



INTRODUCTION

The COVID-19 Risk Dial was implemented by the West Central District Health Department (WCDHD) and adapted from a tool developed by the Lincoln-Lancaster County Health Department (LLCHD) to help communicate to the public the risk of spread of COVID-19 in the community. The Risk Dial is based on the following measures that can be evaluated using current data:

1. Overall Positivity Rate
2. Weekly Positivity Rate
3. Trajectory of Cases in the last 14 days
4. Cases per Million per Day
5. Average Daily Hospitalization
6. ICU Availability
7. Ventilator Availability
8. Community Clusters/Spread
9. Testing Availability
10. Average Testing Turnaround Time
11. Contact Tracing
12. Individuals Affected
13. Medical & Surgical Bed Availability

These measures are commonly cited as important public health indicators for COVID-19 and are relevant for our community.

Over the course of the pandemic, public health agencies such as the World Health Organization, the U.S. Centers for Disease Control and Prevention, State Health Departments, national public health associations, schools of public health, research foundations, and many other organizations have proposed specific metrics to measure the progress of, or set goals for, controlling the COVID-19 pandemic. Not surprisingly, measures and metrics have evolved, and multiple iterations of similar metrics have been offered by different organizations. It is likely that other changes in measures and metrics will occur as the global pandemic continues.

The West Central District Health Department (WCDHD) has monitored this evolution of measures and metrics and selected measures and metrics for which data is available locally and which can be practically applied to our local jurisdiction. WCDHD may make changes to the local measures to better reflect community risk as the pandemic situation evolves and changes.

Each of the measures are scored on a scale of 0 – 4 based on current data. The final score is calculated by averaging the scores of the 13 measures. The composite measure is updated weekly on Thursday to generate the current week's severity.

Due to the nature of live data available to us at the time of Risk Dial placement, we use a three-week average for each data point to determine placement for that week.

Measure #1: Overall Positivity Rate

This score is the percent of positive tests, out of tests performed since the first reported positive test in March. The measure is “person based”, therefore, a person is counted **only once**, no matter how many times they have been tested. A common positivity rate used to reflect low risk of spread is 5%, while areas with positivity rates greater than 15% have extensive community spread. The scale for this measure is:

None	0	0%
Low	1	1%-4%
Moderate	2	5%-9%
High	3	10%-14%
Severe	4	>15%

Measure #2: Weekly Positivity Rate

This score is the percent of positive tests, out of tests performed, for the current week. Again, the measure is “person based”, therefore, a person is counted only once, no matter how many times they have been tested. The scale for this measure is the same as the scale for Measure #1 above.

None	0	0%
Low	1	1%-4%
Moderate	2	5%-9%
High	3	10%-14%
Severe	4	>15%

Measure #3: Trajectory of Cases in the last 14 days.

This measure looks at the percent change in the number of positive cases reported the previous week to the number of positive cases reported in the current week. The scale for this measure is:

None	0	< -100%
Low	1	-100% < -50%
Moderate	2	-50.1% - 0%
High	3	0% - 9%
Severe	4	>=10%

Measure #4: Cases per Million per Day

This measure is a population measure of the magnitude of cases occurring daily in the community which has been used widely both nationally and internationally.

Number of cases per day (based on a 7-day rolling average) divided by the current population of the WCDHD Jurisdiction (39,000) times 1,000,000. The scale for this measure is:

None	0	0
Low	1	1-4/Million
Moderate	2	5-25/Million
High	3	26.50/Million
Severe	4	>=50/Million

Measure #5: Average Daily Hospitalization

Hospitalization information for this measure comes from Great Plains Health (GPH). The same information is reported to the State of Nebraska. The scale for this measure is:

Very Low	0	0-10
Low	1	11-15
Moderate	2	16-20
High	3	21-25
Severe	4	26+

Measure #6: Adult ICU Availability

WCDHD has chosen to use a metric on the percent of ICU beds available. Great Plains Health has had well over 75% of the ICU beds available throughout the pandemic. Across the country, 30% is often being suggested as a “tipping point” after which systems become overwhelmed. The scale for this measure is:

Widely Available	0	60%
Adequate	1	50%
Stable	2	30%
Critical	3	20%
Shortage	4	<0%

Measure #7: Ventilator Availability

WCDHD has chosen to use a metric on the percent of ventilators available. The scale for this measure is:

