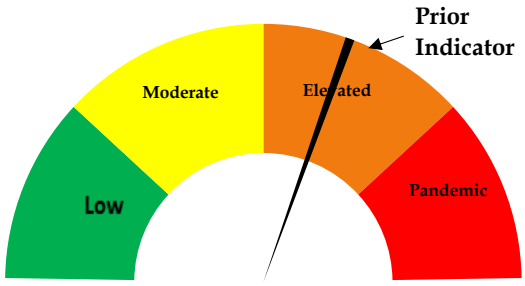
Two Rivers
PUBLIC HEALTH DEPARTMENT

Risk Dial Dec 31, 2020



Risk Dial for COVID-19
Two Rivers Public Health
Published December 31, 2020

- COVID-19 related ICU occupancy continues to decrease across hospitals in TRPHD. Over 40% of ICU beds are available currently. COVID-19 accounts for less than a fifth of patients occupying medical/surgical beds currently in the district. (see https://www.trphd.org/covid-19/ for details)
- The daily average of positive cases has dropped across the district, although testing outside residential facilities is about half the weekly average from 6 weeks ago.
- Although testing availability remains steady across the district, uptake of TestNebraska services is considerably lower than earlier.
- There has been a sudden increase in positivity rates among people who are not residents of long-term facilities, although this may be related to the change in testing coverage and testing context. For more details on testing statistics, see weekly report (Dec 23 - Dec 29 https://www.trphd.org/covid-19/).
- The average time taken on average to convey test results to individuals is now less than 3 days, a significant improvement since the previous week. This pertains only to laboratory-based PCR test results.
- Contact tracing efforts have been integrated by TRPHD across all age groups, allowing for better co-ordination across contact and follow-up teams.
- For these reasons, the risk dial remains lowered within the 'elevated' level. We continue to be cautiously optimistic about a sustained downward trend in daily new cases across the district.

Weekly report Dec 23 - Dec 29 2020

Overview

The weekly report will look at COVID-19 cases in TRPHD across three 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 **December 23 – December 29** (1 week) and **December 1 – December 29** (4 weeks). We describe cases in residential facilities separately from other residents of the district.
- The first set of graphs look at the progress of the pandemic from **April 1 – December 29** (39 weeks) across all counties.
    - We describe the 7-day rolling average [1] of positive cases across TRPHD since April, describing cases by age categories **(Apr – Dec)**
- The second set of graphs look at the **total (cumulative) cases** from **March 15 – December** 29 across each of the 7 counties.
- The third set of graphs represents the **total (cumulative) cases per 100,000 residents** from **March 15 – December 29** for each of the seven counties in Two Rivers Health District.
- The fourth set of graphs describe the daily cases (7-day rolling average) from **December 1 – December 29**. Progress is described by age, county and city of residence. Also depicted are countywide rates per 100,000 population and citywide rates per 10,000 population.
- The fifth set of graphs look at Residential facilities in TRPHD **(Sep – Dec)** [2]
    - We describe weekly positive cases detected in residential facilities (**Sep 2 – Dec 29**), and display each week's cases by the county where the facility is located. [3]

To conclude, overall daily COVID-19 case counts have dropped across Two Rivers Health District, although positivity rates have increased in Franklin and Harlan counties. Although testing availability is steady across Two Rivers, reduced testing uptake over the past week is cause for concern. ICU availability and COVID-related medical/surgical bed usage have remained within safe levels across hospitals in the district in the past week. A little over 9% of the residents of TRPHD have tested positive for COVID-19 over the past 10 months. 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] 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.
[2] For information on residential facilities, please see appendix 3
[3] For information on data sources, please see appendix 1

Testing Overview

- As of Dec 29, over 38,300 residents of Two Rivers Health District were tested at least once for COVID-19. 78,945 tests were conducted since March 1, 9038 of which were positive. [4]
- A little over 61% of all tests conducted since April have been laboratory-based Polymerase Chain Reaction (PCR) tests.
    - However, 65% of tests in the past 4 weeks have been rapid, or antigen tests. These are easier to administer and provide immediate results, but are not as sensitive as PCR tests that are used for laboratory confirmation of COVID.

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

	Dec 23 – Dec 29 (1 week)			Dec 1 – Dec 29 (4 weeks)		
	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Hospital/ Clinic	525	152	29.0%	3338	820	24.6%
TestNebraska	301	80	26.6%	1999	383	19.2%
Residential Facility	2,023	21	1.0%	8665	113	1.3%
Lab/ Pharmacy	157	5	3.2%	1276	225	17.6%
Other	31	8	25.8%	211	32	15.2%
TOTAL	**3037**	**266**	**8.8%**	**15,489**	**1,573**	**10.2%**

- A total of 8665 tests were availed by residents and staff of long-term care and other **residential facilities** in the last 4 weeks. Details are provided below:

	Dec 23 – Dec 29 (1 week)			Dec 1 – Dec 29 (4 weeks)		
Residential Facility In:	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Buffalo	835	4	0.5%	3,015	37	1.2%
Dawson	315	0	0.0%	1,052	4	0.4%
Franklin	0	0	0.0	143	0	0.0%
Gosper	127	9	7.1%	646	33	5.1%
Harlan	87	2	2.3%	431	3	0.7%
Kearney	125	0	0.0%	1,029	1	0.1%
Phelps	486	6	1.2%	2,102	32	1.5%
Outside TRPHD	48	0	0.0%	247	3	1.2%
TOTAL	**2023**	**21**	**1.0%**	**8665**	**113**	**1.3%**

