



## Holdrege Urban Area - COVID-19 Status Report 29 Oct 2020

### **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 urban areas are Holdrege (~5439 people), Lexington (~10,024 people), and Kearney (~33,835 people), meaning that over half of the residents of TRPHD live in three urban areas, and over a third live in Kearney city alone.

To better understand COVID transmission in TRPHD<sup>1</sup>, we decided to analyze case numbers in Kearney, Lexington and Holdrege, defined as the city and surrounding smaller towns

- “Kearney area” includes Kearney city, Elm Creek, Pleasanton, Amherst, Riverdale, Gibbon, Shelton and Axtell.
- “Lexington area” includes Lexington city, Overton, Johnson Lake and Cozad.
- “Holdrege area” includes Holdrege city, Loomis and Funk.

In the fourth edition of this document, we will

- a) Look at the overall course of the COVID-19 pandemic in TRPHD from April - October (**35 weeks**) and identify the outbreaks in each of the three urban areas.
- b) Analyze data from July 01 - October 27 (**17 weeks**) to see daily cases across Holdrege area by age and city of residence.
- c) We will also describe average daily positivity rates and cumulative cases per 100,000 population for Phelps county, comparing it to Buffalo, Dawson and the state of Nebraska
- d) Describe the progress of COVID-19 cases from Sep 30 - Oct 27 (**4 weeks**) across cities in Franklin, Gosper, Harlan, Kearney and Phelps counties, presenting 7-day rolling averages of positive case numbers and rates per 100,000 population.
- e) Present a brief weekly overview and analysis for Holdrege

