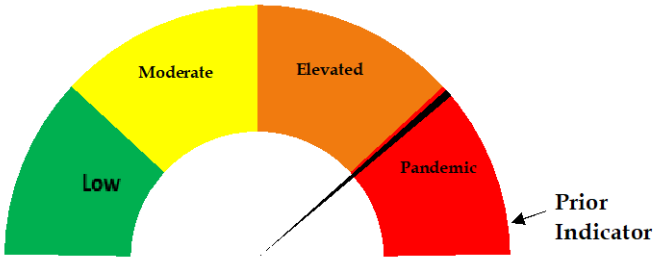
Two Rivers
PUBLIC HEALTH DEPARTMENT

Risk Dial Dec 9 2020



Risk Dial for COVID-19
Two Rivers Public Health
Published December 10, 2020

- The overall number of COVID-related hospitalizations has decreased across the district, approximately 70% of admissions are for non-COVID related reasons.
- ICU availability is currently 12.5%.
- The daily average of positive cases has begun to rise again, but still remains below the number of cases seen just prior to Thanksgiving. Positivity rates are also rising, even though rates are below those four weeks back.
- Test Nebraska has returned to regular posted hours, however since Thanksgiving there has been a lower participation in testing. Access continues to remain unevenly distributed across the district. Low test participation across the district and relatively reduced access in Lexington City continue to remain cause for concern. Outside of long-term care facilities the positivity rates continue to remain high among seniors. About a third of tests of persons over 60, over the previous month, were positive.
- For these reasons, the risk dial continues to remain in the 'pandemic' level, although at a lower level than the previous week.

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Weekly report Dec 2 - Dec 8 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 and accompanying text explain the change in methodology for calculating positivity rates and case denominators. We show positive cases and tests conducted by county, age and gender from **December 2 – December 8** (1 week) and **November 10 – December 8** (4 weeks).
- The first set of graphs look at the progress of the pandemic from **April 1 – December 8** (36 weeks) across all counties.
    - We describe the 7-day rolling average [1]across TRPHD since July, describing cases by age categories **(Jul – Dec)**
- The second set of graphs look at the seven-day rolling average per 100,000 persons [2]
    - We describe 7-day rolling average/ 100,000 population [3] for each of the seven counties, as well as the line for the United States and the state of Nebraska for comparison since Jul 1
- The third set of graphs look at daily cases (7-day rolling average) from **November 10 – December 8**. 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.

To conclude, even as data reconciliation allows us to better estimate the 'true rate' of COVID in Two Rivers Health District, positivity rates continue to remain high. Daily case rates have begun to rise again following the brief lull from a week and a half ago. High case counts in Buffalo county and Kearney city continue to be a hallmark of the spread, but higher spread in Gosper and Harlan counties more recently is cause for concern. There continues to be improved ICU availability and COVID-related medical/surgical bed usage across hospitals in the district this week compared to previous weeks. Residents are advised to exercise utmost caution and 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 data sources, please see appendix 1
[3] 7-day rolling average per 100,000 population = [(7-day average for that day)/2019 mid-year population] * 100,000

Data Overview

- Traditionally, Two Rivers Health department has presented the ***case positivity rate*** to describe the progress of COVID-19 in the district. This calculated new cases as a proportion of the total new persons tested, presented weekly and as a cumulative average. In this system, one person counted only once towards the denominator, irrespective of how many times he/she was tested.
    - As the pandemic progressed and people began to test multiple times, either voluntarily or due to living or work arrangements (for eg: residents in long term care facilities), a discrepancy began to create a gap between the 'true rate' and the calculated average.
    - The suggested recommendation was to report a ***test positivity rate,*** or the proportion of total tests conducted in that time period which produced a positive result. We shall transition to this depiction starting this week.
- However, with increased access to testing and regular COVID testing mandated for residents of assisted living, in-patient and correctional facilities, the number of new tests accessed every week has begun to rise exponentially, influencing the positivity rate.
    - Over a quarter of all COVID tests in TRPHD were conducted in the past 4 weeks, a majority of them antigen (rapid tests)
- As of Dec 9, over 36,036 residents of Two Rivers Health District have been tested at least once for COVID-19. Over 68,266 tests have been successfully conducted since March 1, and 8078 positive results have been obtained. [4]
- About a third of all tests conducted since March in the district were availed by residents or staff of residential facilities. These included long-term care facilities, in-patient psychiatry services, retirement villages, veterans' homes and correctional facilities within the district.
- Over 55% of all tests in the past 4 weeks were rapid, or antigen tests. These are easier to administer and provide immediate results, but are not as sensitive as polymerase chain reaction (PCR) tests that are used for laboratory confirmation of COVID.

[4] Note: Due to the change in datasets and manner of calculation, there may be minor differences between published numbers and totals displayed on www.trphd.org dashboards. The variation is within the margin of error and will be resolved as we move towards reconciliation across all public data interfaces.