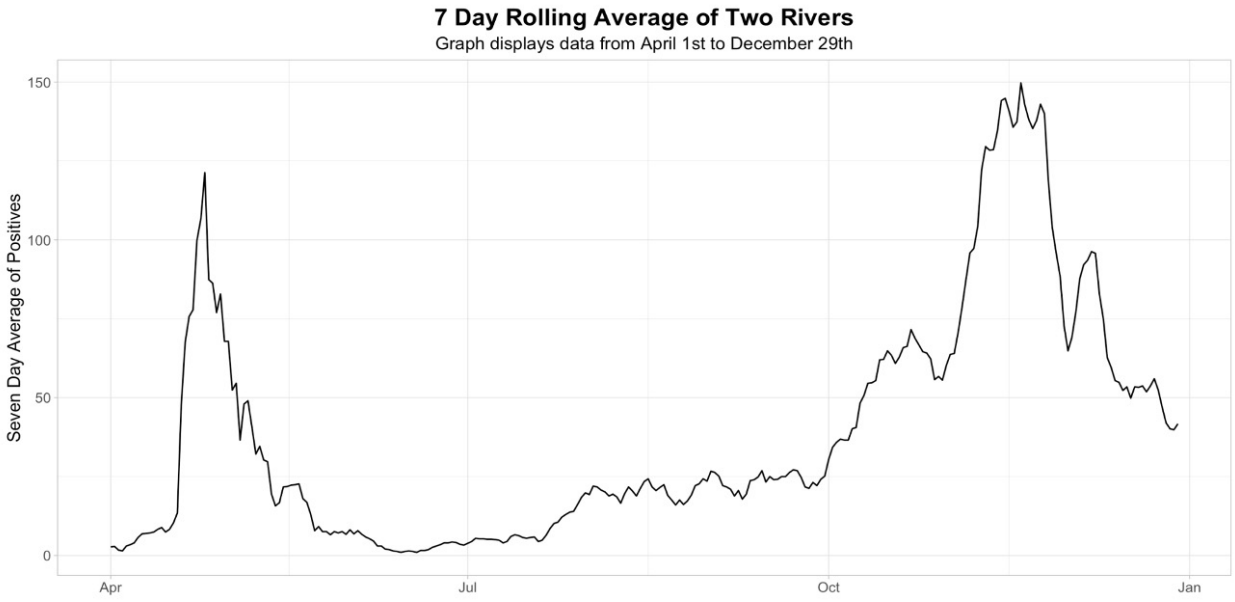
[4] Note: The minor differences between the numbers reported and totals displayed on www.trphd.org dashboards is explained by testing in residential facilities and isolated rapid test results that are not reflected in the state's public dashboards.

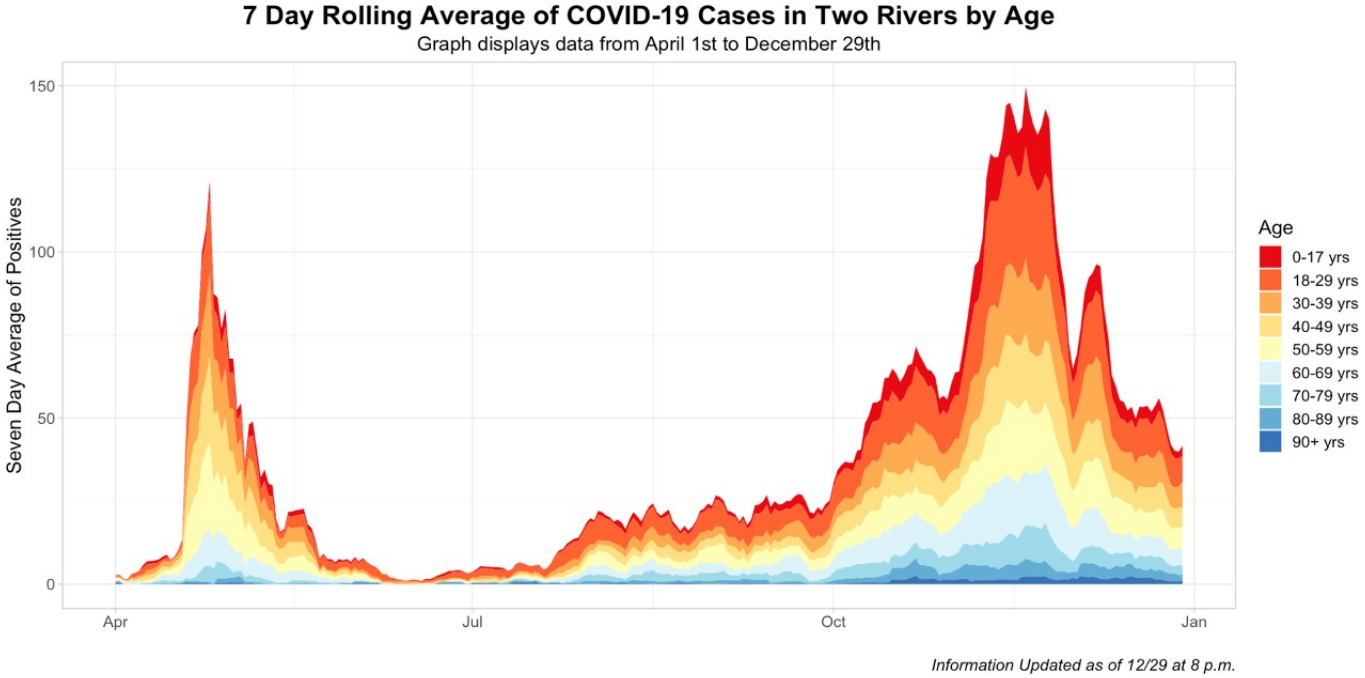
Excluding residential facilities, a total of 6824 [5] persons were tested in the past 4 weeks. The following table gives details of positive cases in the past week and past 4 weeks by county, age categories and gender.

