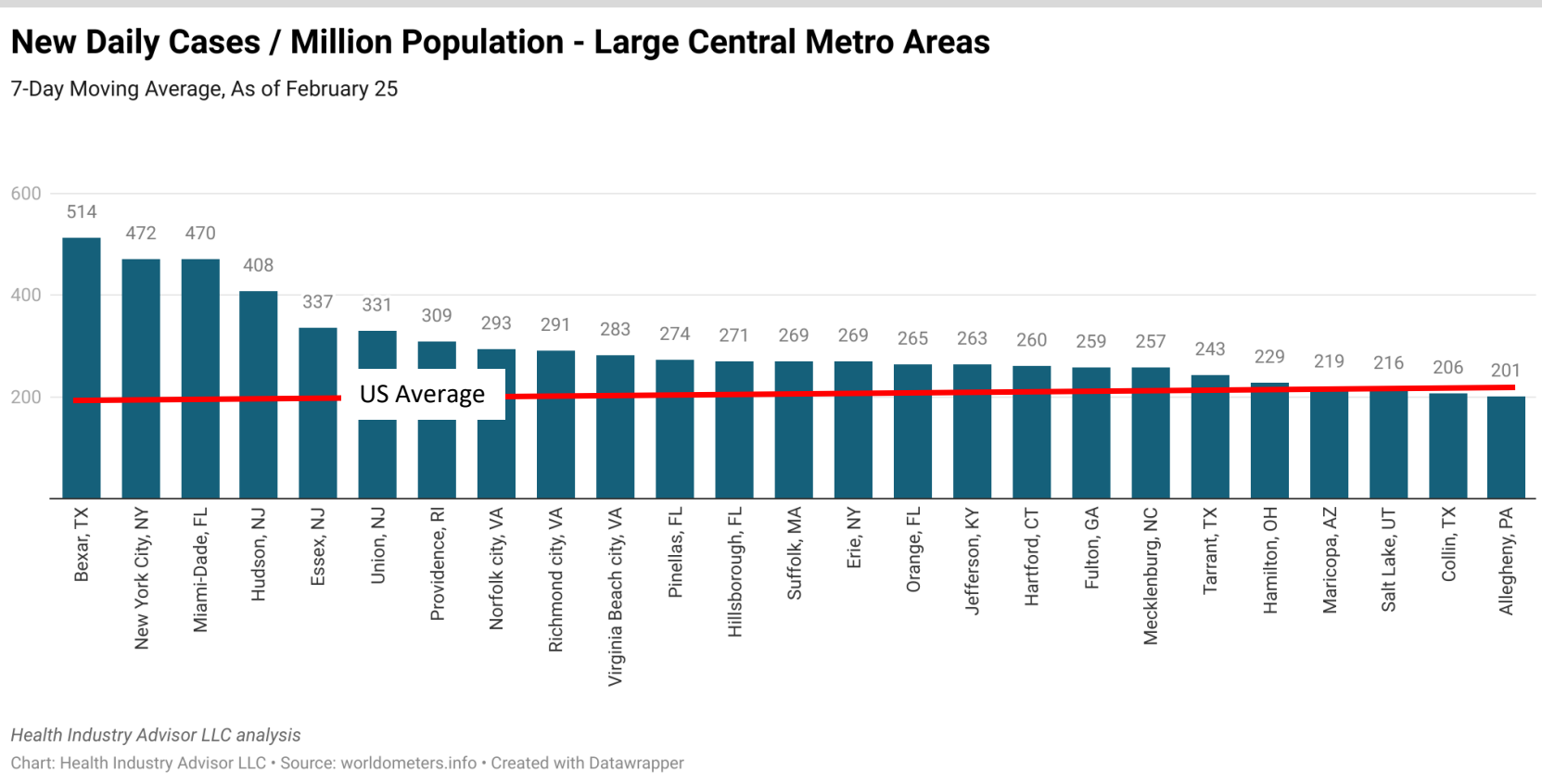
Large Central Metro Areas

Bexar, Texas, New York City, Miami-Dade, Florida and Hudson, New Jersey led all Large Central Metro Areas in 7-day new cases per capita. Bexar and several other Texas counties, however, seemed to experience delayed case reporting between February 12-24, coinciding with the recent deep freeze.



