



Anatomy of an Outbreak: Part 6

As cases (hopefully) peak nationwide, the epidemic moves to rural America

April 23, 2020

Presented by
Health Care Advisory Board

Today's Research Expert



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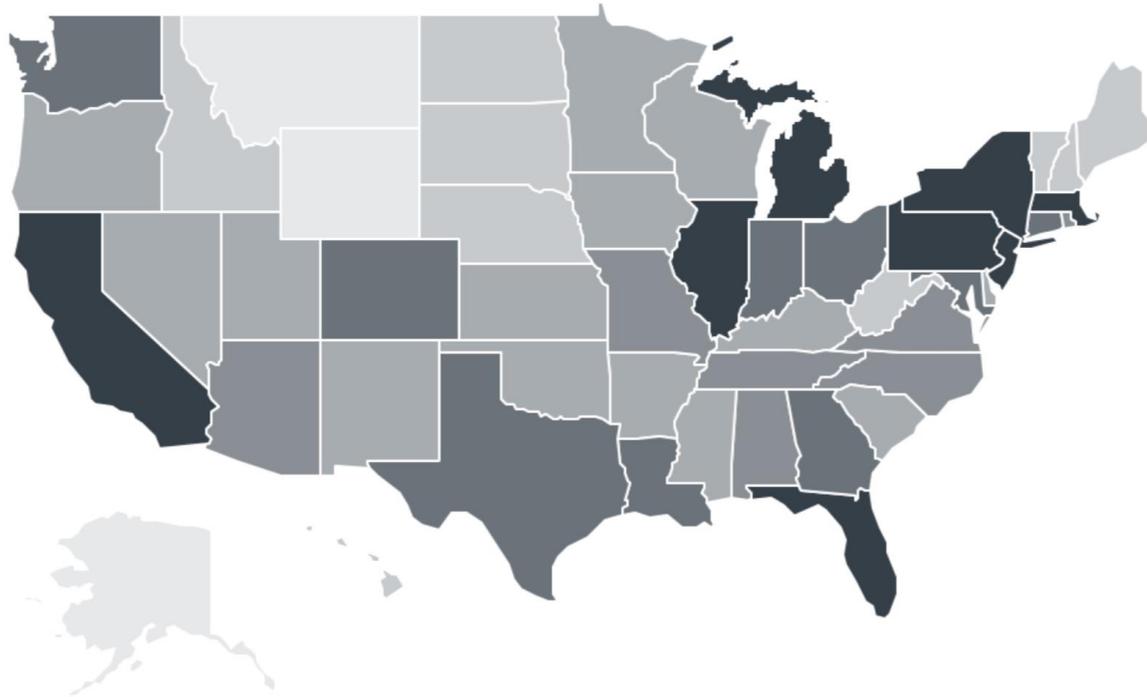
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Coronavirus cases in the United States

Current as of April 22, 2020



● < 500 cases ● < 2,000 cases ● < 5,000 cases ● < 10,000 cases ● < 25,000 cases ● > 25,000 cases

Current Covid-19 cases

At least 805,772 cases

251,720 cases in New York

At least 40,316 deaths

Original estimates of possible effects

96 million cases

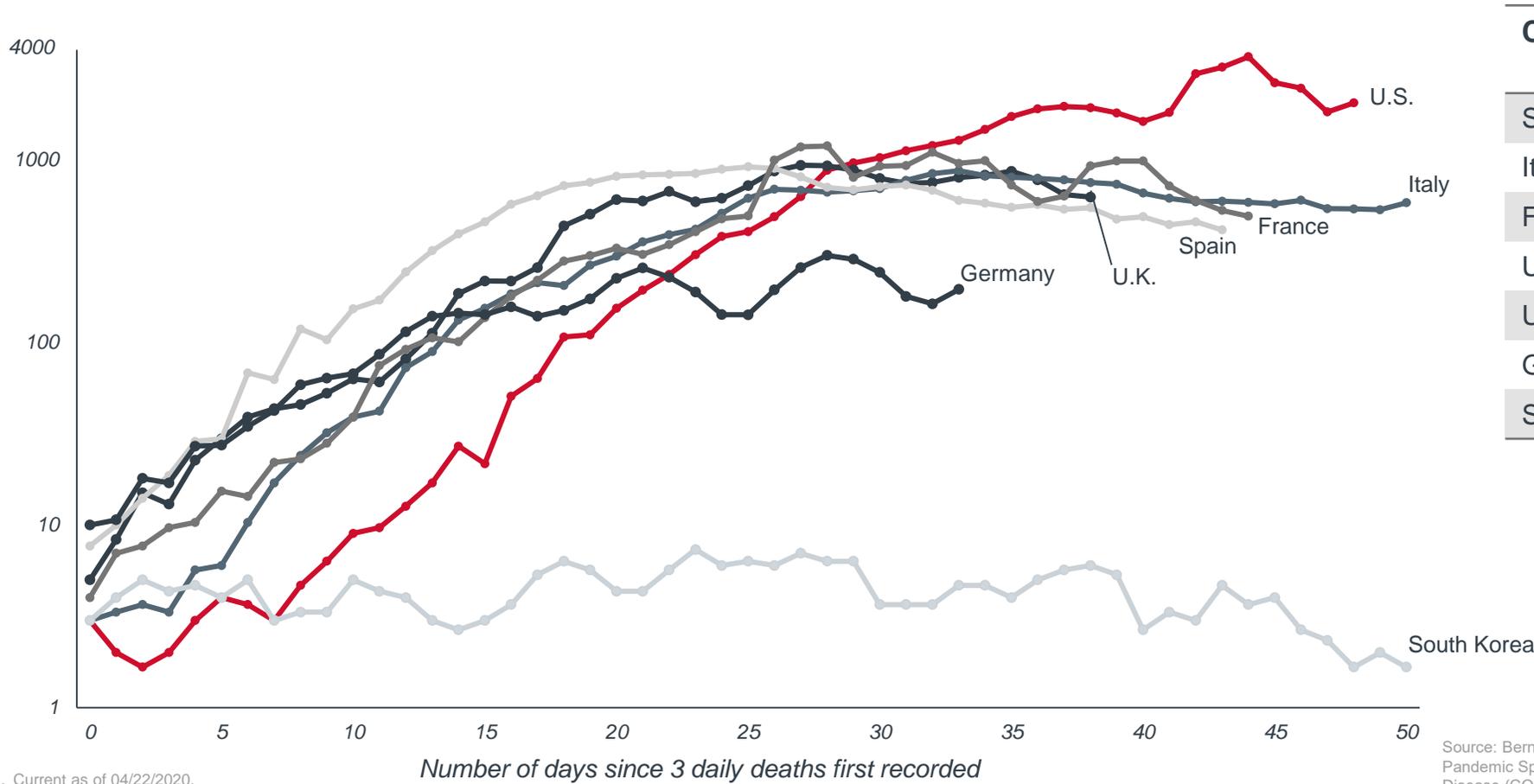
4.8 million hospitalizations

480,000 deaths

Source: "Coronavirus Disease 2019 (COVID-19) in the US," CDC, March 11, 2020. "One slide in a leaked presentation for US hospitals reveals that they're preparing for millions of hospitalizations as the outbreak unfolds," Business Insider, February 27th, 2020.

U.S. death tolls reach their peak, or just a pause?

Daily coronavirus deaths (rolling 3-day average), by number of days since 3 daily deaths first recorded¹



Country	Total deaths per million
Spain	453
Italy	408
France	310
U.K.	260
U.S.	138
Germany	59
South Korea	5

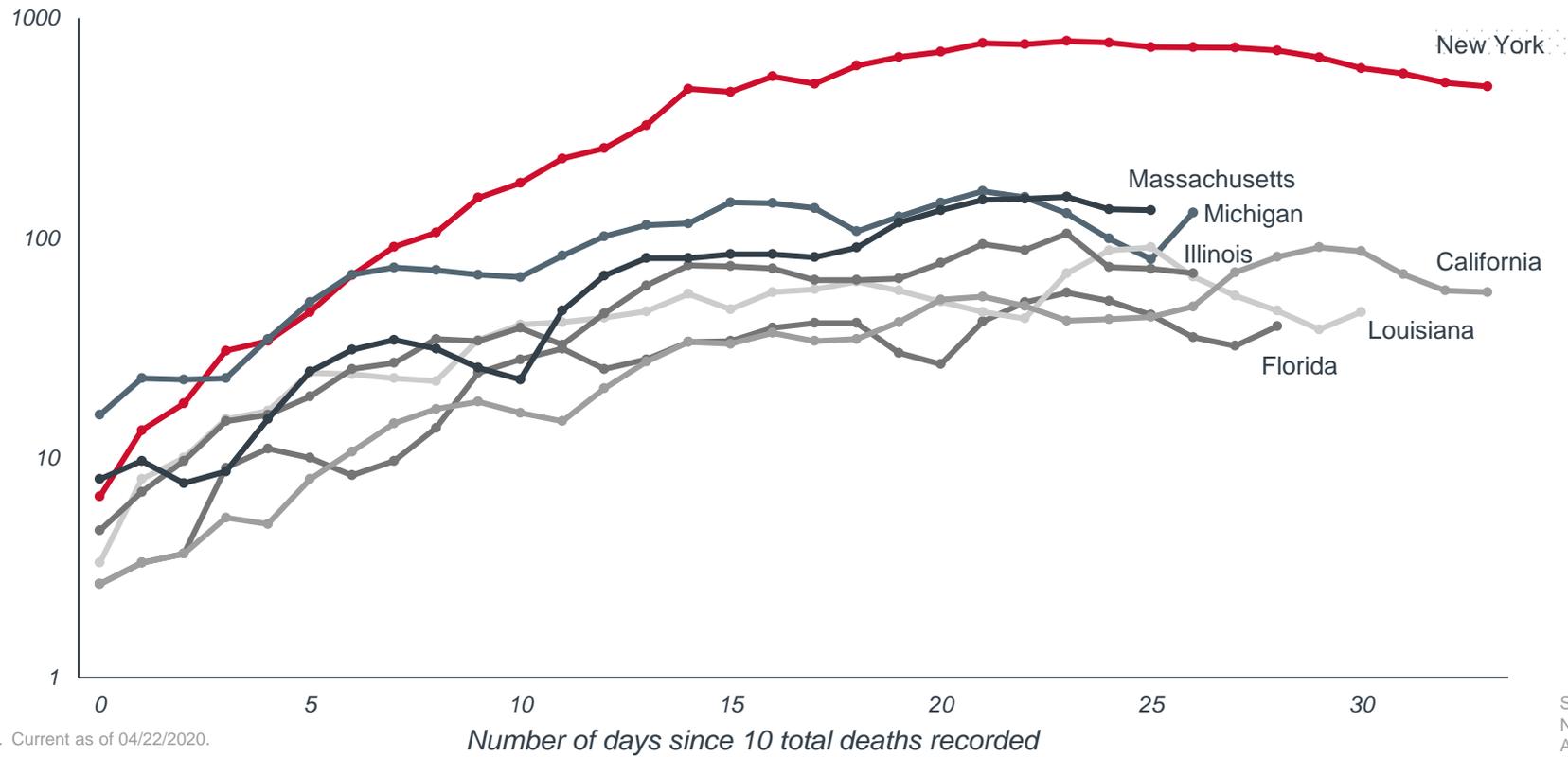
1. Current as of 04/22/2020.

Source: Bernard S et al., "Coronavirus Tracked: The Latest Figures as the Pandemic Spreads," Financial Times, 2020; Roser M et al., "Coronavirus Disease (COVID-19) – Statistics and Research," Our World in Data, 2020.