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

	Dec 2 – Dec 8 (1 week)			Nov 10 – Dec 8 (4 weeks)		
	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Hospital/ Clinic	991	336	33.9%	4,069	1,482	36.4%
TestNebraska	602	101	16.8%	2,642	557	21.1%
Residential Facility	2,655	30	1.1%	10,324	203	2.0%
Lab/ Pharmacy	477	129	27.0%	1,805	482	26.7%
Other	69	13	18.8%	180	32	17.8%
TOTAL	**4794**	**609**	**12.7%**	**19020**	**2756**	**14.5%**

- A total of 10, 324 tests were availed by residents and staff of long-term care and other **residential facilities** in the last 4 weeks. Details are provided below:

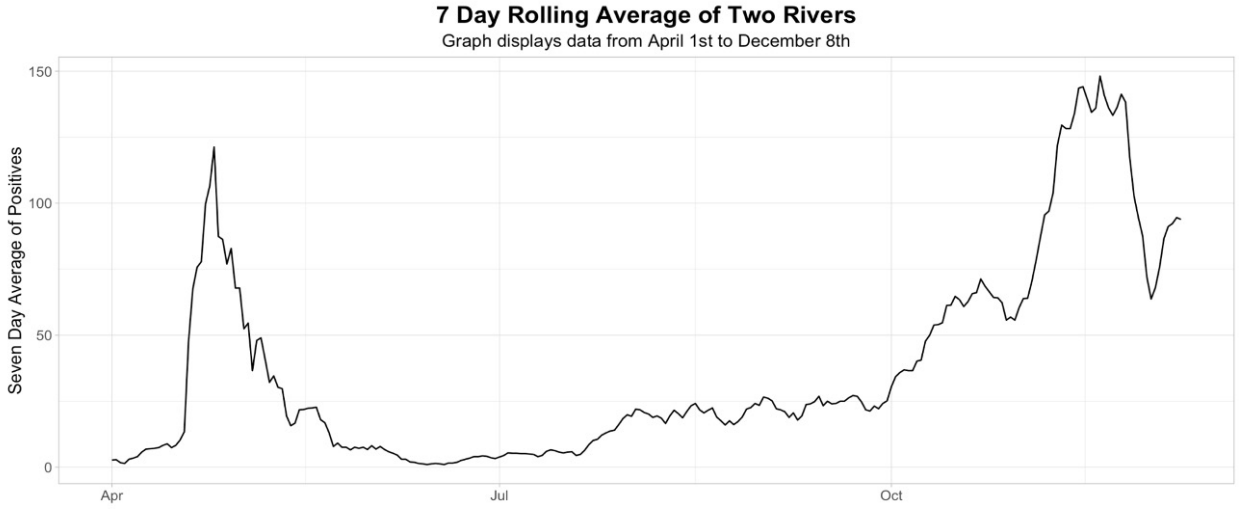
	Dec 2 – Dec 8 (1 week)			Nov 10 – Dec 8 (4 weeks)		
Residential Facility In:	Total Tests	Positive Results	Positivity Rate	Total Tests	Positive Results	Positivity Rate
Buffalo	1,078	18	1.7%	3,584	113	3.2%
Dawson	152	1	0.7%	1,189	25	2.1%
Franklin	30	0	0.0%	373	1	0.3%
Gosper	158	2	1.3%	808	4	0.5%
Harlan	134	1	0.7%	386	1	0.3%
Kearney	624	1	0.2%	1,840	18	1.0%
Phelps	438	6	1.4%	1,916	34	1.8%
Outside TRPHD	41	1	2.4%	228	7	3.1%
TOTAL	**2,655**	**30**	**1.1%**	**10,324**	**203**	**2.0%**

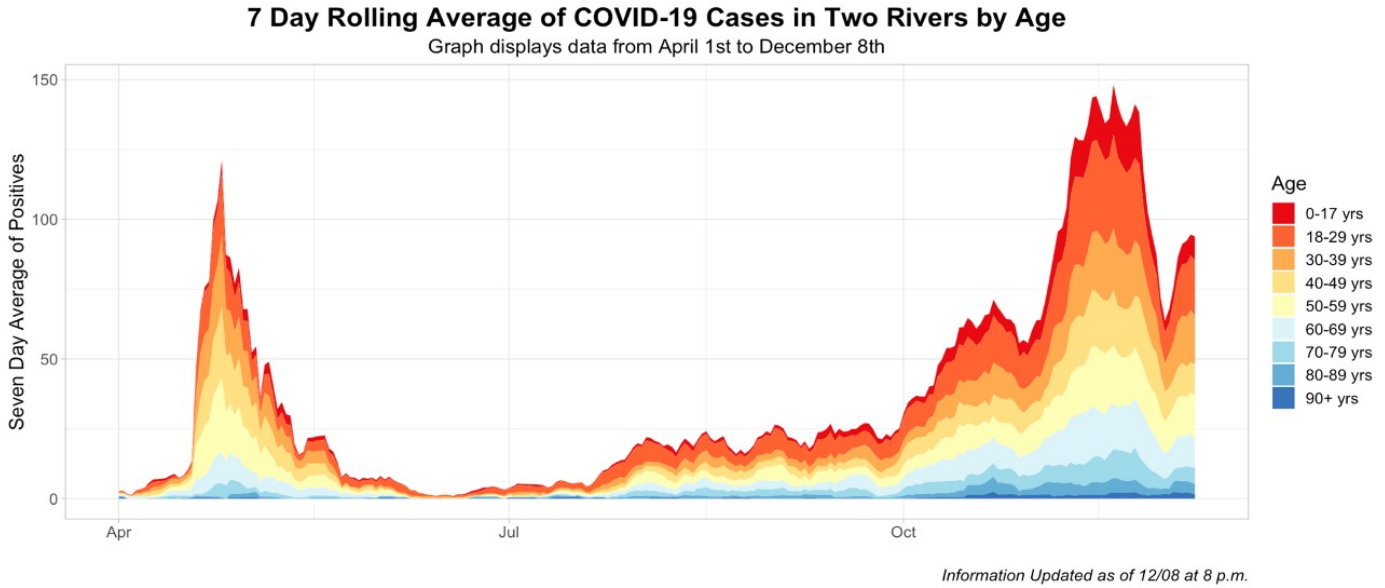
- Considering the specific nature of COVID risk of long-term residents of institutional facilities and taking into account the frequent testing undergone by these residents, we will present detailed age-wise breakup for all tests that were conducted outside of residential facilities in the past 4 weeks.

