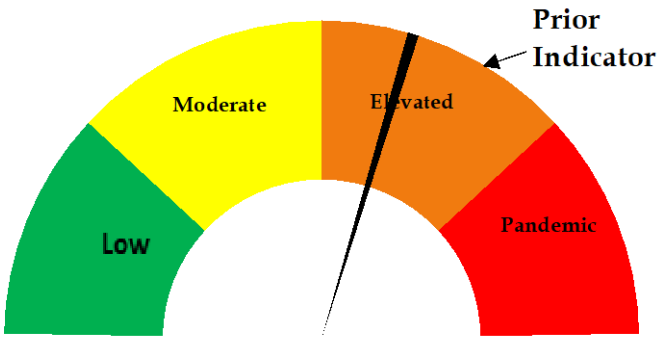
Risk Dial Jan 21, 2020



Risk Dial for COVID-19
Two Rivers Public Health
Published January 21, 2021

- Half of all ICU beds across the district are available currently; COVID-related admissions account for less than 15% of all occupied beds (see https://www.trphd.org/covid-19/ for details)
- Weekly testing numbers continue to fluctuate, overall tests in the district average around 500 daily. A majority of tests conducted in the past three months have been 'rapid' (antigen) tests, as compared to previously when they were more likely to be laboratory-based (PCR). For more details on testing statistics, see weekly report (Jan 13 – Jan 19 https://www.trphd.org/covid-19/weekly-reports.html).
- Positivity rates have dropped across the district and weekly case counts have shown a decreasing trend across all counties and across all age groups.
- Testing availability continues to remain steady across the district; an increase in antigen testing access is anticipated in Dawson county.
- For these reasons, the risk dial is downgraded towards moderate risk this week, although overall risk continues to remain in the 'elevated' zone. TRPHD continues to monitor new cases and potential outbreaks across the district.

Weekly report Jan 13 - Jan 19, 2021
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 **January 13 – January 19** (1 week) and **December 22 – January 19** (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 – January 19** (42 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 – Jan)**
- The second set of graphs look at all tests conducted and all positives detected in TRPHD from **March 15- January 19.**
    - Daily COVID tests and positives are further broken down by method of testing – **Antigen** or **PCR (Polymerase Chain Reaction).**[2]
    - Also depicted is the 7-day rolling average as a trend line.
- The third graph describes the **weekly test positivity rate** from **March 4 – January 19** for Two Rivers Health District. Test positivity rate is described by testing method – Antigen or PCR.
- The fourth set of graphs describe the daily cases (7-day rolling average) from **December 22 – January 19**. 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 – Jan)** [3]
    - We describe weekly positive cases detected in residential facilities (**Sep 2 – Jan 19**), and display each week's cases by the county where the facility is located. [4]

COVID cases across Two Rivers Health District have dropped dramatically in the past week, as have positivity rates across all seven counties. Fewer than 20% of new cases are individuals age 60 or older. ICU availability and COVID-related medical/surgical bed usage have remained within safe levels across hospitals in Two Rivers since January 1. Test utilization continues to fluctuate across the district, especially outside of Buffalo county. 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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[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] PCR tests are laboratory based and are more accurate, however, results may take between 2-5 days to report. Antigen tests are often described as "rapid" tests, and are less expensive and easier to perform than PCR. For more details see CDC's guidelines on COVID testing: https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html
[3] For information on residential facilities, please see appendix 3
[4] For information on data sources, please see appendix 1

Testing Overview

- As of Jan 20, over 40,000 residents of Two Rivers Health District were tested at least once for COVID-19. At least 88,000 tests have been conducted since March 1, and 9800 of these tests were positive.[5] TRPHD has publicly notified 104 deaths due to COVID across the district.
- About 58% 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. [2]

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

	Jan 13 – Jan 19 (1 week)			Dec 22 – Jan 19 (4 weeks)		
	Total Tests	**Positive Results**	**Positivity Rate**	**Total Tests**	**Positive Results**	**Positivity Rate**
Hospital/ Clinic	619	85	13.7%	2450	568	23.2%
TestNebraska	369	57	15.4%	1366	283	20.7%
Residential Facility	1579	6	0.4%	7941	60	0.8%
Lab/ Pharmacy	287	23	8.0%	957	93	9.7%
Other	31	11	35.5%	143	51	35.7%
TOTAL	**2885**	**182**	**6.3%**	**12,857**	**1,055**	**8.2%**

- A total of 7941 tests were availed by residents and staff of long-term care and other **residential facilities** in the last 4 weeks. Details are provided below:

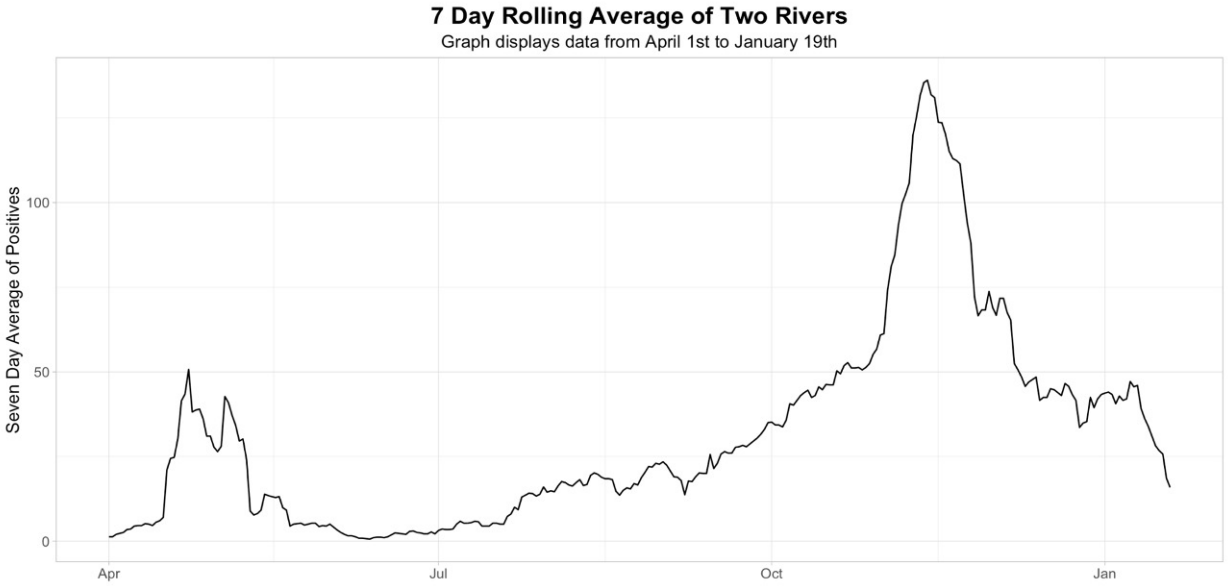
	Jan 13 – Jan 19 (1 week)			Dec 22 – Jan 19 (4 weeks)		
Residential Facility In:	**Total Tests**	**Positive Results**	**Positivity Rate**	**Total Tests**	**Positive Results**	**Positivity Rate**
Buffalo	367	4	1.1%	3138	29	0.9%
Dawson	269	0	0.0%	1133	3	0.3%
Franklin	0	0	0.0	0	0	0.0
Gosper	52	0	0.0%	426	11	2.6%
Harlan	114	0	0.0%	349	2	0.6%
Kearney	251	0	0.0%	679	1	0.1%
Phelps	428	1	0.2%	1781	13	0.7%
Outside TRPHD	98	1	1.0%	435	1	0.2%
TOTAL	**1579**	**6**	**0.4%**	**7941**	**60**	**0.8%**

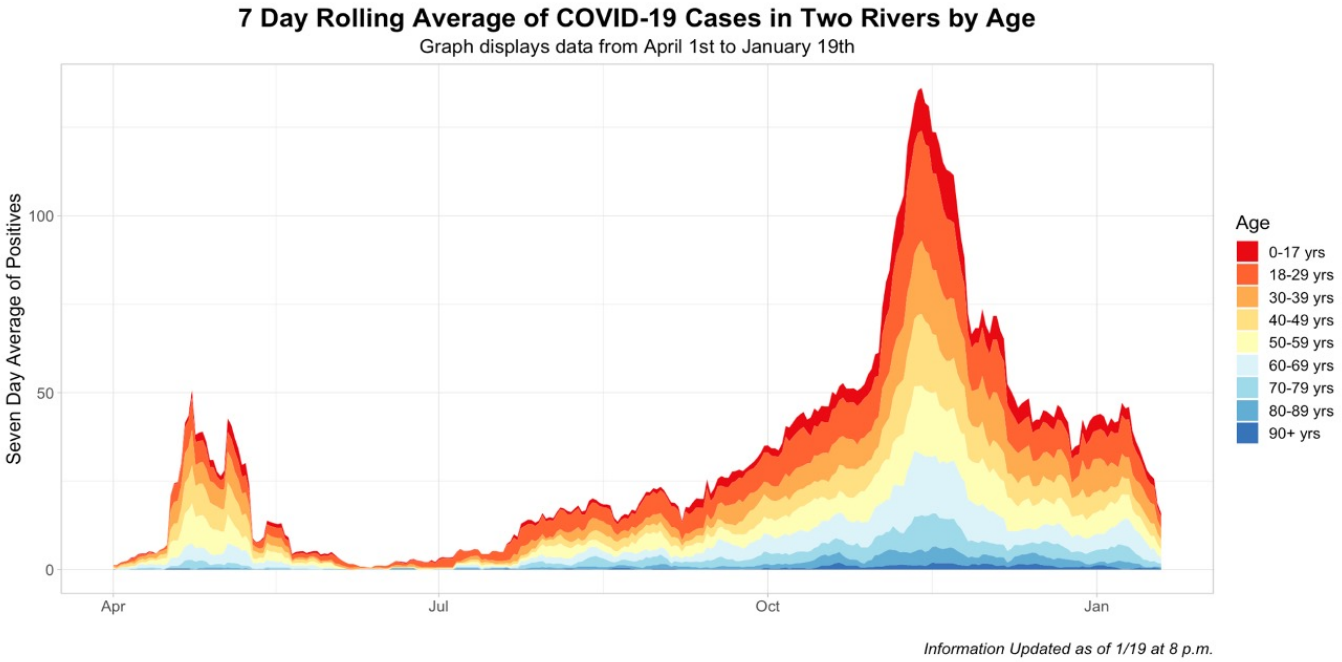
[5] Note: The minor differences between the numbers reported and totals displayed on www.trphd.org dashboards is explained by testing in residential facilities and isolated rapid test results that are not reflected in the state's public dashboards. Tests of persons missing date of birth are excluded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

Excluding residential facilities, a total of 4916 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.

	Jan 13 – Jan 19 (1 week)			Dec 22 – Jan 19 (4 weeks)		
	Total tests conducted	**Positive cases**	**P. rate (%)**	**Total tests conducted**	**Positive cases**	**P. rate (%)**
County						
Buffalo	752	109	14.5%	2680	475	17.7%
Dawson	334	30	9.0%	1363	281	20.6%
Franklin	26	4	15.4%	93	25	26.9%
Gosper	15	4	26.7%	71	21	29.6%
Harlan	26	4	15.4%	91	18	19.8%
Kearney	55	8	14.5%	185	46	24.9%
Phelps	91	17	18.7%	411	123	29.9%
Data missing/ not disclosed	7	0	0.0%	22	6	27.3%
Total	**1,306**	**176**	**13.5%**	**4,916**	**995**	**20.2%**
Age (in yrs)						
0-17	141	13	9.2%	476	82	17.2%
18-29	278	37	13.3%	1073	201	18.7%
30-39	227	37	16.3%	796	180	22.6%
40-49	172	26	15.1%	621	129	20.8%
50-59	165	27	16.4%	658	151	22.9%
60-69	137	23	16.8%	604	136	22.5%
70-79	92	7	7.6%	383	77	20.1%
80-89	54	3	5.6%	206	25	12.1%
90+	40	3	7.5%	99	14	14.1%
Total	**1306**	**176**	**13.5%**	**4916**	**995**	**20.2%**
Gender						
Female	701	80	11.4%	2725	525	19.3%
Male	595	95	16.0%	2157	466	21.6%
Data missing/ not disclosed	10	1	10.0%	34	4	11.8%
Total	**1,306**	**176**	**13.5%**	**4,916**	**995**	**20.2%**

