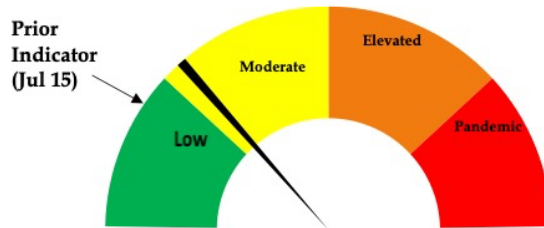




Risk Dial July 30, 2021



Risk Dial for COVID-19
Two Rivers Public Health
Published Jul 30, 2021

- 75 cases of COVID were detected in TRPHD in the past week, over 105 in the past fortnight. Positivity rate of tests conducted outside residential and long-term care facilities is over 10%, the first time since March of this year.
- Genetic testing among a select sampling of cases in TRPHD reveal that a majority of cases now seen in the district are of the B.1.617.2 (Delta) variant of COVID-19. This variant is at least as infectious as the existing COVID strain (B.117) and seems to result in severe illness in younger persons as compared to earlier.
- Across TRPHD, COVID-related bed occupancy is at 13 and two persons are currently being maintained on ventilator support. This is the highest number in the district in the last 5 months (see <https://www.trphd.org/> for details).
- As of Jul 27, 2021, a little less than 39% of TRPHD's total population has been fully vaccinated. About 50% of the adult population (18+years) has been fully vaccinated across the district. See weekly vaccination report at <https://www.trphd.org/covid-19/vaccination-reports.html> for details.
- TRPHD strongly urges all eligible residents to access vaccination through the local pharmacy, TRPHD or through their healthcare provider.
- For these reasons, the risk dial is raised from the previous time it was reset (July 15). Risk in the district is assessed to be "moderate", up from the "low" rating earlier. The increase reflects recent rapid increase in COVID test positivity rates, slower-than-expected increase in vaccination coverage and the sudden rise in COVID- bed utilization rates.

The COVID-19 report was published bi-monthly following lower test positivity rates in June (less than 15 new cases detected per week). The risk dial was also downgraded to "Low". However, the recent increase in cases and the rise in COVID hospitalizations has prompted TRPHD to move back to weekly reporting, starting this week. We will also transition to a different reporting strategy for districtwide data, although the graphs will continue as before.



Weekly report Jul 21 – Jul 27, 2021

Overview

The weekly report will look at COVID-19 cases in TRPHD across different time periods, presenting graphs showing daily progress of cases and a weekly summary in conclusion

- The tables describe total tests conducted and positive cases across TRPHD. We show positive cases and tests conducted by county, age and gender from **Jul 21 – Jul 27** (1 week) and **Jun 30 – Jul 27** (4 weeks). We describe cases in residential facilities¹ separately from other tests conducted in the district.
- The first graphic describes **the vaccination coverage rate of TRPHD residents by county** between **December 15, 2020 – Jul 27, 2021**. All residents are included to calculate the **proportion of the total population that is partially or fully vaccinated**.
- The second set of graphs look at the progress of the pandemic from **April 1, 2020 – July 27, 2021** across all counties.
 - We describe the **7-day rolling average**² of positive cases across TRPHD since April, describing overall progress and cases by **age categories**
- The third set of graphs describe daily COVID tests conducted from **April 1, 2020 – July 27, 2021**. Tests are further denoted as positive or negative. Also displayed is the average weekly **positivity rate (7-day rolling)** in TRPHD from **July 1, 2020 – July 27, 2021**.³
- The fourth set of graphs describe the daily case average (7-day rolling) across towns and cities in three urban areas (**Kearney, Lexington, Holdrege**) (July 1, 2020- July 27, 2021)⁴
 - The cities described are Kearney, Elm Creek, Pleasanton, Amherst, Riverdale, Gibbon, Shelton and Axtell (total 39,412 people), Lexington, Overton, Elwood, Johnson Lake and Cozad (total 15,700 people), Holdrege, Loomis and Funk (total 5967 people).
- The fifth set of graphs describe the daily average of cases (7-day rolling average) from **Jun 30 – Jul 27**.
 - Progress is described by age and city of residence in each of the 7 counties

To conclude, weekly COVID test positivity rate continues to rise across the district, one in eight COVID tests conducted outside of long term care facilities in the past week was positive. COVID testing seems to have shifted to clinical centers and private labs. Two Rivers Health Department continues to receive reports cases of the Delta variant (B.1617.2) in the district. We assume that this variant accounts for a majority of new cases in the last month. 39% of the total population of TRPHD district is now fully vaccinated, including half of all adults (18 years or more). TRPHD has scheduled mobile vaccination clinics at almost 15 sites across seven counties. Those eligible for the vaccine are advised to contact their physician or refer to the vaccination clinic schedule at www.trphd.org. In the meantime, unvaccinated residents are advised to continue to adhere to strict preventive measures (social distancing, correct and consistent masking) at all times to protect themselves and others.

¹ For information on residential facilities, please see appendix 3

² 7-day rolling average refers to the sum of the cases reported on that day and the preceding 6 days divided by 7.

This number is presented for each day to ‘smooth out’ the line for cases.

³ For information on “average positivity rate”, please see appendix 2

⁴ For information on urban areas, please see appendix 5



Testing & Vaccination Overview

- As of July 27, 2021, over 63,000 residents of Two Rivers Health District were tested at least once for COVID-19. Over 143,000 tests have been conducted since March 1, 2020 and over 10,100 persons have tested positive at least once, a small proportion testing COVID positive more than once.⁵ TRPHD has publicly notified 120 deaths due to COVID-19 across the district.
- As of July 26, 39% of TRPHD's entire population has been fully vaccinated. ⁶ Details of vaccination progress are discussed separately.

Details of all COVID tests conducted in Two Rivers' Health District the past 1 week and 4 weeks is displayed below

	Jul 21 - Jul 27 (1 week)			Jun 30 - Jul 27 (4 weeks)		
	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Hospital/ Clinic	364	56	15.4%	1027	105	10.2%
TestNebraska	18	4	22.2%	91	15	16.5%
Residential Facility	727	0	0.0%	1997	2	0.1%
Lab/ Pharmacy	48	5	10.4%	148	6	4.1%
Other	146	10	6.8%	373	17	4.6%
TOTAL	1,303	75	5.8%	3,636	145	4.0%

- A total of 1997 tests were availed by residents and staff of long-term care and other residential facilities ⁷ in the last 4 weeks. Details are provided below:

	Jul 21 - Jul 27 (1 week)			Jun 30 - Jul 27 (4 weeks)		
Residential Facility In:	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Buffalo	280	0	0.0%	938	0	0.0%
Dawson	50	0	0.0%	192	0	0.0%
Franklin	0	0	0.0	0	0	0.0
Gosper	120	0	0.0%	200	0	0.0%
Harlan	11	0	0.0%	65	0	0.0%
Kearney	0	0	0.0	192	0	0.0%
Phelps	247	0	0.0%	349	1	0.3%
Outside TRPHD	19	0	0.0%	61	1	1.6%
TOTAL	727	0	0.0%	1997	2	0.1%

⁵ Note: The minor differences between the numbers reported and totals displayed on www.trphd.org dashboards is explained by testing in residential facilities and isolated rapid test results that are not reflected in the state's public dashboards. Tests of persons missing date of birth are excluded from the analysis

⁶ For information on vaccine-eligible population in each of the counties, please see appendix 4

⁷ For information on residential facilities, please see appendix 3



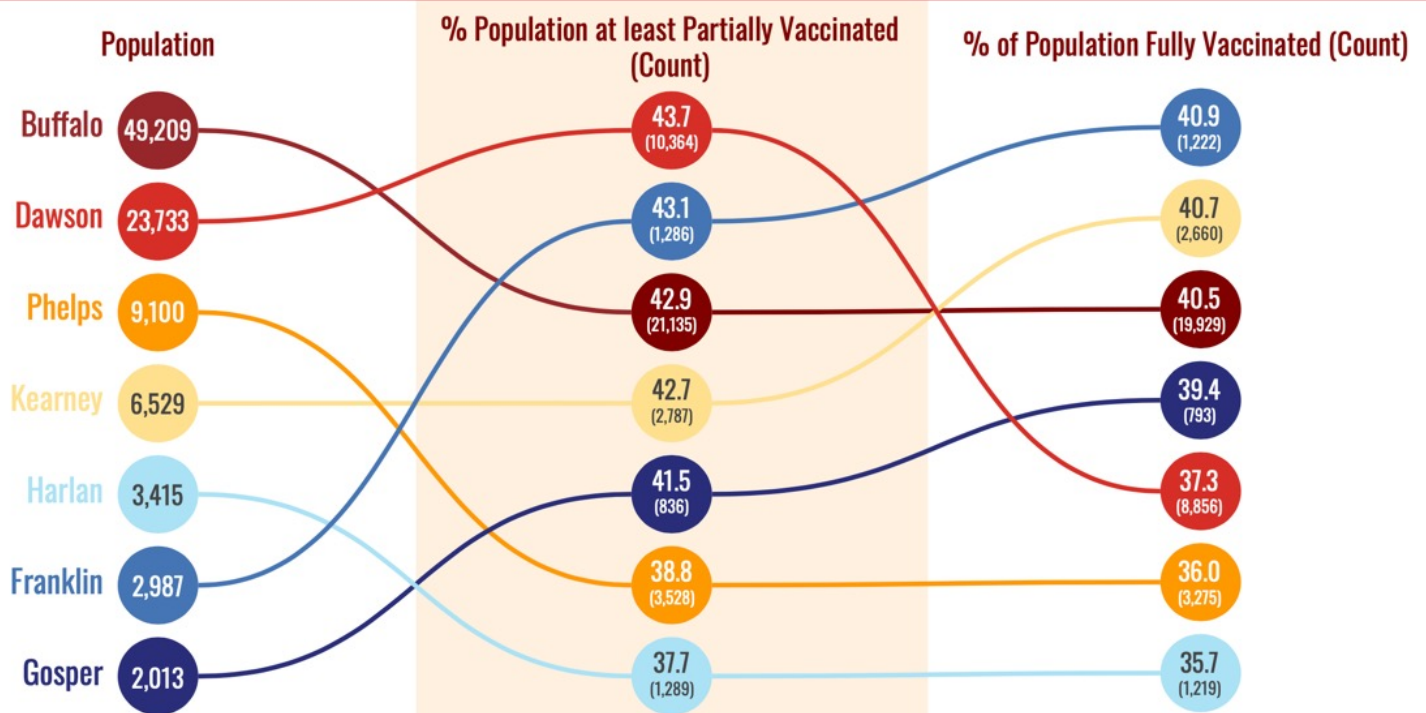
Excluding residential facilities, a total of 1639 tests were conducted in the past 4 weeks. The following table gives details of positive cases in the past week and past 4 weeks by county, age categories and gender.

	Jul 21 - Jul 27 (1 week)			Jun 30 - Jul 27 (4 weeks)		
	Total tests conducted	Positive cases	P. rate (%)	Total tests conducted	Positive cases	P. rate (%)
County						
Buffalo	345	49	14.2%	933	84	9.0%
Dawson	148	9	6.1%	398	20	5.0%
Franklin	17	7	41.2%	43	8	18.6%
Gosper	6	0	0.0%	14	1	7.1%
Harlan	2	0	0.0%	19	2	10.5%
Kearney	21	5	23.8%	94	11	11.7%
Phelps	31	5	16.1%	120	17	14.2%
Data missing/ not disclosed	6	0	0.0%	18	0	0.0%
Total	576	75	13.0%	1,639	143	8.7%
Age (in yrs)						
0-17	91	13	14.3%	243	17	7.0%
18-29	130	16	12.3%	393	32	8.1%
30-39	77	15	19.5%	231	19	8.2%
40-49	77	6	7.8%	216	20	9.3%
50-59	61	9	14.8%	191	20	10.5%
60-69	41	2	4.9%	144	12	8.3%
70-79	52	8	15.4%	111	12	10.8%
80-89	32	6	18.8%	74	10	13.5%
90+	15	0	0.0%	36	1	2.8%
Total	576	75	13.0%	1,639	143	8.7%
Gender						
Female	308	37	12.0%	861	71	8.2%
Male	264	37	14.0%	770	71	9.2%
Data missing/ not disclosed	4	1	25.0%	8	1	12.5%
Total	576	75	13.0%	1,639	143	8.7%



- The graph below describes **all TRPHD residents vaccinated** between **December 15, 2020 – July 26, 2021**. All residents of the seven counties are included.
- Each county is depicted by a colored circle, and the relative position of each corresponds to the proportion vaccinated. Actual numbers (count) are included in parenthesis.
- **Overall, 38.8% of the total population in Two Rivers Health District is now fully vaccinated.. 49.8% of all adult residents (18 years and over) are fully vaccinated.**