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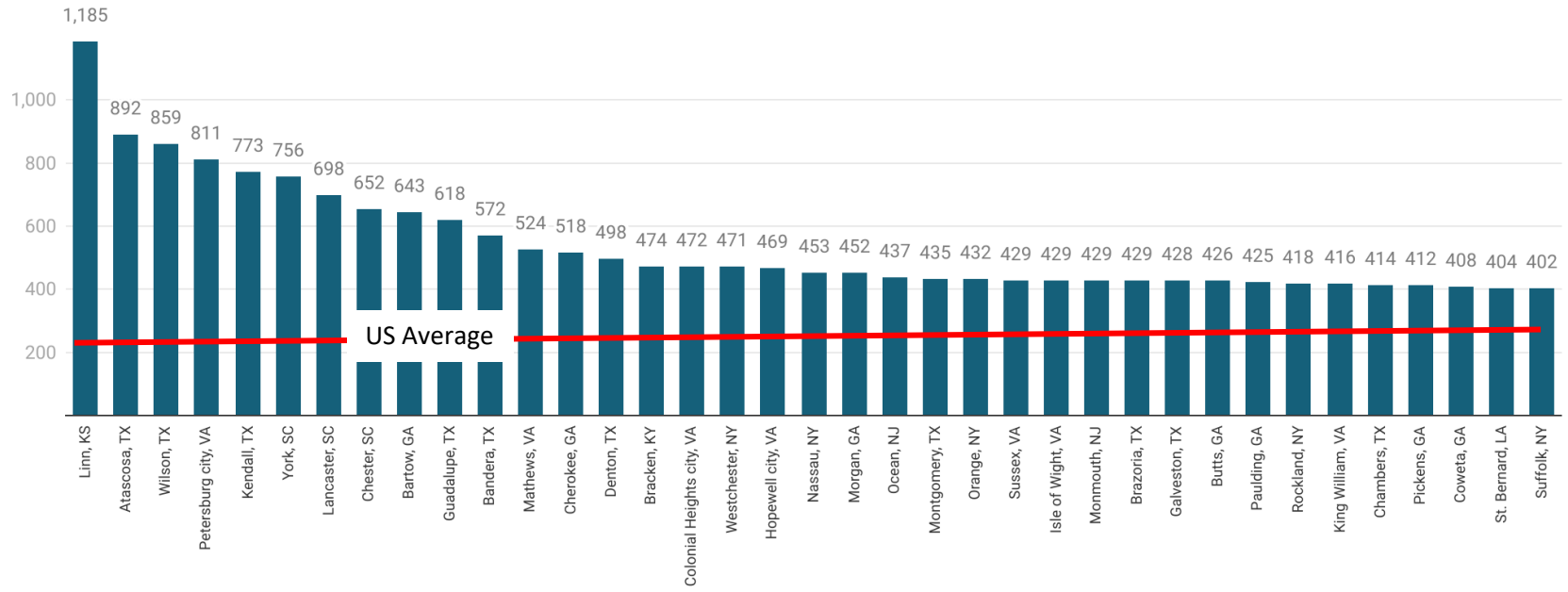
Large Fringe Metro Areas

Several Large Fringe Texas countries experienced high case rates this week – a week after the deep freeze. The deep freeze may have delayed new case reporting.



