Pennsylvania Rural Health Plan

2025 - 2030

MESSAGE FROM THE PRESIDENT OF THE PENNSYLVANIA RURAL HEALTH ASSOCIATION

Rural populations in Pennsylvania experience unique rural health challenges and although each community is unique, there are many unifying themes. As an association and as advocates for rural residents, we are committed to identifying, advocating for, and improving these rural health concerns.

The Pennsylvania Rural Health Plan, 2025-2030 is a culmination of more than two years of collaboration and focus to highlight health care challenges in rural Pennsylvania, acknowledge strengths, and promote recommendations to address disparities. This is the first Rural Health Plan for Pennsylvania since 2000 and will launch efforts to address rural health issues across the state.

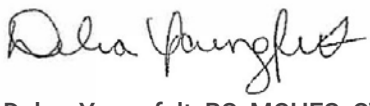
The Pennsylvania Rural Health Plan, 2025-2030 achieves several separate and interrelated objectives:

- Describes the current health status of rural Pennsylvania and identifies priority challenges;
- Assesses how social determinants of health influence the delivery and success of health care in rural Pennsylvania;
- Informs readers of the unique populations living in rural Pennsylvania and their corresponding health care needs;
- Evaluates trends in the payment and financing of health care services;
- Provides recommendations and strategies to address challenges that impact health and well-being; and
- Promotes discussion and action on rural health improvement for policymakers, agencies, providers, and residents of rural Pennsylvania.

The topics included in the Plan address the most pressing issues impacting rural health delivery using the most currently data available at the time of writing. Future updates will build on this Plan and will demonstrate efforts to address recommendations and highlight emerging rural health and population health concerns. As we move through the third decade of the 21st century, we must have a greater understanding of the unique complexities of rural health. Ensuring improved health for all Pennsylvanians, both rural and urban, must be the ultimate goal.

We are indebted to the members of the Advisory Groups who devoted extensive time and dedication to realizing this Plan and to rural health stakeholders who embrace the information and recommendations. We also extend a special note of sincere thanks to the Center for Rural Pennsylvania for their extensive support of, and data for, this Plan.

Thank you for your interest in and support for rural health in Pennsylvania!



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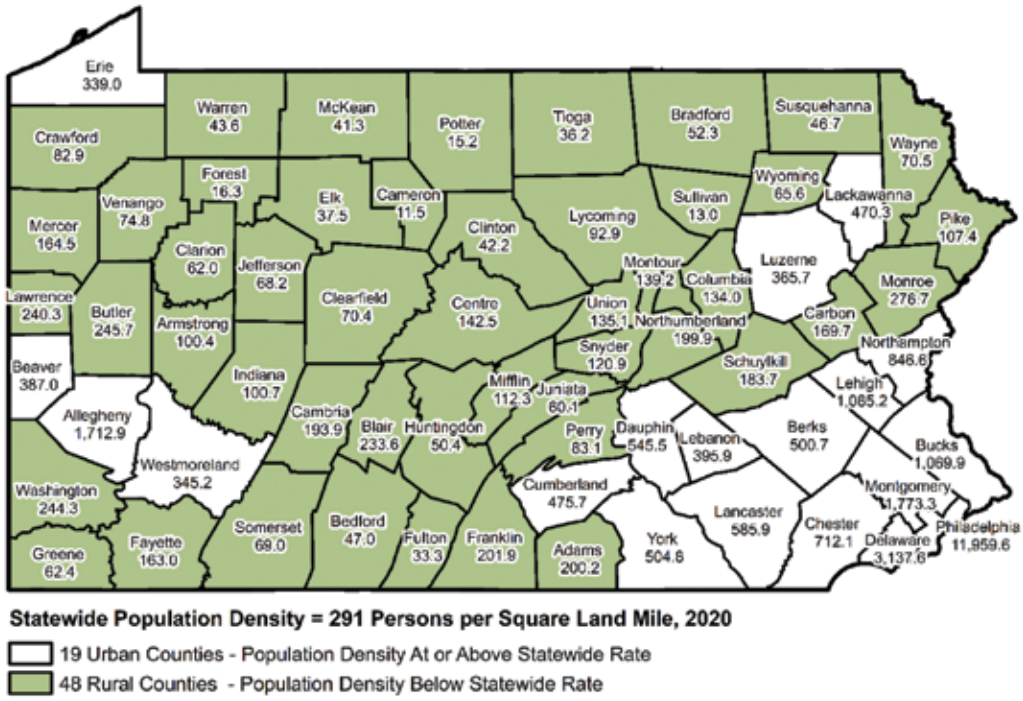
DEFINING RURAL PENNSYLVANIA

Pennsylvania Rural Health Plan

From Lake Erie to the Appalachian Mountains, to state and national forests, Pennsylvania was home to over 13 million people in 2020, becoming the fifth-most populous state in the nation (Krawitz, 2020). According to the Center for Rural Pennsylvania, a bicameral agency of the Pennsylvania General Assembly, nearly 3.4 million of those citizens lived in rural areas of the state. While as a whole, the population of rural Pennsylvania is relatively homogenous, there are unique and noteworthy qualities within that population that deserve attention and dedicated resources. Although some of these qualities present challenges, others offer opportunities for growth and improvement if given the right support.

Defining "rural" can be challenging and federal and state organizations may use different criteria when determining what is considered to be rural or non-metropolitan. The Center for Rural Pennsylvania defines rural counties as any county with a population density of less than the statewide density of 291 people per square land mile, based on the 2020 Census. The Center for Rural Pennsylvania's definition of rural is shown in Figure 1 (Center for Rural Pennsylvania, 2023).

Figure 1: Rural Counties in Pennsylvania by Population Density, 2020



Source: U.S. Census Bureau, 2020; prepared by the Center for Rural Pennsylvania, 2023

Federal government entities provide at least seven other definitions of rural which may not align with how individual states designate rural areas. All federal definitions are population-based, and first define various levels of urban areas before describing the remaining areas as rural. The definitions most frequently used in rural health care are included in Table 1. Maps depicting Pennsylvania's rurality based on these federal definitions are provided in Figures 2 through 7. In July 2023, the U.S. Census Bureau and the Office of Management and Budget updated their definitions of rural and urban using the results of the 2020 Census.

Table 1: Federal Government Entity Definitions of Rural

Entity and Unit of Classification	Unit
U.S. Census Bureau	**Urban Areas, 2020**
Using the 2020 Census, the U.S. Census Bureau defined an urban area as densely settled core of census blocks that meet minimum housing unit density and/or population density requirements. This includes adjacent territory containing non-residential urban land uses. To qualify as an urban area, the territory identified according to criteria must encompass at least 2,000 housing units or a population of at least 5,000. All areas outside urban areas are considered rural. Source: U.S. Census Bureau, 2023b	
Office of Management and Budget	**Core-Based Statistical Area (CBSA)**
Rural areas are all areas that are not: • Metropolitan Area: at least one urbanized area of 50,000+ persons. • Rural areas may be designated as: ○ Micropolitan Area: at least one urbanized cluster of 10,000 to 49,999 persons; or ○ Non-Metro: all other areas not inside the CBSA. Source: U.S. Census Bureau, 2023a	
U.S. Department of Agriculture	**Rural-Urban Commuting Area Codes (RUCAs) and Road Ruggedness Scale (RRS)**
Sub-county components are designated according to population density, urbanization, and daily commuting to urbanized areas or urban clusters: 1. Metropolitan area core: primary flow within an urbanized area (UA); 2. Metropolitan area high commuting: primary flow 30% or more to a UA; 3. Metropolitan area low commuting: primary flow 10%-30% to a UA; 4. Micropolitan area core: primary flow within an Urban Cluster of 10,000-49,999 (large UC); 5. Micropolitan high commuting: primary flow 30% or more to a large UC; 6. Micropolitan low commuting: primary flow 10%-30% to a large UC; 7. Small town core: primary flow within an Urban Cluster of 2,500-9,999 (small UC); 8. Small town high commuting: primary flow 30% or more to a small UC; 9. Small town low commuting: primary flow 10%-30% to a small UC; 10. Rural areas: primary flow to a tract outside of UA or UC; or 11. Not coded: Census tract with zero population and no rural-urban identifier information. The Road Ruggedness Scale (RRS) classifies census tracts into five categories based upon the sum of elevation change underneath roads: 1. Level 2. Nearly level 3. Slightly level 4. Moderately level 5. Highly rugged Source: U.S. Department of Agriculture, 2023a; 2023b	
Federal Office of Rural Health Policy	
The Federal Office of Rural Health Policy accepts as rural all non-Metro counties, a clarified version of the Rural-Urban Commuting Area (RUCA) codes, and as of November 21, 2024, the Road Ruggedness Scale (RRS) to determine rurality. Rural area definitions include: 1. Non-metropolitan counties 2. Outlying metropolitan counties with no population from an urban area of 50,000 or more people; 3. Census tracts with RUCA codes 4-10 in metropolitan counties; 4. Census tracts of at least 400 square miles in area with a population density of 35 or fewer people with RUCA codes 2-3 in metropolitan counties; 5. Census tracts with RRS 5 and RUCA codes 2-3 that are at least 20 square miles in area in metropolitan areas. Source: Health Resources and Services Administration, 2024	

Figures 2 through 7 show rural and urban areas of Pennsylvania based on these definitions.

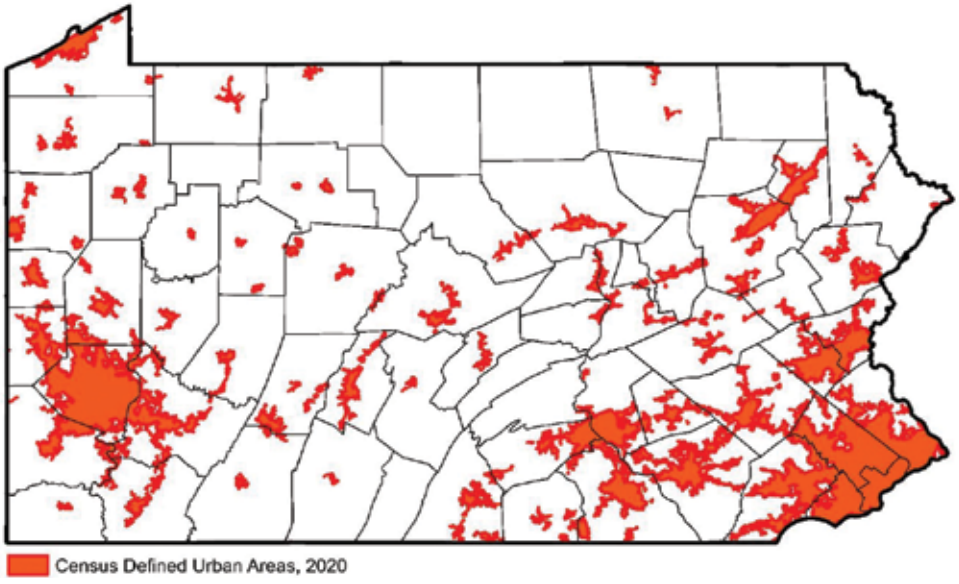
Definition 1: Census Urbanized Area, Urban Cluster, Urban and Rural

The U.S. Census Bureau defines an urban area as a densely settled core of census tracts and/or census blocks that meet minimum population density requirements, combined with adjacent territory including less densely settled areas that connect two parts of the densely settled core. To qualify as an urban area, the territory must encompass at least 5,000 people and the addition of a minimum housing unit threshold of 2,000 as an alternative to qualification based on population size (U.S. Census Bureau, 2023b). This classification includes both Urbanized Areas (UAs) of 50,000 or more people and Urban Clusters (UCs) of at least 5,000 and less than 50,000 people. The use of housing unit density instead of population density has also been taken into account.

It is important to note that the building block of urban is the census tract or the smaller census block; urban need not be an entire county. "Rural" is defined as the residual, i.e., any areas not identified as "urban." Consequently, rural encompasses all populations, housing, and territory not included within an urban area.

Figure 2 shows the urban and rural areas of Pennsylvania using the U.S. Census definition.

Figure 2: U.S. Census Bureau Definition of Urban Areas, 2020



Source: U.S. Census Bureau, 2023; prepared by the Center for Rural Pennsylvania, 2023

Definition 2: Metropolitan—Non-Metropolitan Core-Based Statistical Area

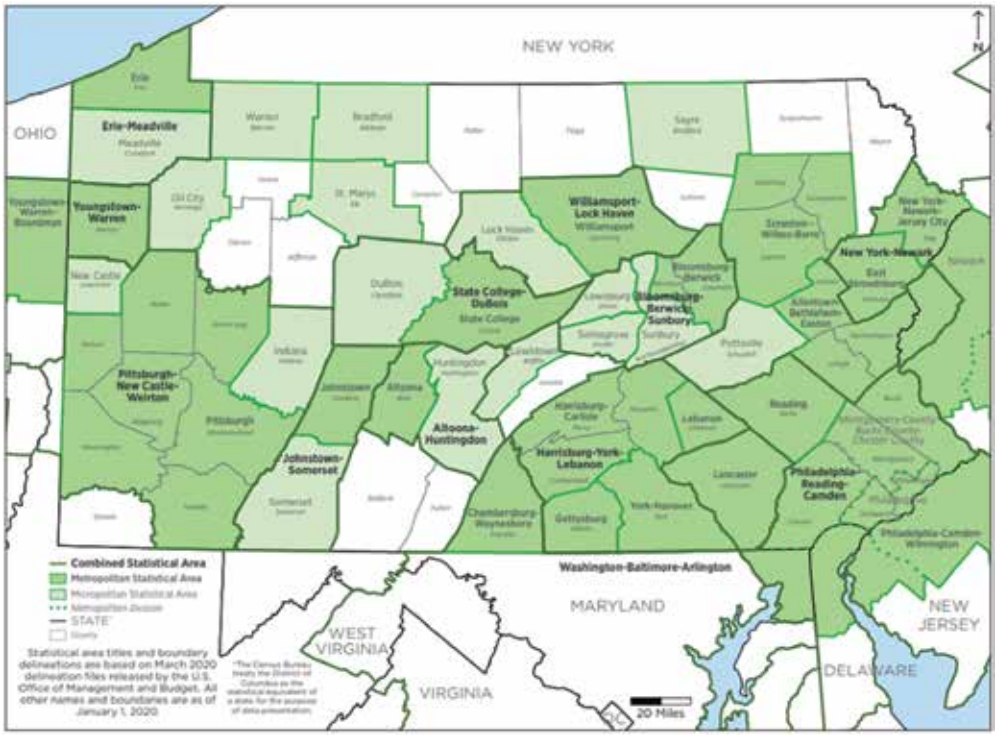
The most frequently used definition of rural has been the United States Office of Management and Budget (OMB) non-metropolitan definition. A metropolitan area is a county or a group of counties that includes a city and the densely settled areas surrounding it; anything outside of this area is considered to be non-metropolitan. Metropolitan statistical areas (MSA) are defined by population cores. Areas within the MSAs are labeled metropolitan while those areas outside of MSAs are labeled non-metropolitan. Metropolitan is commonly considered and labeled "urban" while non-metropolitan is commonly considered and labeled "rural."

In the past two decades, there have been several complementary statistical classifications and definitions added to the basic MSA categorization (U.S. Census Bureau, 2023a). Metropolitan statistical areas are defined as an urbanized area (or combined urbanized areas) of 50,000 or more population plus adjacent counties sharing a high degree of social and economic integration (as measured by commuting ties) with the core urbanized area. Micropolitan areas are urbanized core clusters of 10,000-49,999 population and are considered "rural." Non-metropolitan is now designated for all areas outside the MSA and micropolitan areas. The term core-based statistical area (CBSA) is used interchangeably for both MSAs and micropolitan areas and is related to the large population nucleus. A combined statistical area (CSA) occurs when two or more adjacent MSAs and/or micropolitan areas have an employment interchange of at least 15 percent. Both MSA and micropolitan areas always include the county in which the urbanized area is located.

MSAs are defined by the OMB and periodically updated. The latest update occurred in July 2023. Most know this definition through the use of U.S. Census Bureau data and consider it to be a Census definition. The 2023 update resulted in significant changes for the Commonwealth of Pennsylvania, including the promotion of Hermitage, St. Marys, and Hemlock Farms to Combined Statistical Areas (CSAs) and the demotion of East Stroudsburg and Bloomsburg-Berwick from MSAs to micropolitan statistical areas (Van Leuven, 2023).

Figure 3 shows the metropolitan and non-metropolitan areas of Pennsylvania using the OMB definition.

Figure 3: Office of Management and Budget Definition of Rural, 2020



Source: U.S. Census Bureau, 2024

Definition 3: Rural-Urban Commuting Areas (RUCAs)

The Rural-Urban Commuting Area code designation, known as RUCAs, is a Census tract-based classification scheme that combines Urbanized Area and Urban Cluster definitions with work commuting patterns. The result is a detailed rural and urban status classification scheme that highlights commuting patterns. The original census tract-based RUCA classifications have been mapped and converted to a ZIP Code geography. Most people use the ZIP Code version rather than the original census tract version.

The classification was developed in the 1990s as a collaborative project between the federal Health Resources and Service Administration's (HRSA) Office of Rural Health Policy (ORHP), the Department of Agriculture's Economic Research Service (ERS), and the University of Washington's WWAMI Rural Health Research Center. The scheduled update of the data is expected in Fall 2024 (U.S. Department of Agriculture, 2023); the current data are based on 2010 U.S. Census and 2006–2010 American Community Survey data.

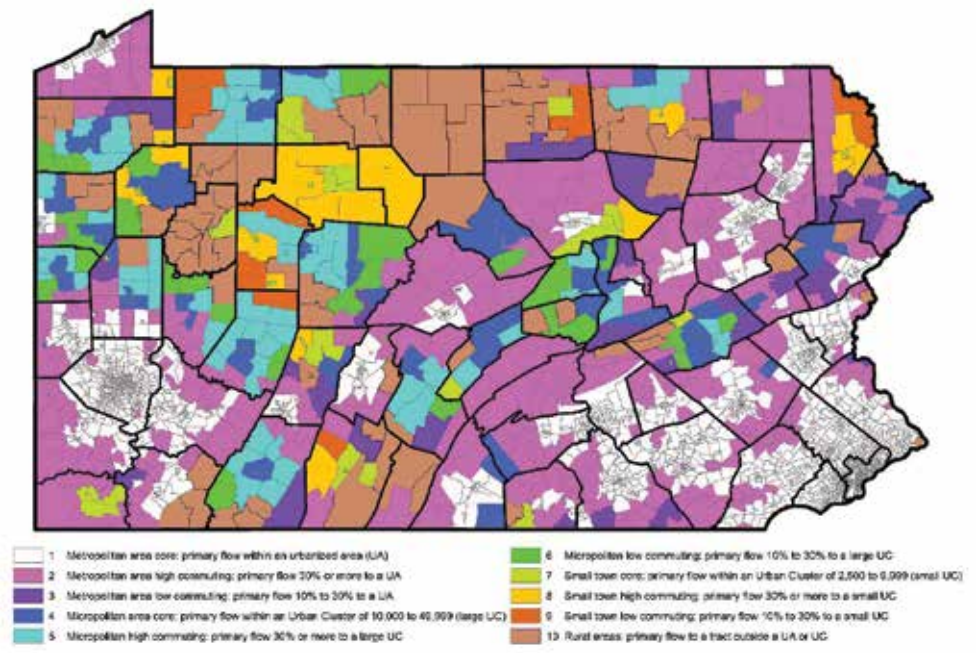
The scheme has 10 major categories (a more detailed classification exists that includes secondary commuting flows). The categories are as follows:

1. Metropolitan area core: primary flow within an urbanized area (UA)
2. Metropolitan area high commuting: primary flow 30% or more to a UA
3. Metropolitan area low commuting: primary flow 10% to 30% to a UA
4. Micropolitan area core: primary flow within an Urban Cluster of 10,000 to 49,999 (large UC)
5. Micropolitan high commuting: primary flow 30% or more to a large UC
6. Micropolitan low commuting: primary flow 10% to 30% to a large UC
7. Small town core: primary flow within an Urban Cluster of 2,500 to 9,999 (small UC)
8. Small town high commuting: primary flow 30% or more to a small UC
9. Small town low commuting: primary flow 10% to 30% to a small UC
10. Rural areas: primary flow to a tract outside a UA or UC

Such a detailed classification can be useful for some research purposes, but for administrative purposes it is too detailed. Consequently, RUCA codes 4 through 10 and codes 2-3 utilizing Road Ruggedness Scale (RRS) 5 are considered to be rural for the purposes of grants administered through the Federal Office of Rural Health Policy (FORHP), as well as for many other applications.

Figure 4 shows the urban and rural areas of Pennsylvania using the RUCA definition aggregated into three categories.

Figure 4: U.S. Department of Agriculture Rural-Urban Continuum Codes, 2010



Source: U.S. Department of Agriculture, 2023

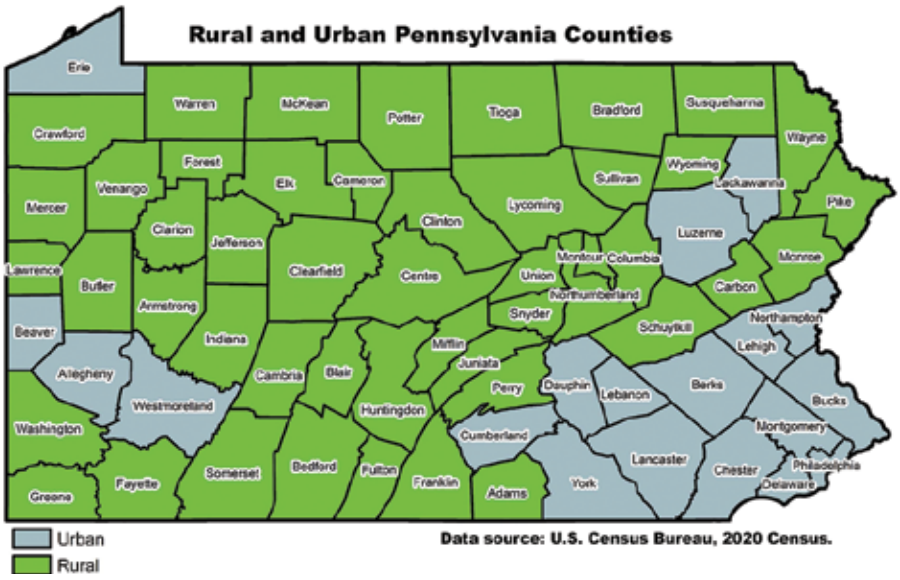
Definition 4: The Center for Rural Pennsylvania's Urban and Rural for Counties, School Districts, and Municipalities

In Pennsylvania, a rural definition that is gaining some favor is one developed by the Center for Rural Pennsylvania (Center for Rural Pennsylvania, n.d.). The Center for Rural Pennsylvania's definition of rural and urban is based on population density whereby counties and school districts with population densities less than the Commonwealth density as a whole are classified as rural, and those with densities equal to or greater than the Commonwealth density as a whole as urban. The population density average of Pennsylvania in 2020 was 291 persons per square mile.

For municipalities, the classification has an additional criterion to population density. The definition for municipalities is: A municipality is rural when the population density within the municipality is less than the statewide average density of 291 persons per square mile, or the total population is less than 2,500, unless more than 50 percent of the population lives in an urbanized area as defined by the U.S. Census Bureau. All other municipalities are considered to be urban.

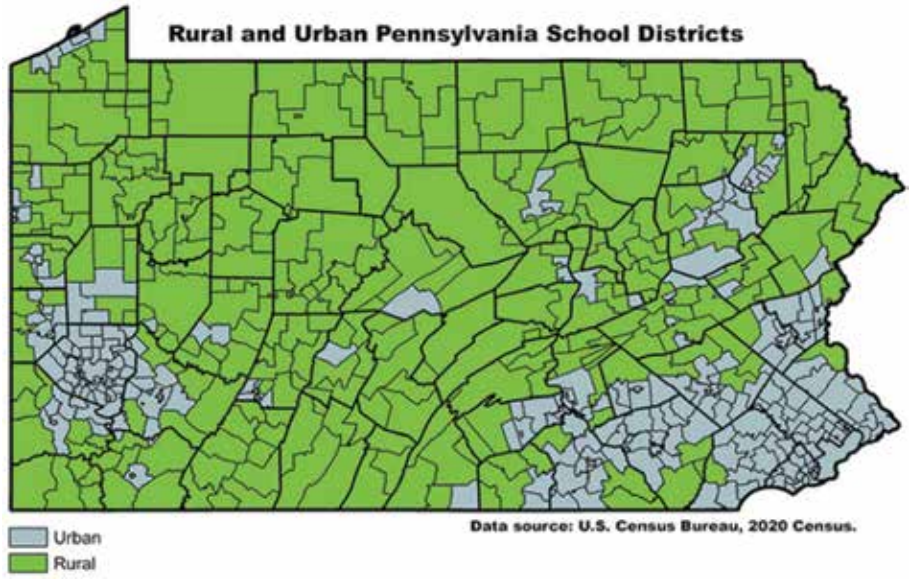
Figure 5 shows Pennsylvania using the Center for Rural Pennsylvania definition of urban and rural with the county as the unit of analysis. Figure 6 shows Pennsylvania using the Center for Rural Pennsylvania definition with school districts as the unit of analysis and Figure 7 shows Pennsylvania using the Center for Rural Pennsylvania definition with the municipality as the unit of analysis.

Figure 5: Map of Pennsylvania Using the Center for Rural Pennsylvania Definition (Counties as Unit of Analysis, 2020)



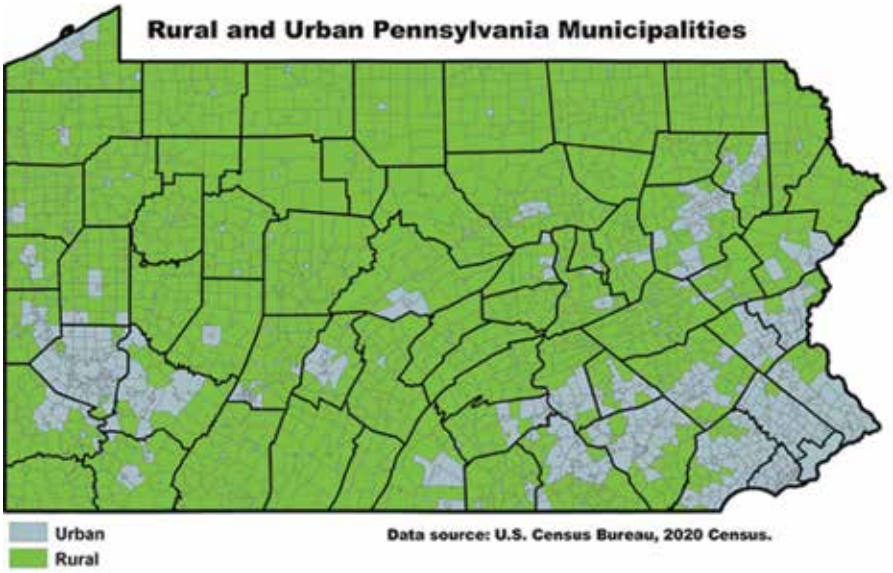
Source: Center for Rural Pennsylvania, 2024

Figure 6: Map of Pennsylvania Using the Center for Rural Pennsylvania Definition (School District as Unit of Analysis, 2020)



Source: Center for Rural Pennsylvania, 2024

Figure 7: Map of Pennsylvania Using the Center for Rural Pennsylvania Definition (Municipality as Unit of Analysis, 2020)



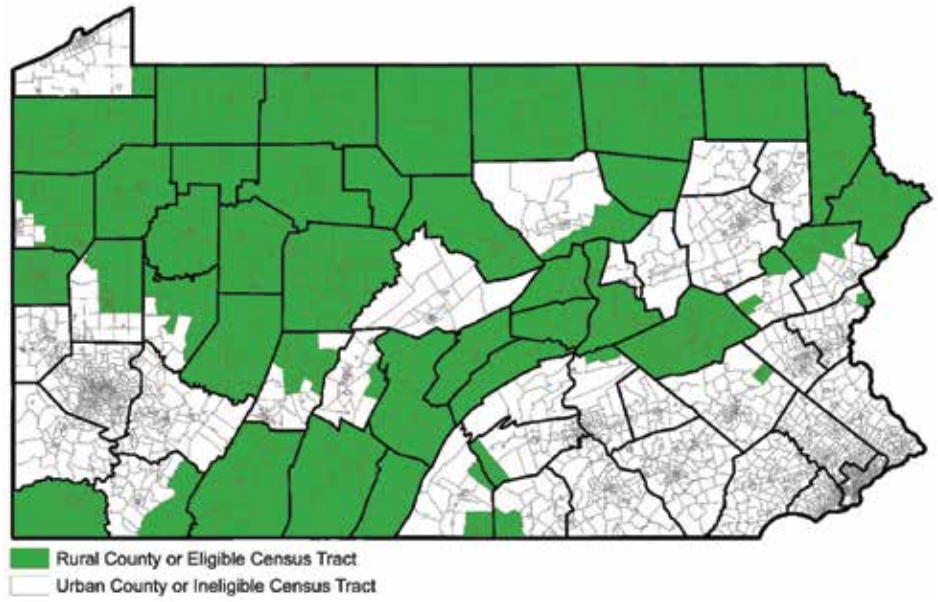
Source: Center for Rural Pennsylvania, 2024

Other Definitions

In addition to these commonly used definitions, other rural definitions have been developed over the years. One such classification used for grants starting in 2022 by the Health Resources and Services Administration (Health Resources and Services Administration, n.d.), FORHP utilizes RUCA codes at the census tract level. Other ad-hoc definitions are in use, as well as, locally-specific definitions.

Figure 8 shows the Federal Office of Rural Health Policy (FORHP) map of Pennsylvania and census tracts eligible for rural health funding. Note that this map will be updated utilizing the areas of eligibility that include the RRS delineations when that map is available in the spring of 2025.

Figure 8: Federal Office of Rural Health Policy Rural Counties and Eligible Census Tracts, 2022



Source: Health Resources and Services Administration, 2023; prepared by the Center for Rural Pennsylvania, 2023

What Definitions Do Rural Health Programs Use?

Each of these definitions is useful for defining metropolitan and non-metropolitan and urban and rural areas although most define larger and more densely populated areas and regions that are outside of those areas are considered to be non-metropolitan or rural. The sole definition that addresses rural is the Rural-Urban Continuum Codes, also known as the Rural Urban Commuting Area (RUCA) codes, is a definition funded by the FORHP to delineate areas of rurality in a state.

The specific similarities and differences of "rural" as indicated in these maps become relevant when applied to state and federal policies, health care provider placement opportunities, health care facility designation and service reimbursement, and more. To determine eligibility for a range of federal programs that fund rural eligible areas, the use of the Am I Rural Tool (Rural Health Information Hub, 2024) and the Rural Health Grants Eligibility Analyzer (Health Resources and Services Administration, n.d.) provide the most accurate identification of eligibility and are the most frequently used tools to determine potential rural health funding.

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AN OVERVIEW OF RURAL PENNSYLVANIA AND RURAL HEALTH CHALLENGES

Pennsylvania Rural Health Plan

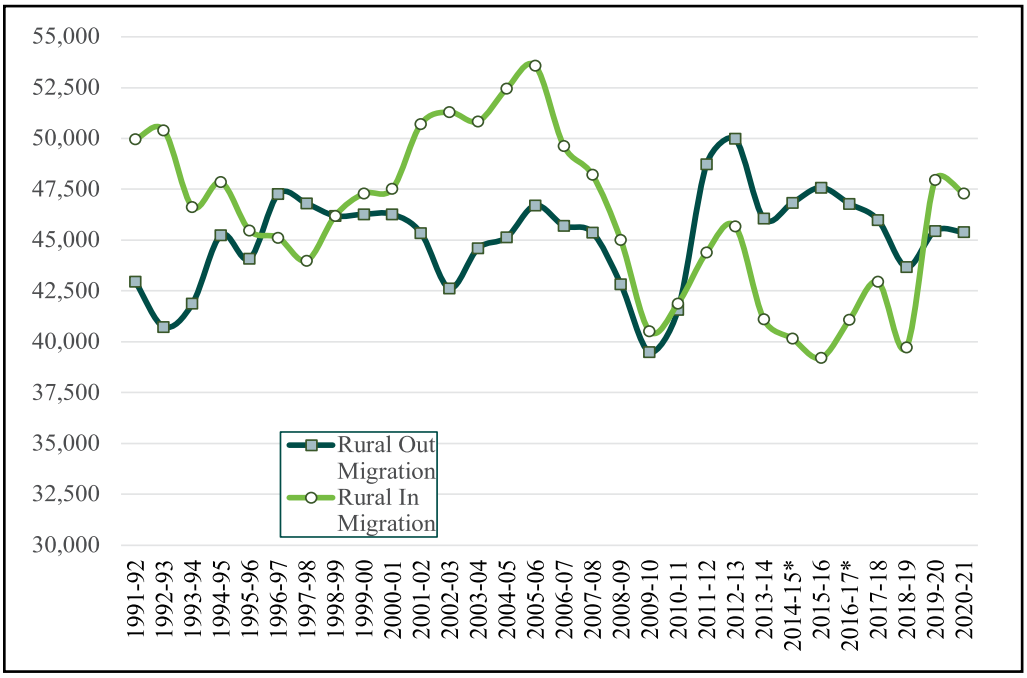
Rural Pennsylvania is rich in natural beauty, small towns, and agricultural landscapes. However, consistent with many rural areas in the United States, rural Pennsylvania faces unique challenges that impact residents and communities. Challenges, from housing to staff retention and poverty, can be a result of population and location issues, where seniors are one of the biggest group of individuals residing in rural Pennsylvania and physicians or primary family providers are less likely to practice in rural areas.

Despite these challenges, rural Pennsylvania has built a sense of community, close relationships, and commitment to preserving rural areas and their heritage. Addressing these challenges requires collaborations among government agencies, the community, businesses, and residents.

RURAL PENNSYLVANIA DEMOGRAPHICS

Rural Pennsylvania is known for its small towns. According to the U.S. Census Bureau, in 2020, 71 percent of Pennsylvania's rural municipalities had a population of fewer than 2,000 people (Center for Rural Pennsylvania, 2023e). Figure 1 shows the trend of in- and out-migration from rural counties for the nine-year period of 1992 to 2021.

