Equity and Access to Hospital Beds through the Arizona Surge Line

[Updated June 2021]

ARIZONA DEPARTMENT OF HEALTH SERVICES

THE ARIZONA SURGELINE

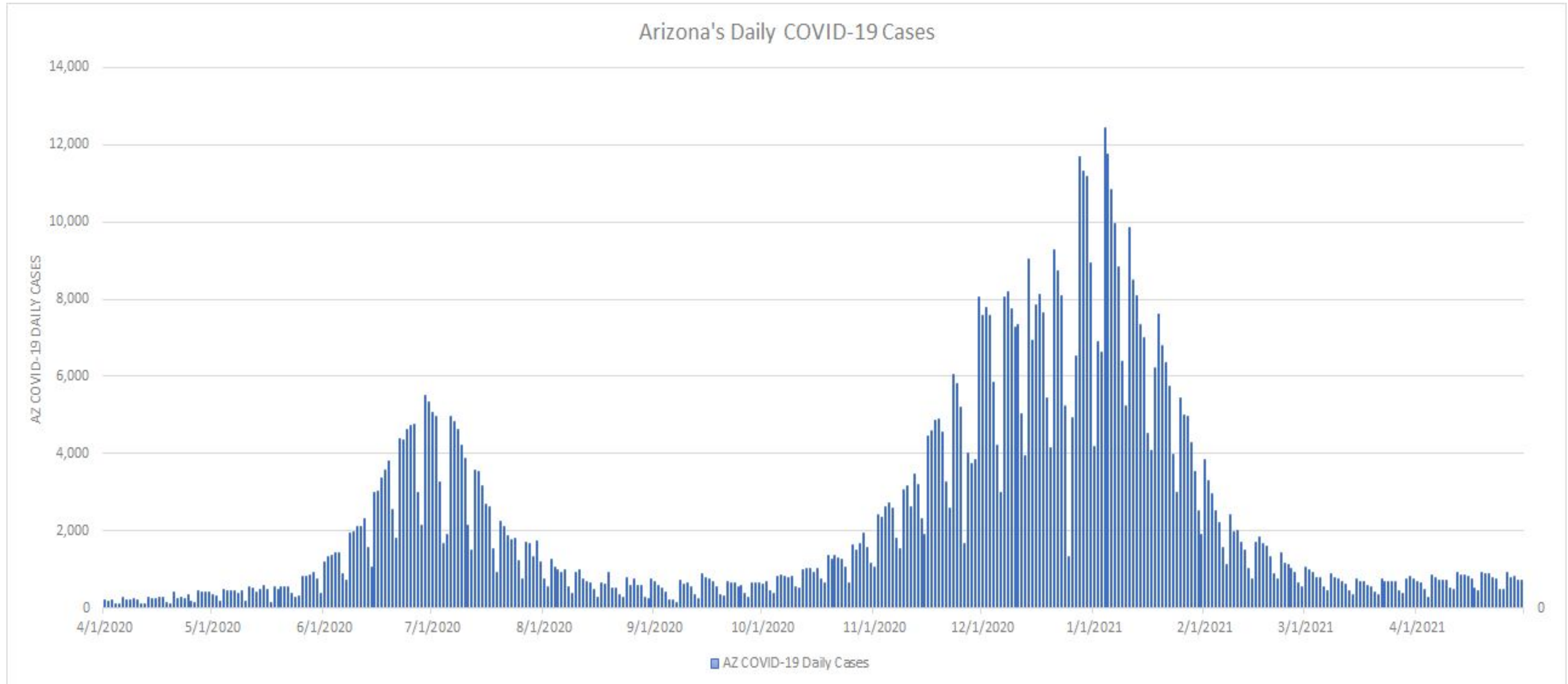
Outline

1. Arizona COVID-19 experience
2. Arizona Surge Line
3. Arizona Surge Line Outcomes

Outline

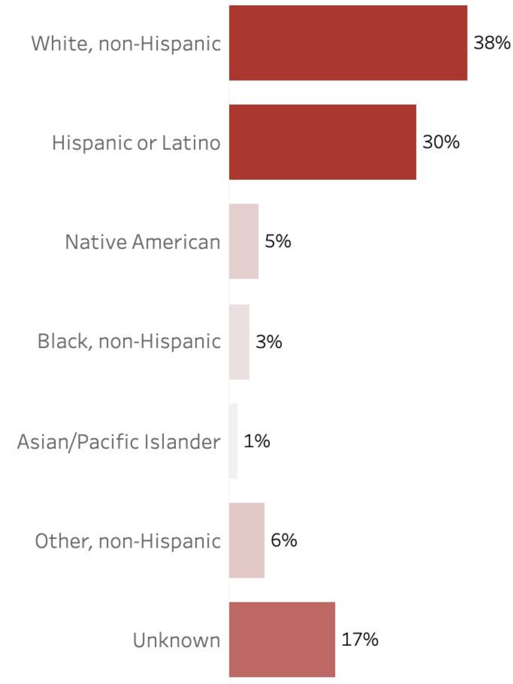
1. Arizona COVID-19 experience
2. Arizona Surge Line
3. Arizona Surge Line Outcomes

AZ experienced two COVID-19 case surges.



https://azdhs.gov/covid19/data/index.php#confirmed-by-day

AZ cases were mostly White, Hispanic/Latino and…. Unknown.



