RURAL HEALTH REDESIGN CENTER

2021

# The Critical Reality of PARHM Communities

*Comparing social determinant of health & clinical population health metrics to rural state averages*

PA RURAL HEALTH MODEL

A Federally-Funded Program

The Model Team

Pennsylvania Rural Health Redesign Center

June 2021

## PREFACE:

The following report contains an analysis of social determinant of health factors and clinical outcomes in the communities served by the Pennsylvania Rural Health Model *(PARHM).* As prefaced by the previously released RHRC study *"The Bridge Between Urban and Rural: A closer look at the inequities of rural communities and PARHM's impact on them"*, many hospitals participating in the Model face great disparities including inflated poverty, unemployment, and disability rates as well as geographic barriers which all result in a poorer quality of life. In follow-up to those findings, this analysis has been conducted to identify if these communities also face poorer health outcomes as a result of the demographic disparities.

This study was configured using public, county-level data provided by the Pennsylvania Department of Human Services *(PA DHS),* along with other supporting statistics and datasets. Specific metrics examined include additional poverty and food insecurity rates, as well as general and disease-specific death rates. The results further support those of previous studies released in that for 76 percent of the population health metrics examined, results for PARHM counties were worse compared to state total, rural, and urban averages. These findings highlight the critical nature of these communities and place additional emphasis on the significance of the support and stability provided to them by Model participant hospitals.

This report has been organized into the following categories based on the data provided.

1. **Overview of PARHM's footprint**
2. **Social Determinant of Health Factors**
3. **Clinical Outcomes**

The following pages will provide a summary of the findings of this analysis. The goal of this report is to inform the Model team and hospital leadership of potential transformation goals and opportunities to improve health equity. In addition, this study can provide the public with educational insight into the current, critical state of PARHM communities as well as the importance of participant hospitals in providing support and stability to them.

## DEFINITIONS

For the purposes of this analysis, and to ensure concise, easy-to-read narrative, please review the following term definitions.

**Catchment Area:** The areas in which the impacts of the Pennsylvania Rural Health Model can be seen – communities served by Model participant hospitals, as determined by patient zip codes.
**DHS:** Pennsylvania Department of Human Services
**HAP:** Hospital and Healthsystem Association of Pennsylvania
**PARHM:** The Pennsylvania Rural Health Model – also referred to as *"The Model and/or Program"*
**Participant Communities:** The catchment areas of participant hospitals - also referred to as "*communities served by PARHM and/or participant hospitals"*
**Participant Counties:** Rural Pennsylvania counties containing at least one PARHM participant hospital – also referred to as *"PARHM counties*"
**RHRC:** Rural Health Redesign Center – the organization responsible for the administration of PARHM.

## METHOD

The primary source of data for this analysis was provided by the Health Equity Analysis Tool *(HEAT)* developed by the Pennsylvania Department of Human Services *(PA DHS).*[1] This purpose of HEAT is to assist in the identification of areas where improvements in health equity can be made. This data was based on the years of 2018 and 2019. Due to this reflected timeframe, effects of the Model were not yet prevalent. Therefore, the findings of this report reflect the starting point for participant hospitals for use of future comparison to gauge Model success.

Once extracted from the DHS website, the data was then separated by county into state total, urban, rural, and PARHM participant sectors based the Center for Rural Pennsylvania's definition of "rural".[2] The values for the various metrics were then aggregated based on these categories. Once calculated, the results for counties containing at least one PARHM participant hospital were compared to the state total and rural averages. As previously mentioned, these counties measured unfavorably in many of the categories, conveying the high-risk nature of the communities and highlighting the importance of the Model to keep healthcare facilities open in these areas.

Additional sources for supporting data include the Center for Rural Pennsylvania, the Hospital & Health System Association for Pennsylvania *(HAP)*, and the Rural Health Redesign Center *(RHRC)*.

Supporting geographic visualization have been developed based on the findings of this report and those previous to it. These provide an alternative method of viewing the results, identifying trends based on location, and understanding the geographic footprint of PARHM. Throughout the narrative of this report, links to visualizations that are relevant to the content of that section will be provided.

