



The GCHS PRAM Index



Pandemic Recovery Acceleration Model

PRAM

COVID-19 PANDEMIC

Metrics, Trends & Acceleration Index





Notes on Benchmarks and Capacities used in the PRAM Dashboard

Benchmarks for new cases and new deaths per day are based on 2020 population projections for the counties within each Local Health Department.

Capacities are based on the total staffed hospital beds, Adult ICU beds and ventilators reported via Knowledge Center by the hospitals that are in each of the Local Health Departments' jurisdictions.

Blank entries in the summary dashboards for each LHD indicate insufficient data to calculate the respective quantity.

A PRAM Today Velocity of 1.00 is only colored yellow if the PRAM Today Index was ever not zero AND the PRAM Today Acceleration is 0.000. Otherwise a velocity of 1.00 is considered to be "yellow".



PRAM Dashboard Interpretations

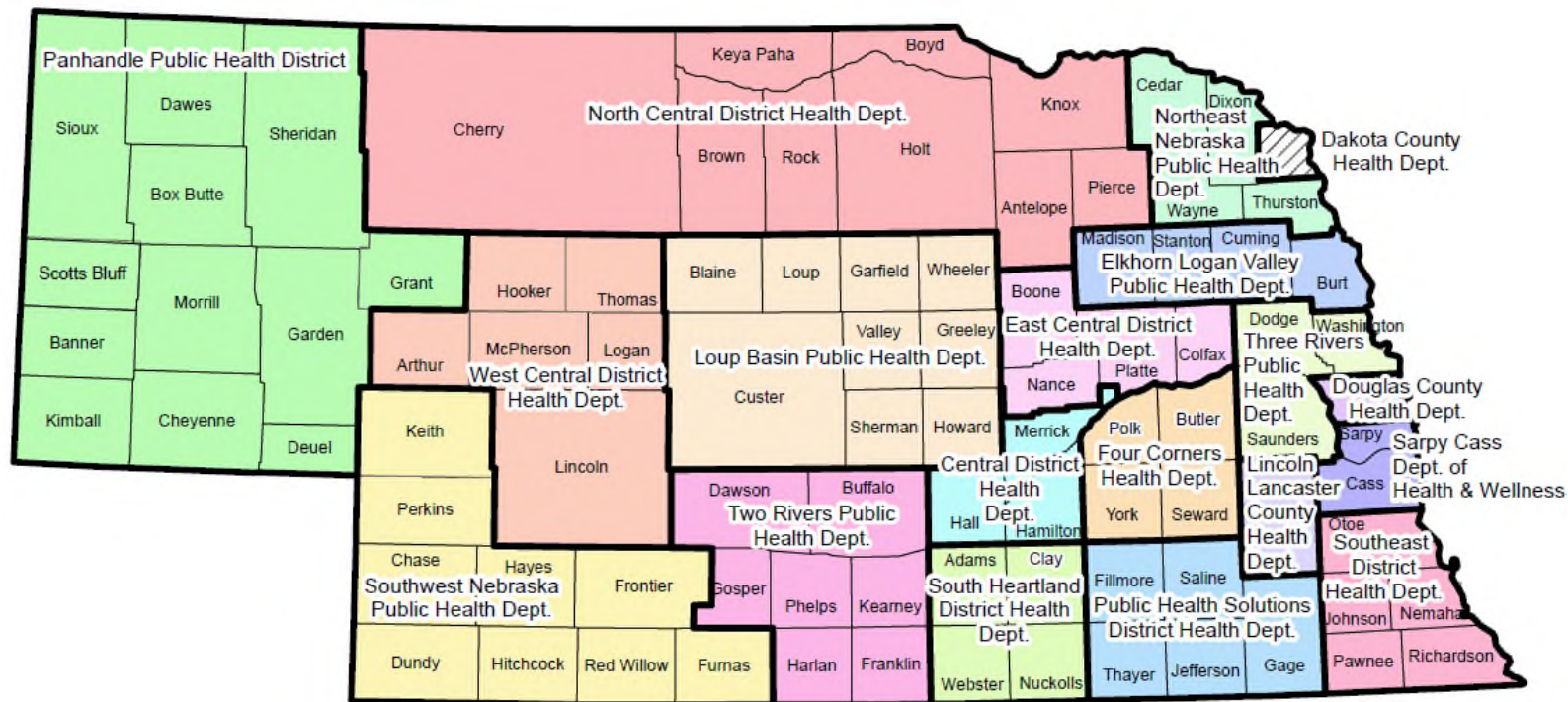
The first 6 rows of the PRAM Today column is populated with the average of the counts from current day, yesterday and the day before yesterday for new cases, percent positive tests, new deaths, hospital and ICU beds occupied by COVID positive patients and ventilators in use by COVID positive patients.

The first 6 rows of the PRAM Today Velocity are populated by the PRAM Today divided by the mean of the previous 8 to 14 days counts. In effect measuring where are we today relative to the prior week.

The first 6 rows of the PRAM Today Acceleration are populated by the $(\text{PRAM Today Velocity} - \text{PRAM Velocity from 10 days prior}) / 10 \text{ days}$ {distance in time between the two metrics}.

The last four rows of the PRAM Today are the DTI = average of the disease specific velocities; RTI = average of the resource specific velocities. A DTI or RTI of < 1 indicates all disease or resource velocities are less than 1. A value of 2 or greater implies at least one disease or resource velocity is very large.

RCI is simply the mean of DTI and RTI providing a 5000 foot view of the pandemic and is interpreted in a similar manner As DTI and RTI. RRI is the ratio of RTI/DTI. A value that is too large indicates that resources are in danger of being Overwhelmed and a value that is too small indicates the disease is spreading rapidly even though resources may be Currently sufficient to meet demand.



Nebraska

Data Sources:

Cases, Deaths, Tests and Hospital Beds :Nebraska Electronic Disease Surveillance System (NEDSS)

Vents and ICU Beds: Knowledge Center



NEBRASKA PRAM_{PHASE I BENCHMARKS}

PRAM _{<u>PHASE I</u>} <u>DISEASE METRICS NAMES</u>	PRAM _{<u>PHASE I</u>} <u>DISEASE BENCHMARKS</u>	PRAM _{<u>PHASE I</u>} <u>NEBRASKA BENCHMARKS</u>
Metric C COVID-19 Confirmed Cases	10 New cases/day/million pop'n	19.3 new cases/day
Metric T COVID-19 % Positive Tests	5% New positive tests/day	5% positive tests/day
Metric D COVID-19 Related Death	0.25 New Death/day/million population	0.39 new deaths/day
PRAM _{<u>PHASE I</u>} <u>RESOURCE METRICS NAMES</u>	PRAM _{<u>PHASE I</u>} <u>RESOURCE BENCHMARKS</u>	PRAM _{<u>PHASE I</u>} <u>NEBRASKA BENCHMARKS</u>
Metric H COVID-19 Hospital Beds	15% Capacity regional hospital beds	429 hospital care beds
Metric I COVID-19 Intensive Care Beds	20% Capacity regional ICU beds	146 intensive care beds
Metric V COVID-19 Ventilator Beds	25% Capacity regional Vent beds	153 ventilator care beds

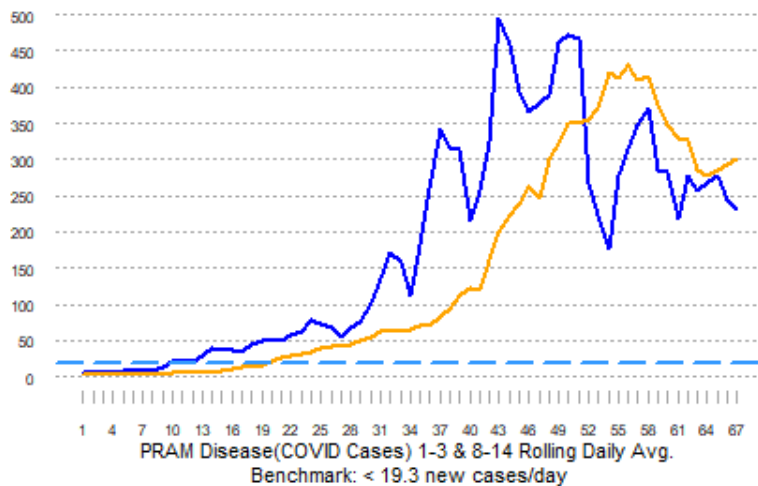


NEBRASKA PRAM DAILY AGGREGATED ACCELERATION DASHBOARD

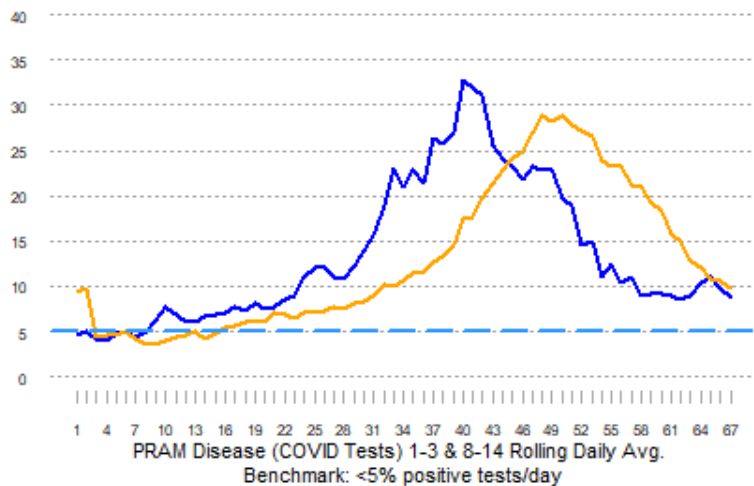
PRAM Dashboard for NEBRASKA	PRAM TODAY BENCHMARK	PRAM TODAY METRIC	PRAM VELOCITY BENCHMARK	PRAM TODAY VELOCITY	PRAM ACCELERATION BENCHMARK	PRAM TODAY ACCELERATION
Confirmed Case Index	<19.3	231.0	<1.0	0.77	<0.20	-0.012
% Positive Test Index	<5.0	8.7	<1.0	0.91	<0.20	0.046
Confirmed Death Index	<0.39	1.0	<1.0	0.36	<0.20	-0.101
Hospital Beds Index	<429	208.3	<1.0	1.03	<0.20	-0.014
ICU Beds Index	<146	69.7	<1.0	1.03	<0.20	-0.073
Ventilator Use Index	<153	58.0	<1.0	0.99	<0.20	-0.058
Disease Trend Index	<1.5	0.68	<1.0	0.95	<0.20	0.005
Resource Trend Index	<1.5	1.02	<1.0	0.84	<0.20	-0.042
Recovery Composite Index	<1.5	0.85	<1.0	0.89	<0.20	-0.019
Recovery Ratio Index	0.5-1.5	1.50	<1.0	0.88	<0.20	-0.052