- The graph below describes 7-day rolling average of COVID-19 across TRPHD from **April 1 – January 19**.
- 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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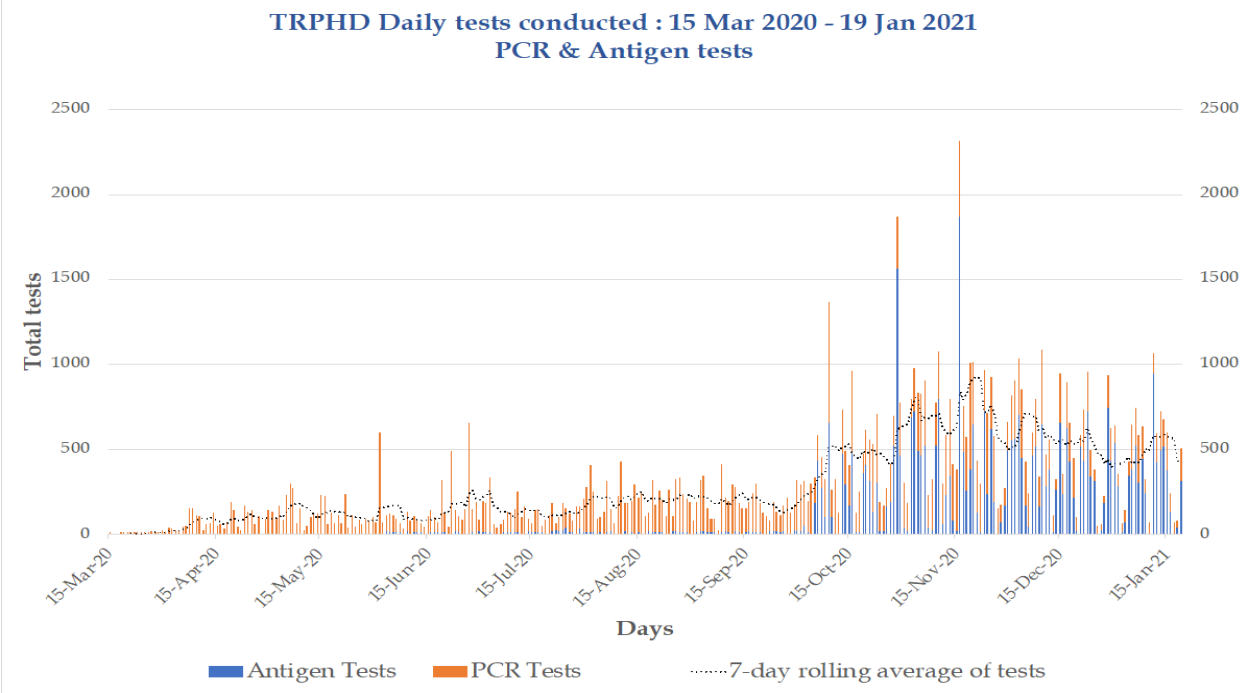
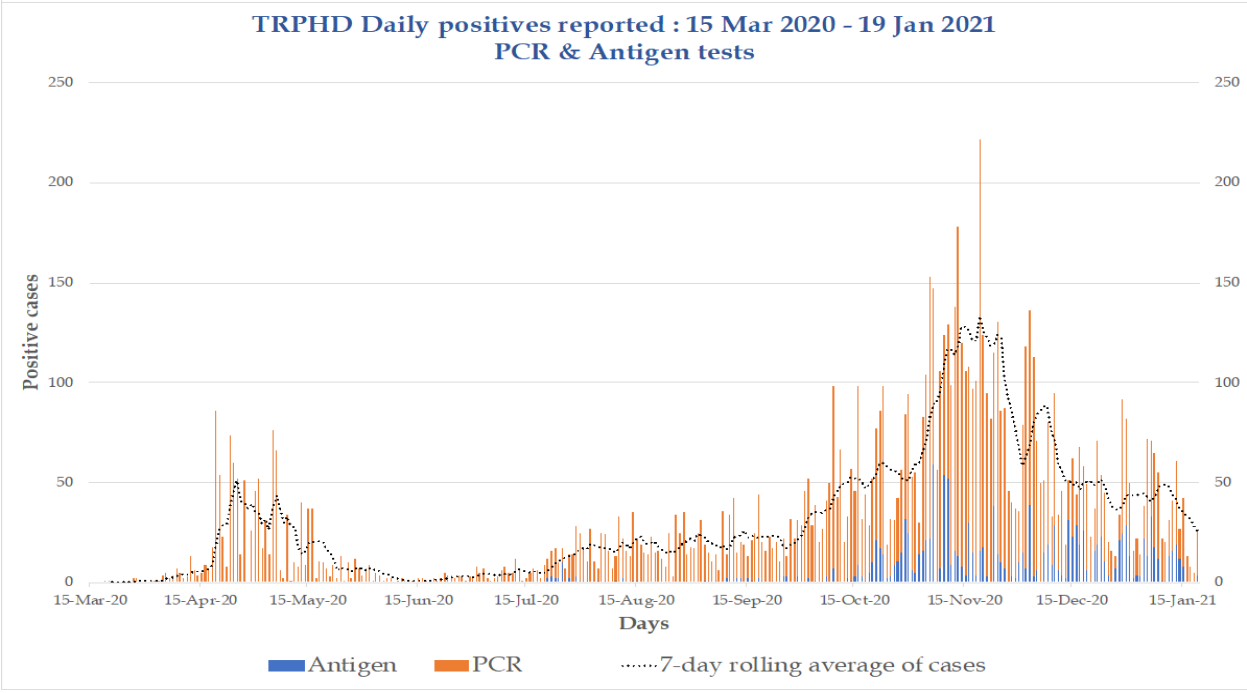
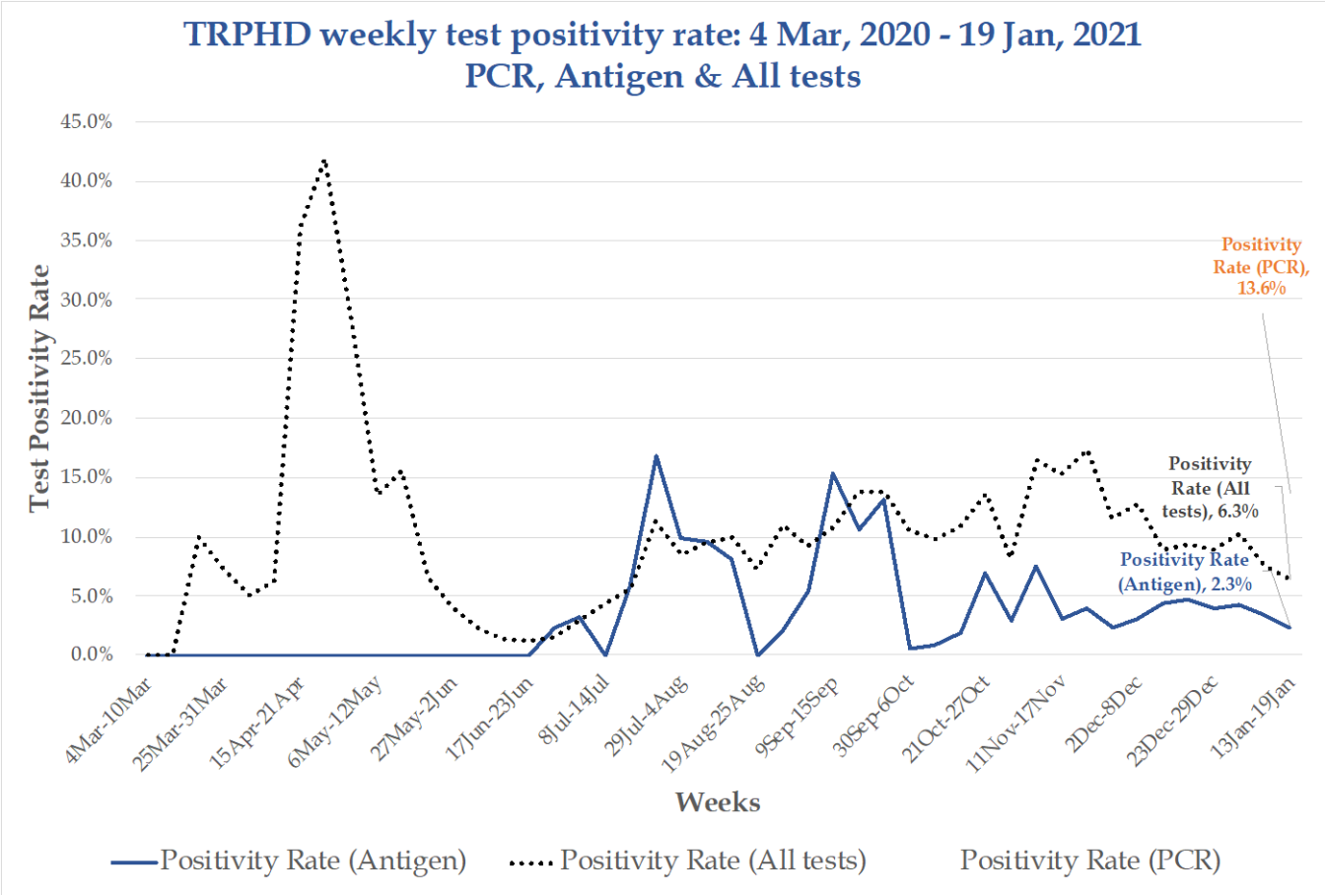
- The first graph below describes **tests conducted daily** across TRPHD from **Mar 15 – Jan 19**, broken down as **Antigen or PCR tests**[2]. The second graph describes daily positives detected across TRPHD in the same time period, broken down as Antigen or PCR tests.
- The 7-day rolling average of tests and 7-day rolling average of positive cases is also included as a trend line in both graphs