*To view a comprehensive document containing the multiple different visualizations, click here.*

## PARHM'S FOOTPRINT

The Pennsylvania Rural Health Model *(PARHM)* is an alternative payment model designed to address the financial challenges faced by rural hospitals by transitioning them from fee-for-service to global budget payments. This model aligns incentives for providers to deliver value-based care and provides an opportunity for rural hospitals to transform the care they deliver to better meet community health needs.

The Model currently has eighteen participant hospitals which stretch across fifteen rural counties – *Figure 1*. According to data provided by the Center for Rural Pennsylvania regarding the catchment area of the PARHM, there are 1,338,459 people covered and impacted by the program.

*Map created using the definition of "rural" according to the Center for Rural P & PARHM Methodology*

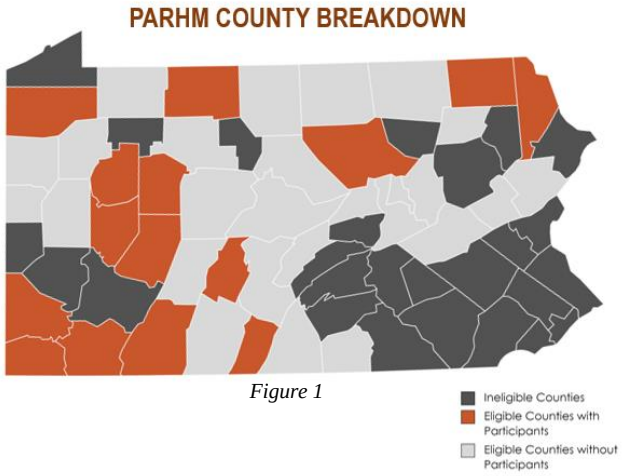



*Figure 1*

The Center for Rural Pennsylvania previously provided the RHRC with demographic data based on zip codes of patients served by Model participant hospitals. Using this data, it was found that impacts of the PARHM could be seen across approximately 92% of the eligible Southwest region, 40% of the Northwest, and 33% of the Northeast - *geographic visualization available*

| REGIONS | SPENDING CONTRIBUTIONS | SALARY CONTRIBUTIONS | JOBS PROVIDED |
|---|---|---|---|
| NORTHWEST *(5 hospitals)* | $616M | $229M | 4.4K |
| SOUTHWEST *(5 hospitals)* | $1.0B | $381M | 7.7K |
| ALTOONA/JOHNSTOWN *(3 hospitals)* | $377M | $138M | 2.7K |
| NORTH AND SOUTH CENTRAL *(2 hospitals)* | $141M | $57M | 1.1K |
| NORTHEAST *(3 hospitals)* | $226M | $82M | 1.9K |
| TOTAL | $2.4B | $886M | 17.8K |

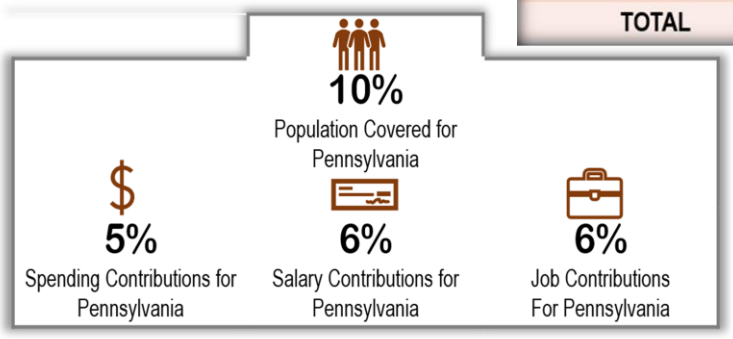



*Figure 2: Data provided by the Center for Rural Pennsylvania*

As shown in *figure 2*, PARHM participant hospitals are estimated to impact about 10% of the Pennsylvania population, contribute 5% of total spending, 6% of salaries, and produce 6% of job opportunities for the state based on data provided by the Center for Rural Pennsylvania and HAP.

