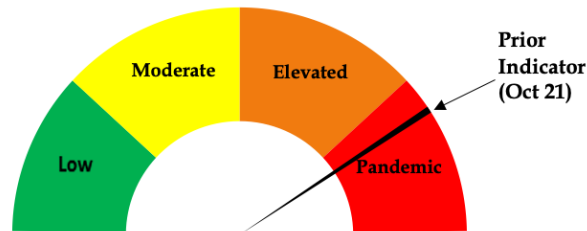




## Risk Dial Oct 28, 2021



**Risk Dial for COVID-19  
Two Rivers Public Health  
Published Oct 28, 2021**

- 356 cases of COVID-19 were recorded in TRPHD between October 20 - October 26. In the past month, 1272 new cases have been detected across TRPHD, 80 of them at long-term care and other residential facilities.
- In the past week, Dawson county recorded 109 cases, almost half of which were in Cozad city. About a tenth of all tests conducted in the past month across TRPHD were positive. Excluding residential facilities, between 22-25% of all tests returned positive in the past six weeks.
- The rate of increase in new vaccinations has slowed further. About 47% of TRPHD's overall population is fully vaccinated, compared to a statewide average of about 56%.
- COVID patients account for about 1/5<sup>th</sup> of all medical and surgical beds across TRPHD. ICU availability has rebounded somewhat, about a third of all beds across the district are unoccupied. Overall ICU bed availability has also increased marginally.
- A testing site at the Buffalo county fairgrounds (drive-through testing with prior online registration, Mon & Wed, 9:30-12:30) is now operational. People availing this service are required to register prior to testing at [www.trphd.org](http://www.trphd.org).
- As of Oct 25, 2021, 47% of TRPHD's total population and 58% of the adult population (18+ years) has been fully vaccinated across the district. See vaccination report at <https://www.trphd.org/covid-19/vaccination-reports.html> for details. TRPHD strongly urges all unvaccinated vaccine-eligible residents to avail of COVID vaccination through their healthcare provider, pharmacy or TRPHD. For schedule of vaccination clinics, see [www.trphd.org](http://www.trphd.org)
- The risk dial remains unchanged from the previous week within the 'pandemic' zone. The risk assessment reflects slightly higher test positivity rates, ongoing disease clusters in some counties, COVID hospitalization rates and the slow rate of increase in vaccination coverage across the district.



## Weekly report Oct 20 – Oct 26, 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 from **Oct 20 – Oct 26** (1 week) and **Sep 28 – Oct 26** (4 weeks). We describe new cases by age, gender and county of residence. We also present weekly and monthly **test positivity rates**. We describe cases in residential facilities separately from other tests (eg: tests in hospitals, pharmacies and clinics<sup>1</sup>)
- The first graphic describes **the vaccination coverage rate of TRPHD residents by county of residence and age** between **Dec 15, 2020 – Oct 26, 2021**. All residents are included to calculate the **proportion of total population partially or fully vaccinated**.
- The second set of graphs look at the progress of the pandemic from **April 1, 2020 – Oct 26, 2021** across all counties.
  - We describe the **7-day rolling average** <sup>2</sup> of positive cases across TRPHD since April, describing overall progress and cases by **age categories**
- The third set of graphs describe the **average COVID test positivity rate (7-day rolling average)** for each of the 7 counties of TRPHD from **July 1, 2020 – October 26, 2021**.<sup>1,3</sup>
- The fourth set of graphs describe the daily case average (7-day rolling) across towns and cities in three urban areas (**Kearney, Lexington, Holdrege**) (Jul 1, 2020- Oct 26, 2021) <sup>4</sup>
  - 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 daily cases (7-day rolling average) from **Sep 28 – Oct 26, 2021**.
  - Progress is described by age & county of residence.

*To conclude, 356 new COVID cases were detected in the Two Rivers area last week, matching the weekly average for the past two months. ICU bed availability has improved, especially with the addition of more beds at facilities. Ongoing disease outbreaks in Dawson and Phelps counties show high positivity rates and seem to be clustered among residents aged 40 years and over. 47% of the total population of TRPHD district and 58% of all adults are fully vaccinated, compared to about 56% across Nebraska. TRPHD has scheduled mobile vaccination clinics across the district, schedule can be found at <https://www.trphd.org/covid-19/event-calendar.html>. TRPHD is also operating a public COVID testing site at the Buffalo County Fairgrounds 9:30 AM – 12:30 PM, Mondays and Wednesdays. Those eligible are advised to contact their physician or their local pharmacy. To access services through Two Rivers health department., please visit [www.trphd.org](http://www.trphd.org) to register an appointment (for COVID testing or vaccination).*

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<sup>1</sup> For information on residential facilities, please see appendix 3

<sup>2</sup> 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.

<sup>3</sup> For information on “test positivity rate (7-day rolling average)”, please see appendix 2

<sup>4</sup> For information on urban areas, please see appendix 5



### Testing & Vaccination Overview

- As of Oct 26, 2021, over 61,000 residents of Two Rivers Health District were tested at least once for COVID-19. Over 173,000 COVID tests have been conducted since March 1, 2020 and over 14,000 persons have tested positive at least once – at least 800 have tested COVID positive more than once.<sup>5</sup> TRPHD has publicly notified 141 deaths due to COVID-19 across the district.
- As of Oct 25, 2021, 46.5% of TRPHD’s entire population has been fully vaccinated. <sup>6</sup> Details of vaccination rates by age in each of the seven counties in Two Rivers Health District is shown below. The legend for color codes used is also displayed. Percentages have been rounded off to the nearest whole number. Vaccines are currently available to all eligible residents aged 12 years and over.