Figure 1: Out of State In-Migration and In State Out-Migration in Rural Pennsylvania, 1992-2021

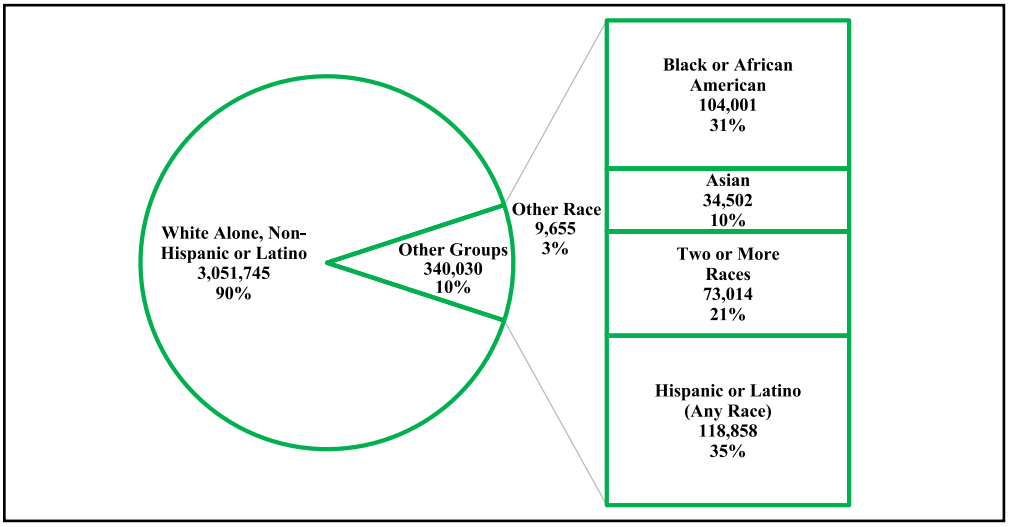


Data source: Internal Revenue Service, 2022; prepared by the Center for Rural Pennsylvania, 2023

Although the state's rural population declined by more than two percent from 2010 to 2020, the population in rural Pennsylvania was comprised of 1.37 million households in 2020. These included 51 percent of married-couple households, 29 percent single-person households, seven percent single-parent households, and 13 percent living in other arrangements (Center for Rural Pennsylvania, 2023e). Single-person households increased by 36 percent in rural Pennsylvania from 1990 to 2020, whereas rural households with children decreased by 10 percent from 1990 to 2020 (Center for Rural Pennsylvania, 2023e).

According to the Center for Rural Pennsylvania's analysis of U.S. Census Bureau data, rural Pennsylvania remains predominantly white. However, from 2000-2020, rural areas became slightly more racially diverse, with an increase of people of color from five percent to 12 percent of the population (Center for Rural Pennsylvania, 2023e). In 2020, only seven percent of rural Pennsylvania's population were foreign-born (Center for Rural Pennsylvania, 2023e). Figure 2 shows the rural minority population for 2021.

Figure 2: Rural Pennsylvania Minority Population, 2021



Data source: U.S. Census Bureau, 2023a; prepared by the Center for Rural Pennsylvania, 2023

In 2021, 34 of Pennsylvania's 48 rural counties had more senior citizens than children (Center for Rural Pennsylvania, 2023a). Census data for that year showed that one in five (20 percent) rural Pennsylvanians were aged 65 years and older. The same ratio of the rural population was under 18 years of age (Center for Rural Pennsylvania, 2023e). In the coming years, the number of Pennsylvania counties with more senior citizens than children will likely increase as the birth rate stagnates and more Baby Boomers (those born between 1946 to 1964) turn 65 years old (Center for Rural Pennsylvania, 2023f).

POVERTY IN RURAL PENNSYLVANIA

Poverty is a prevalent issue in rural areas of Pennsylvania, and income tends to be lower than in urban areas. The U.S. Census Bureau reported that the poverty rate in rural Pennsylvania was 12.0 percent in 2021, similar but slightly higher than the 11.7 percent poverty rate in urban areas in that year (U.S. Census Bureau, 2022b). Average household income for rural Pennsylvanians in 2021 was $77,143, although 42 percent of households had incomes below $50,000. The U.S. Census Bureau comparatively reported that in urban Pennsylvania, 36 percent of households had incomes below that level in 2021 (U.S. Census Bureau, 2022c). The U.S. Bureau of Economic Analysis (BEA) reported that 41 percent of personal income for rural Pennsylvanians was derived from unearned sources including interest, dividends, rent, Social Security, and unemployment compensation, compared to 36 percent of personal income for urban Pennsylvanians (Center for Rural Pennsylvania, 2023e). Further, employment and poverty disparities are evident for Pennsylvanians with a disability. At the state level, in 2021, 44 percent of individuals aged 18-64 with any kind of disability were employed (U.S. Census Bureau, 2021b). Annual earnings for Pennsylvanians with a disability were significantly lower than for those without a disability, and 20 percent of individuals with a disability lived below the poverty line (U.S. Census Bureau, 2021b).

SOCIOECONOMICS

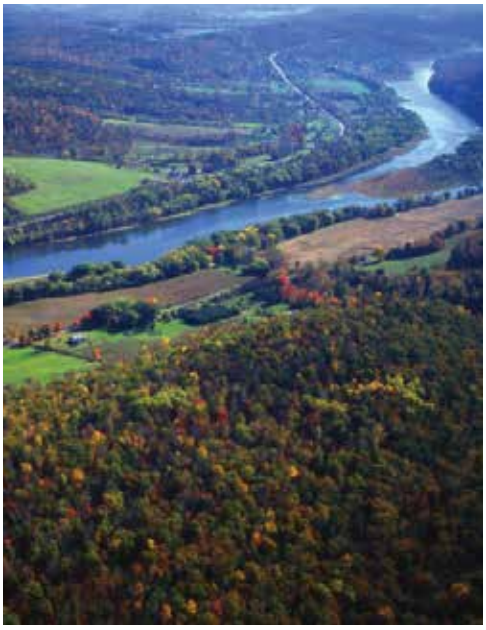
In 2021, the BEA estimated that the gross domestic product (GDP) of rural Pennsylvania was $165.52 billion. If rural Pennsylvania was a state, its GDP would be larger than 17 other states (U.S. Bureau of Economic Analysis, 2022).

Average weekly wages in rural Pennsylvania increased slightly from $884 in 2018 to $931 in 2021, an increase of $47 after adjusting for inflation (Center for Rural Pennsylvania, retrieved 2023b). Urban wages during this period increased from $1,129 in 2018 to $1,286 in 2021, an increase of $157 after inflation adjustments (Center for Rural Pennsylvania, 2023b). One bright spot in Pennsylvania's rural economy was the increase in the number of employers. From the second quarter of 2018 to 2022, the number of employers increased by nearly 900 or one percent. Urban areas gained more than 9,120 new employers, a four percent increase (Pennsylvania Department of Labor and Industry, 2023).

The COVID-19 pandemic had an impact on the rural economy. The Pennsylvania Department of Labor and Industry reported that between the first quarter of 2020 and the first quarter of 2021, rural employers increased by one percent to a total of 82,305 (Pennsylvania Department of Labor and Industry, 2023). During the first quarter of 2021, there were 1.14 million employed rural workers or a decrease of six percent from the same period in 2020 (Pennsylvania Department of Labor and Industry, 2023). In the first three quarters of 2021, the average unemployment rate in rural areas of the state was almost seven percent, consistent with the urban unemployment rate (Pennsylvania Department of Labor and Industry, 2023). Estimates from the Center for Rural Pennsylvania, using BEA data, indicated that rural Pennsylvania's GDP in 2021 was $165.5 billion, (or $48,915 per capita) which was significantly less than urban Pennsylvania's GDP of $679.0 billion (or $70,588 per capita) (U.S. Bureau of Economic Analysis, 2022). For most rural employers, their workforce is very small.The U.S. Census Bureau reported that in 2020, 72 percent of businesses in rural counties employed fewer than 10 workers, and only 15 percent of businesses employed 20 or more workers (U.S. Census Bureau, 2023b).

Carbon County – Glen Onoko Falls

Agriculture is important to rural Pennsylvania's economy. In 2021, the BEA estimated that agriculture, including logging, contributed about $1.79 billion to Pennsylvania's rural economy and employed more than 39,400 workers (U.S. Bureau of Economic Analysis, 2022). Across 7.7 million acres, Pennsylvania's 59,300 farms are tended by native Pennsylvanians and migrant and seasonal farm workers. Every year, 14,000 to 15,000 migrant farm workers come to Pennsylvania temporarily to harvest fruit, vegetables, and other crops, with some of these crop volumes valuing in the millions (Pennsylvania Rural Health Association, 2016).



Bradford County – Susquehanna River

Agriculture, however, is not the only industry in rural Pennsylvania. In 2021, BEA data showed that agriculture and logging accounted for about one percent of rural Pennsylvania's $165.5 billion GDP. Farm employment during that year accounted for two percent of total rural employment (Pennsylvania Department of Labor and Industry, 2023).

Health care is a significant driver in rural economies. Rural health care and the social service industry employed 18 percent of the rural workforce in the second quarter of 2022 (Pennsylvania Department of Labor and Industry, 2023). In the first quarter of 2022, in 15 of Pennsylvania's 48 rural counties, hospitals, and medical centers were the top employers (Pennsylvania Department of Labor and Industry, 2023). In 2021, the Pennsylvania Health Care Cost Containment Council reported that rural hospitals generated over $8.13 billion in patient revenues (Pennsylvania Health Care Cost Containment Council, 2022).

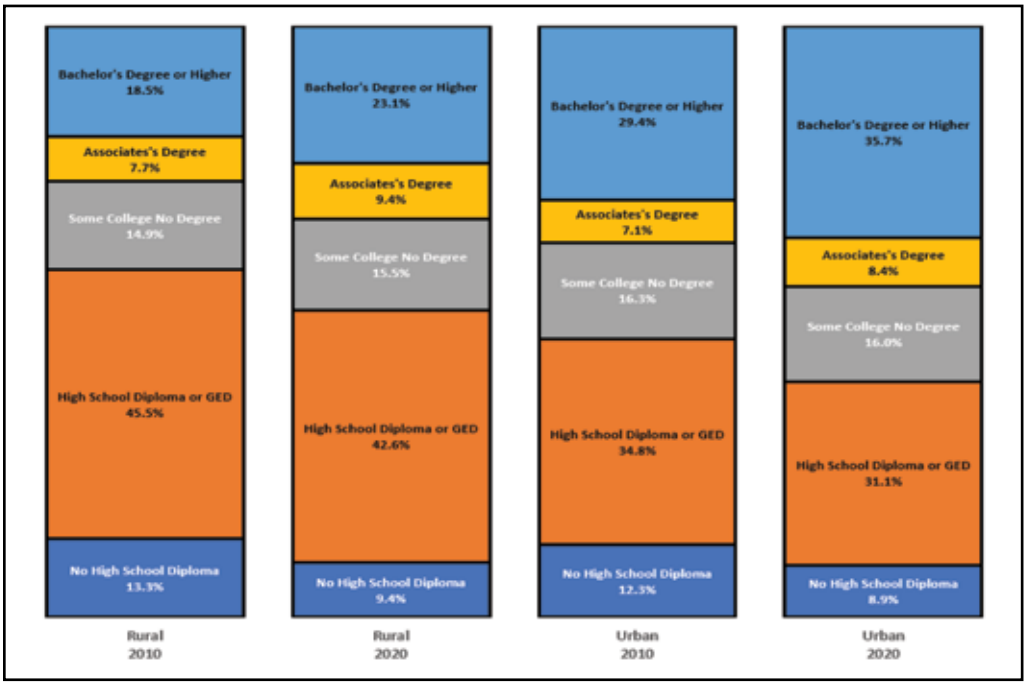
HOUSING AND REAL ESTATE

As of 2020, the U.S. Census Bureau reported that there were 1.61 million housing units located in rural Pennsylvania, a decrease of one percent from 2010 (U.S. Census Bureau, 2021a). By comparison, the number of urban housing units grew by three percent from 2010 to 2020 and totaled 4.13 million in 2020 (U.S. Census Bureau, 2021a). However, there was a large growth in first-time home buyers in rural Pennsylvania. The Federal Housing Finance Agency reported that in 2021, there were 7,960 first-time home buyers in rural areas of the state, an increase of 78 percent from 2017 (U.S. Census Bureau, 2021a). The value of rural housing units was less than that of urban housing units, according to the U.S. Census Bureau. The average value in 2021 of a rural owner-occupied housing unit was nearly $172,150, while urban owner-occupied units averaged a value of $248,900 (U.S. Census Bureau, 2021a).

EDUCATION

Education differs significantly between urban and rural areas. As shown in Figure 3, fewer rural Pennsylvanians 25 years old and older had a bachelor's degree in 2020. In that year, less than 24 percent of rural Pennsylvanians in that age category had a bachelor's degree, compared to 36 percent of urban Pennsylvanians (U.S. Census Bureau, 2022a). In 2020, the National Center for Education Statistics noted that rural Pennsylvania was home to 54 colleges and universities and 49 trade and technical schools (Center for Rural Pennsylvania, 2023d). A nearly equal percentage of rural and urban Pennsylvania adults did not have high school diplomas (nine percent), according to 2021 data from the U.S. Census Bureau (National Center for Education Statistics, 2023). According to data from the Pennsylvania Department of Education, during the 2021-2022 school year, 403,547 rural students were enrolled in grades K-12. From 2011-2012 to 2021-2022, enrollment in rural school districts declined by 12 percent, compared to a six percent decrease in urban school districts (Pennsylvania Department of Education, 2023a). The Department of Education has predicted that this decline will continue through 2032 (Pennsylvania Department of Education, 2023a).

Figure 3: Educational Attainment in Rural and Urban Areas, 2010-2020



Data sources: 2010 and 2020, U.S. Census Bureau, 2023a; prepared by the Center for Rural Pennsylvania, 2023

According to U.S. Census Bureau data, in 2021 most rural students (88 percent) attended public schools for grades K-12, but a greater percentage of urban students (15 percent in urban areas, compared to 12 percent in rural areas) attended private schools (U.S. Census Bureau, 2023a).

In 2020-2021, The Pennsylvania Department of Education reported that a larger percentage of school district revenues were attributable to state government funds in rural school districts (45 percent for rural districts, compared to 33 percent for urban), while a smaller percentage of revenues were attributable to local sources in rural school districts (45 percent in rural districts, compared to 59 percent in urban districts) (Pennsylvania Department of Education, 2023c).


Blair County – Horseshoe Curve

In the 2020-2021 school year, the average rural school district spent $19,679 per student. Urban districts that year spent $19,663 per student. After adjusting for inflation, rural school district expenditures per student increased by 21 percent from 2010-2011 to 2020-2021. During that same period, urban districts had a 15 percent increase (Pennsylvania Department of Education, 2023c). The Pennsylvania Department of Education data also showed that graduation rates in rural school districts were higher than in urban districts. In 2020-2021, 91 percent of rural students graduated compared to 87 percent of urban students (Pennsylvania Department of Education, 2023b).

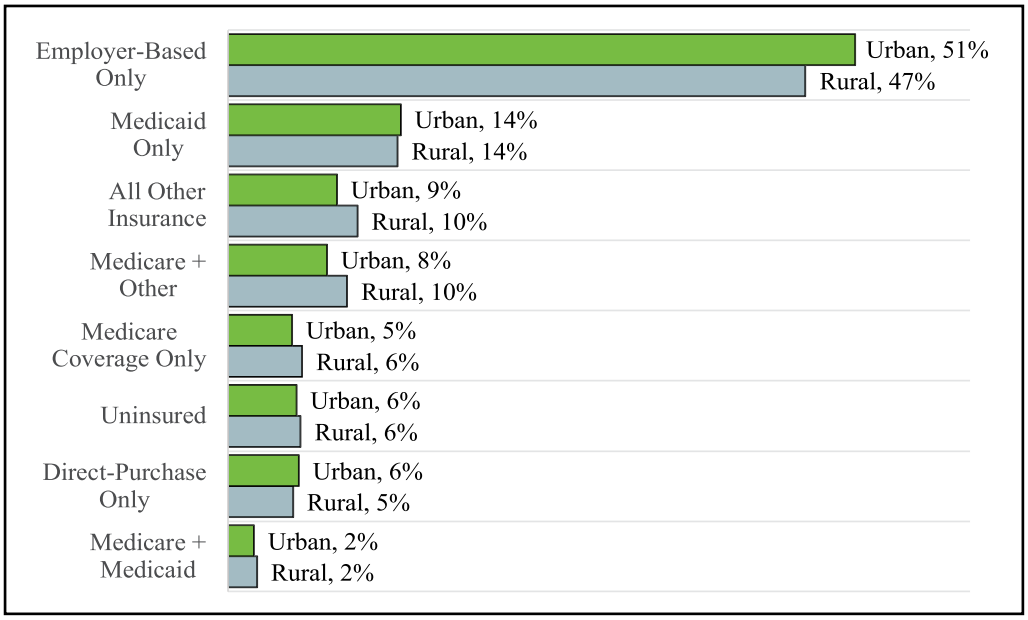
HOUSING AND HOMELESSNESS

Many people in urban as well as rural counties face troubles with securing housing. When the basic need of shelter is not met, persons without a home are left to make difficult choices about their health and well-being. A 2015 study showed a rise in homelessness over five years in Pennsylvania, especially in rural counties (Feldhaus and Slone, 2015). The homeless populations in rural areas showed high rates of health issues and substance abuse, and slightly higher rates of mental health concerns and substance abuse than urban homeless populations. The average age of rural clients in the study was 30 years old. About 24 percent had a disability, and 12 percent had a physical disability (Feldhaus and Slone, 2015). Only 10 percent reported a chronic health condition, and 27 percent reported a mental health condition (Feldhaus and Slone, 2015). While these populations received prevention and nonresidential interventions, they did not often receive housing to alleviate homelessness. The authors of the study reported that data collection has been inconsistent, so further research should be conducted to gain a more informed and comprehensive understanding of rural homelessness.

INSURANCE STATUS AND FINANCIAL ASSISTANCE

While income, poverty, and education contribute significantly to health status, insurance status has an impact on the health of rural residents and communities. The U.S. Census Bureau reported that in 2021, eight percent of working age rural adults (19-64 years old) were uninsured, the same as working age urban adults (U.S. Census Bureau, 2023a). Rural children under the age of 19 were uninsured at a rate of six percent, whereas four percent of urban children were uninsured (U.S. Census Bureau, 2023a). Even after the enactment of the Patient Protection and Affordable Care Act (ACA) in 2010, rural Pennsylvanians enrolled in health insurance at lower rates than urban Pennsylvanians (U.S. Census Bureau, 2023a). Data provided in the 2023 Pennie™ Health Equity Report showed that 89,974 rural Pennsylvania consumers, or 25 percent of the population eligible for the Pennsylvania Pennie™ Marketplace enrolled (Pennsylvania's Health Insurance Marketplace) plan in 2022 (Pennie, 2023). In October 2022, 131,933 children in Pennsylvania were enrolled in the Children's Health Insurance Program (CHIP) (Pennsylvania Department of Human Services, 2022). Insurance status is reflected in Figure 4.

Figure 4: Health Insurance Enrollment in Pennsylvania by Rural and Urban Location, 2021



Data source: U.S. Census Bureau, 2023a; prepared by the Center for Rural Pennsylvania, 2023

FOOD INSECURITY

According to data from the Pennsylvania Department of Human Services (DHS), in October 2022, nearly 481,800 rural Pennsylvanians were enrolled in the Supplemental Nutrition Assistance Program (SNAP), or 14 percent of the rural population (Pennsylvania Department of Human Services, 2023b). In urban areas, there were 1.43 million SNAP enrollees, or 15 percent of the population (Pennsylvania Department of Human Services, 2023b). Despite similar enrollment ratios, rural enrollees have more SNAP vendors per capita than urban. Data from the USDA Food and Nutrition Service showed that in January 2023, there were 2,863 SNAP vendors, i.e., stores that accept SNAP payments or one vendor for every 168 enrollees. In urban areas there were 7,277 vendors, or one vendor for every 196 enrollees (U.S. Department of Agriculture, 2023).

In early 2023, DHS announced that recipients of SNAP benefits would no longer receive the Emergency Allotment (EA) additional payments created during the COVID-19 public health emergency and would resume receiving one SNAP payment per month. It was expected that the impact of the end of SNAP EA payments would be significant. In addition, the 2023 cost-of-living adjustment (COLA) for Social Security and Social Security Income (SSI), which is also set by the federal government, prompted an almost nine percent increase in Social Security payments. SNAP eligibility thresholds, also set at the federal level, did not rise proportionally. As a result, approximately 249,000 households were anticipated to experience a decrease in their base SNAP benefits by an average of $40 per household, which took effect in March 2023 when EAs ended. DHS estimated that approximately rural and urban 5,000 to 20,000 households would be disenrolled from SNAP due to the Social Security increase. These federal changes were expected to primarily affect older Pennsylvanians and seniors (Pennsylvania Department of Human Services, 2023c).

HEALTH CHALLENGES

Rural populations in Pennsylvania exhibit worse health outcomes across several categories, often linked to limited access to services. For example, the number of obese rural adults increased by 26 percent from 2004 to 2013, culminating in 32 percent of rural adults who were obese in 2013, compared to 28 percent of urban adults (Pennsylvania Rural Health Association, 2016). Compared to urban counties, Pennsylvania's rural counties faced higher rates of three infectious diseases (campylobacter, giardiasis, and Lyme disease) and higher death rates from cancer and cardiovascular disease (Pennsylvania Rural Health Association, 2016). Rural Pennsylvanians also tend to be less healthy due to their behaviors. The Behavioral Risk Factor Surveillance System (BRFSS) reveals that fewer rural residents exercise regularly and 60 percent are at risk of a sedentary lifestyle (Pennsylvania Rural Health Association, 2016). These poorer physical conditions can have compounding effects on the presence of chronic illnesses.

HEALTH CARE ACCESS AND INFRASTRUCTURE

Access to health care services is one of the greatest challenges in rural Pennsylvania. Rural Pennsylvanians not only have fewer professionals who provide that care, but they also have fewer methods by which they can reach those professionals and services. Access to primary care and specialty physicians is challenging, local hospitals have limited resources, trauma care may be hours away, and telehealth appointments can be impeded by poor broadband services. These barriers to accessing health care services can leave rural populations at a disadvantage in their health and lifestyle. Rural Pennsylvania is dominated by Health Professional Shortage Areas (HPSA) and Medically Underserved Areas (MUA). In 2018, an estimated 45 percent of Pennsylvania's 3.4 million residents, in urban and rural areas, lived in a Primary Care HPSA, MUA or both (Center for Rural Pennsylvania, 2019).

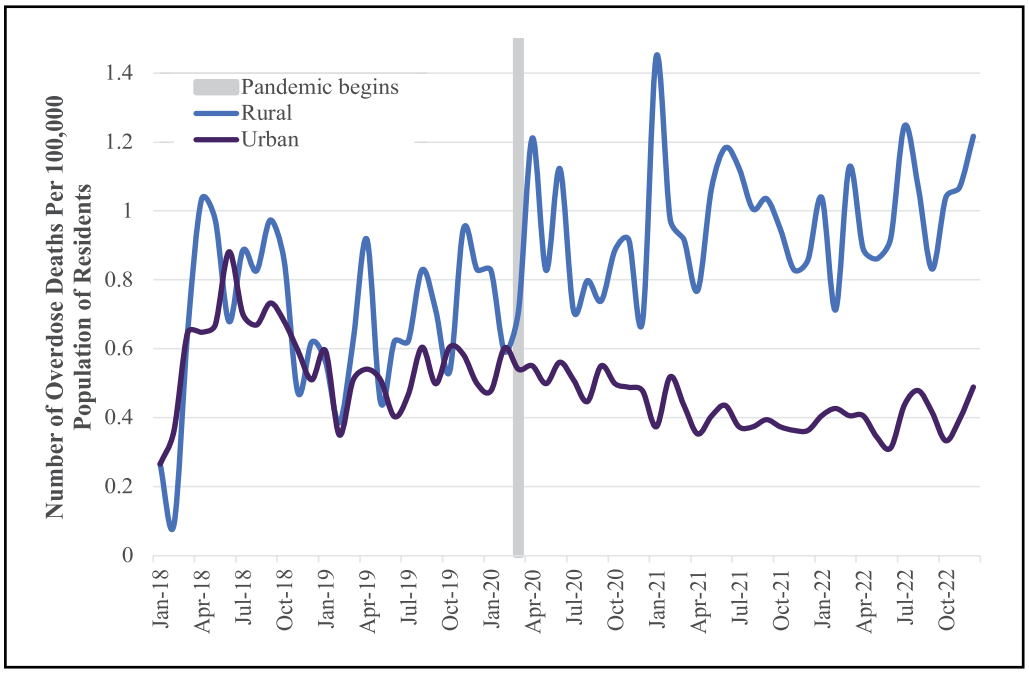
MENTAL HEALTH AND ADDICTION

Mental illness is another major health challenge in rural Pennsylvania. A 2019 report by the Substance Abuse and Mental Health Services Administration (SAMHSA) showed that in Pennsylvania, between the years 2013-2017, 5.6 percent of young adults and four percent of adults had a serious mental illness and 8.8 percent of young adults and 4.2 percent of adults had serious thoughts of suicide (Substance Abuse and Mental Health Services Administration, 2019). However, rural Pennsylvanians lack the resources to effectively address these mental health concerns and face a significant barrier due to the stigma of mental illness. Because rural towns have close personal, social, and professional networks, rural Pennsylvanians experience a lack of privacy in their diagnosis and treatment. This can cause residents to become reluctant to seek the care they need for their mental health concerns. According to a study done by the Center for Rural Pennsylvania, between 1999 and 2018, suicide rates significantly increased across the state. The suicide rate was 25 percent higher in rural counties than urban counties (Mallinson, et al., 2021).

While suicide rates have increased in Pennsylvania over the previous 20 years, rural counties have experienced a significant 25 percent higher rate increase than urban counties.

Illicit drug use disorder and associated overdose deaths have continued to plague rural communities at a higher per capita rate than urban locations as exhibited in Figure 5. In 2022, individuals who overdosed in rural areas had a 24 percent chance of dying compared to 16 percent in urban locations (Center for Rural Pennsylvania, 2023c). In 2022, 60 percent of rural opioid overdose victims received the opioid reverse medication, Naloxone, compared to 64 percent for urban residents (Center for Rural Pennsylvania, 2023c). This gap declined from 11 percent in 2019. Between 2018-2022, rural counties experienced a 15 percent decline of opioid and heroin suspected overdoses while Fentanyl overdose cases continued to rise by 15 percent during the same period. Rural overdose victims tended to be male (68 percent), white non-Hispanic (89 percent), and 30-39 years old (36 percent), in 2022 (Center for Rural Pennsylvania, 2023c).

Figure 5: Pennsylvania Overdose Deaths by Rural and Urban Location, 2018-2022



Data source: Open Data Pennsylvania, 2023; prepared by the Center for Rural Pennsylvania, 2023

INJURIES AND ACCIDENTS

Rural Pennsylvanians face greater risk of death after an injury or accident. Injury-related mortality is 40 percent higher for residents of rural Pennsylvania, in large part because of motor vehicle crashes and subsequent delays in the discovery of the crash and transportation from the crash to emergency medicine (Pennsylvania Rural Health Association, 2016). For a person injured in a rural county in Pennsylvania, the average transport time from the site to a trauma center is 113 minutes which far exceeds the 60-minute “Golden Hour” during which mortality is at its lowest (Pennsylvania Rural Health Association, 2016). Rural Pennsylvanians are limited in their options for transportation to medical services in emergency or non-emergency situations.

Public transportation is sporadic at best in many parts of rural Pennsylvania, and many areas do not have any public transportation services. Severe weather conditions such as snow, ice, and rain can make it dangerous to travel long distances on sparsely populated roads with spotty cell service, to reach the hospital or primary care office.

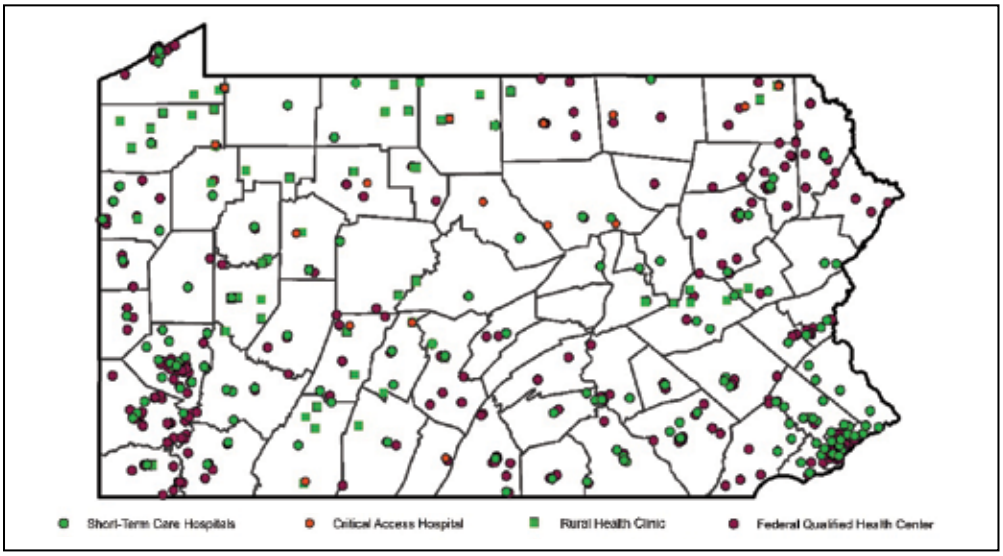
HUMAN TRAFFICKING IN RURAL AREAS

An emerging issue for vulnerable populations is the commercial sexual and labor exploitation of children, women, and men. Although human trafficking has been assumed to be primarily an urban issue, research and advocacy has highlighted the prevalence of human trafficking in rural areas. Recruitment into human trafficking tends to occur in shopping malls, on the Internet, at peers' houses, and in the victim's home, and the perpetrator is often a family member or acquaintance of the victim (Font, et al., 2020). Solicitation and recruitment in rural areas also differ from urban areas. Rural victims are solicited at rest areas and truck stops on major highways, such as I-80, I-81, I-78, and PA Route 15, which run through rural communities with low-surveillance (Font, et al., 2020). However, rural areas are lacking in resources and education needed to identify instances of human trafficking, and health care professionals and first responders are less likely to have adequate training to intervene. In addition to more research, rural areas need additional educators, resources, and evidence-based protocols to implement in the practices of law enforcement, child welfare workers, and health care providers to prevent and address rural human trafficking (Font, et al., 2020).

HEALTH CARE PROVIDERS IN RURAL AREAS

Health care providers in rural areas of Pennsylvania play a critical role in the well-being of residents living in these communities. Providers must be aware of the unique health challenges rural communities face to provide services for better rural health outcomes. There are also challenges in job opportunities for providers in rural settings, which explains the small numbers of providers and the hesitation for providers to practice in rural areas. Health care providers in rural areas of Pennsylvania could make a significant difference in the lives of their patients and communities. By fostering strong relationships with community members, collaborating with local organizations, and advocating for the health care needs of rural residents, providers can contribute to the overall well-being and health equity in rural Pennsylvania. Figure 6 shows the location of health care facilities in Pennsylvania in 2022.

Figure 6: Health Care Facilities in Pennsylvania, 2022



Data source: Health Resources and Services Administration, 2022b

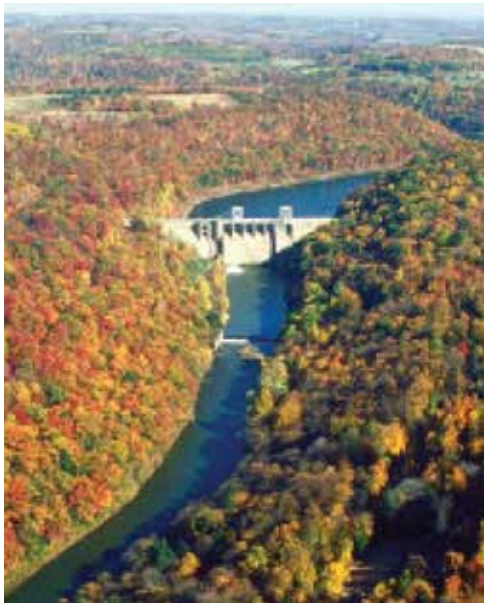
HOSPITALS

According to the Pennsylvania Department of Health, in 2021, rural Pennsylvania had 61 general acute care hospitals with a total of 6,719 staffed hospital beds, averaging 1.99 hospital beds for every 1,000 rural residents. In comparison, there were 86 general acute care hospitals in urban Pennsylvania with a total of 24,000 staffed hospital beds, averaging 2.52 hospital beds for every 1,000 urban residents (Pennsylvania Department of Health, 2022).

According to the federal Health Resources and Services Administration (HRSA), there were 16 federally designated Critical Access Hospitals (CAH) in Pennsylvania in 2023 (Flex Monitoring Team, 2023). These are geographically isolated hospitals, are located more than 35 miles from another hospital, are licensed for 25 beds or less, and provide 24/7 emergency care services to their rural communities (Centers for Medicare and Medicaid Services, 2023). CAHs rely heavily on revenue from government programs such as Medicare and Medicaid, resulting in slimmer operating margins than other hospitals in the state.

PHYSICIANS AND SPECIALISTS

Rural counties have fewer primary care physicians than urban counties, in addition to fewer specialists and other health care professionals. In 2022, HRSA reported that rural Pennsylvania had one physician for every 534 residents, of which 36 percent were primary care physicians, compared to one physician for every 225 urban residents, of which 26 percent are primary care physicians. This equates to 66.6 primary care physicians per 100,000 rural residents and 114.7 primary care physicians per 100,000 urban residents. In fact, one-half of Pennsylvania's primary care physicians practice in just four counties, all of which are urban (Health Resources and Services Administration, retrieved 2022b).



Armstrong County – Mahoning Creek Dam

ADVANCED PRACTICE PROVIDERS

Rural health care relies heavily on Advanced Practice Providers (APP) to address unmet needs as a result of physician shortages. These APPs include Physician Assistants (PA), Certified Registered Nurse Practitioners (CRNP), Clinical Nurse Specialists, Nurse Anesthetists, and Certified Nurse Midwives (CNM). According to HRSA data, in 2021, there were 3.244 APPs in rural Pennsylvania or 96.1 per 100,000 (Health Resources and Services Administration, retrieved 2022a). In urban Pennsylvania, there were 13,963 APPS, or 145.6 per 100,000. In addition, there were 2,452 Physician Assistants (PA) in rural Pennsylvania or 72.6 per 100,000. In urban areas there were 7,330 PAs or 76.4 per 100,000 (Health Resources and Services Administration, 2022a).

According to HRSA, in 2023 there were 69 Rural Health Clinics (RHC) in Pennsylvania (Health Resources and Services Administration, 2023). The state also included 394 Federally Qualified Health Centers (FQHCs); 175 of these clinics were in rural areas and 219 in urban (Health Resources and Services Administration, 2023). While private physicians practicing in rural Pennsylvania serve mostly those with commercial insurance or Medicare, RHCs are required to employ APPs to provide services 50 percent of the time the clinic is open, and they receive special reimbursement from Medicare and Medicaid to serve HPSAs.

EMERGENCY SERVICES

While regular, scheduled primary care is a challenge for rural providers, the responsibilities for primary care practitioners often extend into emergency care as well. Rural hospitals find it difficult to recruit and retain physicians to staff emergency departments (ED), especially board-certified emergency medicine physicians. These hospitals rely on primary care physicians to staff their EDs. Rural Emergency Medical Service (EMS) units often rely on volunteers to staff their services. The low, inconsistent volumes for EMS and hospital EDs make it difficult to maintain a profit (Pennsylvania Rural Health Association, 2016). The Pennsylvania Trauma Systems Foundation seeks to improve the resources dedicated to trauma response in Pennsylvania, through the accreditation of rural hospitals. As of July 2023, four of Pennsylvania's Critical Access Hospitals (CAH) had Level IV trauma center accreditation, improving the quality of care of rural injured patients needing trauma care (Windorski et al., 2019; Pennsylvania Trauma Systems Foundation, 2023).