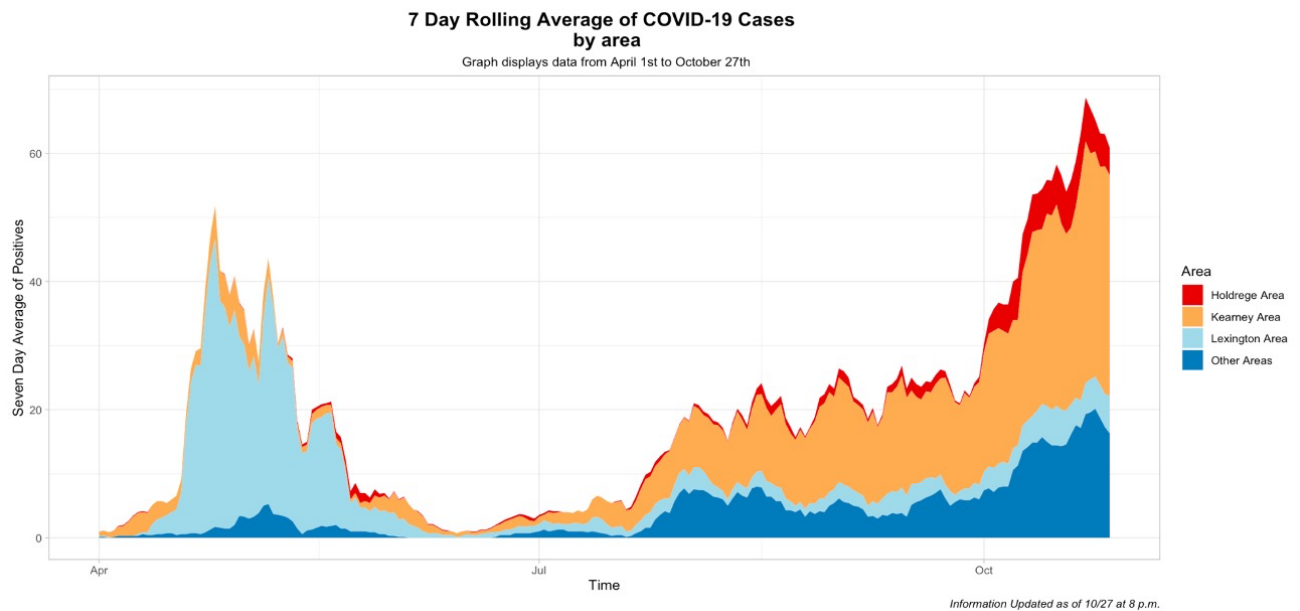
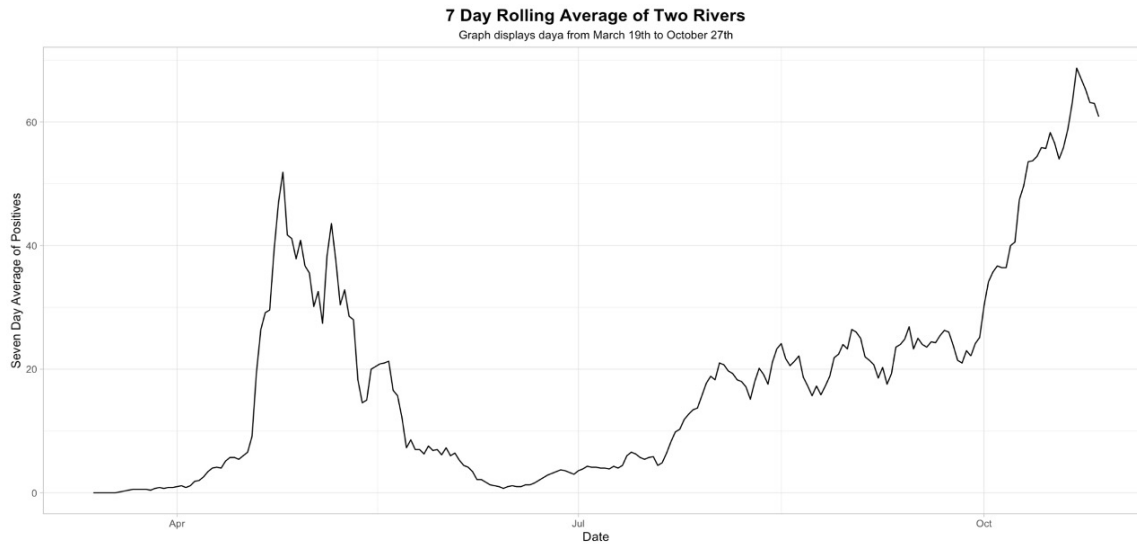
*In summary, Holdrege city and Holdrege urban area have seen rapidly rising numbers of COVID-19 cases in October. The rate of spread seems to have accelerated in recent weeks, and disease incidence seems to be shifting to persons over 60 years, combined with continued high infection rates among younger persons. The number of cumulative per capita cases is likely to soon cross the statewide average. Residents of the city of Holdrege and surrounding towns are strongly advised to avoid non-essential travel and follow standard preventive practices like masking and social distancing to avoid incident infection.*

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<sup>1</sup> For complete explanation of definitions and data sources, please see appendix 1  
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Kearney, NE 68845