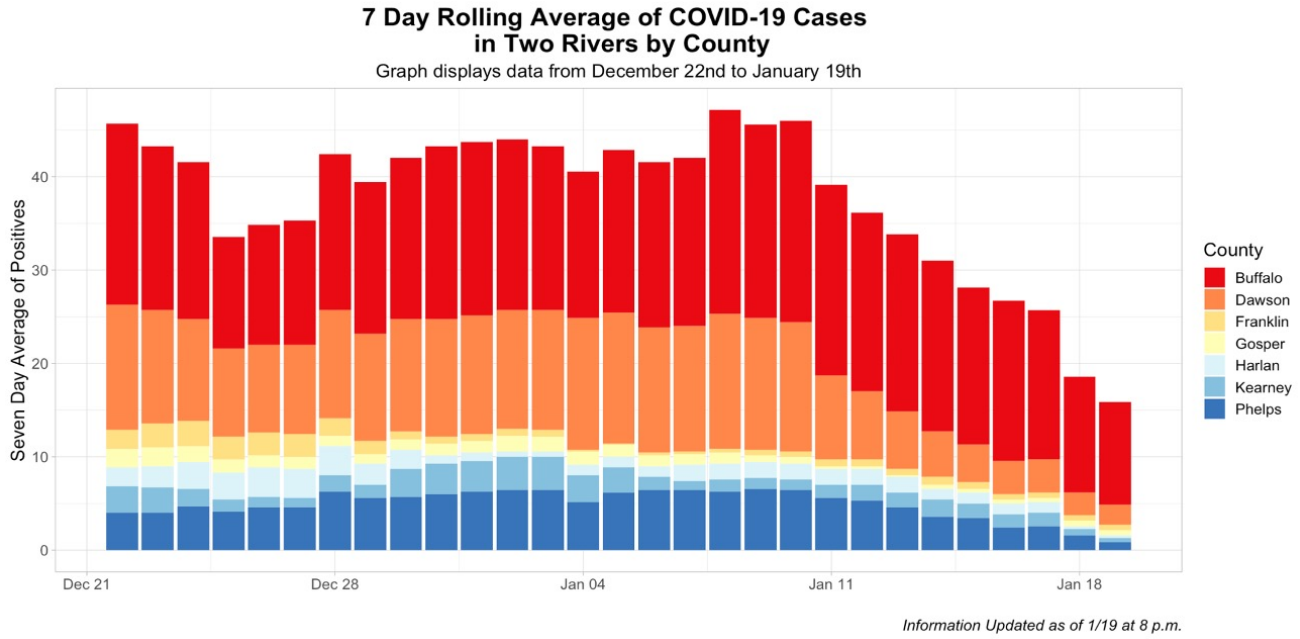


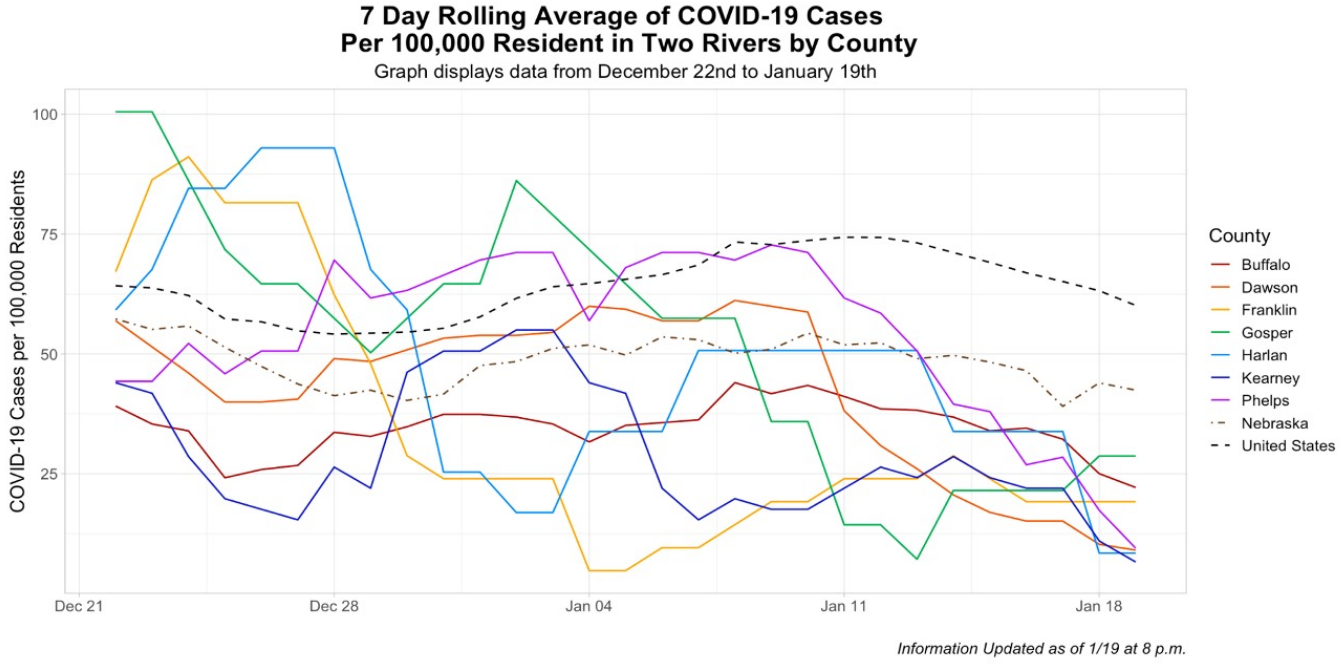
- The graph below describes the **weekly test positivity rate** in TRPHD from **March 4 – January 19**. Also shown is a graph depicting total positivity rates for the district.
- Test positivity rate is described by testing method – Antigen or PCR [6]. Also shown is overall weekly positivity rate for the district (including both PCR and antigen test results)
- Antigen testing became available in TRPHD only after 23rd June, thus the overall positivity rate for the district coincided with the PCR positivity rate till then.