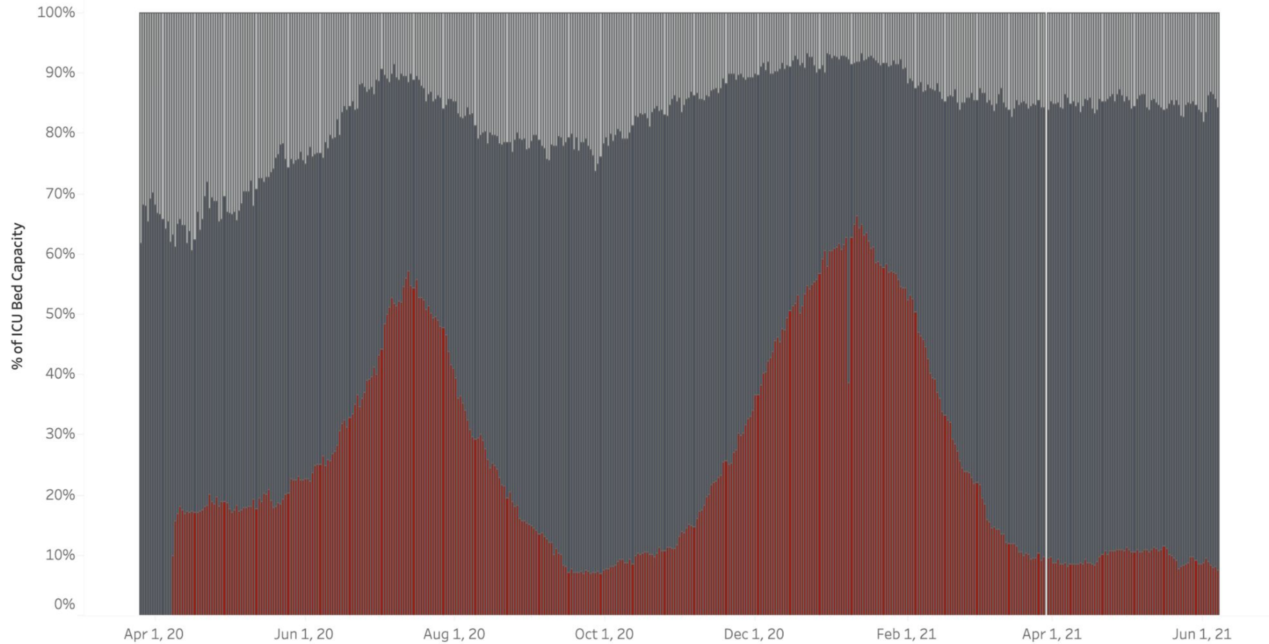
Data through 6/8/21

https://www.azdhs.gov/covid19/data/index.php#demographics

AZ had two hospital surges: summer and winter.

Adult Intensive Care Unit Beds Available
Adult Intensive Care Beds in Use by Non-COVID Patients
Adult Intensive Care Beds in Use by COVID Patients

Number of ICU Beds Available and In Use in Arizona Hospitals



https://www.azdhs.gov/covid19/data/index.php#hospital-bed-usage

Outline

1. Arizona COVID-19 experience
2. Arizona Surge Line
3. Arizona Surge Line Outcomes
4. Equity and Public Health

AZ watched NYC struggle with hospital coordination during their COVID-19 surge.

The New York Times

One Hospital Was Besieged by the Virus. Nearby Was 'Plenty of Space.'

Even as Elmhurst faced "apocalyptic" conditions, 3,500 beds were free in other New York hospitals, some no more than 20 minutes away.

https://www.nytimes.com/2020/05/14/nyregion/coronavirus-ny-hospitals.html

The concept of Arizona Surge Line was straightforward.

A statewide 24/7 transfer service that facilitates the rapid placement of COVID-19 patients and load-leveling of hospitals in the state.

The scope was statewide and focused on COVID-19.

- A statewide resource for interfacility hospital transfers.
- Available to private, public and federal facilities.
- Used only for the transfer of presumed and confirmed COVID-19 patients during the COVID-19 emergency.
- To be explored as a tool for future hospital surges.

The structure was based on technology and hospital expertise.

- A free service to healthcare facilities and providers that is maintained by the Arizona Department of Health Services.
- An algorithm-based structure based on protocols jointly created with workgroups of Arizona hospital transfer centers, Chief Medical Officers, and discharge coordinators.
- Technology from interfaces Central Logic, Revation Systems, and Health Information Exchange (HIE)

There were four main components.