These findings are further explored in the RHRC analysis "The Economic Impact of PARHM Participant Hospitals" which was derived from the findings of a study performed by HAP regarding the economic impact of Pennsylvania hospitals.[3]

## SOCIAL DETERMINENTS OF HEALTH

As determined in the previously mentioned disparity study conducted by the RHRC[4], many participant communities face large inequities compared to other urban and rural areas. This includes inflated unemployment rates, a greater population of disabled individuals, and higher poverty rates – *Figure 3.*

In summary, that study found that 100% of participant hospitals report unemployment rates for their communities above the rural average. In addition, twelve of the eighteen communities report high poverty rates and fourteen have a higher population of disabled individuals in comparison to the rural state average.

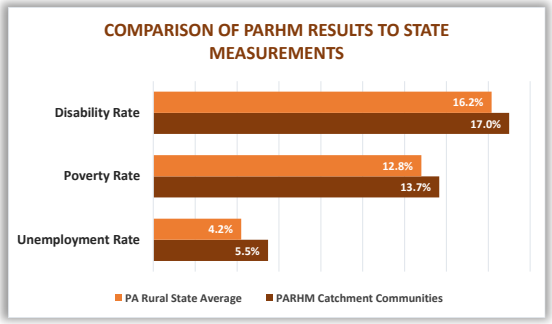



*Figure 3: Data provided by the Center for Rural Pennsylvania*

The DHS data used for this analysis provides additional insight into food insecurity rates and child poverty on a county level for these areas. With the understanding that high poverty rates often lead to an increase of food insecurity rates, it may come as no surprise that PARHM counties ranked high in both metrics.

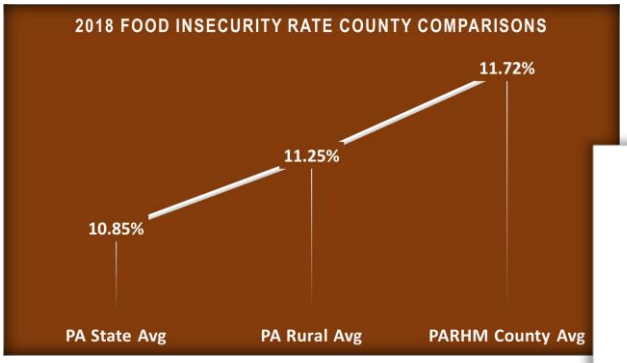
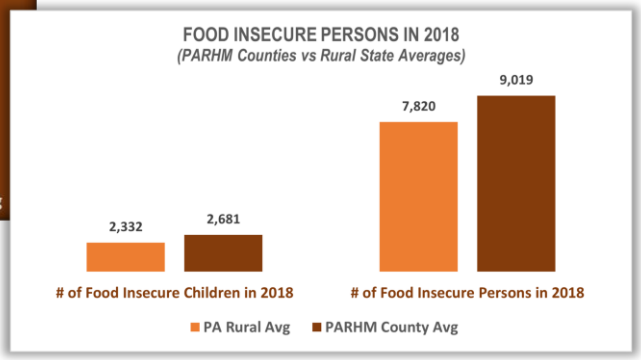



*Figure 4: Data provided by PA DHS*




In *figure 4*, both the food insecurity rate and number of food insecure persons in PARHM counties can be seen. Based on the results specific to children facing food insecurity, a closer look was taken into poverty and maltreatment rates specific to them - *geographic visualization available*

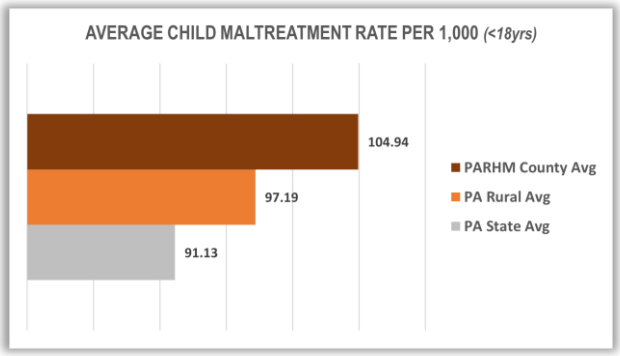



*Figure 5: Data provided by PA DHS*

As shown in *figure 4*, there are more food insecure children in counties where PARHM participants are located compared to other rural counties. This correlates to a higher maltreatment rate in these counties as shown in *figure 5*. In addition, it was found that the poverty rate for children under five years old is greater than the rural average in eleven of the fifteen participant counties - *geographic visualization available*