ORAL HEALTH CARE

Cambria County – Cambria County Courthouse

Oral health is a challenge for rural Pennsylvanians, particularly for children, a disparity due in large part to provider access. The Pennsylvania Legislative Budget and Finance Committee reported that in 2019, there were 7,421 full-time equivalent (FTE) dentists practicing statewide, with only 456 of those FTE dentists practicing in rural areas. The report also noted a seven percent decrease in dentists per capita between 2001 and 2021 (Pennsylvania Legislative Budget and Finance Committee, 2023).

According to a 2021 report by the American Dental Association's Health Policy Institute, in 2020, there were 61.6 dentists per 100,000 residents in urban counties as compared to 31.3 dentists per 100,000 residents in urban counties. When compared to 2010 data, Pennsylvania showed an overall decline in dentists in 2020, with the most pronounced differences evident in rural and in counties with a dental health professional shortage area designation (American Dental Association Health Policy Institute, 2021).

To increase access to dental services, Public Health Dental Hygiene Practitioners (PHDHP) are trained to provide services such as oral health screenings, dental prophylaxis, and diagnostic radiographs in public health settings without the supervision of a dentist. However, only 51 percent of those certified as a PHDHP are using their license to work in public health, and most PHDHPs practice at FQHCs (PA Coalition for Oral Health, 2022).

The Pennsylvania Basic Screening Survey, conducted in 2021-2022, revealed that over 60 percent of third graders experienced dental disease in the form of tooth decay. Children in low-income households faced untreated dental caries (30 percent) at a significantly higher rate of children in higher-income households (20 percent), showing that access to dental services and dental education were lacking for low-income families (Pennsylvania Department of Health, 2023b).

These disparities show an overwhelming need to improve both access to dental care and a necessary increase in the number of dental providers choosing to work in rural areas.

MENTAL AND BEHAVIORAL HEALTH AND SUBSTANCE USE PROVIDERS

Cameron County – Elk State Forest

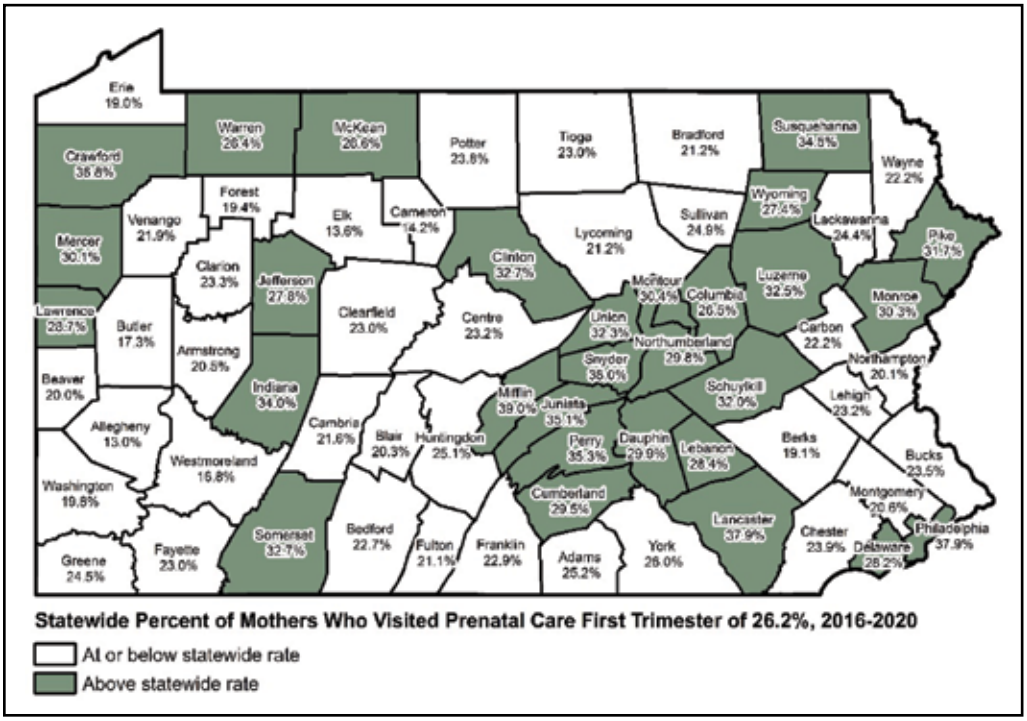
With growing national attention to mental health concerns, it has become clearer how sparse mental health professionals are, especially in rural areas. In the second quarter of 2022, the Pennsylvania Department of Labor and Industry reported that 231 outpatient mental health and substance abuse centers were located in rural Pennsylvania counties, compared to 509 centers located in urban counties (Pennsylvania Department of Labor and Industry, 2023). The contrast is even more stark for psychiatric hospitals. Only five such hospitals existed in rural Pennsylvania in 2022, while 21 were in urban areas (Health Resources and Services Administration, 2023). Many of the mental health services and resources are provided by county mental health programs, which coordinate mental health services and contract with local providers (Pennsylvania Rural Health Association, 2016). As of 2020, Pennsylvania Department of State data showed that there were 4,288 licensed mental health providers or 127 per 100,000 rural residents. In urban Pennsylvania, there were 19,612 licensed providers or 204 per 100,000 residents (Pennsylvania Department of State, 2023). Licensed mental health providers include physicians, behavior specialists, psychologists, clinical social workers, marriage and family therapists, and professional counselors.

RURAL MOTHERS AND CHILDREN

New mothers in rural areas are more likely to smoke during pregnancy, more likely to be Medicaid recipients, and less likely to breastfeed (Pennsylvania Rural Health Association, 2016). According to the March of Dimes, in 2019, 9.2 percent of mothers reported smoking during the last three months of pregnancy (March of Dimes, 2023). Rural areas have lower rates of teenage pregnancy compared to urban areas, but a greater percentage of rural mothers than urban mothers receive Women, Infants, and Children (WIC) services. In 2020, 31 percent of rural births were to mothers receiving WIC, as opposed to 28 percent of urban births (U.S. Department of Agriculture, 2022). However, an equal 74 percent of rural and urban mothers received prenatal care in the first trimester as shown in Figure 7. Low-birth weight babies were slightly less common for rural mothers. In 2020, eight percent of babies born in rural counties had a low birth weight, versus nine percent of babies born in urban counties (Pennsylvania Department of Health, 2023a). A 2019 research brief from the Pennsylvania Health Care Cost Containment Council revealed that neonatal abstinence syndrome (NAS) has also become a concerning issue in rural Pennsylvania. NAS, which causes newborns to experience withdrawal symptoms due to exposure to addictive drugs (e.g., opioids) in the mother's womb, was present in 14.4 per 1,000 statewide newborn stays in 2018. Categorizing this by urban and rural, urban areas in Pennsylvania had a lower NAS rate of 12.6 per 1,000 newborn stays, while rural areas had a much higher NAS rate of 20.3 per 1,000 newborn stays (Pennsylvania Health Care Cost Containment Council, 2019). The March of Dimes reported that 14.2 percent of newborns per 1,000 hospitalized were diagnosed with NAS statewide (March of Dimes, 2023). These statistics call for improved resources dedicated to rural mothers and children, with an emphasis on preventing negative outcomes resulting from the opioid and drug crisis.

Neonatal abstinence syndrome has been present with rural newborns at a much higher rate of 20.3 per 1,000 newborn stays than urban newborns at 12.6 per 1,000 newborn stays.

Figure 7: Mother Prenatal Care in Pennsylvania, 2016-2020



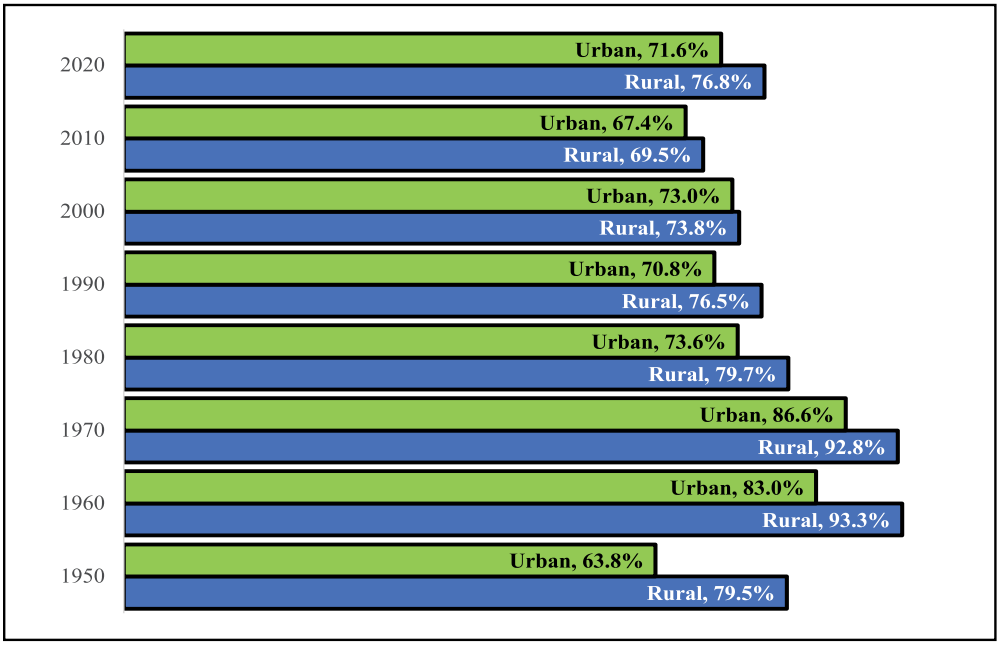
Data source: Pennsylvania Department of Health, 2023; prepared by the Center for Rural Pennsylvania, 2023

GERIATRIC CARE

Elderly residents of rural Pennsylvania also have difficulty getting the care they need, and this problem may continue to grow. The Center for Rural Pennsylvania reported that in rural counties, senior citizens will increase to 25 percent of the population by the year 2040 (Center for Rural Pennsylvania, 2023c). Many of these seniors maintain their social networks and access to resources through senior community centers (SCCs). A 2020 study by the Center for Rural Pennsylvania determined that 54 percent of SCCs in Pennsylvania are located in rural counties. However, these SCCs have fewer options for funding compared to urban centers, which are part of larger organizations. These rural centers must secure alternative sources of funding, such as through fundraising activities, which may be further limited by the relatively few staff available in rural SCCs (Melnick et al., 2020). For other rural seniors, living without assistance is not realistic for their care needs. These seniors seek the services of nursing homes or home- and community-based (HCB) alternatives to nursing home care.

Figure 8 shows the urban and rural dependency ratios for the 70 year period of 1950 to 2020. Age dependency ratio is the ratio of dependents, people younger than 15 or older than 64, to the working-age population, those ages 15-64. Data are shown as the proportion of dependents per 100 working-age population.

Figure 8: Age Dependency Ratio in Rural and Urban Pennsylvania, 1950-2020



Data sources: U.S. Census Bureau, 2023c; prepared by the Center for Rural Pennsylvania, 2023

PHARMACY SERVICES

Pharmaceutical services are difficult to access in rural areas, causing barriers for rural residents in accessing their medications and prescriptions. This can be especially difficult for elderly residents, who are often prescribed multiple medications for chronic illnesses. A 2018 study showed that clusters of pharmacy deserts were located in rural areas of Pennsylvania (Pednekar and Peterson, 2018). The counties with the greatest proportion of pharmacy deserts were Bradford, Clarion, Forest, Franklin, Fulton, Jefferson, Juniata, Lycoming, McKean, Mifflin, Pike, Susquehanna, Tioga, and Venango, all of which are considered to be rural counties. Conversely, clusters of non-pharmacy deserts were located around urban areas such as Philadelphia and Pittsburgh (Pednekar and Peterson, 2018). According to data from the Pennsylvania Department of State, in 2020, there were 3,803 rural pharmacists or 112 per 100,000 residents. In urban Pennsylvania there were 14,101 pharmacists or 147 per 100,000 residents (Pennsylvania Department of State, 2023).

TELEHEALTH SERVICES IN RURAL AREAS

One proposed solution to improving access in rural areas has been the implementation of telehealth and online resources. However, there are challenges with this as well. The U.S. Census Bureau reported that in 2021, 14 percent of rural households and 11 percent of urban households did not have internet access (U.S. Census Bureau, 2023a). There are many reasons for a lack of access: unavailability, unaffordability, slow-speed, or even a lack of interest. Regardless of the reason, the lack of internet access limits the ability of rural residents to utilize telehealth services, employment opportunities or access educational material online. Patients are unable to access their health records through online portals to better understand their personal health. It also prevents rural health care providers from distributing public safety information, telemedicine, in-home patient monitoring or clinician consultation.

The Pennsylvania eHealth Partnership is charged with creating a secure health information exchange (HIE) known as the Pennsylvania Patient and Provider Network, or P3N. This HIE is intended to improve patient care and coordination by giving providers immediate access to real-time patient medical records, thereby improving care by avoiding redundancy of tests, improving communication and coordination among providers, and ensuring patient safety (Pennsylvania Department of Human Services, 2023a). However, without access to adequate broadband, rural providers will be limited in accessing and participating in this information exchange. These limitations are a hindrance to the advancement of health care in rural areas and the expansion of necessary access to health services. They also impact access to education, employment, and other services essential to life in the 21st century.

Without adequate broadband access, rural providers will be limited when accessing and exchanging information from the Pennsylvania Patient and Provider Network information exchange.

Starting in 2020, the Centers for Medicare and Medicaid Services (CMS) reported on the number of Medicare recipients that use telehealth services such as telehealth visits for routine office visits, virtual check-ins for remote evaluations and e-visits. Using RUCAs to identify rural and urban areas, in 2020, 40 percent of rural and 53 percent of urban Medicare recipients used telehealth services (Centers for Medicare and Medicaid Services, 2022). In 2021, this percentage of telehealth users dropped to 29 percent in rural areas and 35 percent in urban locations. In the second quarter of 2022, the percentage of users dropped even lower to 11 percent among rural recipients and 14 percent among urban recipients (Centers for Medicare and Medicaid Services, 2022).

In December 2021, Pennsylvania established the Pennsylvania Broadband Development Authority (PBDA) as an independent agency of the Pennsylvania Department of Community and Economic Development (DCED). The authority is responsible for creating a statewide broadband plan and distributing federal and state monies for broadband expansion projects in unserved and underserved areas of Pennsylvania. PDBA's efforts focus on closing Pennsylvania's digital divide so that all Pennsylvanians can get connected to affordable and reliable high-speed broadband internet at home, at work or on the road.

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PROFILES OF PENNSYLVANIA'S RURAL POPULATION

Pennsylvania Rural Health Plan

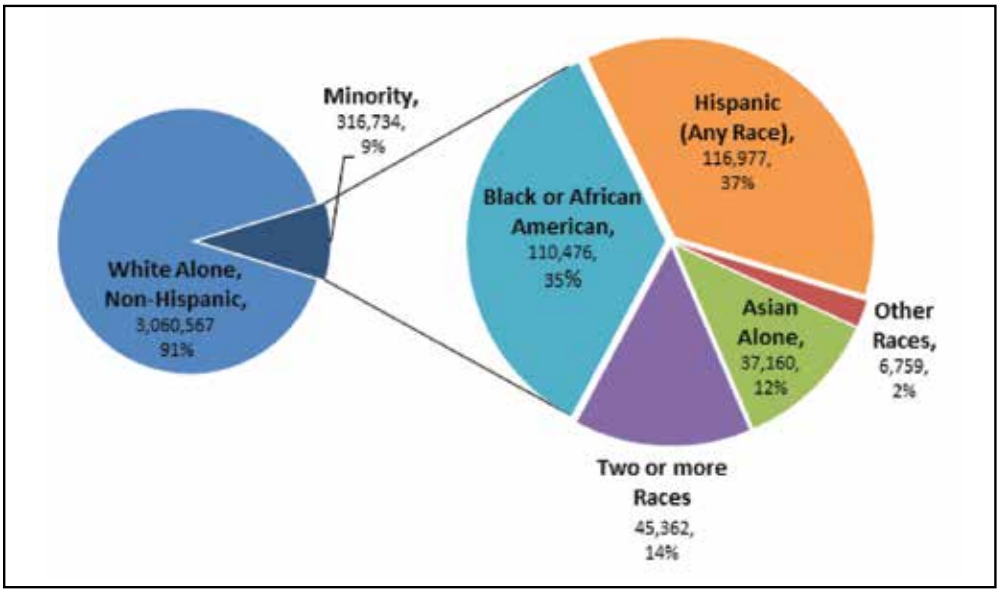
RURAL PENNSYLVANIA DEMOGRAPHICS

Communities in rural Pennsylvania may be small, but their populations are unique. In 2019, only about a third of rural municipalities had populations greater than 2,000 people (U.S. Census Bureau, 2019). Residents of rural Pennsylvania tend to be white and older, but demographics appear to be shifting with time. While some demographics remain consistent over many years, the unique statistics reflecting factors such as age, migration, and special populations in rural Pennsylvania will influence future needs in health care, housing, access to food, mental health care, technological resources, public health, insurance, and many other important aspects of rural wellbeing.

Race, Ethnicity, and Migration

According to data from the U.S. Census Bureau, from 2000 to 2019, rural Pennsylvania's white population remained consistent at about 90 percent, while rural Pennsylvania's non-white and/or Hispanic population grew from five percent to nine percent of the total population. The level of racial and ethnic diversity is significantly lower in rural areas than in urban areas of Pennsylvania. In 2019, approximately nine percent of rural Pennsylvanians were part of a Black, Indigenous, and People of Color (BIPOC) group. Among urban Pennsylvanians, 30 percent were BIPOC. Of the BIPOC living in rural Pennsylvania, most were Hispanic (37 percent) followed by Black/African American (35 percent). From 2000 to 2019, the Hispanic population in rural Pennsylvania increased by 610 percent, while the Black/African American population increased by 35 percent. The Asian population increased by 63 percent, and those of two or more races increased by 741 percent.

Figure 1: Rural Pennsylvania Minority Population, 2019

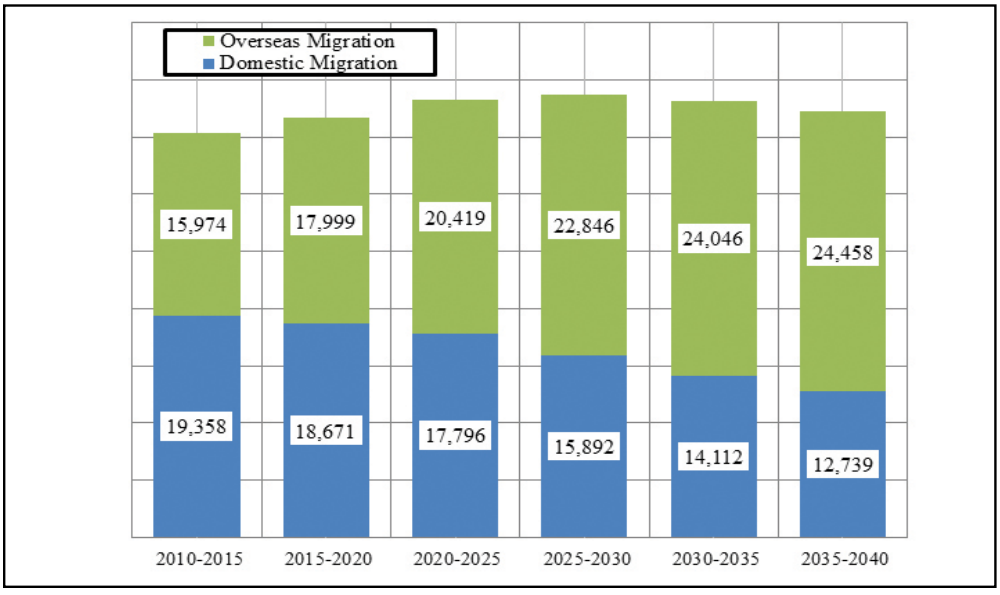


Source: Population and Housing Unit Estimates, Vintage 2019, U.S. Census Bureau

The change in rural Pennsylvania's diversity may be due to the draw of the state's open spaces and green forests from urban areas and out-of-state locations. From 2010 to 2019 Census Bureau data showed that Pennsylvania's rural areas have seen an overall population decrease. Looking to the future, however, rural Pennsylvania is projected to have a four percent increase in population from 2010 to 2040 according to population projections from the Pennsylvania State Data Center. Interestingly, rural counties are projected to gain residents from in-migration, 56 percent of which will be from overseas and 44 percent from other areas of the state and country. This in-migration, specifically from overseas, will represent a 53 percent increase, compared to a 34 percent decrease in domestic in-migration (Center for Rural Pennsylvania, 2014). Urban counties will also see an increase of in-migration, but over 90 percent will be from another country (Center for Rural Pennsylvania, 2014).

In 2019, Census data showed that there were 89,526 residents in rural Pennsylvania who were foreign-born, making up three percent of the rural population. This is less than in urban counties in Pennsylvania, where 792,824 residents, or eight percent of the urban population, were foreign-born. However, these foreign-born residents share some characteristics across geography; in all areas of Pennsylvania, 54 percent of those who were foreign-born became naturalized citizens, and the remaining 46 percent were not U.S. citizens.

Figure 2: Projected Domestic and Overseas In-Migration in Rural Pennsylvania, 2010 to 2040



Data source: Pennsylvania State Data Center, 2014 Population Projections

Rural Counties and Population Density

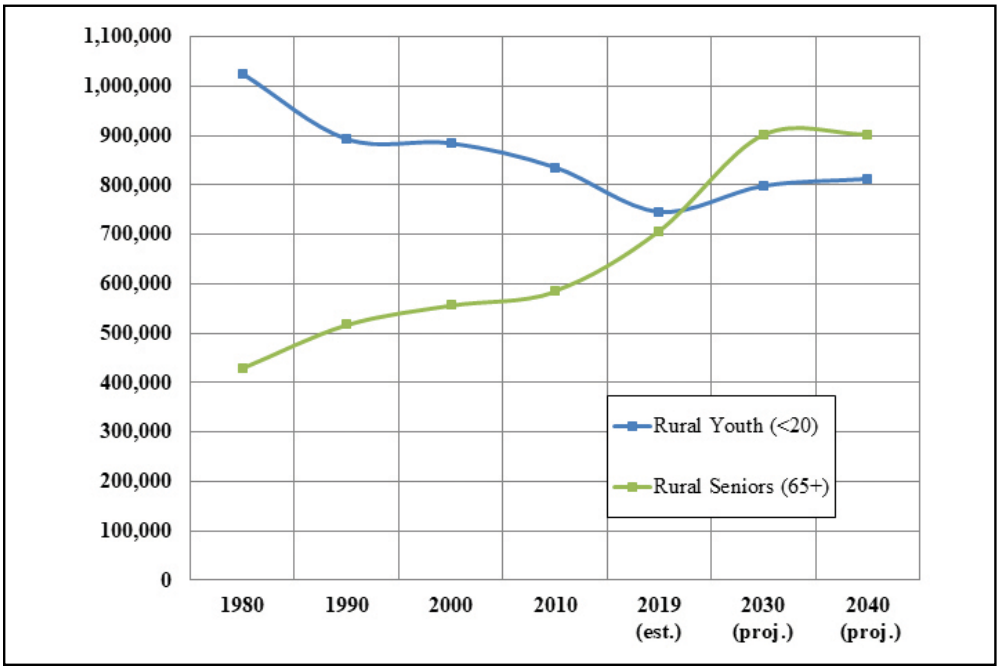
The Pennsylvania State Data Center's projections indicate that the growth in rural areas will make up 10 percent of Pennsylvania's total state population increase during the 2010-2040 period. However, because the remaining 90 percent of the population increase will occur in urban areas, the state's population will become slightly more urban by 2040, increasing from 73 percent to 74 percent from 2010 to 2040 (Behney, et al., 2014). Additionally, while rural areas may see population growth, some rural counties such as Cameron, Forest, and Warren may experience a decrease in their population by greater than 10 percent (Behney, et al., 2014).

Age, Births, and Deaths

Rural Pennsylvania's population is also growing older. According to Census data, in 2019, senior citizens aged 65 or older comprised 21 percent of the rural population. The Pennsylvania State Data Center projections show that by 2040, approximately 25 percent of the rural population will be senior citizens, so that more senior citizens than youth (under age 20) will live in rural counties. Whereas urban counties are expecting an increase in both seniors and youth, rural youth will decrease three percent as the number of seniors rise (Center for Rural Pennsylvania, 2014). The increase in seniors is accompanied by an increase in seniors aged 85 or older. In rural counties, this age group is predicted to have an increase of 104 percent, compared to a 96 percent increase in urban counties.

These specific increases may be a contributing factor to the expected 25 percent increase in deaths in rural Pennsylvania from 2010 to 2040 (Center for Rural Pennsylvania, 2014). Preliminary data from the Pennsylvania Department of Health showed that in 2019 there were more deaths than births in 42 of the state's 48 rural counties. Long-term projections from the Pennsylvania State Data Center anticipate that the number of births will rise for both rural and urban areas of Pennsylvania along with an increase in the number of women of childbearing age (15-40 years old). These changes in age demographics and population counts may result in new rural health care needs and challenges, requiring proper resources to serve both seniors and youth.

Figure 3: Number of Rural Pennsylvania Youth and Senior Citizens, 1980 to 2040 (projected)

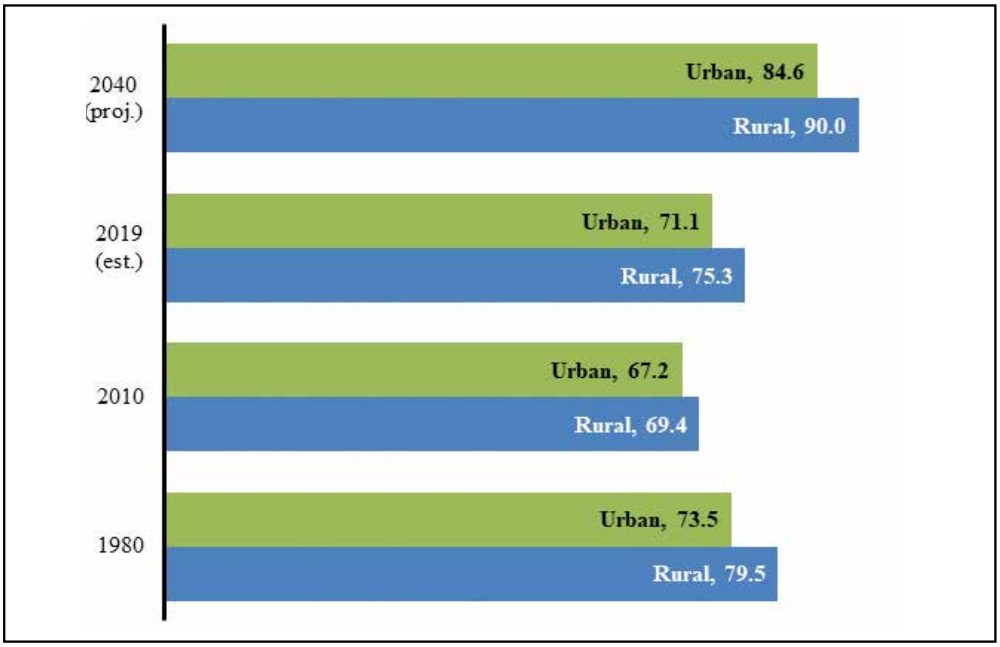


Data sources: U.S. Census Bureau and Pennsylvania State Data Center

Dependency Ratio

The age demographics of rural Pennsylvania may also impact the dependency ratio. A dependency ratio compares the number of people in the working age group (age 20 to 64) to the number of people dependent upon those in the working age group (under age 20 or above age 65) (Center for Rural Pennsylvania, 2014). Census Bureau data showed that in 1980, the dependency ratio was high, with 80 percent of rural Pennsylvanians relying on the working age population. By 2019, the dependency ratio decreased to only 75 percent. However, with the increase in the number of seniors and number of births, rural Pennsylvania's dependency ratio is projected to increase to 90 percent by 2040. Urban dependency ratios have remained lower than those in rural counties in 1980 and 2010 (Center for Rural Pennsylvania, 2014), and they are predicted to remain lower in 2040, reflecting the differences in age demographics in urban areas.

Figure 4: Age Dependency Ratio in Rural and Urban Pennsylvania, 1980 to 2040 (projected*)



*Population <20 plus Population 65+ divided by population 20 to 64
Data sources: U.S. Census Bureau and Pennsylvania State Data Center

Education

The working age population may have various employment opportunities based on their education level and type of school attended (i.e., college/university, trade school, etc.). According to data from the Pennsylvania Department of Education, over 416,600 students were enrolled in rural school districts during the 2020 school year, a decrease of 11 percent from the 2011 school year. This is a significantly larger decrease than in urban districts, which experienced a four percent decrease in enrollment during the same time period. The Pennsylvania Department of Education predicts this decline will continue until the 2030 school year, but whereas urban enrollment will decline by three percent, rural enrollment will decline by seven percent (Center for Rural Pennsylvania, 2014). According to Census Bureau data, enrollment mostly occurs in public schools in rural areas, where 89 percent of students attend public schools and only 11 percent attend private schools. (Comparatively, 85 percent of urban students attend public schools and 15 percent attend private schools).

In 2018-2019, graduation rates in rural areas were 91 percent, while the urban graduation rate was lower at 81 percent according to data from the Pennsylvania Department of Education. However, once they have completed high school, fewer rural students aged 25 or older completed a bachelor's degree or higher. In 2019, the Census Bureau data showed that of rural Pennsylvanians aged 25 or older, 22 percent held a bachelor's or advanced degree, but 35 percent of urban Pennsylvanians the same age held those degrees.

The high school graduation rate is 10 percent higher for Pennsylvania rural students than urban students, however, the bachelor's or advanced degree rate is 13 percent lower for rural than urban for Pennsylvanians aged 25 and older.

According to the federal Integrated Postsecondary Education Data System, there were 51 colleges and universities in rural Pennsylvania in 2019, along with 40 trade and technical schools. In urban areas of the state, there were many more options for degree-granting and non-degree-granting institutions, with 176 colleges and universities and 77 trade and technical schools.

Employment and Income

In 2019, Pennsylvania Department of Labor and Industry data showed that there were nearly 82,300 employers in rural Pennsylvania, compared to the more than 245,700 urban employers. Whereas the number of urban employers increased by one percent from 2018 to 2019, the number of rural employers increased only by 0.3 percent. The difference in employer growth is similar to the difference in employee growth for urban and rural areas. Rural employers provided jobs for 1.24 million employees, an increase in employees of 0.1 percent from 2018-2019. Urban counties, in contrast, had 4.50 million employees, an increase of one percent from 2018-2019. However, there was a higher rate of unemployment in rural areas than in urban areas. Throughout 2019, the average unemployment rate in Pennsylvania's rural counties was 4.7 percent, while the average urban unemployment rate was 4.3 percent.

The differences in poverty rates were also similar in urban and rural areas, though slightly higher in rural areas. According to the U.S. Census Bureau, the rural poverty rate in 2020 was 11.5 percent, and the urban poverty rate was 11.9 percent (Center for Rural Pennsylvania, 2024).

Rural Pennsylvania's Gross Domestic Product (GDP) in 2019 was lower than in urban areas, in both total GDP and per capita GDP. According to data from the U.S. Bureau of Economic Analysis, the GDP in rural Pennsylvania was $148.8 billion and $44,252 per capita in 2020, while GDP in urban Pennsylvania was $623 billion and $66,141 per capita (Center for Rural Pennsylvania, 2024a).

Average household income was also lower in rural areas than in urban areas of the state. Data from the U.S. Census show that the average rural household income was $77,975, and the average income for urban households was higher at $89,959. A similar gap exists in per capita personal income; in 2019, rural Pennsylvanians had $29,039 in per capita personal income, while urban Pennsylvanians had $36,273 in per capita personal income. The distribution of income brackets was also different in urban and rural areas of Pennsylvania. In 2020, 45 percent of rural households had incomes below $50,000 while 23% of rural households had incomes at or above $100,000. Of urban households, 38 percent had incomes below $50,000 while 32 percent had incomes at or above $100,000 (Center for Rural Pennsylvania, 2024b).

Households and Housing

Centre County – Octagonal Barn

In 2020, the U.S. Census Bureau data showed that there were 1.37 million households in rural Pennsylvania, and approximately six percent of housing units were racial and ethnic minority households. Of all rural households, 51 percent were occupied by married couples. Another 29 percent were single-person households, while seven percent were single-parent households. The remaining 13 percent of households were other types of living arrangements (Center for Rural Pennsylvania, 2024b).

Although married-couple households comprise most households in rural Pennsylvania, single-person households have increased by 34 percent since 1990. Among rural households, 27 percent were home to children under the age of 18, which was a decline of 10 percent from 2010 to 2019.

From 2000-2019, Census Bureau data showed that the number of rural families has declined by two percent, while the number of urban families increased by two percent. These rural households tended to house fewer people than urban households. In 2019, the average rural households had 2.39 members while the average urban households had 2.47 members. From 2000 to 2019, the average size of rural households declined by three percent, while the urban households declined by one percent.

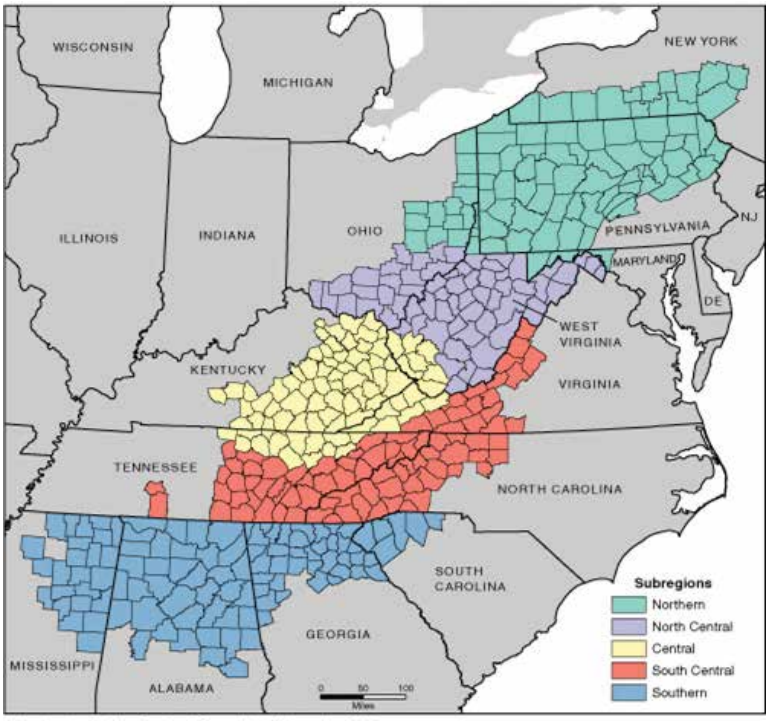
Homelessness in Rural Pennsylvania

Homelessness is a significant problem in rural Pennsylvania, though one that has been misunderstood for some time. Data show an increase in homelessness in rural Pennsylvania, but it is unclear if the data reflects an increase in the problem, an increase in the awareness of the problem, or errors in the data from prior and current undercounting (Feldhaus and Slone, 2015). From 2008-2013, rural homelessness rose by 24 percent (Feldhaus and Slone, 2015). By comparison, total homelessness in Pennsylvania rose by two percent, and urban homelessness decreased by seven percent (Feldhaus and Slone, 2015). Of the total homeless population in rural Pennsylvania, those considered to be sheltered homeless increased by 16 percent, and the unsheltered homeless increased a dramatic 137 percent over the 2008-2013 period. Individual homelessness increased by 35 percent, while the number of people living in homeless families increased by 15 percent (Feldhaus and Slone, 2015). Data collection on homeless veterans was not available until 2011, but even in the shorter time period from 2011-2013, the number of homeless veterans increased by 25 percent (Feldhaus and Slone, 2015). On average, rural homeless people were 30 years old, and many suffered from health conditions; 27 percent had a mental health condition and 12 percent had a physical disability, among other chronic conditions and disabilities faced by others in the population (Feldhaus and Slone, 2015).

