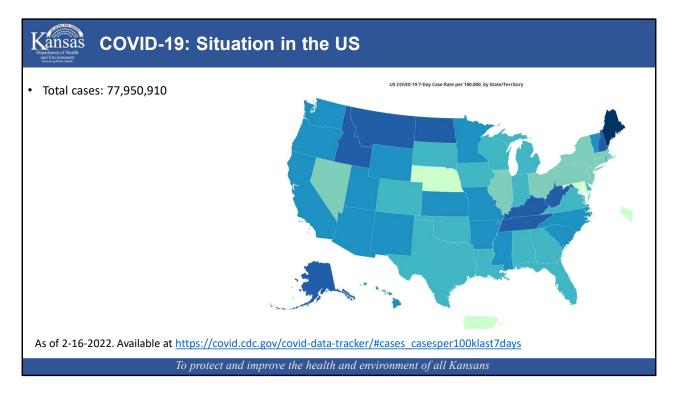




Global Map: https://www.cdc.gov/coronavirus/2019-ncov/locations-confirmed-cases.html.

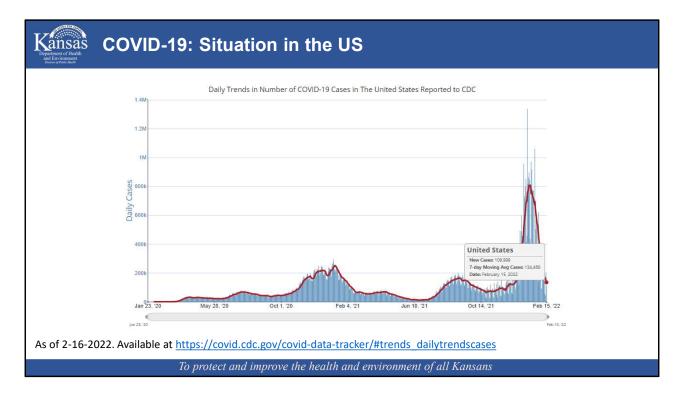
This week, there are over 417 million cases and there are 5,848,485 deaths around the world.



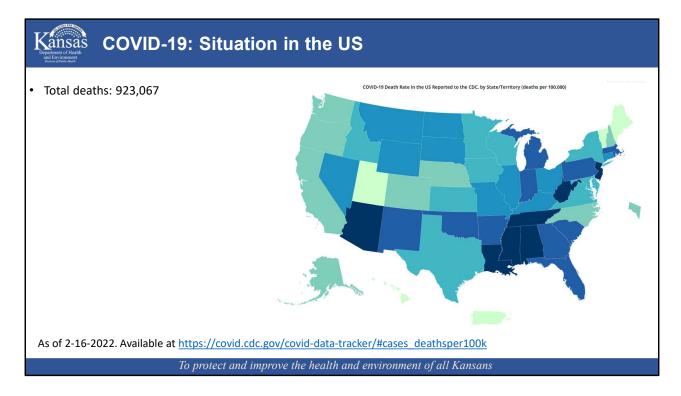
Last week:

Total cases: 76,976,575 (almost 77 million)

As of yesterday: Total cases: 77,950,910



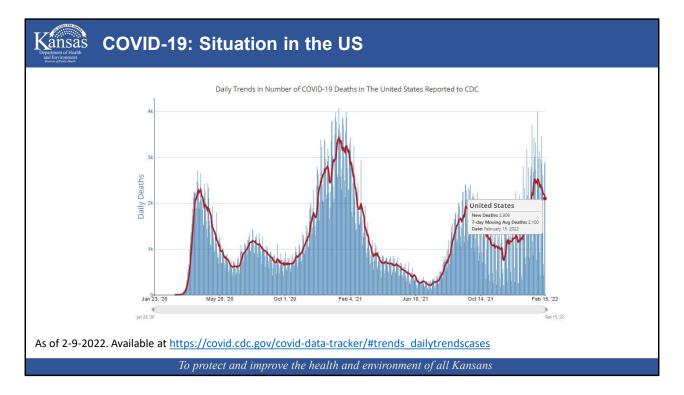
The 7 day average number of cases in the US is 134,468 cases per day. That is down a from about 230,602 cases per day last week.



Last week:

Total deaths since the beginning of the pandemic: 906,603

As of yesterday: 923,067

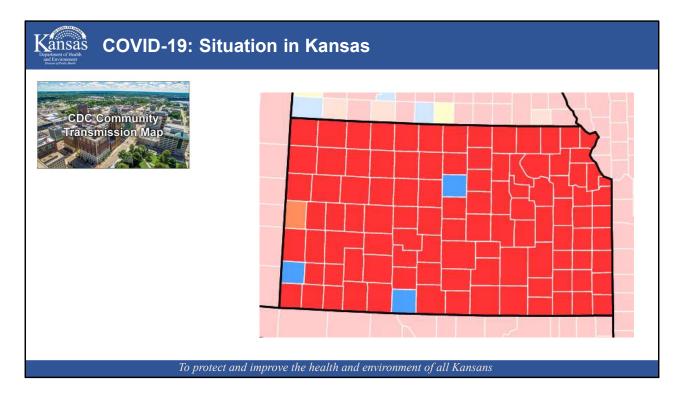


The 7 day average number of deaths in the US is deaths 2,100 per day which is down from last week at 2,356.

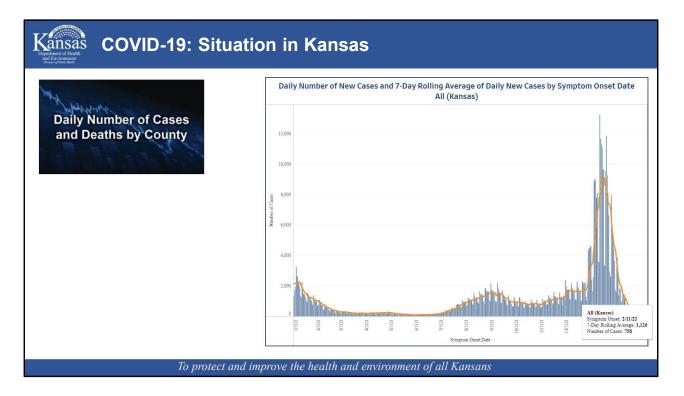
Kansas Description of the second seco	Situation in Kans	sas	
COVID-19 Cases	Hospitalizations	Statewide Deaths	MIS-C*
760,598	19,091	7,890	22
Available at: <u>KDHE COVID-19   Or</u>	ome in Children (MIS-C) associated with e were 2,361 new cases, 30 new deaths, fficial Website (kdheks.gov)	COVID-19. and 125 new hospitalizations reported since	Monday, 2/14/2022.
<i>Io p</i>	protect and improve the health	and environment of all Kansans	

As of yesterday, in Kansas, we had 760,598 cases and 7,890 deaths statewide. That's an increase of 7,624 cases and 70 deaths reported since last week.

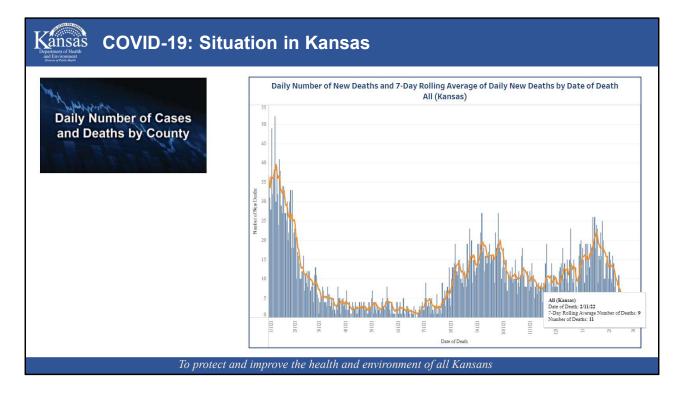
There were 2,361 new cases and 30 new deaths reported between Monday 2/14/2022 and Wednesday 2/16/2022.



Looking at the CDC Community Transmission Map between Wed Feb 09 2022 - Tue Feb 15 2022, Lincoln, Comanche and Stanton counties are in low transmission (blue), Greeley CO is in substantial transmission (orange) and the rest of the state is still in high transmission (red).



If you look at the 7 day average number of cases based on symptom onset date, starting with February 5 through February 11, our 7 day rolling average is 1,126 cases per day. Last week we were at 1,344 cases per day.