	BUFFALO	DAWSON	FRANKLIN	GOSPER	HARLAN	KEARNEY	PHELPS	TRPHD
0-17 YRS	11%	13%	7%	8%	7%	13%	7%	11%
18-29 YRS	34%	46%	28%	35%	25%	41%	29%	36%
30-39 YRS	48%	52%	40%	32%	42%	42%	42%	47%
40-49 YRS	61%	56%	44%	44%	31%	65%	40%	56%
50-59 YRS	64%	59%	43%	45%	45%	54%	52%	59%
60-69 YRS	80%	78%	64%	70%	60%	75%	66%	76%
70-79 YRS	98%	87%	89%	58%	86%	83%	94%	91%
80+ YRS	90%	78%	76%	75%	56%	71%	79%	81%
ALL AGES	47%	48%	45%	44%	39%	47%	43%	46%

0% - 33%	Less than 1/3rd fully vaccinated
34% - 50%	1/3rd to 1/2 fully vaccinated
50%- 74%	1/2 to 3/4ths fully vaccinated
75% & higher	Over 3/4ths fully vaccinated

- How to read this table: (For eg.) : “56% of Dawson county residents in their 40s are fully vaccinated, however only 31% of 40-50 year-olds in Harlan county are fully vaccinated. While over 90% of all TRPHD residents in their 70s are fully vaccinated, only 36% of 20-30 year olds in the district are fully vaccinated.”

<sup>5</sup> Note: Data collection limitations (recording of different first names, alternate spellings, unrecorded or delayed antigen test results) hamper an exact count of measures like total persons tested, or number of distinct positive cases.

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



- The table below provides details of positive cases detected in 7 counties in TRPHD in the past week (Oct 20 - Oct 26) and past 4 weeks (Sep 28 - Oct 26).
- Results are described by the site where tests were conducted, and include both antigen and PCR tests.

	Oct 20 - Oct 26 (1 week)			Sep 28 - Oct 26 (4 weeks)		
	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Hospital/ Clinic	929	229	24.7%	3503	830	23.7%
State Laboratory	14	0	0.0%	23	4	17.4%
Residential Facility	1789	38	2.1%	7445	80	1.1%
Lab/ Pharmacy	69	16	23.2%	318	51	16.0%
Other	274	73	26.6%	1538	307	20.0%
<b>TOTAL</b>	<b>3,075</b>	<b>356</b>	<b>11.6%</b>	<b>12,827</b>	<b>1,272</b>	<b>9.9%</b>

- A total of 7445 tests were availed by residents and staff of long-term care and other residential facilities <sup>7</sup> in the last 4 weeks, and were almost all antigen tests. Details are provided below:

Residential Facility In:	Oct 20 - Oct 26 (1 week)			Sep 28 - Oct 26 (4 weeks)		
	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Buffalo	624	7	1.1%	2377	27	1.1%
Dawson	366	30	8.2%	1223	37	3.0%
Franklin	0.0	0	0.0%	0	0	0.0
Gosper	11	0	0.0%	92	0	0.0%
Harlan	75	1	1.3%	306	4	1.3%
Kearney	29	0	0.0%	155	0	0.0%
Phelps	471	0	0.0%	2674	10	0.4%
Outside TRPHD	213	0	0.0%	618	2	0.3%
<b>TOTAL</b>	<b>1789</b>	<b>38</b>	<b>2.1%</b>	<b>7445</b>	<b>80</b>	<b>1.1%</b>

- How to read this table: (For eg.) : “In the past week, almost 25% of tests conducted in hospitals and clinics across TRPHD were positive. In the past month, 27 positive COVID results were reported among staff and residents of residential facilities (mostly long-term living) in Buffalo county, and 37 in Dawson county.”

<sup>7</sup> For information on residential facilities, please see appendix 3  
 516 W 11<sup>th</sup> Street, Suite 108  
 Kearney, NE 68845



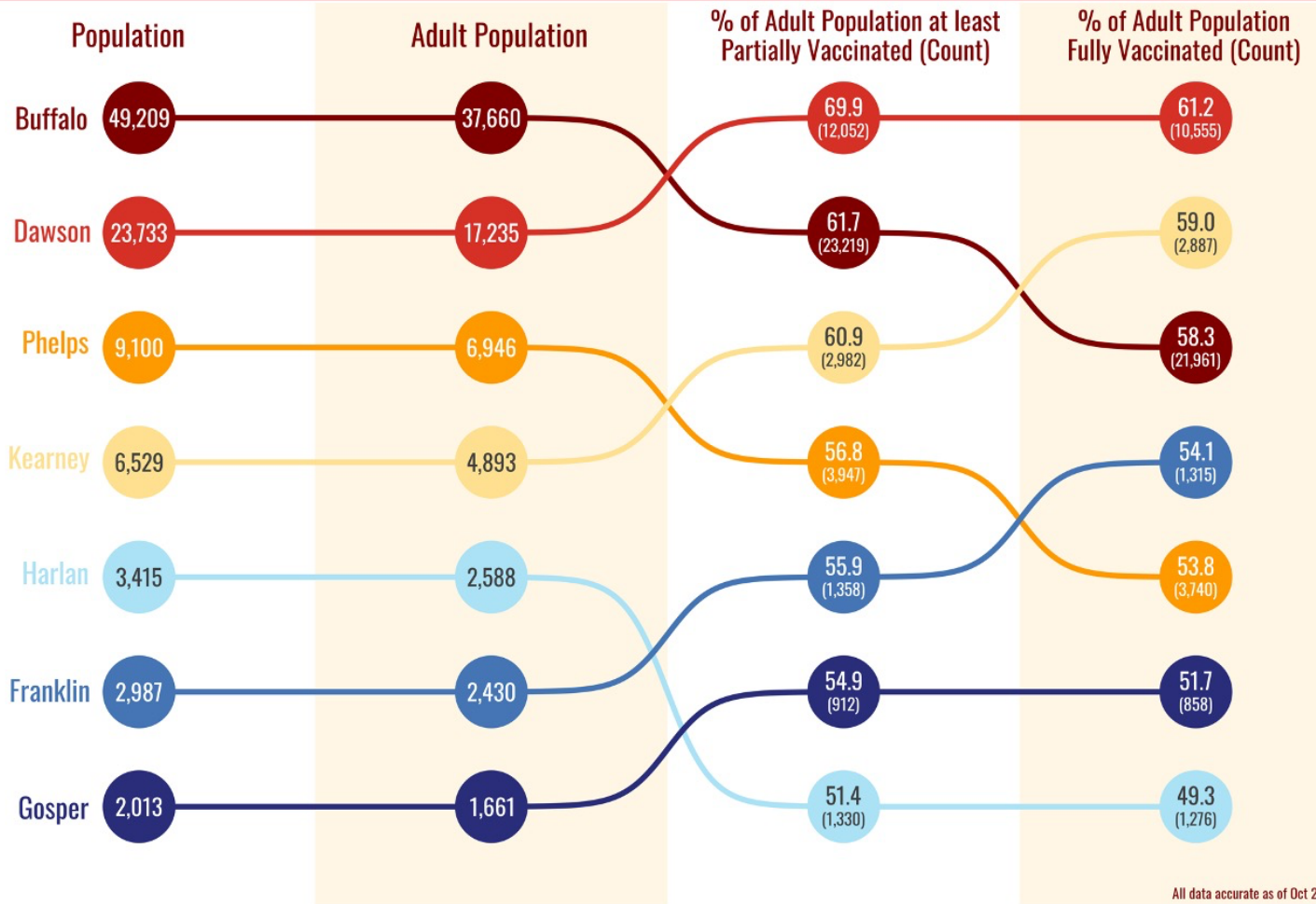
- Non-routine testing refers to tests that are **not** conducted in residential and long-term living facilities. <sup>8</sup> These COVID tests are conducted mainly in hospitals, clinics and pharmacies. Details are provided below.