Rural Pennsylvania in Appalachia

Much of rural Pennsylvania falls into the geographic and cultural region called Appalachia. The current boundary of the Appalachian Region includes all of West Virginia and parts of 12 other states: Alabama, Georgia, Kentucky, Maryland, Mississippi, New York, North Carolina, Ohio, Pennsylvania, South Carolina, Tennessee, and Virginia. The Region covers 205,000 square miles over 420 counties, and it is home to more than 25 million people. Forty-two percent of the Region's population is rural, compared with 20 percent of the nation's population (Appalachian Regional Commission; PDA, Inc.; Cecil G. Sheps Center for Health Services Research; Burness, 2018). Fifty-two of Pennsylvania's 67 counties are designated as part of Appalachia. The Appalachian Region is depicted in Figure 5.

Figure 5: Counties in the Appalachian Region



The Appalachian Region mirrors many of the same issues as rural Pennsylvania. Appalachia's number of physically unhealthy days, mentally unhealthy days, and prevalence of depression are all higher than the national averages for these measures. Risk factors for several health outcomes, such as obesity, smoking, and physical inactivity, are all higher in Appalachia than in the nation overall. The Appalachian portions of New York (18.4 percent) and Pennsylvania (18.2 percent) report the highest percentages of excessive alcohol consumption in the Region, both of which are above the national average. The Region also has lower supplies of health care professionals when compared to the U.S. as a whole, including primary care physicians, mental health providers, specialty physicians, and dentists. Lower household incomes and higher poverty rates, both social determinants of health, reflect worse living conditions in the Region than in the nation (Fowler, 2021).

The Appalachian region experiences challenges with recruiting health care professionals, higher poverty rates, and lower household incomes which impact community health.

These factors have a direct impact on the health status of Appalachia's residents. Every mortality indicator is higher in the Region than in the nation overall: heart disease is 17 percent higher, cancer is 10 percent higher, COPD is 27 percent higher, injury is 33 percent higher, stroke is 14 percent higher, and diabetes is 11 percent higher (Fowler, 2021). The Appalachian portions of Kentucky, Maryland, Ohio, Pennsylvania, and Virginia have notably higher rates than the non-Appalachian portions of those states. With the exceptions of Appalachian Georgia and Appalachian North Carolina, the Appalachian portions of all states are at or above the national heart disease mortality rate. Rural areas face challenges in addressing these health conditions. Those who live in rural Appalachia experience higher heart disease mortality rates than those in more urbanized areas in the Region (Fowler, 2021).

A 2018 report featured rural Pennsylvania's Potter County as one of its case studies of Appalachian counties implementing successful initiatives to improve health. While the counties featured in this report still had their unique challenges in addressing the health of their residents, Potter County demonstrated the influence of "committed local health care providers and strong regional and local collaboration" in rural county health (Appalachian Regional Commission; PDA, Inc.; Cecil G. Sheps Center for Health Services Research; Burness, 2018), as well as the "community culture of volunteering and involvement [that] may also contribute to a health-promoting sense of social cohesion" (Appalachian Regional Commission; PDA, Inc.; Cecil G. Sheps Center for Health Services Research; Burness, 2018). Hospitals and medical offices in rural counties provide the health care and wellness resources, supported in large part by a strategic network of community leaders, regional partnerships, resident involvement, and local stewardship. Small, rural towns in Pennsylvania, such as those in Potter County, often accept responsibility for each other in times of need, offering their "important personal resources—time, energy, expertise, and goodwill—that advance community health" (Appalachian Regional Commission; PDA, Inc.; Cecil G. Sheps Center for Health Services Research; Burness, 2018).

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SOCIAL DETERMINANTS OF HEALTH AND THE IMPACT ON RURAL HEALTH

According to the Centers for Disease Control and Prevention (CDC), social determinants of health (SDOH), "are conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life-risks and outcomes" (U.S. Department of Health and Human Services, 2023). Healthy People 2030, a U.S. Department of Health and Human Services (HHS) initiative and framework, classifies the five key areas of SDOH as:

- Health Care Access and Quality;
- Neighborhood and Built Environment;
- Social and Community Context;
- Economic Stability; and
- Education Access and Quality.

Source: U.S. Department of Health and Human Services, 2023

Figure 1: Social Determinants of Health

Source: U.S. Department of Health and Human Services, 2023

The World Health Organization (WHO) emphasizes that SDOH are shaped by the distribution of money, power, and resources at global, national, and local levels (Centers for Disease Control and Prevention, 2020). SDOH are predominantly responsible for health inequities, which are defined as the "unfair and avoidable differences in health status seen within and between countries" (Centers for Disease Control and Prevention, 2020).

Health Care Access and Quality

According to Healthy People 2030, approximately one in 10 residents of the United States do not have health insurance (U.S. Department of Health and Human Services, 2020c). It is known that individuals without health insurance are less likely to have a primary care provider, and they may not be able to afford the health care services or medications that they require (U.S. Department of Health and Human Services, 2020c). A 2016 brief from the Office of the Assistant Secretary for Planning and Evaluation reported that 43.4 percent of uninsured rural residents claim to lack a usual source of care (Rural Health Information Hub, 2019). This lack of access to care prevents many individuals from receiving recommended health care services such as cancer screenings (U.S. Department of Health and Human Services, 2020c).

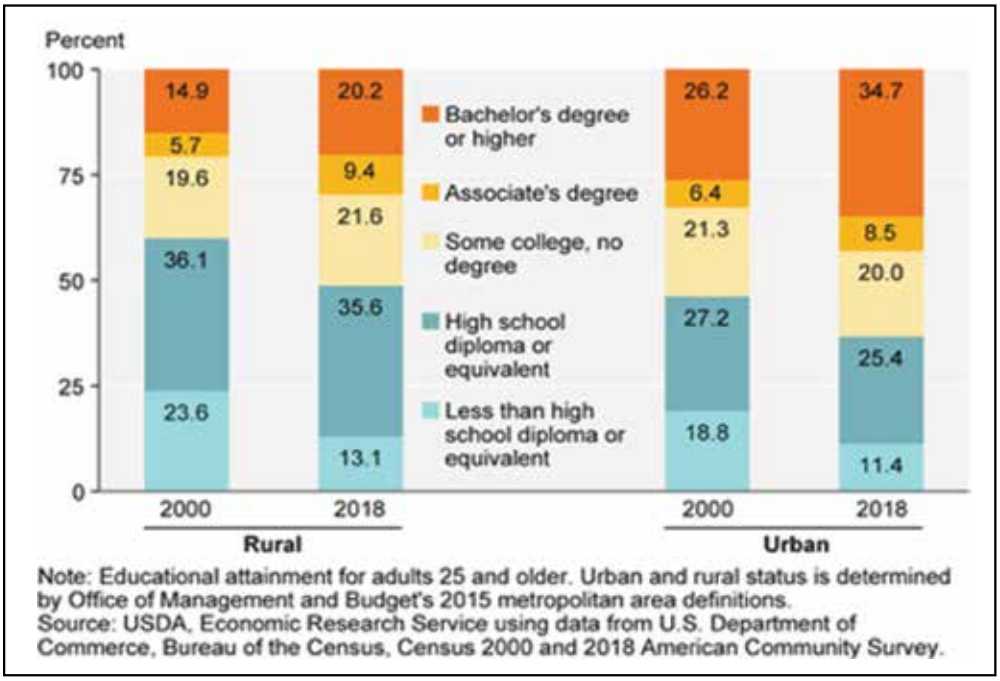
Additional barriers such as workforce shortages, distance and transportation, and poor health literacy are challenges that can impact rural residents' ability to access quality health care disproportionately higher than their urban counterparts (Rural Health Information Hub, 2019). As of September 2020, 61.54 percent of Primary Care Health Professional Shortage Areas (HPSAs) were in rural regions (Rural Health Information Hub, 2019). This workforce shortage has forced many people residing in rural areas to travel long distances to access health care services, especially specialists that are not typically located in rural regions (Rural Health Information Hub, 2019). The time and cost associated with this travel is an additional barrier to health care access for many rural populations (Rural Health Information Hub, 2019). Due to lower educational levels and higher poverty rates in rural areas (Centers for Disease Control and Prevention, 2019), many rural residents may have poor health literacy, another obstacle that can prevent many from seeking or accessing care due fear or frustration related to communicating with health care professionals (Rural Health Information Hub, 2019).

More than 60 percent, of Primary Care Health Professional Shortage Areas are in rural regions, leading to long travel times to access health care services.

Education Access and Quality

HHS asserts that individuals with higher levels of education are more likely to be healthier and live longer (U.S. Department of Health and Human Services, 2020b). While education levels in rural areas have increased over time, individuals residing in urban regions are still more likely to receive at least a bachelor's degree (U.S. Department of Agriculture, 2020). Rural household incomes trend approximately 20 to 25 percent lower than urban households, which can make college less affordable for those living in rural areas (U.S. Department of Agriculture, 2020). Distance to colleges may also impact a rural person's ability to obtain a higher education due to costs associated with travel or room and board (U.S. Department of Agriculture, 2020). Figure 2 illustrates a comparison between rural and urban educational attainment in the years 2000 and 2018.

Figure 2. Educational Attainment in Rural and Urban Areas, 2000 and 2018



Source: U.S. Department of Agriculture, 2020

Social and Community Context

Relationships and interactions with family, friends, co-workers, and community members can have a major impact on the health and well-being of individuals (U.S. Department of Health and Human Services, 2020e). Challenges out of an individual's control, such as unsafe neighborhoods, discrimination, or trouble affording necessities, can have a negative impact on health and safety throughout the lifetime (U.S. Department of Health and Human Service, 2020e). Rural individuals who experience discrimination based on their race, sexual orientation, or gender identity are less likely to seek social or community support due to privacy and confidentiality concerns, anticipated stigmas, or provider bias (Rural Health Information Hub, 2020). While these problems exist in non-rural regions, they are exacerbated in rural areas due to fewer service providers to choose from and a lack of specially trained professionals in rural communities (Rural Health Information Hub, 2020).

Economic Stability

One in 10 people in the U.S. lives in poverty and many more cannot afford fundamental necessities such as healthy food, health care, and housing (U.S. Department of Health and Human Services, 2020a). Individuals who struggle to find and keep a job are more likely to live in poverty and experience negative health outcomes (U.S. Department of Health and Human Services, 2020a). Poverty is an ongoing problem in many rural areas, as reports indicate that 64 percent of non-core, small rural counties are designated as persistent poverty counties, compared to 22 percent of large rural counties and 14 percent of metropolitan counties (Rural Health Information Hub, 2020). Rural regions are also known to present higher poverty rates for both children and the elderly compared to non-rural areas (Rural Health Information Hub, 2020).

Neighborhood and the Built Environment

Clarion County - Main Street Sunset, Clarion

The CDC has stated that the neighborhoods in which people live can have major impacts on their overall health and wellbeing (U.S. Department of Health and Human Services, 2020d). Individuals who reside in neighborhoods with high rates of violence, unsafe air or water, and other health and safety risks are more likely to experience disproportionate health disparities (U.S. Department of Health and Human Services, 2020d). Many rural regions experience poor water and air quality as well as a variety of other environmental hazards such as exposure to pesticides and chemicals (Rural Health Information Hub, 2020). These environmental challenges can be attributed to limited rural infrastructure to support public health and industries such as logging, mining, and agriculture that can have negative environmental impacts (Rural Health Information Hub, 2020). Other environmental concerns such as plumbing and wastewater systems, heating and cooling methods, lead-based paint use, mold, and pests also pose significant health threats to rural populations (Rural Health Information Hub, 2020). Rural renters, when compared to rural homeowners, are also more likely to live in substandard conditions and experience housing challenges related to affordability, quality, and crowding (Rural Health Information Hub, 2020).

Rural Pennsylvania Social Determinants of Health

A report published in 2019 by the Pennsylvania Department of Health Office of Health Equity discussed specific SDOH that impact rural Pennsylvanians. These SDOH include:

- Geographical isolation, low primary care physician and health care provider numbers, even lower number of specialists, and sparse dental care in rural Pennsylvania contribute to disparities in health outcomes compared to other regions in the Commonwealth.
- Transportation, culturally competent providers, and language barriers are common obstacles experienced by rural Pennsylvania populations.
- The decline of coal and steel industries has led to an increase of poverty and unemployment in rural Pennsylvania.
- Sexual and domestic violence are both prevalent in rural Pennsylvania where victims are more likely to experience greater stigma in their small community and have access to fewer and poorly funded resources.
- Housing vouchers and transitional housing are less likely to be offered in rural Pennsylvania, which disproportionately effects women and children who are victims of domestic abuse and seeking safe and affordable housing.
- Extreme weather that results in power outages can impact rural water systems and cause people to lose access to clean water if power is out for an extended period of time.
- Rural communities are considered vulnerable and most at risk for environmental health hazards.

Source: Pennsylvania Department of Health, 2019

To address these SDOH and improve health equity throughout rural Pennsylvania, the Office of Health Equity has advocated for the development of programs and policies to address health disparities (Pennsylvania Department of Health, 2019). This can be achieved by collaborating with state agencies, academic institutions, policy makers, insurers, health care providers, and community-based organizations to create measurable and sustainable improvements in the health status while striving to eliminate health disparities in Pennsylvania (Pennsylvania Department of Health, 2019). By applying what is known about SDOH, it is possible to not only improve both individual and population health, but to also advance health equity across the nation and in rural Pennsylvania (U.S. Department of Health and Human Services, 2020f).

SUMMARY AND RECOMMENDATIONS

SDOH "are conditions in the places where people live, learn, work, and play that affect a wide range of health and quality-of-life-risks and outcomes" (Centers for Disease Control and Prevention, 2020). The five key areas of SDOH are health care access and quality, education access and quality, social and community context, economic stability, and the neighborhood and built environment (Centers for Disease Control and Prevention, 2020). SDOH are shaped by the distribution of money, power, and resources at global, national, state, and local levels (Centers for Disease Control and Prevention, 2020). SDOH are predominantly responsible for health inequities, which are defined as the "unfair and avoidable differences in health status seen within and between countries" (Centers for Disease Control and Prevention, 2020).

The report, State of Health Equity in Pennsylvania, discussed specific SDOH that impact rural Pennsylvanians which include geographical isolation, low primary care physician and health care provider numbers, transportation, language barriers, sexual and domestic violence, housing inequality, extreme weather, and increased rates of poverty and unemployment (Pennsylvania Department of Health, 2019).

To achieve rural SDOH equity, all sectors that impacts individuals and communities must be addressed in a holistic and coordinated approach. These strategies must address not only the health of individual residents but also focus on housing, access to healthy, affordable nutritious food, employment, options for quality education, neighborhood and household safety, physical activity, and more. The individual needs to be cared for in the context of their SDOH characteristics if sustainable, optimal health is to be achieved.

To achieve rural equity, all sectors that impact individuals and communities must be addressed in a holistic approach.

The Pennsylvania Office of Health Equity has advocated for the development of programs and policies to address health disparities in rural regions of Pennsylvania (Pennsylvania Department of Health, 2019). By collaborating with state agencies, academic institutions, policy makers, insurers, health care providers, and community-based organizations, measurable and ongoing improvements in rural health status can be achieved while simultaneously striving to eliminate health disparities across the state (Pennsylvania Department of Health, 2019). When evidence-based knowledge and theories on SDOH are effectively implemented, it is possible to not only improve individual and population health, but also advance health equity across the rural and urban areas (U.S. Department of Health and Human Services, 2020f).

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RACE AND ETHNICITY AS SPECIAL POPULATION FACTORS IN RURAL PENNSYLVANIA

Although rural Pennsylvania is predominantly White, the population is becoming increasingly diverse. From the years 2000 to 2018, while rural Pennsylvania's White population remained at 90 percent or more of the total, non-White and/or Hispanic populations grew from five percent to nine percent of the population (Center for Rural Pennsylvania, 2020). Migration to rural Pennsylvania from overseas locations and domestic urban areas, which tend to have much greater diversity, contributes to the growing racial and ethnic diversity in rural Pennsylvania. Because of this increasing diversity, it is important for health care providers, insurance markets, public health offices, and policymakers to understand the ways in which race and ethnicity impact health status and health care, particularly in rural areas.

It will be vital for health care providers, insurance markets, public health officials, and policy makers to understand the ways in which race and ethnicity impact health status and health care, particularly in rural areas.

As noted in the Demographics chapter of this plan, in 2019, approximately nine percent of rural Pennsylvanians were part of a Black, Indigenous, and People of Color (BIPOC) group. Among urban Pennsylvanians, 30 percent were BIPOC. Of the BIPOC living in rural Pennsylvania, most were Hispanic (37 percent) followed by Black/African American (35 percent). From 2000 to 2019, the Hispanic population in rural Pennsylvania increased by 610 percent, while the Black/African American population increased by 35 percent. The Asian population increased by 63 percent, and those of two or more races increased by 741 percent (U.S. Census Bureau, 2020).

Statewide, Black Pennsylvanians experience worse health outcomes with lower life expectancies, higher death rates, and higher infant and maternal mortality rates (Pennsylvania Department of Health, 2019). Compared to a national infant death rate of 5.9 deaths per 1,000 live births, Pennsylvania's White population experienced an infant death rate of 4.6 per 1,000 live births in 2016. Hispanic/Latino populations faced an infant death rate of 7.4, while Black Pennsylvanians faced an infant death rate of 14.6, three times that of White populations (Pennsylvania Department of Health, 2019). Further, Black maternal mortality rates from 2011-2015 were three times higher than White maternal mortality rates (27.2 per 100,000 births compared to 8.7 per 100,000 births, respectively) (Pennsylvania Department of Health, 2019).

Health risks such as these are magnified by disparities in social determinants of health. Social determinants include factors ranging from broad circumstances, such as socioeconomics, to specific circumstances, such as local environmental conditions (i.e., pollution). These factors affect health as well as access to health care. For example, although Black and Hispanic/Latino workers are nearly equal in the percentage of participation in the labor force as White workers, ethnic and minority communities face poverty at four times the rate of White workers (Pennsylvania Department of Health, 2019). In 2016, Pennsylvania's per capita income was $31,272. White workers participating in the labor force in 2016 earned above average income for Pennsylvania at $36,938, while Black Pennsylvanians earned almost $10,000 less than the statewide average and $15,000 less than the average for White workers. Hispanic/Latino Pennsylvanians earned almost $13,000 less than the statewide average and $18,400 less than the average for White workers (Pennsylvania Department of Health, 2019). Relatedly, Black and Hispanic/Latino Pennsylvanians were more likely to live below the poverty line in 2016, compared to White Pennsylvanians (Pennsylvania Department of Health, 2019).

Adams County – Sachs Covered Bridge

One contributing factor to this income disparity for BIPOC groups is the influence of racism and discrimination. These issues impact workers throughout the nation as well as in Pennsylvania (Pennsylvania Department of Health, 2019). Discrimination fosters disparities in education, employment opportunities, housing, and occupations, all of which lead to challenges in socioeconomic status and health status (Pennsylvania Department of Health, 2019). Not only are there societal barriers to BIPOC groups that result in discrimination, but there also are lasting effects of systematic policies that disproportionately impact BIPOC. Today's residential composition is largely influenced by 1930s federal and local housing policies including redlining, restrictive covenants, and discrimination in housing rentals and sales (Pennsylvania Department of Health, 2019). Such practices have led to the limitation of access to health care generations later through the accumulation of poverty, remnants of segregation, and isolation in remote geographic areas (Pennsylvania Department of Health, 2019). Structural and interpersonal discrimination can prevent BIPOC patients from seeking necessary medical care (Pennsylvania Department of Health, 2019). Children who experience racial prejudice and discrimination early in life may face poor physical and emotional health, as well (Pennsylvania Department of Health, 2019). Not only are there societal and geographic barriers to access to care, but Hispanic/Latino Pennsylvanians have experienced the greatest disparities in financial access to health care, and uninsured rates are consistently higher for BIPOC in Pennsylvania (Pennsylvania Department of Health, 2019).

Health care providers and policymakers are called upon to address these compounded disparities faced by rural BIPOC and to improve the equity of health care delivery. Cultural competence has proven to be an important component in quality of care, by establishing environments that ensure understanding and safety for BIPOC patients. Creating opportunities for culturally competent providers in rural areas will be essential to building an inclusive and informed system of health care. Community health workers have become key players in addressing the shortages of providers and lack of access to health care. These community health care workers may be employees or volunteers who work in rural communities, and they are able to relate to the community's unique mix of ethnicities, languages, socioeconomic status, and life experiences (Pennsylvania Department of Health, 2019). The use of community health workers provides an avenue for patient advocacy, social support, and health education directed at vulnerable populations who are otherwise without significant representation in rural communities. Health agencies have reported improved health outcomes as a result of the success of community health workers (Pennsylvania Department of Health, 2019).

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AGRICULTURAL SAFETY AND FARMWORKER HEALTH

Pennsylvania has a long history of success in its agricultural, food, and lumber industries, bolstered by its agricultural workforce and resources. The Pennsylvania Department of Agriculture has fostered business relationships across the globe, supporting food production and processing; forest products; the dairy industry; fertilizer and agricultural chemical manufacturing; and meat, poultry, and fish products (Pennsylvania Department of Agriculture, 2021).

Pennsylvania is the "Snack Food Capital of the World" due to its production of pretzels, potato chips, confectioneries, and chocolate that together with other products and processing, generates over $22.4 billion in annual sales (Pennsylvania Department of Agriculture, 2021). Following food products, the most exported goods are forest products. Forests cover over 60 percent of Pennsylvania land, placing Pennsylvania as the top producer of export grade hardwood in the country. Nearly $21.8 billion of Pennsylvania's revenue come from forest products and processing, including black cherry, red maple, red oak, and sugar maple trees (Pennsylvania Department of Agriculture, 2021). Annually, meat, poultry, and fish sales amount to $8.8 billion, and the advancements in biotechnology have turned Pennsylvania into a leader in plant and animal genetics as well as embryonic research (Pennsylvania Department of Agriculture, 2021). This success requires support for the agricultural workforce to ensure their health and safety which comes from a range of sources throughout Pennsylvania agencies and offices. These organizations must adapt to the ever-changing needs of agricultural workers.

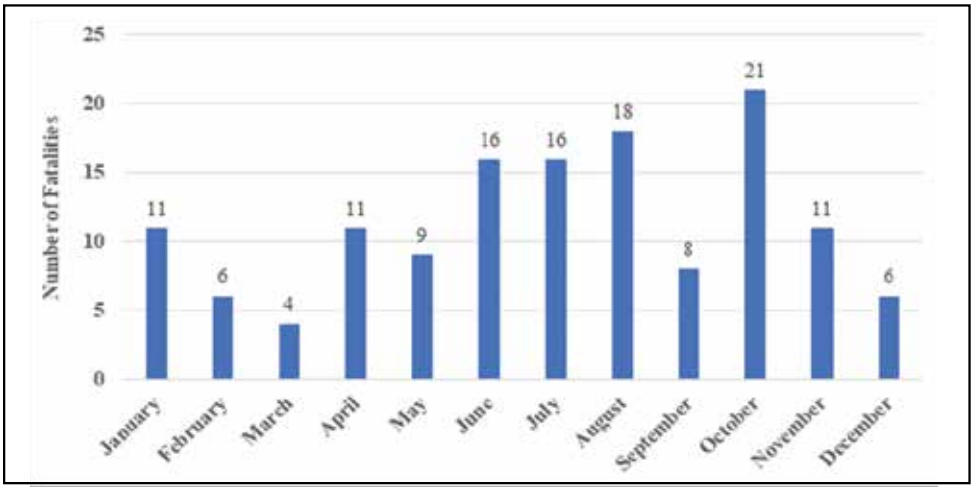
Agricultural Safety and Health Issues

Tractor rollovers are one of the most common types of farm accidents. Photo coutesy of the Iowa FACE Program.

With a rate of 21.4 deaths per 100,000 workers in 2016, agriculture is one of the most dangerous industries in the United States (Rural Health Information Hub, 2023). According to the Occupational Safety and Health Administration (OSHA), "farmworkers are at high risk for fatalities and injuries, work-related lung diseases, noise-induced hearing loss, skin diseases, and certain cancers associated with chemical use and prolonged sun exposure" (Centers for Disease Control and Prevention, 2018). On average, agricultural workers in the U.S. experience 100 non-fatal lost-work-time injuries every day (Rural Health Information Hub, 2019). While different hazards exist on farms, transportation incidents, including tractor rollovers, are the leading cause of agricultural work-related deaths (Rural Health Information Hub, 2023). Machinery caused 19 percent of farm fatalities. Persons, plants, animals, and minerals were responsible for another 12 percent, followed by other causes such as structures, surfaces, parts, materials, tools, instruments, and chemicals (Michael and Gorucu, 2023).

There were 137 Pennsylvania farm-related fatalities in the five years from 2015 to 2019, down from 145 fatalities in the five years prior (Michael and Gorucu, 2023). Males accounted for more than 91 percent of all fatalities. Combined, children aged 14 and younger and adults aged 65 and older accounted for 54 percent of the 137 fatalities. These deaths occurred most frequently in the morning, and in the summer and autumn during peak fieldwork and harvest seasons (Michael and Gorucu, 2023). Figure 1 shows fatalities by month for the 137 deaths from 2015-2019. October's harvest season leads in the number of deaths, followed closely by summer months when children and adolescents are out of school and more present on the farm (Michael and Gorucu, 2023). State farm-related deaths included 39 in 2020, 16 in 2021, 37 in 2022, and 33 in 2023, most associated with farm machinery and equipment (Michael et al., 2024).

Figure 1: Farm Fatalities by Month, 2015-2019



Source: Michael and Gorucu, 2023

Farmers and farmworkers are exposed to several chronic and acute health risks including:

- Exposure to chemicals;
- Exposure to high levels of dust, mold, and bacteria;
- Falls from ladders, farm equipment, and grain bins;
- Prolonged sun exposure;
- Joint and ligament injuries;
- Exposure to loud noises and sounds from machinery and equipment;
- Stress from environmental factors;
- Risk of heatstroke, frostbite or hypothermia; and
- Risk of electrocution.

Source: Rural Health Information Hub, 2023b

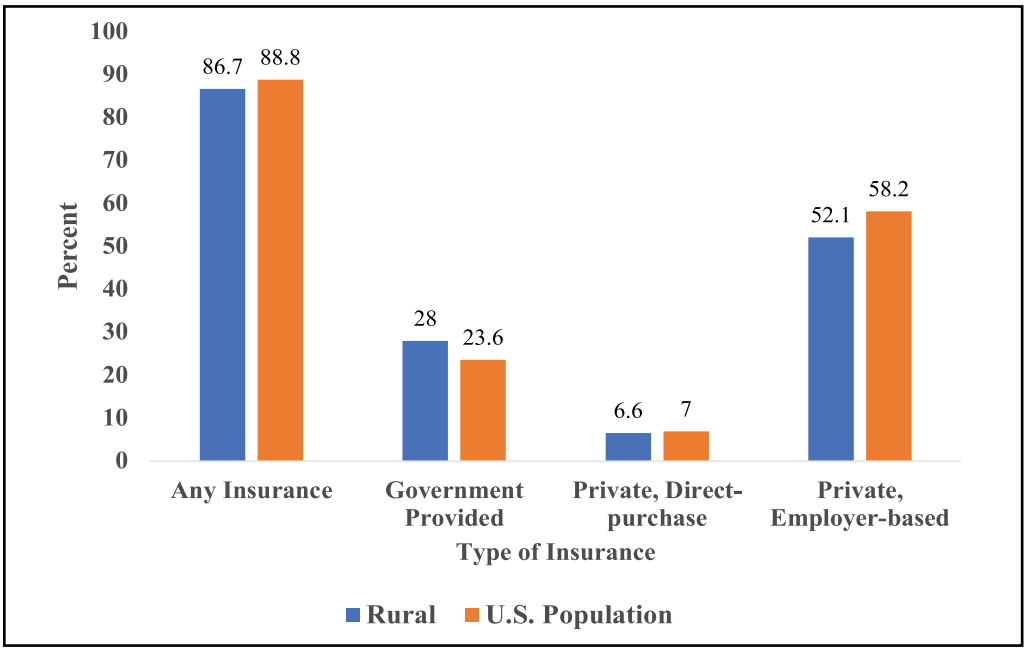
Many federal agencies focus on agricultural health and safety including the U.S. Department of Agriculture's National Institute of Food and Agriculture (NIFA), the National Institute for Occupational Safety and Health (NIOSH), and the Occupational Safety and Health Administration (OSHA) (Rural Health Information Hub, 2023b).

First responders and health care providers in rural areas where agriculture work is common must also be trained and prepared to treat agricultural-related injuries (Rural Health Information Hub, 2023b). Emergency personnel must be cautious when responding to agricultural accidents and be aware of hazards to prevent further injuries or fatalities (Rural Health Information Hub, 2023b).

Health Insurance

According to the U.S. Department of Agriculture (USDA), "most Americans with health insurance coverage receive it through their employers, and farm households are no exception…in fact, farmers are as likely as the general U.S. population to receive their health insurance through an outside employer" (U.S. Department of Agriculture, 2022). The rural population under age 65 is slightly less likely to purchase health insurance coverage directly from an insurance company and more likely to receive coverage from Medicare or Medicaid (Rural Policy Research Institute, 2022). Figure 2 illustrates the agricultural source of health insurance coverage in 2019, the latest year for which these data are available.

Figure 2: Source of Health Insurance Coverage, 2019

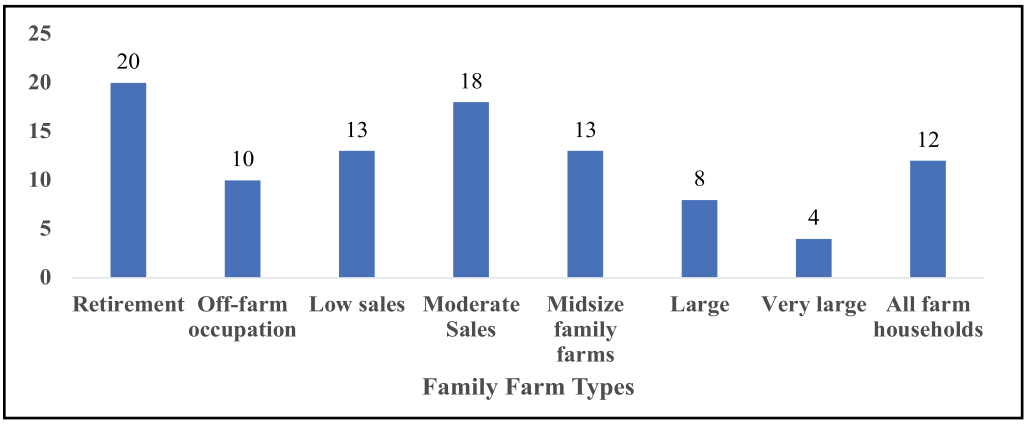


Note: Individuals may have more than one source of insurance

Source: Rural Policy Research Institute, 2022

Health insurance status among farmers can vary depending upon the size and type of farm. Smaller farms with moderate sales or small farms utilized as retirement farms (regardless of household member age) held the highest percentage of uninsured persons (Whitt et al., 2022) as displayed in Figure 3.

Figure 3: Percent of Uninsured Household Members by Farm Type, 2021



Source: Whitt et al, 2022

Health insurance is essential for maintaining optimal health and is an important indicator of a population's overall wellbeing. It is critical for agricultural workers to have comprehensive health insurance coverage due to their elevated risk of injury and illness and associated health acute and chronic health care needs (U.S. Department of Agriculture, 2022).

Mental Health

"Due to environmental, financial, and social factors, there are a number of stressors inherent in farming and farm ownership…in addition to physical injuries, farmers are also at risk of behavioral and mental health issues such as anxiety, depression, substance use, and death by suicide" (Rural Health Information Hub, 2023). Mental health and wellness is an emerging need for agricultural workers. Farm owners are subjected to many uncontrollable factors such as market prices, government regulations, drought, floods, and disease outbreak (AgrAbility, 2023). The stress these factors place on farm workers can lead to acute and chronic mental health conditions such as depression, anxiety, and addiction (AgrAbility, 2023). In fact, farmers have one of the highest suicide rates of any profession, potentially as a result of a lack of control over influences such as weather, markets, and policies that impact farming (Grant, 2021). From 2012 to 2017, 900 Pennsylvania dairies closed, ending many long-standing family farms, and the crisis was exacerbated by the COVID-19 pandemic when dairy farmers were forced to dump their milk and hog farms had to kill their unused livestock because restaurants and schools could not operate at full capacity (Grant, 2021). It is essential that health care providers and mental behavioral health counselors understand agricultural issues and to have ties to local resources that farmers can easily access (Grant, 2021).

Factors such as market prices, government regulations, drought, floods, and disease outbreaks are stressors that can put farmers at risk for mental and behavioral consequences.

Migrant Farm Workers

A migrant farmworker is defined as an individual who is required to be absent from a permanent place of residence for the purpose of seeking remunerated employment in agricultural work. "Migrant farmworkers" are also called "migratory agricultural workers" or "mobile workers." Seasonal farmworkers are individuals who are employed in temporary farm work but do not move from their permanent residence to seek farm work; they may also have other sources of employment (Migrant Clinicians Network, 2023).

An estimated 2.4 million hired farmworkers are in the U.S. during any given year, including migrant, seasonal, year-round, and guest program workers (Migrant Clinicians Network, 2023). Approximately 14,000 to 15,000 migrant farm workers travel to Pennsylvania to harvest crops (Pennsylvania Rural Health Association, 2016).

Migrant farm workers come to the U.S. in a variety of ways. While some may cross the border informally, others are hired through visa programs such the H2A Temporary Agricultural Program. This program allows U.S. employers who meet specific regulatory requirements to bring foreign nationals to the U.S. to fill temporary agricultural jobs (U.S. Citizen and Immigration Services, 2022).

Migrant farm workers live in a variety of settings, which may be owned, leased, or operated by an employer or a farm labor contractor and occupied by two, four or more unrelated persons. These housing units or camps may fall under state or federal guidelines depending on the type of visa that is held, such as H2A, Non-H2A Seasonal, Non-H2A Year-Round, H2A, and single-family housing units. In 2020, Pennsylvania had 360 farm labor camps housing over 4,300 seasonal and guest workers (Fernandez, 2020).