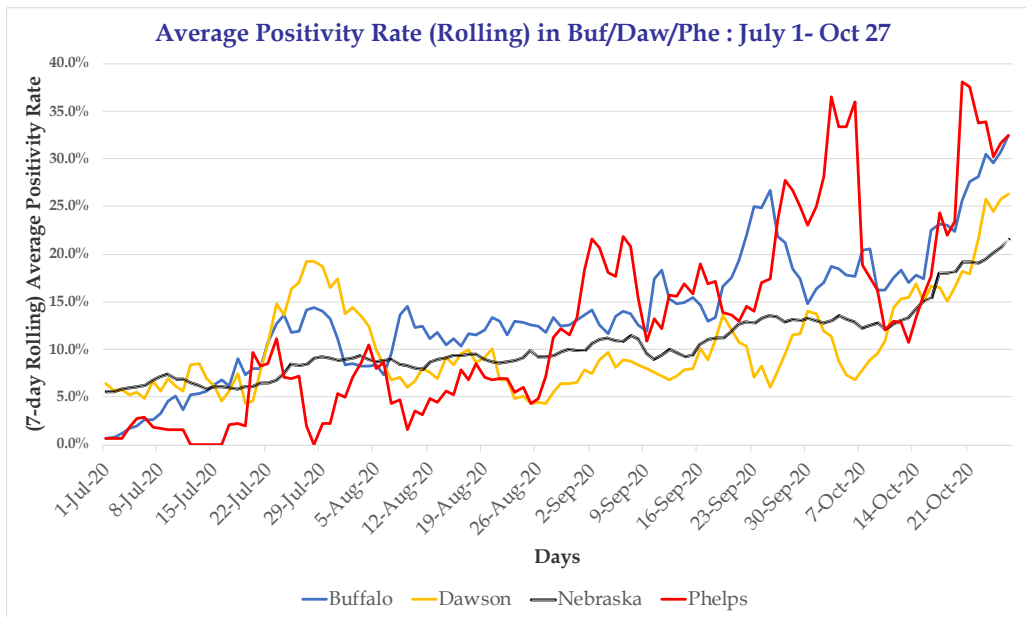
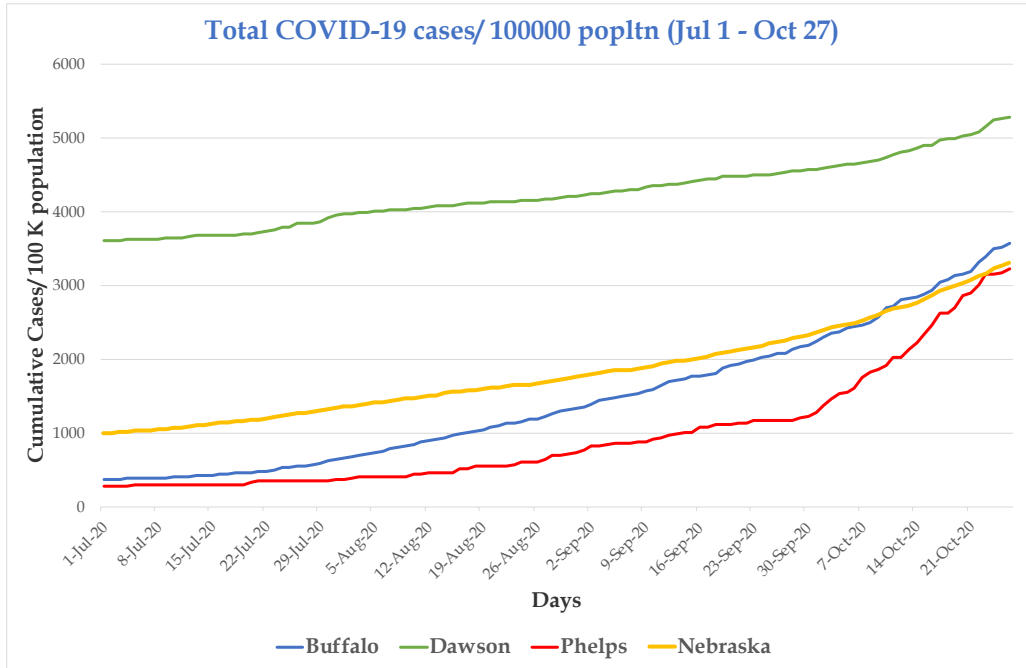


- The graph below describes daily COVID-19 cases in TRPHD from **April 1 - October 27**
- The second graph further breaks down cases by urban area (**Holdrege, Lexington, Kearney and all others**) during this time period