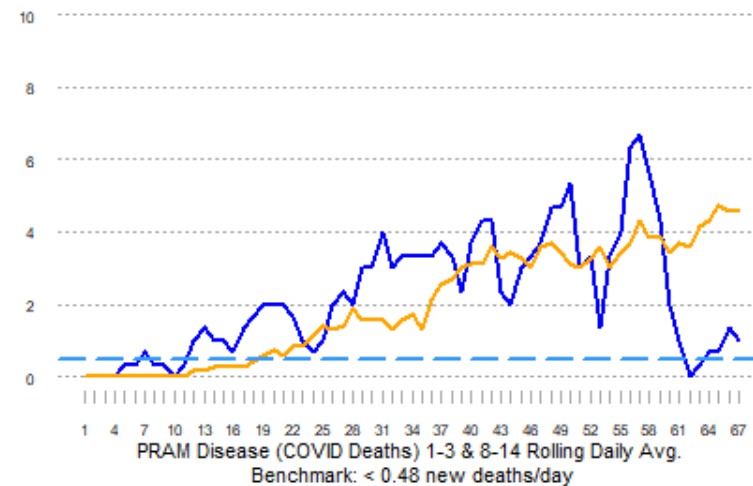
PRAM COVID Daily Rolling Average Nebraska New Cases



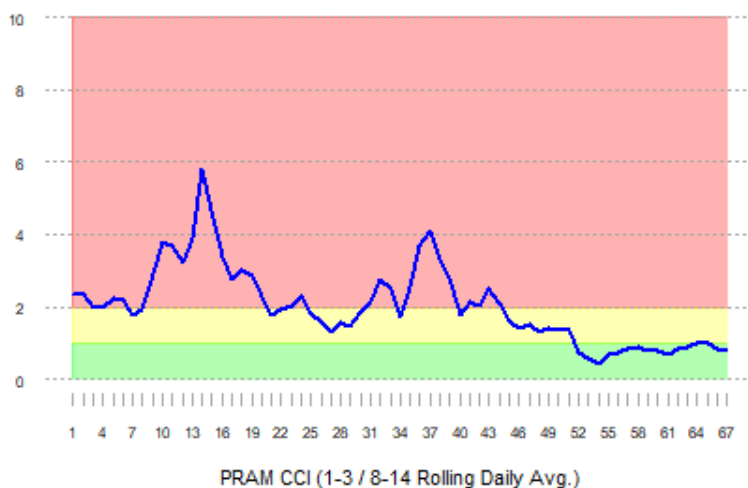
PRAM COVID Daily Rolling Average Nebraska Percent Positive Tests



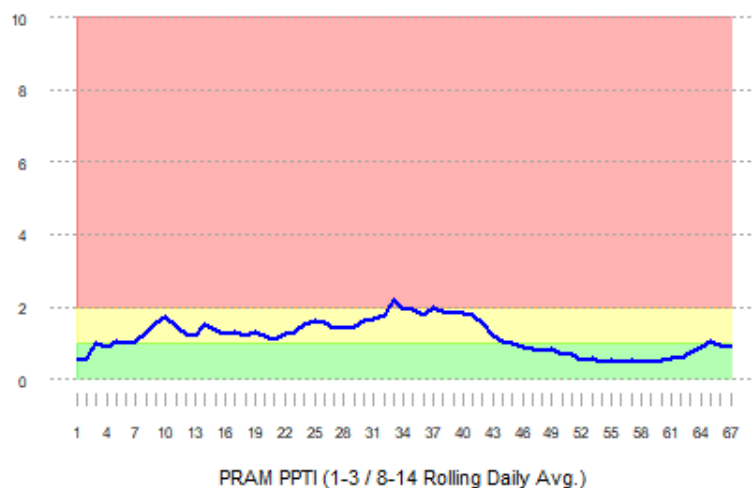
PRAM COVID Daily Rolling Average Nebraska New Deaths



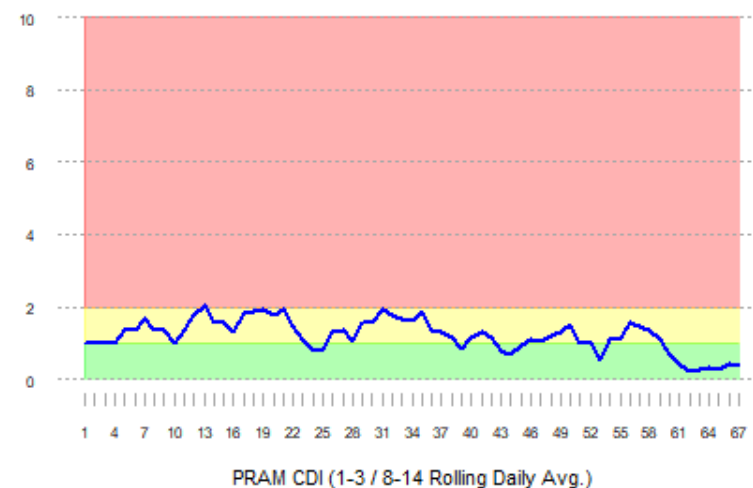
Nebraska PRAM Confirmed Case Index (CCI)



Nebraska PRAM Percent Positive Test Index (PPTI)

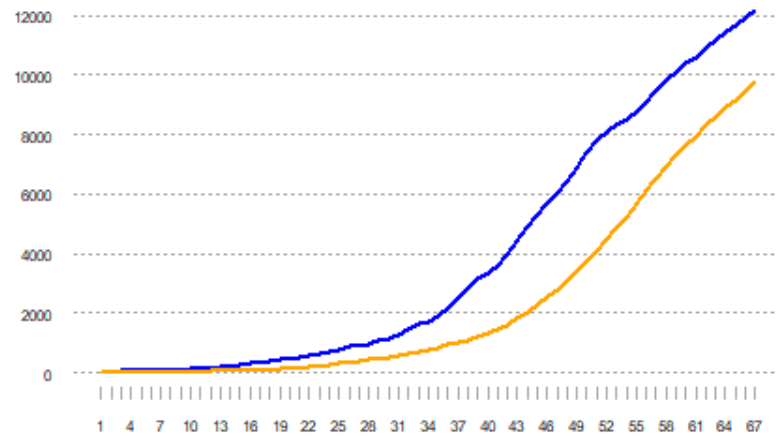


Nebraska PRAM Confirmed Death Index (CDI)



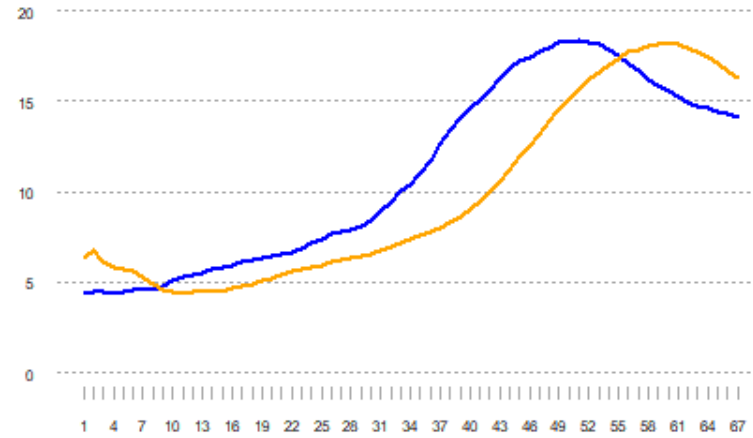


PRAM COVID Daily Rolling Average Nebraska Cumulative Cases



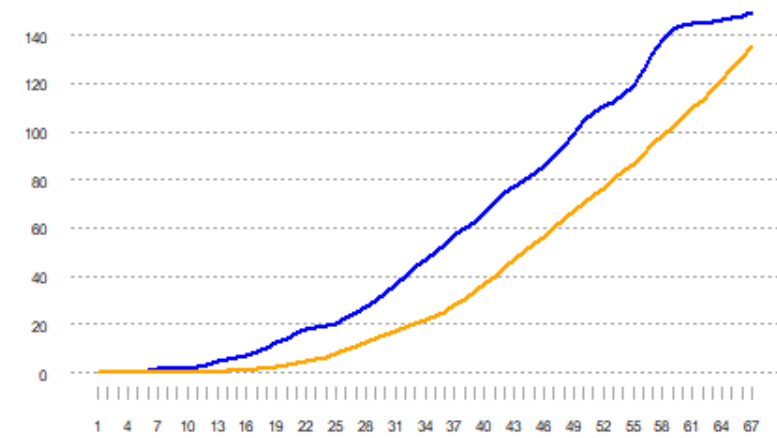
PRAM Disease (COVID Cases) 1-3 & 8-14 Rolling Daily Avg.