	Dec 23 – Dec 29 (1 week)			Dec 1 – Dec 29 (4 weeks)		
	Total tests conducted	**Positive cases**	**P. rate (%)**	**Total tests conducted**	**Positive cases**	**P. rate (%)**
County						
Buffalo	518	94	18.1%	3521	627	17.8%
Dawson	296	75	25.3%	1836	471	25.7%
Franklin	24	15	62.5%	174	36	20.7%
Gosper	16	4	25.0%	122	44	36.1%
Harlan	25	9	36.0%	127	32	25.2%
Kearney	35	8	22.9%	329	79	24.0%
Phelps	98	38	38.8%	641	149	23.2%
Data missing/ not disclosed	2	2	100.0%	74	22	29.7%
Total	**1,014**	**245**	**24.2%**	**6,824**	**1,460**	**21.4%**
Age (in yrs)						
0-17	83	19	22.9%	772	128	16.6%
18-29	228	44	19.3%	1534	294	19.2%
30-39	181	46	25.4%	1175	277	23.6%
40-49	124	38	30.6%	854	196	23.0%
50-59	131	37	28.2%	909	235	25.9%
60-69	130	30	23.1%	827	172	20.8%
70-79	81	19	23.5%	478	94	19.7%
80-89	41	6	14.6%	215	50	23.3%
90+	15	6	40.0%	60	14	23.3%
Total	**1014**	**245**	**24.2%**	**6824**	**1460**	**21.4%**
Gender						
Female	553	125	22.6%	3706	738	19.9%
Male	453	118	26.0%	2998	707	23.6%
Data missing/ not disclosed	8	2	25.0%	120	15	12.5%
Total	**1,014**	**245**	**24.2%**	**6,824**	**1,460**	**21.4%**

[5] Tests of persons missing date of birth were excluded from the analysis

- The graph below describes 7-day rolling average of COVID-19 across TRPHD from **April 1 – December 29**.
- 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.





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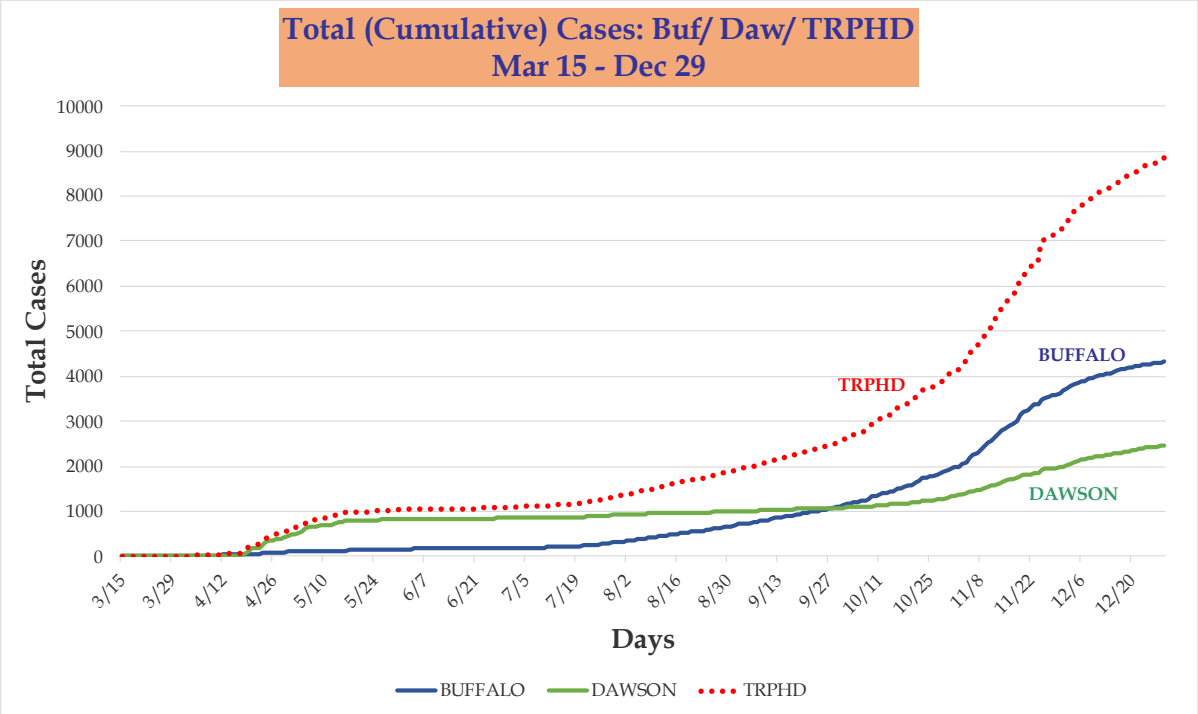
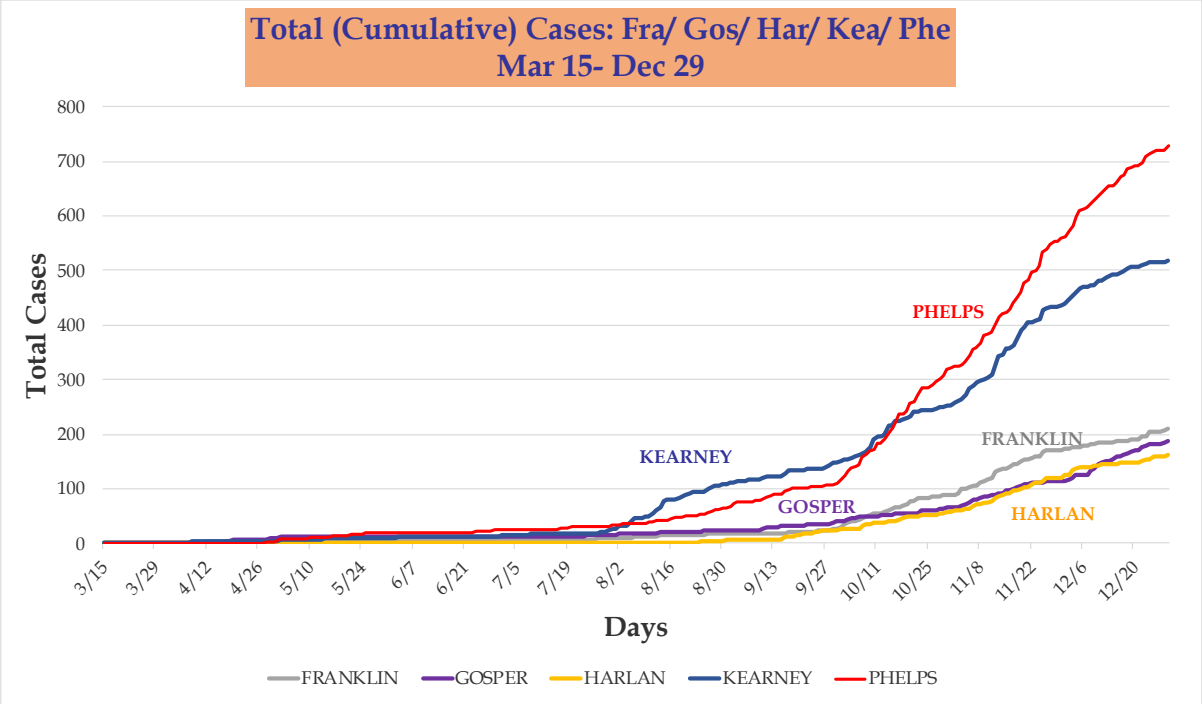
- The graph below describes the **total (cumulative)** COVID-19 cases recorded in each of the 7 counties in Two Rivers Health District from **March 15 – December 29**.
- Graphs are presented separately for Buffalo and Dawson counties, and for Phelps, Franklin, Gosper, Harlan and Kearney counties. Scales are different for both graphs.