1*
Expedite patient transfer to a higher level of care

2
Expedite patient transfer to a lower level of care

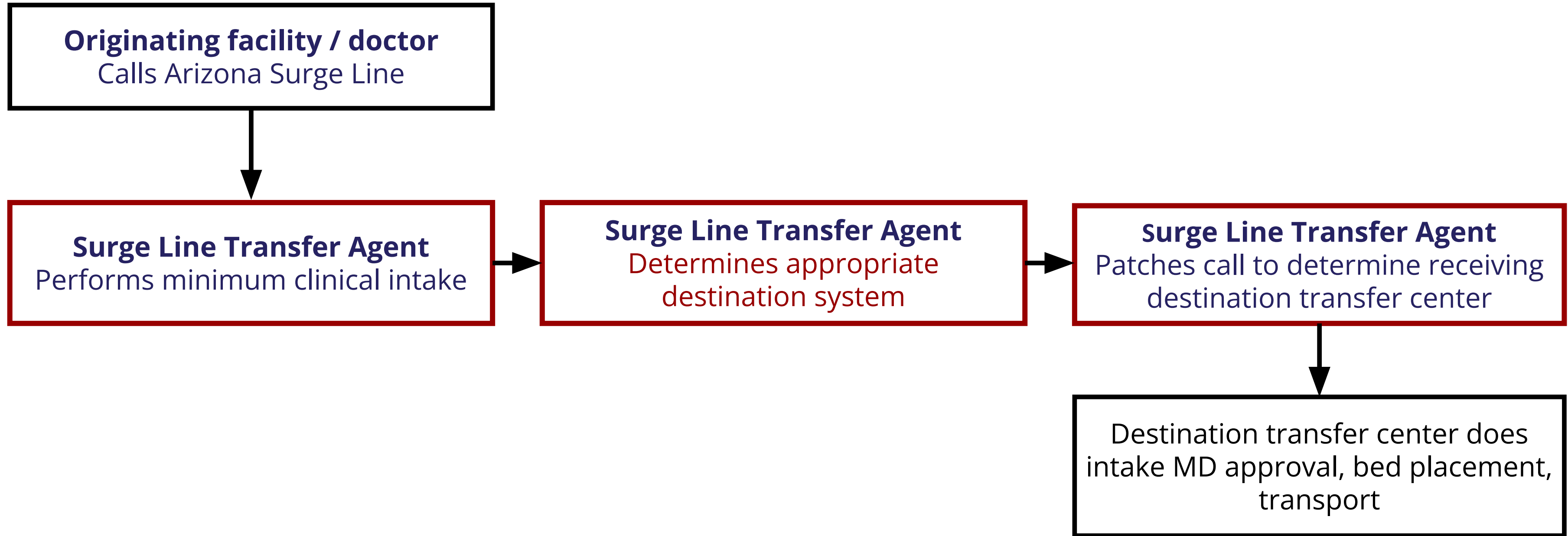
3
Provide a safety net for interfacility transport

4
Provide critical care and palliative care consultation

A key factor was having a real-time, statewide bedboard.

		ACUTE					ICU			IMC			TELE	
Region	Facility	Heart Center	Med Surg	Medical	Oncology	Surgical	Heart Center	Medical	Surgical	Heart Center	Medical	Surgical	Med Surg	Observation
Eastern	American Fork Hospital			9			12					6		
	Community Regional Medical Center	6			4	0		0	6				0	
	Plateau Medical Center	6			4	2		5	6		3			
Northern	Clearwater Regional Medical Center	6		4				6		6				
	Four Winds Hospital		2						7					
	Franklin Hospital Medical Center			8	6			3	0				2	4
	Lake Shore Hospital		13									13	2	
Southern	Adirondack Medical Center		11				4	5				5	3	4
	Albany Medical Center	4	8					6					6	
	Brookhurst Memorial Hospital	2			2	0	2	0		8			6	

The Arizona Surge Line acted as a “doorway” for transfers to HLOC.



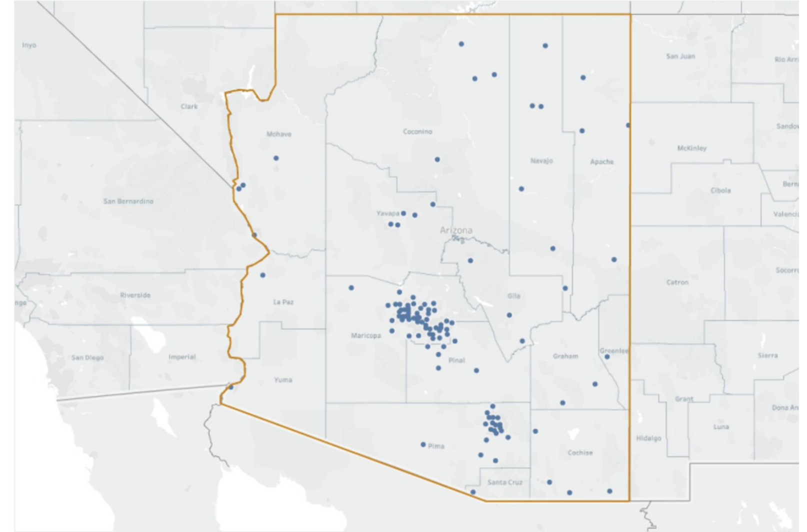
https://www.azdhs.gov/covid19/index.php#healthcare-providers-surge-line

Transfer agents were Arizona-based EMCTs.