Social distancing seems to be paying off

But some states are still seeing spikes in mortality rates

Daily coronavirus deaths (rolling 3-day average), by number of days since 10 total deaths first recorded¹



Metro Area	Total deaths per 100,000
Detroit	338
New Orleans	225
NYC	223
Boston	201
Miami	104
Seattle	54
Chicago	53
Los Angeles	17

1. Current as of 04/22/2020.

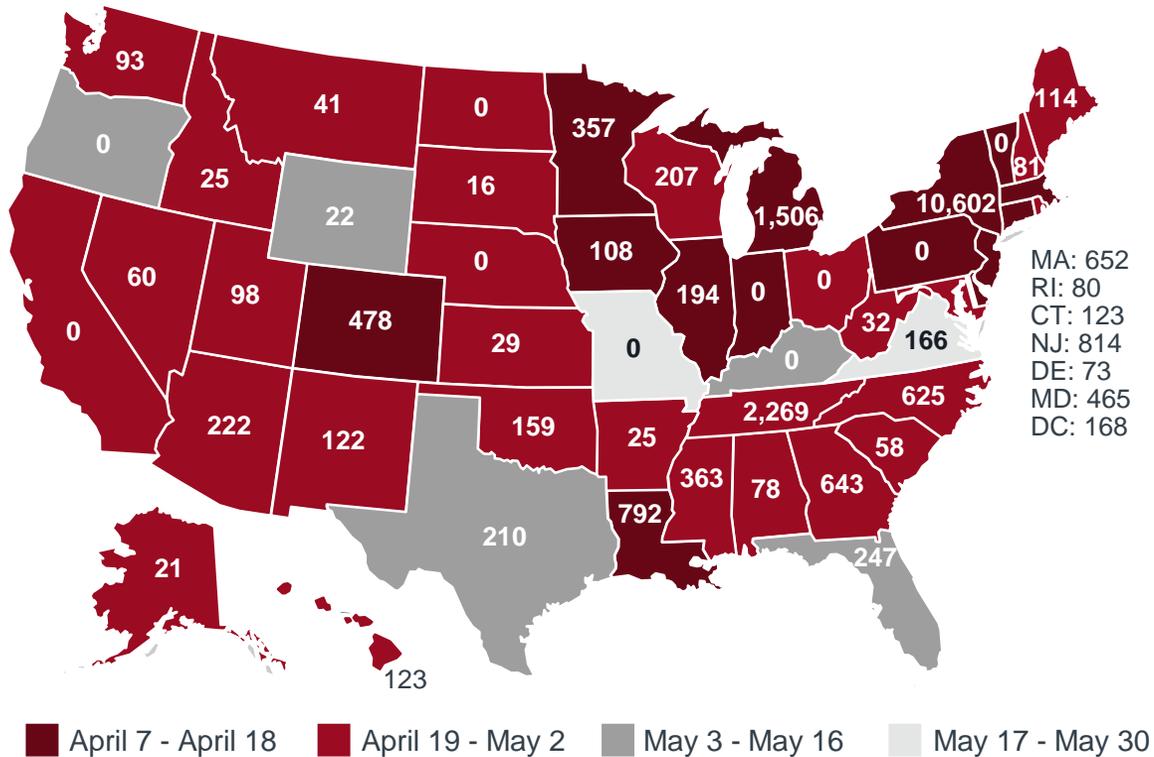
Source: "We're Sharing Coronavirus Case Data for Every U.S. County," The New York Times, 2020; Katz J, "How Severe Are Coronavirus Outbreaks Across the U.S.? Look Up Any Metro Area", The New York Times, 2020.

Early projections painted a grim picture

Resource and capacity expectations three weeks ago

Projected ICU bed shortage and dates of peak resource use by state

Updated April 1, 2020



States with greatest predicted peak ventilator demand



New York	9,055
Tennessee	2,318
Texas	1,975
Michigan	1,798
Florida	1,594

States with least predicted peak ventilator demand



Vermont	27
Wyoming	53
North Dakota	59
Alaska	60
South Dakota	72

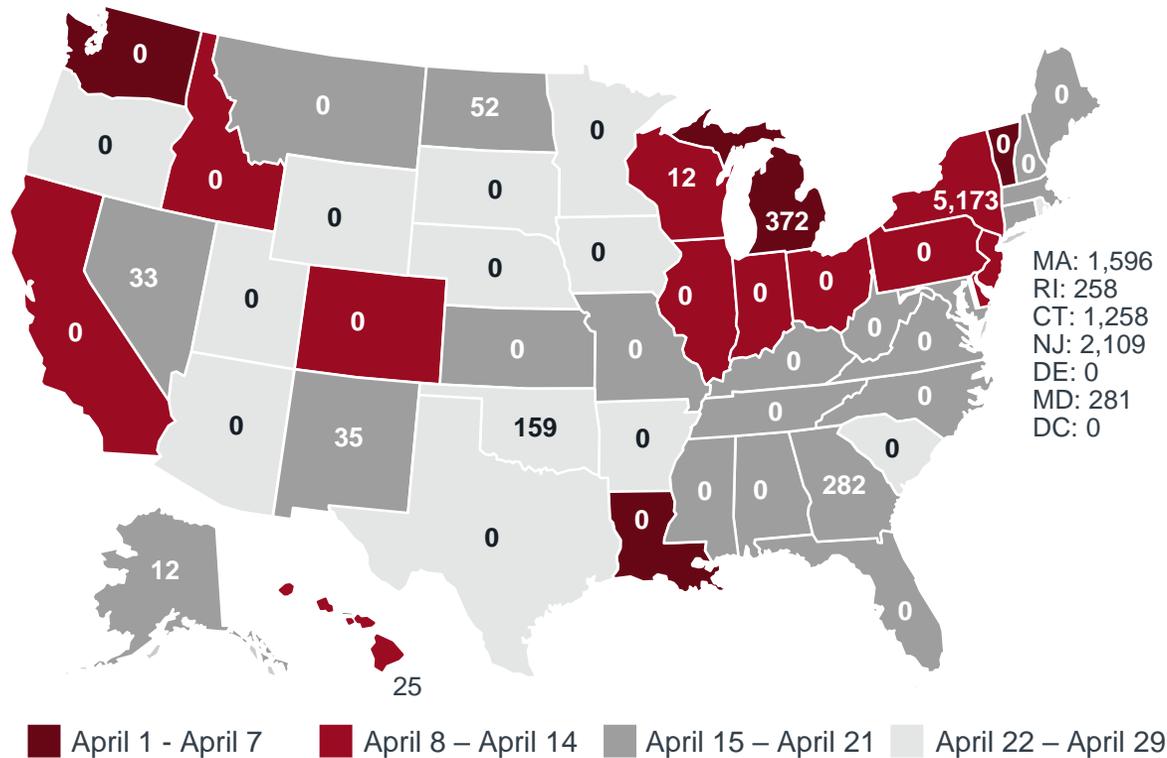
Source: COVID-19 Projections, The Institute for Health Metrics, April 1, 2020.

An extraordinary mobilization of resources

Resource and capacity expectations two weeks ago

Projected ICU bed shortage and dates of peak resource use by state

Updated April 8, 2020



States with greatest predicted peak ventilator demand



New York	5,008
New Jersey	2,189
Massachusetts	1,592
Florida	1,323
Connecticut	1,153

States with least predicted peak ventilator demand



Vermont	13
Delaware	14
Idaho	20
New Hampshire	24
Wyoming	26

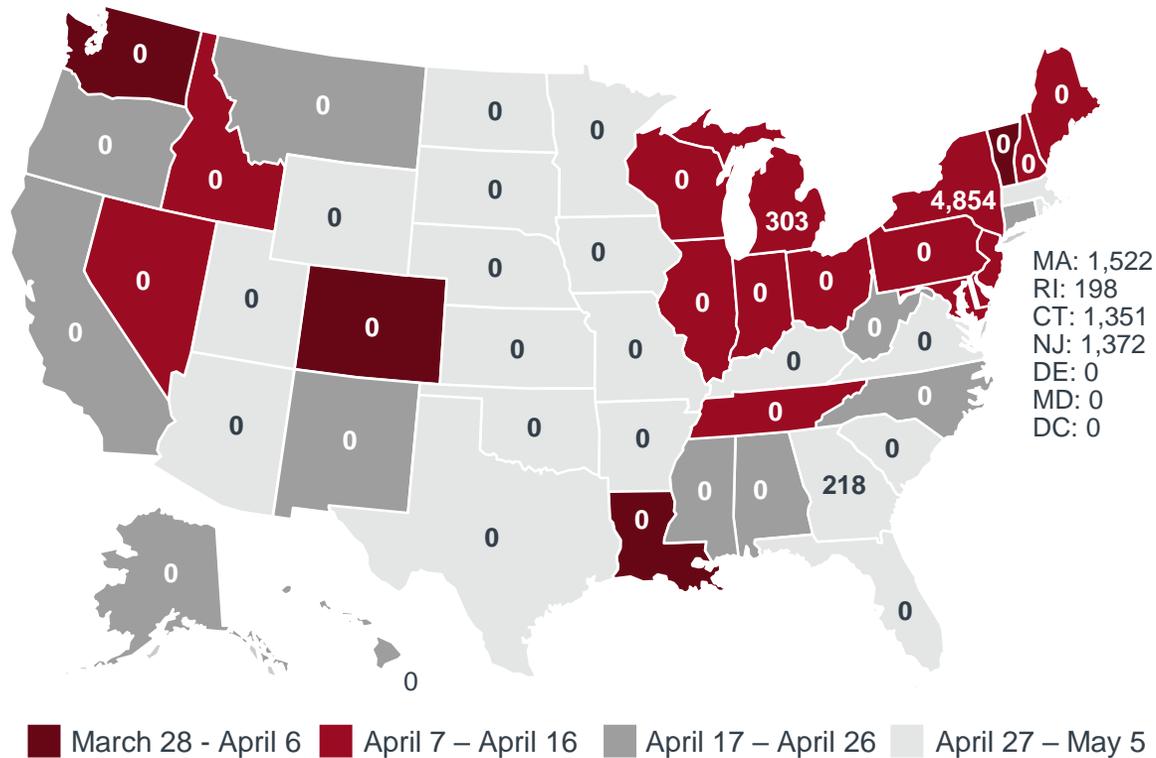
Source: COVID-19 Projections, The Institute for Health Metrics, April 8, 2020.