[6] PCR tests are laboratory based and are more accurate, however, results may take between 2-5 days to be reported. Antigen tests are often described as 'rapid' tests, and are less expensive and easier to perform than PCR. For more details see CDC's guidelines on COVID testing: https://www.cdc.gov/coronavirus/2019-nCoV/lab/guidelines-clinical-specimens.html

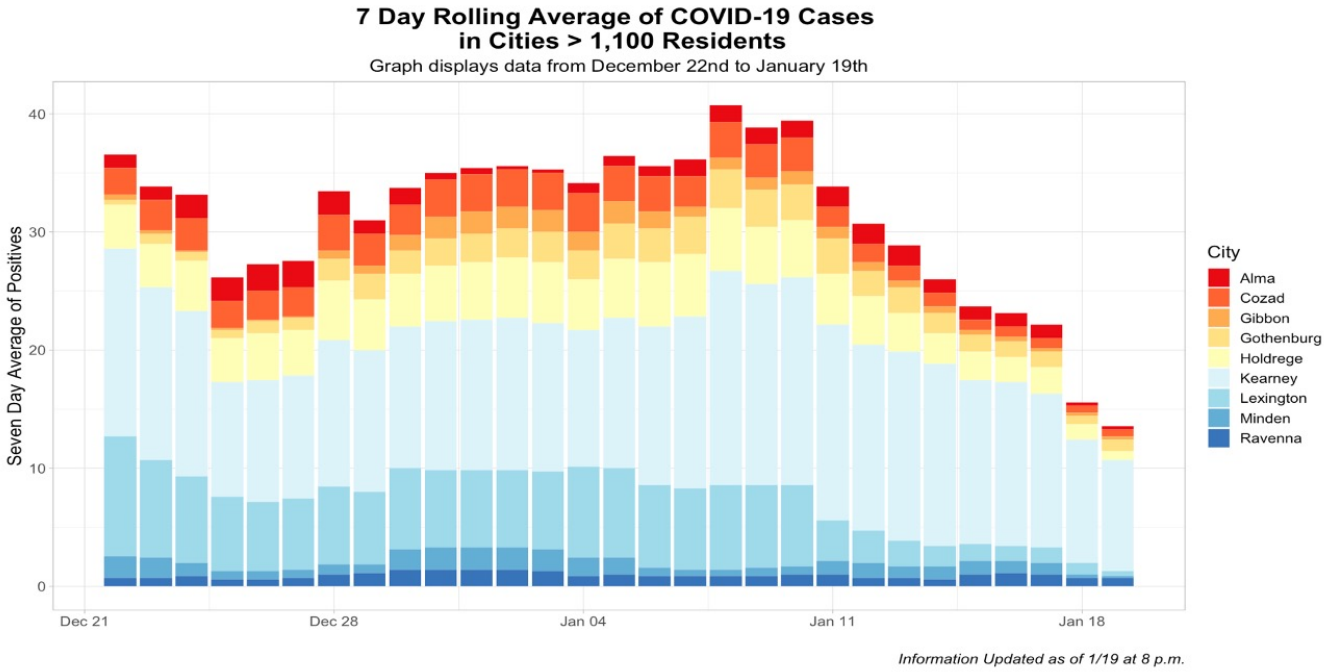
- The following bar graph describes the 7-day rolling averages of COVID-19 cases by **county** for the past four weeks **(Dec 22 – Jan 19).**
- The second graph describes the same data per 100,000 population.[7] The graph also depicts the line for the United States and Nebraska.