While these seasonal jobs contribute significantly to Pennsylvania's economy, migrant workers typically do not receive promotions, raises, benefits, or health insurance through their employers. As discussed earlier in this chapter, agricultural producers can be challenged to support health insurance for their families and provide those benefits to employees. The state's Medicaid program may not cover most health care costs for migrant workers due to a variety of Pennsylvania residency status issues but will cover emergency medical expenses if needed (Pennsylvania Rural Health Association, 2016). A more comprehensive rules review for specific medical assistance available to migrant workers and their families is available from the Health Care for Immigrants manual (Casserly, 2017) and the Pennsylvania Health Law Project. Transportation to medical care is limited and the costs of that travel and for medical care can present significant barriers. As a result, some migrant workers may not seek care for acute or chronic conditions.

According to the information from the Rural Health Information Hub, migrant and seasonal agricultural workers and their families face unique health challenges which result in significant health disparities. These challenges can include:

- Hazardous work environments;
- Poverty and insufficient support systems;
- Inadequate or unsafe housing;
- Limited availability of clean water and septic systems;
- Inadequate health care access;
- Continuity of care issues;
- Lack of insurance;
- Cultural and language barriers;
- Fear of using health care due to immigration status; and, as noted previously,
- Lack of transportation.

Migrant and seasonal agricultural workers and their families typically do not have access to health insurance and may face unique health challenges without options for care.

Migrant farm workers experience serious health problems including diabetes, malnutrition, depression, substance use, infectious diseases, pesticide poisoning, and injuries from work-related machinery. These critical health issues are exacerbated by the migratory culture of this population group, which increases isolation and makes it difficult to develop a relationship with a health care provider, maintain treatment regimens, and track health records (Rural Health Information hub, 2021).

Elk County – County Courthouse

Keystone Rural Health Center (Keystone Health), a Federally Qualified Health Center (FQHC), located in southcentral Pennsylvania, is the sole federally funded grantee in Pennsylvania that provides services to migratory and seasonal agricultural workers across the Commonwealth. The program, the Keystone Statewide Agricultural Worker Program, provides primary care services to all migratory and seasonal agricultural workers in the state. The program coordinates, to the best of their ability, specialty care, pharmaceuticals, and dental care; inpatient or outpatient hospital care are not supported. Another grantee, a small FQHC in Kennett Square (in southeast Pennsylvania), serves mushroom workers in that area of the state (Keystone Health, 2021, 2023). Nationwide Insurance funds equipment for grain bin rescues to local emergency response systems to recover farmers and farm workers who are entrapped in grain bin storage units, saving them from suffocation.

Farm Safety Programs in the State

In addition to the Keystone Statewide Agricultural Worker Program, several other programs assist Pennsylvania's agricultural workers. The Pennsylvania Office of Rural Health administers the Penn State Worker Protection Standard Program,, which provides technical and compliance assistance to agricultural producers and employees to ensure compliance with the Federal Environmental Protection Agency Worker Protection Standard (Pennsylvania Office of Rural Health, 2023), which strictly mandates and enforces the correct use and storage of chemicals on farms. The program develops culturally relevant training materials for Anabaptist populations as well as foreign-born workers, giving all agricultural workers access to education about the Worker Protection Standard, pesticide safety, general farm safety, and other regulations (Rural Health Information Hub, 2023a).

Penn State provides extensive support for farm owners and workers. One program, AgrAbility for Pennsylvanians (AgrAbility PA), is a statewide partnership between Penn State Extension and United Cerebral Palsy (UCP) Central PA that provides technical assistance and support for famers with disabilities. This program is part of a network of AgrAbilty initiatives across the country, funded by the USDA and NIFA, to implement consumer-driven, vital education, assistance, and support to farmers and ranchers with disabilities. Penn State Extension also develops and leads a number of programs to address farm safety prevention and supports.

SUMMARY AND RECOMMENDATIONS

Agriculture is one of the most dangerous industries in the United States, as agricultural workers are exposed to chronic and acute health risks such as exposure to chemicals, exposure to high levels of dust, mold, and bacteria; falls from ladders, farm equipment, and grain bins; prolonged sun exposure; joint and ligament injuries; exposure to loud noises and sounds from machinery and equipment; stress from environmental factors; risk of heatstroke, frostbite, or hypothermia; and risk of electrocution (Rural Health Information Hub, 2023). In addition to physical injuries, agricultural workers are also at risk of behavioral and mental health issues such as anxiety, depression, substance use, and death by suicide (Rural Health Information Hub, 2023).

Pennsylvania has a long history of success in its agricultural, food, and lumber industries, bolstered by its agricultural workforce and resources. These industries require support for the agricultural workforce to ensure their health and safety.

Montour County – Yellow Headed Blackbird

Pennsylvania agriculture relies heavily on migrant and seasonal workers during various crop-harvesting seasons. There are several types of migrant and seasonal workers who perform different duties, and while these seasonal jobs contribute significantly to Pennsylvania's economy, migrant workers are provided no health insurance through their employers.

Pennsylvania's Medicaid program may not cover most of the health care costs for migrant workers but will cover emergency medical expenses if necessary (Casserly, 2017). Most full-time farmers are as likely as the general U.S. population to receive their health insurance through an outside employer, though insurance coverage rates do vary slightly across agricultural specialties (U.S. Department of Agriculture, 2021).

Many federal agencies focus on agricultural health and safety including NIFA, NIOSH, and OSHA. These federal agencies provide various education, trainings, resources, and prevention projects that are intended to reduce and prevent agriculture-related injuries and deaths (Rural Health Information Hub, 2023). All farm workers should take advantage of these resources in order to protect themselves, their employees, and their families from farm-related injuries or deaths. In addition to these federal resources, first responders and health care providers in rural areas where agriculture work is common must also be trained and prepared to respond to and treat agricultural-related injuries while also practicing caution as to avoid further injury or death from occurring (Rural Health Information Hub, 2023). It has also been recommended that mental health counselors understand agricultural issues and have ties to local resources that farmers can easily access to address any of their mental health needs (Grant, 2021). Those supports, together with programs at Penn State and other organizations in the state, can support the health and safety of one the state's most important sectors, agricultural production.

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THE ANABAPTIST AS A SPECIAL POPULATION IN RURAL PENNSYLVANIA

The Anabaptist community, predominately Amish and Mennonite, is an important part of rural Pennsylvania culture. While these communities are significant to rural Pennsylvania, it is challenging to estimate the specific number of people who identify as Anabaptist, Amish, Plain, all of these, or none of these. In 2022, approximately 86,965 Amish lived in Pennsylvania in 550 church districts, as shown in Table 1 (Young Center for Anabaptist and Pietist Studies, 2022a). For more information and robust writings on these communities, see works by Don Kraybill and Steve Nolt, scholars who have led Anabaptist studies at The Young Center for Anabaptist and Pietist Studies and are nationally recognized experts.

Table 1: Pennsylvania Amish, 2022

County	Common Settlement Name	Population (rounded to nearest 5)
Adams	Littlestown	40
Blair	Tyrone	365
Bradford	Canton	135
Cambria	Nicktown	355
Centre	Aaronsburg	325
	Brush Valley	1220
	Penns Valley	600
Clarion	Emlenton/Sligo	365
	Knox	420
	Rimersburg	30
Clearfield	Curwensville	285
	Westover	220
Clearfield/Jefferson	Troutville	2,620
Clinton	Sugar Valley	1,275
Clinton/Centre	Nittany Valley	1,600
Columbia/Montour	Bloomsburg/Danville	865
Crawford	Atlantic	1,455
	Conneautville	210
	Guys Mills	155
	Linesville	375
	Saegertown	215
	Spartansburg	2,525
	Union City	250
Cumberland/Franklin	Newburg/Cumberland Valley	1,110
Dauphin	Lykens Valley	1,740
Erie	Edinboro	50
Forest	Tionesta/Fryburg	360
Franklin	Path Valley	725
Indiana	Laurel Run/Homer City	70
	Punxsy/Smicksburg	3,070
Indiana/Jefferson	Johnsonburg/Rossiter	565
Jefferson	Hazen/Brookville	485
	Ringgold	245
Juniata	Mifflintown/Port Royal	1,315
Lancaster/Chester/York	Lancaster	43,010
Lawrence	Enon Valley	90
Lawrence/Mercer	New Wilmington	2,890
Lebanon	Lebanon County/Myerstown	1,395
Lycoming	Nippenose Valley	410
	White Deer Valley	915
McKean	Turtlepoint	155

Mercer	Carlton	150
	Fredonia	360
	Greenville	160
	Mercer/Jackson Center	790
	Stoneboro	55
Mifflin	Big Valley	4,240
	Ort Valley	35
Montour/Northumberland	Turbotville/Danville	170
Northumberland	Northumberland/Dornsife	540
Perry	Loysville/Blain	1,110
Potter	Shinglehouse	20
	Ulysses	470
Snyder	McClure	395
Somerset	Somerset-Garrett	1,485
Tioga/Bradford	Millerton	30
Union	Winfield	180
Venango	Clintonville	570
Warren	Sugar Grove	1,285
York	Glen Rock/New Freedom	215
Total Amish Population		86,965

Source: Young Center for Anabaptist and Pietist Studies, 2022a

Members of the Plain community often wear distinctive, plain dress, whereas some Mennonite or Brethren denominations often do not have these distinguishable features in their communities. Mennonite communities tend to have assimilated into mainstream culture more than traditional groups, and they are more accepting of contemporary clothing, higher education, and modern technology (Young Center for Anabaptist and Pietist Studies, 2023). More conservative Mennonite groups and some Brethren groups may wear plain clothing, but they do drive cars, operate tractors, and use telephones and electricity in their homes (Young Center for Anabaptist and Pietist Studies, 2023).

Estimates of Old Order Mennonite populations, who use horse-and-buggy transportation, are summarized in Table 2. Old Order communities are more traditional and do not permit electricity, television, radio, or telephones in their home, and they believe modern automobiles give undesirable access to the rest of the world and its influence (LancasterPA.com, 2023). Old Order Mennonite groups often use horse-and-buggy transportation, although other groups of Mennonites commonly permit contemporary influences and modern technology (Young Center for Anabaptist and Pietist Studies, 2023c).

Table 2: Pennsylvania Old Order Mennonite (Horse-and-Buggy), 2018

Congregation Name	Number
Groffdale Mennonite Conference	10,149
Stauffer Mennonite Church	1,448
Reidenbach Mennonite Churches	243

Source: Young Center for Anabaptist and Pietist Studies, 2022b

These special populations have traditions and histories that differ from their rural neighbors, but they are impacted by the health and well-being of those rural neighbors and surrounding communities. Anabaptist communities emphasize a literal translation of the New Testament and the teachings of Jesus Christ, and a long history of religious persecution reinforced a divide between civil governments and Anabaptist community. The encouragement of mutual aid within their community creates a dependency upon each other during times of difficulty. In their reliance upon their church community, the Amish decline participation in Social Security and commercial insurance coverage, believing that these programs undermine their faith in God (Young Center for Anabaptist and Pietist Studies, 2023a). Without commercial insurance, Amish communities may utilize an informal aid program to assist their community members with large hospital bills. Local congregations will collect a special offering through door-to-door visits by the deacon to each family in the district, or events such as public benefit auctions or bake sales may be held to raise funds (Young Center for Anabaptist and Pietist Studies, 2023d).

Amish and Mennonite communities tend to have fewer health conditions compared to the general public, including lower asthma rates and fewer poor mental health days, but still face common conditions such as high cholesterol, high blood pressure, diabetes, and cancer (Yost, Thompson, Miller, and Abbott, 2016). Religious beliefs distance many members of this population from the typical health care practices of non-Anabaptist rural Pennsylvanians. While health care practices can vary widely among the many Anabaptist communities and individual families, Anabaptist groups believe the New Testament God is the ultimate healer, and therefore they are often willing to yield to the mysteries of divine providence (Young Center for Anabaptist and Pietist Studies, 2023b). In a survey, members of Anabaptist communities described health as a "gift from God" that presents itself as the ability to work and fulfill duties (Garrett-Wright, Main, and Jones, 2020). They often turn to written materials from professional and lay sources for information about health, and they rely on natural remedies they view as provided by God (Garrett-Wright, Main, and Jones, 2020). Many families utilize modern medical services, while others prefer alternative medicine such as vitamins and supplements, homeopathic remedies, healthy foods, reflexologists, and chiropractors (Young Center for Anabaptist and Pietist Studies, 2023b). These health habits are shaped heavily by unique cultural factors, including a preference for natural antidotes, a lack of information regarding modern health care, an uncomfortableness or unfamiliarity in high-tech settings, and a willingness to suffer and lean on the providence of God. Yet, the Anabaptist community also shares cultural factors with other rural Pennsylvanians, such as conservative rural values and difficulties accessing health care, which change their relationship with health care practices (Young Center for Anabaptist and Pietist Studies, 2023b).

Members of Anabaptist communities describe health as a "gift from God" that presents itself as the ability to work and fulfill duties.

Mifflin County – Belleville Sale

These influences leave Anabaptist communities less likely to seek medical treatment for minor aches or illnesses, for which they will more likely turn to folk remedies and herbal teas. While they are willing to utilize surgery and high-tech treatment in some circumstances, Anabaptist communities are less likely to use life-saving medical interventions or to intervene when an elderly member faces a terminal illness. In these cases, the community opts to yield to the will of God (Young Center for Anabaptist and Pietist Studies, 2023b). Under some circumstances, the Amish community may travel out of the country to locations such as Mexico for treatments not authorized in the U.S., especially for cancer diagnoses (Young Center for Anabaptist and Pietist Studies, 2023b). This reliance on homeopathic treatments provides business opportunities for Amish entrepreneurs who operate health food stores, but also leaves the community vulnerable to outsiders who market questionable cure-all products to entice Amish customers (Young Center for Anabaptist and Pietist Studies, 2023b).

Amish and Mennonite populations additionally face unique challenges due to certain types of genetic conditions. While all populations carry genetic sequence variations to some degree, Plain communities have a long history of isolation in their communities that is now associated with a high prevalence of some genetic diseases (Clinic for Special Children, 2023). Through research of genetics in Plain populations, scientists have discovered genetic disorders that were previously unidentified, leading to treatments not only for Plain groups but for people around the world (Clinic for Special Children, 2023). The Clinic for Special Children, a leader in this research, has provided findings on the impact of genetics in conditions such as spinal muscular atrophy, manic-depressive illness, hearing loss, and familial hypercholesterolemia (Clinic for Special Children, 2023). Continued research and support for genetic health care services will be necessary to identify best practices within Plain populations and outside their communities.

Children in Anabaptist communities are at particular risk for trauma injuries, an issue that groups such as the Lancaster Amish Safety Council and the Pennsylvania Amish Safety Committee seek to address. They noted that young children who helped with farm work or were playing in barns were suffering head injuries from falling through hay holes in barns, through which hay is thrown from the upper barn level to animals 10 to 12 feet below. Members of the Anabaptist community and surrounding health care providers collaborated to create hay hole covers from netting, which were effective in reducing the number of head injuries caused by hay hole falls (Kimmel, 2017). Other initiatives have focused on reducing traumatic injuries caused by farm equipment, as well as educating farmers on the brain development of children so they can appropriately assign tasks to children with minimal risk (Kimmel, 2017). Such programs require a respectful, accommodating relationship among the Anabaptist community, health care providers, and health researchers to ensure both safety and culture are secure.

SUMMARY AND RECOMMENDATIONS

Although the health care practices differ within these Anabaptist populations, it is important for health care providers and public health efforts to reach these communities where they are. Anabaptist communities desire a trusting relationship with medical providers, just as all rural Pennsylvanians do, and they have concerns about accessibility and cost of care (Garrett-Wright, Main, and Jones, 2020. Resources must be dedicated to all populations in rural communities so that health status can be improved across everyone living in rural Pennsylvania.

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AGING IN RURAL PENNSYLVANIA

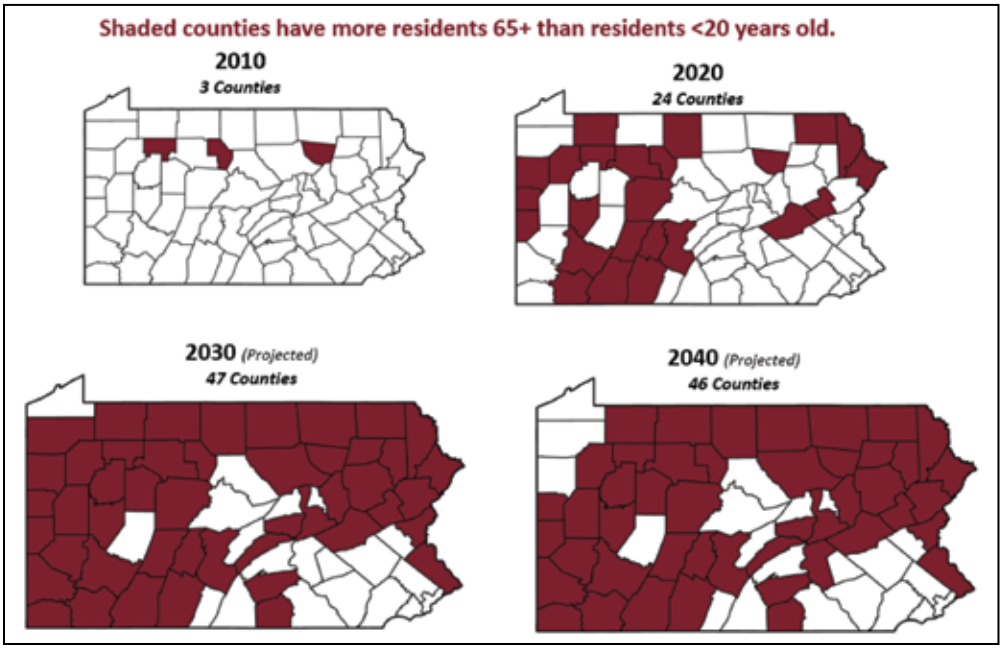
Adults are aging across the United States and the number of adults aged 65 and older is expected to increase from 46 million in 2020 to 90 million by 2050 (Rural Health Information Hub(a), 2019). As the remainder of the baby boom cohort reaches age 65 by 2030, the number of older adults in the U.S. will increase by nearly 18 million and one in five adults will be 65 years of age or older.

While this presents challenges across the country, it is of special consideration in rural areas since traditionally, rural residents tend to be older than their urban counterparts. In 2020, the percentage of Pennsylvanians over the age of 65 was 18 percent in urban areas and 20 percent living in rural areas (Center for Rural Pennsylvania, n.d.). According to the U.S. Department of Agriculture (USDA), "many rural counties grow older because they attract retirees, usually because they are scenic or recreation destinations" (Cromartie, 2018). Furthermore, rural areas continue to age due to large waves of younger adults leaving rural counties for more urban or suburban environments (Cromartie, 2018) and because retirees may choose to move to rural areas for the opportunity to continue their independence (Rural Health Information Hub, 2019). Between 2010 and 2020, urban areas were expected to increase in population by approximately nine percent, while rural areas were anticipated to see an increase in population by two percent (Pendall, et al., 2016). It is predicted that between 2020 and 2030, rural populations will increase only by one percent, while urban regions are expected to see an eight percent growth of population (Pendall, et al., 2016). This variation is due, in part, to the outmigration of young adults to more urban areas, which affects current and future population trends (Cromartie, 2018).

Compared to urban areas, rural counties have higher rates of older adults.

Figure 1 shows the projected number of Pennsylvania residents over age 65 from the years 2010 to 2040.

Figure 1: Percent Change in Persons 65 Years Old and Older, 2010 to 2040 (Projected)



Source: Decennial Censuses, U.S. Census Bureau; and Pennsylvania State Data Center; compiled by the Center for Rural Pennsylvania, 2023

The health care needs of an aging population differ from those of the general population and include an increased need for long-term care and social services. "As the U.S. population ages, the increasing prevalence of chronic disease and complex medical conditions will have profound implications for the future health care system" (Dall, et al., 2013). Older adults are more likely to have multiple chronic health conditions such as diabetes, hypertension, and arthritis with an estimated 90 percent of adults over age 65 having a diagnosis of at least one of these conditions. Health equity also becomes more pronounced, as was seen during the COVID-19 pandemic, since older adults with chronic disease are affected and more challenged in rural areas.

Nursing home residents in rural areas are more likely to face dementia, depression, developmental disability, and psychiatric diagnoses (Rural Health Information Hub, 2021). "Between 2010 and 2030 there will probably be an additional twenty-seven million Americans with hypertension, eight million with coronary heart disease, and three million with heart failure" (Dall, et al., 2013). As a result, health care specialties such as vascular surgery and cardiology services are projected to grow in demand by 20-30 percent as the aging population and chronic disease prevalence increase (Dall, et al., 2013). Access to high quality, comprehensive, and team-based care is critical to the provision of older adult services, as they rely on a team of providers to coordinate their care and allow them to age in the comfort of their chosen community (Rural Health Information Hub, 2019).

Access to high quality, comprehensive, and team-based care is critical to the provision of older adult services.

Aging in place, the preferred living situation of nearly 90 percent of older adults, allows individuals to remain in their homes or communities "safely, independently, and comfortably." Older adults who age in place can continue to receive support from, and provide support to, their communities while experiencing increased life satisfaction and self-esteem. In rural communities, older individuals choosing to age in place may face many of the same challenges as rural residents of all ages—transportation, coordination of care, food, and financial insecurity, and more. The outmigration of younger residents, who provide 30 percent of care for older adults, creates a gap in health and other support services (Rural Health Information Hub, 2021).

For those older adults residing in rural assisted living and long-term facilities or retirement communities, location can significantly affect options for care. Melnick and colleagues (2013) noted a greater number of nursing home beds per aging adult in rural areas compared to urban areas but a lower level of community-based and in-home care options. However, in some rural areas, there may be fewer local options for nursing homes or assisted living facilities. As a result, aging adults and their families may need to consider a facility outside of their community or provide those services within the family (Rural Health Information Hub, 2021). Many aging adults in rural Pennsylvania rely on public insurance options such as Medicare and Medicaid to pay for health care services, which may limit their ability to pay for home care as opposed to those utilizing private insurance (Melnick, et al., 2013).

A study conducted in 2023 at the University of Pennsylvania's Population Aging Research Center demonstrated that, for an increasing number of rural older adults with disabilities, family was their only source of assistance with daily activities such as eating, bathing, and shopping (Tachibana, 2023). At 45 percent in rural areas, this family care support system exceeded the 40 percent provided in urban areas.

Lawrence County – Recreation

In January 2020, the state's Community HealthChoices (CHC) program implemented a mandatory managed care program for those requiring long-term care services and supports for Medicare and Medicaid beneficiaries (Pennsylvania Department of Human Services, 2024b). Included in the CHC is Pennsylvania's Living Independence for the Elderly (LIFE) program, which provides options for older persons to live independently and meet their health and personal needs (Pennsylvania Department of Human Services, 2024a). These benefits include personal care assistance, meal delivery, home modifications, and personal emergency response systems (American Council on Aging, 2024).

Like other facilities in rural Pennsylvania, long-term care facilities face challenges such as provider shortages, geographic isolation, and transportation limitations. The majority of long-term care facilities are not staffed full time by physicians, which could increase the potential for unnecessary hospitalizations. The use of telemedicine presents an opportunity for consultation with off-site medical professionals and the ability to maintain these critical services in rural communities. Telehealth is a remote monitoring option for aging adults and those with disabilities to increase independent living options (Rural Health Information Hub, 2021).

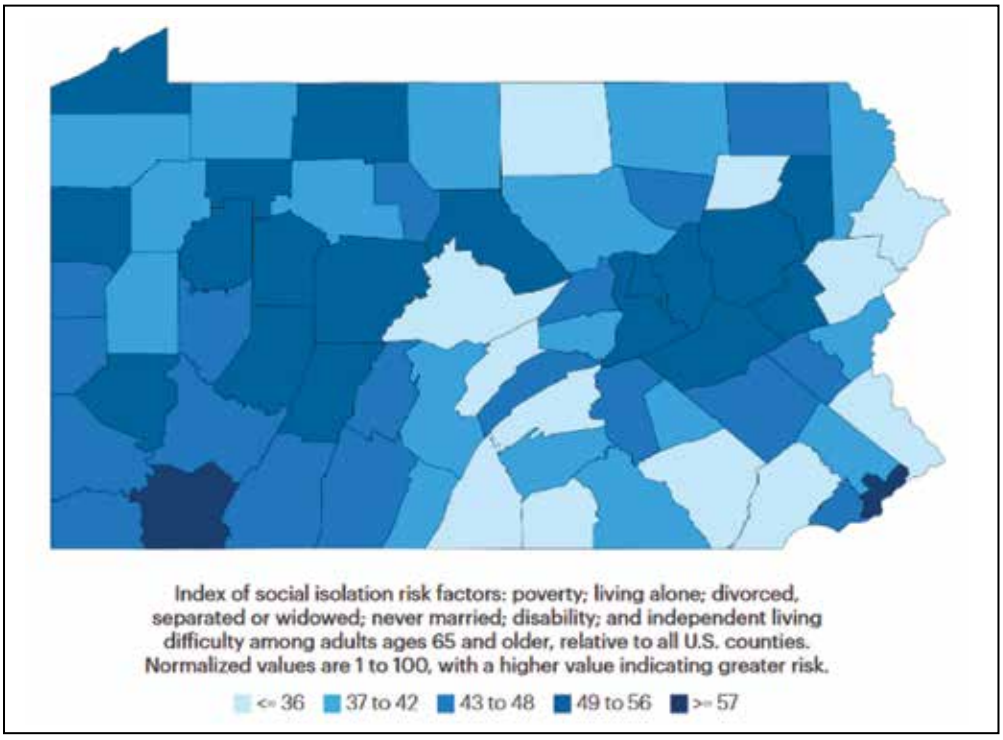
The Pennsylvania Department of Aging (PDA) provides and coordinates a variety of services to address the needs of older adults. To support the health and wellness of older persons, the department administers chronic disease self-management, strength, balance, fall prevention, exercise programs, and more. PDA also administers two prescription assistance programs, PACE and PACENET, which assist older persons with accessing and paying for medications. For aging adults who choose to age in place, the Help at Home, also known as the Options Program, ensures that residents aged 60 and older are provided with necessary support and resources such as home health, home modifications, shopping, laundry, and meals. PDA supports needs assessments to determine qualification for these resources; eligibility is not based on income. PDA educates older adults on a variety of supplemental meal programs, including the Pennsylvania Senior Farmers Market Nutrition Program, the Supplemental Nutrition Assistance Program (SNAP), meals at senior community centers, and more. These programs are funded through a combination of state and federal dollars.

For many older adults, specifically for those in rural areas, transportation can be a significant barrier to aging in place. PDA provides transportation assistance programs such as the Shared Ride Program and coordinates with community-based services like the county Area Agencies on Aging (AAA) to ensure access to transportation to appointments, adult day services, and other programs. The Pennsylvania Caregiver Support Program is a critical resource that addresses the needs of caregivers as they assist aging adults. Supports such as reimbursement for out-of-pocket caregiving costs, education, counseling, and others are available through the AAAs (Pennsylvania Department of Aging, 2023).

Loneliness due to lack of transportation, loss of friends, chronic illness, hearing loss, or several other factors may lead to a degradation in health. A 2021 study showed that more than one-third of adults over the age of 45 feel lonely, and one-fourth of adults over age 65 are considered socially isolated (Centers for Disease Control and Prevention, 2021). Social isolation has been shown to significantly increase an individual's risk of premature death, rivaling that of smoking, obesity, and physical inactivity (Centers for Disease Control and Prevention, 2021). These loneliness and isolation challenges include a 50 percent increase in dementia, a 32 percent increase in stroke, and higher rates of depression, anxiety, and suicide (Centers for Disease Control and Prevention, 2021).

In Pennsylvania, social isolation for those over age 65 is particularly acute in both the inner large cities and most rural counties as depicted in Figure 2.

Figure 2: Pennsylvania Risk of Social Isolation by County



Source: United Health Foundation, 2023

SUMMARY AND RECOMMENDATIONS

As the rural population continues to age, it is critical that the infrastructure and support systems are in place to support residents as they age in their preferred location, whether in their own home, a quality facility, or a combination of options. It is additionally important that advocacy for rural aging services and support continues to ensure that quality research and attention is given as this population continues to grow (Krout, n.d.). Utilizing technology to reach rural communities through telehealth and tele-monitoring, enhancing comprehensive and personalized services through investments in rural-specific research, and implementing community-based programs to reduce social isolation within rural populations should be fully explored (University of Illinois Chicago, 2021). PDA has made great strides in ensuring that all rural residents and their caregivers have access to support programs and other resources, and through additional advocacy and funding, can continue to expand these offerings.

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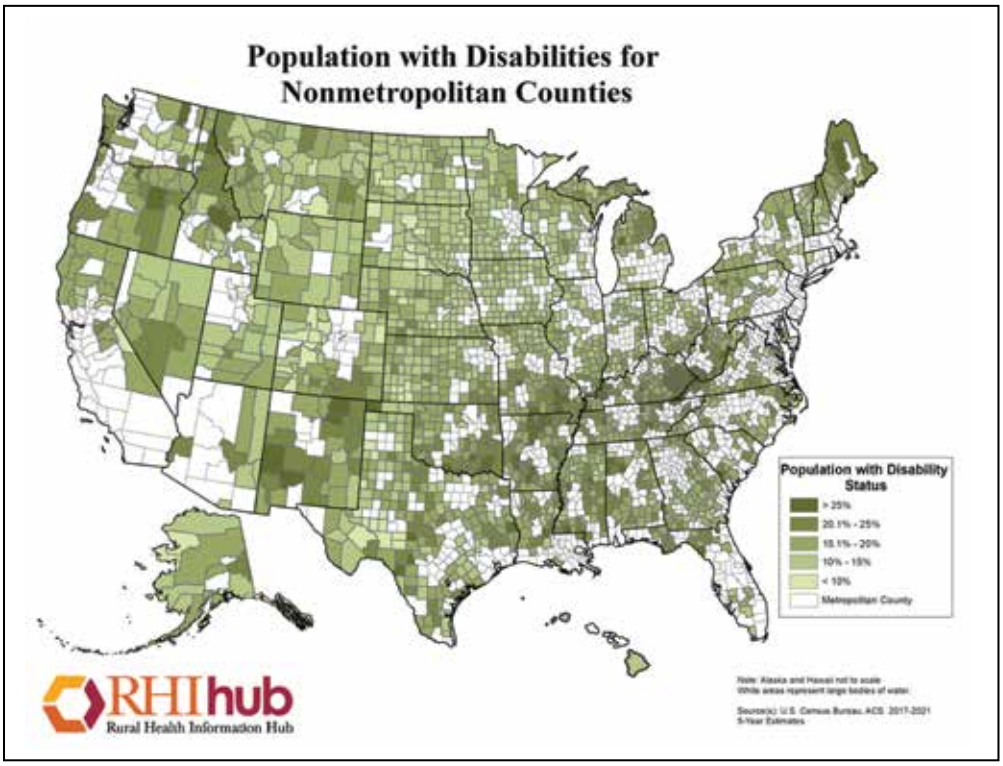
DISABILITIES IN RURAL AMERICA AND PENNSYLVANIA

The University of New Hampshire Institute on Disability estimates that approximately 3.2 million people living in rural America, or about 18.0 percent of the rural population, are individuals with disabilities (Institute on Disability, 2023).

Figure 1: Population with Disabilities for Nonmetropolitan Counties



Source: Rural Health Information Hub, 2023

According to the Rural Health Information Hub, "people with disabilities who live in rural areas where essential services are scarce often face difficulties seldom encountered in urban areas." Services and resources such as adequate housing, employment, transportation, educational programs, and specialized health care often are limited in many parts of rural America. Individuals with disabilities living in rural regions typically rely on various community organizations, health care facilities, and local government to utilize the limited resources that provide the services they require.

Individuals with Disabilities in Rural Pennsylvania

The Pennsylvania Developmental Disabilities Council (PADDC) is an organization that "engages in advocacy, systems change, and capacity building for people with developmental disabilities and their families" (Pennsylvania Developmental Disabilities Council, 2023). The PADDC is dedicated to:

- Support people with disabilities in taking control of their own lives;
- Ensure access to goods, services, and support;
- Support communities so that all people belong;
- Empower people with all disabilities;
- Promote the understanding of the life experiences of people with disabilities; and
- Pursue equity for all people.

Source: Pennsylvania Developmental Disabilities Council, 2023

Fayette County - Fort Necessity

In 2020, the PADDC, in collaboration with the Pennsylvania Health Access Network (PHAN), released Healthcare Access for People with Disabilities in Rural Pennsylvania. This report was developed as part of the Rural Healthcare Access Project, a PHAN initiative funded by a grant from the PADDC. The Rural Healthcare Access Project is a PHAN initiative focused on improving access to health care for people with disabilities living in rural Pennsylvania (Pennsylvania Developmental Disabilities Council, 2023). The report was based on over 300 conversations with rural community members with disabilities, their family members, caregivers, and other community-based organizations throughout rural Pennsylvania.

This report included five major findings:

- Getting the Right Information is Often a Fundamental Barrier
  - Health care providers do not always provide information or referrals to community resources; therefore, information is often difficult to access or unavailable.
- Health Care Networks Often Cannot Accommodate Local Need
  - Some providers are unwilling to treat people with disabilities, resulting in wait times that can be one to two years or more for receiving appropriate treatment. Individuals with disabilities who are Medicaid recipients are even more limited in their provider options and face even longer wait times.
- Access to Transportation is Crucial to Accessibility
  - Rural Pennsylvanians with disabilities reported commute times of one to three hours, each way, to access services and noted that the Medical Assistance Transportation Program (MATP) is not always an available option.
- A Good Relationship with One's Health Care Provider is Essential
  - While many providers provide excellent care to patients with disabilities, others may benefit from additional training and education on caring for and treating individuals with disabilities.
- Insurance Companies Can Limit Access to Health Care
  - It can be challenging for insurance companies to authorize necessary treatments or equipment. Consumers reported insurance companies denying claims, questioning medical necessity of treatments and equipment, and forcing patients to try less effective treatments first.

Source: Pennsylvania Developmental Disabilities Council, 2023

The PADDC and PHAN composed six recommendations to help alleviate these challenges facing individuals with disabilities living in rural Pennsylvania. These recommendations are:

- Increase funding to rural health systems;
- Use consumer experiences as a roadmap for policy shifts;
- Provide education and support to consumers in navigating the health care system;
- Increase provider education and competency;
- Make information about the health care system more accessible by consolidating, better publicizing, and utilizing various accessible formats that can be easily understood; and
- Create opportunities for direct communication between consumers, providers, insurance companies, and officials.

Source: Pennsylvania Developmental Disabilities Council, 2023

In addition to the efforts of the PADDC and PHAN, many other Pennsylvania organizations and agencies have developed studies and programs to better assess and accommodate individuals with disabilities in rural Pennsylvania. One partnership surveyed residents with disabilities, their family members, and caregivers on their experience with the health care system and assessed effectiveness in addressing the health care needs of rural people with disabilities (Pennsylvania Office of Rural Health, 2023). These efforts across the state are a crucial step in ensuring improved access to and quality of health care for all people with disabilities living in rural Pennsylvania.