Vaccinations of Total Population in TRPHD



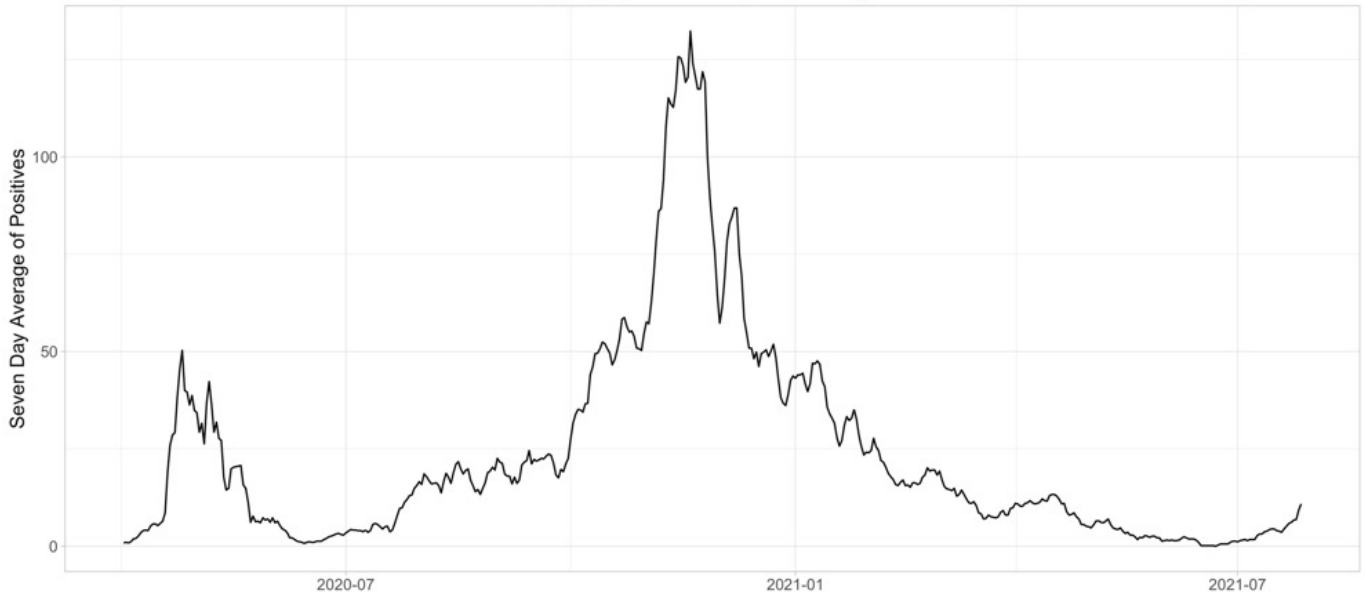
*All data accurate as of July 26th



- The graph below describes 7-day rolling average of COVID-19 across TRPHD from **April 1, 2020 - July 27, 2021**.
- The second graph describes 7-day rolling average of COVID-19 cases by age across TRPHD for the same time period. The height of the graph corresponds to total cases and the thickness of each colored band corresponds to each age group.