Projections looking much more optimistic

Resource and capacity expectations a week ago

Projected ICU bed shortage and dates of peak resource use by state

Updated April 13, 2020



States with greatest predicted peak ventilator demand

New York	5,246
Massachusetts	1,671
New Jersey	1,665
Connecticut	1,290
Florida	968

States with least predicted peak ventilator demand

Wyoming	13
Vermont	12
Alaska	7
Montana	7
North Dakota	5

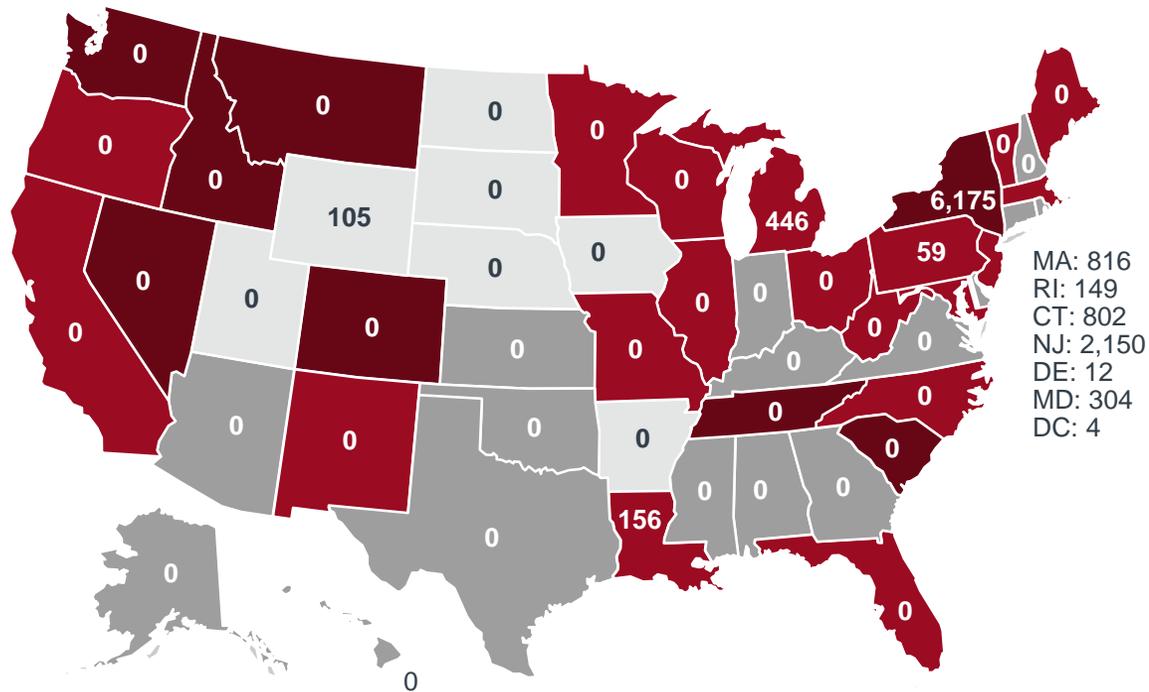
Source: COVID-19 Projections, The Institute for Health Metrics, April 15, 2020.

Entering the latter half of the curve

Predicted resource peaks inch closer and Covid starts to enter rural America

Projected ICU bed shortage and dates of peak resource use by state

Updated April 21, 2020



March 30 - April 11
 April 12 – April 19
 April 20 – April 27
 April 28 – May 12

States with greatest predicted peak ventilator demand



New York	6,454
New Jersey	2,372
Michigan	1,068
Pennsylvania	961
Connecticut	802

States with least predicted peak ventilator demand



Maine	17
Hawaii	13
Vermont	13
Montana	7
Alaska	6

Source: COVID-19 Projections, The Institute for Health Metrics, April 22, 2020.

Lower density not fully protecting rural America from Covid

Rural areas particularly vulnerable to future Covid outbreaks

Vulnerable population

- Older individuals with high rates of chronic disease
- Essential workers that cannot work from home

~900 Workers at the Smithfield Foods pork plant in Sioux Falls, S.D. are positive for Covid-19, now considered the largest hotspot in the nation

Struggling hospitals

- Razor thin or negative margins with little cash on hand to weather revenue dip
- Few neighboring health systems that can offer support

1 in 4 Number of rural hospitals that were already at risk of closure at the beginning of 2020



Shortage of resources

- Physicians and clinical staff
- Little buying power for PPE and supplies

13.1 Number of physicians per 10,000 people in rural areas, compared to 31.2 per 10,000 people in urban areas

Lack of community infrastructure

- Transportation for health care access
- Public health and food security
- Broadband for telehealth services

25% Of rural Americans lack access to broadband internet service

Source: Fugleberg, J. "Sioux Falls pork plant COVID-19 cases near 900 as officials prep re-opening," The Globe, April 20, 2020; "About rural health care," National Rural Health Association, Eighth Broadband Progress Report, Federal Communication Commission.

Is social distancing finally coming to an end?

Despite protests and Presidential pressure, most states hesitant to re-open

Some Americans voice their discontent, but most still favor social distancing



Protests have broken out in several states—including Ohio, Michigan, and California—against continued social distancing requirements

66% Percent of Americans who are more concerned that state **governments will lift restrictions too soon**, rather than too early

Experts say the consequences of loosening too soon could be dire

300K Number of **Covid-19 deaths** predicted by HHS in their internal “best guess” scenario model, should all social distancing measures be lifted

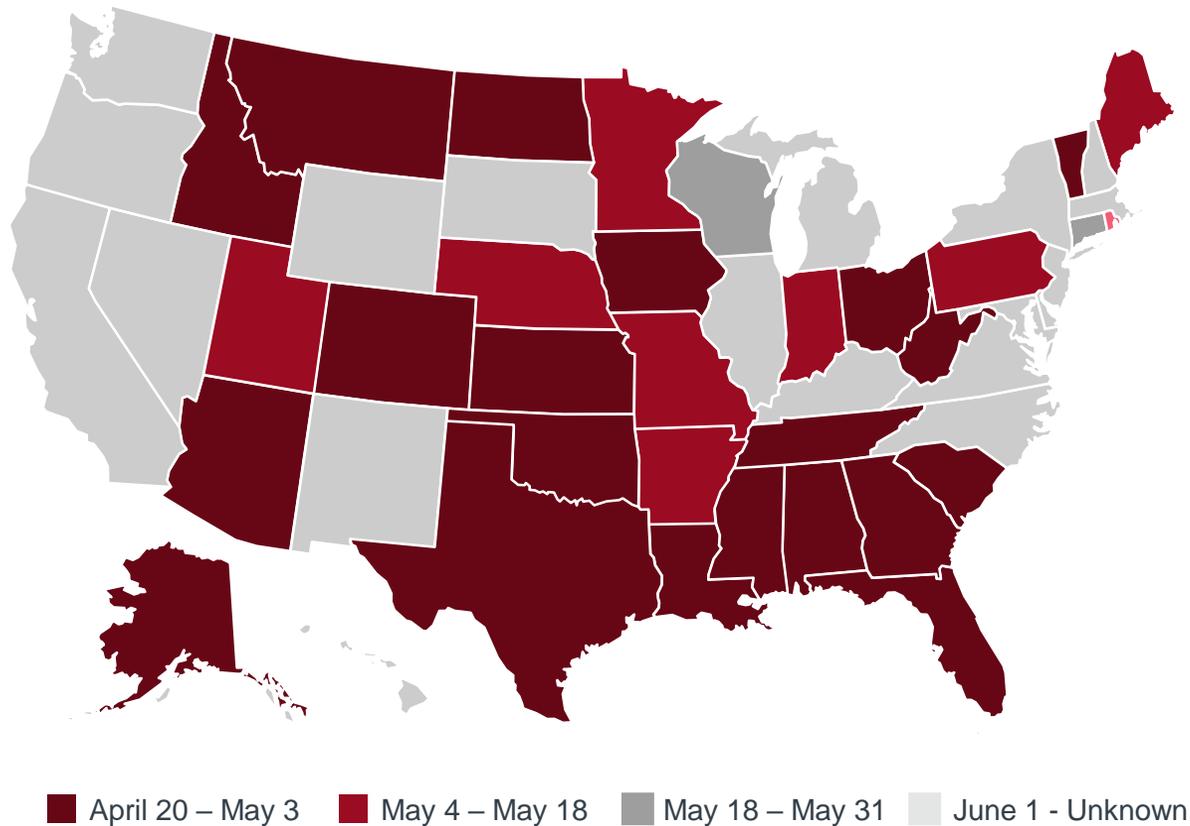


Most scientists and governors agree that **testing remains the primary barrier** to easing restrictions—and it’s unclear when testing capacity will be sufficient

Source: Pew, Most Americans Say Trump Was Too Slow in Initial Response to Coronavirus Threat, April 2020. NPR, What Happens If U.S. Reopens Too Fast? Documents Show Federal Coronavirus Projections, April 2020.

States starting to reopen across next several weeks

When states are starting to lift their first restrictions, current as of April 22



States form coalitions to coordinate reopening

Northeast: New Jersey, New York, Delaware, Pennsylvania, Rhode Island and Massachusetts

Midwest: Kentucky, Ohio, Wisconsin, Indiana, Illinois, and Michigan

Western: California, Washington, and Oregon



DATA SPOTLIGHT

IHME¹ suggests reopening dates

- 4** States could begin to ease restrictions by May 4, with most others doing so in mid to late May
- 8** States who should wait until late June or early July

1. Institute for Health Metrics Evaluation

Source: "When will we return to normal? Top coronavirus computer model says some US states can start re-opening by May 4," *The Hill*, "This is where all 50 states stand on reopening," CNN, April 20, "Here's when all 50 states plan to reopen after coronavirus restrictions," *The Hill*, April 20

Trump issues re-opening guidelines

But will governors follow his lead?

White House says states can progress to first phase of opening with...

1 **Sustained downward trend in cases/ symptoms**

- Downward trajectory of documented cases within a 14-day period **OR** downward trajectory of positive tests as a % of total tests within a 14-day period (with a flat or increasing test volume)
- Downward trajectory of influenza-like illnesses (ILI) reported within a 14-day period **AND** downward trajectory of Covid-like syndromic cases reported within 14 days

2 **Adequate hospital capacity and worker testing**

- Ability to treat all patients without crisis care **AND** robust testing program in place for at-risk health care workers, including antibody testing

Governor responses are (predictably) mixed

“ We appreciate their suggestions, and we will evaluate them thoroughly, but the plain overriding fact is **we cannot put the cart before the horse**”

- New Mexico Gov. Michelle Lujan Grisham (D)

“ We are still in **dire need of critical resources from the federal government**, including sufficient personal protective equipment (PPE) and increased testing capacity”

- Oregon Gov. Kate Brown (D)

“ I think the president and his team are **headed in a very good direction**”

- Tennessee Gov. Bill Lee (R)



Source: “Guidelines for Opening Up America Again,” White House, April 16, 2020, “Governors Divide By Party On Trump Plan To Reopen Businesses Shut By Coronavirus,” NPR, April 17, 2020

Long-awaited guidance to reopen emerges

A few states meet criteria to open; considerable variation among states persists



DATA SPOTLIGHT

Guidance: Requirements to safely reopen

WHO Positivity rate should be no higher than **10%** for countries to reopen

White House Covid-19 task force Positivity should decrease for 14 days while rate of testing increases or stays flat

U.S. positivity rate, testing changes this week¹:

Positivity rate	Change in positivity rate	% Change in tests run
18.5%	Negative	18.8

Trends in Covid-19 positivity and testing rates

	Pos. rate (%)	Change in testing rate		Pos. rate (%)	Change in testing rate		Pos. rate (%)	Change in testing rate			
AK	2.8	↘	119%	KY	9.6	↗	-8%	NY	38.4	↘	-10%
AL	11.2	↘	-2%	LA	17.7	↘	-48%	OH	13.9	↗	45%
AR	7.7	↗	8%	MA	23.8	↗	9%	OK	6.3	↘	5%
AZ	9.6	↗	5%	MD	19.3	↗	20%	OR	5.0	↔	-11%
CA	7.6	↘	245%	ME	5.1	↘	-65%	PA	20.5	↗	-14%
CO	21.4	↗	-21%	MI	28.7	↘	21%	RI	14.0	↗	15%
CT	32.1	↗	-6%	MN	5.5	↗	-4%	SC	11.0	↗	-17%
DC	20.7	↗	23%	MO	10.6	↗	-39%	SD	13.8	↗	15%
DE	19.3	↗	-24%	MS	9.1	↗	-10%	TN	6.8	↘	40%
FL	9.8	↘	7%	MT	3.8	↘	-8%	TX	9.7	↘	17%
GA	22.0	↘	18%	NC	8.0	↗	-9%	UT	4.5	↘	151%
HI	2.3	↘	19%	ND	4.4	↗	55%	VA	16.2	↗	5%
IA	13.3	↗	42%	NE	10.3	↗	31%	VT	6.1	↘	-29%
ID	10.0	↗	-33%	NH	9.9	↗	-4%	WA	8.5	↘	-26%
IL	21.4	↗	13%	NJ	50.0	↗	9%	WI	8.9	↗	11%
IN	17.9	↘	20%	NM	5.1	↗	-24%	WV	3.6	↘	60%
KS	10.9	↗	7%	NV	12.0	↗	-12%	WY	4.2	↘	-43%

Arrows indicate directionality change from last week; change in testing rate compares new tests run last week versus this week

1. "Last week" data includes April 9-15, "this week" data includes April 16-22.