If you look at the 7 day average number of deaths based on the date of death, starting with February 5 through February 11, our 7 day rolling average is 9 deaths per day. Last week we were at 12 deaths per day.

	Active COV	/ID-19 Clusters	
Clusters	Cases	Hospitalizations	Deaths
341	9,000	96	86
Clusters	All COVI Cases	D-19 Clusters Hospitalizations	Deaths
3,491	57,703	2,447	2,543
47 outbreak-related	l cases/760,598 cases (7 hospitalizations/19,091 deaths/7,890 total deat	total hospitalizations (12.8%	6)

Moving on to outbreaks:

As of late Tuesday night, we had 3,491 outbreaks identified across the state (since the beginning of the pandemic). This week we have 341active clusters. That is down from 375 last week.

Our percentage of outbreak related cases is 7.6%, outbreak-related hospitalizations is about 12.8% and outbreak-related deaths is about 32.2%.

e	COVID-19 Clust	15	14.043		Active	
Туре	Clusters	Cases	Hospitalizations	Deaths	-	
College or University	2	55	0	0		
Corrections	20	1,858	2	1		
Daycare	26	164	0	0		
Government	1	8	0	0		
Group Living	15	628	7	3		
Healthcare	8	208	4	1		
Long Term Care Facility	214	4,847	82	\$1		
Meat Packing	1	7	0	0		
Private Business	11	204	0	0		
School	41	985	1	0		
Sports	2	36	0	0		
Total	341	9,000	96	86		

We currently have 26 active outbreaks in daycares (35 last week), 20 in corrections, 15 in group living, 8 in healthcare settings, and 214 active outbreaks in LTCFs (similar to last week). We also have 11 in private businesses and 41 in schools (down from 51 last week).

Don't forget, if you are interested in seeing the list of named locations with 5 or more cases within the last 14 days, you can go to the dashboard.

## Kansas COVID-19: Updated Travel Related Quarantine

For the US list:

- 1. Remove: None
- 2. Keep: None
- 3. Add: None

For the International list:

- 1. Remove: None
- 2. Keep: Faroe Islands
- 3. Add: Denmark, Georgia, Iceland, Latvia, Netherlands, Reunion, Slovenia

NOTE: The travel-related quarantine list will be posted 2/17/2022 and all active locations will expire automatically on 3/3/2022. KDHE will no longer update the travel-related quarantine list.

To protect and improve the health and environment of all Kansans

For the US list:

- 1. Remove: None
- 2. Keep: None
- 3. Add: None

For the International list:

- 1. Remove: None
- 2. Keep:

Faroe Islands

3. Add:

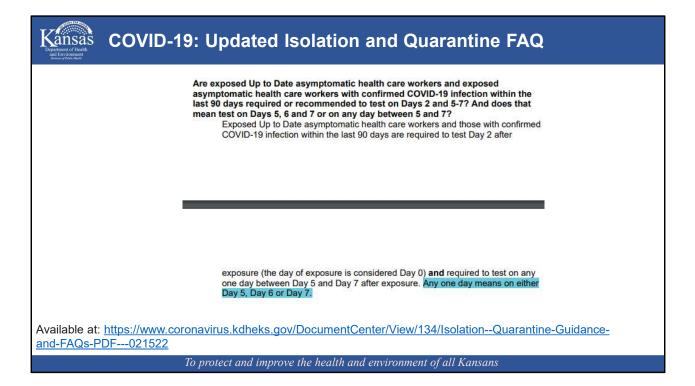
Denmark

Georgia (the country)

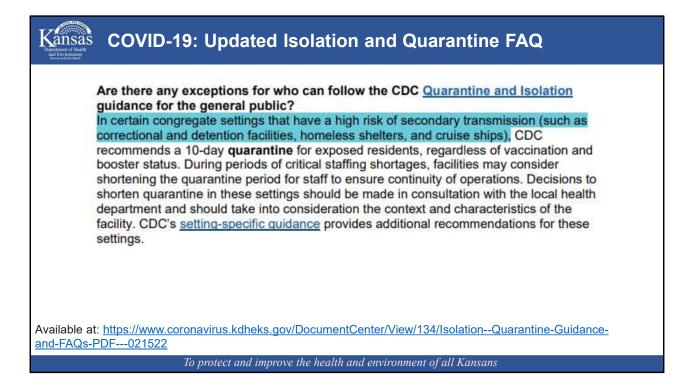
Iceland

Latvia

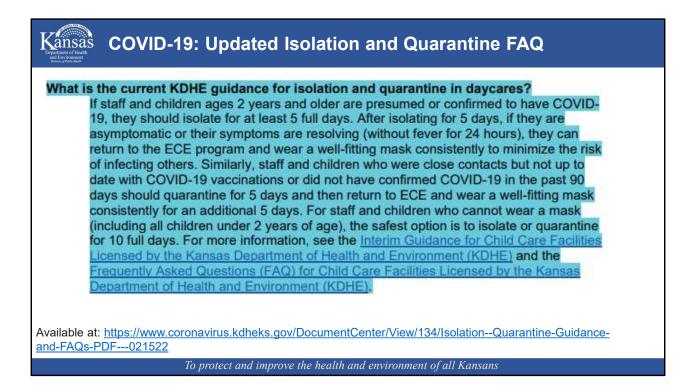
- Netherlands
- Reunion
- Slovenia



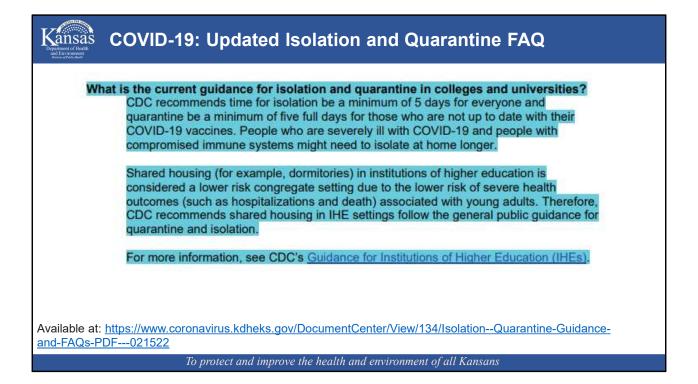
Blue note is a clarifying statement.



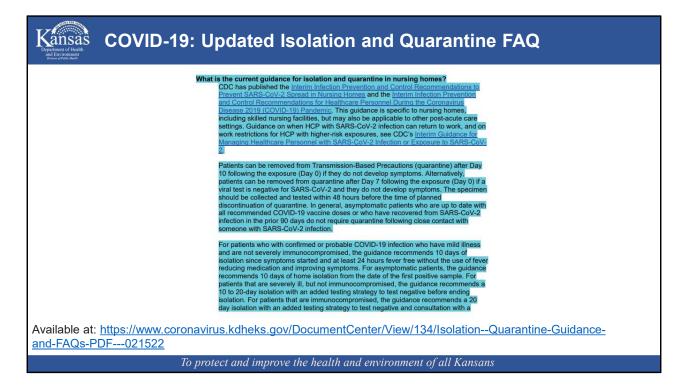
Removed LTCFs from the examples of congregate settings that cannot follow the General Population guidance for Isolation and Quarantine. LTCFs are addressed in their own section now.



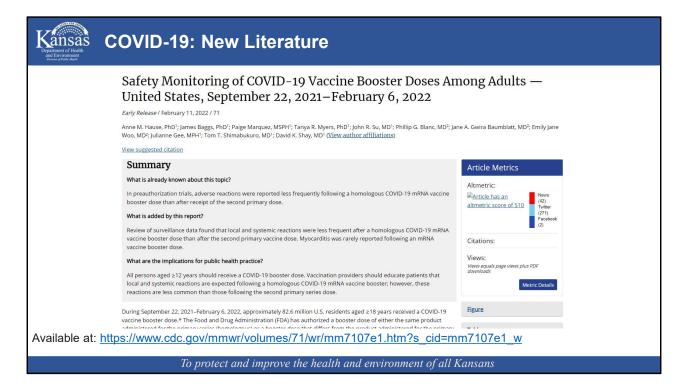
Updated guidance for daycares attendees and caregivers ages 2 and up can follow the General Population guidance for isolation and quarantine. Children under two are recommended to isolate/quarantine for 10 days because they cannot mask properly.