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HOMELESSNESS IN AMERICA

According to the Council of Economic Advisers (2019), more than half a million people go homeless on a single night in the United States. It is estimated that 65 percent of homeless individuals are found in homeless shelters, while the remaining 35 percent are unsheltered, living in places unintended for human habitation such as sidewalks, parks, cars, or abandoned buildings (Council of Economic Advisers, 2019). Homelessness is most often the result of individuals experiencing desperate situations or extreme hardship potentially caused by substance abuse disorders, untreated mental illness, or unintended consequences from well-intentioned policies (Council of Economic Advisers, 2019).

Vulnerable Populations for Homelessness

Many factors may place certain individuals at higher risk for homelessness, such as being a veteran, single-mother, or unemployed. The U.S. Department of Housing and Urban Development (HUD) claims in their 2019 Annual Homeless Assessment Report (AHAR) to Congress that on a single night in January 2019, 37,085 veterans were experiencing homelessness in the U.S. (Nisar et al., 2020). Between 2018 and 2019, Pennsylvania saw one of the largest decreases of homeless veterans at -12.7 percent (Nisar et al., 2020). The most recent data suggest that there are 857 per 10,000 veterans experiencing homelessness in Pennsylvania (Nisar et al., 2020).

Families are the fastest growing segment of the homeless population and account for approximately 40 to 50 percent of the nation's homeless (Family Gateway, 2023). The most common composition of a homeless family is a single mother and two children (Family Gateway, 2023). Over 90 percent of homeless single mothers report being physically and/or sexually abused during their lifetime (Family Gateway, 2023). In Pennsylvania, many support services are available to single mothers such as mortgage and foreclosure assistance, rental subsidies and vouchers, and energy and gas company programs that can help prevent single mother and family homelessness within the state (U.S. Department of Housing and Urban Development, n.d.). However, these resources and services may be unknown or difficult to access.

Families, especially single mothers with two children, are the fastest growing segment of the homeless population.

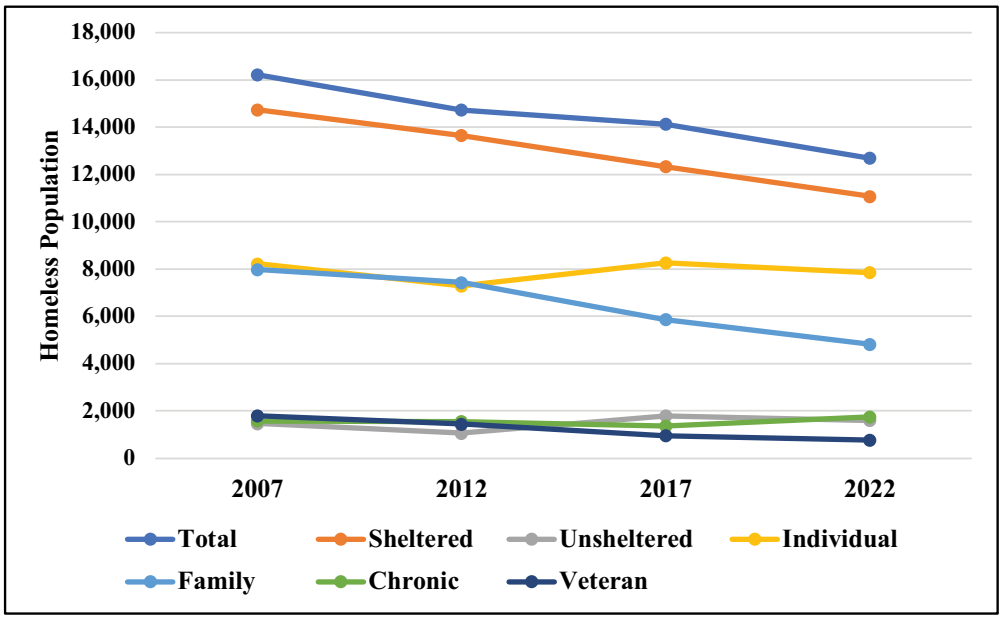
Many studies have found a strong association between homelessness, income, and unemployment rates in the U.S. (U.S. Department of Housing and Human Development, 2019). Homelessness itself can be a barrier to employment, since individuals living without reliable access to laundry services, showers, a place to sleep, and technology may face challenges when attempting to submit job applications or complete job interviews (Institute of Global Homelessness, 2017). The mental demands of housing insecurity also may make it difficult for individuals to successfully function in the workplace (Institute of Global Homelessness, 2017).

Homelessness in Rural Pennsylvania

Research has found that homelessness in rural areas has increased at greater rates than in urban areas in recent years (Feldhaus and Slone, 2015). A 2015 study found that among homeless individuals in rural Pennsylvania, nearly 24 percent had a disability; 27 percent had a mental health problem; 12 percent had a physical disability; and 10 percent had a chronic health condition (Feldhaus and Slone, 2015).

Homelessness data released by The National Alliance to End Homelessness indicated that the overall state rate of homelessness has dropped from 12.9 individuals per 10,000 residents in 2007 to 9.8 individuals in 2022 (National Alliance to End Homelessness, 2022). Figure 1 shows that between 2007 and 2022, a reduction of 22 percent total homeless and a reduction of 40 percent in homeless families occurred. During that same time period, an increase was noted for unsheltered persons (9 percent) and chronic homeless individuals (11 percent) (National Alliance to End Homelessness, 2022).

Figure 2: Pennsylvania State Homelessness Population, 2007-2022



Source: National Alliance to End Homelessness, 2022

Pennsylvania's rural homeless must overcome challenges related to the lack of public transportation in rural areas and the geographically dispersed employment opportunities, health care providers, and social services (Feldhaus and Slone, 2015).

Pennsylvania's rural homeless population must overcome a wide range of challenges.

According to this study, "these challenges are compounded by the relative invisibility of rural homelessness, the lack of data on the rural homeless, and the lack of understanding of the unique patterns of rural homelessness among funding agencies, state-level programs, and policymakers" (Feldhaus and Slone, 2015). Data from this study suggest that rural homeless in Pennsylvania are most offered services that focus on prevention or other social services not related to housing (Feldhaus and Slone, 2015). Researchers have claimed that it is necessary to determine whether this trend is due to the actual needs of rural homeless in Pennsylvania or is a result of the challenges in finding housing for the rural homeless (Feldhaus and Slone, 2015).

SUMMARY AND RECOMMENDATIONS

To better address rural homelessness in Pennsylvania, many considerations have been proposed such as consolidating state-level data collection under one methodology, developing a standard definition of homelessness, increasing dialogue between data collectors and those serving homeless populations, developing data collection strategies designed specifically for rural areas, and examining the reasons for a rural focus on prevention and service-only programs (Feldhaus and Slone, 2015). By implementing these considerations, researchers can begin to have a better understanding of rural homelessness in Pennsylvania and in turn, develop more effective interventions to address the challenge of reducing the homeless population throughout the commonwealth.

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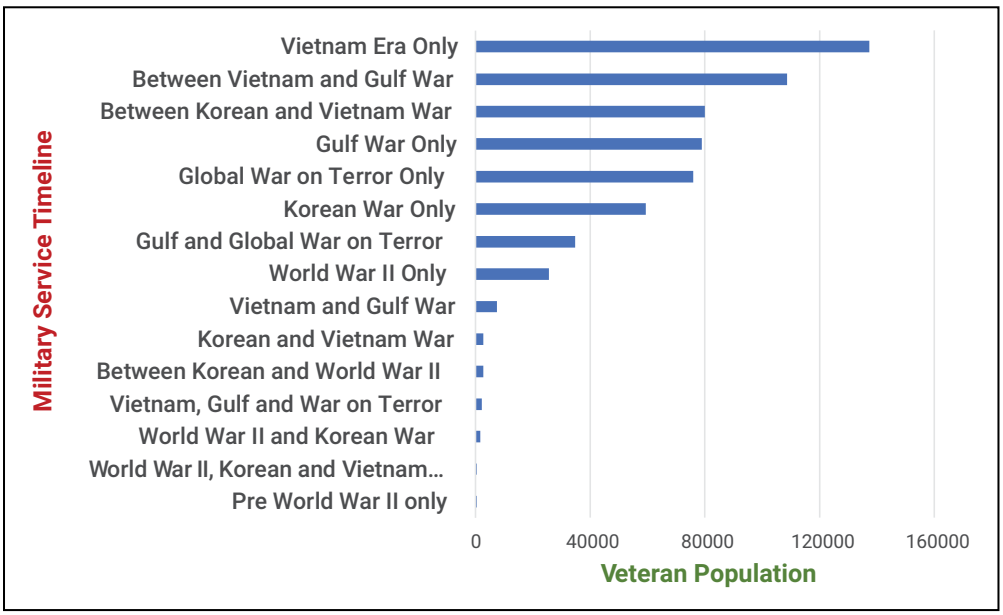
VETERANS IN RURAL PENNSYLVANIA

Pennsylvania is home to 823,000 men and women veterans, personnel whose status currently covers either active duty, reserve, national guard, retired, or discharged military personnel (Maciag, 2017; U.S. Department of Veteran Affairs, 2017a). This number equates to nearly five percent of the total U.S. veteran population. Military services include the Air Force, Army, Coast Guard, Navy, and Marine Corps. The Defense Manpower Data Center (2023) indicates that, as of September 2022, there were 2,468 active duty and 26,756 reserve and National Guard serving within the state, representing the 38th largest in the nation and the 5th largest in the nation, respectively.

In 2022, the discharged or retired veteran population in Pennsylvania was 769,423, the nation's fourth largest state total (U.S. Department of Veterans Affairs, 2022a). Of this group, 225,172 veterans or 30 percent of the state's veterans reside in rural counties as defined by the Center for Rural Pennsylvania (Stacker, 2022).

Pennsylvania veterans served during World War II, the Korean War, the Vietnam War, the Persian Gulf War, the Global War on Terrorism, and during other conflicts, as shown in Figure 1.

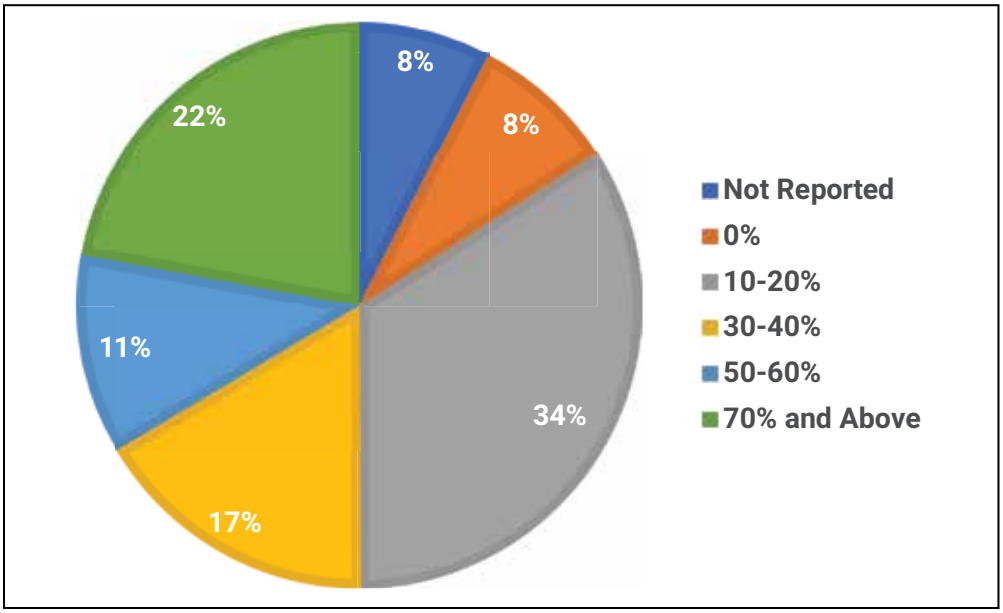
Figure 1: Pennsylvania Veteran Population Military Service Timelines



Source: Center for Workforce Information and Analysis, 2021

Personnel serving during each of these periods may experience specific duty-related health issues such as malaria during WW II, frostbite from Korea, nuclear radiation from atomic bomb testing, Agent Orange from Vietnam, burn-pit inhalation from the Gulf War or possible toxic chemical contact from drinking water at Camp Lejeune, NC or aircraft fire-fighting extinguishing agents at various air bases. Veterans also may suffer from psychological wounds such as post-traumatic stress disorder. According to the Veterans Health Administration (VHA), in 2017, 125,847, or 14.5 percent of the retired or discharged veteran population in the state has designated service-connected disability (U.S. Veterans Administration, 2017a). The VHA is the component of the U.S. Department of Veterans Affairs (VA), which operates the related health care system and is separate from the U.S. Department of Defense (DoD). Figure 2 shows the percentage of disabilities reported for Pennsylvania's veterans.

Figure 2: Pennsylvania Veterans Health Administration Disability Ratings



Source: U.S. Census Bureau, 2020b

VETERAN HEALTH ACCESS

Veterans in Pennsylvania may use a variety of health care options based on their current or past military affiliation and status. Health insurance options are initially available to all veterans although individual circumstances may preclude acquiring, purchasing, or applying for coverage. Several groups are more vulnerable to the lack of medical coverage, especially separated veterans. They may not receive an adequate source of or ability to purchase private insurance and may not qualify for Medicaid or VHA services. Reserve and National Guard veterans, both serving and retired, also are disadvantaged.

Depending upon the facility type and location, the Veteran's Health Administration medical resource capabilities will vary.

Overall, the percentage of veterans within the state civilian population is decreasing but both the percentage of veterans in rural communities and those reaching retirement age are increasing (Livestories, 2020; U.S. Census Bureau, 2020; U.S. Veterans Administration, 2022b). Arranging for health insurance of some type and the ability to successfully access and utilize that capability can be challenging for all veterans, regardless of geographic location.

Active Duty

Those on active duty, in an activated status or within 180 days post non-retirement separation (Transitional Assistance Management Program or TAMP) are under a TRICARE health umbrella. These individuals utilize military hospitals and clinics for care when available (TRICARE, 2022a). If emergency or urgent care services are required, a TRICARE-authorized provider or VHA system facility may be utilized when available. In Pennsylvania, TRICARE is administered by the Eastern Region and, in 2020, was contracted to Humana Military (TRICARE, 2022b). TRICARE medical expenses, including dental and vision for active-duty members, are covered by the DoD.

Reserve/National Guard

Military Reserve and National Guard members not on active-duty orders or under TAMP may purchase TRICARE Reserve Select, a premium based plan (TRICARE, 2022d), or may use private health insurance or VHA services if qualified.

Forest County – Fishing Spots

Retired Active Duty

Individuals who have retired from the active-duty military with more than 20 years of service or have been medically retired at less than 20 years must select a TRICARE option within 90 days after separation. TRICARE Prime is a managed care option, which requires annual enrollment fees and network copayments. TRICARE Select is a fee-for-service plan. At age 65, TRICARE for Life begins as the member activates Medicare Part A and Part B (TRICARE, 2022c). Military health care facilities are available to retirees on a space-available basis. Members of this group may enroll for both dental and vision coverage.

Retired Reserve/National Guard

Retired reserve and National Guard members with greater than 20 years of computed service are entitled to two different plans depending upon their age (TRICARE, 2022e). Those under age 60 may purchase TRICARE Retired Reserve. If qualified, retired reserve and National Guard may use private insurance or VHA services. Within 90 days after turning age 60, beneficiaries must choose either TRICARE Prime or TRICARE Select. At age 65, members fall under the same TRICARE for Life as retired active duty. After age 60, members of this group may enroll for both dental and vision coverage.

Separated

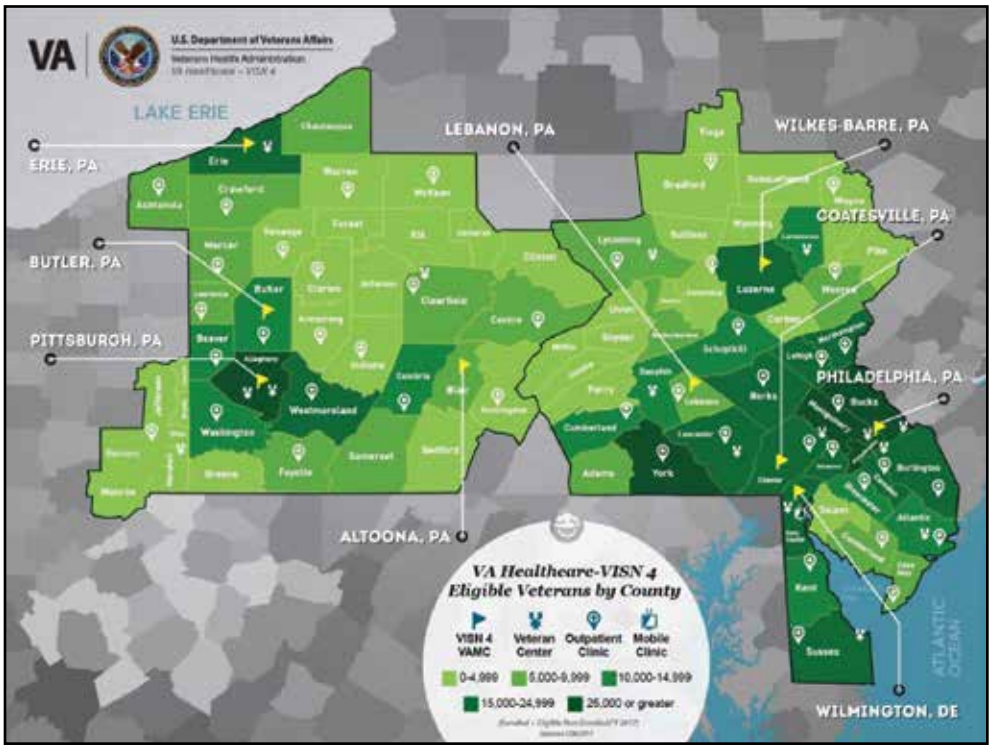
Upon separation from military service, a member's access to health care benefits depends on their current status. For all active duty and any reserve or National Guard, TRICARE TAMP is available for 180 days. For recipients of the Medal of Honor, TRICARE Prime or Select is available, like active-duty retirees (TRICARE, 2022a). If qualified, separated military personnel also may use private health insurance, Medicaid, or VHA services.

Veteran's Health Administration

The VHA is part of the U.S. Veterans Administration, led by the Secretary of Veteran Affairs, a presidential cabinet position, and directed by the Office of the Under Secretary for Health. The office manages an annual budget of $68 billion and oversees care for 9 million enrolled veterans (U.S. Veterans Administration, 2022e). The VHA administers and provides medical services, which are coordinated at the national, regional, and local levels. Veterans will rarely interact with VHA at the national level, infrequently on the regional level, and as needed at the local level. Advocating nationally for the rural veteran population within the VHA is the VA Office of Rural Health.

The VHA is organized into 19 Veterans Integrated Service Networks (VISNs), each with its designated geographic region. These areas include states, territories, and former areas of administrative control such as the Philippines. VISN 4, based in Pittsburgh, PA, is responsible for most of Pennsylvania, as denoted in Figure 3; VISN 2, based in the Bronx, NY oversees a geographical portion of north-central Pennsylvania; and VISN 5, based in Linthicum, MD, manages a small section of lower-central Pennsylvania. Veterans may utilize cross-VISN services. The VA Office of Rural Health supports five Veterans Rural Health Resource Centers in Iowa City, IA; Salt Lake City, UT; White River Junction, VT; Gainesville, FL; and Portland, OR that serve as hubs of rural health care research, innovation and dissemination (U.S. Veterans Administration, 2023).

Figure 3: Veterans Integrated Service Network 4, Patient Service Locations



Source: Veterans Administration, 2017b

VA care can be the best option for many qualifying veterans, both as a primary and secondary source of health care. Although not fully provided at every facility, a wide array of services are available in a variety of locations throughout the country. The Mission Act of 2018 supplements many previous gaps in coverage. In 2018, a Rand Corporation study determined that the "VA health care system performs similar to or better than non-VA systems on most measures of inpatient and outpatient care quality, although there is high variation in quality across individual VA facilities" (Price and Farmer, 2018). For qualifying veterans, the addition of home-based primary care together with telemedicine can make VHA services an attractive option.

VHA Health Care Services

The VHA's objective "aims to make the home into the preferred place of care, whenever possible" (Baker, 2018). A veteran's admission into the VHA health care system depends upon an assessed and assigned Priority Group rating considering both service-connected disability and income among several considerations (U.S. Veterans Administration, 2022d). The VHA's medical resource capabilities vary depending upon the facility type and location. These sites range from large integrated health care systems and stand-alone medical centers to local community clinics and veteran centers. Each site has its strengths, weaknesses, and purpose.

Local medical facilities provide most of the veteran health care. Each VISN includes a large health care system site, several medical centers, many community-based outpatient clinics (CBOCs), and veteran centers. Nationally, several VISNs also have community living and rehabilitation centers, opiate replacement treatment program sites, and progressive care centers. Access to these sites is available to all veterans through their VHA primary care manager.

Pennsylvania has one large health care system site, seven medical centers, 35 CBOCs and 12 veteran centers, which are overseen by VISN 4. No Pennsylvania-based facility locations are in VISN 2 or 5 (U.S. Veterans Administration, 2021). One medical center, 10 CBOCs, and seven veteran centers are located in rural Pennsylvania, based on the VA's definition of rurality (U.S. Veterans Administration, 2015a).

Greene County – I Love This Place

Health care system sites and medical centers provide a wide range of inpatient, outpatient, and specialty care services. VHA medical centers are required to provide at least two service categories including outpatient, inpatient, residential, and institutional extended care (U.S. Veterans Administration, 2015b). Medical centers deliver traditional hospital services such as surgery, critical care, mental health, orthopedics, pharmacy, radiology, and physical therapy. Most medical centers offer additional medical and surgical specialty services including audiology and speech pathology, dermatology, dental services, geriatrics, neurology, oncology, podiatry, prosthetics, urology, and vision care (U.S. Veterans Administration, 2022e). In 2015, 45 percent of services provided at Pennsylvania's VHA medical centers were to rural veterans, exceeding the 40 percent statewide population of rural veterans (U.S. Veterans Administration, 2015a).

Community-based outpatient clinics (CBOCs) provide local health care access such as primary care, health and wellness visits, and laboratory services and may offer podiatry, optometry, oral health, behavioral health, clinical social service, and other specialties. The VHA continues to expand the network of CBOCs to include more rural locations in Pennsylvania (U.S. Veterans Administration, 2022b).

Veteran Centers provide a wide range of social and psychological services, including professional readjustment counseling and outreach services to all veterans and their family members. Many of the counselors and outreach staff are veterans who are experienced and prepared to discuss loss, grief, and transition after combat trauma.

Home Based Primary Care is provided to veterans with a disability or chronic health condition who desire to remain in their homes. A CBOC-based health care team delivers in-home assistance such as nursing care, physical therapy, and assistance with daily tasks (U.S. Veterans Administration, 2022c). This is especially important to veterans who have trouble commuting to medical appointments for frequent care. Depending on individual needs, skilled home health care, adult day care, and other services are funded and provided if available locally.

Telemedicine, first adopted by the VHA in 2003, continues to expand and is vitally important to those who are homebound or live in geographically isolated areas. The use of telemedicine encounters has experienced significant long-term success and the expansion of VA virtual visits, particularly for veterans with mental health disorders, has been groundbreaking. The introduction of a mobile app for setting appointments has made telehealth more accessible.

Telehealth medicine could help alleviate transportation issues that rural Pennsylvania veterans face. For telehealth services to be successful, there will need to be high speed internet.

Transportation to VHA health care appointments for veterans and their caretakers varies by each county in Pennsylvania. The Disabled American Veterans (DAV) have teamed with other service organizations by donating vans to provide veteran transportation (Disabled American Veterans, 2023). Scheduling and specific routes are unique to each county and are coordinated through the county VA Office. Volunteers, usually veterans, serve as designated drivers and a few counties contract with commercial, Medical Assistance Transportation Program (MATP), fixed route buses or senior citizen shared ride programs. Regularly scheduled VA-provided shuttle bus service is available from a few medical centers to the VA Pittsburgh Health System.

The VA Maintaining Systems and Strengthening Integrated Outside Networks Act of 2018, also known as the VA Mission Act of 2018, was landmark legislation that provides a dramatic improvement in how community care supplements VHA care. Certain veteran requirements and conditions must exist but with these, veterans can (Wallace, 2020):

- Access services not available at a VA facility;
- Receive community care when no full-service VA facility is within a reasonable distance;
- Access VA Urgent Care, walk-in service, and community urgent care from VA network providers;
- Receive services from the expanded VA Veteran Caregiver Program; and
- Benefit from “safe opioid” procedures for VA prescriptions.

SUMMARY AND RECOMMENDATIONS

Pennsylvania is home to the fifth largest veteran population in the country with over one-third of Pennsylvania veterans residing in rural counties. Due to a variety of factors, in-state veterans by proportion increasingly reside in rural versus urban counties. This population is becoming older and experiences greater VA-rated disabilities over time. Access to medical health coverage depends on the veteran's status and location. The VHA is a beneficial option for many but requires a VHA priority code assignment to access the system. Located throughout the country, the VHA offers many of the same capabilities as managed care plans and, in many instances, is rated higher in quality than non-VHA care. Currently only 40 percent of Pennsylvania's veterans are able or choose to utilize VHA services. For rural Pennsylvania veterans, medical facility location access continues to be challenging; however, if high-speed internet service is available, the combined use of telemedicine and home health may alleviate many transportation issues. The rural veteran populations in Pennsylvania who require closer observation and support are those that have separated or are/were in a reserve status and do not have medical coverage of any type. This is an area that necessitates further research and support.

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PENNSYLVANIA'S HEALTH CARE DELIVERY SYSTEM

Pennsylvania Rural Health Plan

HEALTH CARE WORKFORCE CHALLENGES IN RURAL AREAS

An adequate supply of, and access to, a trained health care workforce is critical to ensuring a healthy population. The health care workforce has been, and continues to be, an issue in rural America and in rural Pennsylvania. Since the 1980s, workforce has been a focus in research, advocacy, and state and federal initiatives, which have identified the barriers to recruiting and retaining a rural health care workforce. These barriers include urban-centric health professions education, higher rural demand for health care services due to residents' poorer health status, barriers to telehealth usage, spousal and family considerations, and lower salaries in rural areas (Joint State Government Commission, 2015). All sectors of the rural health care workforce are impacted, including primary care, specialty care, oral health, mental and behavioral health services, long-term care, emergency medical services, and home health.

PRIMARY CARE

Access to primary care continues to be a challenge in rural areas. According to health care provider licensure data from the Pennsylvania Department of State, in 2014 the ratio of primary care physicians per 100,000 rural residents was 74.5, versus 129.1 per 100,000 residents in urban areas. Figure 1 presents the map of primary care HPSAs by county in 2022. In fact, two-thirds of Pennsylvania's primary care physicians practice in the four most populated counties, all of which are in urban areas (Pennsylvania Rural Health Association, 2016). Advanced practice providers such as Physician Assistants (PA) and Certified Registered Nurse Practitioners (CRNP) fill these gaps in provider shortages and have the ability to perform 85-90 percent of primary care physician services (Pennsylvania Rural Health Association, 2016). There were 49 PAs per 100,000 residents in rural areas in 2013, slightly higher than the rate in urban counties (Pennsylvania Rural Health Association, 2016). In 2014, in rural areas, the rate of CRNPs per 100,000 residents was 33 compared to 59 CRNPs per 100,000 residents in urban areas (Pennsylvania Rural Health Association, 2016).

Figure 1: Primary Care Health Professional Shortage Areas by County, 2022

Source: Health Resources and Services Administration Data Warehouse; prepared by the Center for Rural Pennsylvania

Rural primary care physicians are, on average, older than their urban counterparts and closer to retirement. In 2014, the average percentage of rural physicians aged 65 and older in Pennsylvania was 16.2 percent, versus 12.4 percent in urban counties. Less than four percent of rural county physicians are under the age of 35, versus 8.7 percent in urban counties (Pennsylvania Department of Health, 2017).

Research has demonstrated a positive correlation between the supply of primary care providers and better health outcomes, including lower rates of all causes of mortality and poor self-reported health (Starfield, et al., 2005; Shi, 2012; HHS Office of Disease Prevention and Health Promotion, 2020). It is notable that the five leading causes of death per 100,000 residents—heart disease, cancer, unintentional injury, chronic lower respiratory disease, and stroke—are higher in rural areas than urban areas. Four of these leading causes of death are associated with chronic disease that require consistent access to primary care for effective treatment (Rural Health Information Hub, 2022). It is critical to the health and sustainability of rural populations to address workforce challenges and increase access to primary care.

SPECIALTY CARE

The rural Pennsylvania specialty care workforce faces challenges like primary care. The supply of some physician specialists has declined overall since 2010, as many specialties have most practitioners over age 55, and the pipeline of residents entering some specialty care fellowships is shrinking (Joint State Government Commission, 2015). The hardest hit specialties include allergy/immunology, preventive medicine, general and some specialty surgeries, psychiatry, pulmonology, and pathology. Nearly a quarter of Pennsylvania's hospital obstetric units closed between 2004 and 2014 (Keppler, 2016). As a result, many rural residents must travel farther for obstetric care and labor and delivery services. For example, no hospitals with obstetric units are located in the largely rural area between northern Allegheny County (in the southwestern part of the state and Erie (in the northwestern region), and in some parts of rural central Pennsylvania, there are no obstetric units within a 50-mile radius (Keppler, 2016).

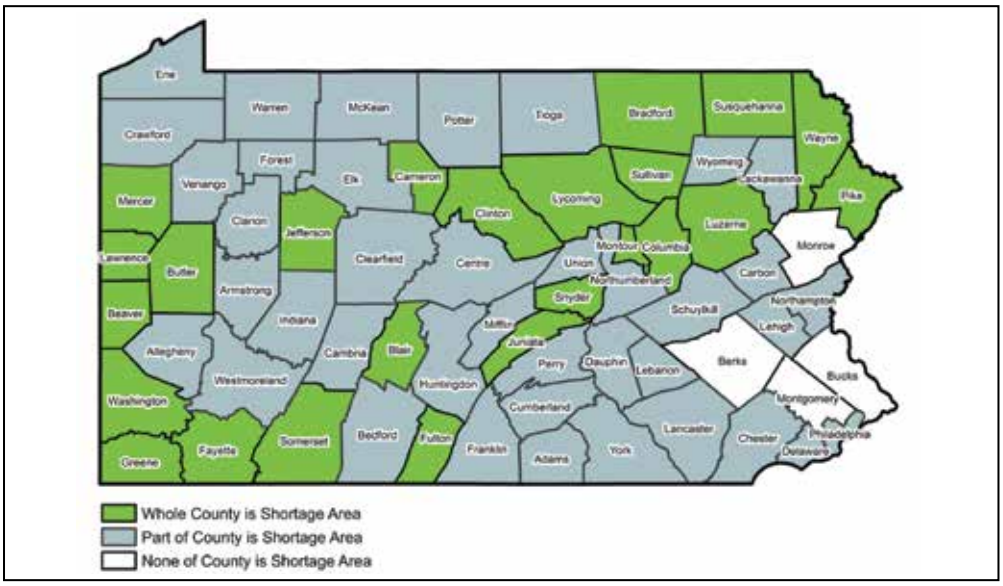
The hardest hit specialties are allergy/immunology, preventive medicine, general, psychiatry, pulmonology, and pathology. Obstetric care has also declined in rural areas.

ORAL HEALTH CARE

Assuring access to a strong oral health workforce in rural areas is challenging. A lack of access to oral health services is a critical issue facing rural Pennsylvanians and can be linked to a variety of other negative health implications including heart disease, cancer, and diabetes (Frank, 2019). Only 36 dentists per 100,000 residents practice in rural areas, compared to 55 dentists per 100,000 residents in urban areas (Pennsylvania Rural Health Association, 2016). Sixty-three of Pennsylvania's 67 counties contain a Dental Health Professional Shortage Area designation; for example, rural Cameron, Fulton, Juniata, and Potter counties have only 20 dentists per 100,000 residents (Pennsylvania Rural Health Association, 2016) as shown in Figure 2.

Several types of oral health providers have proven to be effective at decreasing shortages in rural areas including Public Health Dental Hygiene Practitioners (PHDHP). PHDHPs are trained to provide services such as oral health screenings, dental prophylaxis, and diagnostic radiographs in public health settings independent of a dentist. Most PHDHPs in Pennsylvania practice at Federally Qualified Health Centers (FQHC) and 28 percent of PHDHPs work in public health settings.

Figure 2: Dental Health Professional Shortage Areas in Pennsylvania by County, 2022



Source: Health Resources and Services Administration Data Warehouse; prepared by the Center for Rural Pennsylvania

BEHAVIORAL HEALTH CARE

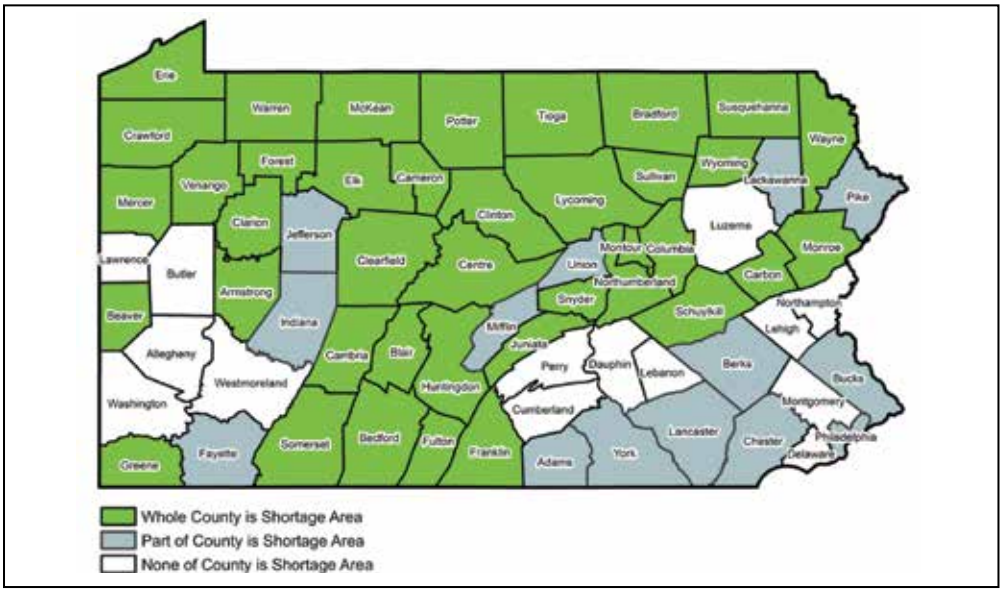
Controlling for size and population, Pennsylvania ranked fourth among states for the prevalence of acute mental illness within fifteen categories, including mental illness, substance abuse disorder, and suicidal thoughts (Mental Health America, 2021). Pennsylvania was ranked 12th for access to mental health care in the state comparison released by Mental Health America in 2021 (Mental Health America, 2021). In 2016-2017, more than half of Pennsylvania adults with mental illness (53 percent) and more than half of Pennsylvania youth with major depression (57.5 percent) did not receive treatment. One major factor for these gaps in care could be because Pennsylvania ranked near the bottom third of states for mental health workforce availability (Mental Health America, 2021).