Source: [The COVID Tracking Project](#), updated Apr 21, 2020; Collins, Keith, "Coronavirus Testing Needs to Triple Before the US Can Reopen, Experts Say," *New York Times*, Apr 17, 2020; "Opening Up America Again," The White House, Apr 17, 2020.

No magic target for testing, but directionality clear: More. Country, states are inching closer to adequate testing



DATA SPOTLIGHT

Expert opinions on testing rate needed to safely reopen and stay open

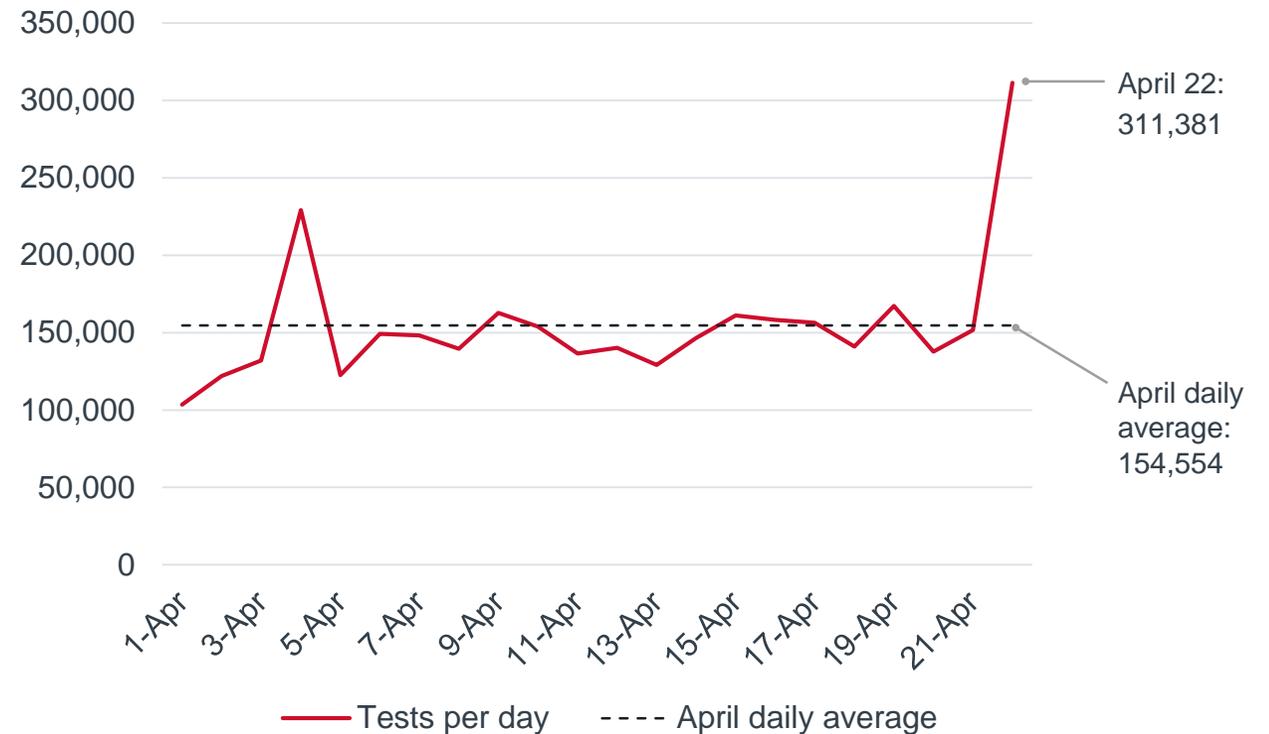
- **500-700k** tests per day by mid-May (Harvard Global Health Institute)
- **5M** test per day by June, **20M** tests per day by July (Harvard's Safra Center for Ethics)
- Ability to test all symptomatic individuals, those with influenza-like illnesses (White House task force)

Change in testing rate this week vs last week¹, by state

HIGHEST	CA 245%	LOWEST ²	ME -65%
	UT 151%		LA -48%
	AK 119%		VT -29%
	WV 60%		SC -17%
	ND 55%		PA -14%

1. "Last week" data includes April 9-15, "this week" data includes April 16-22.
 2. Not all states submitted data for 4/22 by the time of publication. States that had not submitted data were excluded from analysis of lowest-testing states.

COVID-19 tests performed in United States, by day



Source: [The COVID Tracking Project](#), updated Apr 21, 2020; Collins, Keith, "Coronavirus Testing Needs to Triple Before the US Can Reopen, Experts Say," *New York Times*, Apr 17, 2020; "Roadmap to Pandemic Resilience," Edmond J. Safra Center for Ethics at Harvard University, 20 Apr 2020. "Opening Up America Again," The White House, Apr 17, 2020.

Efforts to expand testing reinvigorated at every level

Doubts remain over patchwork approach, though funding should ease the burden



Federal

“Trump says he will use DPA¹ to increase swabs for testing”

- Act may be used to direct an unnamed company to increase production of nasopharyngeal swabs by over 20 million swabs per month

Relieve supply shortages



State

“Maryland buys 500,000 coronavirus test kits from South Korea”

- Gov. Larry Hogan purchased half-a-million test kits from South Korea in a deal spearheaded by his wife, First Lady Yumi Hogan

Improve testing capacity



Private sector

“LabCorp receives EUA for self-collection of Covid-19 PCR² test samples”

- First EUA issued by FDA for a test using at-home self-collection via nasal swab
- Available to first responders and health care workers initially and to consumers in coming weeks in most states with a doctor’s order

Diversify testing options

1. Defense Production Act
2. Polymerase Chain Reaction

Source: Sullivan P., “Trump says he will use Defense Production Act to increase swabs for testing”, The Hill, April 19; Nirappil F., Cox E., Schneider G., “With focus on testing, Maryland buys 500,000 coronavirus test kits from South Korea”, The Washington Post, April 20; “LabCorp Receives EUA for Self-Collection of COVID-19 PCR Test Samples”, 360Dx, April 21.

Early treatment results show promise

Despite excitement over new data, too early to declare success

Remdesivir (Gilead)



Leaked results from University of Chicago hospital trial show quick recoveries in fever and respiratory symptoms for patients with severe Covid-19; nearly all patients discharged in under a week

► Key limitations of early findings

- 1 Results are from only one trial site
- 2 Data readout is incomplete (results expected in April)
- 3 Study does not have placebo arm

Convalescent plasma



Initial data from study protocol indicates that “a single dose of 200 milliliters showed benefit for some patients, leading to improvement.”

► Access quickly expanding

- 1,600+ sites registered for National Covid-19 Convalescent Plasma Project¹
- 600 patients have already started treatment

► Early results from Israel and China show potential



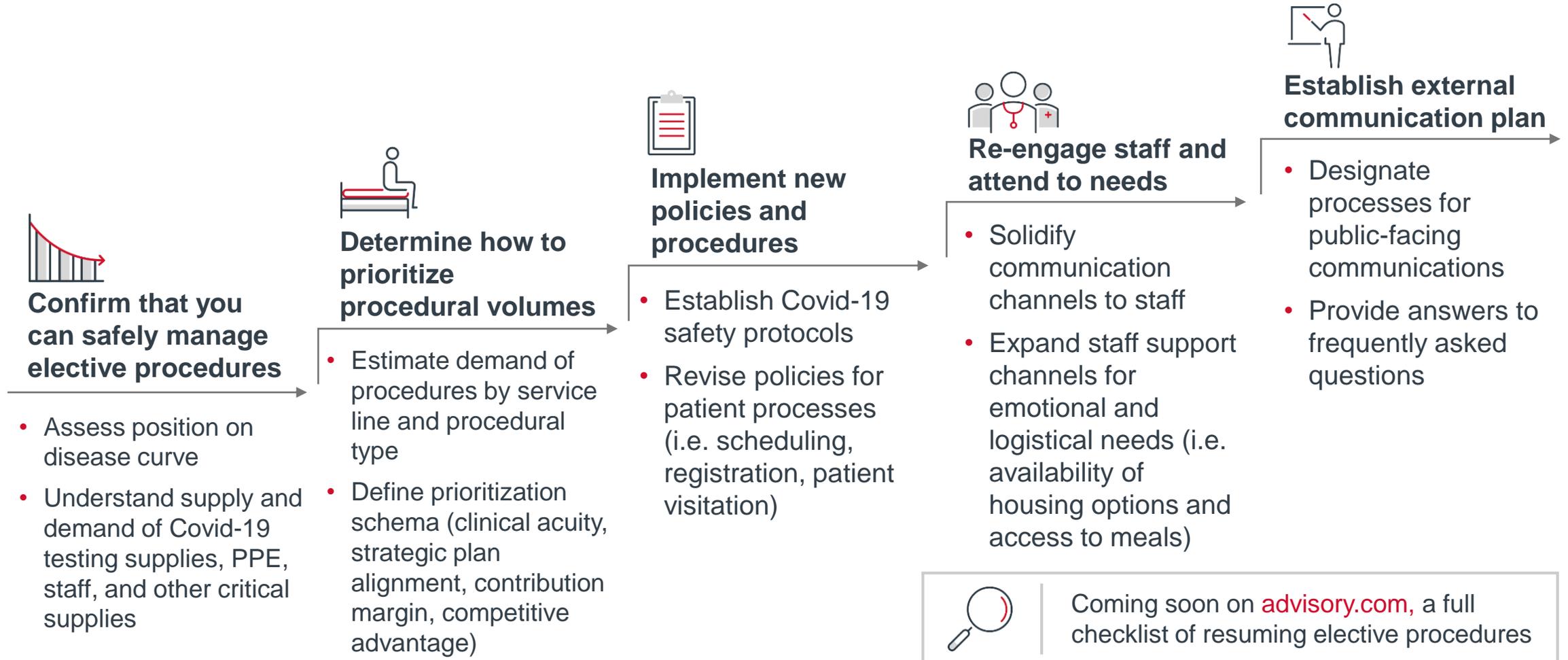
Update on hydroxychloroquine: Novartis launching Phase III randomized control trial to assess safety and efficacy

1. Led by Mayo Clinic

“Early peek at data on Gilead coronavirus drug suggests patients are responding to treatment”, Stat Plus, April 16 2020; “Explaining how a plasma transplant may help coronavirus patients recover,” ABC News, April 20 2020; “29-year-old COVID-19 patient treated with Israel’s new ‘passive vaccine,’” The Jerusalem Post, April 12 2020; “Effectiveness of convalescent plasma therapy in severe COVID-19 patients,” PNAS, April 6 2020.