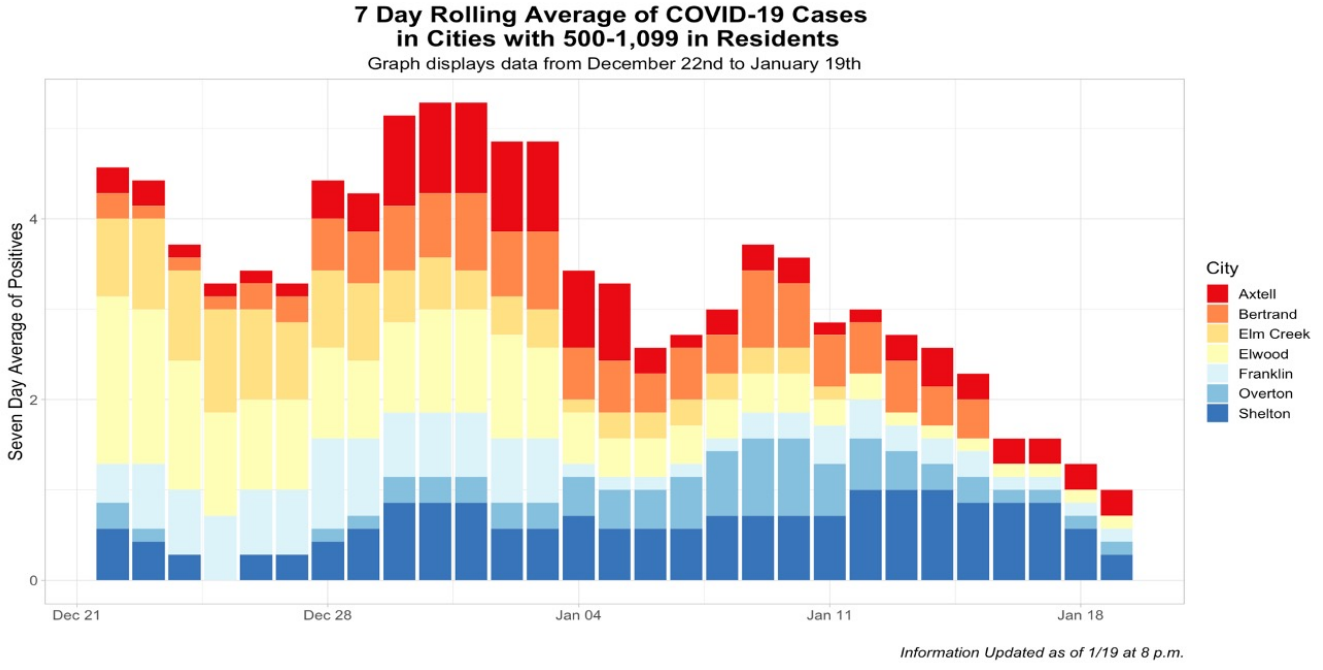




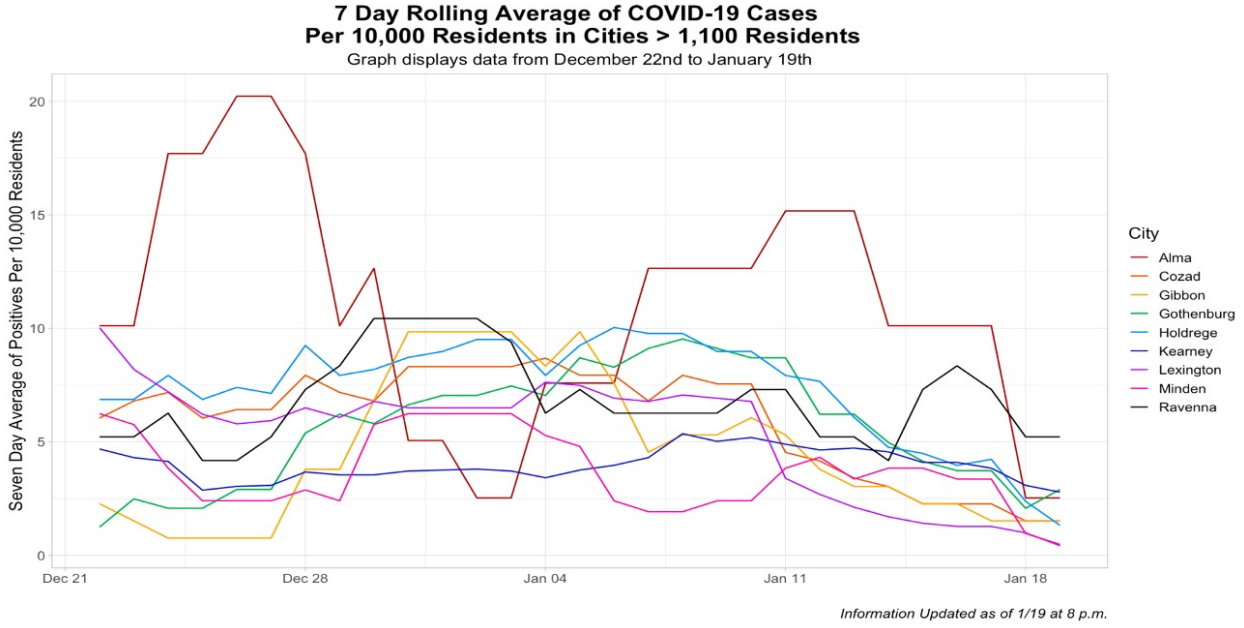
[7] Please note: When comparing counties, we describe rates per 100,000 population. This is roughly equal to the total population of Two Rivers Health Department (~97,000)

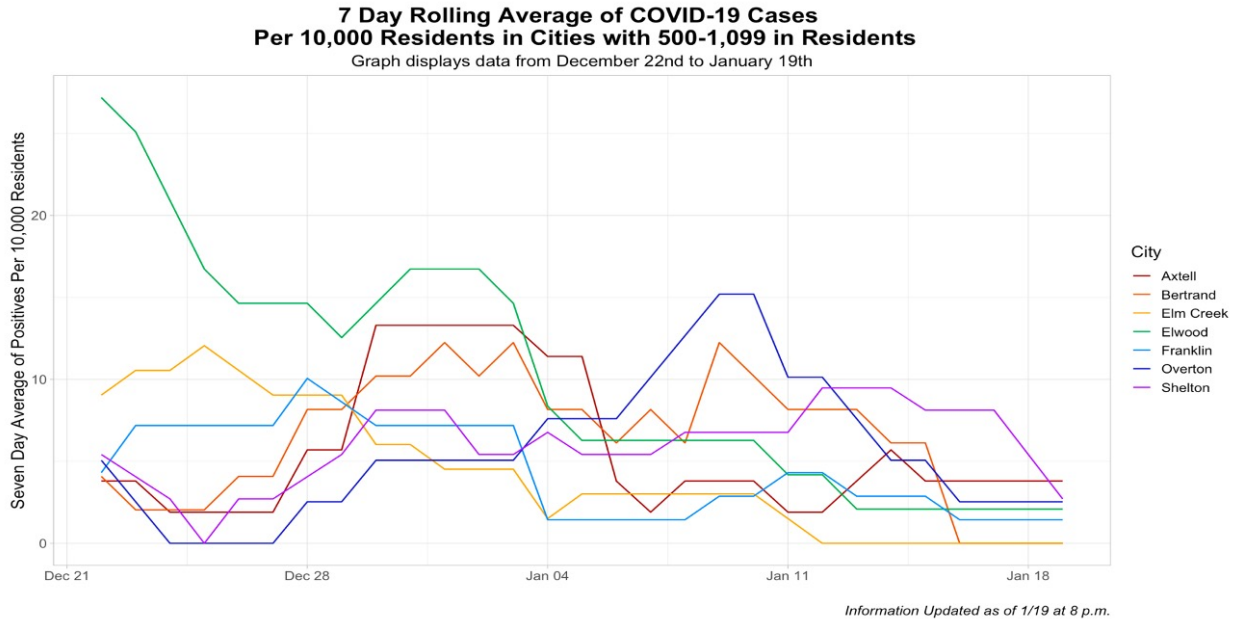
- The following bar graph describes the 7-day rolling averages by **city** for the past four weeks **(Dec 22 – Jan 19)** in TRPHD. The graph above shows cities with population above 1100 and the one below shows the graph for cities with less than 1100 residents. The scale is different for both graphs.