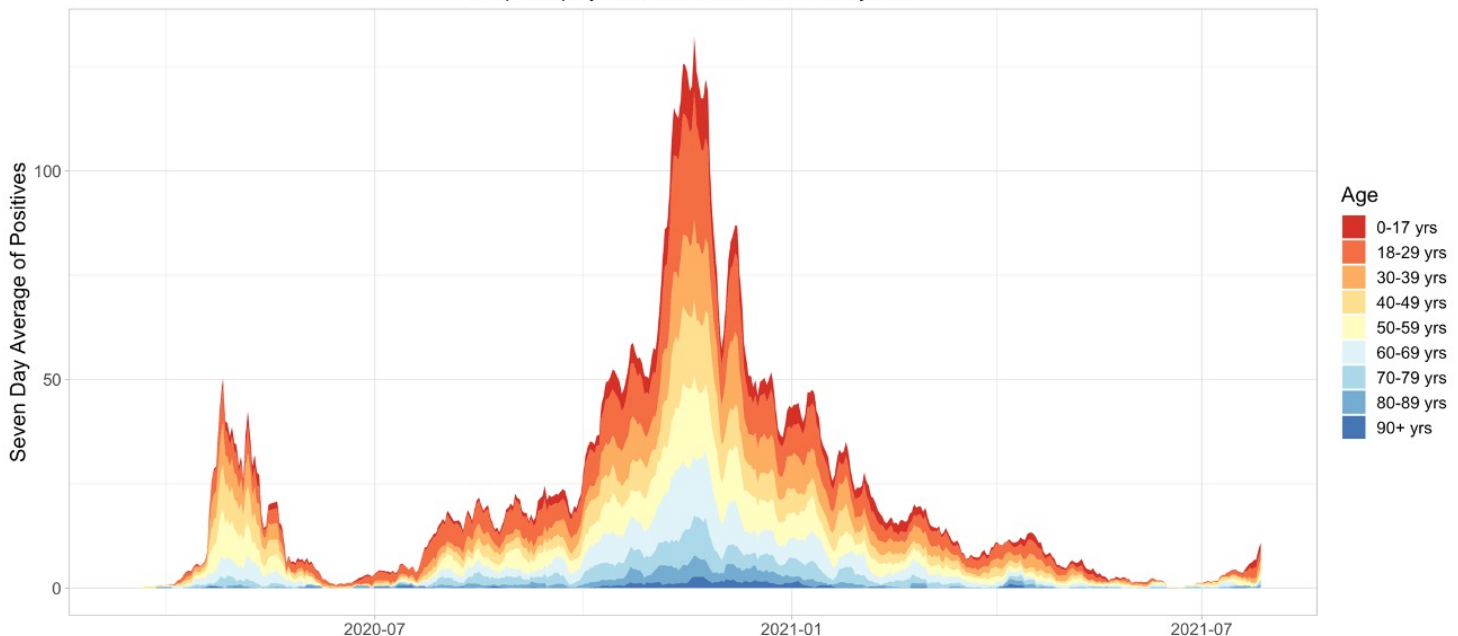
7 Day Rolling Average of Two Rivers

Graph displays data from April 1st to July 27th



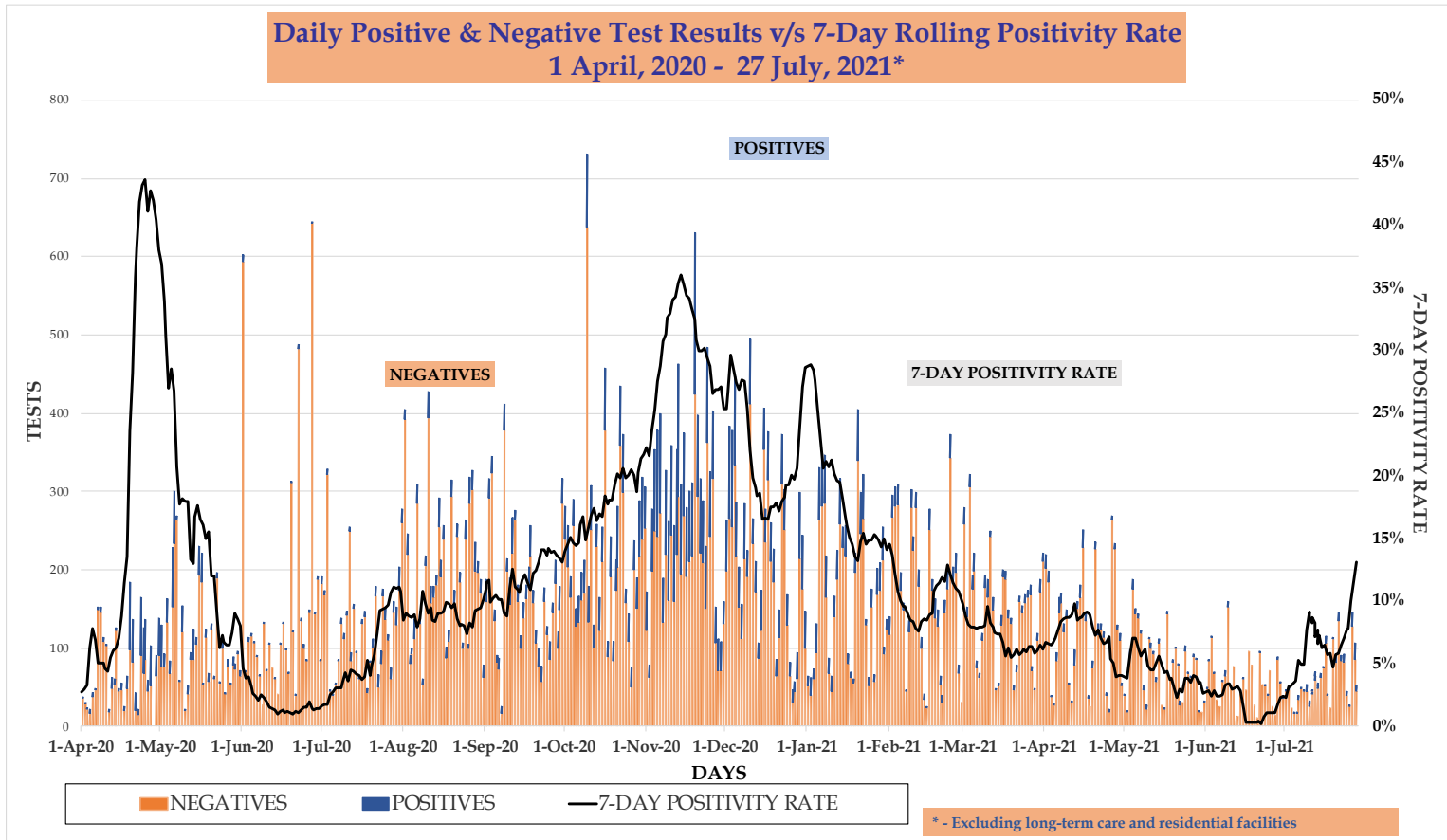
Daily Average of COVID-19 Cases in TRPHD by Age

Graph displays data from June 29th to July 27th





- The graph below describe the daily **positive and negative COVID test results** in TRPHD from **April 1, 2020 – July 27, 2021**. Also depicted is the average **test positivity rate (7-day rolling average)**⁸ in TRPHD for the same time.
- Graph describes all tests conducted **outside residential facilities** in the past 16 months.⁹



⁸ For description of average positivity rate, see appendix 1

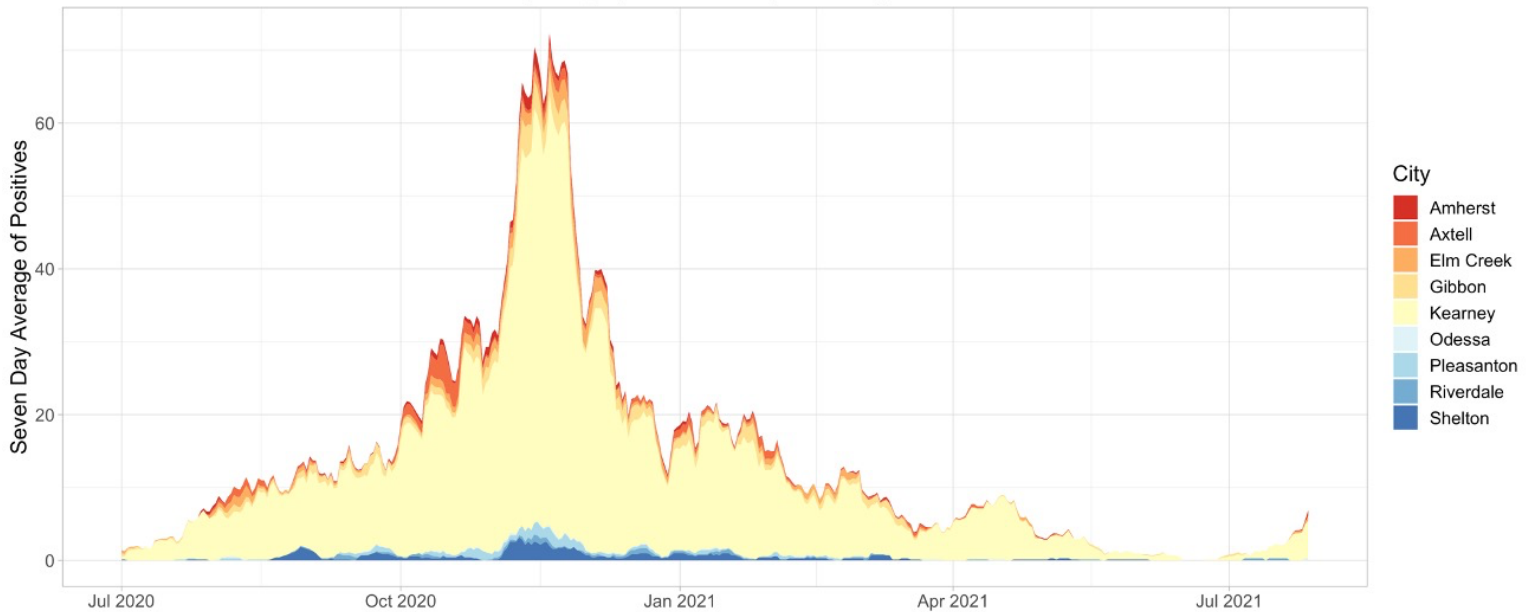
⁹ For information on residential facilities, please see appendix 3



- The following graphs describe the average daily COVID cases (7-day rolling) in three urban areas in Two Rivers Health Department.
- The urban areas are Kearney city and surrounding towns (**Kearney, Elm Creek, Pleasanton, Amherst, Riverdale, Gibbon, Shelton and Axtell - total 39,412 people**), Lexington city and surrounding towns (**Lexington, Overton, Elwood, Johnson Lake and Cozad - total 15,700 people**), Holdrege city and surrounding towns (**Holdrege, Loomis and Funk - total 5967 people**).¹⁰
- Time considered is from **July 1, 2020 - Jul 27, 2021**. Scales are different for all three graphs.
- The graph for Kearney city and surrounding areas is presented below.