As of 2018, the Hospital and Healthsystem Association of Pennsylvania (HAP) reported a statewide average of 179 mental health care practitioners per 100,000 population, which falls below the national average of 214 providers per 100,000 people (Hospital and Healthsystem Association of Pennsylvania, 2023). In addition, 53 counties in Pennsylvania fall below the statewide average, and rural counties struggle the most with mental health provider shortages (Hospital and Healthsystem Association of Pennsylvania, 2023).

In 2019, the Health Resources and Services Administration (HRSA) designated 31 predominately rural counties in Pennsylvania as Mental Health Professional Shortage Areas (HPSAs) as shown in Figure 3. Only 38.42 percent of the demand for psychiatric care was met under the population-to-psychiatrist ratio formula (Joint State

Government Commission, 2020). This is a decline from 2015 when the workforce met between 50.51 to 64.11 percent of the demand. As an example, rural Juniata and Perry counties had only 12 mental health providers per 100,000 residents in 2018 (Sholtis, 2018).

Figure 3: Mental Health Professional Shortage Areas in Pennsylvania by County, 2022



Source: Health Resources and Services Administration Data Warehouse; prepared by the Center for Rural Pennsylvania

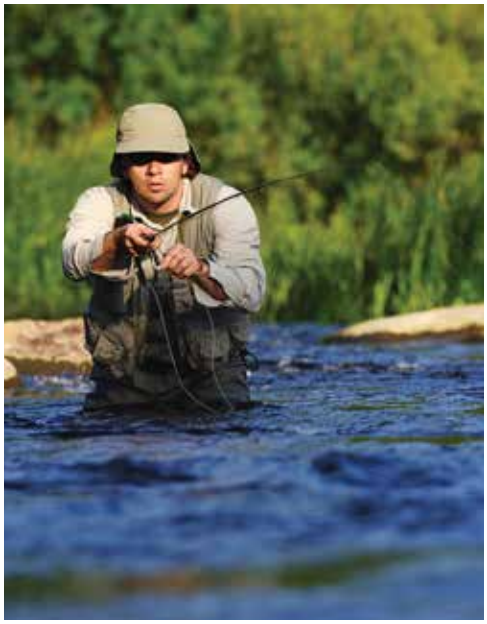
Just one quarter (153) of Pennsylvania's 569 mental health and substance abuse centers are in rural counties. Only five psychiatric and substance abuse hospitals are in rural Pennsylvania, while urban areas are home to 30.

LONG-TERM CARE AND HOME HEALTH CARE

Between 2010-2017, Pennsylvania's population age 65 and over increased 16.3 percent, a rate 20 times that of the general state population (Joint State Government Commission, 2019). With this increase, Pennsylvania ranks seventh in the nation for residents over the age of 65 which includes an average of rural residents that is higher than the national average (23.5 percent for Pennsylvania versus 22.9 percent in the rural U.S.) (Smith and Trevelyan, 2019). By 2040, the population of Pennsylvanians aged 85 and older is projected to increase by 82 percent. Estimates indicate that 70 percent of those over age 65 will require long-term care for an average of three years (Department of Health and Human Services, 2020). One in seven Pennsylvania residents has one or more disabilities, making their use of long-term care or home health care more likely (Pennsylvania Long-Term Care Council, 2019). Among Pennsylvania residents under age 65, 2.1 percent identify with a self-care disability, 5.4 percent identify with a cognitive disability, and 11.7 percent identify with any category of disability (American Association of Retired Persons, 2018). These numbers exceed national disability averages (American Association of Retired Persons, 2018).

Pennsylvania's long-term care and home health care providers employ 219,000 direct care workers, who include personal care aides, nursing assistants, and home health aides (Pennsylvania Long-Term Care Council, 2019).

Many of these staff are women with a high school diploma, with a median age of 40. At less than $12 per hour, the median wage of these workers is far lower than the median wage of Pennsylvanians as a whole ($18/hour). The turnover rate for direct care workers ranges between 19 percent and 51 percent annually, accounting for a persistent job vacancy rate exceeding 20 percent (Pennsylvania Health Care Association, 2022). Many of these workers reside in households earning below 200 percent of the federal poverty level (Pennsylvania Long-Term Care Council, 2019). Workforce estimates often do not include family caregivers, who play important roles in home health care. Estimates from 2017 indicated that nearly 1.59 million Pennsylvania family caregivers provided approximately 1.33 billion hours of care to parents, spouses, partners, and friends (American Association of Retired Persons, 2019). This support equates to over $18.2 billion in unpaid care. Family caregiver services are at times supplemented by paid home health providers, but many of these family caregivers are responsible for scheduling and transportation to medical visits, proper administration of prescriptions, providing nutritional meals, and other tasks.



Juniata County – Best Fishing Spots

The U.S. Bureau of Labor Statistics estimates that home health care workforce utilization will rise by 47 percent in the coming decade (Knoedler, 2020). In rural Pennsylvania, as of 2021, one home health care worker exists for every eight patients requiring their services (Knoedller, 2020). By 2026, it is estimated that Pennsylvania will need more than 37,000 direct care workers to meet demand (Pennsylvania Long-Term Care Council, 2019).

SUMMARY AND RECOMMENDATIONS

Several policies and programs are addressing ongoing health care workforce shortages, specifically through recruitment and retention programs and efforts to change the urban-centric clinical education structure. These include scholarship programs and medical school recruiting efforts, rural residency training programs, placement of qualifying international medical students in medically underserved areas, student loan repayment programs, and “pipeline” programs that focus on school-based outreach on health professions. Research shows that students who have access to, and participate in, rural residency training programs are three times more likely to practice in rural areas when compared to their urban program-trained peers. However, only 7.4 percent of family medicine residency programs are located in rural areas, and only 2.3 percent of training programs in urban areas offer rural tracks (UW Center for Health Workforce Studies, 2023). Research indicates that providers originally from a rural area are more likely to practice in a rural community after medical training, providing a possible pipeline program opportunity.

One approach to address the increased demand for primary care providers in rural areas is to redefine the scope and standards of practice for practitioners other than physicians. Research shows that utilizing advanced practice practitioners increases access for those in underserved areas and generates greater overall levels of patient satisfaction. These practitioners, such as PAs and CRNPs, comprise 46 percent of providers at primary care facilities such as Federally Qualified Health Centers. Important considerations moving forward include altering the independent practice authority and prescription and dispensing authority of these providers to ensure they can provide comprehensive primary care for their rural patients and communities.

Another approach to consider for recruiting primary care providers in rural areas is to promote the unique characteristics of rural practice. This framework highlights the close-knit nature of rural communities, with the focus on community connection centered on schools, civic engagement, faith, and providing care to those living in the provider's own community.

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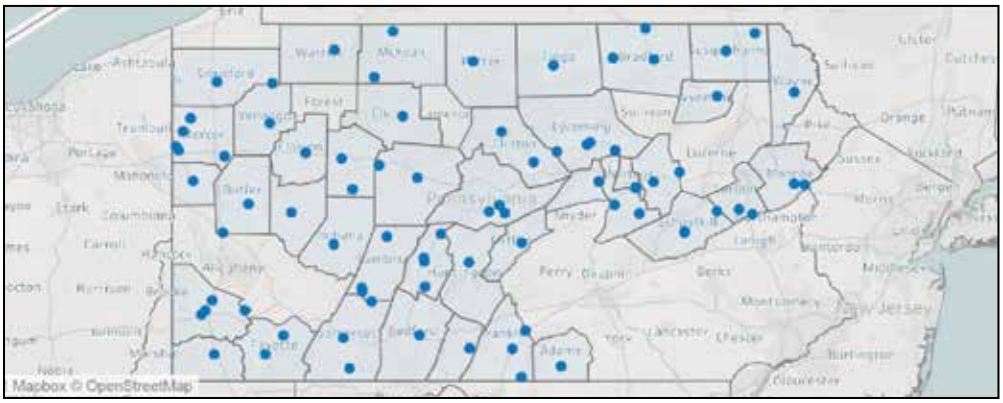
HOSPITALS AND HEALTH SYSTEMS IN RURAL PENNSYLVANIA

In Pennsylvania, rural hospitals are a critical component of rural health care and essential to maintaining access to high quality care for the communities they support. Pennsylvania has 74 rural hospitals, located in 41 of the state's 48 rural counties (Hospital and Healthsystem Association of Pennsylvania, 2021a). Figure 1 shows the location of these hospitals that serve residents that are, on average, older, more susceptible to chronic health issues, and financially disadvantaged (Pennsylvania Office of Rural Health, 2021a).

Figure 1: Rural Hospitals in Pennsylvania



Source: Health Resources and Services Administration Data Warehouse; prepared by the Center for Rural Pennsylvania

In most rural counties, the hospital is the bedrock of the local community and provides significant economic impact to its residents. In Pennsylvania, rural hospitals are located in 41 of 48 rural counties; seven counties have no hospital. Hospitals directly impact their local economies in many ways—maintaining and constructing new buildings, providing jobs, purchasing medical equipment, etc. Rural hospitals rank in the top 10 largest employers in nearly all rural counties in the state that have hospitals (Hospital and Healthsystem Association of Pennsylvania, 2021). Hospitals also indirectly affect the economy through business interactions (such as employment and cleaning services) which result in economic activity in other industries like real estate (Hospital and Healthsystem Association of Pennsylvania, 2021).

RURAL HOSPITALS BY SERVICE TYPE

Based on data from the Pennsylvania Department of Health's (DOH) 2019 Annual Hospital Questionnaire, the state's 74 rural hospitals are defined by the following service types (Hospital and Healthsystem Association of Pennsylvania, 2023):

- 65 General Acute Care Hospitals;
- 17 Critical Access Hospitals;
- 3 Rehabilitation Hospitals;
- 3 Psychiatric Hospitals;
- 2 Long Term Acute Care Hospitals; and
- "Other Specialty" Hospitals.

HOSPITAL CAPACITY

The Hospital and Healthsystem Association of Pennsylvania's (HAP) Hospital Capacity Snapshot, shown in Table 1, provides a summary of Pennsylvania's total hospital capacity compared to total rural hospital capacity and percentages. Although rural hospitals make up 34 percent of the hospitals across the state, they maintain just 21 percent of the licensed and staffed beds (Pennsylvania Department of Health, 2023; prepared by the Hospital and Healthsystem Association of Pennsylvania). In 2018, on average, there were 2.14 hospital beds for every 1,000 rural residents and 2.54 hospital beds for every 1,000 urban residents (Center for Rural Pennsylvania, 2021).

Table 1: Pennsylvania Hospitals' Capacity Snapshot

	Pennsylvania Total	Rural	Rural %
Number of Hospitals	217	74	34%
Admissions	1,571,523	301,947	19%
Discharges	1,565,860	300,943	19%
Licensed Bed	39,978	8,323	21%
Staffed Bed	36,385	7,785	21%
Emergency Department Visit	6,170,092	1,515,724	25%
Outpatient Clinic Visit	13,942,242	2,877,080	21%

Source: Pennsylvania Department of Health, 2023; prepared by the Hospital and Healthsystem Association of Pennsylvania

RURAL HOSPITAL SERVICES

Rural hospitals, just like urban hospitals, have obligations to address the health needs of their communities. All provide emergency care and many provide primary care through provider-based rural health clinics, preventive services, swing beds, long-term care, ambulance services, general surgery, and some specialty care services like orthopedics (Flex Monitoring Team, 2018). However, due to lower patient volumes, higher percentages of uncompensated care costs, insufficient population density, workforce shortages, and other financial challenges, many rural hospitals are challenged to offer the same access to many specialties and other health care services as their urban counterparts. Some essential health care services that are typically more difficult to access in rural communities include community outreach, enrollment assistance, health fairs, community health education, health screenings, health research, indigent care, substance use treatment, psychiatric services, hospice care, palliative care, dental services, hemodialysis, and obstetrics (Flex Monitoring Team, 2018).

Because rural hospitals often do not have the resources to employ a wide range of specialists, patients presenting to the emergency department needing specialized care may need to be transferred to a larger facility. To save costs and allow patients to remain in their communities, increasing numbers of rural hospitals are avoiding unnecessary transfers with the use of telemedicine. Telemedicine allows physicians in community hospitals to collaborate with specialists in larger, urban hospitals instead of transferring the patient. This gives rural physicians the opportunity to continue learning from peers and grow their knowledge base, and allows the hospital to keep the patient and the revenue in the local community (Emergency Staffing Solutions, 2019). Prior to the COVID-19 pandemic, rural hospitals had been expanding their use of telemedicine in a range of additional areas including stroke care, pharmacy, dermatology, radiology, wound care management, internal medicine, and others. The pandemic and federal waivers enacted during the COVID-19 public health emergency significantly increased telemedicine use in hospitals. Telemedicine is discussed in more detail in the HIT and Telehealth section of this plan.

RURAL HOSPITAL MERGERS, ACQUISITIONS, AFFILIATIONS, AND NEW FACILITIES

Since 2010, Pennsylvania has seen a series of mergers, consolidations, and affiliations as economies of scale and other factors push the health care industry toward larger systems (Malawsky, 2017). Of the 74 rural hospitals in the state, 56 are part of a health system and only 18 remain independent (Hospital and Healthsystem Association, 2023). Several of the health systems operating in Pennsylvania are gaining large geographic market shares. For example, the University of Pittsburgh Medical Center (UPMC), headquartered in southwestern Pennsylvania, has a lead market share in many rural and urban counties, while Geisinger, with headquarters in northcentral Pennsylvania, is the largest health care provider in several rural counties and in the northeast portions of the state (Malawski, 2017). Other health systems throughout the state also have acquired rural hospitals, such as Duke LifePoint, Guthrie, Penn Highlands Healthcare, the Lake Erie College of Osteopathic Medicine, Lehigh Valley Health Network, St. Luke's University Health Network, and others.

Pennsylvania has seen a series of mergers, consolidations, and affiliations as economies of scale and other factors push health care toward larger systems.

Health care in Pennsylvania is competitive. Certificate of Need (CON) laws are state regulatory mechanisms for establishing or expanding health care facilities and services in each area. According to 2019 data from the National Conference of State Legislatures (NCSL), Pennsylvania and New Hampshire are the only states in the eastern half of the U.S. that do not have health care CON laws (National Conference of State Legislatures, 2019). This may remove barriers for competing health systems to open facilities close to their competitors regardless of community need.

Rural Hospital Closures and Federal and State Responses

Rural hospital closure has been an issue since the mid-2000s. According to Becker's Healthcare, "Low patient volume and heavy reliance on government payers are among the challenges rural health care organizations have faced for years. Newer challenges, such as the financial pressures tied to the COVID-19 pandemic, also threaten rural hospitals' ability to maintain access to health care services" (Becker's Healthcare, 2021). The Cecil G. Sheps Center for Health Services Research reports that for the period of 2005-2023, 100 acute care rural hospitals closed across the U.S. and 83 hospitals converted to another type of limited-service facility (Cecil G. Sheps Center for Health Services Research, 2023.). In Pennsylvania, five acute care hospitals have closed during that time, as illustrated in Figure 6.

Figure 6: Rural Hospital Closures in Pennsylvania, 2005-2023

Source: Cecil G. Sheps Center for Health Services Research, 2023

Chartis tracks rural acute care hospital vulnerability across the nation. In February 2020, they identified 453 hospitals at risk for closure; of those, 22 percent of rural hospitals in Pennsylvania were determined to be "vulnerable," 13 percent were "most vulnerable," and nine percent were "at risk" for closure (Chartis, 2020). Hospital closures impact the local delivery of health care services, the overall population of the community, and the local economy.

Federal Critical Access Hospital Program

In response to the closure of increasing numbers of rural hospitals in the 1980s and 1990s, Congress passed important legislation to address the crisis. In 1997, Congress created the Critical Access Hospital (CAH) designation through the Balanced Budget Act of 1997 (Rural Health Information Hub, 2021). "Critical Access Hospital" is a designation given to eligible rural hospitals by the Centers for Medicare and Medicaid Services (CMS). Hospitals eligible for conversion to CAH status are licensed and staffed for 25 beds or less; are located between 15 and 35 miles of the nearest like facility, depending on geography; and serve large Medicare and Medicaid populations.

Critical Access Hospitals are licensed and staffed for 25 beds or less; are located between 15 and 35 miles to the nearest like facility and were designed to combat the large number of rural hospital closures.

The CAH designation is designed to reduce the financial vulnerability of rural hospitals and improve access to health care by keeping essential services in rural communities. CAHs receive certain benefits, such as cost-based reimbursement for Medicare services (Rural Health Information Hub, 2021). Pennsylvania's CAHs also receive cost-based reimbursement for Medicaid services through a reconciliation process conducted by Pennsylvania's Department of Human Services. Annual state budget approval is necessary to continue this Medicaid supplemental payment. As of 2022, Pennsylvania had 16 CAHs (Pennsylvania Office of Rural Health, 2021b).


Bedford County – Bedford Springs Hotel

In addition to the CAH designation, the Balanced Budget Act of 1997 also established the Medicare Rural Hospital Flexibility (Flex) Program (Health Resources and Services Administration, 2021). This program provides funding for quality, financial, operational, population health, emergency medical services, and value-based improvements for CAHs to ensure that high quality health care is available in rural communities and aligns with community needs (Health Resources and Services Administration, 2021). As of 2021, all 16 of Pennsylvania's CAHs participated in the Flex program.

Federal Small Rural Hospital Improvement Program

The Small Rural Hospital Improvement Program (SHIP) is another federal program that supports rural hospitals. Authorized through section 1820 (g)(3) of the Social Security Act, SHIP provides funding for small rural hospitals with 49 beds or less to assist them in implementing data system requirements established under the Medicare Program, including using funds to assist hospitals in improving value and quality of health care (National Rural Health Resource Center, 2021). As of 2021, Pennsylvania had 26 small rural hospitals eligible for and participating in SHIP.

Federal Rural Emergency Hospital

Rural Emergency Hospital (REH) is a designation given to eligible rural CMS, effective January 1, 2023. Congress established the Rural Emergency Hospital (REH) designation in December 2020 in Section 125 of the Consolidated Appropriations Act, 2021 (Public Law 116-260) and in response to the loss of essential health care services in rural areas due to hospital closures. The REH designation is designed to maintain access to critical outpatient hospital services in communities that may not be able to support or sustain a CAH or small rural hospital. REHs are required to provide 24-hour emergency and observation services and can elect to furnish other outpatient services. Facilities designated as an REH will receive enhanced Medicare payments for certain outpatient services and additional monthly payments. CAHs and rural acute care hospitals with 50 or fewer beds that were open on December 27, 2020, are eligible to apply for REH status. Facilities that closed after December 27, 2020, are eligible to reopen as an REH if they meet the REH Conditions of Participation (Rural Health Information Hub, 2022).

Pennsylvania Micro-hospital Model

In Pennsylvania, a micro-hospital refers to an acute care hospital that offers emergency services and maintains facilities for at least 10 inpatient beds with a narrow scope of inpatient acute care services, such as no surgical services. Formerly known as the "innovative hospital model," this model has proven to be a viable alternative to many facilities and will continue to be an option for providers seeking to offer acute care services in a smaller footprint (Pennsylvania Department of Health, n.d.).

Clearfield County – Clearfield County Fair

Pennsylvania Tele-emergency Department (tele-ED) Model

Tele-ED refers to the operation of a tele-ED staffed by Advanced Practice Providers (APP) 24 hours per day/7 days per week (24/7) with a physician available at all times through telecommunications but not physically present in the emergency department. The Pennsylvania Department of Health (DOH) has a structured exception process for eligible low-volume rural hospitals to operate a tele-ED (Pennsylvania Department of Health, n.d.).

Pennsylvania Outpatient Emergency Department Model

In March 2022, the DOH established criteria for hospitals to offer emergency services at an outpatient location with no other inpatient or surgical services onsite. These locations, known as outpatient emergency departments or OEDs, are intended to create and preserve access to health care in rural areas. To be authorized to operate an OED, the main licensed hospital of an OED must offer general acute care services, the OED must be included as an outpatient location under the license of the hospital, must be located within a 35-mile radius of the main licensed hospital, and needs to meet certain other requirements.

ONGOING FINANCIAL CHALLENGES FOR RURAL HOSPITALS

Despite the federal programs established to reduce rural hospital closures across the U.S., these facilities continue to close at alarming rates. Since 2010, five rural hospitals have closed in Pennsylvania, and many more are in jeopardy of closing. Prior to the pandemic, in FY 2019, 43 percent of all Pennsylvania's rural hospitals were operating at a negative margin (Pennsylvania Health Care Cost Containment Council, 2020). Since 2012, the state and the Pennsylvania Department of Health have collaborated with state and federal partners to develop and implement a rural-focused, value-based payment model to address the financial situation of these hospitals and improve population health in rural communities. The Pennsylvania Rural Health Model (PA RHM) began implementation in 2019 and currently has 18 participating rural hospitals and six payers. The PA RHM will be discussed in more detail later in this plan.

SUMMARY AND RECOMMENDATIONS

To maintain access to high quality health care for rural Pennsylvanians, it is essential to strengthen and support the hospitals in these communities. Rural hospitals continue to face many challenges including lower numbers of patient services provided, higher percentages of uncompensated care, workforce shortages, increased competition, and other financial obstacles. Hospitals must continue to build and maintain strong relationships with federal, state, and local partners and embrace value-based initiatives that improve community health. Ongoing advocacy is necessary to ensure the survival of rural hospitals through continued federal, state, and local support, and to enhance the quality, access, and equity of health care for rural communities.

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RURAL HEALTH CARE FINANCING AND PAYMENT

Although managing health care finances has always been difficult, recent challenges facing health care providers have contributed to significant increases in financial hardship. Across the nation, providers face rising costs for labor, supplies, equipment, drugs, and facilities, while payer reimbursements have failed to keep up with inflation. COVID-19 pandemic impacts further pushed health care staffing into crisis mode across all Pennsylvania health care facilities, including both clinical and non-clinical position shortages.

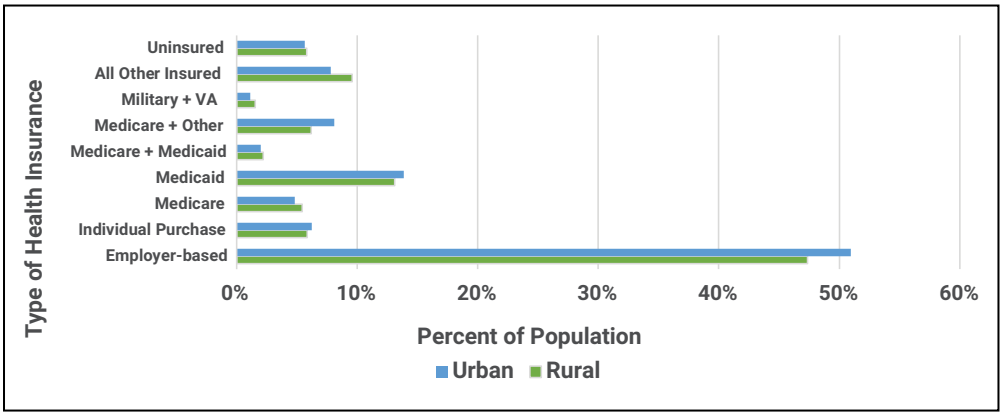
Rural health care providers face additional financial challenges due to low patient volumes, a high reliance on government payers such as Medicare and Medicaid, fewer providers, higher populations of uninsured patients, and an older population with more chronic conditions, among others. The cumulative burden of these challenges can threaten a rural provider's ability to maintain access to services (American Hospital Association, 2020). Understanding rural health care financing and payments is essential to understanding the financial viability of these facilities and their ability to continue serving rural patients well into the future.

HEALTH INSURANCE STATUS IN RURAL PENNSYLVANIA

Payment for health care services in rural Pennsylvania varies by the patient receiving services, the health care provider or facility delivering the service, and the source of payment for the services. Health care services are most often paid through some type of insurance coverage with requirements, benefits, and challenges. Most health insurance is accessed through an employer; subsidized government coverage, such as Medicaid and Medicare; through insurance plans paid for by individuals; or a combination of these payment sources. A percentage of the population has no health care payment options and is considered to be uninsured.

Figure 1 shows the distribution of health insurance enrollment of Pennsylvania residents, by rural and urban areas.

Figure 1: Health Insurance Enrollment in Pennsylvania, 2019



Source: U.S. Census Bureau, 2019; prepared by the Center for Rural Pennsylvania

Sullivan County – Lumberjack Competition

As seen in Figure 1, rural and urban populations utilize a variety of insurance payment options. The majority of rural and urban populations are enrolled in employer-based insurance, although urban populations are slightly more likely to be enrolled in employer-based insurance. Urban populations have a higher percentage of enrollment in Medicaid, while rural populations have a slightly higher percentage of enrollment in Medicare only, as well as Medicare and Medicaid together. Rural providers are more likely to provide services to populations that are generally older and sicker than their urban residents (Pennsylvania Rural Health Association, 2016). As a result, rural providers are, on average, more heavily and disproportionately reliant on reimbursement from sources such as Medicare. This has an impact on expected reimbursement and on the type of services rural providers must plan to offer, given their budgetary constraints, in order to serve older and sicker populations.

SOURCE OF REIMBURSEMENTS FOR HEALTH CARE SERVICES

Commercial Insurance

Commercial health insurance entities are privately-owned health insurance companies, which negotiate with health care providers to set reimbursement amounts for health care services and procedures. Reimbursement from commercial health insurance is an important contributor to rural providers' revenue streams. In Pennsylvania, health care providers must negotiate with each individual insurance company to establish rates through contracts. Small independent rural facilities rarely have specialized staff with contract negotiation expertise which can negatively impact reimbursement rates.

Consumers participate in commercial health insurance plans through employer-sponsored health plans, by enrolling in a plan directly through the health insurance company or through a health care marketplace. As seen in Figure 1, 47 percent of rural Pennsylvania residents utilize employer-sponsored health insurance, while six percent of rural Pennsylvania residents purchase their own insurance directly.

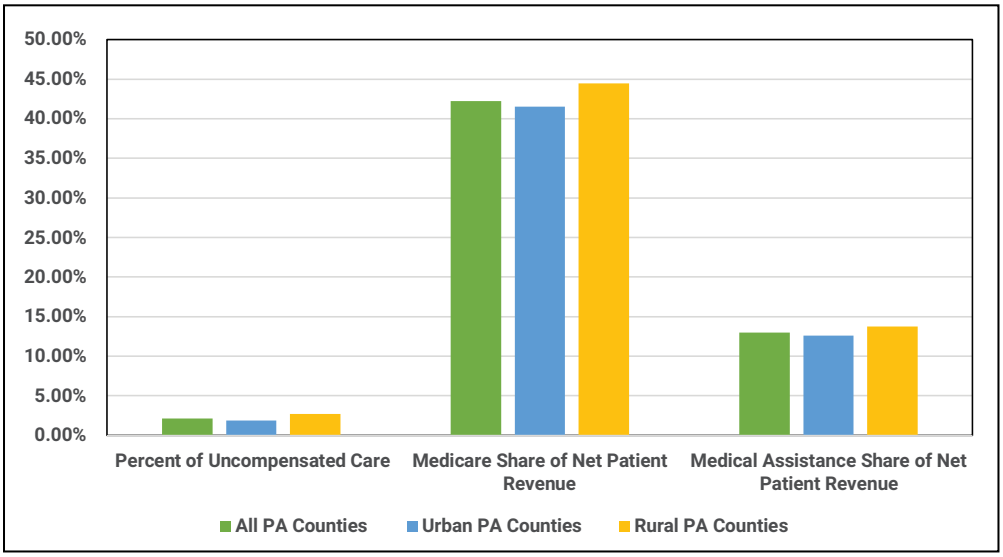
Medicare

Medicare, administered by the Centers for Medicare and Medicaid Services (CMS) is a health insurance program for individuals aged 65 and older, for those with disabilities, and for those diagnosed with end-stage renal disease. The Medicare program includes four distinct parts, each with its own reimbursement structure. Medicare Parts A and B are "traditional Medicare" and cover inpatient and outpatient services, Part C includes Medicare Advantage plans, and Part D covers prescription drugs (Centers for Medicare and Medicaid Services, 2020).

As noted previously in Figure 1, rural providers serve a greater percentage of the population who are enrolled in Medicare, as compared to urban providers. Because of this, rural providers receive a larger portion of their net patient revenue from Medicare, as compared to urban providers (shown in Figure 2). This makes rural providers highly dependent on Medicare reimbursement, which is slightly over half of reimbursement rates from private insurers (Lopez, et al., 2020). This effect is not limited to hospitals. Physician services receive private insurance reimbursement at 143 percent of Medicare rates (Lopez, et al., 2020). Rural providers must carefully plan for the additional care resources that must be dedicated to an older and sicker population, with consideration for the providers' higher dependence on a limited reimbursement system. This can prevent those providers from establishing new programs or services with any associated short-term financial risk.

Figure 2 shows the average Medicare share of net patient revenue, the average Medicaid share of net patient revenue, and the average percent of uncompensated care for fiscal year 2020, compared across all Pennsylvania counties, urban counties, and rural counties. Rural counties have the highest average in all three categories.

Figure 2: Average Share of Medicare, Medicaid, and Uncompensated Care by Pennsylvania County Type, 2020

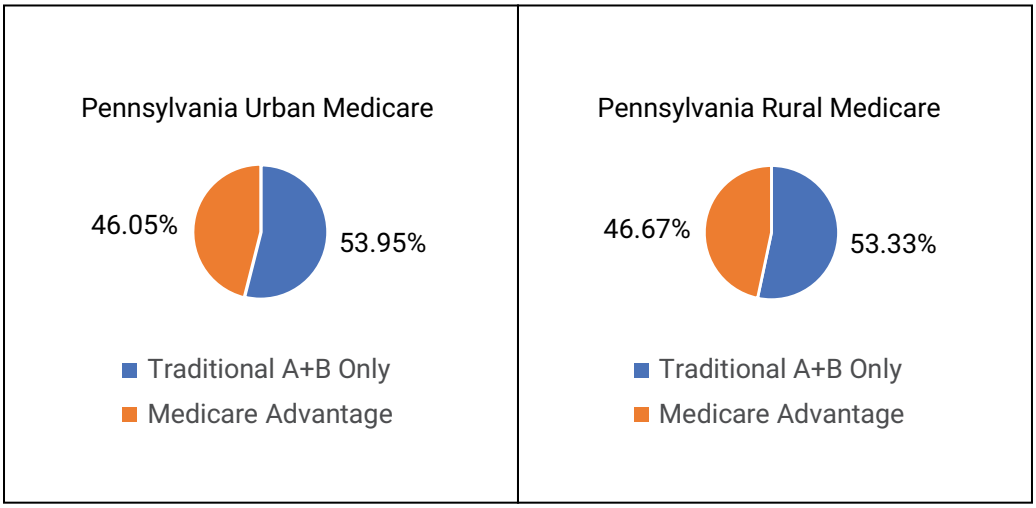


Source: Pennsylvania Health Care Cost Containment Council, 2021

Medicare Advantage

The Medicare Advantage program (also known as Part C) is an alternative to traditional Medicare that allows beneficiaries to receive all of Part A, Part B, and often Part D benefits through private insurance plans that contract with CMS (Centers for Medicare and Medicaid Services, 2020). The ratio between individuals utilizing traditional Medicare and Medicare Advantage is nearly identical among rural and urban counties in Pennsylvania as shown in Figure 3.

Figure 3: Rural and Urban Medicare Part A and Part B Participation in Pennsylvania



Source: Centers for Medicare and Medicaid Services, 2018

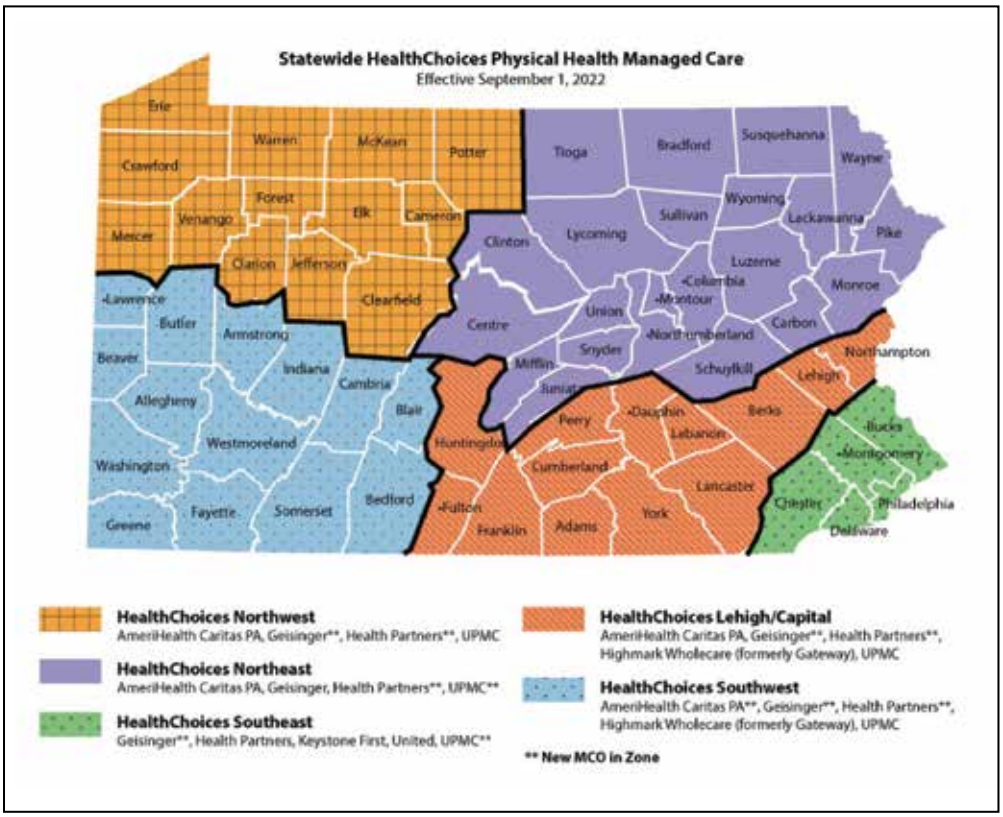
In 2018, Medicare enrolled 771,123 rural Pennsylvania residents, 411,218 in traditional Medicare and 359,913 in Medicare Advantage (Center for Medicare and Medicaid Services, 2018). As a state, Pennsylvania ranks seventh in the nation for the percentage of eligible residents enrolled in Medicare Advantage at 41 percent (Grunebaum, 2021).

Medicaid

Medicaid, known as Medical Assistance (MA) in Pennsylvania, is a health care program for low-income populations and is jointly funded by the federal and state governments. Pennsylvania's Medicaid program provides access to health care services for limited income children, pregnant women, parents, seniors, individuals with disabilities, and adults receiving federal income maintenance assistance (Pennsylvania Department of Human Services, 2021). In 2019, the federal government financed 52 percent of the total cost within the state, which was slightly below the national average of 63 percent (Hospital and Healthsystem Association of Pennsylvania, 2019). As of July 2022, there were over 3.5 million Pennsylvanians eligible for MA. (Pennsylvania Department of Human Services, 2022a) and 2.6 million enrolled as of February 2024 (Pennsylvania Department of Human Services, 2024). On average in Pennsylvania, Medicaid rates are reimbursed at approximately 86 percent of Medicare rates (Medicaid and CHIP Payment and Access Commission, 2017).