There was widespread hospital participation.

Number of Different Hospitals, by Type, participating with the Arizona Surge Line (i.e., sent and/or received patients) in the First 6 Months of Functioning

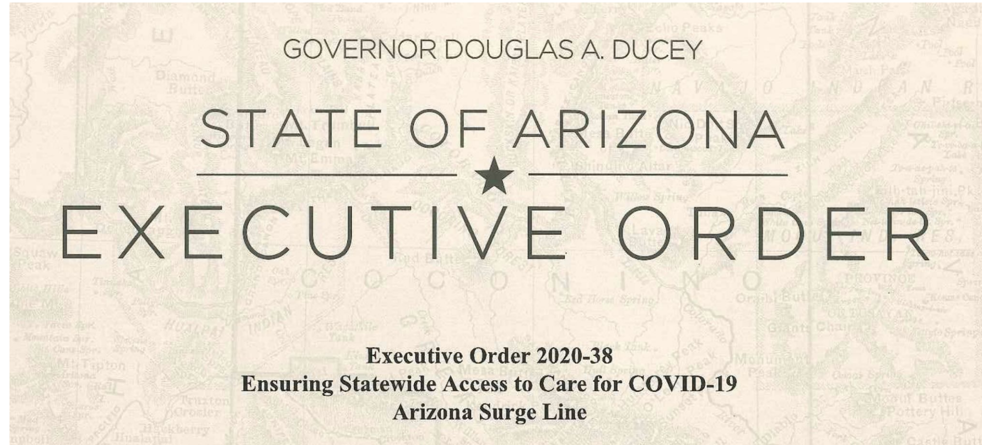
Hospital type	Number of Unique Hospital Participants, April–October 2020
Private, non-profit	57
Private, for-profit	34
Critical Access Hospital	15
Indian Health Service	15
Public, non-profit	6
Tribally operated P.L. 93-638	5
Total	132



Source: The authors; map © OpenStreetMap contributors, openstreetmap.org
NEJM Catalyst (catalyst.nejm.org) © Massachusetts Medical Society

https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0595

Insurance was removed as a barrier for transfers.



GOVERNOR DOUGLAS A. DUCEY

STATE OF ARIZONA

EXECUTIVE ORDER

Executive Order 2020-38
Ensuring Statewide Access to Care for COVID-19
Arizona Surge Line

3. The Arizona Department of Insurance, in conjunction with the Arizona Department of Health Services, shall require that all insurers regulated by the State cover COVID-19 transfer and treatment to and from all hospitals, healthcare institutions, or alternate care sites designated by the Arizona Department of Health Services at in-network rates without regard to whether the facility is in-network if the patient's transfer is facilitated by the Arizona Surge Line. Transfer and treatment shall be covered on the basis of admission date, and in-network coverage for treatment shall remain in place for the duration of a patient's admission facilitated by the Arizona Surge Line, including in the event that the COVID-19 Declaration of Public Health Emergency is terminated prior to patient discharge.

https://azgovernor.gov/executive-orders

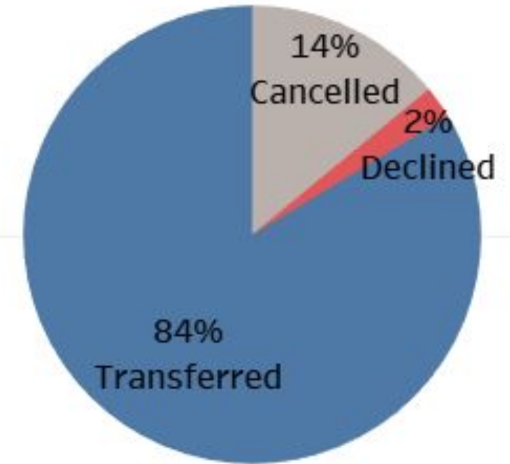
Outline

1. Arizona COVID-19 experience
2. Arizona Surge Line
3. Arizona Surge Line Outcomes
4. Equity and Public Health

To date, Surge Line transfers are in the thousands.