## CLINICAL POPULATION HEALTH METRICS

In addition to the social determinant of health data, DHS also provided information specific to clinical outcomes on the county level. Some of the metrics analyzed include overall health indexes, general death rates, and death rates by diagnosis.

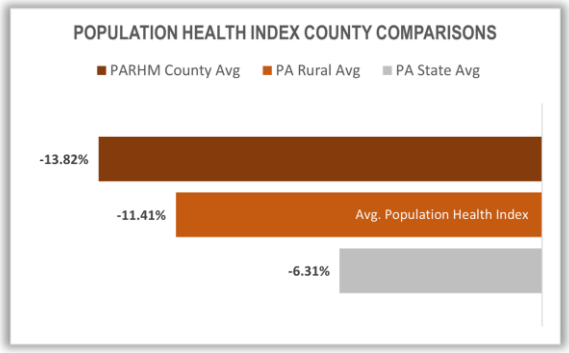



*Figure 6: Data provided by PA DHS*

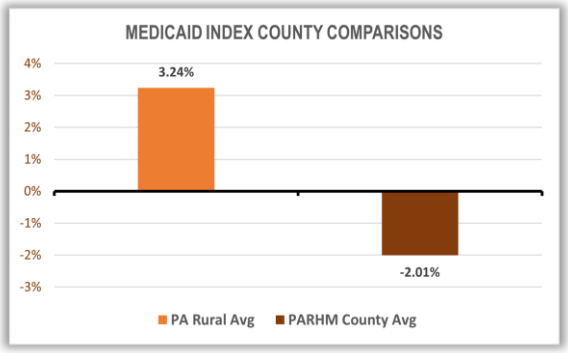



*Figure 7: Data provided by PA DHS*

As shown in *figures 6 and 7*, counties with at least one participant hospital are lower on both the population health and Medicaid index, meaning the health outcomes in these areas are worse in comparison to the rural and state averages - *geographic visualization available*

In addition to the health indexes, the DHS data also provides insight into various death rates. It was found that in 60% of participant counties, the number of deaths of despair exceeded the rural state average, which accounts for the difference in averages shown in *figure 8*.

*(Deaths of despair are usually classified as a suicide, drug or alcohol overdose, or death resulting from a chronic liver disease)*