Updated guidance for colleges and universities which can also follow the General Population guidance; this includes dormitories which CDC states is a lower risk congregate setting.



And the FAQ document has been updated to include the guidance for nursing homes that we discussed last week.



To characterize the safety of COVID-19 vaccine boosters among persons aged ≥18 years during September 22, 2021–February 6, 2022, CDC reviewed adverse events and health impact assessments following receipt of a booster that were reported to v-safe and adverse events reported to VAERS.

Among 721,562 v-safe registrants aged ≥18 years who reported receiving a booster, 88.8% received homologous COVID-19 mRNA vaccination. Among registrants who reported a homologous COVID-19 mRNA booster dose, systemic reactions were less frequent following the booster (58.4% [Pfizer-BioNTech] and 64.4% [Moderna], respectively) than were those following dose 2 (66.7% and 78.4%, respectively).

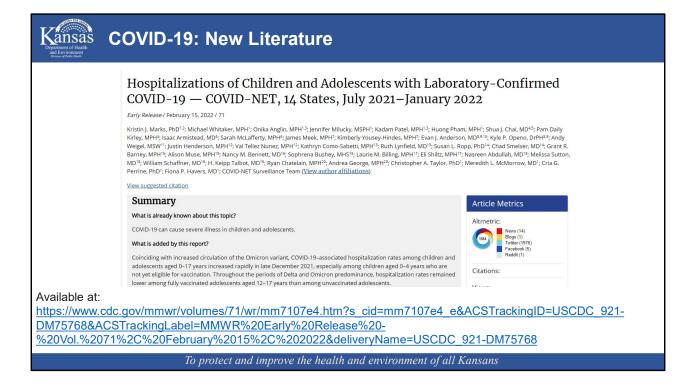
Myocarditis is a rare adverse event associated with receipt of COVID-19 mRNA vaccines; the overall reporting rates of myocarditis following COVID-19 mRNA vaccination were highest among males aged <18 years (5). To date, 37 reports to VAERS of myocarditis among adults aged ≥18 years have met the case definition following administration of 81.2 million COVID-19 mRNA booster doses in the United States. One death was reported; investigation is ongoing, and other contributory factors for myocarditis are being evaluated.

Kansas Department of Health and Environment Druger of Adde Hards	COVID-19: New Literature	
	Waning 2-Dose and 3-Dose Effectiveness of mRNA Vaccir COVID-19–Associated Emergency Department and Urgen and Hospitalizations Among Adults During Periods of Del Variant Predominance — VISION Network, 10 States, Aug 2022	t Care Encounters ta and Omicron
	Early Release / February 11, 2022 / 71	
	Jill M. Ferdinands, PhD'; Suchitra Rao, MBBS*; Brian E. Dixon, PhD <sup>3+</sup> ; Patrick K. Mitchell, ScD <sup>5</sup> ; Mallin B. Desilva, MD <sup>6</sup> ; Stephanie A. Natarajan, PhD <sup>5+1</sup> ; Edward Stenehjem, MD <sup>3+1</sup> ; Shaun J. Grannis, MD <sup>3+2</sup> ; Jungmi Han <sup>9</sup> ; Charlene McEvoy, MD <sup>6</sup> ; Toan C. Ong, PhD <sup>5</sup> ; Al PhD <sup>5</sup> ; Peter J. Embi, MD <sup>3+12</sup> ; Kristin Dascomb, MD <sup>3+</sup> ; Nicola P. Klein, MD <sup>5</sup> ; Eric P. Griggs, MPH <sup>1</sup> ; Deepika Konatham <sup>16</sup> ; Anupam B. K William F. Fadel, PhD <sup>3+</sup> ; Nancy Grisel, MPP <sup>11</sup> ; Kristin Goddard, MPH <sup>5</sup> ; Palak Patel, MBBS <sup>1</sup> ; I-Chia Liao, MPH <sup>14</sup> ; Rebecca Birch, MPH <sup>5</sup> ; PhD <sup>1</sup> ; Julie Arndorfer, MPH <sup>15</sup> ; Ousseny Zerbo, PhD <sup>5</sup> ; Monica Dickerson <sup>1</sup> ; Kempapura Murthy, MBBS <sup>2+</sup> Jeremiah Williams, MPH <sup>1</sup> ; Ca MPH <sup>15</sup> ; Jeline's Charlor, PhD <sup>15</sup> ; Mehriter H. Wondimu, MPH <sup>15</sup> ; Cathor, PhD <sup>15</sup> ; Mehriter H. Wondimu, MPH <sup>15</sup> ; Cathor, PhD <sup>15</sup> ; Mehriter H. Wondimu, MPH <sup>15</sup> ; Cathor, PhD <sup>15</sup> ; Mehriter H. Wondimu, MPH <sup>15</sup> ; Cathor, PhD <sup>15</sup> ; Mehriter H. Wondimu, MPH <sup>15</sup> ; Cathor, PhD <sup>15</sup> ; Michelle A. Barron, MD <sup>2</sup> ; Manjusha Gaglani, MBBS <sup>14,16</sup> ; Mark G. Thompson, PhD <sup>1</sup> ; Bruce Fireman <sup>8</sup> (View author affiliations)	lison L. Naleway, PhD7; Sarah E. Reese, harbanda, MD <sup>15</sup> ; Duck-Hye Yang, PhD <sup>5</sup> ; Nimish R. Valvi, DrPH3; Sue Reynolds, therine H. Bozio, PhD7; Lenee Blanton,
	View suggested citation	
	Summary What is already known about this topic? Protection against COVID-19 after 2 doses of mRNA vaccine wanes, but little is known about durability of protection after 3 doses. What is added by this report?	Article Metrics Altmetric:
Available at:	https://www.cdc.gov/mmwr/volumes/71/wr/mm7107e2.htm?s_cid=m	<u>m7107e2_w</u>
	To protect and improve the health and environment of all H	Kansans

A test-negative case-control study design using data from eight VISION Network sites<sup>§</sup> examined vaccine effectiveness (VE) against COVID-19 emergency department/urgent care (ED/UC) visits and hospitalizations among U.S. adults aged ≥18 years at various time points after receipt of a second or third vaccine dose during two periods: Delta variant predominance and Omicron variant predominance.

During the Delta-predominant period, VE against laboratory-confirmed COVID-19– associated ED/UC encounters was higher after receipt of a third dose than after a second dose; however, VE declined with increasing time since vaccination (<u>Table 2</u>). Among recipients of 3 doses, VE was 97% within 2 months of vaccination and declined to 89% among those vaccinated  $\geq$ 4 months earlier (p<0.001 for test of trend in waning VE).

During the Omicron-predominant period, VE against COVID-19–associated ED/UC encounters was lower overall compared with that during the Delta-predominant period and waned after the second dose, from 69% within 2 months of vaccination to 37% at ≥5 months after vaccination (p<0.001). Protection increased after a third dose, with VE of 87% among those vaccinated within the past 2 months; however, VE after 3 doses declined to 66% among those vaccinated 4–5 months earlier.



This report analyzes data from the Coronavirus Disease 19–Associated Hospitalization Surveillance Network (COVID-NET)<sup>§</sup> to describe COVID-19–associated hospitalizations among U.S. children (aged 0–11 years) and adolescents (aged 12–17 years) during periods of Delta (July 1–December 18, 2021) and Omicron (December 19, 2021–January 22, 2022) predominance.

During the Delta- and Omicron-predominant periods, rates of weekly COVID-19– associated hospitalizations per 100,000 children and adolescents peaked during the weeks ending September 11, 2021, and January 8, 2022, respectively. The Omicron variant peak (7.1 per 100,000) was four times that of the Delta variant peak (1.8), with the largest increase observed among children aged 0–4 years.<sup>¶</sup> During December 2021, the monthly hospitalization rate among unvaccinated adolescents aged 12–17 years (23.5) was six times that among fully vaccinated adolescents (3.8).