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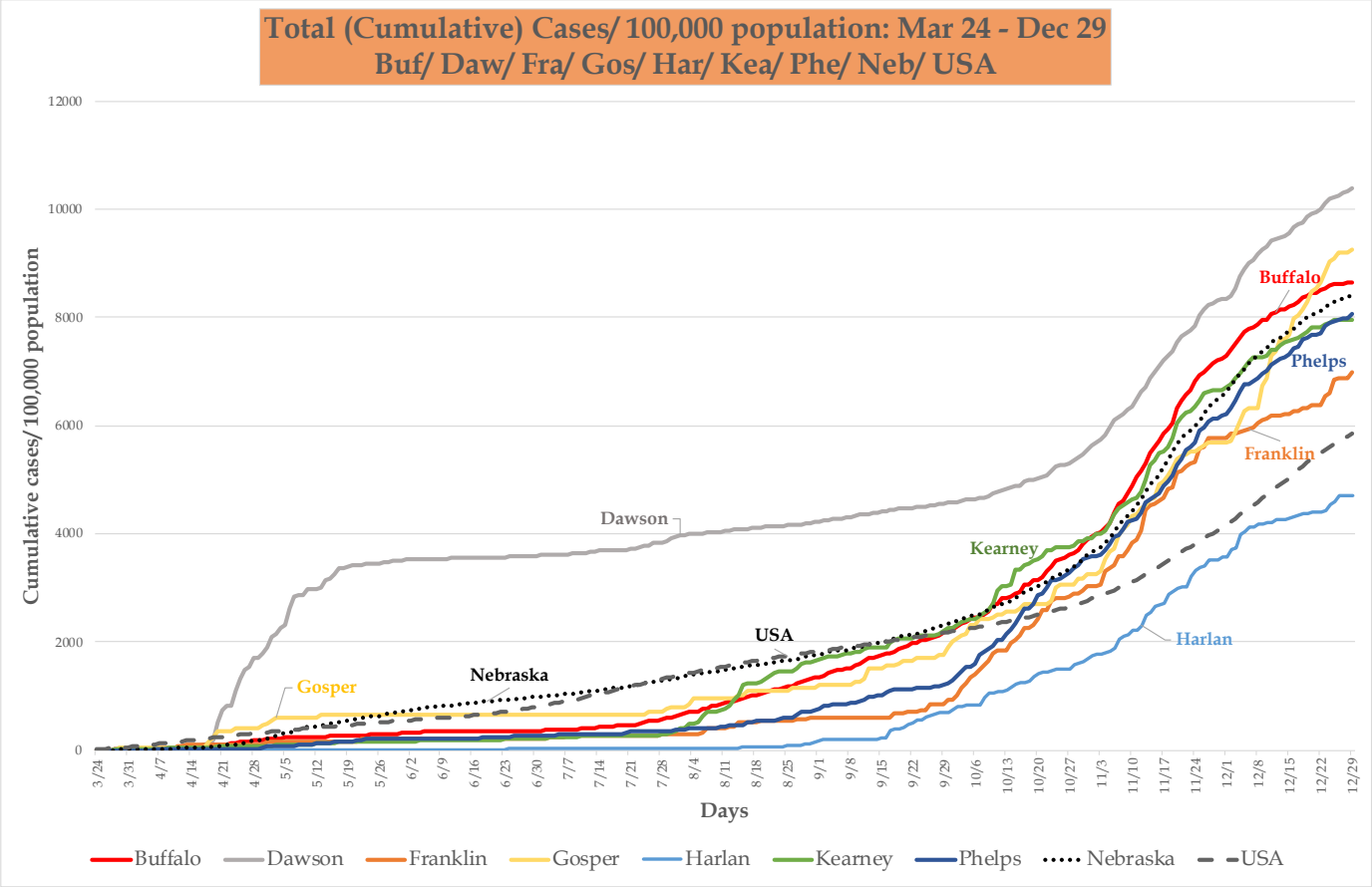
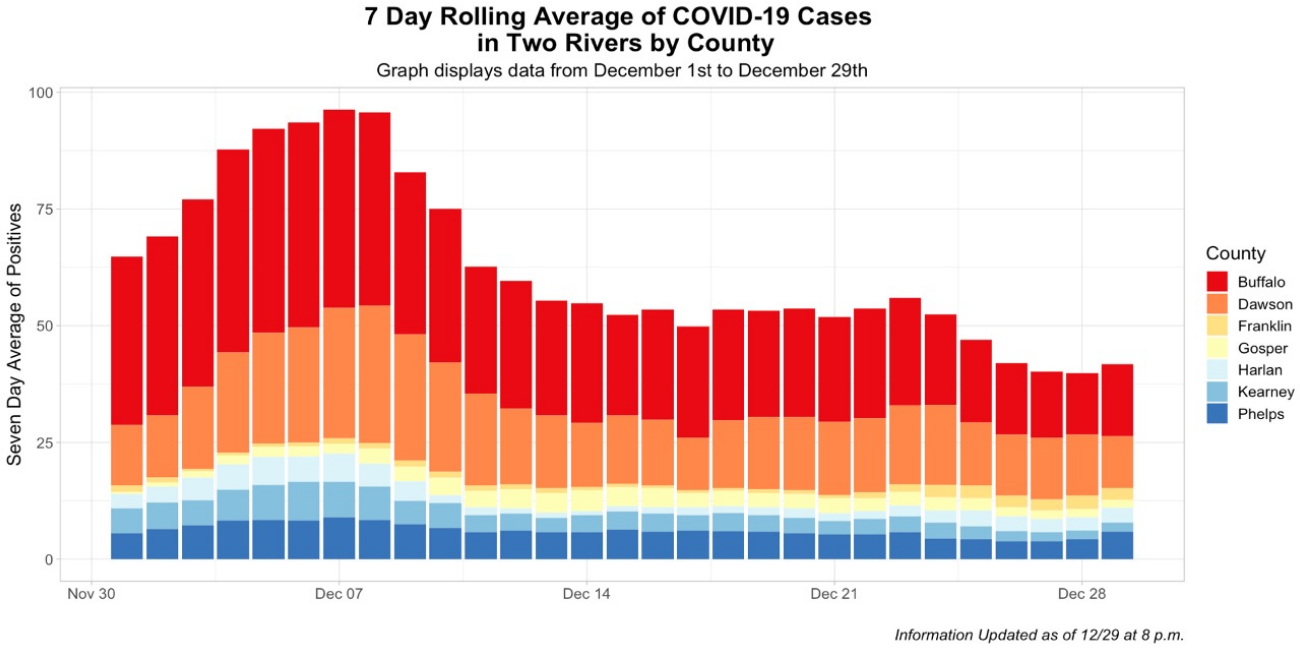
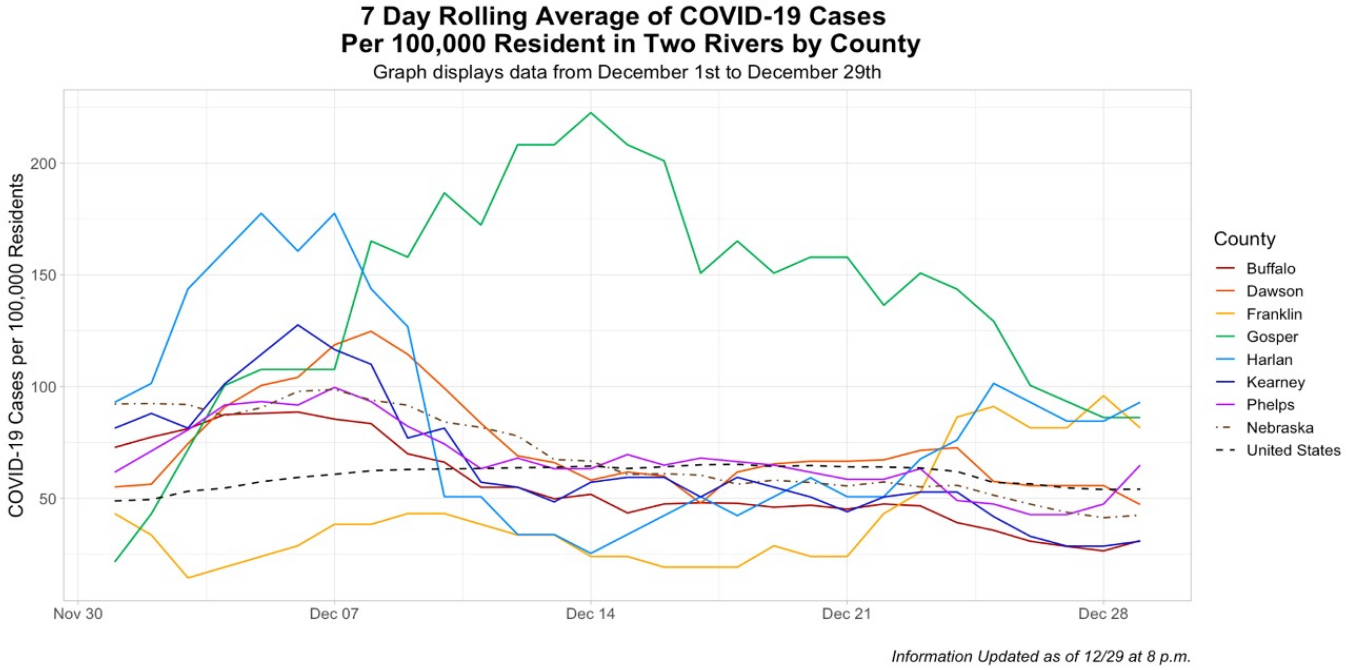
- The graph below describes the **total (cumulative) cases /100,000 population** [6]each of the 7 counties in TRPHD from **July 1 to Dec 22**. Nebraska state and the United States are presented for comparison.
- This allows us to standardize the progress of all counties as well as the state of Nebraska. Of particular interest is the slope of each line, corresponding to the rate of increase in cases.
- Between 8-10% of all residents of Dawson, Gosper, Buffalo, Kearney and Phelps have tested positive since March 2020.