	Oct 20 – Oct 26 (1 week)			Sep 28 – Oct 26 (4 weeks)		
	Total tests conducted	Positive cases	P. rate (%)	Total tests conducted	Positive cases	P. rate (%)
<b>County</b>						
Buffalo	817	181	22.2%	3299	638	19.3%
Dawson	280	79	28.2%	1159	301	26.0%
Franklin	16	5	31.3%	78	30	38.5%
Gosper	15	4	26.7%	69	27	39.1%
Harlan	17	5	29.4%	66	21	31.8%
Kearney	61	9	14.8%	227	46	20.3%
Phelps	76	34	44.7%	461	125	27.1%
Data missing/ not disclosed	4	1	25.0%	23	4	17.4%
<b>Total</b>	<b>1,286</b>	<b>318</b>	<b>24.7%</b>	<b>5,382</b>	<b>1,192</b>	<b>22.1%</b>
<b>Age (in yrs)</b>						
0-17	234	36	15.4%	1061	196	18.5%
18-29	312	48	15.4%	1198	224	18.7%
30-39	176	51	29.0%	764	197	25.8%
40-49	160	55	34.4%	613	174	28.4%
50-59	160	57	35.6%	635	160	25.2%
60-69	130	41	31.5%	507	125	24.7%
70-79	76	18	23.7%	345	77	22.3%
80-89	38	12	31.6%	259	39	15.1%
<b>Total</b>	<b>1286</b>	<b>318</b>	<b>24.7%</b>	<b>5,382</b>	<b>1192</b>	<b>22.1%</b>
<b>Gender</b>						
Female	718	159	22.1%	3122	619	19.8%
Male	566	158	27.9%	2237	559	25.0%
Data missing/ not disclosed	2	1	50.0%	23	14	60.9%
<b>Total</b>	<b>1286</b>	<b>318</b>	<b>24.7%</b>	<b>5,382</b>	<b>1,192</b>	<b>22.1%</b>

<sup>8</sup> For information on residential facilities, please see appendix 3

- The graph below describes **all TRPHD residents who are fully vaccinated** against COVID-19 between **December 15, 2020 - October 18, 2021**. All residents of the seven counties are included although the vaccine is currently available only to those 12 years or over.
- 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, 46.5% of TRPHD's total population and 58.0% of all adult residents (18 years and over) are fully vaccinated.**

## Vaccinations of Adult Population in TRPHD





- The graph below describes 7-day rolling average of COVID-19 across TRPHD from **April 1, 2020 – Oct 26, 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.