Hospitals pivot to planning for reopening

Checklist of considerations for resuming elective procedures



When do you know if you can safely do procedures?

Region past top of Covid-19 curve

- New Covid-19 cases on rolling 3-day average
- New confirmed deaths on rolling 3-day average

State, county, local government approval

- Guidelines for region allow for elective procedures
- Follow social distancing guidelines

Sufficient supply of beds and staff

- Covid-19 cases not close to max
- Staff and ORs should not be redeployed to Covid-19 cases

Sufficient supply of PPE

- PPE to handle Covid-19 related volumes, new surgery volumes, and ambulatory volumes

Capability to do pre-procedure testing

- Screen patients and staff for Covid-19 symptoms
- Use laboratory testing when available

Common procedures for initial reopening phase



Inpatient joint replacement



Elective EP and angioplasty

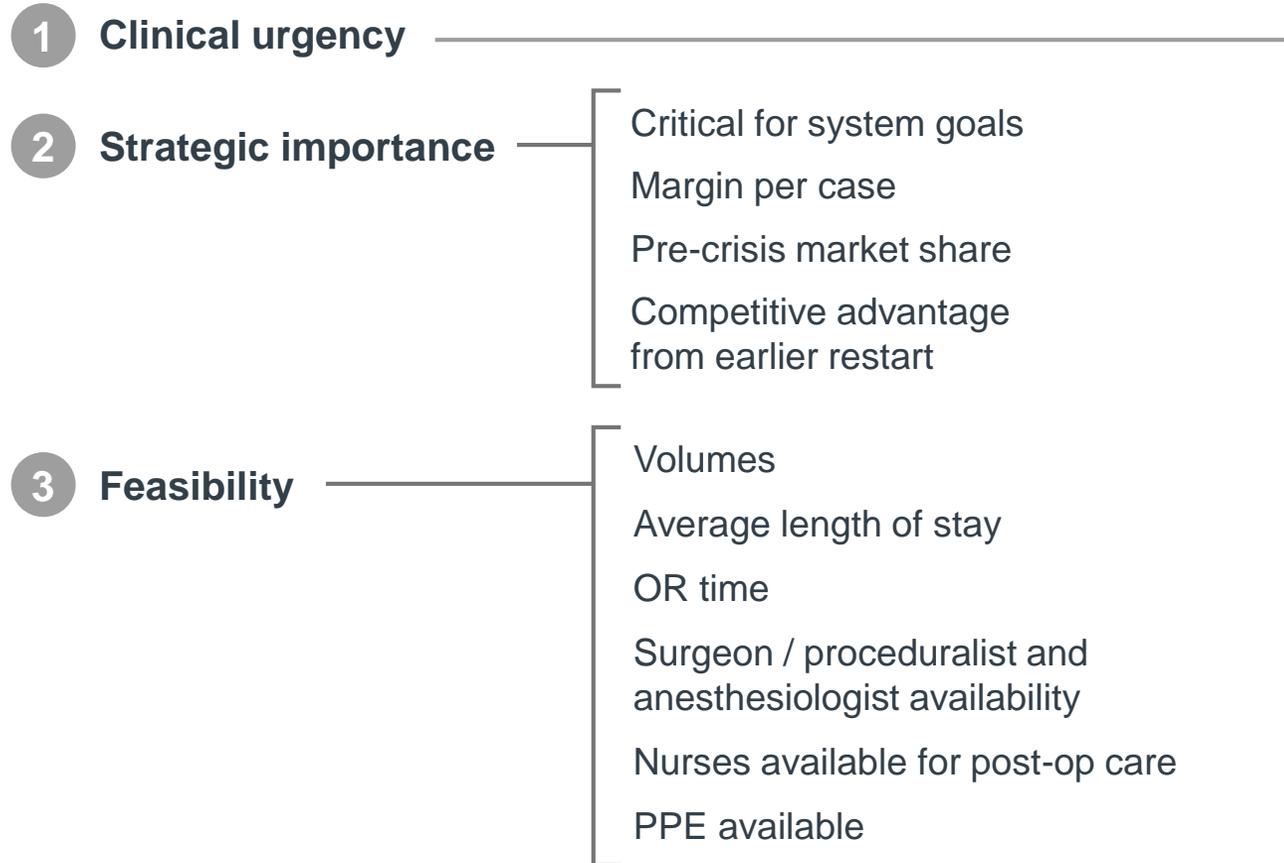


GI surgery for stable patients



Outpatient ortho procedures

How will you prioritize volumes?



CMS tiers of clinical urgency



Tier 1: Low acuity treatment or service

- Consider postponing service or follow-up with virtual care
- Routine primary care and preventive visit or annual wellness visits



Tier 2: Intermediate acuity treatment or service

- Not providing service has potential for increasing morbidity and mortality
- Evaluation of new symptoms or follow-up care in established patient



Tier 3: High acuity treatment or service

- Lack of in-person treatment or service would result in patient harm
- Symptoms consistent with Covid-19 or other emergency conditions

Source: Non-Emergent, Elective Medical Services, and Treatment Recommendations, CMS, April 7, 2020.

Service line considerations for opening

Service Line	Limiting Factors for Clearing Backlog	Changes to Future Demand
Cardiovascular	<ul style="list-style-type: none"> Added time per case due to increased complexity Complex cases will reduce bed availability Ancillary service availability a further limitation as needed anesthesiologists and pulmonology providers tasked with ongoing Covid-19 response 	<ul style="list-style-type: none"> - Shift from acute care settings: outpatient interventions, remote monitoring/telehealth, and increased use of medical management + Increased demand from CV complications among Covid-19 patients - CV patients more complex due to delays in care
Orthopedics	<ul style="list-style-type: none"> Working through backlog will require expanded OR hours, including weekends Willingness of surgeons and other staff to flex capacity beyond standard operating hours 	<ul style="list-style-type: none"> - Sports medicine demand decreased in the short term amid sporting event cancellations - Orthopedic trauma suppressed during stay-at-home period - ASCs may attract more elective, commercially insured orthopedic patients
OB/GYN	<ul style="list-style-type: none"> Backlog for gynecology office visits and gynecologic surgeries dependent on physicians' willingness to extend hours Restart date for screenings will lag more urgent services 	<ul style="list-style-type: none"> - Continued shift to virtual visits for gynecology and prenatal visits - Shift to ASCs for gynecologic surgeries - Minor shift to out-of-hospital births
General Surgery	<ul style="list-style-type: none"> Anesthesiologist and ventilator requirements for all major procedures 	<ul style="list-style-type: none"> - Availability of upstream lab, imaging, and PCP services will limit ramp up + Potential increase in emergent, complex cases as delayed care and later diagnoses worsen conditions

Service line considerations for opening (continued)

Service Line	Limiting Factors for Clearing Backlog	Changes to Future Demand
GI	<ul style="list-style-type: none"> • More complex surgeries dependent on upstream screening services/referrals and ventilator availability • Restart date for outpatient screenings like EGD and colonoscopies will lag behind surgical services 	<ul style="list-style-type: none"> - Colonoscopy/EGD demand may decrease as patients delay tests in the immediate future and potentially use at-home stool tests over the next few years
Imaging	<ul style="list-style-type: none"> • Added time per case due to new cleaning and distancing protocols will limit scanner productivity • Working through backlog will require expanded hours 	<ul style="list-style-type: none"> - Decline in medium term screening outlook due to fewer “self-referred” exams (namely screening mammography and lung screening) as people have lingering fear - If unemployment remains high across next year and/or HDHPs for patients who remain employed either remain at current levels or increase, imaging volumes will drop
Oncology	<ul style="list-style-type: none"> • Most cancer programs maintained treatment services during COVID surge • Some low-risk cancer surgeries were delayed. Those procedures will need to integrate with ongoing schedule • Delayed pre-treatment consults should be able to resume without major barriers 	<ul style="list-style-type: none"> - Potential increase in more complex diagnoses due to delayed screenings - Shift to virtual for select patient management services - Ramp up of screening services and PCP visits required for treatment volumes to return to pre-COVID levels

What is not happening during Covid-19

Future demand relies on safety perception and screening utilization

Elective procedures



Canceled in an effort to save limited health care capacity and supplies



Likelihood to return moderate
Examples: joint replacements, soft tissue procedures, certain bariatric surgeries

Non-elective, fear-impacted procedures



Still indicated but declining due to fear of contracting Covid-19



Likelihood to return high
Examples: MI, stroke, vascular surgeries, oncology services

Non-elective, behavior-impacted procedures



No longer indicated as social distancing reduces prevalence



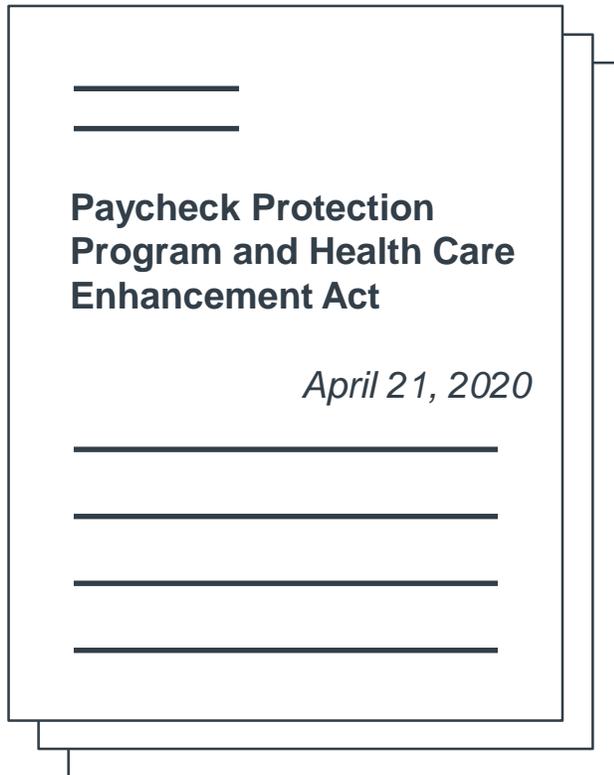
Likelihood to return low
Examples: influenza, trauma surgeries

Metrics that indicate downstream utilization changes

- Public perception of hospital safety
- Confidence of referring physicians in hospital safety
- Change in diagnostic imaging volumes
- Number of PCP screening consults
- Increase in patients treated conservatively with medication
- Number of visits shifted to virtual care rather than canceled

Congress coalesces around next round of support

\$484B funding added to health care and small business lifelines



Major provisions and funding allocations of the Senate bill



Hospitals

- ~\$75B for providers through the CARES Act
- No new policy changes



Businesses

- ~\$350B for the PPP¹
- Increases EIDL² authorization level from \$10B to \$20B
- No new policy changes