Widely Available	0	90%
Adequate	1	60%
Stable	2	40%
Critical	3	20%
Shortage	4	<20%

Measure #8: Community Clusters/Spread

Individuals diagnosed with COVID-19 are contacted by a public health investigator (contact tracer). If the person had no known contact to a confirmed case, no travel to an area with ongoing transmission of COVID-19, and no other known potential source of exposure, then the case is classified as community spread. Community spread is when you do not know the source of infection. The scale for this measure is:

Very Good	0	0 - 15%
Good	1	16 % - 30%
Moderate	2	31% - 60%
High	3	61% - 75%
Severe	4	76% - 100%

Measure #9: Testing Availability

This measure looks at how available testing is to everyone in the area. The scale for this measure is:

Widely Available	0	Testing Available to All
Available	1	High Availability/Exceeding Need
Low	2	Available/Meeting Need
Critical	3	Not Meeting Need
None	4	Severe Shortage of Testing

Measure #10: Average Testing Turnaround Time

A key metric related to testing is the time it takes for WCDHD to receive test results from the date of sample collection (turnaround time). WCDHD's goal is to have the majority of test results reported within 48 hours. When the turnaround time exceeds 48 hours, that increases the likelihood that someone who tests positive may expose others and that those close contacts may develop COVID-19 before WCDHD can communicate with them. The scale for this measure is:

Very Good	0	< 1 day
Good	1	1 day
Moderate	2	2 to 3 days
Critical	3	4 to 6 days
None	4	7 days or more

Measure #11: Contact Tracing

The length of time it takes to make first contact with the original case and those with whom they have had close contact is a key to containing outbreaks. WCDHD's benchmark is to make initial contact with the case within 24 to 48 hours. The scale for this measure is:

Very Good	0	80% within 24 hours
Good	1	80% within 48 hours
Moderate	2	70% within 48 hours
Critical	3	60% within 48 hours
Severe	4	50% within 48 hours

Measure #12: Individuals Affected

Individuals affected account for the number of known close contacts of positives. The scale for this measure is:

None	0	0 individuals
Low	1	1-20 individuals
Moderate	2	21-40 individuals
High	3	41-60 individuals
Severe	4	61-80 individuals

Measure #13: Medical & Surgical Bed Availability

Medical & surgical bed availability looks at the hospital capacity. The scale for this measure is:

Widely Available	0	60% - 100%
Low	1	50% - 59%
Moderate	2	30% - 49%
High	3	20% - 29%
Severe	4	0% - 19%

Once all of the measures have been scored, the average of the 13 scores is the number used for the Risk Dial. See below for an example.

ID	Risk Factors	Qualitative (Committee)	Objective (Data)	Overall
R1	Overall Positivity Rate	1	1	1
R2	Weekly Positivity Rate	1	1	1
R3	Trajectory of Cases in the last 14 days	4	4	4
R4	Cases per Million per Day	4	4	4
R5	Average Daily Hospitalization	0	0	0
R6	ICU Availability	0	0	0
R7	Ventilator Availability	0	1	0.5
R8	Community Clusters/Spread	4	3	3.5
R9	Testing Availability	2	2	2
R10	Average Testing Turnaround Time	2	2	2
R11	Contact Tracing	4	4	4
R12	Individuals Affected	4	4	4
R13	Medical & Surgical Bed Availability	2	3	2.5
	Average	2.15	2.23	2.19

This score of **2.19** would equate to the lower Orange range on the Risk Dial. The number published with the risk dial is rounded to the nearest tenth.

WCDHD has assembled a committee of public health workers who have a vast knowledge of present situations surrounding the current impact COVID-19 has on our community. Each week the committee members are provided the objective data as reference. They compare this data with their knowledge of current situations to determine subjective scores. The average of the subjective scores is then averaged with the objective data to provide the overall score.

Every Thursday, during the Public Health Command Center (PHCC) meeting, the data, as well as the dial placement is presented to the PHCC members.

The PHCC consists of the following agencies:

- City of North Platte, Mayor
- County Representatives from:
 - Arthur
 - Hooker
 - Lincoln
 - Logan
 - McPherson
 - Thomas
- ESU Sixteen
- Great Plains Health
- Long-Term Care Facility Representative
- Mid-Plains Community College
- North Platte Fire & Rescue
- North Platte Police Department
- North Platte Public School District
- Region II
- West Central District Health Department