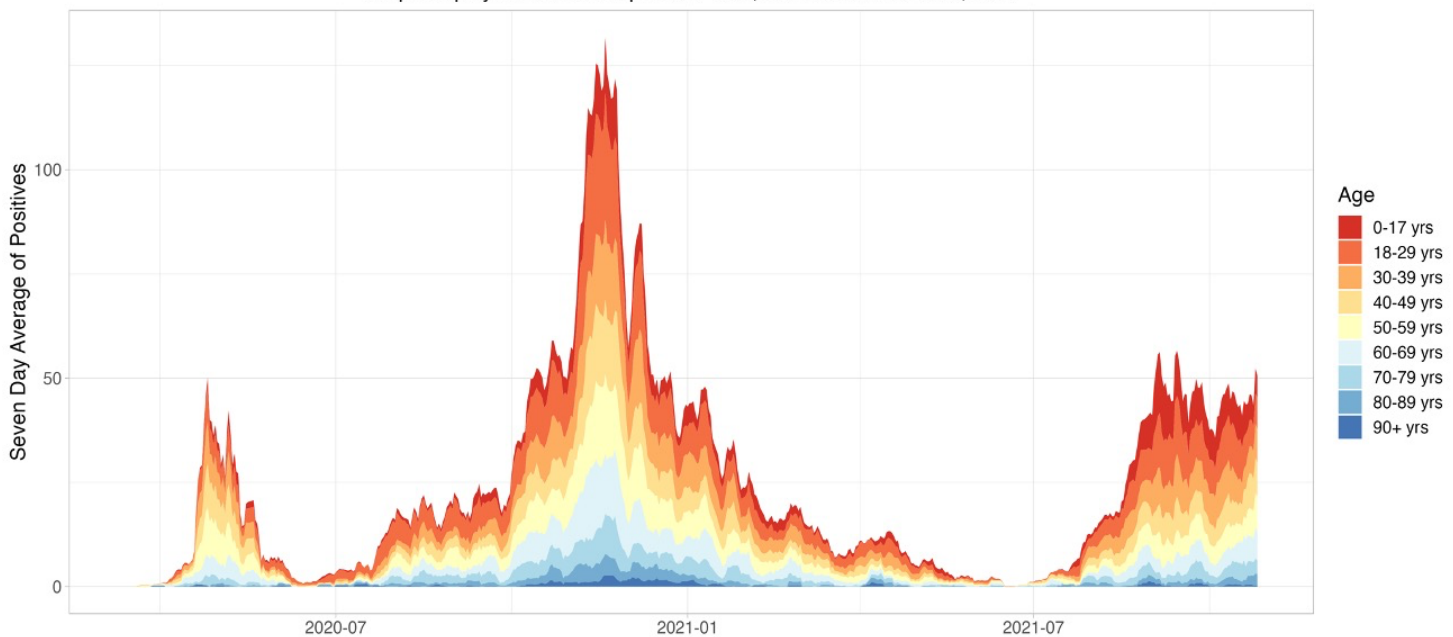
### 7 Day Rolling Average of Two Rivers

Graph displays data from April 1st, 2020 to October 26th, 2021



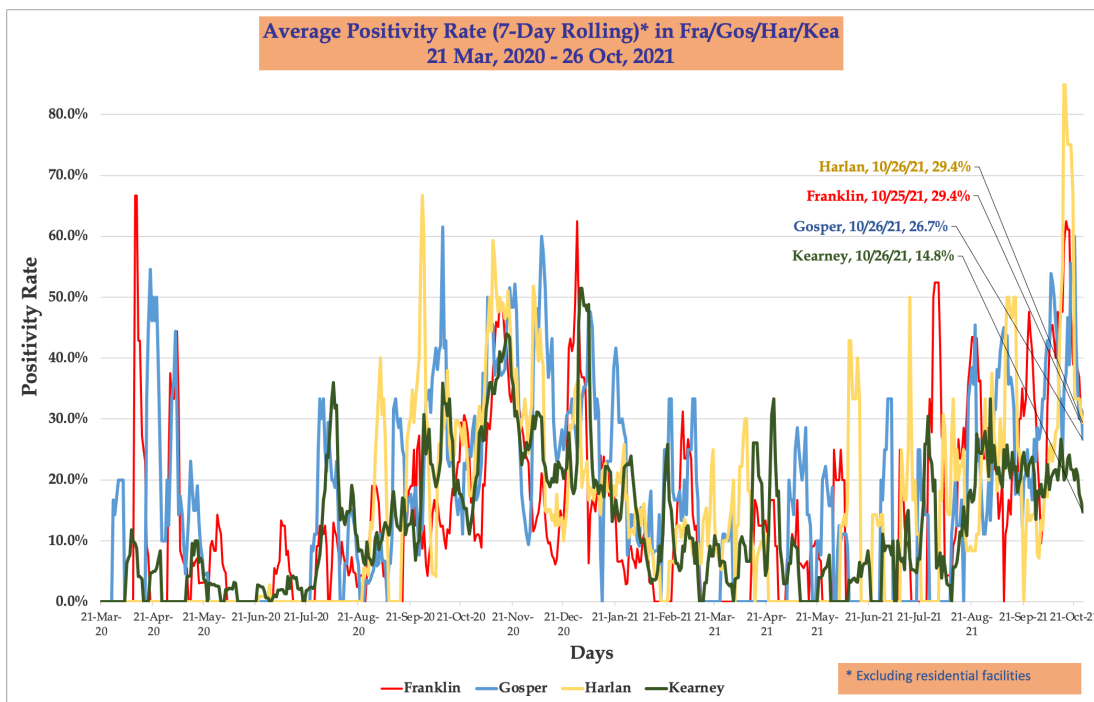
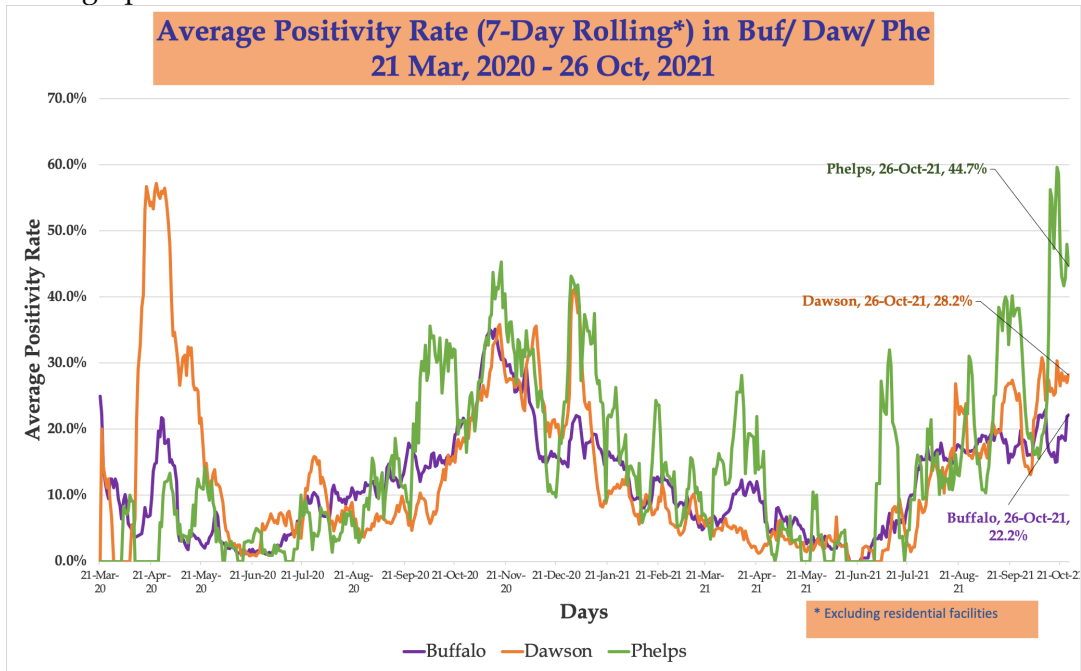
### Daily Average of COVID-19 Cases in TRPHD by Age

Graph displays data from September 28th, 2021 to October 26th, 2021





- The graphs below describe the **weekly COVID test positivity rate (7-day rolling)** <sup>9</sup> in each of the 7 counties from **July 1, 2020 - October 26, 2021**. The graph describes test positivity rates for tests conducted outside residential facilities. Scales are different for both graphs.