Testing

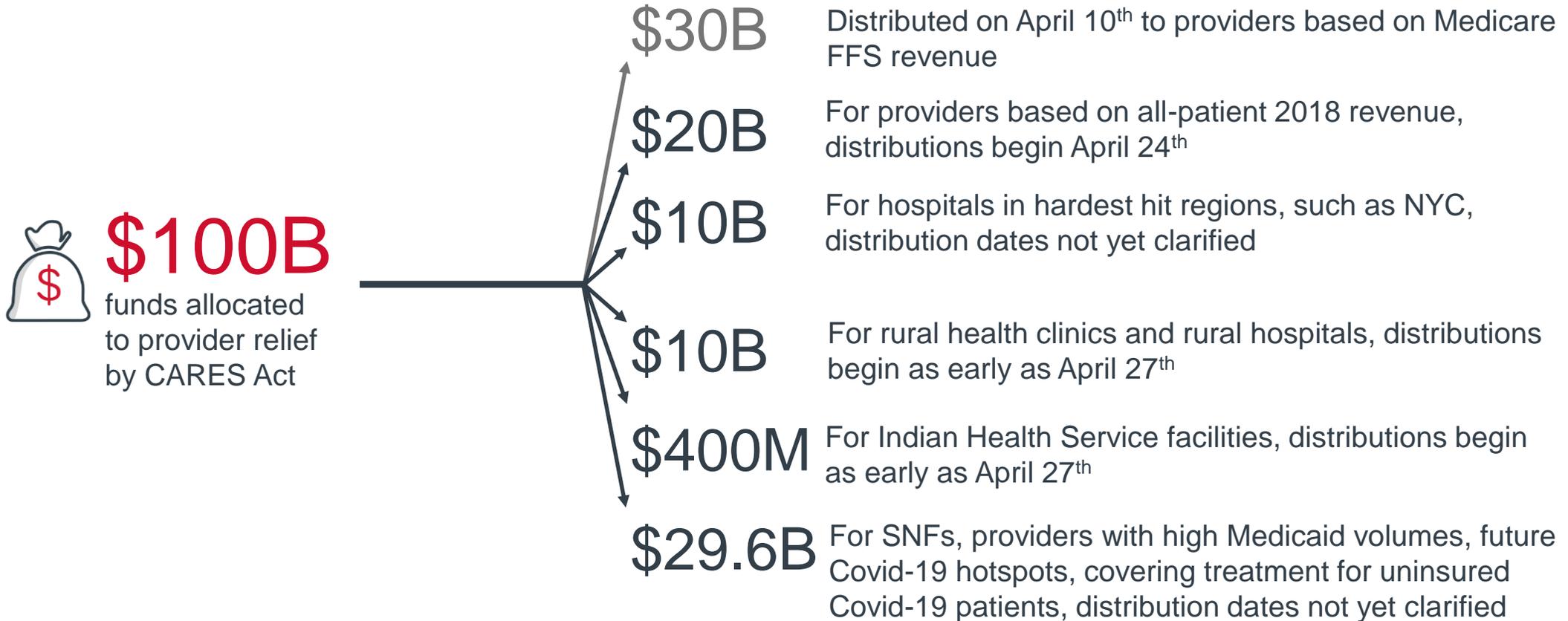
- ~\$25B for expanding capacity of Covid-19 tests
- ~\$11B of which is for states, localities, territories, and tributes
- ~4.25B of which is based on relative number of Covid-19 cases
- ~\$1B for BARDA³
- ~\$825 for community health centers and rural clinics
- ~\$1B for testing uninsured

1. Paycheck Protection Program.
2. Economic Injury Disaster Loan.
3. Biomedical Advanced Research and Development Authority.

Source: McDermott+Consulting, Paycheck Protection Program and Health Care Enhancement Act, U.S. Senate, April 21, 2020.

HHS outlines CARES Act funding distribution

Azar announces how the additional \$70B will be spent



Source: HHS Announces Additional Allocation of CARES Act Provider Relief Fund, HHS, April 22, 2020.

How will Covid-19 impact health system finances?

Four main variables dictate how hospitals margins will fare during the crisis

Variables	Primary determinants	Wild cards
1 Cost of Covid-19 treatment	Covid-19 case load, surge expenses, general productivity loss	Additional changes to payment rates
2 Vanishing volumes	Length of elective delays, ability to flex down expenses, extent of social distancing	Consumer perception of non-elective services
3 Battle for the backlog	Excess supply, patient loyalty, sustained site-of-care shifts	Asymmetric competition
4 Economic erosion	Sustained unemployment rates, employer benefit strategy	Further coverage expansion

Initial estimate of overall impact on health system finances for a 1,000-bed system during a moderate Covid-19 scenario

153M Reduction in quarterly revenue

31.0M Amount of quarterly Covid-19 revenue

Frontline frustration over practice environment bubbles over

With more difficult messages likely to come from employers

Frontline clinicians organize to protest pandemic practice environment



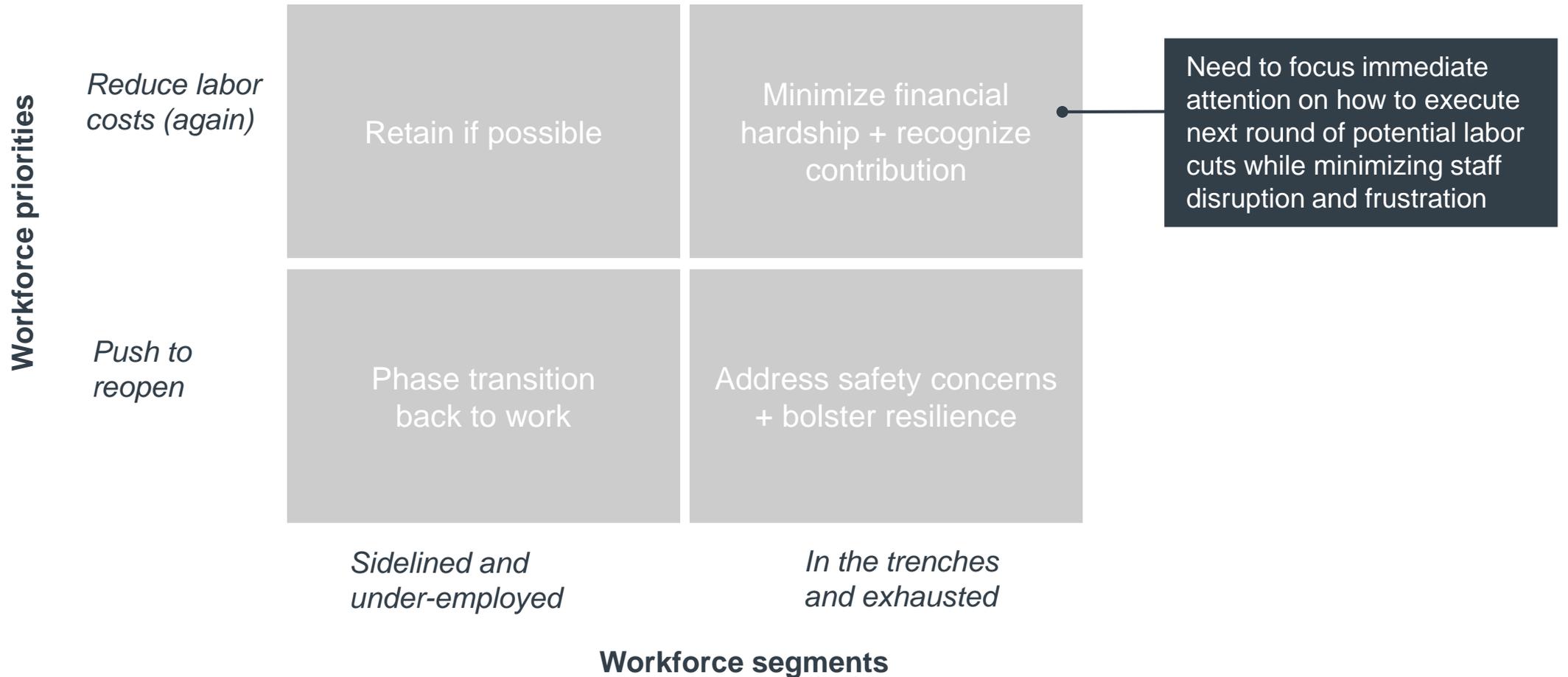
National Nurses United union organizes RN protest, demands the federal government use the Defense Production Act to produce PPE



New York State Nurses Association sues New York State Department of Health, New York hospitals over alleged failure to protect nurses from contracting Covid-19

Source: Chiu A, "We're beyond angered': Fed-up nurses file lawsuits, plan protest at White House over lack of coronavirus protections," The Washington Post, <https://www.washingtonpost.com/nation/2020/04/21/nurse-protection-coronavirus/>; del Valle L, Moghe, S, "New York state nurses union files three lawsuits alleging poor Covid-19 working conditions," CNN, <https://www.cnn.com/2020/04/20/us/new-york-nurses-union-sues-over-covid-19/index.html>.

Prepare yourself for the next round of labor cuts

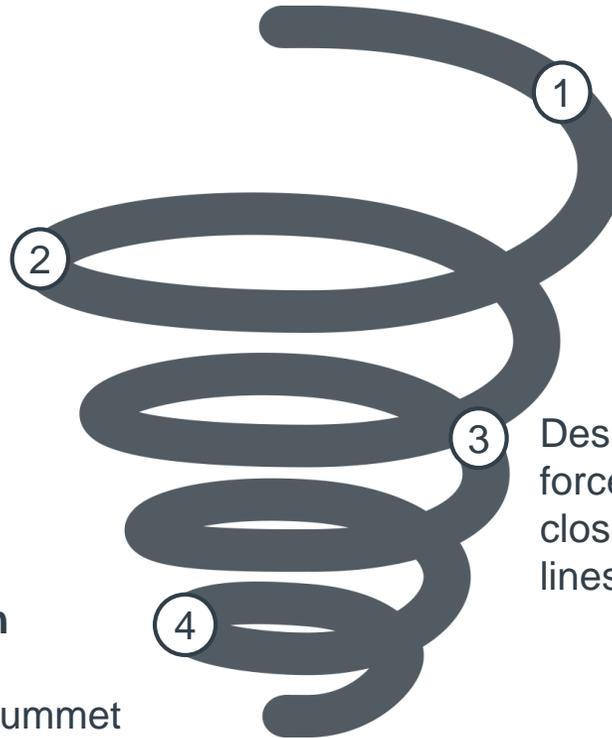


Don't turn a difficult situation into a toxic one

The danger of a one-off approach to labor savings

System unable to re-capture anticipated elective surgery volume, forces executive team to implement additional cost savings measures

Frontline staff lose faith in executive promises; staff engagement, productivity plummet



CEO reduces travel spending, eliminates merit increase, announces soft hiring freeze; **emphasizes minimal impact on staff**

Despite prior promise, CEO forced to eliminate bonuses, close underperforming service lines, and layoff 50 FTEs

Source: Labor Savings Playbook, HR Advancement Center, Advisory Board.

Craft your labor contingency plan now

Build principled scenarios



- Model future financial performance for best-, middle- and worst-case revenue declines
- Use the Covid-19 [elective surgery cancelation impact estimator](#) to estimate losses

Create tiers of action



- Map a subset of labor savings tactics to each scenario
- To determine which labor savings tactics to implement in which scenario, score them on factors including: difficulty to implement, amount of savings, patient impact, staff impact, horizon to savings and efficacy

Set action triggers



- Select leading metrics that indicate when to enact each tier of tactics
- Metrics to consider may include: unemployment rate, days cash on hand, volumes decline

Communicate carefully



- Don't make promises to staff that you can't keep

See Memorial Health's best practice labor contingency plan in the [Labor Savings Playbook](#) on [advisory.com](#)

Source: Labor Savings Playbook, HR Advancement Center, Advisory Board.