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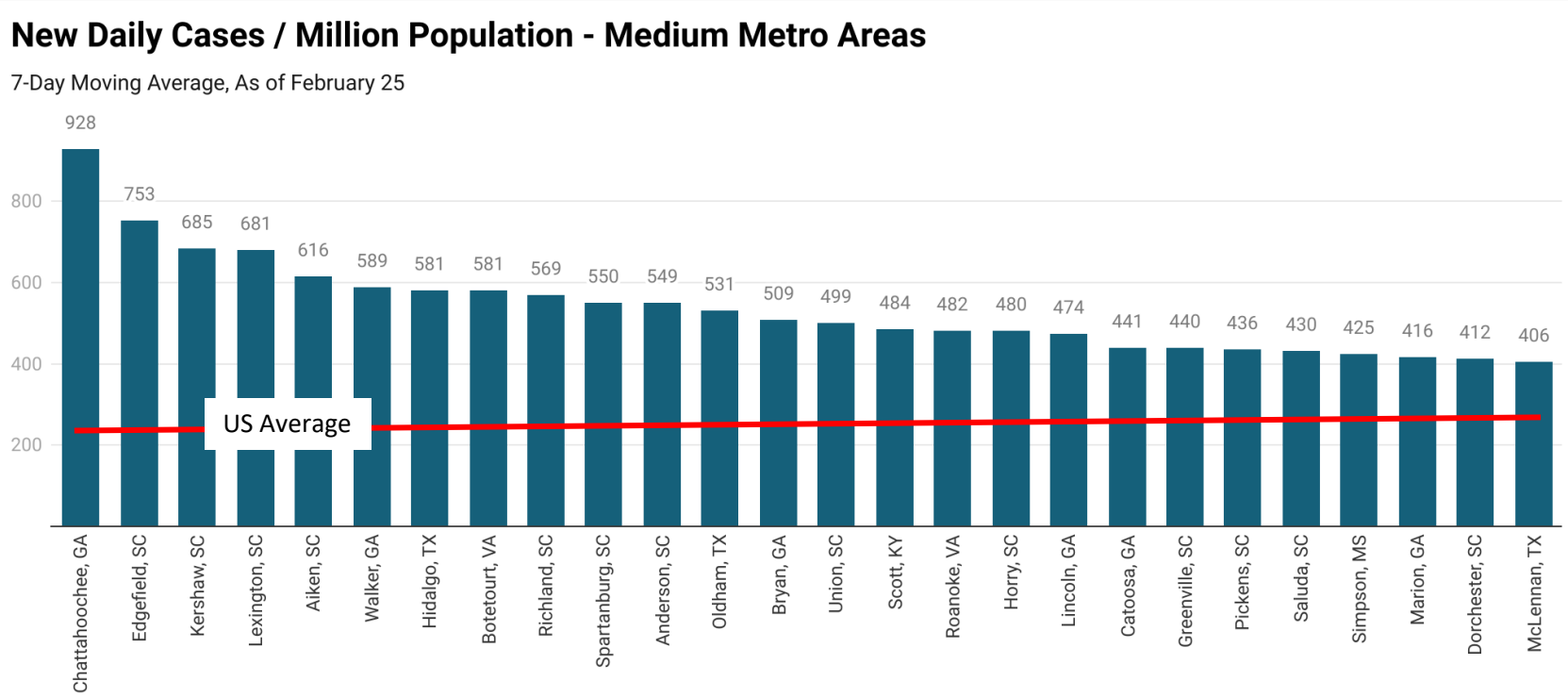
Medium Metro Areas in the US

South Carolina outpaced other states with the highest case rates among Medium Metro counties.