<sup>9</sup> For information on “weekly test positivity rate (7-day rolling avg)”, please see appendix 2  
516 W 11<sup>th</sup> Street, Suite 108  
Kearney, NE 68845

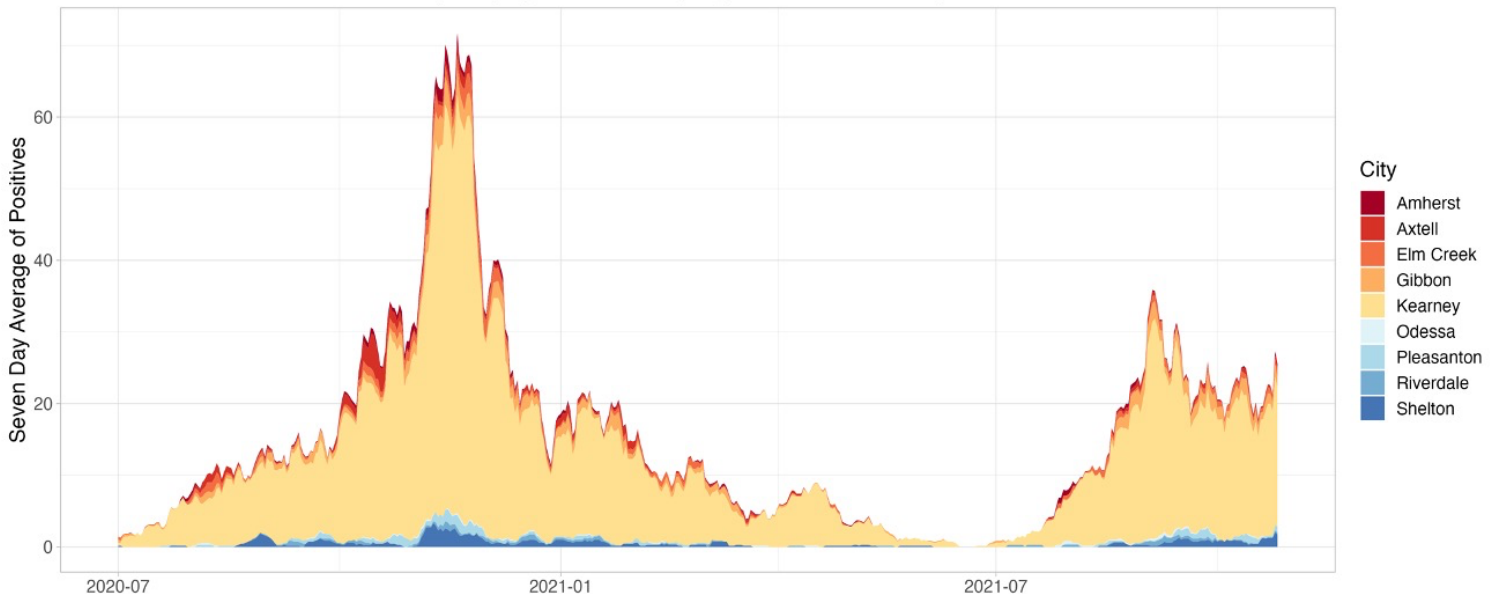




- The following graphs describe the average **daily COVID cases (7-day rolling)** in three urban areas in Two Rivers Health Department.
- The urban areas are Kearney city and surrounding towns (**Kearney, Elm Creek, Pleasanton, Amherst, Riverdale, Gibbon, Shelton and Axtell - total 39,412 people**), 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**).<sup>10</sup>
- Time considered is from **July 1, 2020 - Oct 26, 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, 2020 to October 26th, 2021



Information Updated as of 10/26th at 8 p.m.

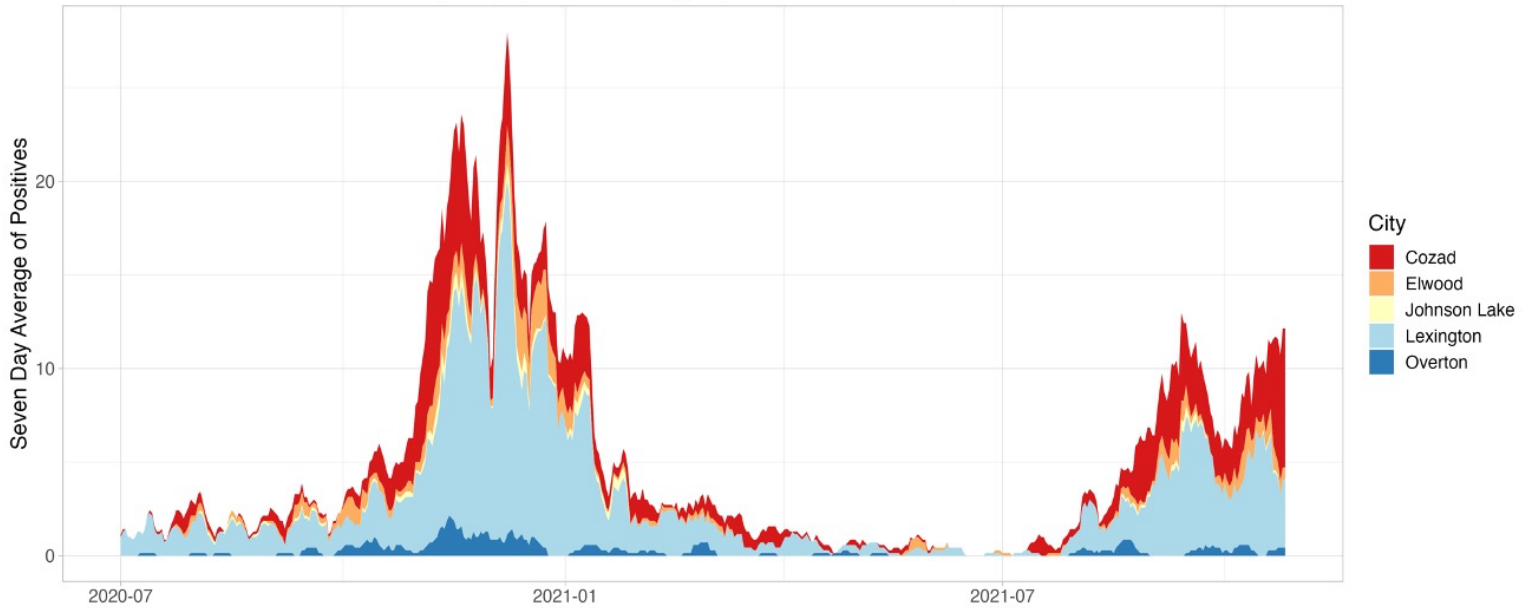
<sup>10</sup> For details about each of the urban areas, please see appendix 5  
516 W 11<sup>th</sup> Street, Suite 108  
Kearney, NE 68845