Emerging tension in early planning for telehealth's future

Provider organizations getting ready to pivot despite lack of clarity from payers

Providers and systems making plans for expanded telehealth



- Early efforts to model medium- and long-term consumer demand for telehealth
- Considering implications of broad use of telehealth on physician hiring, retention, and contracting
- Re-evaluating physical assets and “brick and mortar” footprint

Payers not showing their hand beyond public health emergency



- Current Medicare reimbursement parity for virtual and in-person visits is not permanent
- Plans worry that post-Covid telehealth will be a complement to care, not an alternative



NEXT STEPS

Making the case for reimbursement parity

- Provide data on telehealth visits as a **viable care delivery channel** in their own right
- Demonstrate how telehealth reimbursement parity can help **meet payers' and purchasers' business objectives**

The crisis in long-term care isn't slowing down

America's elderly population remains among the most vulnerable to the disease



DATA SPOTLIGHT

Nursing homes and Covid-19

4,700

Number of nursing homes with reported cases

50,000

Number of staff and residents at those facilities who have contracted the virus

9,000

Number of nursing home staff and resident deaths linked to Covid-19

Magnitude of nursing home outbreaks is intensifying



Washington

First major outbreak in the U.S.; **128 cases and 43 deaths** have been linked to the facility.



New Jersey

One facility in Andover has had **106 cases and 68 deaths** among residents and staff.



Georgia

Nursing home in Albany has reported **154 cases and 16 deaths** associated with it.

Source: New York Times, "Coronavirus in the U.S.: Latest Map and Case Count," <https://www.nytimes.com/interactive/2020/us/coronavirus-us-cases.html>.

State-level resources attempt to go beyond oversight

Federal response: Oversight

Improving transparency around outbreaks

Nursing homes are now **required to report Covid-19 cases** to CDC, other residents, and caregivers.

- ▶ Proposed \$1000 weekly fine if cases are not reported

Protecting against fraud and abuse

DOJ launched the National Nursing Home Initiative to target nursing homes that provide “**grossly substandard** care to their residents.”

- ▶ DOJ will pursue criminal and civil enforcement actions against the facilities

State response: Operational support

Expanding testing access and capacity



- **West Virginia** is mandating that every long-term care resident and employee gets tested
- **Florida, Massachusetts,** and other states are deploying the National Guard to help test at facilities

Bolstering staffing models and clinical capabilities



- **Maryland** has a clinical care “strike team” that is deployed to help stabilize patients and assist with triage
- **Michigan** formed a new task force that will provide staff education and help implement infection control protocols

Addressing existing operational inefficiencies



- **Georgia** National Guard teams help sanitize facilities
- **Virginia** is focused on sourcing funding for additional staff

Source: United States Department of Justice, *Department of Justice Launches a National Nursing Home Initiative*; McKnights Long-Term Care News; *Providers to report COVID infections in 12 hours or face \$1k fines, CMS says*; Richmond Times-Dispatch; *Northam's new task force promises action to help long-term care facilities in Virginia battle the coronavirus*; Skilled Nursing News, *States Call in National Guard to Help with Infection Control, COVID-19 Testing in Nursing Homes*; Michigan.gov; MDHHS *Implementing Strategies in Long-term Care Facilities to Help Slow the Spread of COVID-19 and Protect Residents and Staff*.

The top 16 open questions we're looking at now

How will Covid-19 impact...



...the **demographic makeup** of the US—and future demand?



...the purchaser landscape and the nation's **payer mix**?



...the **competitive landscape** efforts to “disrupt” the industry?



...expectations about U.S. health care **capacity**?



...**site-of-care** shifts, including to virtual channels?



...perception of **government's role** in health care?



...**public perception** of industry stakeholders?



...the structure of the U.S. health care **supply chain**?



...demand for **behavioral health** services?



...**employers'** health benefits strategies?



...future fundraising and **philanthropy** efforts?



...the future of the **clinical workforce**?



...the U.S.' approach to post-acute and **long-term care**?



...the future of **value-based care** and risk-based payment?



...perceptions of the **value of systemness** and scale?



...the pharma, device, and tech **innovation pipelines**?

Today's focus

How will Covid-19 impact...



...the **demographic makeup** of the US—and future demand?



...the purchaser landscape and the nation's **payer mix**?



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Large scale philanthropic mobilization happening now

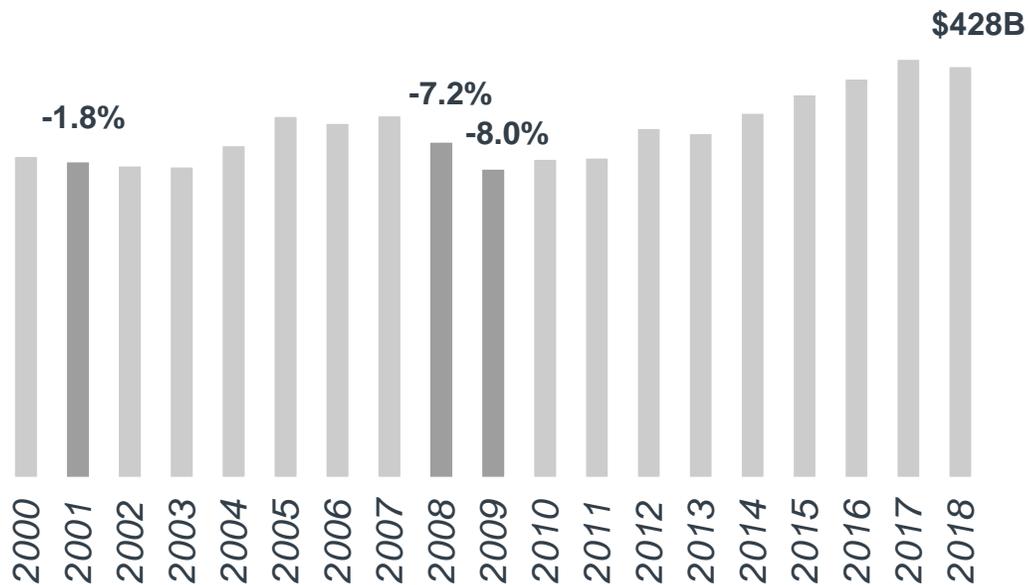
U.S. may be on track to defy historical precedent

Economic downturns usually depress giving, but...

...early signs indicate 2020 may become an exception

Total U.S. charitable giving, 2000-2018

Change in total giving highlighted for recession years



\$4.9B

In **Covid-related grants** originating from U.S. funders year-to-date¹

79%

Of **individual donors** surveyed in late March 2020 say they plan to give more, or at the same level, as last year

677

U.S. **foundations** signed a pledge committing themselves to provide funding to emergency response efforts and ease restrictions on funding for grantees

?

Untold sums of money being contributed to individuals or for-profit businesses through acts of charity that will never be "counted" in our assessment of 2020 philanthropy

1) As of April 20, 2020.

Source: "Giving USA 2019," Giving USA Foundation; Council on Foundations, <https://www.cof.org/news/call-action-philanthropys-commitment-during-covid-19>, accessed April 20, 2020; "COVID-19 and philanthropy: How donor behaviors are shifting amid pandemic," Fidelity Charitable, <https://www.fidelitycharitable.org/insights/how-covid-19-is-shifting-donor-giving.html>; "Funding for coronavirus (COVID-19)," Candid, <https://candid.org/explore-issues/coronavirus>, accessed April 20, 2020.

Will donors rally behind hospitals once crisis wanes?

Public opinion and post-emergency narrative will shape financial impact

Public perception of the crisis response

Shifts in the charity paradigm

Health system donor compact

Positive impact on hospital giving

Hospitals emerge as heroic and empathetic actors in the final post-crisis narrative, despite broader failures in the systemic response

Americans double down on their preference to use philanthropy to fund gaps in the social safety net and see hospitals as urgently-in-need

Health systems imagine and articulate an impactful role for donors in creating a better future state for their organization

Negative impact on hospital giving

Hospitals are blamed – deservedly or not – for failures in the systemic response to Covid-19 and further struggle to capture interest among health-focused donors

Americans further shift their preference toward government-funded health care, in turn demoting hospitals' standing as charitable recipients

Health systems become overconfident that their crisis funding will sustain itself and expect donors to rally behind calls for financial relief

Remembering our pre-pandemic workforce

Workforce trends we were tracking in early 2020



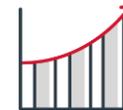
Physicians experiencing a steady pace of change and consolidation



Nursing facing a shortage of experience



Advanced practice providers gaining increased autonomy



Medical assistant demand and turnover on the rise



Struggling to get clinicians to embrace new ways of providing care

A tale of two workforces

In the trenches



On frontlines in surge markets



Burned out due to high volumes, emotional stress

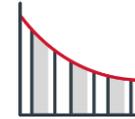


Feelings of distrust stemming from PPE shortages, risk of exposure

Sample impacted roles:

- Critical care providers
- Inpatient nurses

On the sidelines



Seeing lower volumes or lack of work altogether



Financially vulnerable due to furloughs, pay cuts



Feelings of distrust stemming from financial insecurity

Sample impacted roles:

- Unlicensed staff
- Ambulatory clinicians

An early take on longer-term workforce implications

Segment of the workforce	Emerging trends to watch	Our (far too early) take
Physicians	<ul style="list-style-type: none"> Financial vulnerability reenergizes physicians looking for shelter from the financial storm Increasing openness to telehealth and team-based care 	<p>Now may be the time to acquire physician talent, but the market will still be competitive; employers need to know what physician talent they need to advance strategy and their budget</p>
Advanced practice providers	<ul style="list-style-type: none"> Relaxing of practice restrictions Increasing acceptance of autonomy by patients and physicians 	<p>Preserve APP autonomy as much as possible and hire where possible to meet patient demand and fill in physician shortage gaps</p>
Nursing	<ul style="list-style-type: none"> New grads pushed into practice early Experienced nurses may delay retirement due to financial pressure 	<p>Temporary pressure release from our projected staffing shortages and the experience gap; must assess longer-term strategy as nursing ratios could become more inflexible, limiting creative staffing models</p>
Medical assistants	<ul style="list-style-type: none"> Potential influx due to job seekers amidst recession Increase in turnover due to newly-perceived risk and low pay 	<p>Financial downturn provides temporary relief from MA shortage, still have to tackle how to reduce turnover in this role or how to craft a MA pipeline strategy that can tolerate high turnover</p>



These trends all depend on how well we rebuild staff trust and resilience.

Fast-tracking supplies, tests, treatments, and vaccines

Regulators temporarily reduce barriers to go from innovation to appropriate use

Industry responses to urgency of Covid-19 crisis



Re-prioritization of R&D and manufacturing capacity

- Diagnostic firms and many others focus on scalable testing options
- Biopharma pipelines focus on Covid-19 treatment and vaccines
- Device and supply companies shift production to ventilators, PPE

● Production



Loosened regulations for testing and approval of medical products

- FDA enables accelerated vaccine development and approval
- Leveraging real-world data and real-time trial reporting to show efficacy of repurposed treatments

● Regulation



Relaxed guidelines on acceptable use of technology

- Manufacturers and providers collaborate on ventilator refurbishment
- Sleep apnea machines repurposed to address ventilator shortages
- Regulators allow Skype, FaceTime for telehealth visits

● Market Use

All sectors will have to adapt to emerging unmet needs

Innovation directly addressing Covid-19 seeing spikes—but stickiness is unclear

Biopharma	Clinical trials become slower and more expensive	Manufacturers experiment with real-world evidence (RWE) and digital trials	Increased time-to-market for backlogged Phase 3 products causes re-prioritization of early-stage pipeline
Medical Device	Provider purchasers de-prioritize ‘bells-and-whistles’ device purchases	Demand for innovation in monitoring, surveillance, diagnostic, and care-at-home	Spike in demand for extended-use products (e.g., beds, monitors, ventilators) leads to significant drop long-term
Digital & IT	Providers favor optimization of existing technology (e.g. EHRs) over net-new products	Tech giants ‘earn their healthcare stripes’ by deploying solutions quickly, at a national scale and gain health care B2B market share	Data aggregators become more critical in health care ecosystem as demand for AI and predictive analytics spikes

Near-term *Long-term (2021+)*

Data sharing accelerates research and innovation

Renewed focus on public-private collaboration could have lasting impact

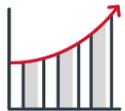
Covid-19 sparks unprecedented levels of collaboration and data sharing



Collaboration between the White House and IBM, Amazon, Google, and Microsoft for treatment and vaccine development



Deterioration of competition among industry and academics as researchers prioritize finding a vaccine over claiming credit



Early signs of growing public trust in tech giants as they swiftly take action to address the crisis

Google and Apple team up on contact tracing

Two rival technology giants form an unlikely partnership to develop app-based tracing tool

Key privacy and security features address concerns:

- Identities of infection users are not revealed
- Data is decentralized, anonymized, and refreshed every 15 minutes
- Relies on proximity detection rather than location data
- Program is entirely opt-in

Source: <https://www.vox.com/recode/2020/4/16/21221458/apple-google-contact-tracing-app-coronavirus-covid-privacy>; Advisory Board interviews and analysis.