7 Day Rolling Average of COVID-19 Cases by City

Graph displays data from July 1st to July 27th



Information Updated as of 7/27 at 8 p.m.

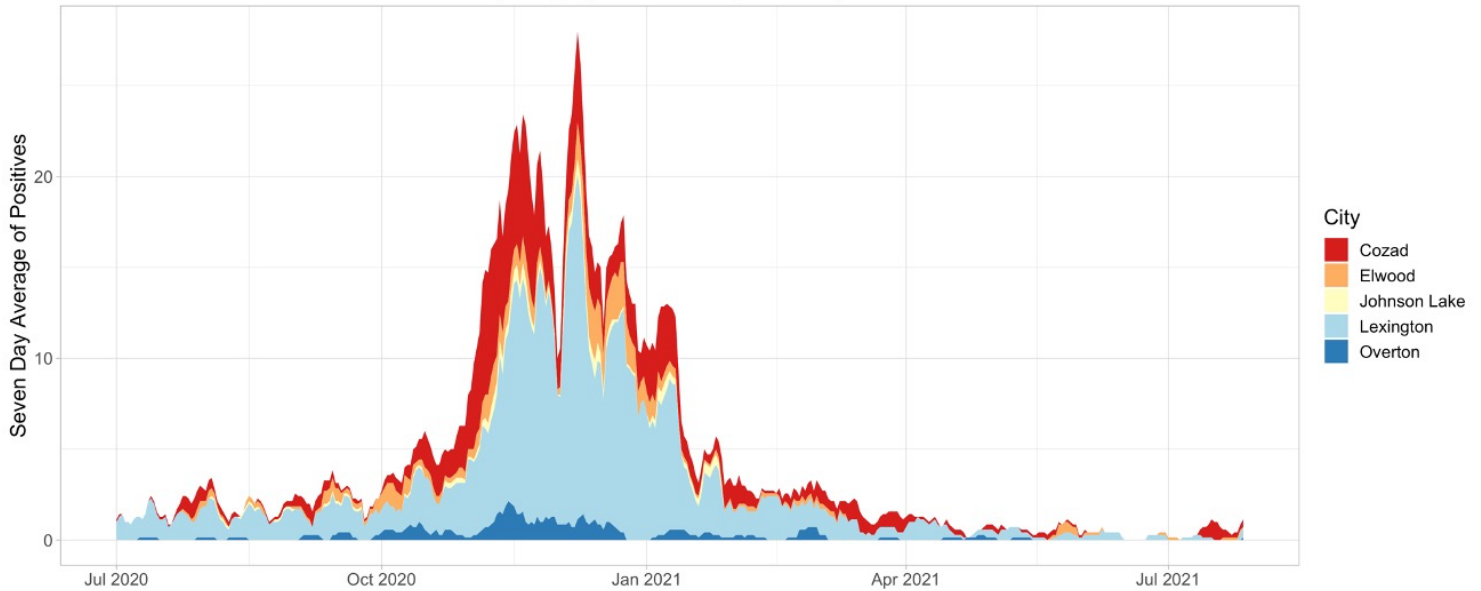
¹⁰ For details about each of the urban areas, please see appendix 5
516 W 11th Street, Suite 108
Kearney, NE 68845



- The **daily average (7-day rolling)** of positive cases in **Lexington** and **Holdrege** cities and surrounding towns between July 1, 2020 – Jul 27, 2021 are presented below.

7 Day Rolling Average of COVID-19 Cases by City

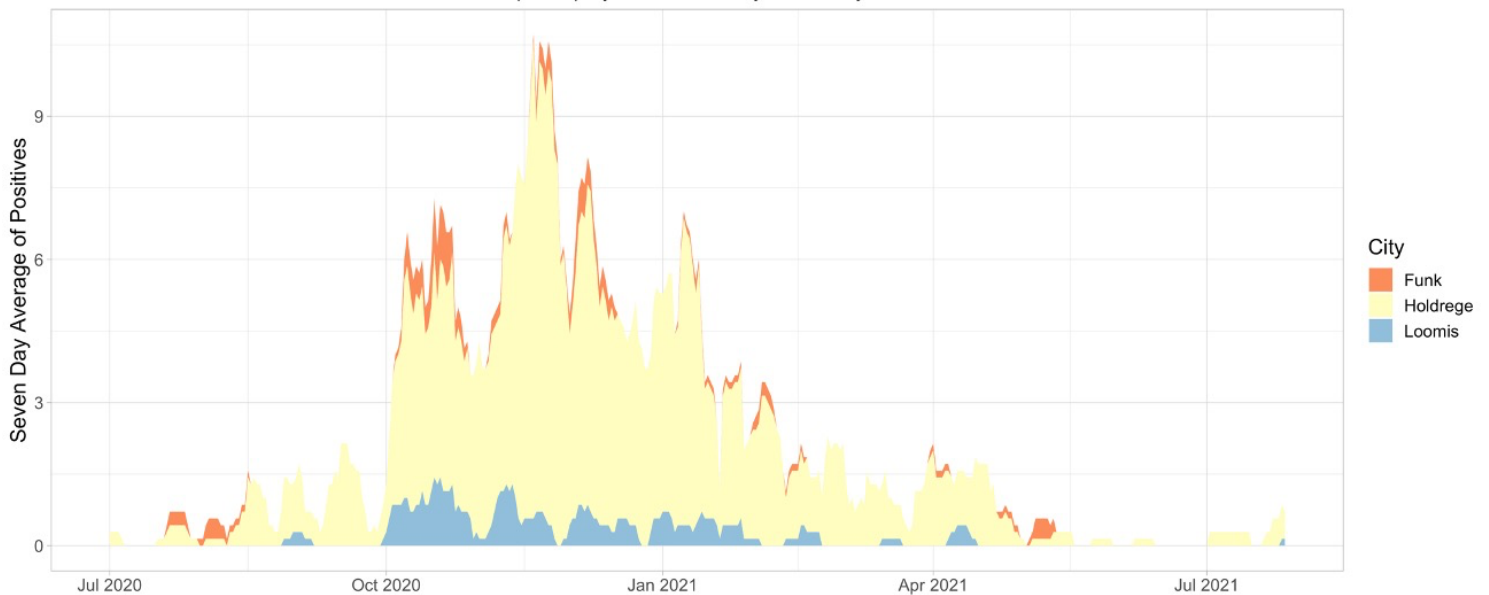
Graph displays data from July 1st to July 27th



Information Updated as of 7/27 at 8 p.m.