[6] For information on cumulative cases/ 100,000 population, please see appendix 2

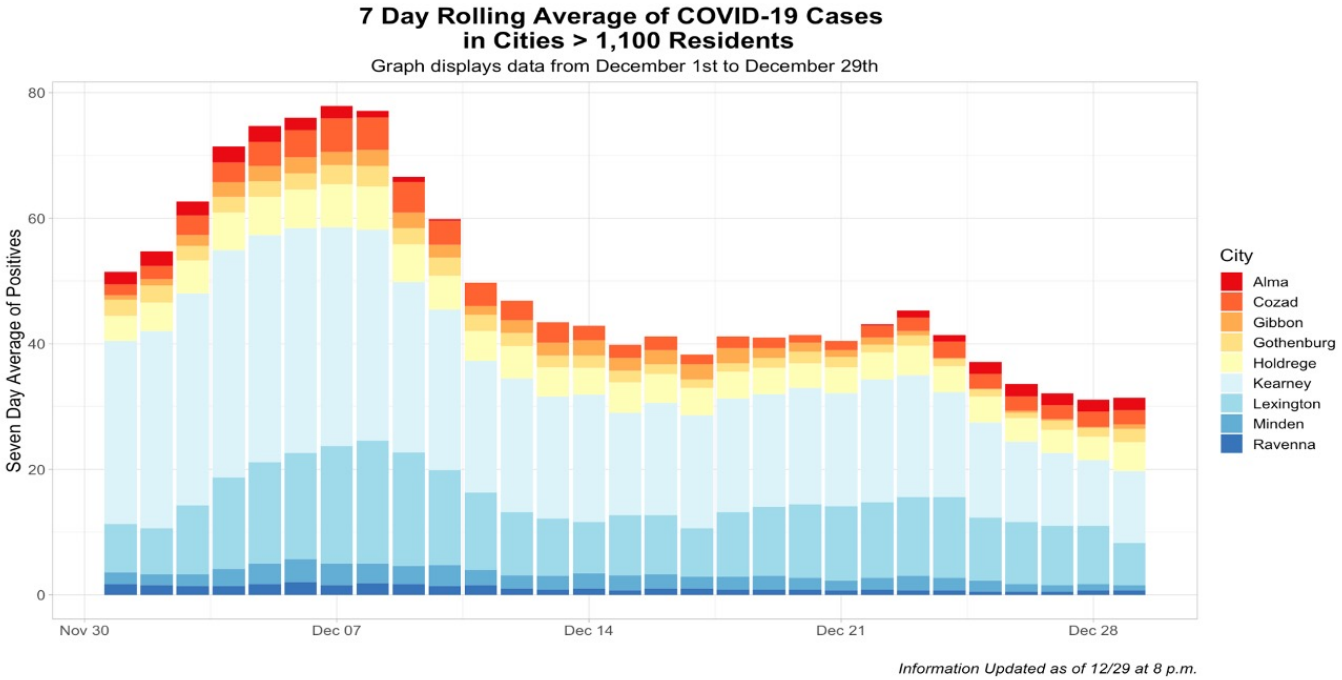
- The following bar graph describes the 7-day rolling averages of COVID-19 cases by **county** for the past four weeks **(Dec 1 – Dec 29).**
- The line graph describes the same data per 100,000 population.[7] The graph also depicts the line for the United States and Nebraska.