PRAM COVID Daily Rolling Average Nebraska Percent Positive Cumulative Tests



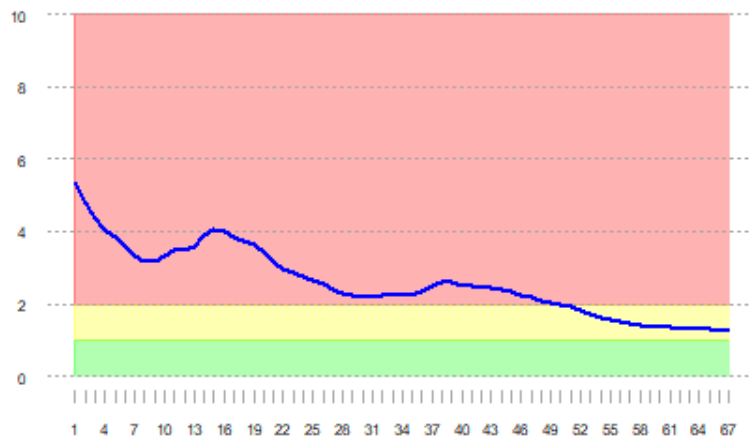
PRAM Disease (COVID Tests) 1-3 & 8-14 Rolling Daily Avg.

PRAM COVID Daily Rolling Average Nebraska Cumulative Deaths



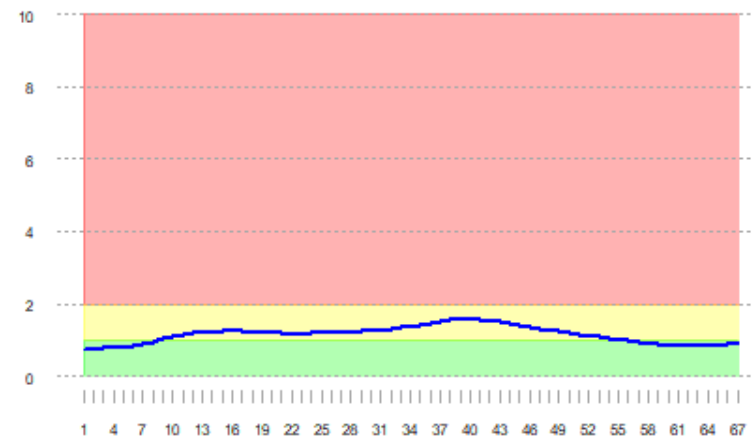
PRAM Disease (COVID Deaths) 1-3 & 8-14 Rolling Daily Avg.

Nebraska PRAM Cumulative Confirmed Cases Index (CCCI)



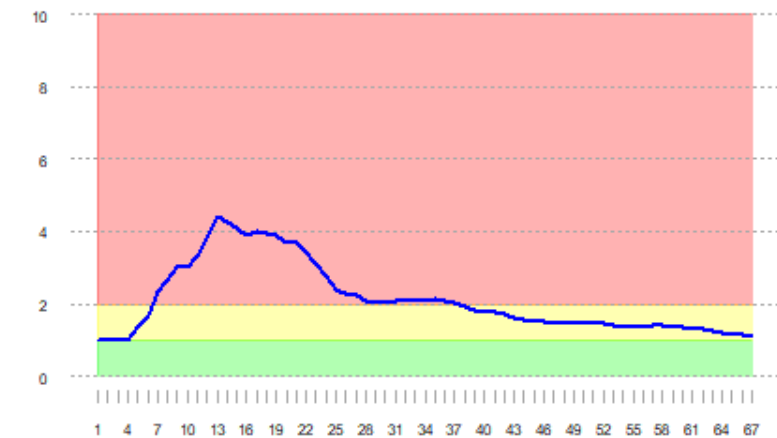
PRAM CHBI (1-3 / 8-14 Rolling Daily Avg.)

Nebraska PRAM Cumulative Percent Positive Tests Index (CPPTI)



PRAM CPPTI (1-3 / 8-14 Rolling Daily Avg.)

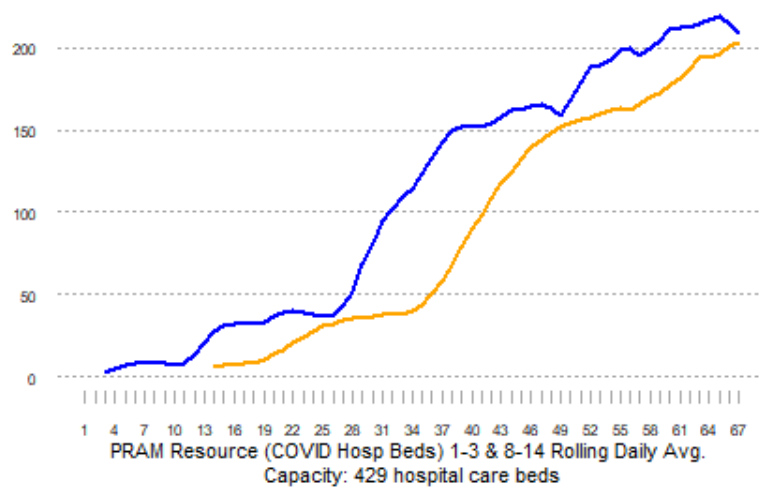
Nebraska PRAM Cumulative Confirmed Death Index (CCDI)



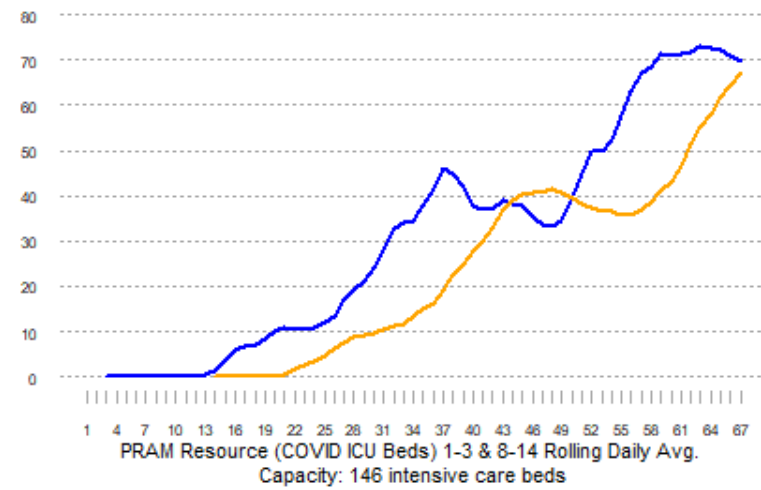
PRAM Disease (COVID Deaths) 1-3 / 8-14 Rolling Daily Avg.



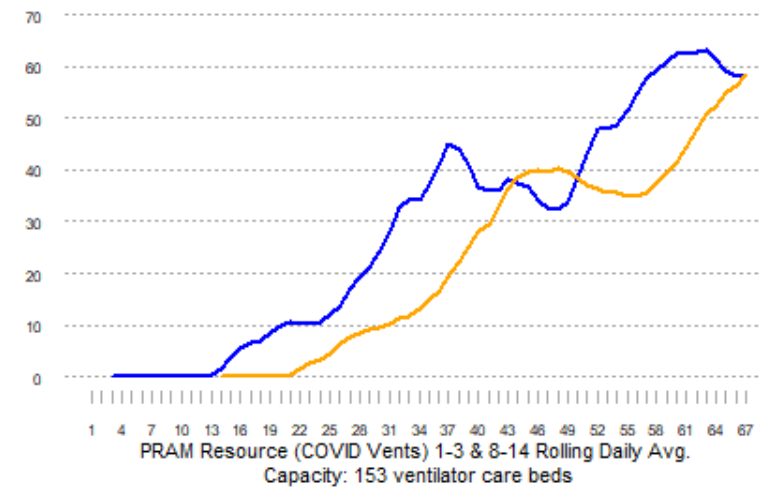
PRAM COVID Daily Rolling Average Nebraska Current Hospital Beds



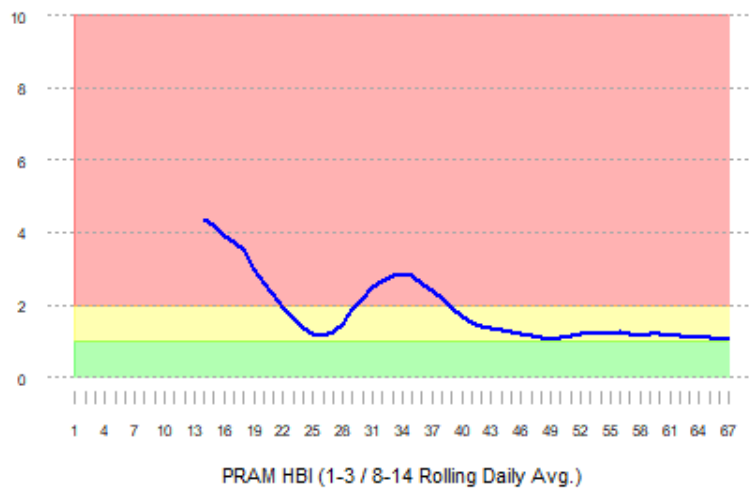
PRAM COVID Daily Rolling Average Nebraska Current ICU Beds