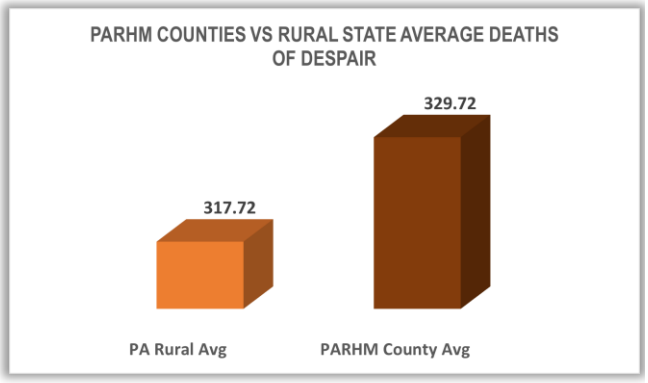



*Figure 8: Data provided by PA DHS*

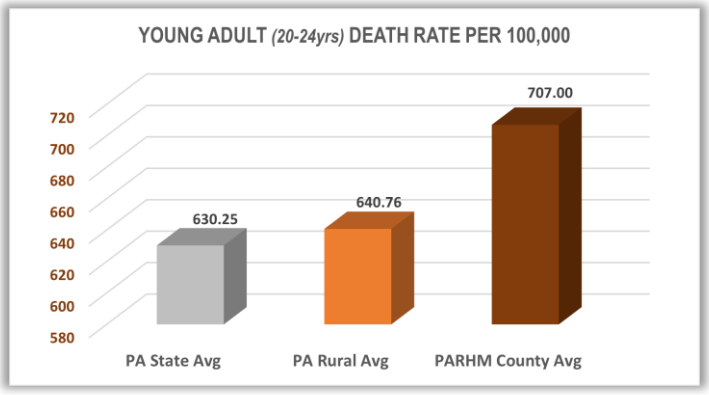



*Figure 9: Data provided by PA DHS*

The death rate per 100,000 young adults is also significantly higher in PARHM counties – *figure 9*. In more than half of these counties this rate is higher than the rural average, with the highest county recording a rate of 1,412 deaths per 100,000 young adults – more than double that of the rural average.

*geographic visualization available*

The DHS data also provided insights into the death rates for specific diseases in Pennsylvania counties. As shown in the following figures, counties with at least one PARHM participant measured unfavorably compared to the rural and state averages in all of the listed diagnoses.

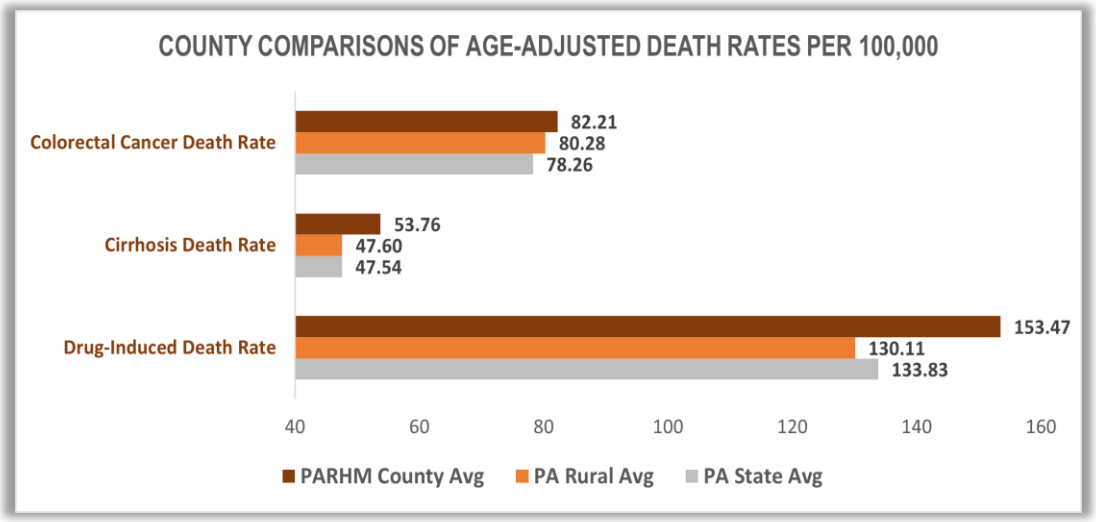



*Figure 10: Data provided by PA DHS*

While some comparisons present smaller gaps between the different categories of counties, such as in the lung and colorectal cancer comparisons, the results of others were much more significant – i.e., drug-induced, diabetes, and coronary heart disease death rates. After analysis, it was found that 73% of participant counties report drug-induced and cirrhosis death rates above the rural average.