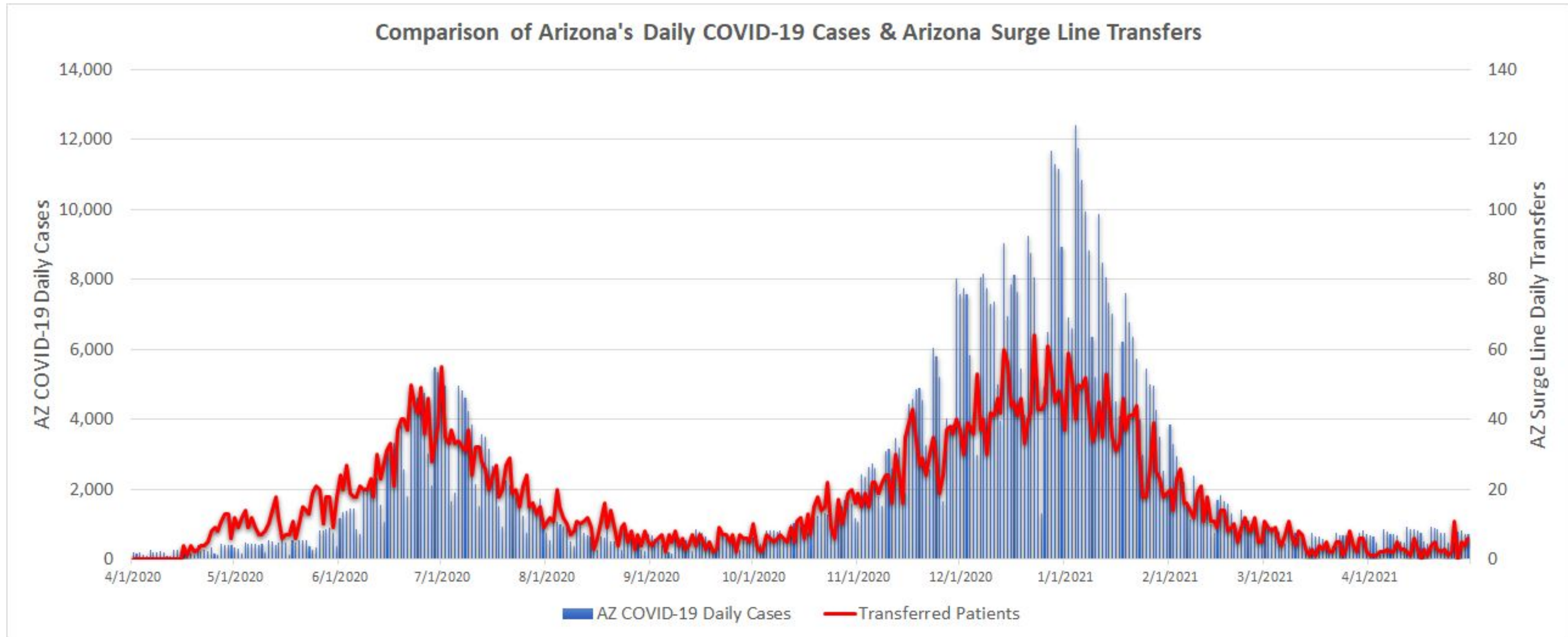
Distribution of AZ Surge Line Requests		
	Case Volume	% of Case Volume
Transfer Higher Level Care	6,929	80%
Transfer Lower Level Care	1,495	17%
Transport	175	2%
Consults	48	1%
Grand Total	**8,647**	100%

Higher Level of Care Outcomes



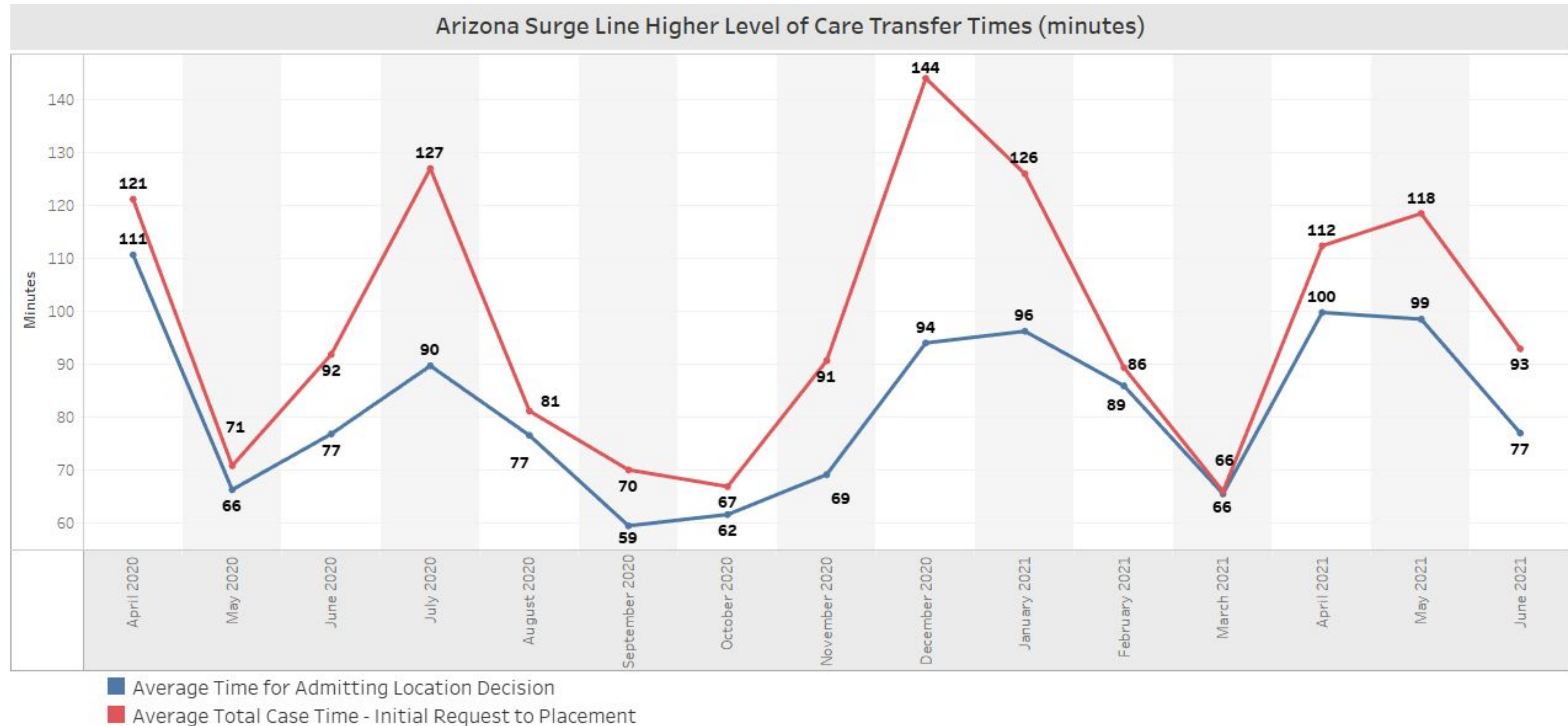
Data from ASL, date range: 4/16/2020 - 5/31/2021