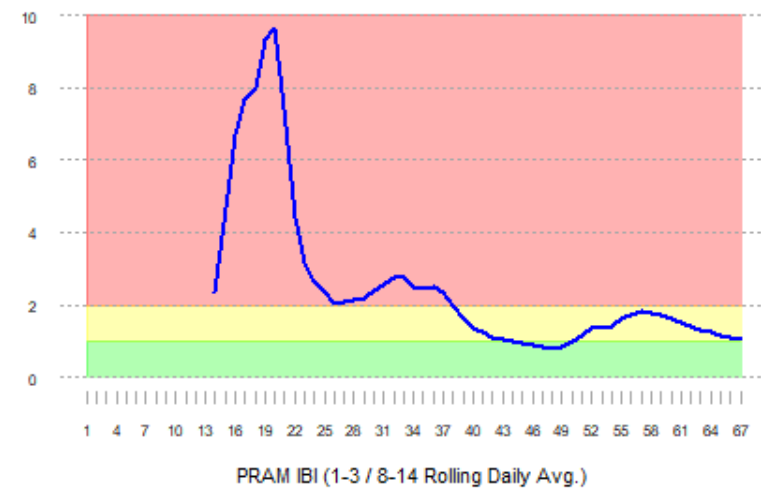
PRAM COVID Daily Rolling Average Nebraska Current Ventilators



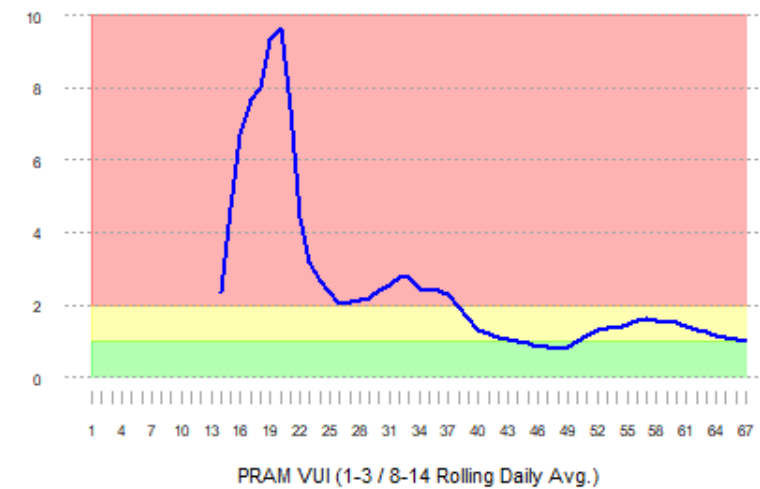
Nebraska PRAM Hospital Beds Index (HBI)



Nebraska PRAM ICU Beds Index (IBI)

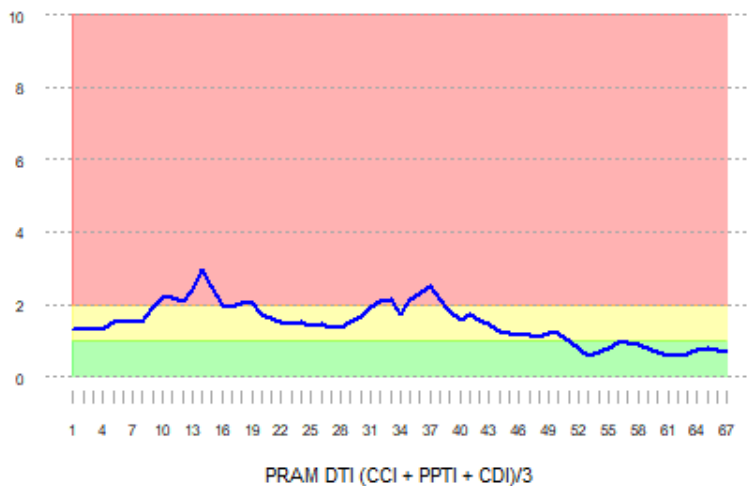


Nebraska PRAM Ventilator Use Index (VUI)

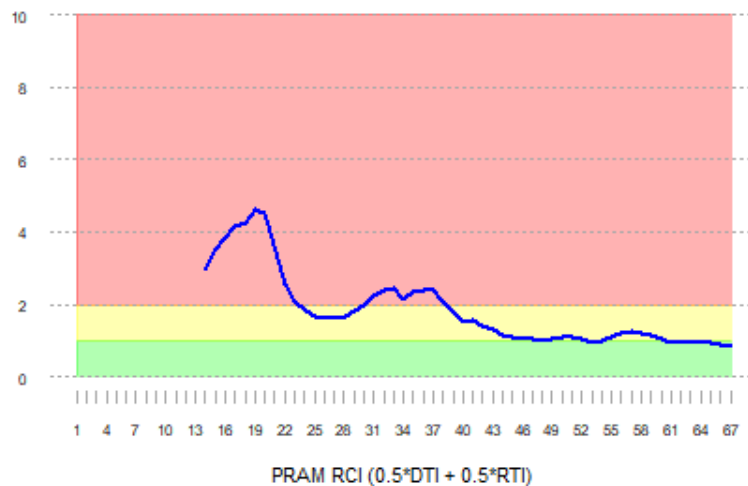




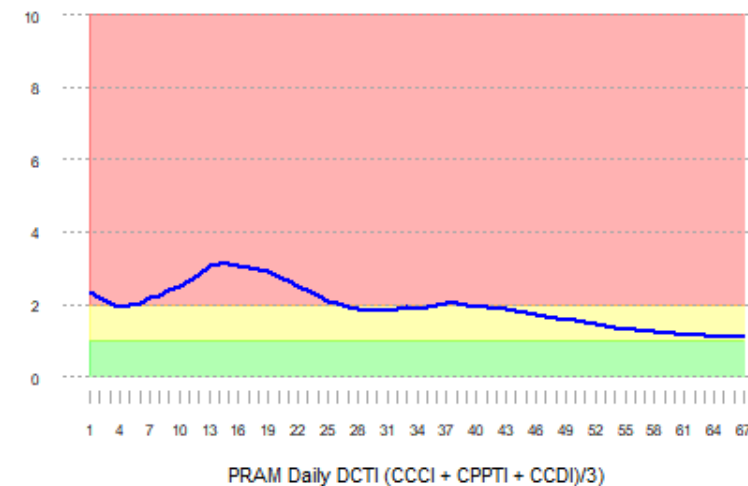
Nebraska PRAM Disease Trend Index (DTI)



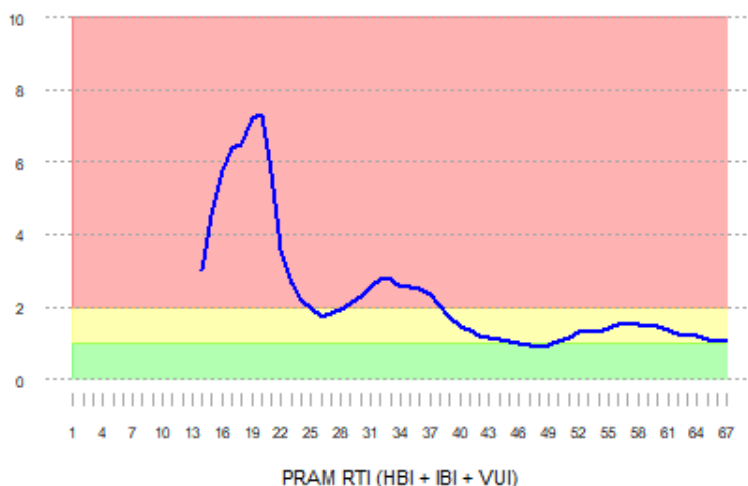
Nebraska PRAM Recovery Composite Index (RCI)



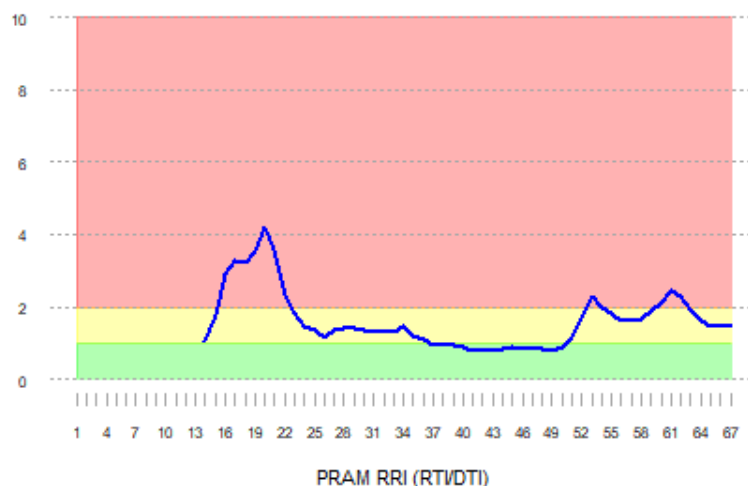
Nebraska PRAM Disease Cumulative Trend Index (DCTI)