Kansas Department of Health and Environment and Environment	COVID-19: New Literature	
	Effectiveness of Maternal Vaccination with mRNA COVID During Pregnancy Against COVID-19–Associated Hospita Aged <6 Months — 17 States, July 2021–January 2022 Early Release / February 15, 2022 / 71 Natasha B. Halasa, MD <sup>1+</sup> , Samantha M. Olson, MPH <sup>2+</sup> , Mary A. Staat, MD <sup>2</sup> ; Margaret M. Newhams, MPH <sup>2</sup> ; Ashley M. Price, MPH <sup>2</sup> Melissa A. Cameron, MD <sup>2</sup> ; Pia S. Pannaraj, MD <sup>2</sup> ; Katherine E. Bline, MD <sup>1</sup> ; Shira J. Gerz, MD <sup>1+</sup> ; Sabrina M. Heideman, MD <sup>3-</sup> ; Ol MD <sup>1+</sup> ; Katherine Irby, MD <sup>2+</sup> ; Staralle Z. Cvijanovich, MD <sup>1+</sup> Heidl, F. Hori, MD <sup>1+</sup> ; Shira J. Gerz, MD <sup>1+</sup> ; Sabrina M. Heideman, MD <sup>3-</sup> ; Ol MD <sup>3+</sup> ; Katherine Irby, MD <sup>2+</sup> ; Jennifer E. Schuster, MD <sup>2-</sup> ; Stephanie P. Schwartz, MD <sup>2+</sup> ; Elizabeth H. Mack, MD <sup>2+</sup> , Aline B. M. Ryan A. Nofziger, MD <sup>2+</sup> ; Jennifer E. Schuster, MD <sup>2-</sup> ; Stephanie P. Schwartz, MD <sup>2+</sup> ; Luzy, MD <sup>2+</sup> ; Elizabeth M. Mack, MD <sup>2+</sup> , Aline B. M. MD <sup>3+</sup> ; Suzanne M. Gilboa, PhD <sup>2</sup> ; Kara N. Polen, MPH <sup>2+</sup> ; Angela P. Campbell, MD <sup>2</sup> ; Adrienne G. Randolph, MD <sup>2+2+</sup> ; Manish M. Patel, ( <u>View author affiliations</u> )	Julie A. Boom, MD <sup>5</sup> ; Leila C. Sahni, PhD <sup>5</sup> ; hleen Chiotos, MD <sup>15</sup> ; Bria M. Coates, MD <sup>15</sup> ; harlotte V. Hobbs, MD <sup>15</sup> ; Janet R. Hume, laddus, MD <sup>25</sup> ; Kelly N. Michelson, MD <sup>12</sup> ; <sup>9</sup> ; Tracie C. Walker, MD <sup>26</sup> ; Matter, MD <sup>12</sup> ; Matter,
DM75768&A	Summary What is already known about this topic? COVID-19 vaccination during pregnancy is recommended to prevent severe illness and death in pregnant women. Infants are at risk for COVID-19-associated complications, including respiratory failure and other life-threatening complications. What is added by this report? Cdc.gov/mmwr/volumes/71/wr/mm7107e3.htm?s_cid=mm7107e3_ede CSTrackingLabel=MMWR%20Early%20Release%20- 71%2C%20February%2015%2C%202022&deliveryName=USCDC	
	To protect and improve the health and environment of all.	Kansans

The Overcoming COVID-19 network conducted a test-negative, case-control study at 20 pediatric hospitals in 17 states during July 1, 2021–January 17, 2022, to assess effectiveness of maternal completion of a 2-dose primary mRNA COVID-19 vaccination series during pregnancy against COVID-19 hospitalization in infants. Among 379 hospitalized infants aged <6 months (176 with COVID-19 [case-infants] and 203 without COVID-19 [control-infants]).

Effectiveness of maternal vaccination during pregnancy against COVID-19 hospitalization in infants aged <6 months was 61% (95% CI = 31%–78%).

## Kansas COVID-19: New Omicron Literature

•A model to predict immunological exposure to SARS-CoV-2 and susceptibility to Omicron suggests that 21.7% and 59.9% of Kansans were protected from infection with Omicron and severe disease from Omicron starting on December 1<sup>st</sup> 2021, respectively.

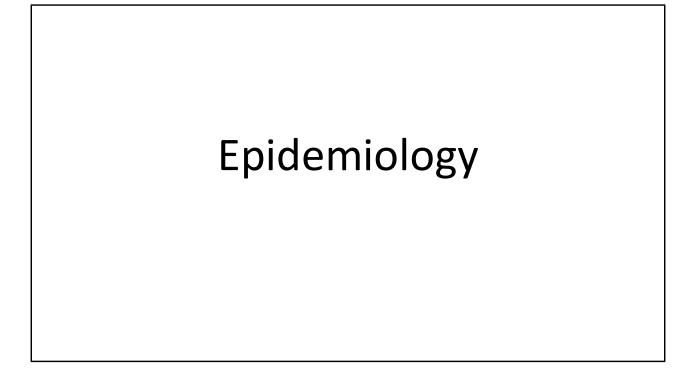
•Individuals who received heart or kidney transplants had much smaller vaccine response against all variants including Omicron if they had been vaccinated only versus vaccinated and previously infected with SARS-CoV-2.

•Health care workers in Israel who receive a 4<sup>th</sup> booster dose of Pfizer or Moderna had improved immune response against Omicron vs. those who only received 3 doses and did not have any severe adverse reactions.

•BA.2 may replicate faster than BA.1 in human nasal epithelial cells.

•BA.1.1 may be more sensitive to Casirivimab and Imdevimab than either BA.1 or BA.2.

To protect and improve the health and environment of all Kansans



### Trends in Disease Severity and Health Care Utilization During the Early Omicron Variant Period Compared with Previous SARS-CoV-2 High Transmission Periods — United States, December 2020–January 2022

Weekly / January 28, 2022 / 71(4);146-152

On January 25, 2022, this report was posted online as an MMWR Early Release.

A. Danielle Iuliano, PhD<sup>1</sup>; Joan M. Brunkard, PhD<sup>1</sup>; Tegan K. Boehmer, PhD<sup>1</sup>; Elisha Peterson, PhD<sup>2</sup>; Stacey Adjei, MPH<sup>1</sup>; Alison M. Binder, MS<sup>1</sup>; Stacy Cobb, PhD<sup>1,2</sup>; Philip Graff, PhD<sup>2</sup>; Pauline Hidalgo<sup>2</sup>; Mark J. Panaggio, PhD<sup>2</sup>; Jeanette J. Rainey, PhD<sup>1</sup>; Preetika Rao, MPH<sup>1</sup>; Karl Soetebier, MAPW<sup>1</sup>; Susan Wacaster<sup>1</sup>; ChinEn Ai, MPH<sup>4</sup>; Vikas Gupta, PharmD<sup>4</sup>; Noelle-Angelique M. Molinari, PhD<sup>1</sup>; Matthew D. Ritchey, DPT<sup>1</sup> (<u>View author affiliations</u>)

Major findings:

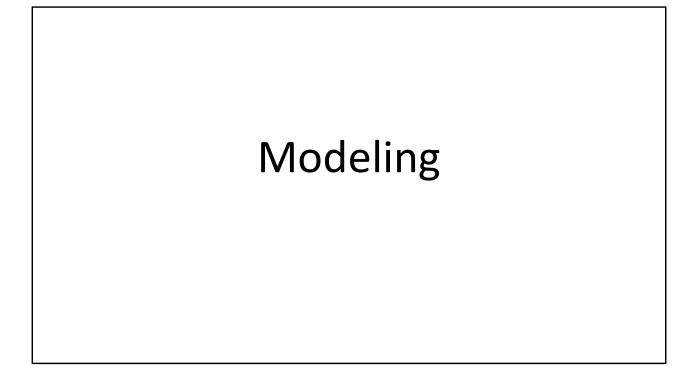
- In the USA, the maximum daily 7-day moving average number of cases was 386% greater, ED visits were 86% greater, admissions were 76% greater and deaths were 4% lower during the Omicron wave versus the Delta wave.
- The increase in cases, ED visits, and admissions was a result of the increase in the number of cases and not due to increased severity of Omicron vs. Delta.

Limitations: The data might be skewed due to differences in self testing between Delta and Omicron, vaccination was not accounted for when comparing severity.