Surge Line transfer peaks followed the case peaks.



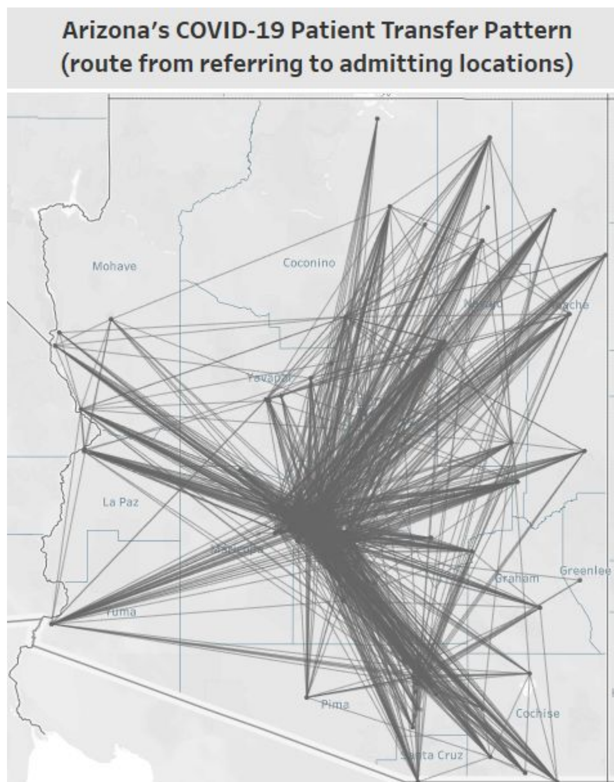
Data from ASL
https://azdhs.gov/covid19/data/index.php#confirmed-by-day

Transfers were accepted quickly, although 2+ hospitals often had to be called during times of surge.



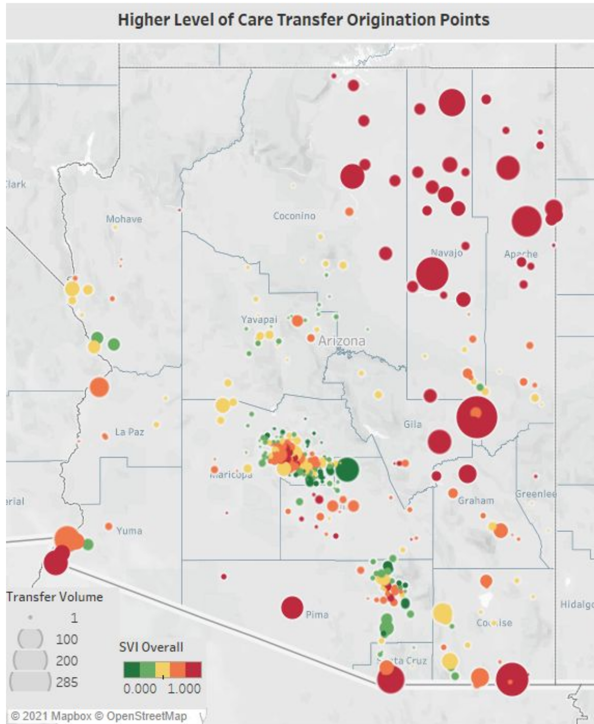
Data from ASL

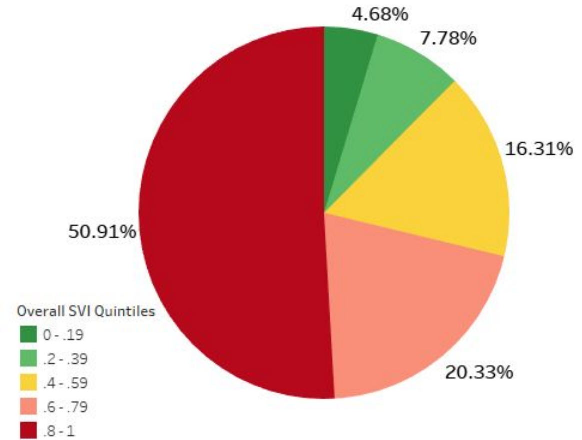
HLOC transfers were mostly from rural facilities to urban ones.