7 Day Rolling Average of COVID-19 Cases by City

Graph displays data from July 1st to July 27th



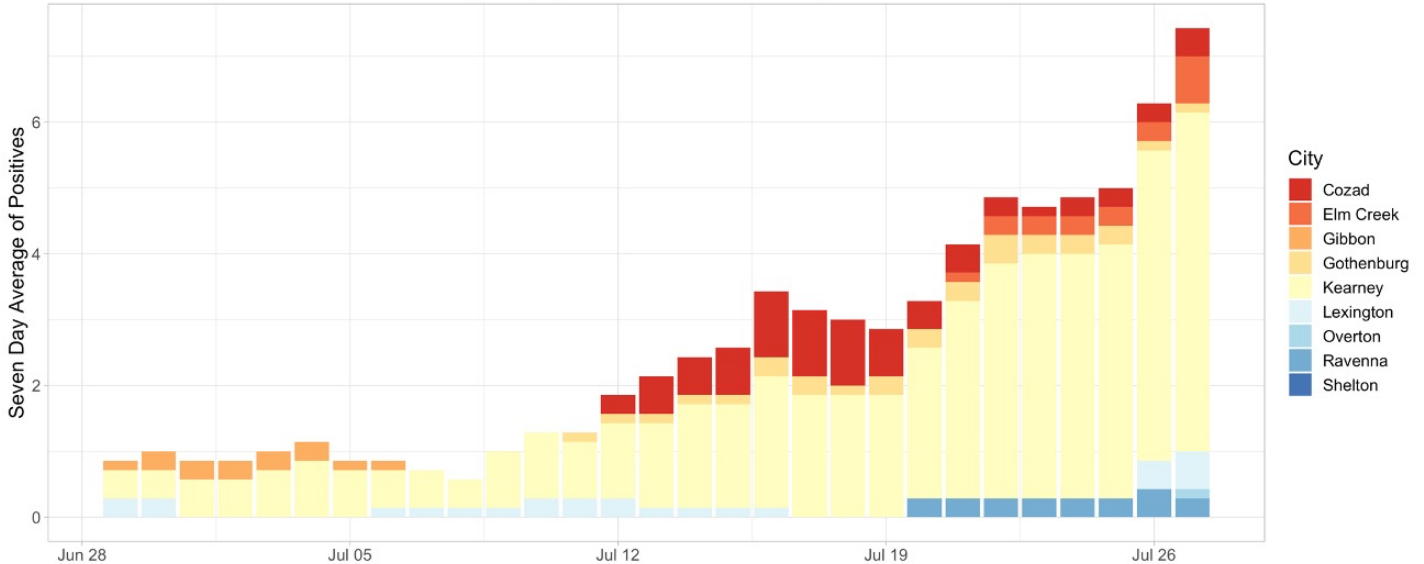
Information Updated as of 7/27 at 8 p.m.



- The following bar graphs describes the 7-day rolling averages by city for the past four weeks (**Jun 30 - Jul 27**) in TRPHD. The graph above shows cities in **Buffalo and Dawson** counties and the one below shows the graph for cities in **Gosper, Harlan, Kearney and Phelps** counties. The scale is different for both graphs.

7 Day Rolling Average of COVID-19 Cases Buffalo and Dawson County

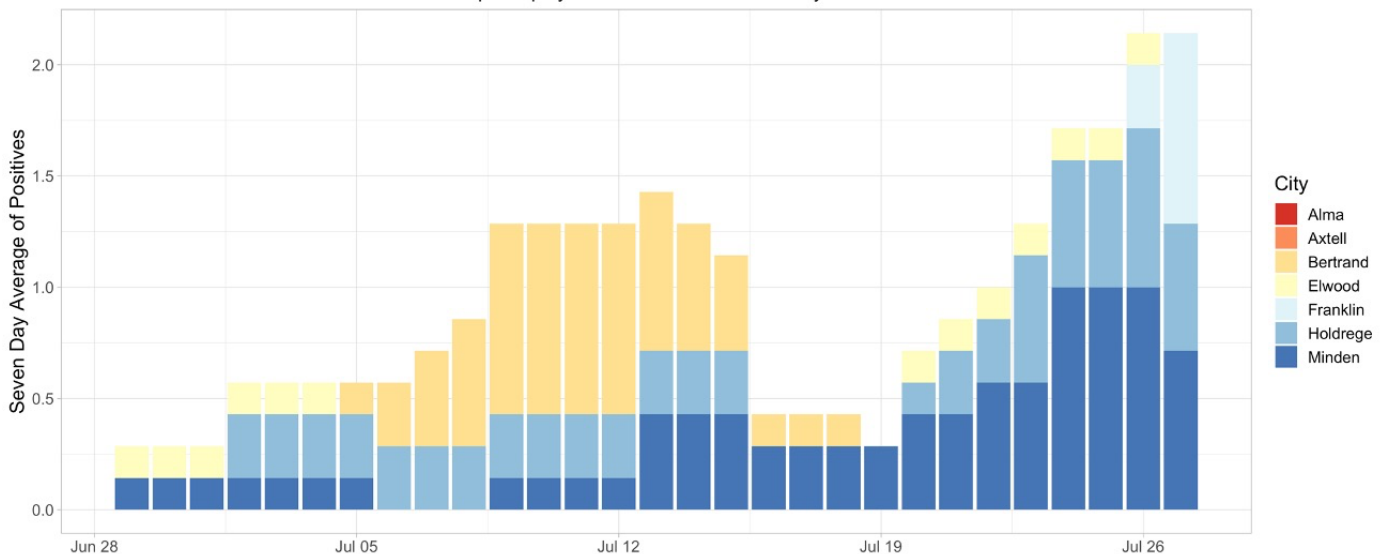
Graph displays data from June 29th to July 27th



Information Updated as of 7/27 at 8 p.m.