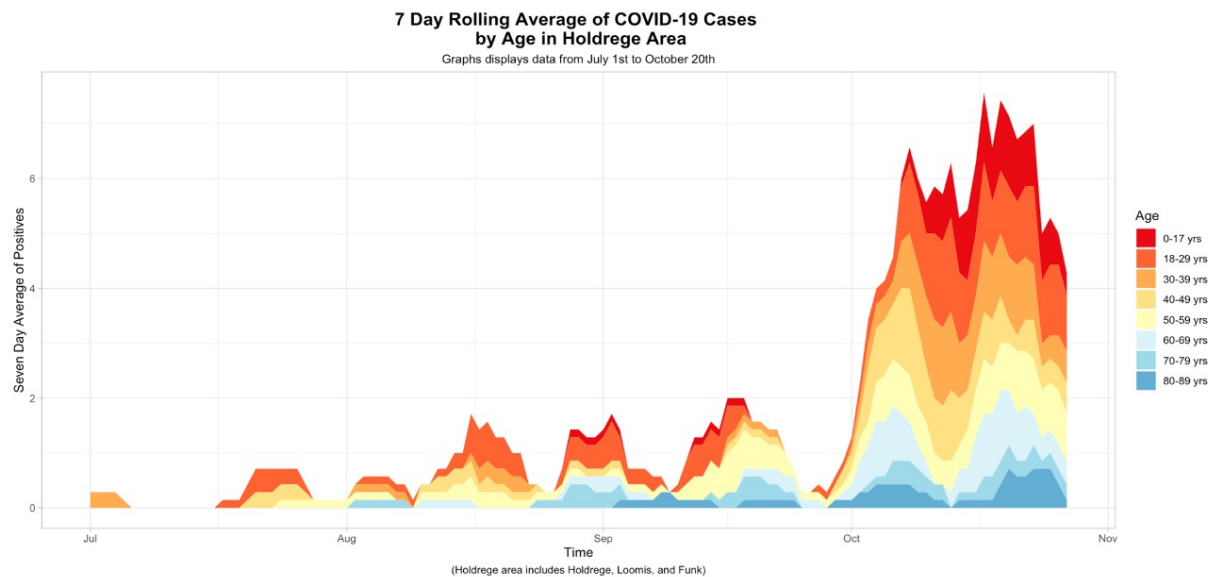
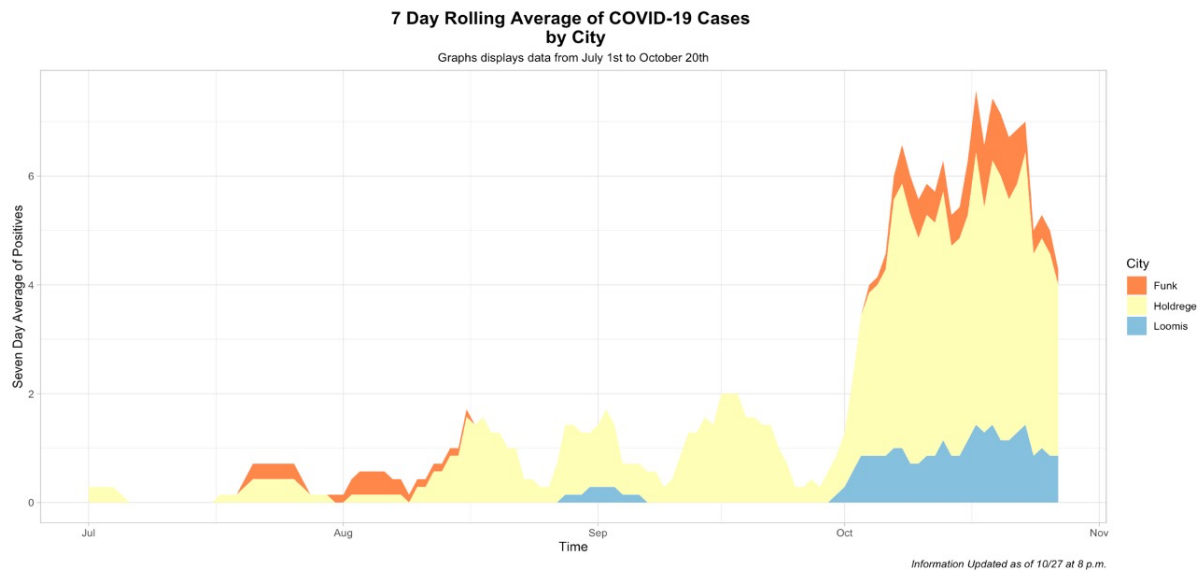


- The graph below describes cumulative (overall) COVID-19 cases from **July 1 - October 27**, presented per 100,000 population in Buffalo, Dawson, **Phelps** and the state of Nebraska.
- The second graph describes average daily positivity rates across the same areas during this time.