- The **daily average (7-day rolling)** of positive cases in **Lexington** and **Holdrege** cities and surrounding towns between July 1, 2020 – Oct 26, 2021 are presented below.

### 7 Day Rolling Average of COVID-19 Cases by City

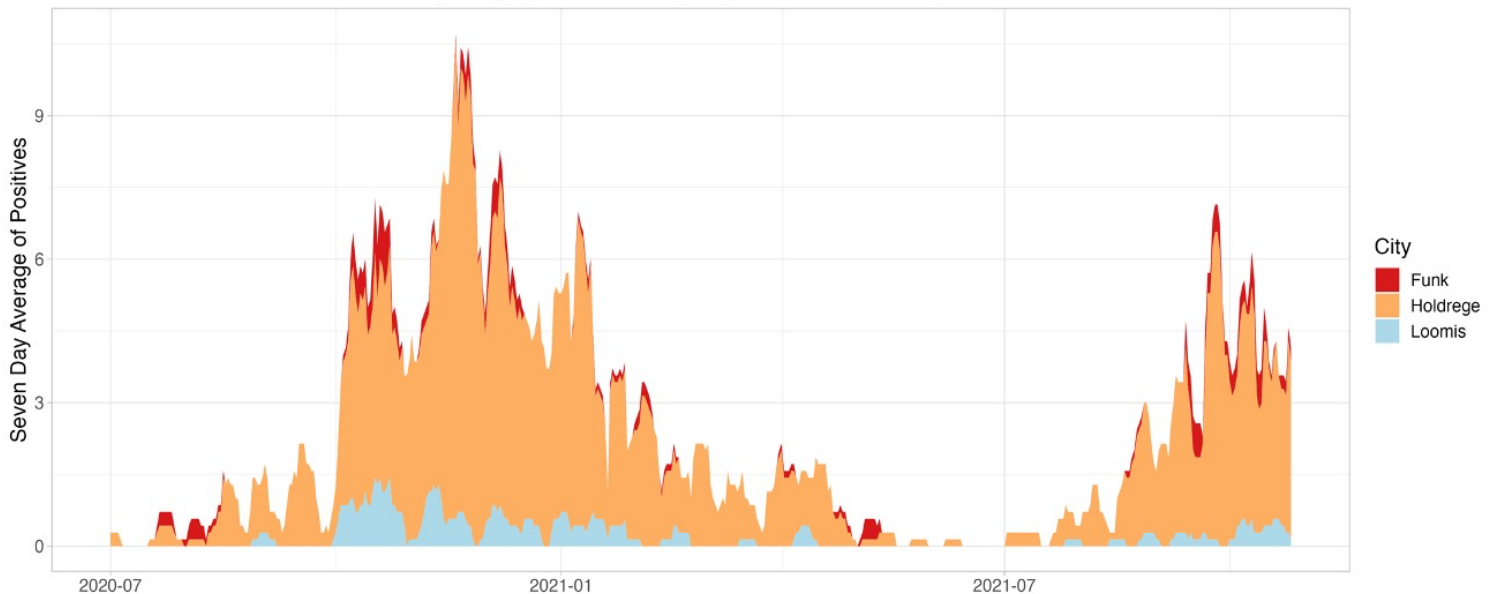
Graph displays data from July 1st, 2020 to October 26th, 2021



Information Updated as of 10/26th at 8 p.m.