URL: <a href="https://www.cdc.gov/mmwr/volumes/71/wr/mm7104e4.htm?ACSTrackinglD=USCDC\_1133-DM75733&ACSTrackingLabel=NSSP%20Update%20February%202022&deliveryName=USCDC\_1133-DM75733">https://www.cdc.gov/mmwr/volumes/71/wr/mm7104e4.htm?ACSTrackinglD=USCDC\_1133-DM75733&ACSTrackingLabel=NSSP%20Update%20February%202022&deliveryName=USCDC\_1133-DM75733</a>

Summary: CDC examined data from three surveillance systems and a large health care database to assess multiple indicators across three high–COVID-19 transmission periods: December 1, 2020–February 28, 2021 (winter 2020–21); July 15–October 31, 2021 (SARS-CoV-2 B.1.617.2 [Delta] predominance); and December 19, 2021–January 15, 2022 (Omicron predominance). As of January 15, 2022, the maximum daily 7-day moving average number of cases (798,976), ED visits (48,238), admissions (21,586), and deaths (1,854) observed during the Omicron period reflects changes of 219%, 137%, 31%, and -46%, respectively, compared with those during the winter 2020–21 period, and 386%, 86%, 76%, and -4%, respectively, compared with those during the Delta period. The largest relative differences in ED visits and admissions were observed among children and adolescents aged 0–17 years during the Omicron period; however, this age group represented only 14.5% of COVID-19 ED visits and 4.2% of COVID-19 admissions. During the Omicron period, a maximum of 20.6% of staffed inpatient beds were in use for COVID-19 patients, 3.4 and 7.2 percentage points higher than during the winter 2020–21 and Delta periods, respectively. However, ICU bed use did not increase to the same degree: 30.4% of staffed ICU beds were in use for COVID-19 patients during the Omicron period, 0.5 percentage points lower than during the winter 2020–21 period and 1.2 percentage points higher than during the Delta period. When comparing the indicators at their peaks during the Omicron period, event-to-case ratios for ED

visits (87 visits per 1,000 cases), hospitalizations (27 hospitalizations per 1,000 cases), and deaths (nine deaths per 1,000 cases [lagged by 3 weeks]) were lower than those observed during the peak winter 2020–21 (92, 68, and 16, respectively) and Delta (167, 78, and 13, respectively) periods. The percentage of hospitalized COVID-19 patients who received IMV (3.5%) or died while in the hospital (7.1%) during Omicron was lower than during the winter 2020–21 (IMV = 7.5%; deaths = 12.9%) and Delta (IMV = 6.6%; deaths = 12.3%) periods overall, and for both adult age groups (p<0.001). Mean length of hospital stay during Omicron (5.5 days) was 31.0% lower than during the winter 2020–21 (8.0 days) and 26.8% lower than during Delta (7.6 days) periods overall, and for both adult age groups (p<0.001).



Population immunity to pre-Omicron and Omicron SARS-
CoV-2 variants in US states and counties through December 1, 2021
<ul> <li>Payette Klassen, O Melanie H. Chitwood, O Ted Cohen, Virginia E. Pitzer, Marcus Russi,</li> <li>Nicole A. Swartwood, O Joshua A. Salomon, Nicolas A. Menzies</li> <li>doi: https://doi.org/10.1101/2021.12.23.21268272</li> </ul>
<b>doi:</b> https://doi.org/10.1101/2021.12.23.212062/2
No. 1 - Conference
<ul> <li>Major findings:</li> <li>The authors model predicts that 21.7% and 59.9% of Kansans were protected from infection with Omicron and severe disease from Omicron starting on December 1<sup>st</sup> 2021, respectively.</li> </ul>
<ul> <li>As of December 1<sup>st</sup> 2021, the authors predicted that 86.8% of Kansans were immunologically exposed to SARS-CoV-2 through vaccination or infection.</li> </ul>
Limitations: Some of the data for infections come from a statistical model (they modeled data that were already modeled).
URL: https://www.medrxiv.org/content/10.1101/2021.12.23.21268272v2

Summary: The authors used infection data from a statistical model that predicts SARS-CoV-2 infection prevalence in every state and county in the USA, vaccination data from the CDC and data for breakthrough cases from the Census Bureau's Household Pulse Survey to create a model to predict the percent of individuals infected with pre-Omicron variants and/or were vaccinated. After accounting for the waning of protection that occurs over time and the immune escape of the Omicron variant, the authors predicted that only 21.8% of the population of the USA protected from Omicron infection vs. 61.2% were protected from severe disease. The authors also predicted that 88.2% of the population had been immunologically exposed to SARS-CoV-2, but that the protection of the exposure was limited by the time since exposure and immune escape.



Prior SARS-CoV2 infection in vaccinated solid organ transplant recipients induces potent neutralization responses against variants, including Omicron
© Alok Choudhary, © Mark Lerman, © David Calianese, Salman Khan, © Judson Hunt, Afzal Nikaein, © William Honnen, © Dabbu Kumar Jaijyan, Erica Kalu, © Abraham Pinter doi: https://doi.org/10.1101/2022.02.10.22270607
<ul> <li>Major findings:</li> <li>In individuals who received heart or kidney transplants, only 19% (2 dose) and 35% (3 dose) of vaccine recipients had measurable antibody responses against ancestral SARS-CoV-2 and the antibody response to Omicron was 10% at best.</li> <li>In individuals who received heart or kidney transplants, received a 2 or 3 dose SARS-CoV-2 vaccines, and had been previously infected with SARS-CoV-2 all recipients had measurable antibody response to ancestral SARS-CoV-2 and 76% had antibody responses to Omicron.</li> </ul>
Limitations: Small sample size
URL: https://www.medrxiv.org/content/10.1101/2022.02.10.22270607v1

Summary: This study investigated a panel of CoV2 infected- (n=13) and uninfected-(n=63) vaccinated kidney and heart transplant recipients for antibody responses against 8 SARS-CoV-2 variants. Strong neutralization of Omicron (IC50>1:600) was observed in 6/8 two-dose vaccinated transplant patients with prior CoV2 infection while only 2/43 uninfected-vaccinated plasma reached this strength against Omicron with two doses of the vaccine. In the two-dose vaccinated cohort, only 17% (8/43) of CoV2 uninfected transplant patients reached the minimal protective titer against D614G, which decreased to 9% (4/43) against the highly resistant Omicron variant. Similar trends were observed in CoV2 infected-vaccinated transplant patients against D614G (IC50>1:1000 for 3/5 SOTRs) and Omicron (IC50>1:600 for 2/5 SOTRs). In three dose vaccinated cohorts, CoV2 uninfected transplant patients showed improved immunity compared to two dose cohorts, with 35% of SOTRs reaching the minimal protective titer against D614G and 15% against Omicron. Overall, transplant patients who had been vaccinated and previously infected with SARS-CoV-2 had a much greater antibody against all variants including Omicron.

Fourth Dose COVID mRNA Vaccines' Immunogenicity & Efficacy Against Omicron VOC
Gili Regev-Yochay, Tal Gonen, Mayan Gilboa, Michal Mandelboim, Victoria Indenbaum, Sharon Amit, Lilac Meltzer, Keren Asraf, Carmit Cohen, Ronen Fluss, Asaf Biber, Ital Nemet, Limor Kliker, Gili Joseph, Ram Doolman, Ella Mendelson, Laurence S Freedman, Dror Harats, Yitshak Kreiss, Yaniv Lustig doi: https://doi.org/10.1101/2022.02.15.22270948
<ul> <li>Major findings:</li> <li>Recipients of a 4<sup>th</sup> booster dose of Moderna or Pfizer types had a ~9-10-fold increase in IgG and neutralizing titers within 2 weeks of vaccination and an 8-fold increase in live Omicron VOC neutralization.</li> <li>Breakthrough infections were common, mostly very mild, yet, with high viral loads.</li> <li>Vaccine efficacy against infection was 30% and 11% for Pfizer and Moderna, respectively.</li> <li>Adverse reactions to the 4<sup>th</sup> booster were reported, but were not different from the other doses.</li> </ul>
• Adverse reactions to the 4 <sup>st</sup> booster were reported, but were not different from the other doses. Limitations: This study was performed on health care workers and was not randomized and may not be applicable to the general public due to differences in exposure.