Data from ASL, date range: 4/16/20 - 1/31/21

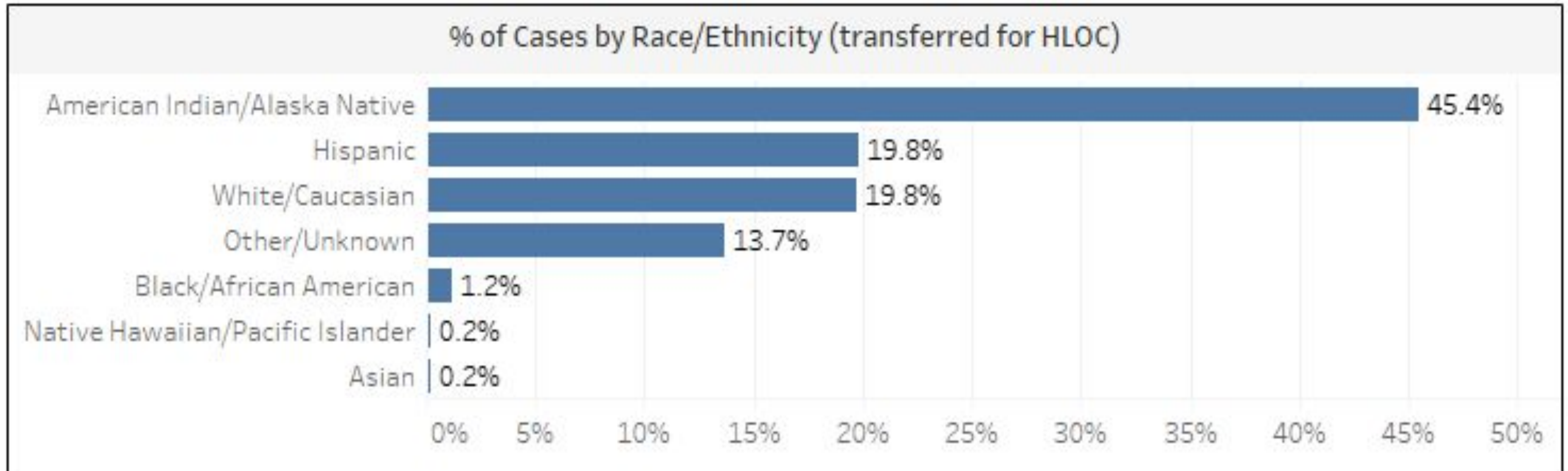
The Surge Line mostly transferred patients from vulnerable zip codes.





Data from ASL, date range 4/16/20- 1/31/21

AI/AN accounted for nearly half of ASL transfers.



Data from ASL, date range 4/16/20- 5/31/2021

Rural facilities were most impacted from the other Surge Line components.

1 Expedite patient transfer to a higher level of care

2 Expedite patient transfer to a lower level of care

68% returned to rural sending facilities

3 Provide a safety net for interfacility transport

75% transport went to rural residences

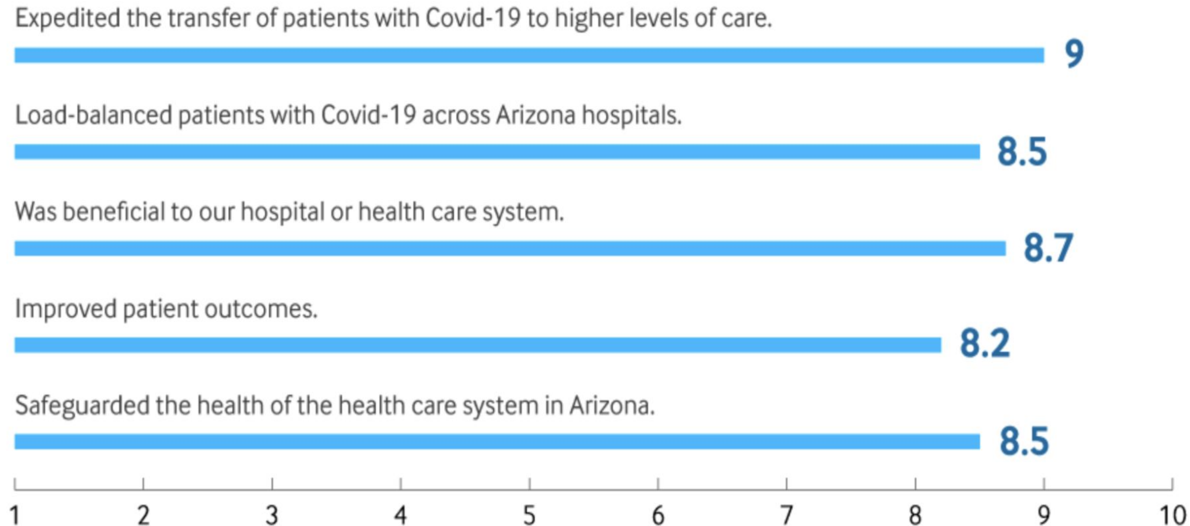
4 Provide critical care and palliative care consultation