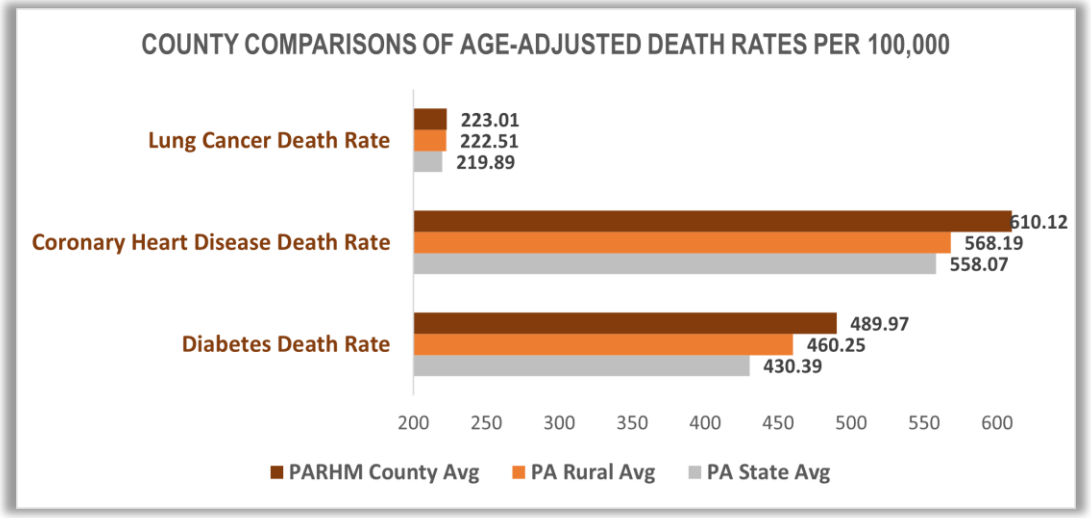



*Figure 11: Data provided by PA DHS*

Interestingly, when comparing the percentage of adults diagnosed with diseases such as diabetes, there was less than a 1% difference between PARHM communities and the state and rural averages. Because the percentage of diabetes diagnosis in adults is close to average across all categories yet the death rates for this diagnosis are much greater in PARHM counties, it can be inferred that diagnosed individuals are dealing with additional health-issues escalating the severity of this disease or that there is a difference in the methods of treatment in these counties.

## CONCLUSION

Based on the various findings of this analysis and those prior, it is evident that the communities of PARHM participant hospitals face many disparities and poorer health outcomes. Individuals in these communities are more likely to be unemployed or disabled, and more likely to be living in poverty with increased levels of food insecurity. It is also likely that these individuals are dealing with poorer mental health which results in increased suicides and drug-related overdoses. In addition, while any disease diagnosis is serious, for individuals in these communities it comes with an increased risk of death. With all of this in mind, it is clear that these rural regions deserve a great deal of attention and should not be overlooked.

These findings make it evident that PARHM participants are serving some of the most critical communities across the state. The Model team is dedicated to keeping these rural facilities open as it is recognized that they are the cornerstone of many of their communities.

While the poorer health outcomes highlighted in this analysis were likely to be expected due to the critical condition of many social determinant of health factors, they are not to be accepted. PARHM leadership and participants have been taking significant strides to bridge the gaps of disparity in these communities. The information founded in this report specific to health outcomes and social determinants of health will be used to drive future decisions on transformation planning and improving health equity in their communities. Therefore, future assessments of similar nature will be conducted using these initial findings as comparisons to gauge the effectiveness of the transformation plan efforts and overall Model success.

While the goal of healthcare transformation is no easy feat, PARHM leadership is dedicated to the cause. However, it should be recognized that true transformation takes time, and the effects of the Model are just starting to be seen. Only by continuation of the Model will these communities be able to witness long-term, lasting results related to social determinants of health, clinical outcomes, and the improvement of overall population health.

## CITATIONS


[1]Department of Human Services. *Health Equity*. Health Equity Analysis Tool. HEAT. (n.d.). https://www.dhs.pa.gov/HealthInnovation/Pages/HealthEquity.aspx.

[2]The Center for Rural Pennsylvania. *"Rural Pennsylvania Counties."* Web. 07 May 2021. https://www.rural.palegislature.us/ruralcounties.html

[3]Siegel, Sari, PhD, Ayse Yilmaz, MHA, and Obaid Zaman, MPP. *Beyond Patient Care: Economic Impact of Pennsylvania Hospitals. A White Paper Analysis of FY 2019 Data*. The Hospital and Healthsystem Association of Pennsylvania (HAP), Dec. 2020. PDF. https://haponlinecontent.azureedge.net/resourcelibrary/beyond-patient-care-economic-impact-white-paper-fy2019.pdf

[4]Rural Health Redesign Center. *The Bridge Between Urban and Rural: A closer look at the inequities of rural communities & PARHM's impact on them*. May. 2021.