URL: https://www.medrxiv.org/content/10.1101/2022.02.15.22270948v1

Summary: The authors enrolled 154 and 120 health care works to receive Pfizer or Moderna 4<sup>th</sup> booster does, respectively, and compared subsequent immune responses to 426 age-matched controls that did not receive a 4<sup>th</sup> dose. Within 1-3 weeks of administration of either of the vaccines' fourth dose, anti-RBD IgG titers increased 9-10fold, to titers slightly higher than those of the first month after the third dose. T-cells from individuals who received a 4<sup>th</sup> dose of the Moderna vaccine had greater activation when incubated with spike proteins, while T-cells from individuals who received the 4<sup>th</sup> dose of the Pfizer vaccine had no additional activation. Vaccine efficacy against infection was 30% (95%CI:-9% to 55%) and 11% (95%CI:-43% to +43%) for Pfizer and Moderna, respectively. Overall, breakthrough infections were mild and no severe adverse reactions were detected.

# Characteristics of Omicron Variants

#### Virological characteristics of SARS-CoV-2 BA.2 variant

Daichi Yamasoba, Izumi Kimura, Hesham Nasser, Yuhei Morioka, Naganori Nao, Jumpei Ito, Keiya Uriu, Masumi Tsuda, Jiri Zahradnik, Kotaro Shinakawa, Rigel Suzuki, Taki Kishimoto, Yusuke Kosugi, Kouji Kobiyama, Teppei Hara, Mko Toyoda, Yiri Lanaka, Erika P Buternanaka, Royo Shimizu, Hayato Ito, Lei Wang, Yoshitaka Oda, Yasuko Orba, Michihito Sasaki, Kayoko Nagata, Kamiko Yoshimatsu, Hiroyuki Asakura, Mani Nagashima, Kenji Sadamasu, Kazuhisa Yoshimura, Jin Kuramochi, Motoaki Seki, Royi Fujiki, Asushi Kaneda, Tadanaga Shimada, Taka-aki Nakada, Seinchiro Sakao, Takuji Suzuki, Takamasa Ueno, Alifumi Takaori-Kondo, Ken J Ishii, Gideon Schreiber, The Genotype to Phenotype Jagan (G2P-Japan) Consortium, Hirofumi Sawa, Akatsuki Saito, Takashi Irie, Shinya Tanaka, Keita Matsuno, Takasuke Fukuhara, Terumasa Ikeda, Kei Sato doi: https://doi.org/10.1101/2022.02.14.480335

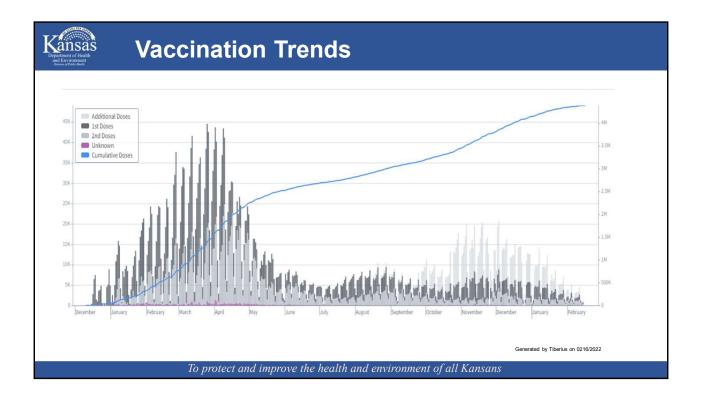
conclusive picture of BA.2 characteristics.

URL: https://www.biorxiv.org/content/10.1101/2022.02.14.480335v1

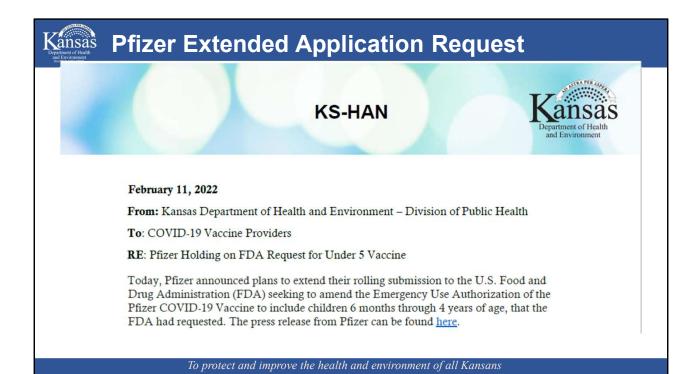
Summary: To quantify the spread speed of each SARS-CoV-2 lineage in the human population, the authors estimated the relative effective reproduction number of each variant using data from GISAID that indicated the count of lineage by country by day in a multinomial logistic regression. All variants were compared to the baseline of Omicron BA.1. The authors model suggests that Omicron BA.2 reproduces in the population at 1.4 times the rate of BA.1. Similar to BA.1, BA.2 was also highly resistant to the vaccine-induced antisera. Also, BA.2 was almost completely resistant to two therapeutic monoclonal antibodies, Casirivimab and Imdevimab, and was 35-fold more resistant to another therapeutic antibody, Sotrovimab, when compared to the ancestral D614G-bearing B.1.1 virus. These data suggest that, similar to BA.1, BA.2 is highly resistant to the antisera induced by vaccination and infection with other SARS-CoV-2 variants as well as three antiviral therapeutic antibodies. Both BA.1 and BA.2 exhibited pronounced resistances against B.1.1- and Delta-infected convalescent hamster sera. Interestingly, BA.2 was significantly (2.9-fold) more resistant to BA.1-infected convalescent hamster sera than BA.1. To further verify the resistance of BA.2 against BA.1-induced immunity, mice were immunized with the cells expressing the S proteins of ancestral B.1.1 and BA.1 and obtained murine antisera. Again, the neutralization assay using murine sera showed that BA.2 is more significantly (6.4-fold) resistant to the BA.1 S-immunized sera than BA.1. These findings suggest that BA.1-induced

humoral immunity is less effective against BA.2.





	Avoid missed opportunities!
N	Vinimum order is 1 vial of any vaccine through direct shipment form KDHE
•	complete the following order form as soon as possible and no later
than V	Vednesday 5pm CT.
	Vednesday 5pm CT Please keep Vaccine Finder current. ppacts vaccine.gov and visibility of the vaccine you have available to administer in addition to ordering caps for the state.



## Kansas Pfizer Extended Application Request

Friday's <u>FDA statement</u> after Pfizer released a <u>statement</u> announcing an extension to their EUA application to allow for data on the effectiveness of a third dose. "*Given that the study is advancing at a rapid pace, the companies will wait for the three-dose data as Pfizer and BioNTech continue to believe it may provide a higher level of protection in this age group. This is also supported by recent observations of three dose booster data in several other age groups that seems to meaningfully augment neutralizing antibody levels and real-world vaccine protection for omicron compared to the two-dose regimen. The companies expect to have three-dose protection data available in early April".* 

# Kansas CDC Updated Clinical Guidance

- On Friday, the Centers for Disease Control and Prevention (CDC) issued updates and a clarification to <u>COVID-19 vaccination guidance</u> to help ensure people have optimal protection against SARS-CoV-2 infection, severe illness, and death.
- For people who are moderately or severely immunocompromised, these updates and clarification cover the number of doses needed and the appropriate dosing schedule. In summary, here is the updated COVID-19 vaccination schedule for people who are moderately or severely immunocompromised, with the clarification and updates highlighted:

AINSAS Intrent of Health I Environment in at Phate Heads	C Upo	lated Cl	inical G	uidanc	9	
Primary vaccination	Age group	Number of primary vaccine doses	Number of booster doses	Interval between 1st and 2nd dose	Interval between 2nd and 3rd dose	Interval between 3rd and 4th dose
Pfizer-BioNTech	5–11 years	3	NA	3 weeks	≥4 weeks	N/A
Pfizer-BioNTech	≥12 years	3	1	3 weeks	≥4 weeks	≥3 months
Moderna	≥18 years	3	1	4 weeks	≥4 weeks	≥3 months
Janssen	≥18 years	1 Janssen, followed by 1 mRNA	1	4 weeks	≥2 months	N/A

ALCONT.

# Kansas CDC Updated Clinical Guidance

People who previously received antibody products (anti-SARS-CoV-2 monoclonal antibodies or convalescent plasma) as part of COVID-19 treatment, post-exposure prophylaxis, or preexposure prophylaxis can be vaccinated at any time; **COVID-19 vaccination does not need to be delayed following receipt of monoclonal antibodies or convalescent plasma**. Although some <u>reduction in vaccine-induced antibody titers</u> was observed in people who previously received antibody products, the clinical significance of this reduction is unknown, and the balance of benefits vs. risks favors proceeding with vaccination even considering the possibility of diminished vaccine effectiveness in this situation.