Excluding residential facilities, a total of 8696 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 2 – Dec 8 (1 week)			Nov 10 – Dec 8 (4 weeks)		
	Total tests conducted	**Positive cases**	**P. rate (%)**	**Total tests conducted**	**Positive cases**	**P. rate (%)**
County						
Buffalo	1,166	253	21.7%	4,856	1,321	27.2%
Dawson	537	186	34.6%	2,023	615	30.4%
Franklin	41	8	19.5%	226	64	28.3%
Gosper	28	16	57.1%	113	43	38.1%
Harlan	36	15	41.7%	165	62	37.6%
Kearney	112	34	30.4%	471	155	32.9%
Phelps	175	53	30.3%	629	217	34.5%
Data missing/ not disclosed	44	14	31.8%	213	76	35.7%
Total	**2,139**	**579**	**27.1%**	**8,696**	**2,553**	**29.4%**
Age (in yrs)						
0-17	274	53	19.3%	1,107	246	22.2%
18-29	498	124	24.9%	2,035	527	25.9%
30-39	363	115	31.7%	1,427	421	29.5%
40-49	269	68	25.3%	1,180	371	31.4%
50-59	293	95	32.4%	1,147	404	35.2%
60-69	238	67	28.2%	1,013	332	32.8%
70-79	133	33	24.8%	531	164	30.9%
80-89	59	20	33.9%	211	74	35.1%
90+	12	4	33.3%	45	14	31.1%
Total	**2139**	**579**	**27.1%**	**8696**	**2553**	**29.4%**
Gender						
Female	1,118	284	25.4%	4,672	1,322	28.3%
Male	1,006	286	28.4%	3,964	1,205	30.4%
Data missing/ not disclosed	15	9	60.0%	60	26	43.3%
Total	**2,139**	**579**	**27.1%**	**8,696**	**2,553**	**29.4%**

- The graph below describes 7-day rolling average of COVID-19 across TRPHD from **April 1 – December 8**.
- 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.





Information Updated as of 12/08 at 8 p.m.