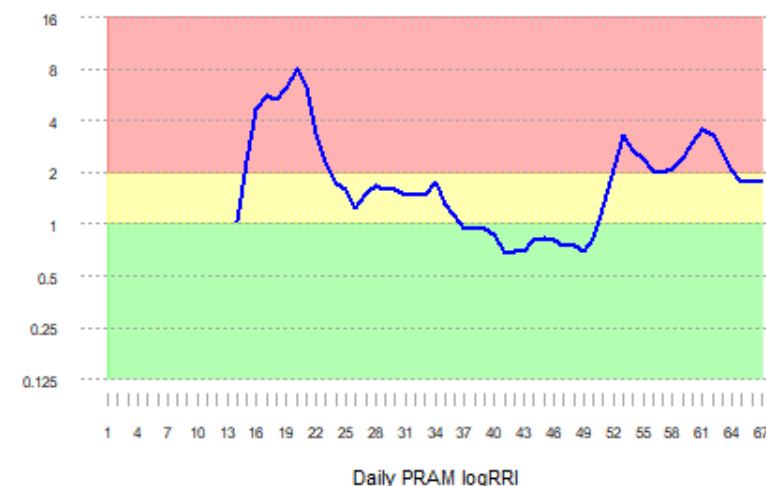
Nebraska PRAM Resource Trend Index (RTI)

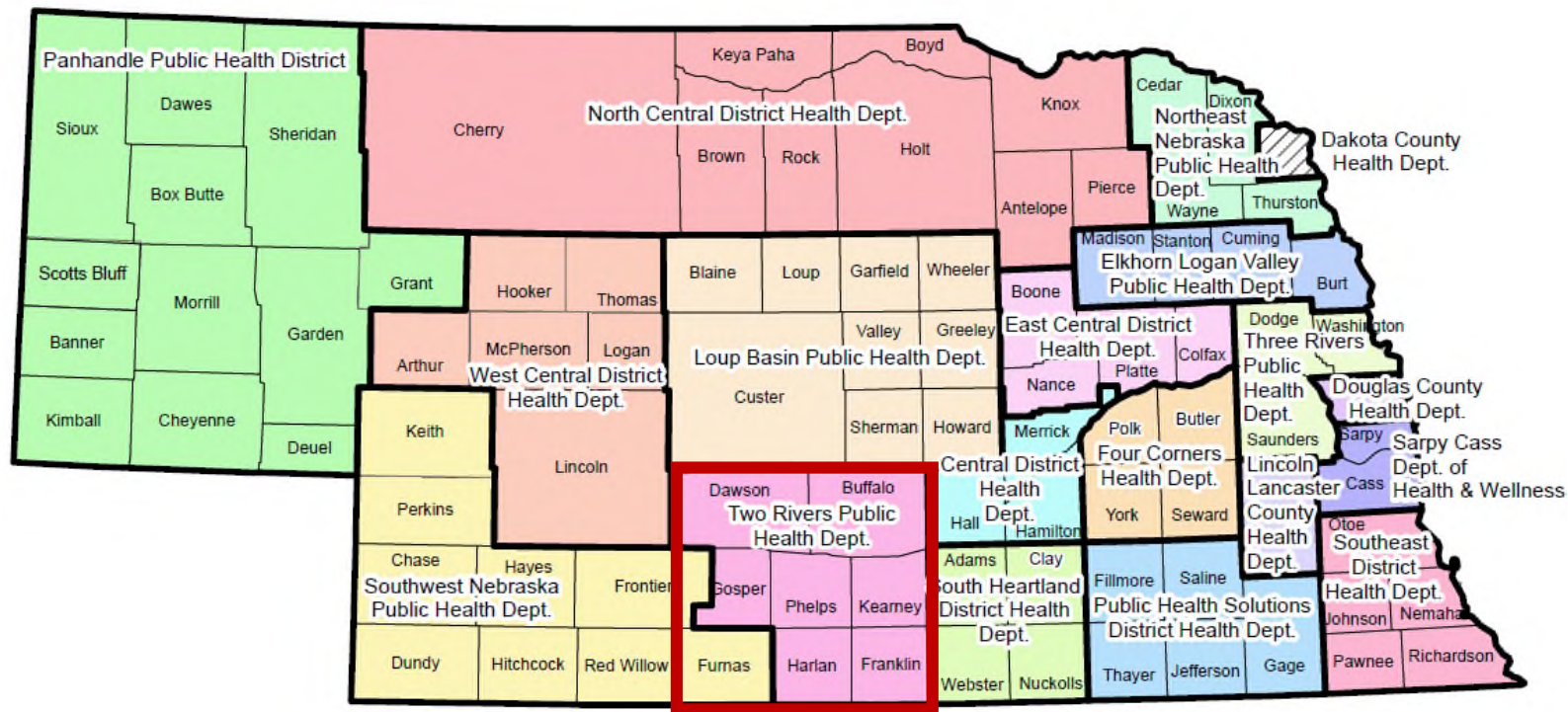


Nebraska PRAM Recovery Ratio Index (RRI)



Nebraska PRAM Log2 Recovery Ratio Index (logRRI)





Two Rivers Public Health Department (T2RPHD)

Data Sources:

Cases, Deaths, Tests and Hospital Beds :Nebraska Electronic Disease Surveillance System (NEDSS)

Vents and ICU Beds: Knowledge Center



T2RPHD PRAM PHASE I BENCHMARKS

PRAM PHASE I DISEASE METRICS NAMES

Metric C	COVID-19 Confirmed Cases
Metric T	COVID-19 % Positive Tests
Metric D	COVID-19 Related Death

PRAM PHASE I DISEASE BENCHMARKS

10 New cases/day/million pop'n
5% New positive tests/day
0.25 New Death/day/million population

PRAM PHASE I SHDHD BENCHMARKS

0.97 new cases/day
5% positive tests/day
0.02 new deaths/day

PRAM PHASE I RESOURCE METRICS NAMES

Metric H	COVID-19 Hospital Beds
Metric I	COVID-19 Intensive Care Beds
Metric V	COVID-19 Ventilator Beds

PRAM PHASE I RESOURCE BENCHMARKS

15% Capacity regional hospital beds
20% Capacity regional ICU beds
25% Capacity regional Vent beds

PRAM PHASE I SHDHD BENCHMARKS

38 hospital care beds
10 intensive care beds
14 ventilator care beds ¹³

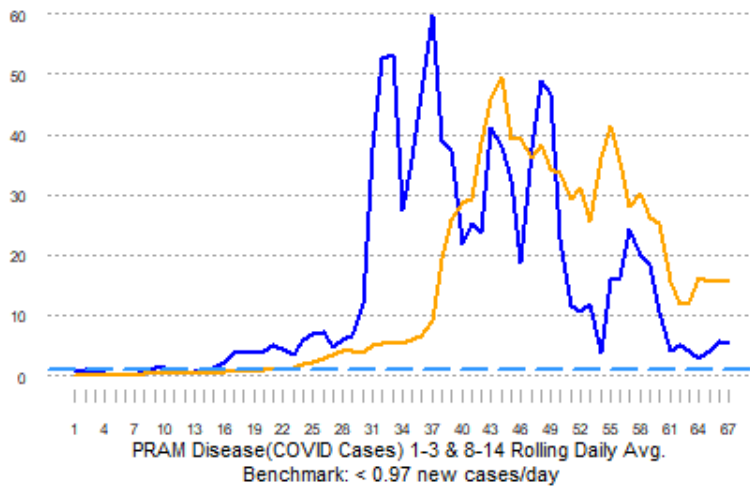


T2RPHD PRAM DAILY AGGREGATED ACCELERATION DASHBOARD

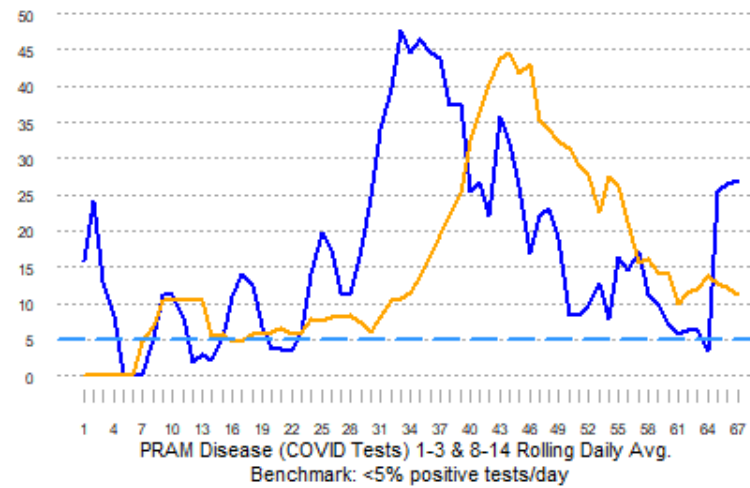
PRAM Dashboard for T2RPHD	PRAM TODAY BENCHMARK	PRAM TODAY METRIC	PRAM VELOCITY BENCHMARK	PRAM TODAY VELOCITY	PRAM ACCELERATION BENCHMARK	PRAM TODAY ACCELERATION
Confirmed Case Index	<0.97	5.3	<1.0	0.38	<0.20	-0.029
% Positive Test Index	<5.0	27.1	<1.0	2.29	<0.20	0.157
Confirmed Death Index	<0.02	0.0	<1.0	0.78	<0.20	-0.015
Hospital Beds Index	<38	8.3	<1.0	0.70	<0.20	0.007
ICU Beds Index	<10	0.0	<1.0	0.70	<0.20	0.043
Ventilator Use Index	<14	0.0	<1.0	0.70	<0.20	0.043
Disease Trend Index	<1.5	1.15	<1.0	1.21	<0.20	0.022
Resource Trend Index	<1.5	0.70	<1.0	1.22	<0.20	0.047
Recovery Composite Index	<1.5	0.92	<1.0	1.22	<0.20	0.034
Recovery Ratio Index	0.5-1.5	0.61	<1.0	1.06	<0.20	0.032