However, in people who previously received a COVID-19 vaccine, administration of tixagevimab/cilgavimab (EVUSHELD<sup>™</sup>) for pre-exposure prophylaxis should be deferred for at least two weeks after vaccination, per the product <u>EUA</u>

#### Kansas NEW Pfizer Controlant Data "SAGA Logger" Coming This Week

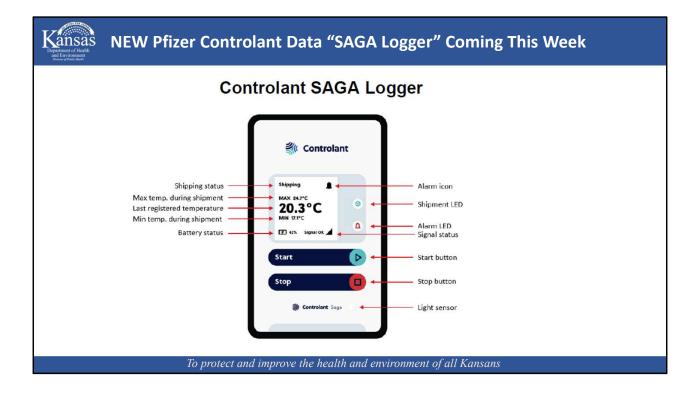
This only applies to direct shipments from Pfizer – Not redistribution from KDHE

- Starting this week, Pfizer vaccine shippers will begin transitioning to an updated data logger from Controlant. This new device called "SAGA Logger" will provide improved performance for monitoring and reporting during shipment. The key improvements to this device include:
  - Enhanced location accuracy with WiFi
  - Utilization of the 4G cellular network
  - Interactive LCD display with an improved user interface
  - 150 days of backup storage when no cloud is available
  - Longer battery life
  - Improved data transmission capability

#### Kansas NEW Pfizer Controlant Data "SAGA Logger" Coming This Week

This only applies to direct shipments from Pfizer – Not redistribution from KDHE

- The new interactive LCD tracker display shows current temperatures and the minimum and maximum temperatures of the shipper contents during transit. The screen also includes an easy-to-read status indicator for the safer NiMH extended-life battery.
- The new SAGA Logger is slightly larger in size and, as with the previous logger, requires return shipping in the packaging materials provided with your order.



## Kansas Pfizer Education

#### Medical Updates & Immunization Site Training for All Healthcare Providers led by Pfizer Vaccines US Medical Affairs

Goal: Educate providers and immunization staff personnel on the proper use of the Pfizer-BioNTech COVID-19 Vaccine

#### **Updated Schedule**

To access dates and links for upcoming training sessions, please visit: https://www.pfizermedicalinformation.com/en-us/medical-updates

# Kansas Pfizer Education

#### Session topics include:

•\*NEW\* Introduction of new Controlant Temperature Monitoring Device

•Use of each vaccine presentation, including storage, handling, preparation, and administration for:

- Ages 5 through 11 Years: DILUTE BEFORE USE/Orange Cap
- Ages 12 Years and Older: DO NOT DILUTE/Gray Cap; DILUTE BEFORE USE/Purple Cap

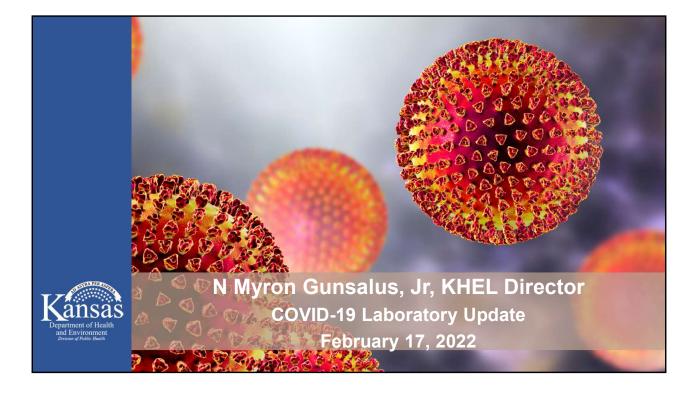
•Recent medical updates regarding the vaccine

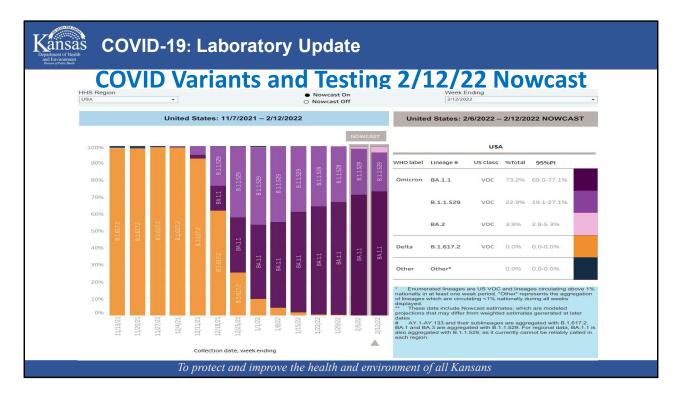
•An overview of healthcare provider resources

•Question and answer session

These sessions will be **updated** to reflect the latest information and recent changes which will be identified at the start of each session.

Kansas Department of Health and Environment Device of Patter Health	Pfizer Education	
	Date & Time (Note times listed are ET)	Password
	<u> Attendee link -Thursday, February 17 - 12pm ET</u>	niX7fg3xTR3
	<u> Attendee link – Tuesday, February 22 - 3pm ET</u>	MMeBHKrM326
	<u> Attendee link – Wednesday, February 23 - 12pm ET</u>	NgBarUWa228
	<u> Attendee link – Thursday, February 24 - 12pm ET</u>	nMfj6BJEy32
	<u> Attendee link – Tuesday, March 1 - 3pm ET</u>	svU8YkF58Qc
	<u> Attendee link – Wednesday, March 2 - 12pm ET</u>	3jJ2WJMgeb8
	<u> Attendee link – Thursday, March 3 - 12pm ET</u>	4UBrwQDva77
	<u> Attendee link – Tuesday, March 8 - 3pm ET</u>	yMMMMnf5U44
	<u> Attendee link – Wednesday, March 9 - 12pm ET</u>	2nWpjWa5H8B
	<u> Attendee link – Thursday, March 10 - 12pm ET</u>	YMeTxT4qf43
	<u> Attendee link – Tuesday, March 15 - 3pm ET</u>	fVJzVYdN326
	<u> Attendee link – Wednesday, March 16 - 12pm ET</u>	jEAtpMcM365
	<u> Attendee link – Thursday, March 17 - 12pm ET</u>	hwE2sdzwZ53
	<u> Attendee link – Tuesday, March 22 - 3pm ET</u>	miSmuZnQ358
	<u> Attendee link – Wednesday, March 23 - 12pm ET</u>	iPdKJ8Cia66
	<u> Attendee link – Thursday, March 24 - 12pm ET</u>	xpM3jXQu7K5



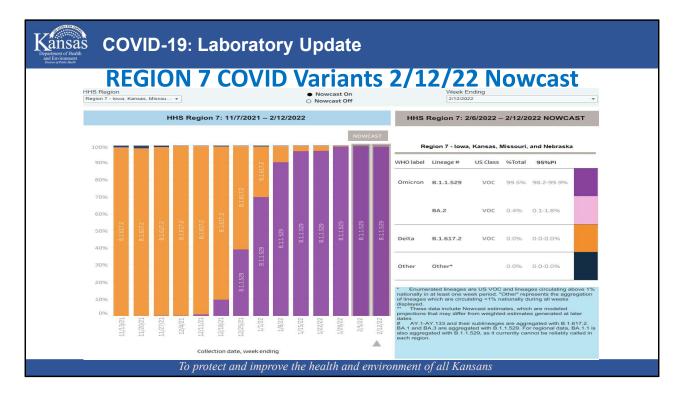


https://covid.cdc.gov/covid-data-

tracker/?CDC\_AA\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019ncov%2Fcases-updates%2Fvariant-surveillance%2Fgenomic-surveillancedashboard.html#variant-proportions