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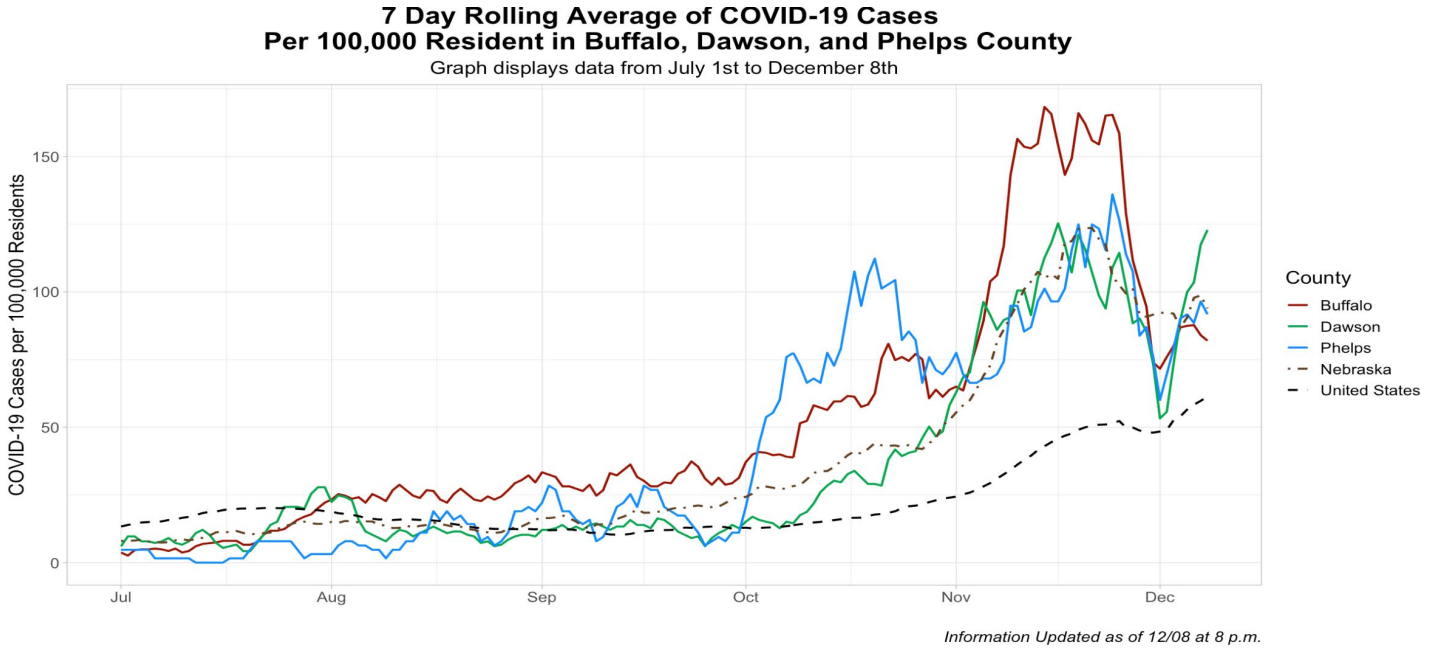
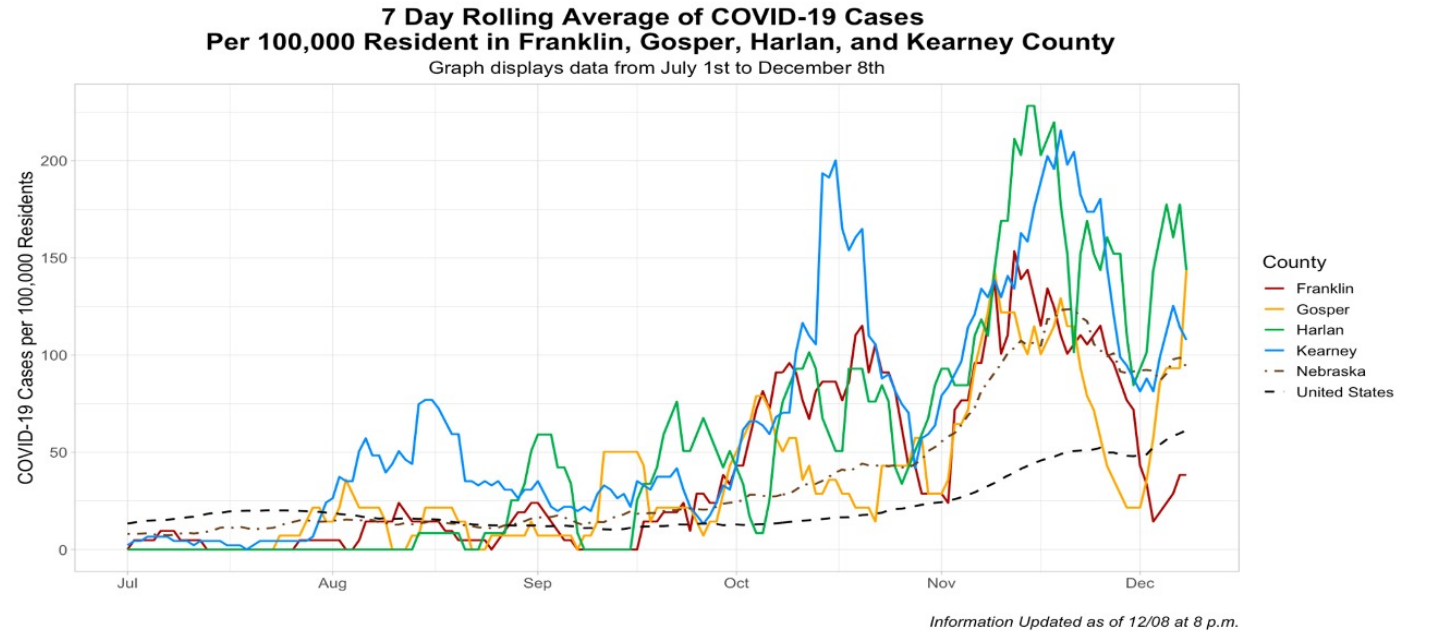
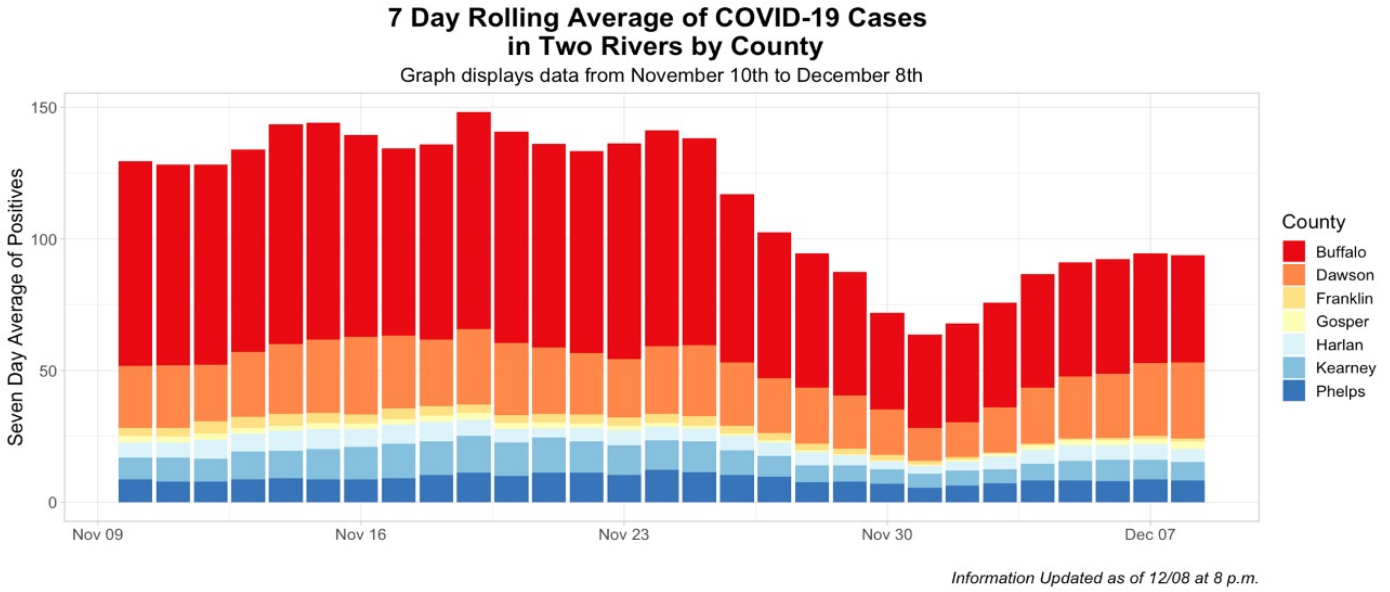
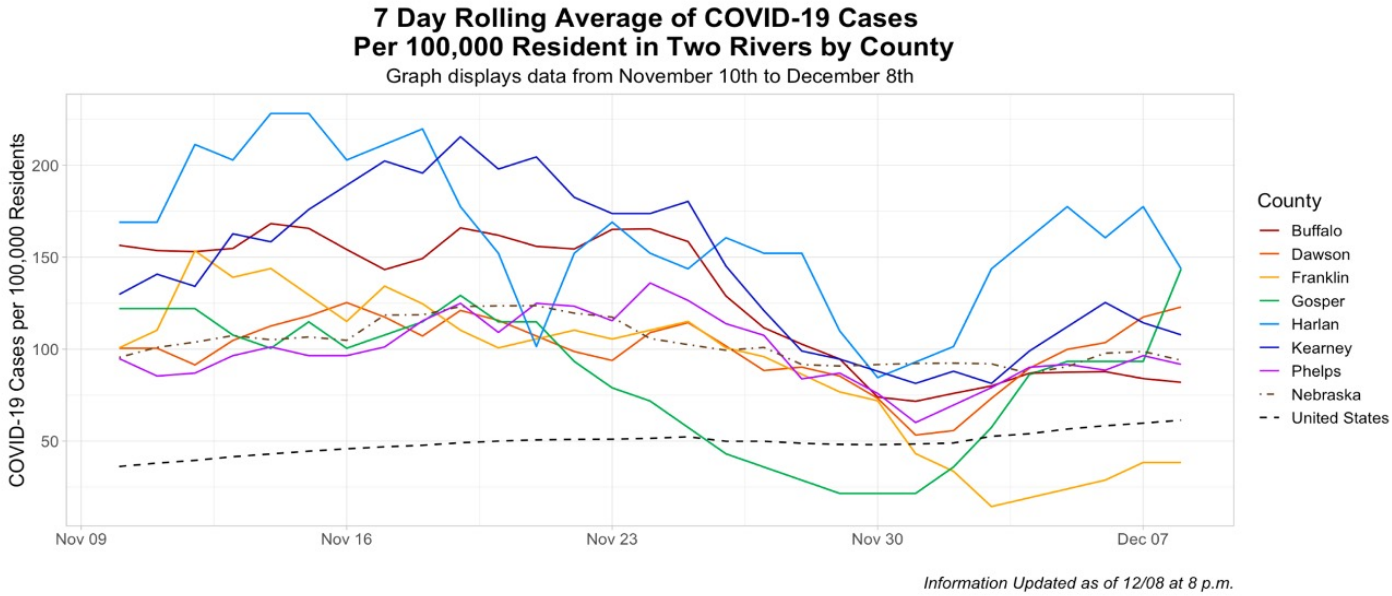
- The graph below describes the **average daily case count/ 100,000 population** across all 7 counties from **July 1 to Dec 8**. Height of the line corresponds to the 7-day rolling average of cases relative to the county's population. Nebraska and USA are shown for comparison.
- Graphs are presented separately for Buffalo and Dawson, and for Franklin, Gosper, Harlan, Kearney and Phelps counties. Scales are different for both graphs.