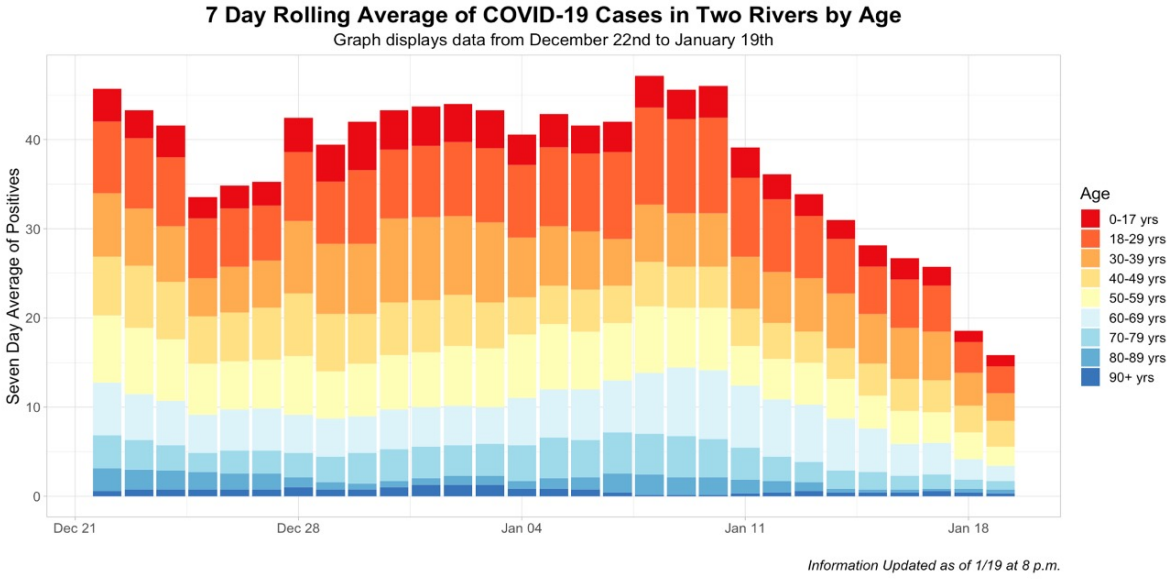
- The following line graph describes the 7-day rolling average of COVID cases per 10,000 population in **cities** across TRPHD for the past four weeks **(Dec 22 – Jan 19)** [8]
- The top graph describes shows cities with population above 1100 and the one below shows the graph for cities with under 1100 residents. The scale is different for both graphs.

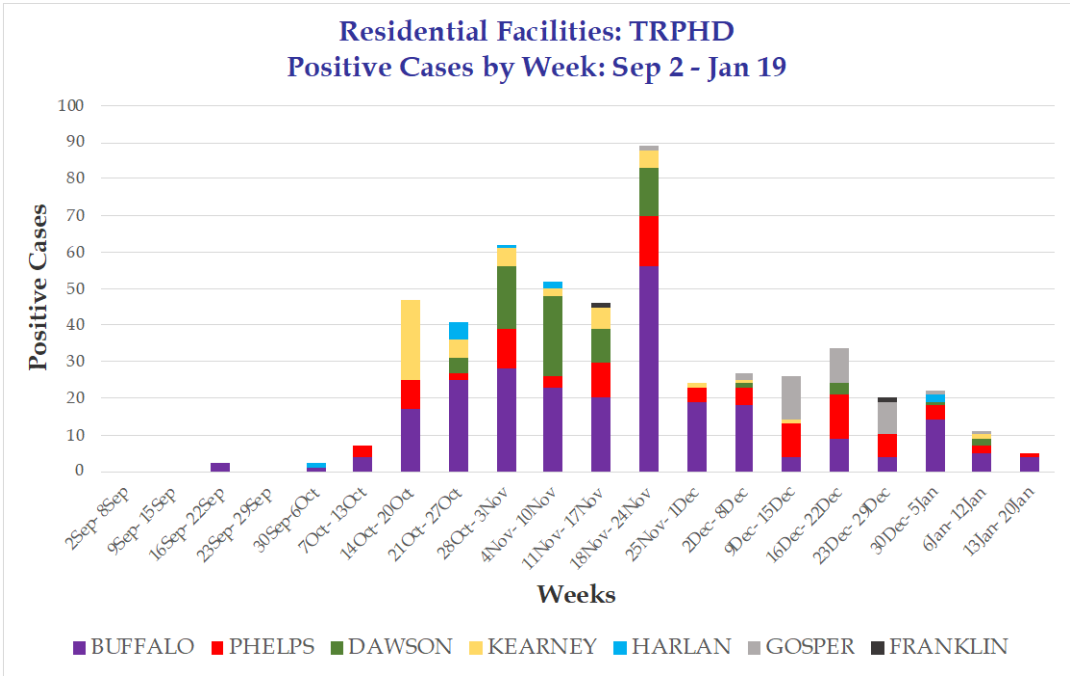




[8] Please note: When comparing cities, we describe rates per 10,000 population. This is roughly equal to the total population of Lexington (~10,000)

- The first graph below describes the **7-day rolling average** of cases from **December 22 – January 19** 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 – Jan 19).** Regular and widespread testing in long term care facilities in TRPHD began in early October.





Two Rivers
PUBLIC HEALTH DEPARTMENT

Weekly summary

- The daily average of positive cases across Two Rivers Health District has decreased dramatically in the past week. This drop is seen across all counties in the district.
- Test positivity rates continue to drop in both residential as well as non-residential settings. PCR-based laboratory tests report a weekly positivity rate less than 15% for the first time since early October.
- 'Rapid' antigen tests account for an increasing share of tests in the district. However, considering the differences in sensitivity, a corresponding increase in testing rates has not been observed. Increased access of testing services by the general population is key to controlling spread in the district.
- Persons over 60 years of age accounted for less than a fifth of new cases in the past week.
- Half of all ICU beds across the district are available currently; COVID-related admissions account for less than 15% of all occupied beds (see https://www.trphd.org/covid-19/ for details)

To conclude, COVID cases across Two Rivers Health District have dropped dramatically in the past week, as have positivity rates across all seven counties. Fewer than 20% of new cases are in individuals age 60 or older. ICU availability and COVID-related medical/surgical bed usage have remained within safe levels across hospitals in Two Rivers since January 1. Test utilization continues to fluctuate across the district, especially outside of Buffalo county. 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.

Two Rivers
PUBLIC HEALTH DEPARTMENT

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)
- 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
- 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.