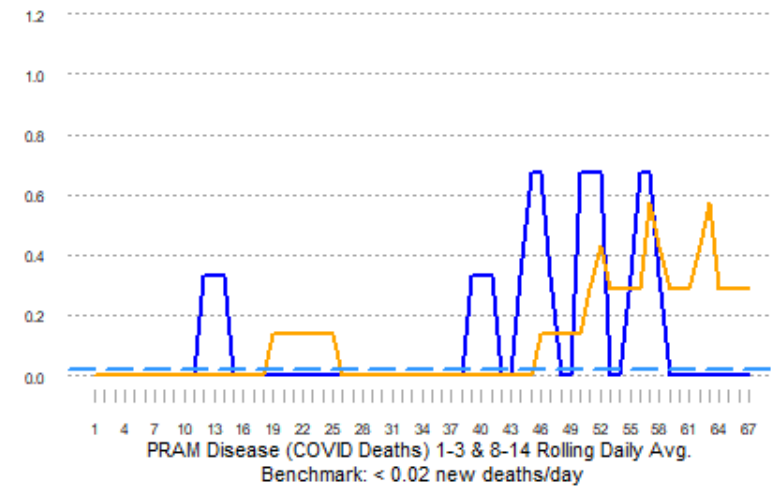
PRAM COVID Daily Rolling Average T2RPHD New Cases



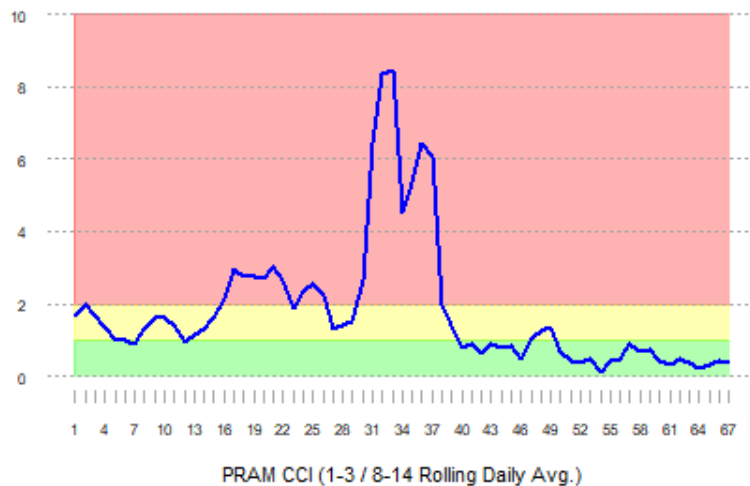
PRAM COVID Daily Rolling Average T2RPHD Percent Positive Tests



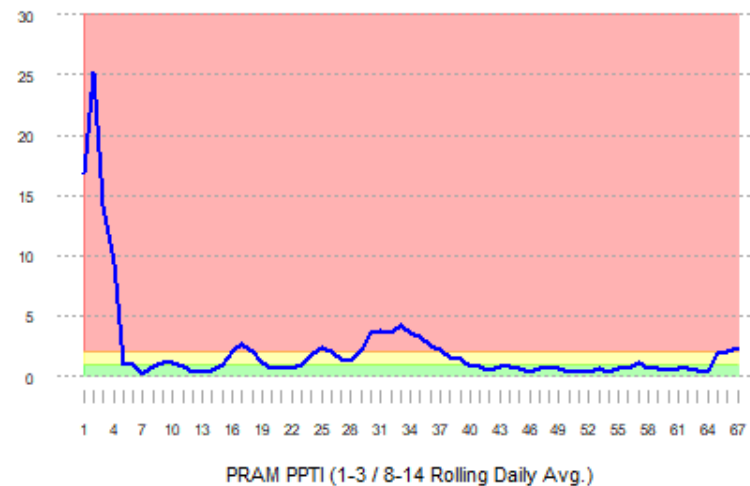
PRAM COVID Daily Rolling Average T2RPHD New Deaths



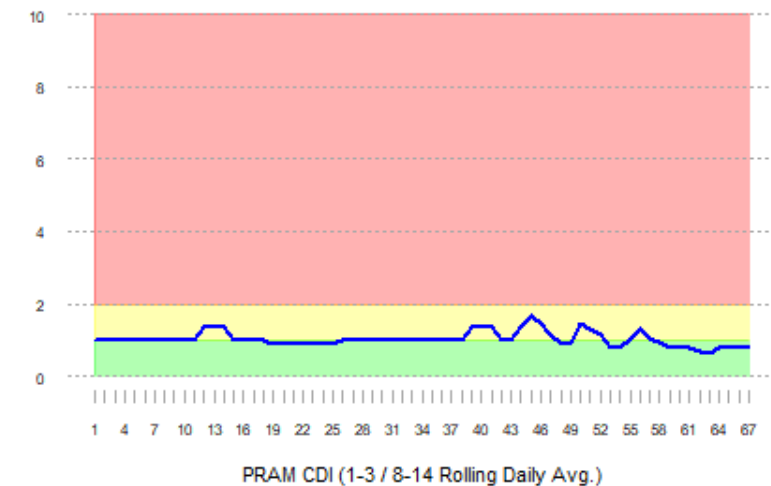
T2RPHD PRAM Confirmed Case Index (CCI)



T2RPHD PRAM Percent Positive Test Index (PPTI)

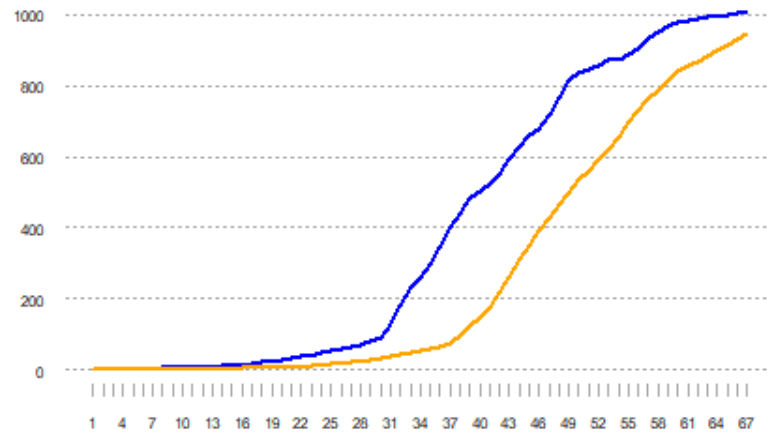


T2RPHD PRAM Confirmed Death Index (CDI)



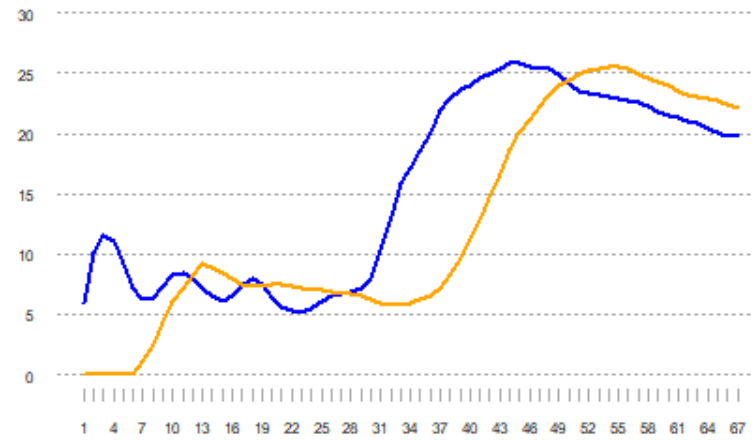


PRAM COVID Daily Rolling Average T2RPHD Cumulative Cases



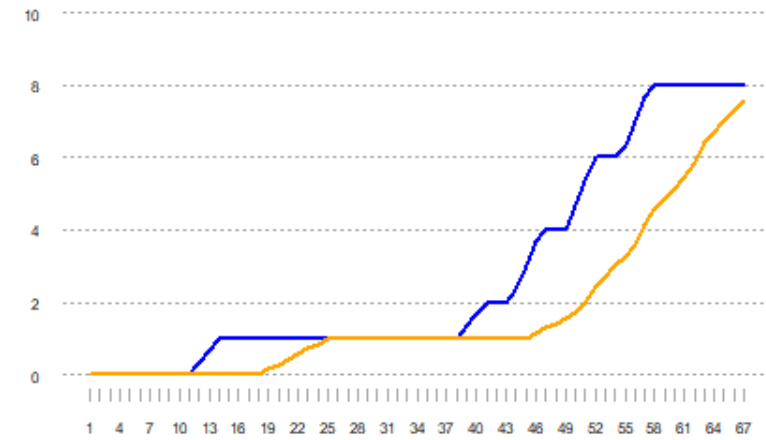
PRAM Disease (COVID Cases) 1-3 & 8-14 Rolling Daily Avg.

PRAM COVID Daily Rolling Average T2RPHD Percent Positive Cumulative Tests



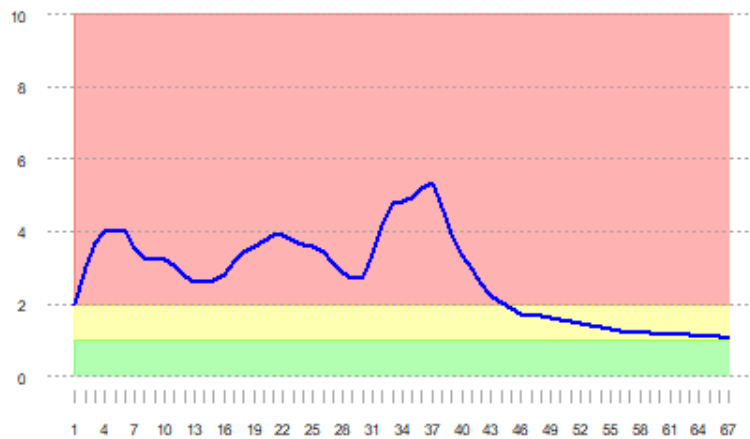
PRAM Disease (COVID Tests) 1-3 & 8-14 Rolling Daily Avg.