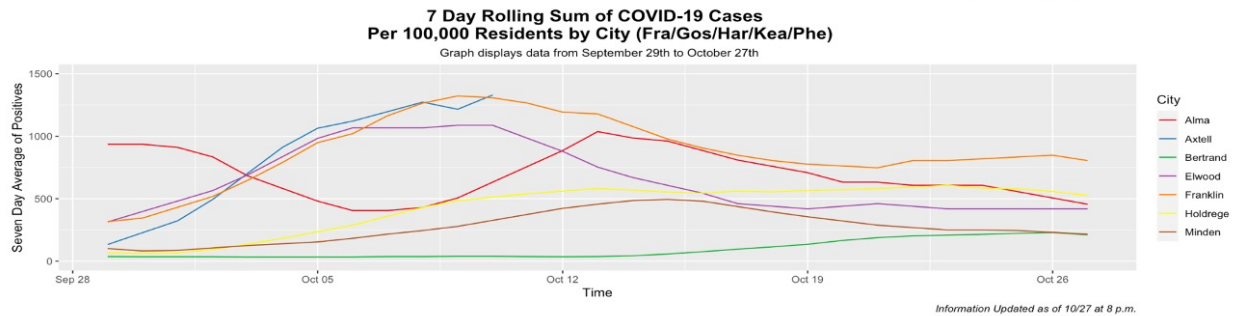
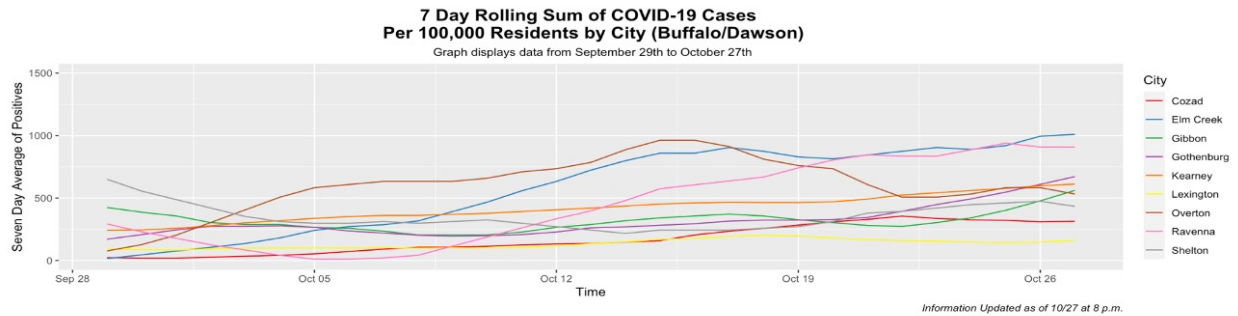
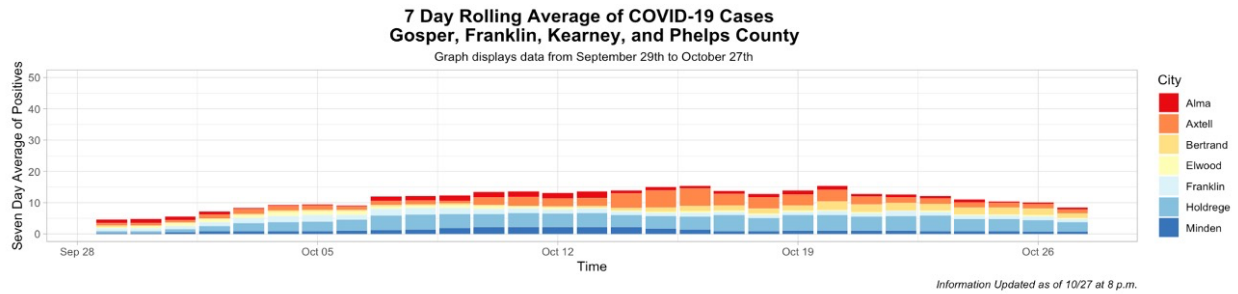
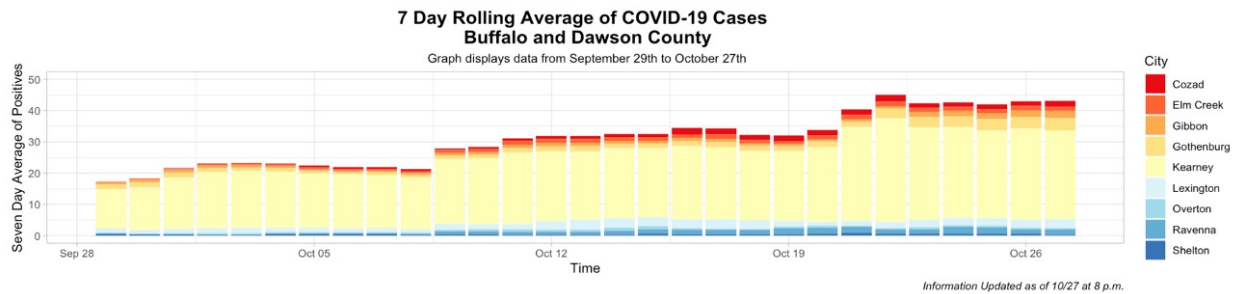