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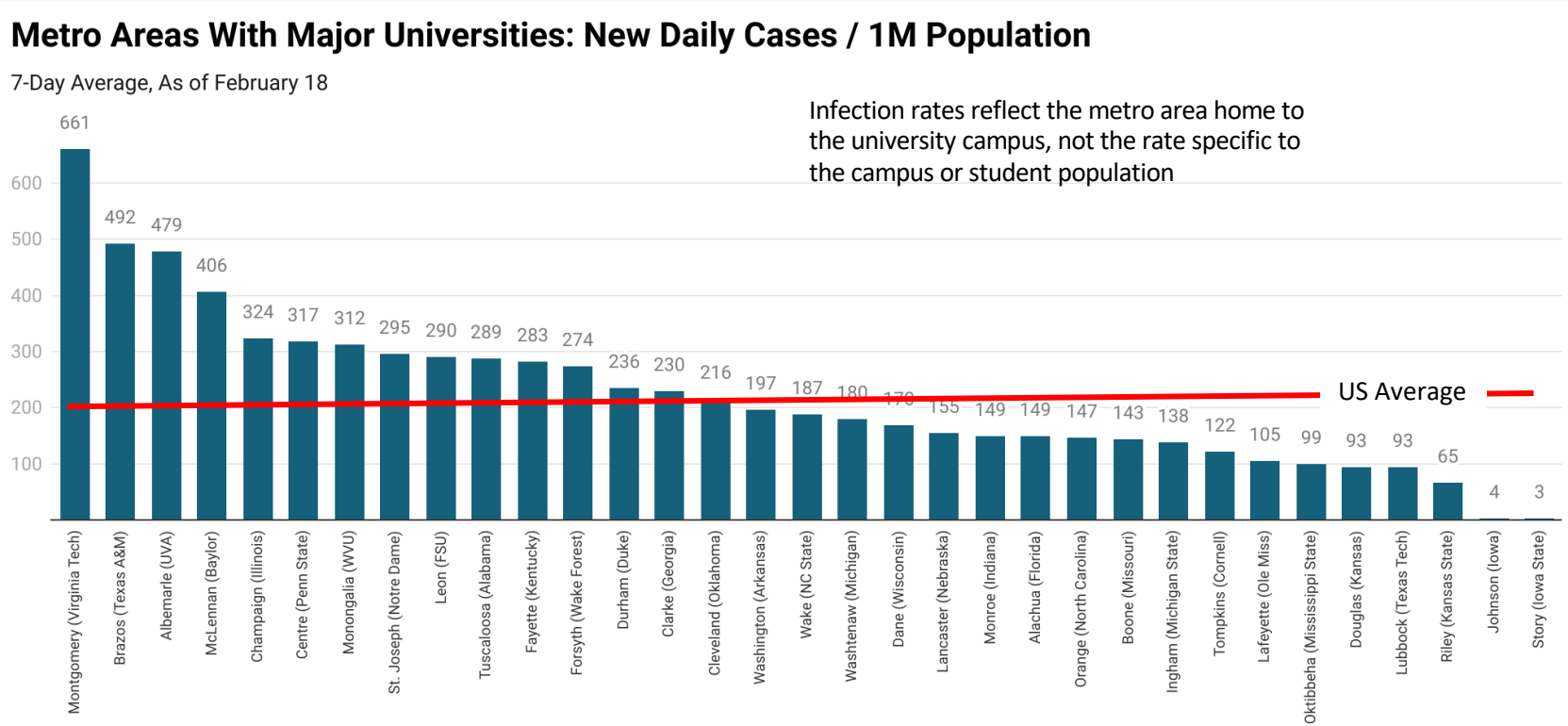
Metro Areas With Major Universities

Montgomery County County, home to Virginia Tech, reported the highest new case rate of the 33 such areas we track.