84% from rural sending facilities

Data from ASL, date range 4/16/20- 5/31/21

The Arizona Surge Line is evaluated highly by participating hospitals.

Results of the Arizona Surge Line 4-Month Evaluation, on a scale of 1-10 (1=strongly disagree; 10 = strongly agree)



https://catalyst.nejm.org/doi/full/10.1056/CAT.20.0595

The Arizona Surge Line is an equity-enhancing intervention.

- Insurance was removed a barrier
- Waitlist protocol protected rural patients
- Transfers were expedited for patients from vulnerable zip codes
- Transfers were expedited for populations disproportionately impacted by COVID-19
- Rural facilities and providers were supported
- Activation of Alternate Care Sites was postponed
- Triage activation was postponed

Even so, equity could have been operationalized further.

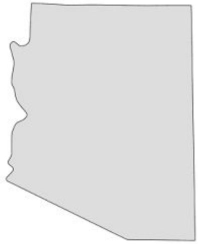
- What about all ICU transfers?
- What about making scope expansion more nimble?
- What about preemptively addressing border closing?
- What about empowering the smaller hospitals?

We wonder what would have happened without the Arizona Surge Line.

- Uncontrolled flow into Phoenix + Tucson
- Imbalanced hospitals
- Widespread diversion + halting transfers
- Activation of triage protocols
- Increased inequity
- Less time at the bedside
- Increased transfers due to insurance
- Decreased bed turnover
- Increased deaths
- Increased burnout

https://www.nytimes.com/2020/05/14/nyregion/coronavirus-ny-hospitals.html

The future of the Arizona Surge Line (and other load-leveling transfer centers) is bright.



- Full time use for Behavioral Health?
- Regular use if seasonal surges?
- Occasional use for public health emergencies?

- National Academy of Medicine (2021)
  “Ensure that strategies are in place to “load balance patients and resources regionally to avoid triage decisions, particularly decisions that are likely to lead to adverse and inequitable outcomes.”
- MN, NM, MD have a similar transfer line
- Multiple state / regional interest

https://nam.edu/national-organizations-share-strategies-to-improve-crisis-standards-of-care-implementation-during-future-covid-19-surges-and-beyond/

Final words…

- **A centralized transfer, load-leveling line should be used in times of hospital surge. It is an equity-enhancing initiative, helps to avoid triage and benefits hospitals and patients alike.**

Selected References

ASPR Tracie. (2020, April 24). *ASPR Tracie technical assistance* [Webinar notes]. https://files.asprtracie.hhs.gov/documents/aspr-tracie-ta-mocc-webinar-qa-final.pdf

Arizona's response to the Covid-19 pandemic. (n.d.). Arizona Department of Health Services. Retrieved June 8, 2021, from https://azdhs.gov/covid19/

Armstrong, D., & Allen, M. (2021, February 18). *Dying on the waitlist.* ProPublica. https://www.propublica.org/article/dying-on-the-waitlist

Begun, J.W., & Jiang, J. (2020). Health care management during Covid-19: Insights from complexity science. *NEJM Catalyst*. Doi: 10.1056/CAT.20.0541

Gold, R., & Evans, M. (2020, September 17). Why did covid overwhelm hospitals? A yearslong drive for efficiency. *Wall Street Journal.*https://www.wsj.com/articles/hospitals-for-years-banked-on-lean-staffing-the-pandemic-overwhelmed-them-11600351907?st=fus1f7qffwuxjop

Healthcare providers and facilities - Arizona Surge Line. (n.d.). Arizona Department of Health Services. Retrieved June 8, 2021, from www.azdhs.gov/surgeline

National organizations share strategies to improve crisis standards of care implementation during future COVID-19 surges and beyond. (2021, May 13). National Academy of Medicine. Retrieved June 8, 2021, fromhttps://nam.edu/national-organizations-share-strategies-to-improve-crisis-standards-of-care-implementation-during-future-covid-19-surges-and-beyond/

Villarroel, L., Christ, C.M., Smith, L., Larsen, C., Staab, R.N., White, M.D., Frey, K.A., Brown, J., Wilson, D., Chapital, A., Gerhardt, A., Gammon, H., Feddersen, M.L., King, D., & Wilhoite, K.B. (2021). Collaboration on the Arizona Surge Line: How Covid-19 became the impetus for public, private, and federal hospitals to function as one system. *NEJM Catalyst.* doi: 10.1056/CAT.20.0595