PRAM COVID Daily Rolling Average T2RPHD Cumulative Deaths



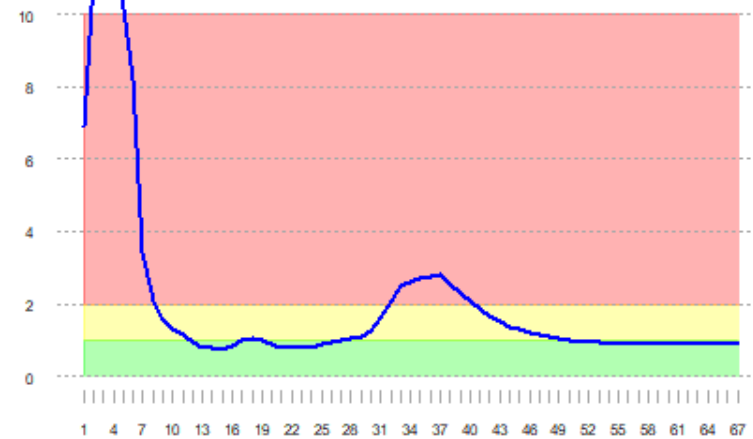
PRAM Disease (COVID Deaths) 1-3 & 8-14 Rolling Daily Avg.

T2RPHD PRAM Cumulative Confirmed Cases Index (CCCI)



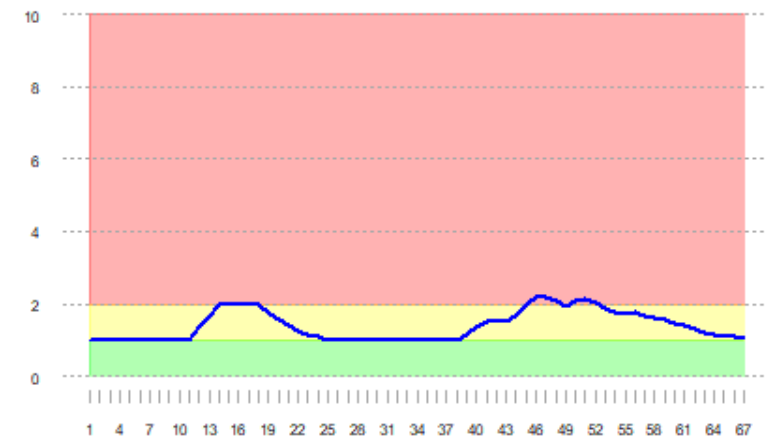
PRAM CHBI (1-3 / 8-14 Rolling Daily Avg.)

T2RPHD PRAM Cumulative Percent Positive Tests Index (CPPTI)



PRAM CPPTI (1-3 / 8-14 Rolling Daily Avg.)

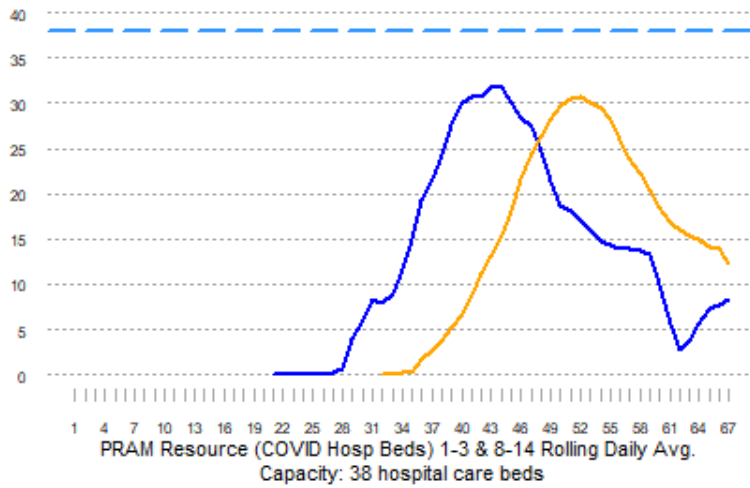
T2RPHD PRAM Cumulative Confirmed Death Index (CCDI)



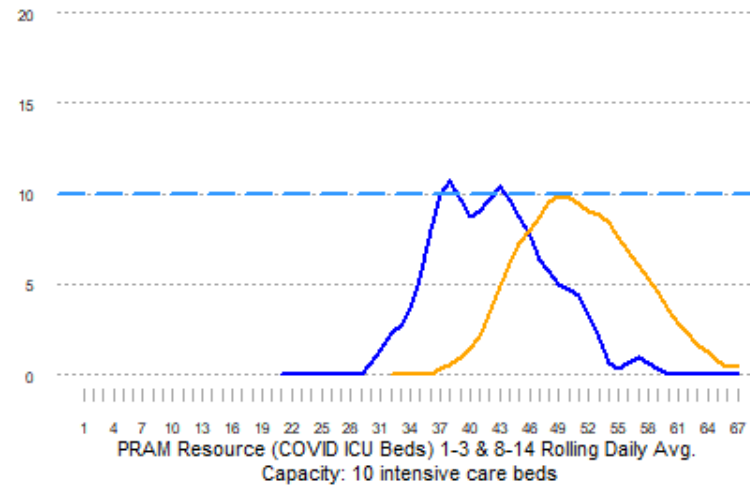
PRAM Disease (COVID Deaths) 1-3 / 8-14 Rolling Daily Avg.



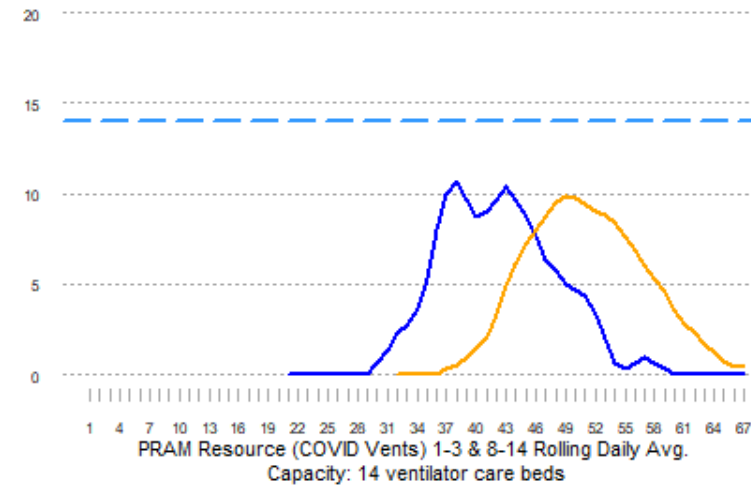
PRAM COVID Daily Rolling Average T2RPHD Current Hospital Beds



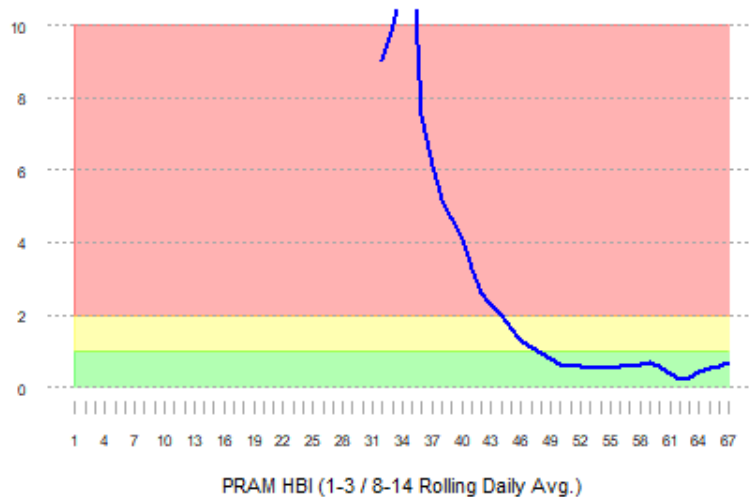
PRAM COVID Daily Rolling Average T2RPHD Current ICU Beds



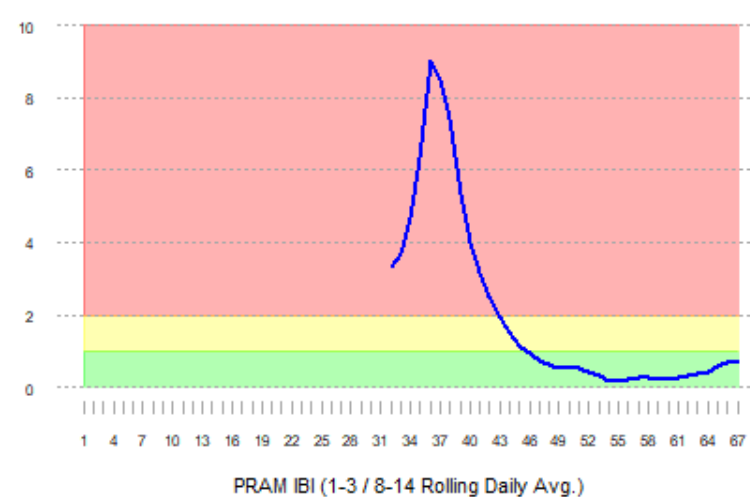
PRAM COVID Daily Rolling Average T2RPHD Current Ventilators