### 7 Day Rolling Average of COVID-19 Cases by City

Graph displays data from July 1st, 2020 to October 26th, 2021



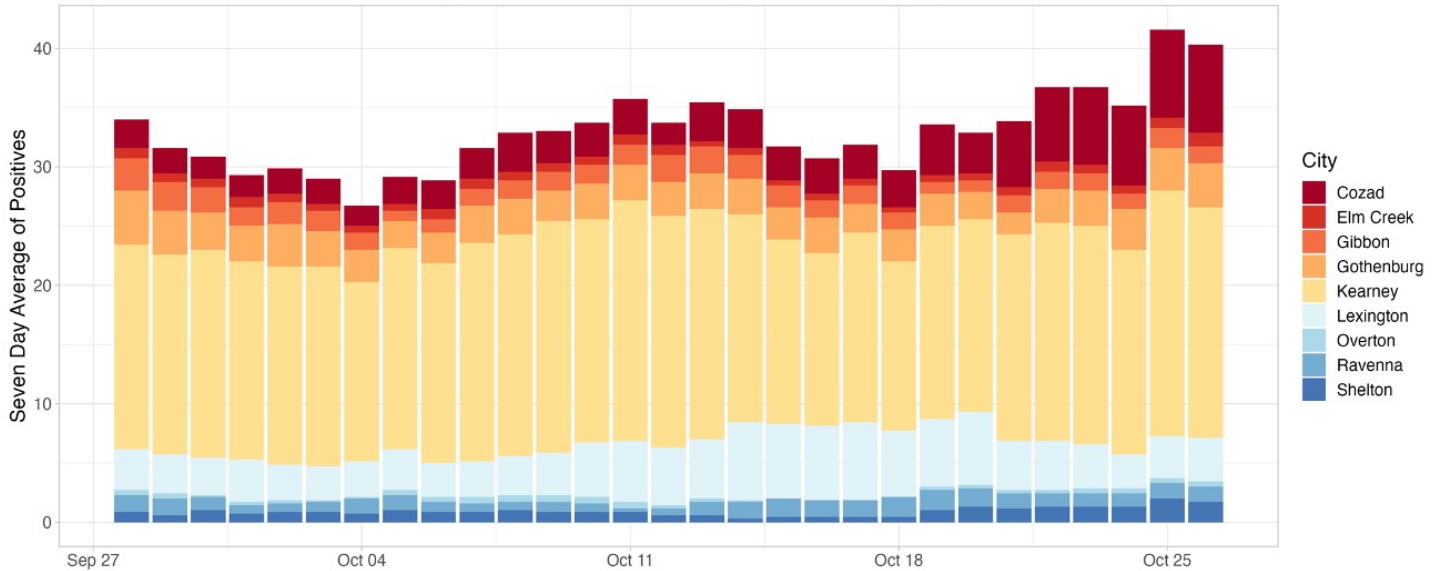
Information Updated as of 10/26th at 8 p.m.



- The following bar graphs describes the 7-day rolling averages by city for the past four weeks (Sep 28 - Oct 26) 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

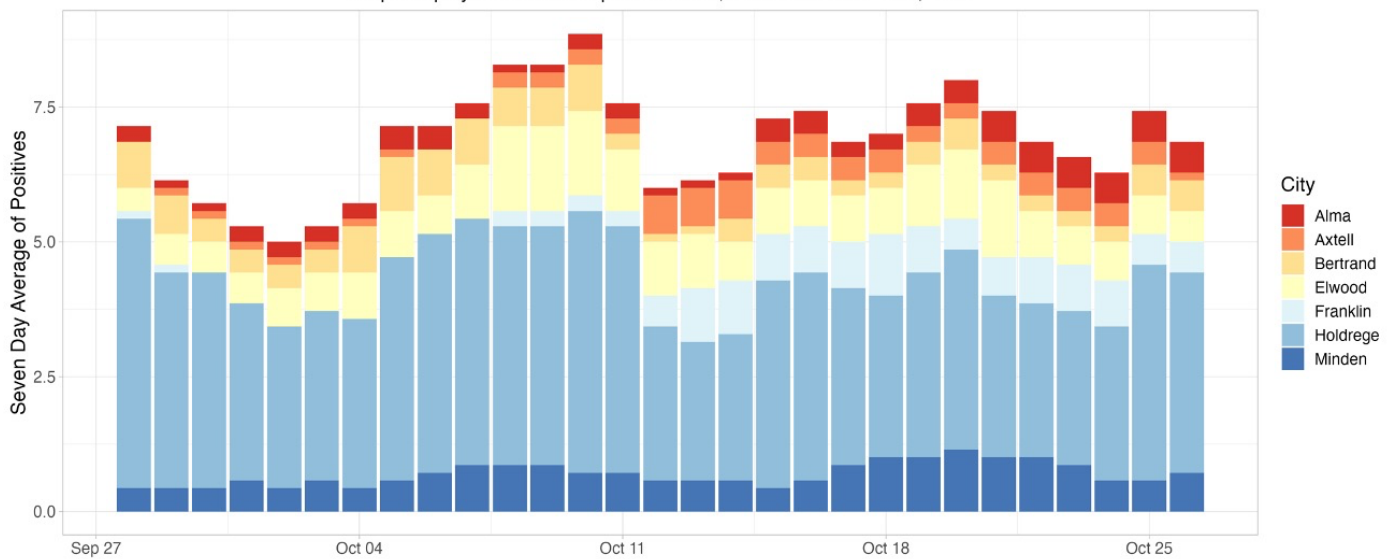
Graph displays data from September 28th, 2021 to October 26th, 2021



Information Updated as of 10/26th at 8 p.m.