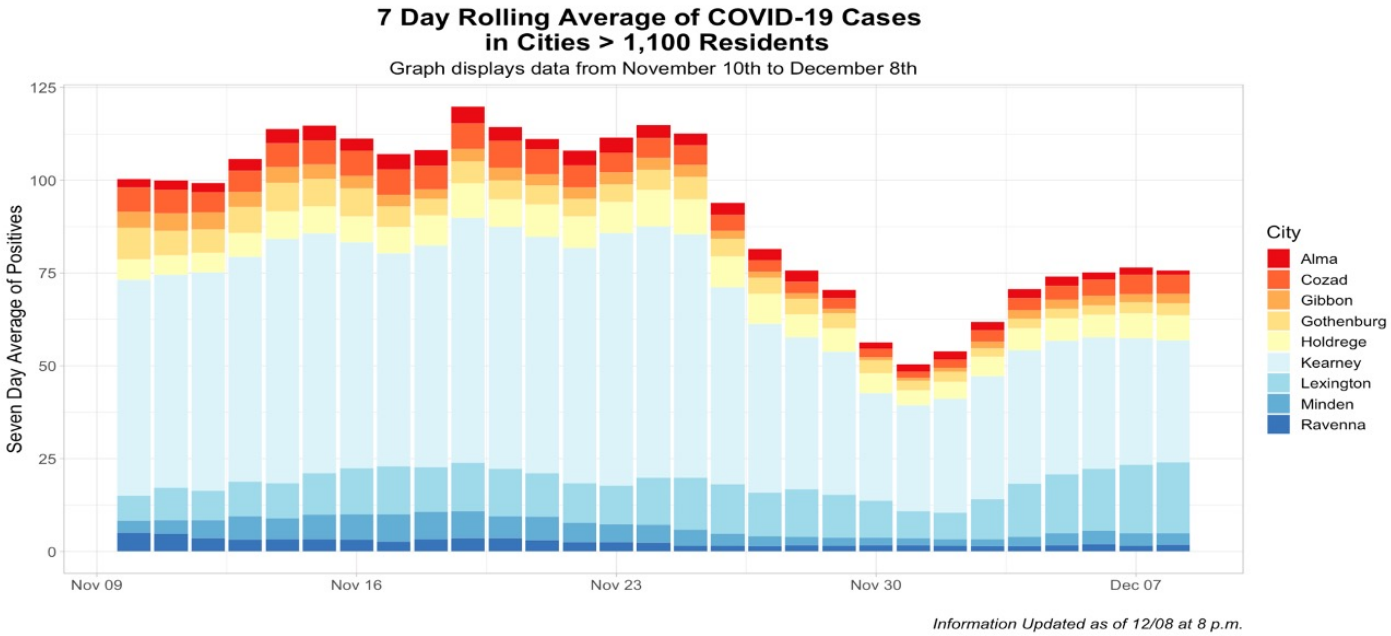
- The following bar graph describes the 7-day rolling averages of COVID-19 cases by **county** for the past four weeks **(Nov 10 – Dec 8).**
- The line graph describes the same data per 100,000 population.[5] The graph also depicts the line for the United States and Nebraska.