7 Day Rolling Average of COVID-19 Cases Gosper, Franklin, Kearney, and Phelps County

Graph displays data from June 29th to July 27th



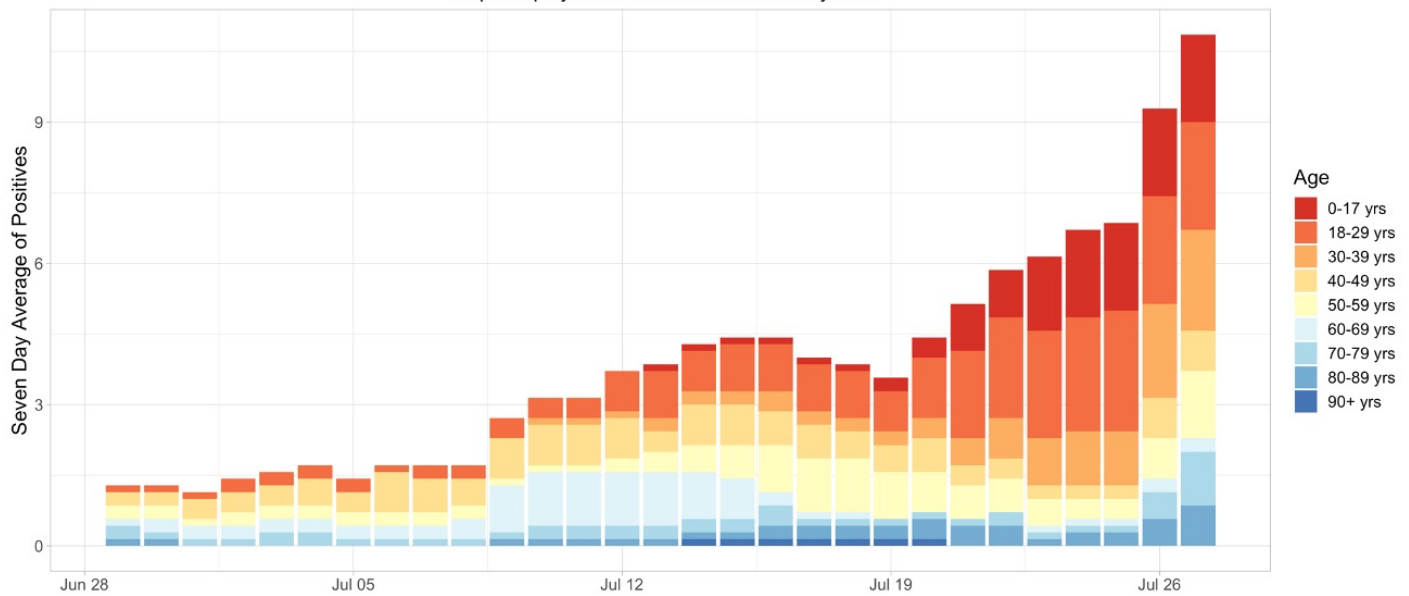
Information Updated as of 7/27 at 8 p.m.



- The graph below describes the **7-day rolling average** of cases from **Jun 30 - Jul 27** by age. The height of the graph corresponds to total cases and the thickness of each colored band corresponds to each age group.

7 Day Rolling Average of COVID-19 Cases in Two Rivers by Age

Graph displays data from June 29th to July 27th



Information Updated as of 7/27 at 8 p.m.



Weekly summary

- 75 cases of COVID were detected in TRPHD in the past week, almost 150 cases in July 2021. This represents a significant increase from previous weeks. Positivity rate of tests conducted outside residential and long term care facilities is at 13%, comparable to the long term average of 14.6%
- Higher cases detected among younger age groups (below 40 years) is cause for concern, as this age group is less likely to be vaccinated..
- Genetic testing among a select sampling of cases in TRPHD reveal that a majority of cases now seen in the district are of the B.1.617.2 (Delta) variant of COVID-19. This variant is at least as infectious as the existing COVID strain (B.117) and seems to result in severe illness in younger persons as compared to earlier.
- Across TRPHD, COVID-related bed occupancy is at 13 and two persons are currently being maintained on ventilator support. This is the highest number in the district in the last 5 months (see <https://www.trphd.org/> for details).
- As of Jul 27, 2021, a little less than 39% of TRPHD's total population has been fully vaccinated. About 50% of the adult population (18+years) has been fully vaccinated across the district. See weekly vaccination report at <https://www.trphd.org/covid-19/vaccination-reports.html> for details.
- COVID-19 vaccination continues to be provided by Two Rivers Health Department vaccine clinic and walk-in pharmacies across the district. All persons aged 12 and over are eligible for the vaccine. TRPHD has scheduled mobile vaccination clinics at almost 15 sites across seven counties to distribute vaccines and to focus on areas of potential shortfall. Those eligible for the vaccine are advised to refer to the vaccination clinic schedule at www.trphd.org

To conclude, weekly COVID test positivity rate continues to rise across the district, one in eight COVID tests conducted outside of long term care facilities in the past week was positive. COVID testing seems to have shifted to clinical centers and private labs. Two Rivers Health Department continues to receive reports cases of the Delta variant (B.1617.2) in the district. We assume that this variant accounts for a majority of new cases in the last month. 39% of the total population of TRPHD district is now fully vaccinated, including half of all adults (18 years or more). TRPHD has scheduled mobile vaccination clinics at almost 15 sites across seven counties. Those eligible for the vaccine are advised to contact their physician or refer to the vaccination clinic schedule at www.trphd.org. In the meantime, unvaccinated residents are advised to continue to adhere to strict preventive measures (social distancing, correct and consistent masking) at all times to protect themselves and others.



APPENDIX 1

Background

The Two Rivers Public Health Department (TRPHD) covers 7 counties in central Nebraska, reaching 97,132 people who live and work in the health district spread across roughly 4663 square miles. Over three quarters of residents live in Buffalo and Dawson county, a tenth live in Phelps county, and the remaining 15% is spread somewhat comparably among the four counties of Kearney, Harlan, Franklin and Gosper in decreasing order of population. The largest cities are Holdrege (pop. 5408), Lexington (pop. 10115) and Kearney (pop. 33867) meaning that well over half the residents of TRPHD live in three cities, and over a third are in Kearney alone. The population of all 7 counties in TRPHD are shown below.

County	Population
Buffalo	49,659
Dawson	23,595
Franklin	2,979
Gosper	1,990
Harlan	3,380
Kearney	6,495
Phelps	9,034
TRPHD total	97,132
Nebraska state	1,934,408
United States	328,239,523

- Data is presented as 7-day rolling averages for daily numbers and absolute counts for cumulative cases. The 7-day rolling average is the sum of all cases reported on that day plus the previous six divided by 7.
- Total (cumulative) cases refer to all COVID cases that have been confirmed by testing in the district since the beginning of the pandemic in TRPHD (March 19)
- All tests refers to all types of tests conducted across the Health District, including laboratory-based PCR and rapid antigen.
- Average positivity rate refers to a seven-day rolling average positivity rate, which is the sum of all cases for that day and the previous six divided by the sum of all tests done in that day and the previous six. This is also the same as the “weekly positivity rate”
- In cases that call for comparison across larger areas (counties v/s state of Nebraska, for eg), we present the count per 100,000 population. 100,000 roughly corresponds to the population of Two Rivers Health District (97,132)
- In cases that call for comparison between cities, (Kearney v/s Minden for eg), we present a count per 10,000 population. 10,000 roughly corresponds to the population of Lexington (10,115), the second largest city in TRPHD.
- Deaths due to COVID-19 are identified in death certificates (usually COVID -19 is the Underlying Cause of Death) and attested by the attending physician or medical examiner/ coroner. Each case is further investigated by TRPHD over telephone - the next



of kin is contacted, condolences conveyed and exit interviews conducted by Department staff before releasing a public notification. For further details on the procedure for COVID-19 death certification, please see <https://www.cdc.gov/nchs/data/nvss/vsrg/vsrg03-508.pdf>

- For calculation, we use the 2019 mid- year census estimate (American Community Survey, ACS) and data from The Atlantic’s COVID tracking project (<https://covidtracking.com/data>)

APPENDIX 2

Total (cumulative) cases per 100,000 population

The total/ cumulative case counts are the **total** cases confirmed by testing in an area (county, city, state or health district) calculated from the first recorded case (in case of TRPHD this is March 19, 2020). This is expressed as a fraction of the total population of the area and standardized to 100,000 persons. A population of 100,000 is used to compare counties as it is comparable to the overall population of Two Rivers Health District (97,032).