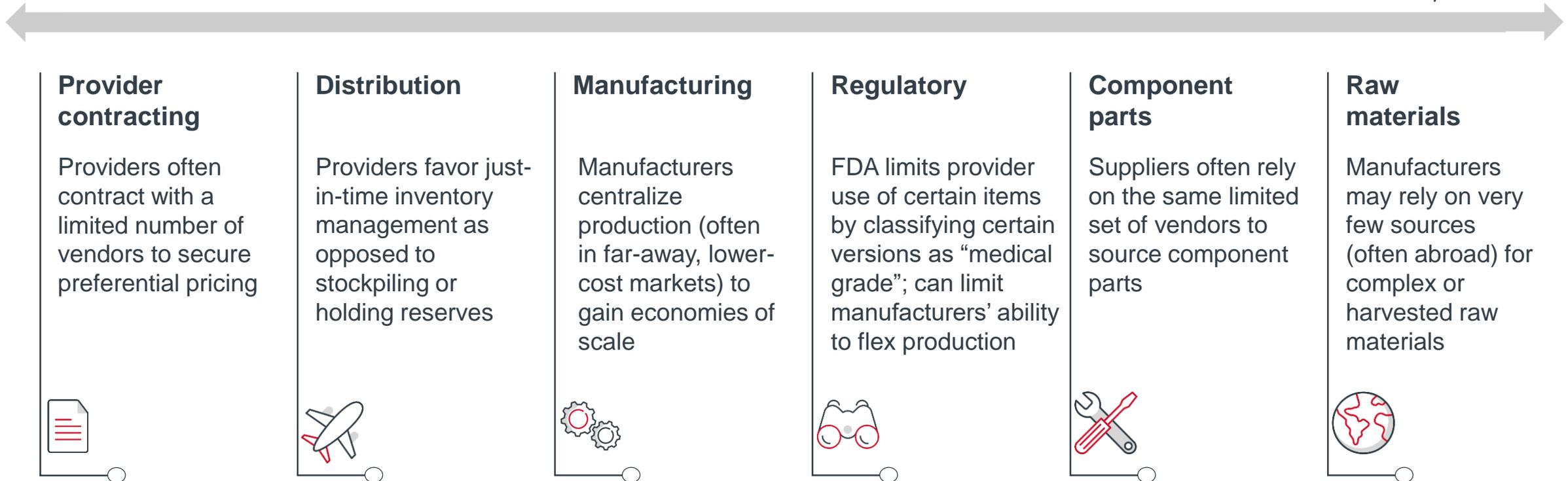
Why not just make more PPE?

Lack of redundancy across the supply chain prevents flexibility in times of crisis

Factors that limit flexibility across the supply chain

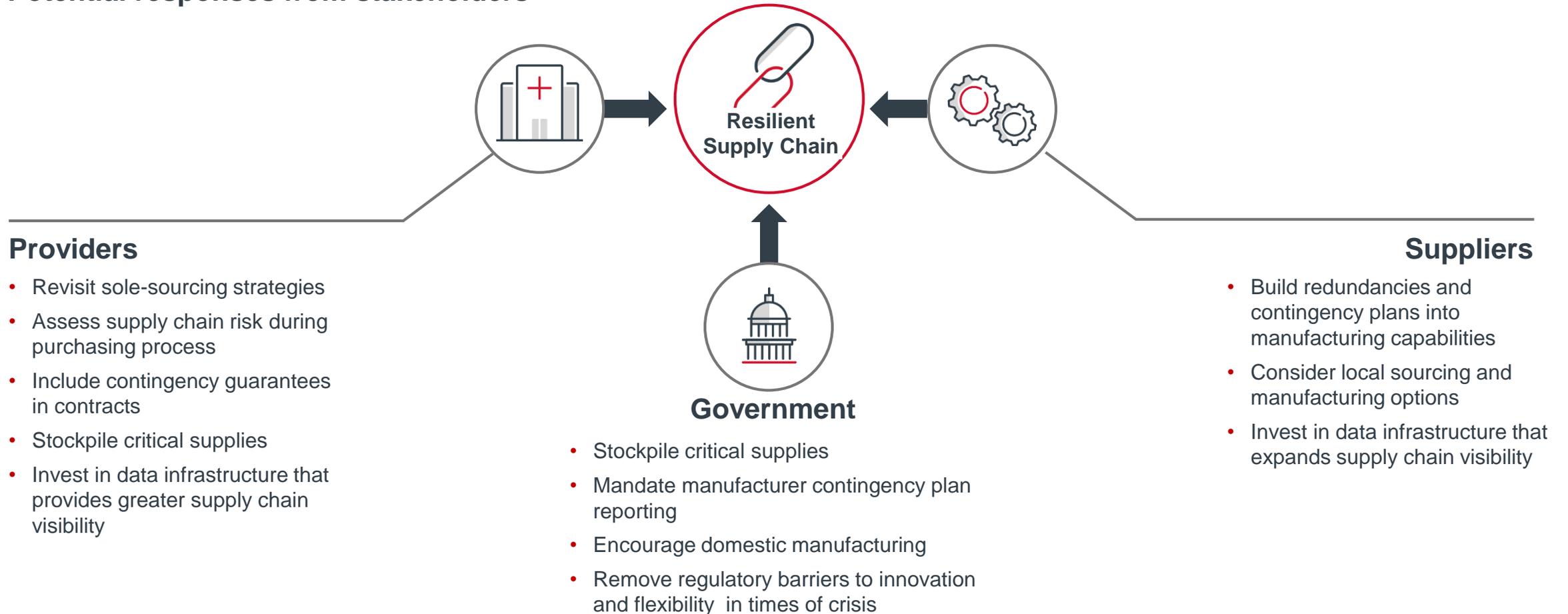
Downstream

Upstream



Industry-wide changes needed to bolster supply chain

Potential responses from stakeholders



Deaths unlikely to radically shift demand patterns

But impact of Covid-19 deaths worse among elderly and in dense urban areas

Original projections: 4.8 million hospitalizations
480,000 deaths

Current estimates (IHME): ~430,000 hospitalizations¹
~60,300 deaths

Impact of Covid-19 deaths on elderly will vary greatly by region

NATIONAL BASELINE

0.16% Absent virus, baseline death rate of 65+ population over 3-month period



0.08%

Projected percent reduction² in U.S.' 65+ population due to Covid-19 by August 4th

U.S.



0.87%

Projected percent reduction² in NYC's 65+ population due to Covid-19 by August 4th

New York City

1. Calculated based on national average of 7.12 hospitalizations per death.

2. Calculations based on IHME projections, and fact that 73% of current deaths in NYC have happened in 65+ population.

Source: "One slide in a leaked presentation for US hospitals reveals that they're preparing for millions of hospitalizations as the outbreak unfolds," Business Insider, February 27th, 2020; "COVID-19 Projections," IHME, April 20th, 2020; "COVID-19: What's New for April 5, 2020," IHME, April 5th, 2020; "COVID-19 Daily Data Summary: Deaths," NYC Health, April 21st, 2020; "FastStats: Older Persons Health," CDC;

Mortality rate not the only factor that could influence demand

Reduced utilization from deceased patients likely outweighed by upticks elsewhere

Lingering care needs among Covid survivors

Covid-19 may not only damage lungs, but also heart, brain and kidneys



19% Percent of hospitalized patients in China study with signs of heart damage

37% Percent of hospitalized patients in Wuhan study with neurologic symptoms¹

Exacerbations of pre-Covid care needs due to treatment delays

THE WASHINGTON POST

“Patients with heart attacks, strokes and even appendicitis vanish from hospitals”



Majority of patients put off elective procedures for duration of pandemic

New care needs due to Covid-related stress and isolation



Stress, unhealthy behaviors during quarantine could increase new diagnoses like diabetes, mental health

50% Increase in calls to Georgia substance abuse hotline amid pandemic

21% Increase in prescriptions for antidepressants, anti-anxiety, anti-insomnia post-Covid-19

1. Symptoms include dizziness, headaches, impaired consciousness, loss of taste and smell, and skeletal-muscle injuries.

Source: Daily Briefing, "It's Not Just Lungs: Covid-19 May Damage the Heart, Brain, and Kidneys," Advisory Board, April 17, 2020; Bernstein L, "Patients With Heart Attacks, Strokes and Even Appendicitis Vanish from Hospitals," The Washington Post, April 20, 2020; Hill B, "Georgia substance abuse hotline sees increased calls for help amid COVID-19 pandemic," Fox 5 Atlanta, April 21, 2020; Minemyer P, "Prescriptions for Antidepressants, Anti-Anxiety, Anti-Insomnia Drugs Jumps 21% Post COVID-19," FierceHealthcare, April 16, 2020.

Pandemic exacerbating health inequity

Impacts on demand will be most pronounced among marginalized groups

Structural inequity contributes to worse Covid-19 health outcomes among minorities



Marginalized groups often...

- More likely to hold “essential jobs”
- Live in poorer areas with less access to care
- Less able to social distance
- Have higher rates of chronic illness

34% National Covid-19 cases made up by Black Americans
vs.
13% Percentage of Americans who are Black American

Steps hospital leaders can take to mitigate racial disparities



Collect and share race-specific data from your Covid-19 cases



Leverage community partnerships and care management to target prevention



Double down on patient-centered principles to overcome implicit bias in provider interactions

Source: Sachdev R, Sullivan D, “3 Steps Hospital Leaders Can Take to Mitigate the Racial Impact of Covid-19,” Advisory Board, April 10, 2020; “Cases of Coronavirus Disease (COVID-19) in the U.S.,” CDC, April 20, 2020; “QuickFacts,” United States Census Bureau, 2020.

Your top resources for COVID-19 readiness



CDC and WHO Guidelines

Compiles evidence-based information on hospital and personnel preparedness, COVID-19 infection control recommendations, clinical guidelines, and case trackers



Managing clinical capacity

Examines best practices for creating flexible nursing capacity, maximizing hospital throughput in times of high demand, increasing access channels, deploying telehealth capabilities, and engaging clinicians as they deal with intense workloads



Coronavirus scenario planning

Explores twelve situations hospital leaders should prepare for and helps hospital leadership teams pressure test the comprehensiveness of their preparedness planning efforts and check for blind spots



How COVID-19 is transforming telehealth—now and in the future

Explores how telehealth is being deployed against COVID-19 and essential next steps for telehealth implementation



To access the top COVID-19 resources, visit [advisory.com/covid-19](https://www.advisory.com/covid-19)

Meet our experts



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