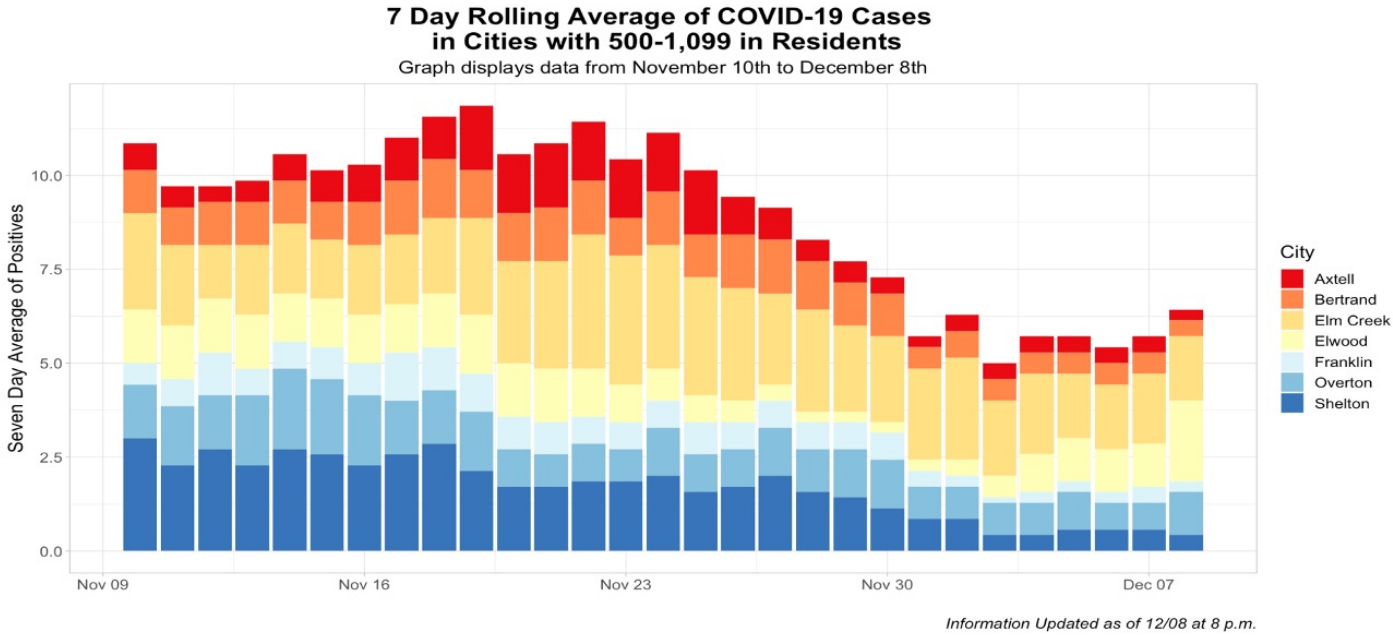




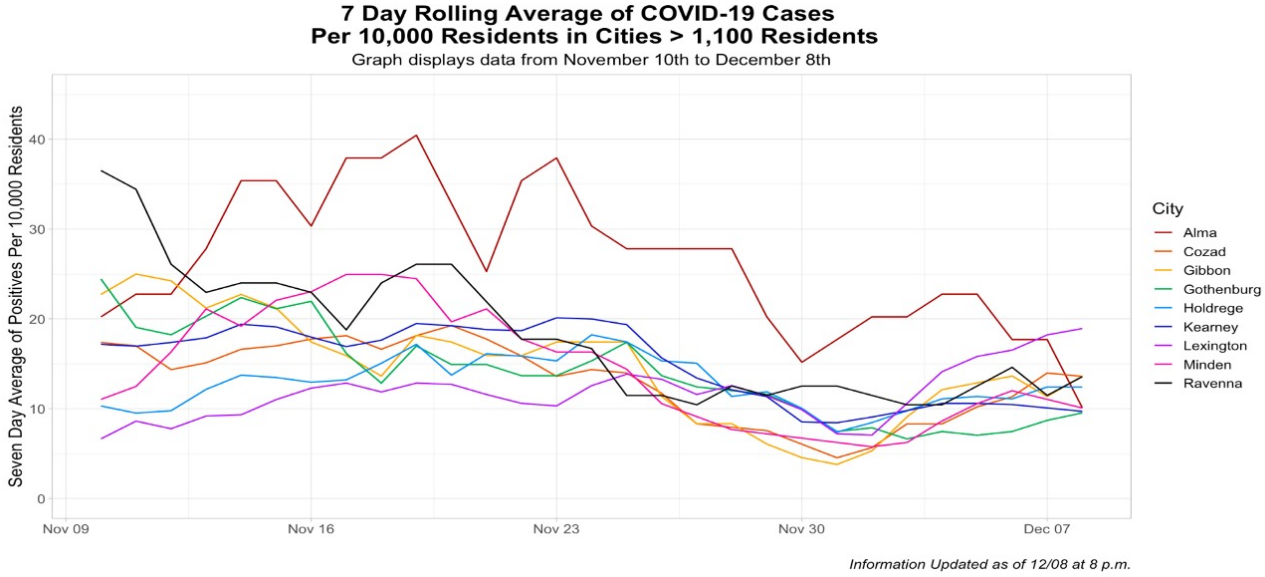
[5] Please note: When comparing counties, we describe rates per 100,000 population. This is roughly equal to the total population of Two Rivers Health Department (~97,000)

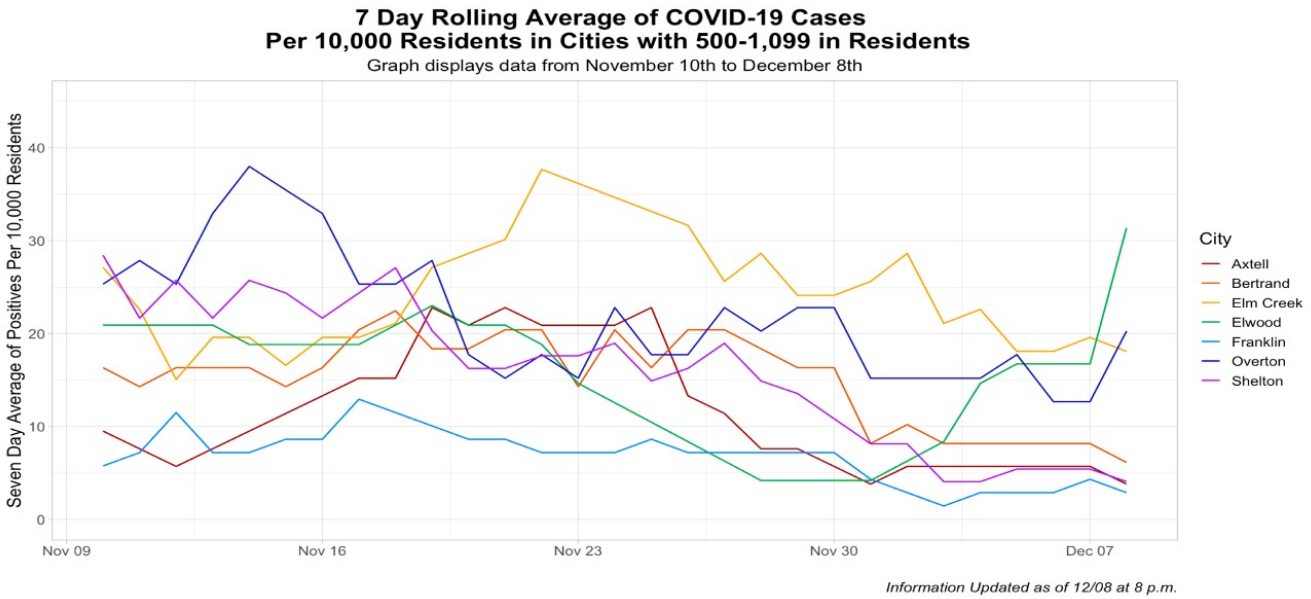
- The following bar graph describes the 7-day rolling averages by **city** for the past four weeks **(Nov 10 – Dec 8)** across all counties in TRPHD. The graph above shows cities with population above 1100 and the one below shows the graph for cities with under 1100 residents. The **scale is different** for both graphs.