Total (cumulative) cases / 100,000 persons is calculated as:

[(Total positive test results for residents in the region)] / (mid-year population) * 100,000

Daily average of cases per 100,000 population

The daily average (7-day rolling) of cases is the sum of all cases reported on that day plus the previous six divided by 7. This is expressed as a fraction of the total population of the area and standardized to 100,000 persons. A population of 100,000 is used to compare counties as it is comparable to the overall population of Two Rivers Health District (97,032).

Daily average of cases / 100,000 persons is calculated as:

[(7-day rolling average of cases among residents)] / (mid-year population) * 100,000

APPENDIX 3

About a third of all tests conducted since March in the district have been availed by residents or staff of residential facilities. “Residential facilities” include long-term care facilities, in-patient psychiatry services, retirement villages, veterans’ homes and correctional facilities within Two Rivers Health District.

Considering the specific nature of COVID risk of long-term residents of institutional facilities and taking into account the frequent testing performed at facilities, we present numbers separately for long term care facilities and others in the district.



APPENDIX 4

Vaccine-eligible population

The total COVID-19 vaccine-eligible population of Two Rivers Health District is about 76,002. This includes all residents over the age of 16 years living in the seven counties that make up the district. The table below describes the eligible population in each of the seven counties divided by age category.

	16-29 YRS	30-49 YRS	50-64 YRS	65+ YRS	TOTAL(16+ YRS)
TRPHD	19580	22863	17760	15799	76002
BUFFALO	11828	11910	8184	6863	38785
DAWSON	4301	5723	4334	3696	18054
FRANKLIN	391	586	717	809	2503
GOSPER	232	418	532	526	1708
HARLAN	459	649	735	845	2688
KEARNEY	985	1508	1343	1239	5075
PHELPS	1384	2069	1915	1821	7189

Vaccines used in TRPHD

In the first phase, COVID-19 vaccines have been approved for use in all persons over the age of 16 years. Currently, Pfizer and Moderna vaccine formulations are being offered in Two Rivers Health District. Use of the Johnson & Johnson (Janssen) vaccine formulation has been paused pending further scrutiny by the Food and Drug Administration (FDA).

The Nebraska Department of Health and Human Services paused use of the Johnson & Johnson (Janssen) COVID-19 vaccine after Centers for Disease Control and Prevention (CDC) and Food and Drug Administration (FDA) recommendations following reports of six women who have been hospitalized with severe blood clots after receiving the vaccine dose, including one woman in Douglas county. The women were aged between 18-48 years. Vaccine use was reinstated on April 26, 2021 and is now available at private pharmacies across the state.

To date, over 6.8 million doses of Janssen vaccine have been administered in the United States, over 31,500 in Nebraska, and 1560 in Two Rivers Health District.

Symptoms in the 6 hospitalized individuals included headache, back pain, other unexplained pain. Symptoms typically began 6-13 days after vaccination, and hospital admission was within 15 days, on average. More than 55% of the Janssen vaccine was administered before 22nd of March in Two Rivers Health District.



APPENDIX 5

Methods & Definitions

To better understand the course of the COVID-19 pandemic in Kearney, Lexington and Holdrege, we created ‘urban areas’ that included both the city and its surrounding towns. We included all towns within 20 miles of Kearney city, 15 miles of Lexington and 10 miles of Holdrege within each city’s urban area. The respective populations of all 7 counties in TRPHD are shown below. Kearney city accounts for over third of the population of TRPHD.

County	Population
Buffalo	49,659
Dawson	23,595
Franklin	2,979
Gosper	1,990
Harlan	3,380
Kearney	6,495
Phelps	9,034
TRPHD total	97,132
Nebraska state	1,934,408

Thus “Kearney area” includes Kearney city as well as Elm Creek, Pleasanton, Amherst, Riverdale, Odessa, Gibbon, Shelton and Axtell.

“Lexington area” includes Lexington city as well as Overton, Johnson Lake and Cozad.

“Holdrege area” includes Holdrege city, Loomis and Funk.

The populations of cities and villages is described below. Also included are Minden and Gothenburg, used as comparison points in descriptive statistics about the area.

CITY	POPULATION
Kearney	33867
Elm Creek	949
Axtell	751
Pleasanton	359
Riverdale	179
Amherst	253
Gibbon	1869
Shelton	1055
Odessa	130
KEARNEY URBAN AREA (TOTAL)	39412
Lexington	10115
Overton	567
Johnson Lake	600



Elwood	683
Cozad	3735
LEXINGTON URBAN AREA (TOTAL)	15,700
Holdrege	5408
Funk	183
Loomis	376
HOLDREGE URBAN AREA (TOTAL)	5967
Gothenburg	3489
Minden	2890

For presenting data, we selected 3 time frames:

- a) April 1 - current (From the beginning of the pandemic to most recent Tuesday)
- b) July 01 - current (From the beginning of second sustained 'wave' in daily case counts to current)
- c) Previous 4 weeks
 - Data is presented as 7-day rolling averages for daily numbers and absolute counts for cumulative cases. The 7-day rolling average is the sum of all cases reported on that day plus the previous six divided by 7.
 - Cumulative cases refer to all cases that have been confirmed in the district since the beginning of the pandemic in TRPHD (March 19)
 - Average positivity rate refers to a seven-day rolling average positivity rate, which is the sum of all cases for that day and the previous six divided by the sum of all tests done in that day and the previous six
 - Average positivity rate (in %) = (Sum of positive cases for current day + previous 6 days) / (Sum of total tests for current day + previous six days)
 - In cases that call for comparison across larger areas (counties v/s state of Nebraska, for eg), we present the count per 100,000 population. 100,000 roughly corresponds to the population of Two Rivers Health District (97,132)
 - In cases that call for comparison between cities, (Kearney v/s Minden for eg), we present a count per 10,000 population. 10,000 roughly corresponds to the population of Lexington (10,115), the second largest city in TRPHD.
 - For calculation, we use the 2019 mid- year estimate (American Community Survey, ACS) and data from The Atlantic's COVID tracking project (<https://covidtracking.com/data>)