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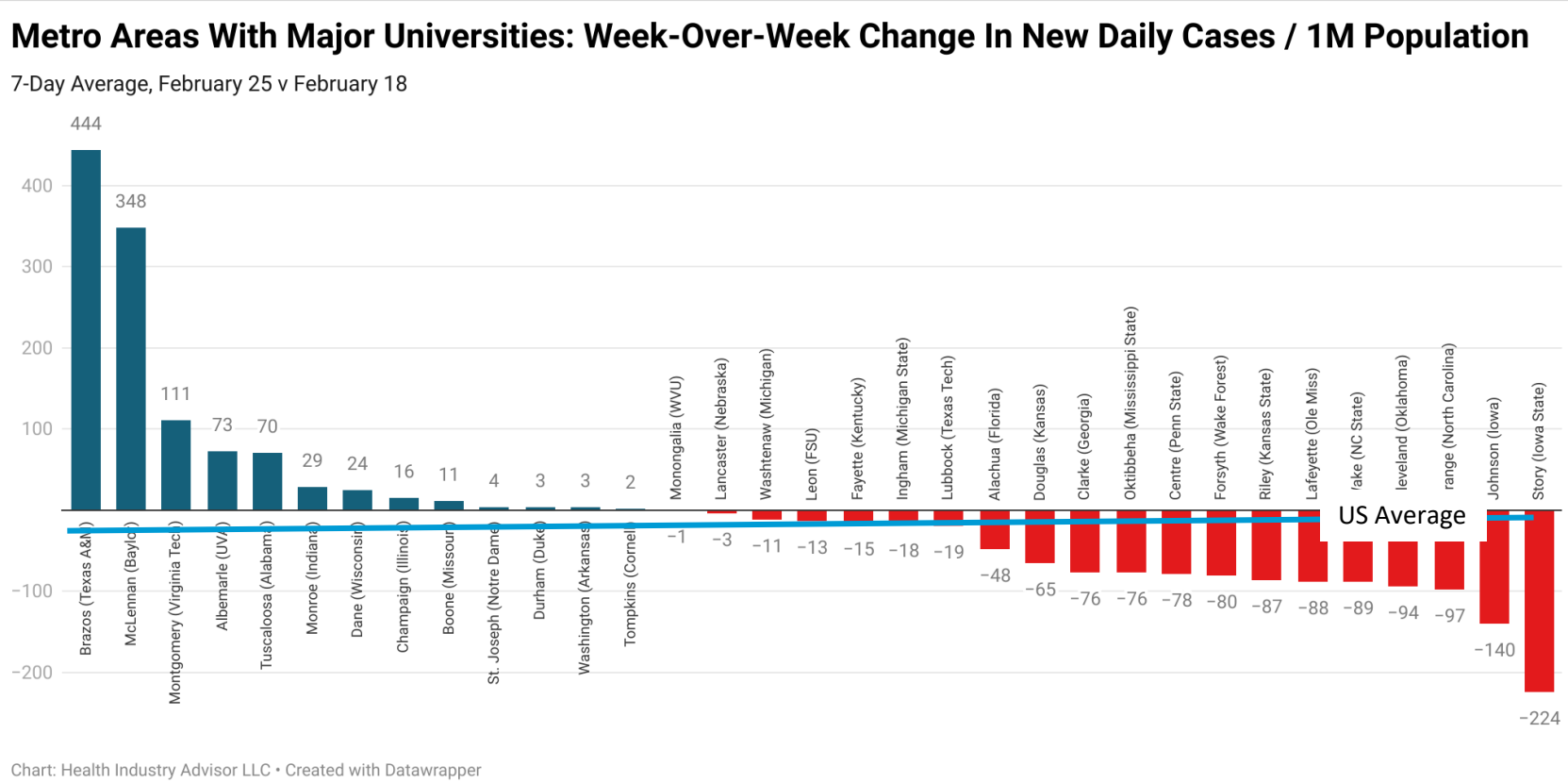
Metro Areas With Major Universities

Brazos and McLennan counties in Texas outpaced other University communities in new case rates last week. As noted earlier, however, the recent deep freeze in Texas likely caused reporting delays.



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Sources

The following data sources are accessed on a daily or weekly basis

- The Atlantic's Covid Tracking Project: https://covidtracking.com
- Worldometers.info: https://www.worldometers.info/coronavirus/
- Centers for Disease Control and Prevention, National, Regional, and State Level Outpatient Illness and Viral Surveillance https://gis.cdc.gov/grasp/fluview/fluportaldashboard.html
- Centers for Disease Control and Prevention, COVID-19 Laboratory-Confirmed Hospitalizations https://gis.cdc.gov/grasp/COVIDNet/COVID19_5.html
- Centers for Disease Control and Prevention, COVID Data Tracker https://www.cdc.gov/covid-data-tracker/index.html#mobility
- Centers for Disease Control and Prevention, Vaccines, https://www.cdc.gov/coronavirus/2019-ncov/vaccines/index.html
- Institute for Health Metrics and Evaluation, COVID-19 estimate downloads http://www.healthdata.org/covid/data-downloads
- New York Times, Covid-19 data https://github.com/nytimes/covid-19-data
- COVID-19 Data Repository by the Center for Systems Science and Engineering (CSSE) at Johns Hopkins University https://github.com/CSSEGISandData/COVID-19
- COVID-19 Projections Using Machine Learning, https://covid19-projections.com
- Covid-19 Forecast Hub, https://viz.covid19forecasthub.org
- Oliver Wyman Pandemic Navigator, https://pandemicnavigator.oliverwyman.com/forecast?mode=country&region=United%20States&panel=mortality
- Rt.live
- Yale School of Public Health & Harvard TH Chan School of Public Health, https://covidestim.org
- Bloomberg Vaccine Trackers, https://www.bloomberg.com/graphics/covid-vaccine-tracker-global-distribution/?sref=Z0b6TmHW

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