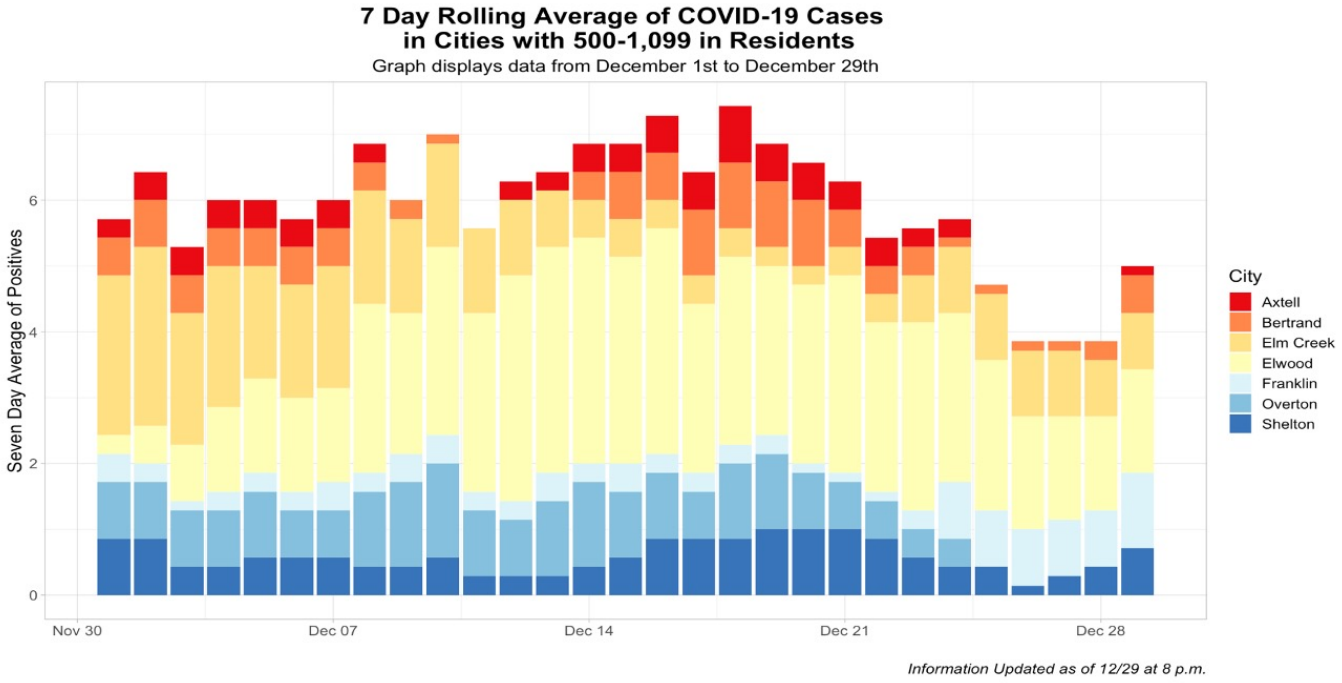




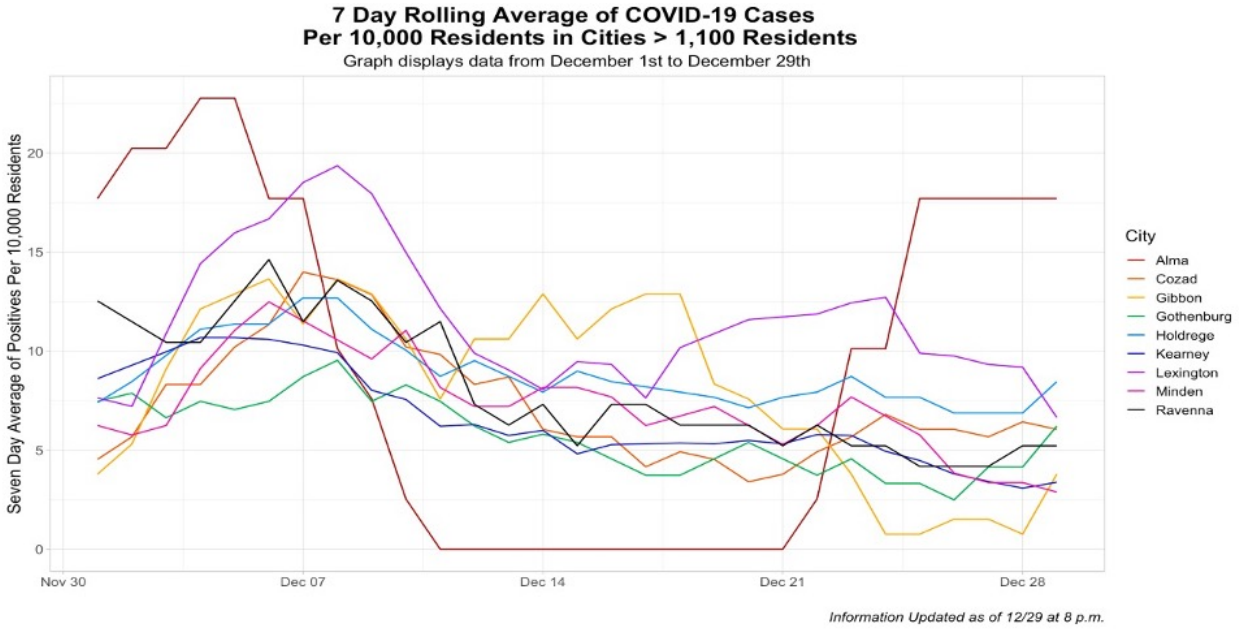
[7] Please note: When comparing counties, we describe rates per 100,000 population. This is roughly equal to the total population of Two Rivers Health Department (~97,000)

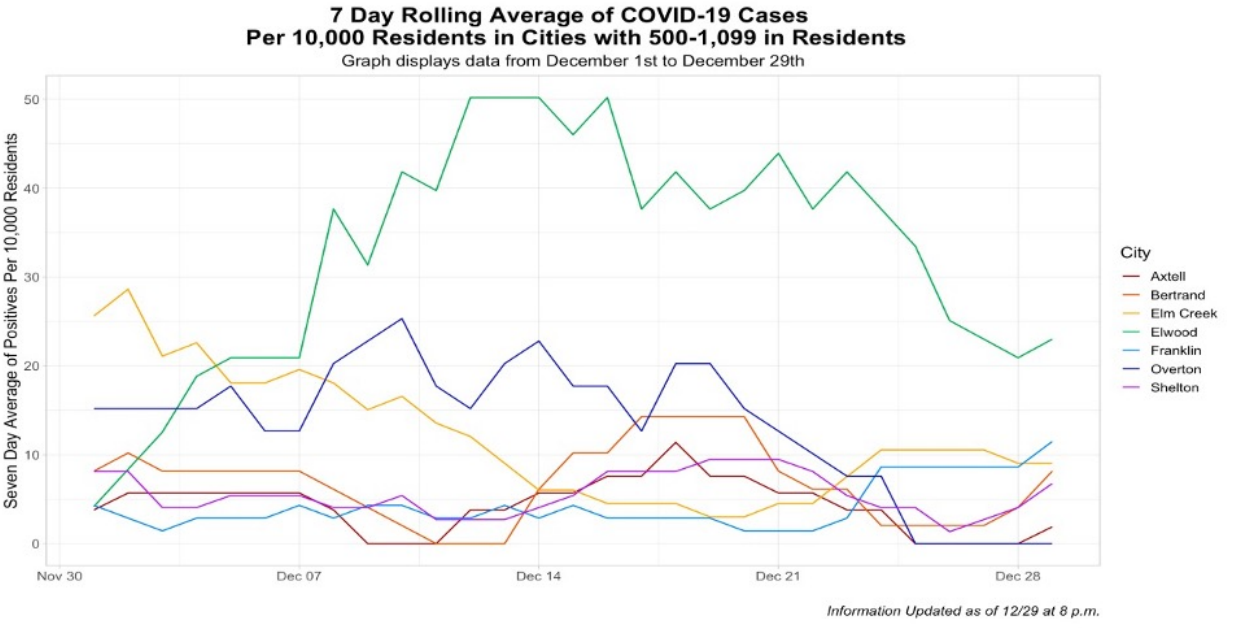
- The following bar graph describes the 7-day rolling averages by **city** for the past four weeks **(Dec 1 – Dec 29)** in TRPHD. The graph above shows cities with population above 1100 and the one below shows the graph for cities with under 1100 residents. The scale is different for both graphs.