- The graph below shows COVID-19 cases in **Holdrege** area from **July 1 - October 27**, describing the number of cases by city.
- The second graph describes cases by age during the same period.





- The graph below shows COVID-19 cases across 16 cities in TRPHD from **Sep 28 - Oct 27**. **Holdrege** is shown along with other cities in Franklin, Gosper, Harlan, Kearney and Phelps counties. Scales are identical for cities in all 7 counties
- The second graph describes cases per 100,000 population in the same cities during this time period.





### Weekly Summary Report

Viewing the graphs from April – October, some broad trends are noticeable:

- The COVID-19 outbreak in Two Rivers is now comparable to the earlier outbreak in Lexington in April-May, both in terms of number and rate of growth of new cases
- COVID-19 cases in Kearney and Holdrege cities form a significant proportion of the new cases in the last 6 weeks.

On analyzing graphs of COVID cases from July – October, some details become clear:

- There was a dramatic increase in cumulative per capita cases across Phelps county in early October.
- This period also corresponded with higher positivity rates. The average positivity rate crossed the statewide average in September and has remained elevated since.
- Although Holdrege city accounts for a major portion of the cases in Holdrege area, Funk has also been seeing rising case numbers more recently.
- The persistent rise in positive cases among persons aged 60 years and over is worrying.

Graphs looking at the previous 4 weeks from late September to October reveal:

- Although Kearney continues to lead in total cases per day, Holdrege has had the second highest number of COVID cases in the district.
- Per capita rolling case averages in Holdrege are almost identical to Kearney city, although the population in Holdrege is only about a sixth that of Kearney

*In summary, Holdrege city and Holdrege urban area have seen rapidly rising numbers of COVID-19 cases in October. The rate of spread seems to have accelerated in recent weeks, and disease incidence seems to be shifting to persons over 60 years, combined with continued high infection rates among younger persons. The number of cumulative per capita cases is likely to soon cross the statewide average. Residents of the city of Holdrege and surrounding towns are strongly advised to avoid non-essential travel and follow standard preventive practices like masking and social distancing to avoid incident infection.*



## APPENDIX 1

### 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. Holdrege city accounts for over half of the population of Phelps county.

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

Thus “Kearney area” includes Kearney city as well as Elm Creek, Pleasanton, Amherst, Riverdale, 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.

For presenting data, we selected 3 time frames:

- a) April 1 – Oct 27 (From the beginning of the pandemic to current)
- b) July 01 – Oct 27 (From the beginning of second sustained ‘wave’ in daily case counts to current)
- c) Sep 30 – Oct 27 (Previous 4 weeks)
  - Data is presented as 7-day rolling averages for daily numbers and absolute counts for cumulative cases. This is simply the sum of all cases for that day and 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 different areas (counties v/s state of Nebraska, for eg), we present the count per 100,000 population. 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>)