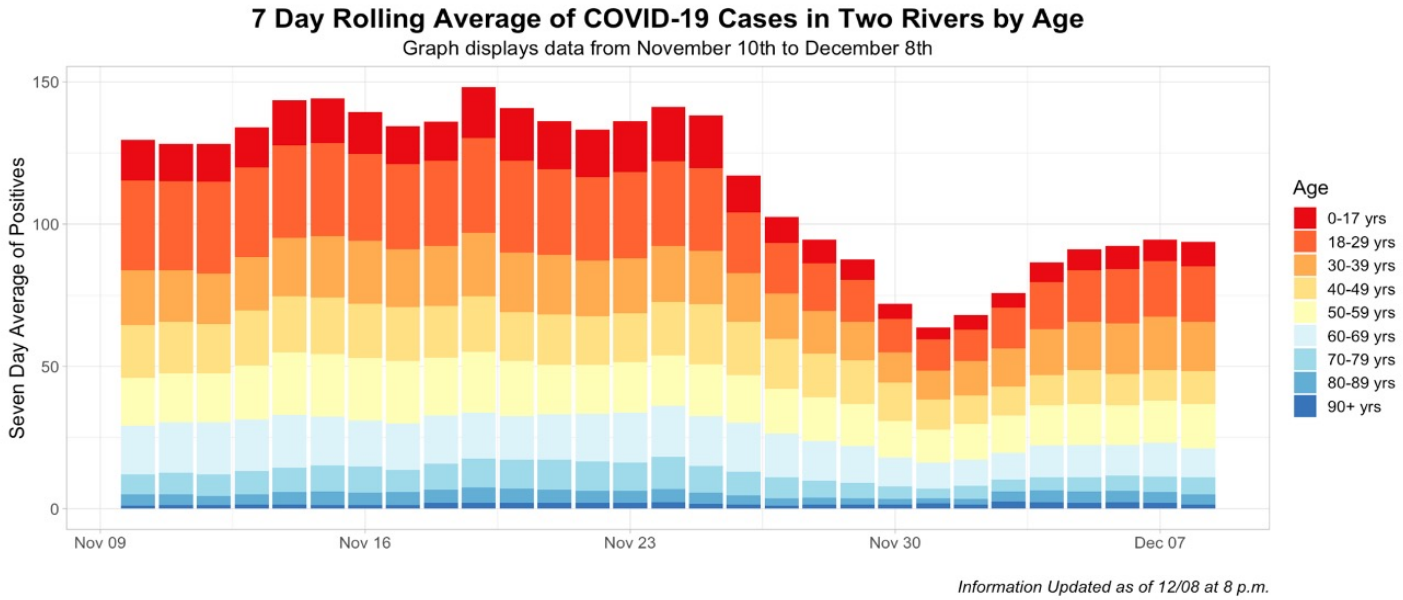
- The following line graph describes the 7-day rolling average of COVID cases per 10,000 population in **cities** across TRPHD for the past four weeks **(Nov 10 – Dec 8)** [6]
- The top graph describes shows cities with population above 1100 and the one below shows the graph for cities with under 1100 residents. The **scale is different** for both graphs.





[6] 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 graph below describes cases from **November 10 – December 8** by age. 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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Weekly summary

- Over 65,000 COVID tests have been used by residents of TRPHD in the past nine months, and 8000 have tested positive. Less than 450 of those cases were residents of long-term care and other residential facilities.
- Case counts have begun to rebound across all counties as predicted, although they have not reached the daily average seen four weeks previously.
- Variations in data completeness have caused fluctuations in per-capita rates across the district, especially in cities with population below 1100 people.
- Nevertheless, rising case rates in Dawson county and Lexington in particular continue to be cause for concern.
- Positivity rates continue to be extremely high across the district. Excluding testing in residential facilities, almost a third of all tests were returned positive in the past 4 weeks.
- Per-capita daily rates are closely tracking statewide trends and seem likely to rise in the coming weeks. Increased incidence among residents aged 60 years and over may translate into higher hospitalization rates in the coming weeks (see https://www.trphd.org/covid-19/ for details).

To conclude, even as data reconciliation allows us to better estimate the 'true rate' of COVID in Two Rivers Health District, positivity rates continue to remain extremely high. Daily case rates have begun to rise again following the brief lull a week and a half previously, tracking the statewide average. High case counts in Buffalo county and Kearney city continue to be a hallmark of the spread, but higher spread in Gosper and Harlan counties more recently is cause for concern. There continues to be improved ICU availability and COVID-related medical/surgical bed usage across hospitals in the district this week compared to previous weeks. Residents are advised to exercise utmost caution and 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 populations 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.
- 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
- 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)