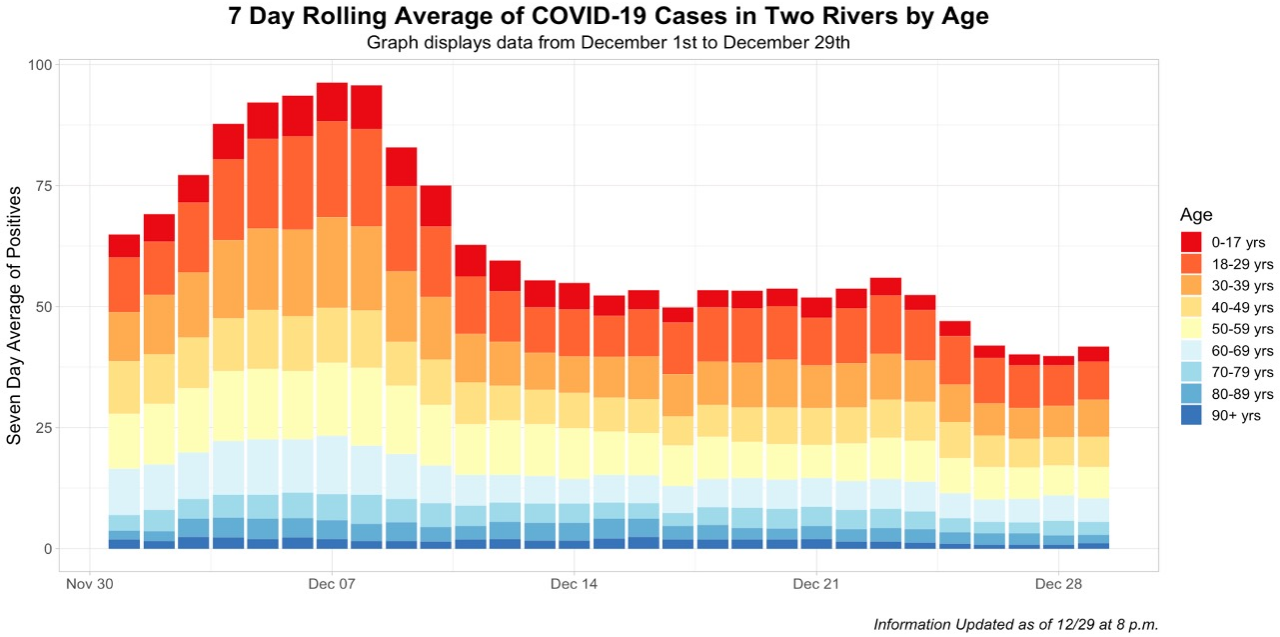
- The following line graph describes the 7-day rolling average of COVID cases per 10,000 population in **cities** across TRPHD for the past four weeks **(Dec 1 – Dec 29)** [8]
- The top graph describes shows cities with population above 1100 and the one below shows the graph for cities with under 1100 residents. The scale is different for both graphs.

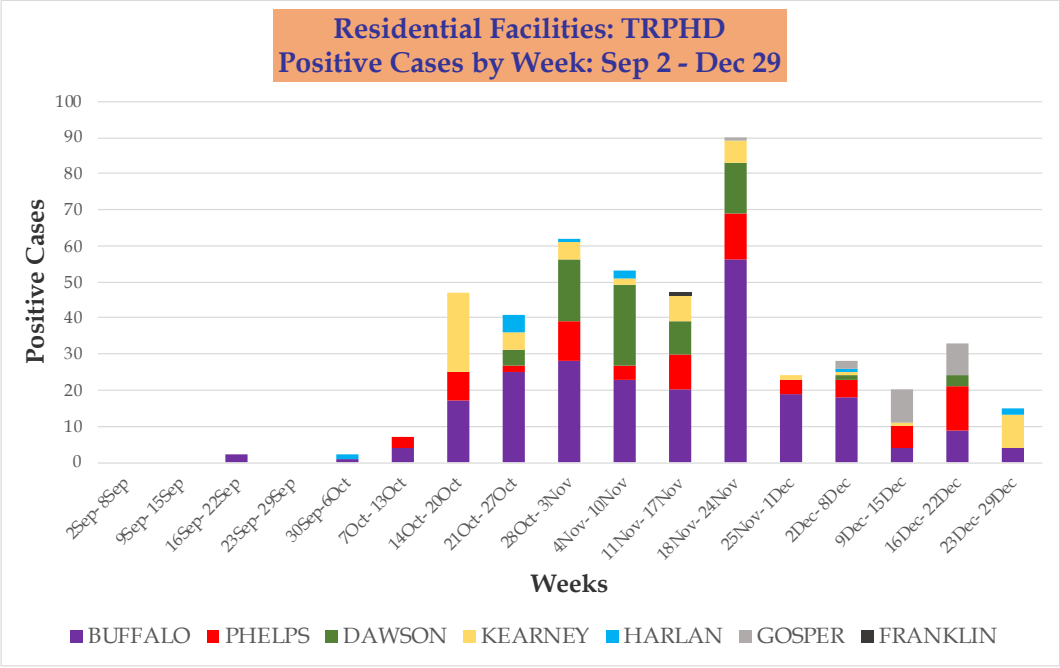




[8] Please note: When comparing cities, we describe rates per 10,000 population. This is roughly equal to the total population of Lexington (~10,000)

- The first graph below describes the **7-day rolling average** of cases from **December 1 – December 29** by age. Tests were conducted among all persons , including residents of long-term residential facilities. The height of the graph corresponds to total cases and the thickness of each colored band corresponds to each age group.
- The second graph shows the distribution of cases per week in **residential facilities** in the district, broken up by county (**Sep 2 – Dec 29).** Regular and widespread testing in long term care facilities in TRPHD began in early October.





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Weekly summary

- The daily average of positive cases across Two Rivers Health District continues to drop, although positivity rates in counties outside Buffalo have risen in the past week.
- Although testing facilities continue to be available through TestNebraska as well as private clinics and hospitals, testing uptake has dropped to about half the weekly average six weeks previously.
- The drop in daily case counts across Buffalo county continue to drive down overall incidence rates in TRPHD. A recent increase in case counts in Franklin and Gosper counties is being closely monitored.
- Rising positivity rates among persons aged 60 years and over who are not residents of long term facilities is a cause for concern. Over a quarter of all new positives in the past week were among 60+ individuals.
- Cumulative case counts detected through testing conducted at residential facilities has dropped in the past week.
- Between 8-10% of the residents of Dawson, Gosper, Buffalo, Kearney and Phelps counties have tested positive for COVID-19 at some time during the past 10 months. Of these, Dawson experienced a surge in cases in April-May, and other counties between September – November.

To conclude, overall daily COVID-19 case counts have dropped across Two Rivers Health District, although positivity rates have increased in Franklin and Harlan counties. Although testing availability is steady across Two Rivers, reduced testing uptake over the past week is cause for concern. ICU availability and COVID-related medical/surgical bed usage have remained within safe levels across hospitals in the district in the past week. A little over 9% of the residents of TRPHD have tested positive for COVID-19 over the past 10 months. 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.

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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

- 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)
- 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
- 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).

Population numbers used are from the American Community Survey (ACS 2019 mid-year estimates). For further detail, see: https://www.census.gov/programs-surveys/acs/data.html

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

[(Total positive test results for residents in the region)] / (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.