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

Graph displays data from September 28th, 2021 to October 26th, 2021



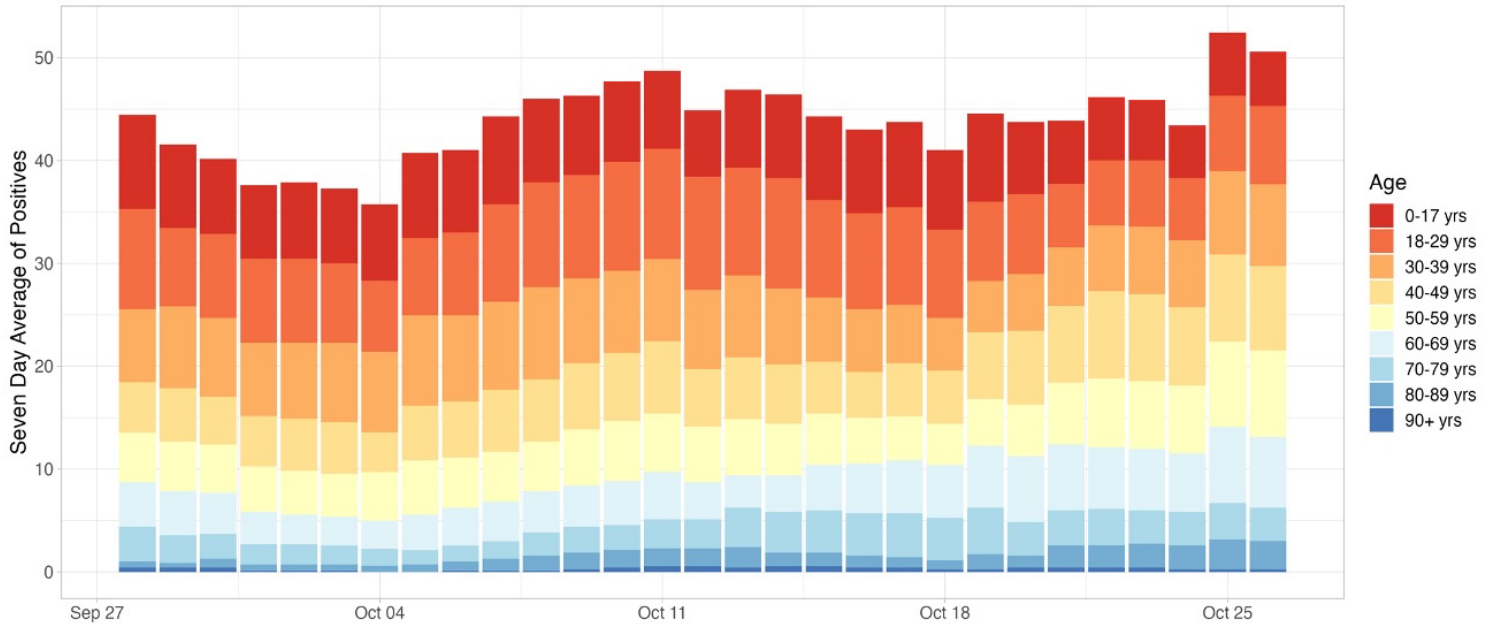
Information Updated as of 10/26th at 8 p.m.



- The graph below describes the **7-day rolling average** of cases from **Sep 28 – Oct 26** 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 September 28th, 2021 to October 26th, 2021



Information Updated as of 10/26th at 8 p.m.



### Weekly summary

- 356 cases of COVID-19 were recorded in TRPHD between October 20 - October 26. In the past month, 1272 new cases have been detected across TRPHD, 80 of them at long-term care and other residential facilities.
- In the past week, Dawson county recorded 109 cases, almost half of which were in Cozad city. About a tenth of all tests conducted in the past month across TRPHD were positive. Excluding residential facilities, between 22-25% of all tests returned positive in the past six weeks.
- The rate of increase in new vaccinations has slowed further. About 47% of TRPHD's overall population is fully vaccinated, compared to a statewide average of about 56%.
- COVID patients account for about 1/5<sup>th</sup> of all medical and surgical beds across TRPHD. ICU availability has rebounded somewhat, about a third of all beds across the district are unoccupied. Overall ICU bed availability has also increased marginally.
- A testing site at the Buffalo county fairgrounds (drive-through testing with prior online registration, Mon & Wed, 9:30-12:30) is now operational. Those desirous of COVID testing are requested to register at [www.trphd.org](http://www.trphd.org) for scheduling.
- As of Oct 25, 2021, 47% of TRPHD's total population and 58% of the adult population (18+ years) has been fully vaccinated across the district. See vaccination report at <https://www.trphd.org/covid-19/vaccination-reports.html> for details. TRPHD strongly urges all unvaccinated vaccine-eligible residents to avail of COVID vaccination through their healthcare provider, pharmacy or TRPHD. For schedule of vaccination clinics, see [www.trphd.org](http://www.trphd.org)
- All persons aged 12 and over are eligible for the vaccine. TRPHD has scheduled mobile vaccination clinics at over 15 sites across seven counties to distribute vaccines and to focus on areas of potential shortfall.

*To conclude, 356 new COVID cases were detected in the Two Rivers area last week, matching the weekly average for the past two months. ICU bed availability has improved, especially with the addition of more beds at facilities. Ongoing disease outbreaks in Dawson and Phelps counties show high positivity rates and seem to be clustered among residents aged 40 years and over. 47% of the total population of TRPHD district and 58% of all adults are fully vaccinated, compared to about 56% across Nebraska. TRPHD has scheduled mobile vaccination clinics across the district, schedule can be found at <https://www.trphd.org/covid-19/event-calendar.html>. TRPHD is also operating a public COVID testing site at the Buffalo County Fairgrounds 9:30 AM - 12:30 PM, Mondays and Wednesdays. Those eligible are advised to contact their physician or their local pharmacy. To access services through Two Rivers health department, please visit [www.trphd.org](http://www.trphd.org) to register an appointment (for COVID testing or vaccination).*



## 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
<b>TRPHD total</b>	<b>97,132</b>
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:

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

### 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:

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

## 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 81,000. This includes all residents over the age of 11 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.

	12-29 YRS	30-49 YRS	50-64 YRS	65+ YRS	TOTAL(12+YRS)
<b>TRPHD</b>	<b>24,794</b>	<b>22863</b>	<b>17760</b>	<b>15799</b>	<b>81,216</b>
<b>BUFFALO</b>	14,314	11910	8184	6863	41,271
<b>DAWSON</b>	5,750	5723	4334	3696	19,503
<b>FRANKLIN</b>	515	586	717	809	2,627
<b>GOSPER</b>	333	418	532	526	1,809
<b>HARLAN</b>	625	649	735	845	2,854
<b>KEARNEY</b>	1,385	1508	1343	1239	5,475
<b>PHELPS</b>	1,872	2069	1915	1821	7,677

### 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	49209
Dawson	23733
Franklin	2987
Gosper	2013
Harlan	3415
Kearney	6529
Phelps	9100
<b>TRPHD total</b>	<b>96986</b>
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
<b>KEARNEY URBAN AREA (TOTAL)</b>	<b>39412</b>
Lexington	10115
Overton	567
Johnson Lake	600



Elwood	683
Cozad	3735
<b>LEXINGTON URBAN AREA (TOTAL)</b>	<b>15,700</b>
Holdrege	5408
Funk	183
Loomis	376
<b>HOLDREGE URBAN AREA (TOTAL)</b>	<b>5967</b>
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>)