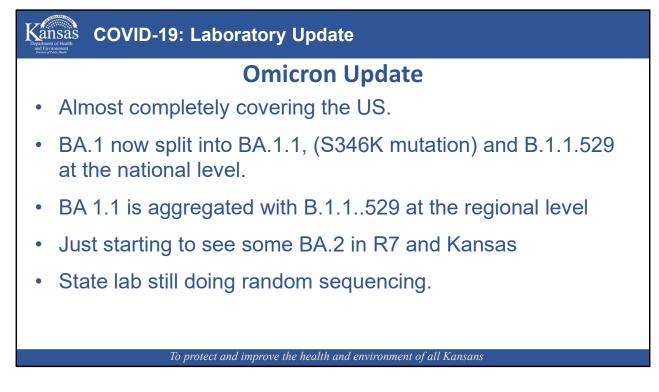
We can see that the BA.2 is now 3.9% nationally

BA.1.1 is now differentiated from the original lineage of Omicron B.1.1.529



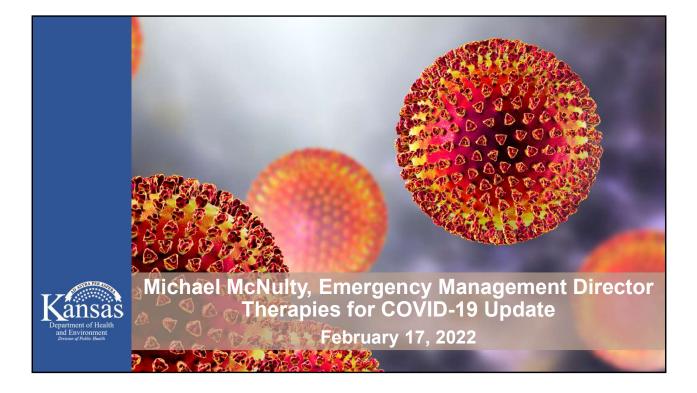
https://covid.cdc.gov/covid-data-

tracker/?CDC\_AA\_refVal=https%3A%2F%2Fwww.cdc.gov%2Fcoronavirus%2F2019ncov%2Fcases-updates%2Fvariant-surveillance%2Fgenomic-surveillancedashboard.html#variant-proportions



https://www.kdheks.gov/it\_systems/ks-han.htm

Kansas COVID-19: Laboratory Update
Helpful Contacts
General Laboratory Information and LABXCHANGE
<u>KDHE.KHELINFO@ks.gov</u>
CLIA Certification Questions:
<u>KDHE.CLIA2@ks.gov</u>
School Testing Program Contact
<ul> <li>Sarah Allin, K-12 Funding Project Manager</li> <li><u>Sarah.allin@ks.gov</u></li> </ul>
Courier Service
Chad Yamashita (Chad.Yamashita@ks.gov)
To protect and improve the health and environment of all Kansans



### Kansas Bebtlovimab

- The FDA has issued an EUA for the emergency use of the unapproved product bebtelovimab (175mg/2mL) for the treatment of mild-to-moderate COVID-19 in adults and pediatric patients (12 years of age and older weighing at least 40kg):
  - with positive results of direct SARS-CoV-2 viral testing, and
  - who are at high-risk for progression to severe COVID-19, including hospitalization or death, and
  - for whom alternative COVID-19 treatment options approved or authorized by FDA are not accessible or clinically appropriate
- Bebtelovimab retains activity against both the omicron variant and the BA.2 omicron subvariant
- Bebtelovimab must be administered as a single intravenous injection over at least 30 seconds.
- CMS is currently working on billing codes.
- NDC is on the Carton and Vial. 0002-7589-01

### Kansas Bebtlovimab Limitations

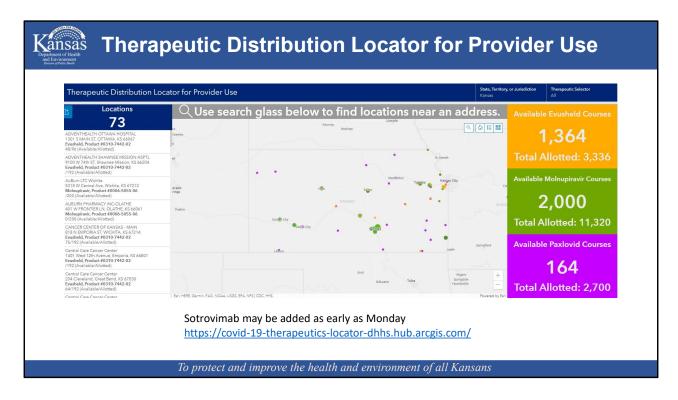
- Bebtelovimab is not authorized for use in patients, who:
  - Are hospitalized due to COVID-19, OR
  - Require oxygen therapy and/or respiratory support due to COVID-19, OR
  - Require an increase in baseline oxygen flow rate and/or respiratory support due to COVID-19 and are on chronic oxygen therapy and/or respiratory support due to underlying non-COVID-19 related comorbidity.
- Treatment with bebtelovimab has not been studied in patients hospitalized due to COVID-19. Monoclonal antibodies, such as bebtelovimab, may be associated with worse clinical outcomes when administered to hospitalized patients with COVID-19 requiring high flow oxygen or mechanical ventilation.
- http://www.lillyantibody.com/bebtelovimab

				Kansas Monoclonal Antibodies
				700
WEEK	Bebtelovimab	Evusheld	Sotrovimab	600
17-Jan	0	624	450	500
<mark>24-Jan</mark>	<mark>0</mark>	<mark>624</mark>	<mark>576</mark>	400
31-Jan	0	640	528	
7-Feb	0	416	552	300
14-Feb	285	432 (-30.7%)	504 (-12.5%)	200
				0
				3-Jan 10-Jan 17-Jan 24-Jan 31-Jan 7-Feb 14-Feb
				BebtelovimabEvusheldSotrovimab

Anticipate level allocations through at least February.

## Kansas Therapies Strategy Implementation

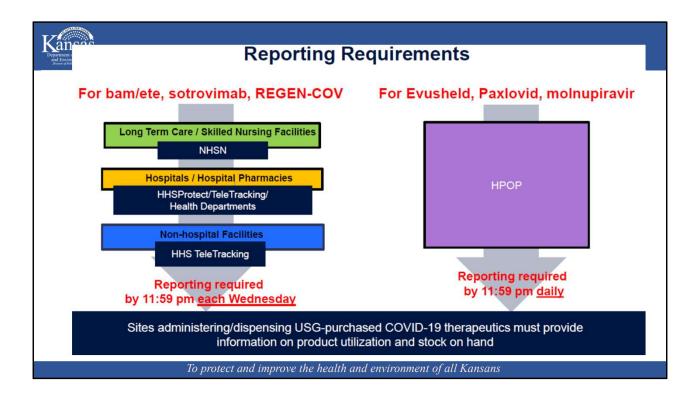
- Monoclonal Antibodies
  - Hospitals
- Oral Antivirals
  - Federal Pharmacy Partnership, Long Term Care Serving Pharmacies, Independent community, hospital and other chain pharmacies
- Evusheld
  - Centers focused on identified at-risk populations covered under EUA (Transplant centers, cancer centers, etc.), All hospitals



https://covid-19-therapeutics-locatordhhs.hub.arcgis.com/

## Kansas Movement to HPOP

- Single allocating process through HPOP coming
  - Therapeutics allocating through HPOP started February 14, 2022
  - Only sites that have completed the HPOP process will be eligible for allocations
- Therapeutics reporting process will remain in place for the time being
  - HHS exploring options to streamline and reduce reporting burden on providers
  - Timeline for reporting changes TBD



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## Kansas Therapies Questions

- Will HHS transition back to the regular direct ordering process? If so, when?
  - HHS will continue to monitor product utilization rates, COVID-19 case burden, and overall availability of USG-procured COVID-19 therapeutics to determine when a shift back to a direct ordering process might occur.
  - During this pandemic, it is imperative that COVID-19 therapeutics are accessible in a fair and equitable manner within communities across the country. It is for this reason that HHS oversees the distribution of COVID-19 therapeutics with equity and efficiency at the heart of allocation determinations.
- If you have any questions related to monoclonal antibody distribution in Kansas, please contact Michael McNulty (<u>mike.mcnulty@ks.gov</u>)
- Issues with Logging into and using HPOP 833-748-1979 or cars\_helpdesk@cdc.gov