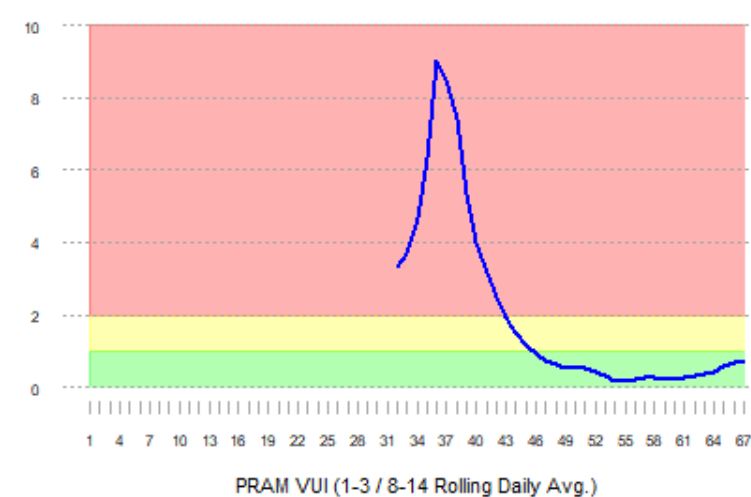
T2RPHD PRAM Hospital Beds Index (HBI)



T2RPHD PRAM ICU Beds Index (IBI)

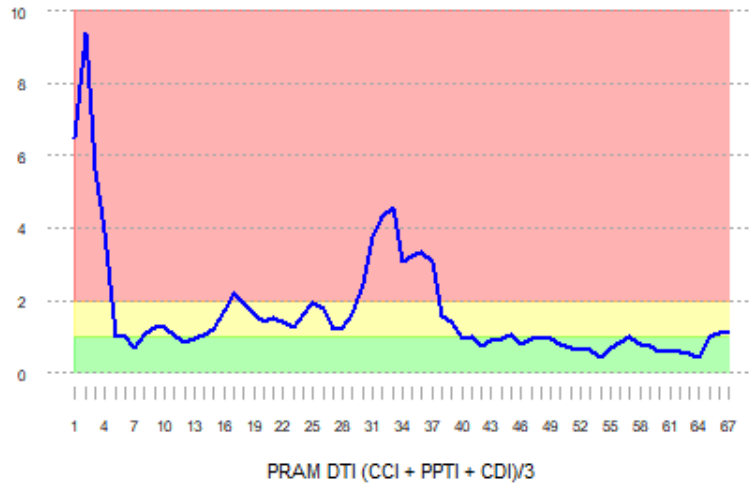


T2RPHD PRAM Ventilator Use Index (VUI)

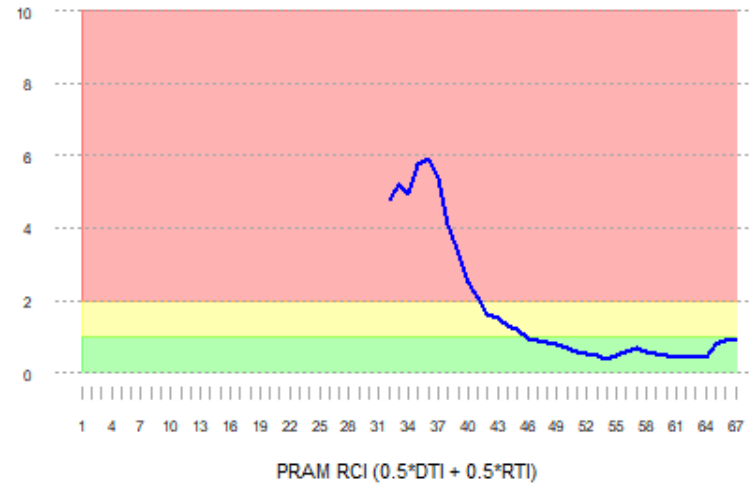




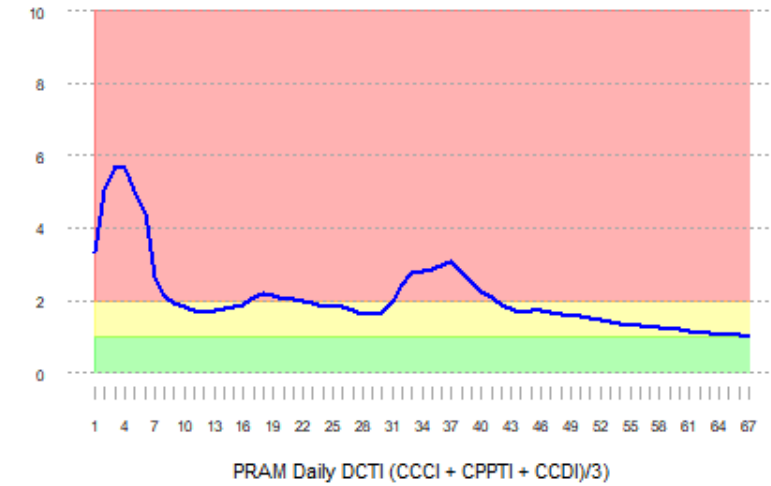
T2RPHD PRAM Disease Trend Index (DTI)



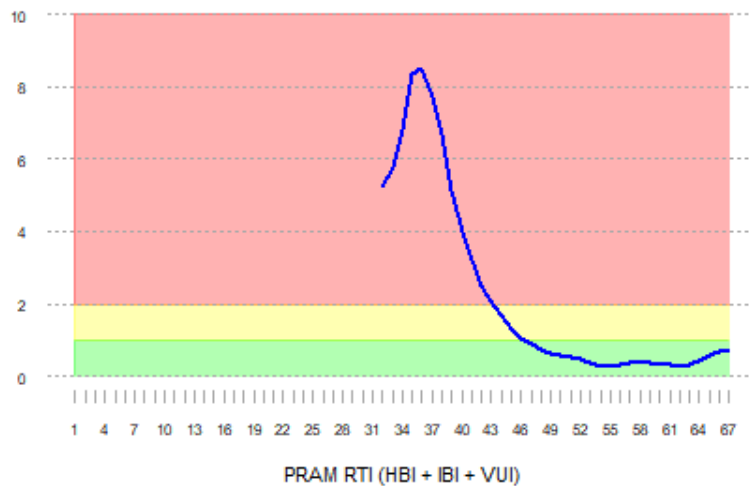
T2RPHD PRAM Recovery Composite Index (RCI)



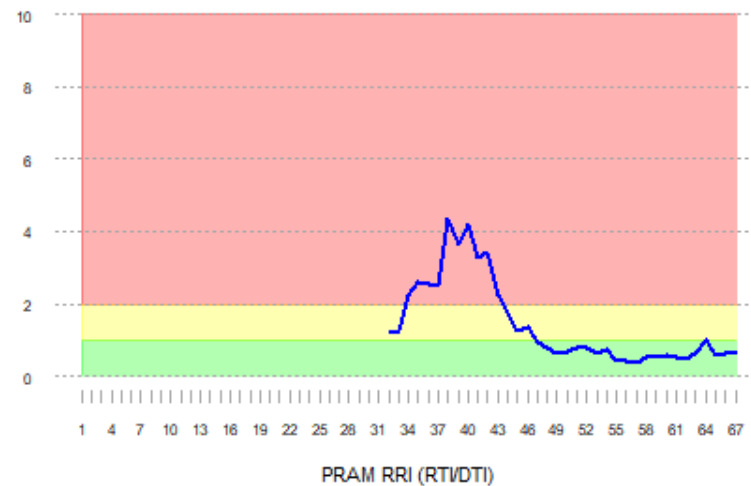
T2RPHD PRAM Disease Cumulative Trend Index (DCTI)



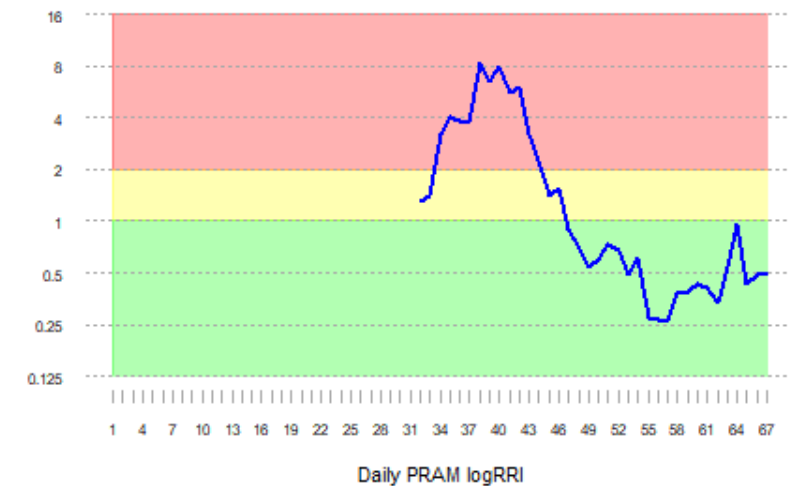
T2RPHD PRAM Resource Trend Index (RTI)



T2RPHD PRAM Recovery Ratio Index (RRI)



T2RPHD PRAM Log2 Recovery Ratio Index (logRRI)





**GLOBAL CENTER
FOR HEALTH SECURITY**

The GCHS PRAM Model

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UNIVERSITY OF
Nebraska
Medical Center