Pennsylvania pays for most MA health care services through a managed care model known as HealthChoices. HealthChoices is administered by private health insurance companies, known as Medicaid Managed Care Organizations (MCOs), which contract with the Pennsylvania Department of Human Services (DHS) to provide access to health care services. HealthChoices is organized into five MA MCO zones, as illustrated in Figure 4. Similar zones have been established for other HealthChoices programs and for behavioral health services supported by MA.

Figure 4: Pennsylvania HealthChoices Map



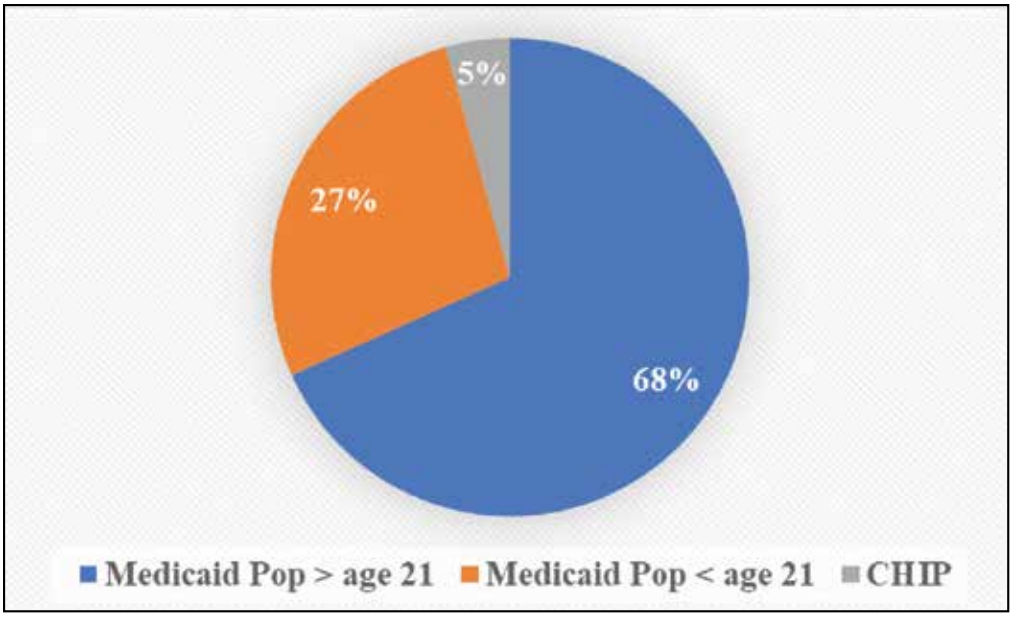
Source: Pennsylvania Department of Human Services, 2022c

Children's Health Insurance Program

The Children's Health Insurance Program (CHIP) is a state- and federally-funded health insurance program providing health insurance to uninsured U.S. citizens who are Pennsylvania resident children under the age of 19, are not eligible for or enrolled in Medicaid, and whose parents are working full time but do not have employer-sponsored health insurance.

In June 2020, CHIP insured over 44,000 rural Pennsylvania children; in rural counties, the CHIP-insured rate ranged from 2.1 to 6 percent (Children's Health Insurance Program, 2020b). Figure 5 shows the percentage of rural Pennsylvania residents receiving government supplemented assistance under the age of 21 by assistance source (Medicaid/CHIP).

Figure 5: Rural Pennsylvania Government Supplemented Assistance (Medicaid/CHIP) by Age



Source: Pennsylvania Department of Human Services, 2020; Children's Health Insurance Program, 2020b

Pennie™, Pennsylvania's Health Insurance Marketplace

The Patient Protection and Affordable Care Act (ACA) of 2010 brought significant changes to health care across the U.S. by expanding access to insurance, increasing consumer protections, emphasizing prevention and wellness, improving quality and system performance, expanding the health care workforce, and curbing rising health care costs (National Conference of State Legislatures, 2011). The ACA established the federal Health Insurance Marketplace, a service that helps people shop for and enroll in health insurance, available for most states at HealthCare.gov. Pennsylvania launched its health insurance marketplace, called "Pennie™," in 2020 (Norris, 2022).

Individuals with lower incomes were among those who benefitted most from the ACA. In 2015, Pennsylvania expanded the state's Medicaid program to cover all adults with incomes below 138 percent of the federal poverty level.

Military and Veteran's Health Insurance

The Veteran's Health Administration (VHA) is a federally funded program that provides health care benefits to qualifying veterans. For non-VHA federal facilities, care for VHA patients may be provided and reimbursed through the 2020 VHA Mission Act which gives veterans greater access to health care in VA facilities and the community, expands benefits for caregivers, and improves the VA's ability to recruit and retain medical providers. TRICARE is federally organized health insurance coverage for active duty, retired, and selective reserve/national guard military members and their families. TRICARE is administered similarly to commercial insurance. In 2019, two percent of rural Pennsylvanians received health care funded by the military or VA, compared with the one percent in the urban areas of the state (U.S. Census Bureau, 2018). Specifics on health insurance for veterans are addressed in the Veterans Chapter included in this document.

THE UNINSURED

Uninsured individuals are those who are without any source of employer-sponsored or direct purchase health insurance and who are not eligible for or have not applied for Medicare, Medicaid, or VHA programs. The number of uninsured adults under age 65 in Pennsylvania, including the state's rural counties, has dropped over time but remains significant. In 2019, six percent of rural residents and six percent of the urban population were uninsured (U.S. Census Bureau, 2018).

PAYMENT FOR HEALTH CARE SERVICES IN RURAL PENNSYLVANIA

Rural providers face challenges in financial viability due to differences in their payer mix and patient volumes compared to their urban counterparts. When rural providers establish their operational plans and budget constraints, they must consider the likely reimbursement for services provided to their unique populations. They also must spread their fixed costs across fewer patients than their urban counterparts which results in increased costs per patient in rural facilities. With larger populations of aging and lower income patients in rural communities, rural facilities typically have a greater percentage of government payers than urban facilities.

Uncompensated care occurs when hospital care is provided for which no payment is received from the patient or commercial or public insurers. For the hospital, this represents a combination of bad debt and financial assistance on behalf of the facility since it does not expect payment. Financial assistance is included as a community benefit that non-profit hospitals and health systems report annually to the Internal Revenue Service. Uncompensated care at rural hospitals averages 2.16 percent compared to a lower statewide average of 1.72 percent (Pennsylvania Health Care Cost Containment Council, 2019).

SUMMARY AND RECOMMENDATIONS

An array of options pays for preventive, emergency, acute, chronic, and other health care services. Although employer-sponsored health insurance covers the largest group of insured Pennsylvanians, both rural and urban providers rely heavily upon a mixture of commercial payors and subsidized government coverage for reimbursement of services. Medicare remains a prominent payer in rural areas, especially given the aging population who utilize a disproportionate amount of health care resources. In addition, Medicaid participation through the state's HealthChoices programs has increased in rural areas. Strong local economies in rural areas will help to ensure continued access to employer-sponsored health insurance. Each reimbursement method has its advantages and disadvantages for both the patient and provider, and it is important for rural providers to understand the insurance status of the populations they serve. Incremental changes in patient volumes can have large financial impacts on rural providers. Changes in patient volumes coincide with changes in payor mix, and such changes determine the amount of revenue generated, as well as the financial and operational wellbeing of rural organizations. Given the need to sustain health care services in rural areas, as well as the precarious financial balance that many rural providers face each year, these factors make finance and payment a critical subject to consider in policy changes, organizational decisions about services, and population health discussions.

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RURAL MENTAL AND BEHAVIORAL HEALTH AND SUBSTANCE USE DISORDER

Behavioral health, which includes mental illness and substance abuse, has been and continues to be a challenge across rural America and in rural Pennsylvania. Effective behavioral health prevention and treatment is a key component of successfully addressing overall population health.

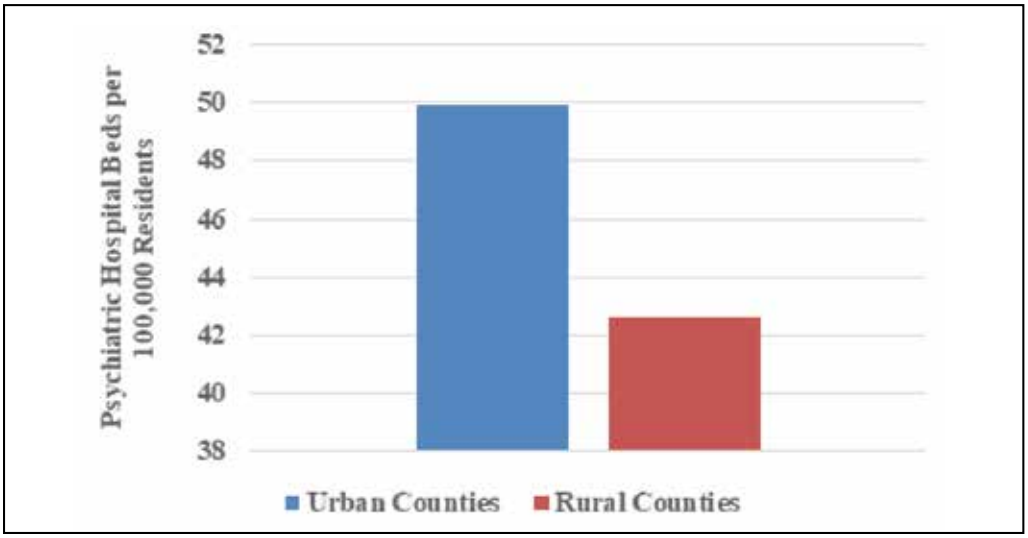
FACILITIES AND SERVICES

Pennsylvania has a long history of innovation and leadership providing behavioral health services. In 1753, with funds raised by Dr. Thomas Bond and Benjamin Franklin, the Pennsylvania Hospital opened in Philadelphia to serve psychiatric patients (Sudak, 2017). There, in 1783, Dr. Benjamin Rush, the "father of American psychiatry," proposed that mental illness was a disease of the mind and not a result of demons. In 1844, the head of Pennsylvania Hospital for the Insane organized superintendents from 13 hospitals to share information and innovation which led to the founding of the American Psychiatric Association (Sudak, 2017).

As of 2021, 99 hospitals in the state were licensed, set-up, and staffed with inpatient psychiatric units providing a total of 6,247 beds for psychiatric services (Pennsylvania Department of Health, 2019). These included 23 specialty psychiatric hospitals, six state psychiatric hospitals, 63 general acute care hospitals with psychiatric units, and seven Veterans Administration (VA) medical centers with psychiatric units (Joint State Government Commission, 2020). Nine facilities served adults only, five served children and adolescents only, and one served clergy. Despite the prevalence of facilities in the state, mental, behavioral health, and psychiatric services are not distributed equitably across rural and urban areas.

Figure 1 shows psychiatric in-patient hospital bed capacity by rural and urban counties. Even with fewer rural beds available, the psychiatric admissions rate per 100,000 residents is slightly higher in rural counties at 843.4 rural admissions, compared to 841.3 urban admissions (Pennsylvania Department of Health, 2019).

Figure 1. Hospital Beds for Psychiatric Inpatient Use by Urban and Rural Counties

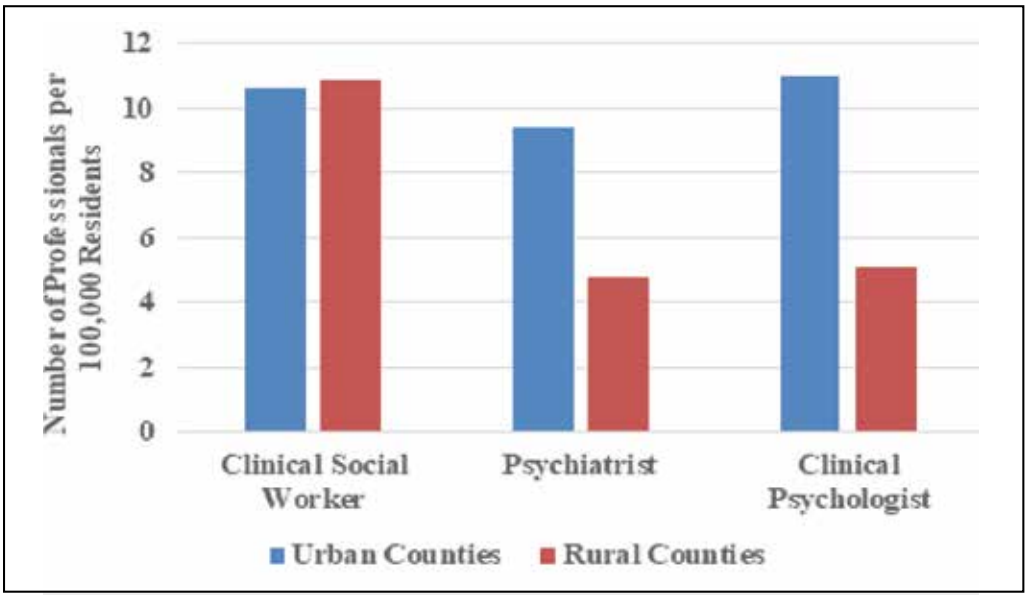


Source: Pennsylvania Department of Health, 2019

Mental and behavioral health services are provided through several different types of providers. Access to clinical social workers is similar across rural and urban areas; access to psychiatrists or available hospital beds at psychiatric inpatient units show a distinct urban/rural divide. Counseling and therapy may be provided not only at hospitals, but at primary care clinics; behavioral health and counseling clinics; independent sole provider offices; and through telehealth services from clinical social workers, psychiatrists, or clinical psychologists, depending on patient need. Between urban and rural counties, clinical social workers per 100,000 residents are evenly distributed (Pennsylvania Department of Health, 2019). However, the utilization of psychiatrists and clinical psychologists is available at a rate per 100,000 rural residents that is half the availability per 100,000 urban residents (Pennsylvania Department of Health), as shown in Figure 2.

Psychiatrists and clinical psychologists by number are available to rural residents at half the rate available to urban residents.

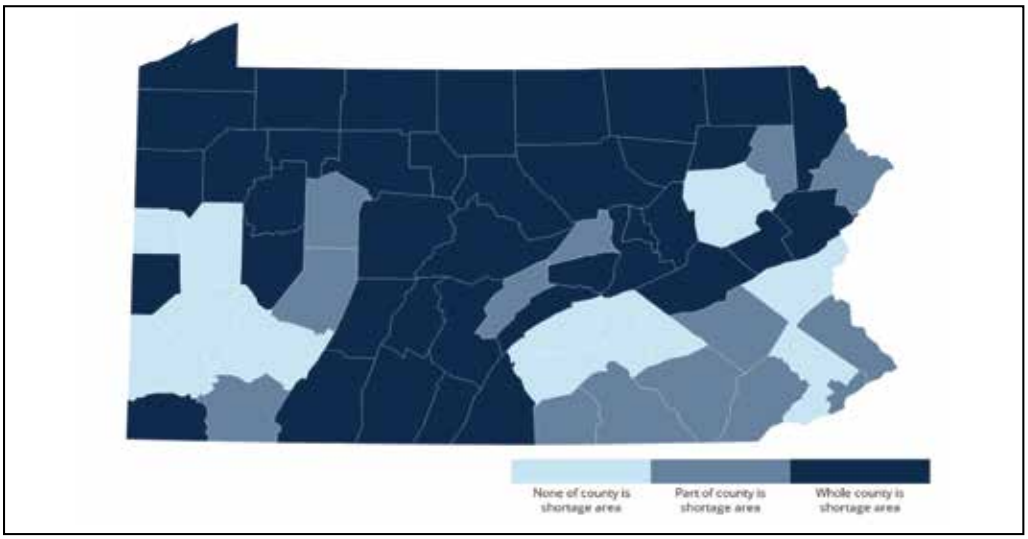
Figure 2. Pennsylvania Mental and Behavioral Health Care Professionals by Urban and Rural Counties



Source: Pennsylvania Department of Health, 2019

An even clearer picture of the rural health care shortage of mental and behavioral health professionals is provided in Figure 3, which shows the 2021 federally designated Mental Health Professional Shortage Areas (HPSA) in Pennsylvania by county. The counties with the largest area of Mental HPSAs mirror the rural counties in the state.

Figure 3. Health Professional Shortage Areas: Mental health, by County, 2022 - Pennsylvania



Source: data.HRSA.gov. November 2022.

Privacy is a challenge in small communities where anonymity may be hard to achieve (Townsend, 2011; Rural Health Information Hub, 2021). Rural facilities that provide behavioral health services may face barriers to utilization, including the social stigma and privacy concerns of patients. Typically, mental and behavioral health issues, substance abuse, and counseling are not openly discussed in rural communities, preventing rural residents from knowing which services are readily available (Rural Health Information Hub, 2021). Models that co-locate or integrate behavioral health services with primary care, within the same clinic or hospital building, have proven to ease patient anxiety about the public disclosure of their mental and/or behavioral health treatment (Rural Health Information Hub, 2021).

PATIENTS SERVED

Behavioral health providers serve patients with varying degrees of mental health conditions. Pennsylvania residents aged 5 to 65 with cognitive difficulty comprise 5.9 percent of the rural population and 5.2 percent of the urban population within that same age group (U.S. Census Bureau, 2019).

Adult mental illness in Pennsylvania include:

- Serious psychological distress (10.4 percent of state population);
- Major depressive disorder (6 percent of state population);
- Bipolar disorder (2.6 percent of state population); and
- Schizophrenia (1.1 percent of state population).

Source: Heun-Johnson, et al., 2017

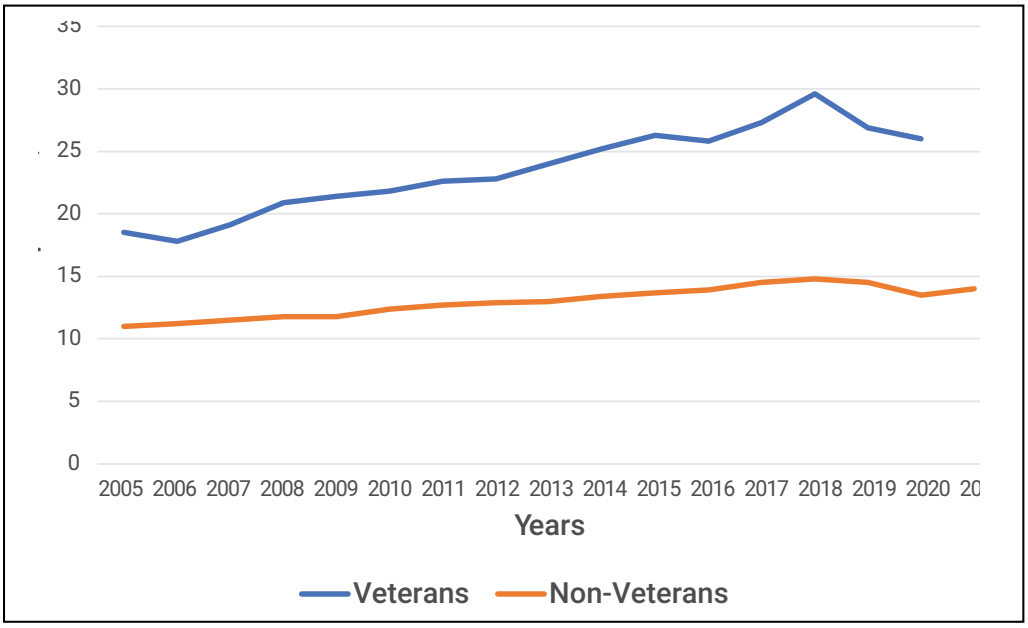
According to the Centers for Disease Control and Prevention (CDC) (2011), cognitive difficulty may result from, but is not limited to:

- Alzheimer's disease and other dementias;
- Stroke;
- Traumatic brain injury; and
- Developmental disabilities.

Serious psychological distress is common within the general U.S. population. Major depressive disorder, bipolar disorder, and schizophrenia are serious mental illnesses that can limit normal daily activity (Centers for Disease Control and Prevention, 2011). Each of these three illnesses are estimated to impose an economic burden of $5 billion annually in Pennsylvania (Centers for Disease Control and Prevention, 2011).

Although mental health disorders may overlap, any one disorder may lead to thoughts of suicide. In Pennsylvania, the prevalence of serious thoughts of suicide has been slowly increasing. In 2020, 4.28 percent of the state's population were reported to have considered suicide, compared to a lower national average of 4.19 percent (Mental Health America, 2021). The COVID-19 pandemic increased rates of depression, anxiety, and isolation (Mueller, et al., 2020; Abbott, 2021). These increased stressors may have contributed to a greater suicide rate in certain populations (Losey, 2021) (see Figure 4). For example, after several years working to decrease the suicide rate through concentrated counseling programs and telehealth, U.S. veteran suicide rates declined from a high of 29.6 per 100,000 veterans in 2017 (Ramchand, 2021; Veterans Administration, 2021), with rates falling through 2019. Preliminary reports from the Pentagon indicated a 2020 yearly mortality total increase of 13.5 percent veteran suicides (Losey, 2021; Veterans Administration, 2021). As a comparison, the U.S. non-veterans 2016 suicide rate was 17.8 per 100,000 in 2017 and slightly lower in 2019 (Ramchand, 2021; Veterans Administration, 2019). The Centers for Disease Control and Prevention (CDC) indicated a further decline in 2020 for the non-veteran yearly mortality totals of 5.6 percent (Fernandez, 2021).

Figure 4: Age- and Sex-Adjusted Suicide Rates, U.S. Veterans and Non-Veterans

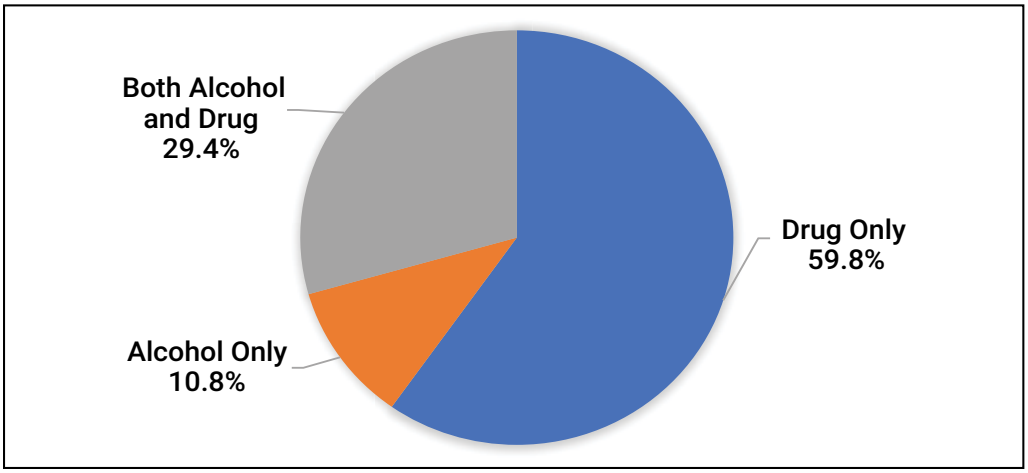


Source: Veterans Administration, 2021; Losey, 2021; Fernandez, 2021

DRUG AND ALCOHOL ADDICTION

Drug and alcohol abuse affected 25 percent of Pennsylvania families in 2018, ranking Pennsylvania tenth in the country. Addiction and substance abuse, which may be drugs and/or alcohol (see Figure 5), take a toll on individuals, families, health care facilities, rehabilitation services, social services, and enforcement agencies. In the 10-year period of 1999-2019, higher rates per 100,000 residents of overdose deaths fluctuated between rural and urban counties without a consistent pattern (Hedegaard and Spencer, 2021). During that period, the leading cause of overdose deaths in rural counties were natural and semi-synthetic opioids, such as oxycodone, hydrocodone, and codeine (Hedegaard and Spencer, 2021). However, beginning in 2019, rural overdose deaths involving psychostimulants (drugs such as methamphetamines) rose to 1.4 times higher per 100,000 in rural counties than urban at 6.7 rural deaths compared to 4.8 urban deaths (Hedegaard and Spencer, 2021). In 2021, coroners, law enforcement, and state officials reported that methamphetamine and cocaine use were on the rise while prescription drug and heroin deaths leveled off (Associated Press, 2021). Overall, the Pennsylvania drug overdose rate per 100,000 was still higher in urban counties (Hedegaard and Spencer, 2021).

Figure 5. Substance Abuse Among Enrolled Treatment Patients

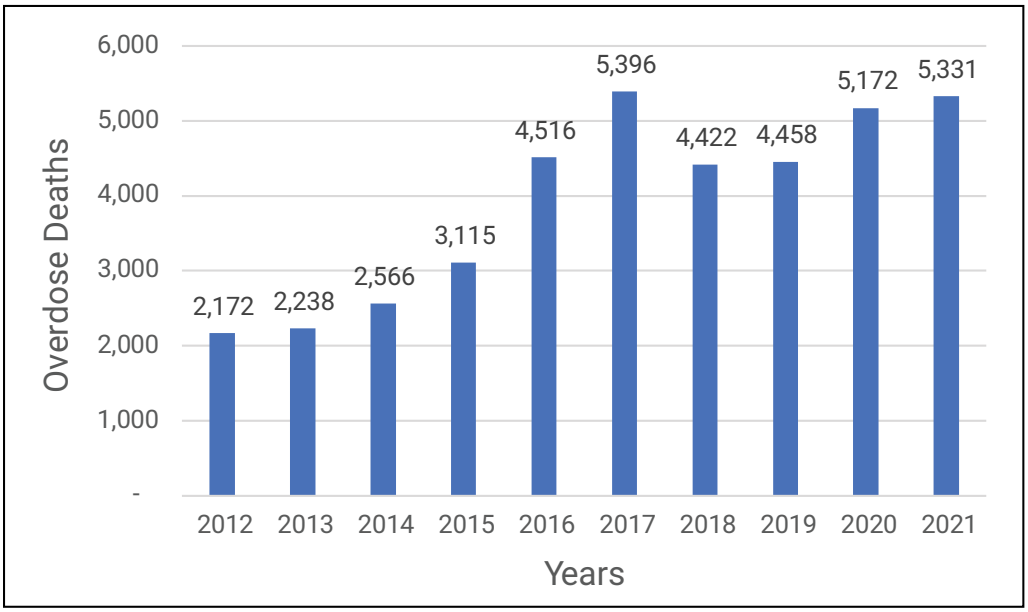


Source: Substance Abuse and Medical Health Administration, 2020

The CDC reported a 16 percent increase in Pennsylvania overdose deaths from 4,444 in 2019 to 5,172 deaths in 2020 (Associated Press, 2021; Ahmad, et al., 2021). Nationally, overdose deaths increased as well by 29 percent during the same one-year timeframe. Continuing the upward trend, on November 17, 2021 the CDC submitted their provisional counts of drug overdose deaths for the year ending April 2021 showing an increase in Pennsylvania of 13.1 percent and a national increase of 28.5 percent over the same time period from the previous year (Centers for Disease Control and Prevention, 2021). The reported statewide increase in 2020 ended a trend of declining numbers (see Figure 6). The initial earlier decline was due, in part, to a reduction in the distribution of pharmaceutical opioids and the increase in the use of the overdose antidote naloxone, which was distributed to police, emergency-room personnel, ambulance crews, and made available to the general public through a statewide prescription (Associated Press, 2021). Former CDC director Robert Redfield stated in a December 2020 report that "the disruption to daily life due to the COVID-19 pandemic has hit those with substance use disorder hard" (Centers for Disease Control and Prevention, 2020). The same report delineated anti-COVID-19 pandemic measures utilized at local, state, and national levels may have had unintended consequences for substance use and overdose (Centers for Disease Control and Prevention, 2020).

The pandemic caused isolation and depression that exacerbated issues for those in recovery and resulted in increases of drug and alcohol overdose. In Pennsylvania, Governor Tom Wolf's mandatory stay-at-home order issued on April 1, 2020, combined with the closure of non-essential businesses, contributed to an increase in the unemployment rate from 4 percent in March 2020 to over 12 percent by the end of April of the same year (Vaughn, 2020). The lockdown intensified isolation and impeded access to treatment (Vaughn, 2020). The CDC estimated that 13 percent of Americans reported starting or increasing substance abuse as a coping method (Abramson, 2021). For individuals in substance use recovery, social support is critical to prevent relapse. Although access to in-person meetings and peer support groups was limited during the pandemic, virtual meetings and telehealth counseling expanded and were effective for some (National Institute on Drug Abuse, 2021).

Figure 6. Pennsylvania Overdose Deaths by Year, 2012-2020



Sources: Open Data PA, 2021; Associated Press, 2021

Pennsylvania has initiated processes to assist individuals experiencing drug addiction. On September 30, 2014, David's Law–Opioid Overdose Reversal Act 139 was signed into law, which expanded access to naloxone and provided immunity to individuals who prescribe, dispense, and administer naloxone (Pennsylvania General Assembly, 2014). To increase the chance that an individual will fully recover from an overdose, the recommended "warm handoff" program was initiated, providing the patient a substance abuse treatment referral while still in the hospital emergency room (Vertava Health, 2021). Other addiction treatment services include:

- Intervention Services: professional interventionist will help chose correct program;
- Drug and Alcohol Detox Program: this option is a medically assisted detox program;
- Inpatient Addiction Treatment: grow and build positive behaviors that support sobriety;
- Outpatient Addiction Treatment: transitional step-down level of care; and
- Aftercare Services: continues stable recovery by providing peer support and mentorship.

SUMMARY AND RECOMMENDATIONS

The struggle to positively address rural Pennsylvania's behavioral health challenges has resulted in some success; however, significant focus is required to achieve long-term advances.

Nationally, in 2020, only 44.8 percent of adults with mental health conditions received treatment, with an average of an 11-year delay from onset to first treatment (National Alliance on Mental Illness, 2021). Access to psychiatrists and clinical psychologists per 100,000 population in rural areas is half of that in urban areas. Incentives need to be implemented to position these professionals in rural counties. Increasing professional service reimbursement in the designated Pennsylvania Mental Health Professional Shortage Areas (HPSA) would encourage filling the void. Telehealth behavioral health application has shown some success with veterans and civilians, especially for those experiencing suicide ideation. Expanding this option, both for mental health and substance abuse disorder, for rural Pennsylvania residents would break isolation trends. The telehealth choice is critical especially where medical facility travel distance can be considerable as well as during periods of widespread isolation such as during the COVID-19 pandemic.

Addressing barriers to widespread access to telehealth, such as limitations to rural broadband access, would increase mental health service availability to rural residents. The Pennsylvania state government has been proactive in addressing illicit pharmaceutical opioid drug access and allowing for the widespread distribution of the naloxone overdose antidote to decrease overdose deaths. Finally, co-locating behavioral health and primary care would provide greater anonymity for behavioral health patients living in smaller rural communities. Successfully addressing the behavioral challenges throughout rural Pennsylvania will help to alleviate other population health-related issues.

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ORAL HEALTH IN RURAL PENNSYLVANIA

Rural populations struggle to access quality health care and oral health care is no exception. A lack of access to oral health services is a critical issue facing rural Pennsylvanians and can be linked to negative health implications.

Pennsylvania has 163 individual Dental Health Professional Shortage Areas (DHPSAs), which document the maldistribution of the dental workforce and serious disparities in access to care for low income and rural populations.

Significant areas of rural Pennsylvania lack dentists, and as a result, it is often difficult for rural residents to access dental care. There is a significant geographic maldistribution of the dental workforce since most dentists practice in urban or suburban areas. According to 2022 federal shortage designations, Pennsylvania has 163 dental Health Professional Shortage Areas (dental-HPSAs), which document the maldistribution of the dental workforce and serious disparities in access to care for low-income and rural populations. These designations indicate that only 36 percent of the oral health care needs in the state are met (Health Resources and Services Administration, 2022). Pennsylvania would need a total of 337 new providers to meet all needs in the designated shortage areas (Health Resources and Services Administration, 2022). At the current rate of new dentist graduates choosing to work in dental HPSAs, it would take 14 years to meet this need (PCOH Workforce, 2023).

The Pennsylvania Legislative Budget and Finance Committee published a study in 2023 on rural dental health. Key findings included: over 6,900 dentists practice in non-rural counties, compared to 450 dentists in rural areas; only six percent of the graduates from Pennsylvania-based dental schools practiced in rural areas; only a quarter of the state's loan repayment grantees were practicing in rural areas; and rural dentists have 39 percent more Medicaid recipients for every dentist participating in Medicaid compared to non-rural areas.

Pennsylvania adopted a 10-year 2020-2030 State Oral Health Plan (Pennsylvania Department of Health, 2020), which is focused on three priorities: access and education, workforce, and building a state infrastructure. The plan is designed to improve oral health for all Pennsylvanians over the next decade and will address rural disparities.

ACCESS TO CARE OPTIONS

It is not uncommon for rural residents to travel across counties and wait months to see a dental provider. Current wait times can be as long as 730 days in rural areas to get an appointment (Pennsylvania Coalition for Oral Health, 2023). The integration of oral health into medical settings is quickly becoming a feasible option to assist rural areas. Medical providers can complete oral health risk assessments and apply fluoride varnish to patients in the primary care setting.

Individuals in rural areas may also rely on mobile dental programs and teledentistry to connect with a dental provider. It is important for mobile programs to be connected to brick-and-mortar facilities so that residents can seek care in case of an emergency or need for complex restorative dentistry. Rural broadband access is an important component of a successful teledentistry program.

Pennsylvania's safety net system for oral health care consists of care at Federally Qualified Health Centers (FQHCs), Rural Health Clinics (RHCs), and free and charitable clinics. In 2020, nearly 90 percent of FQHC sites provided dental services in just over half of Pennsylvania's 67 counties. RHCs serve the state's 48 rural counties with county-wide dental professional shortage designations. Sixteen of the state's 66 RHCs offer some type of oral health education, oral health services, and/or a dental referral system. Of the 53 free and charitable clinics in the state, approximately 12 sites offer dental services (Free Clinic Association of Pennsylvania, 2023).

Snyder County - Chapman Township

Pennsylvania has three full-time dental schools, which can serve as an additional safety net option for dental treatment. However, all three schools are in Pittsburgh or Philadelphia, the most urban cities in the state. Some preventive services can be provided at no- or low-cost at the state's 13 dental hygiene programs.

Pennsylvania utilizes a predominately managed care model for the state's Medicaid program. Managed Care Organizations (MCO) are contracted through DHS to serve member needs and are required to meet network adequacy requirements. With just 23% of general dentists accepting any form of Medicaid, residents who rely on Medicaid for their health plan have a demand that greatly exceeds the supply in rural counties. For individuals who are uninsured, underinsured, or not eligible for Medicaid coverage, access can be even more difficult although significant services are provided through FQHCs for those without adequate health insurance.

ORAL HEALTH WORKFORCE

Pennsylvania has a range of dental providers in its licensed and certified workforce. In 2021, Pennsylvania had more than 10,000 licensed dentists and 9,000 licensed dental hygienists (Pennsylvania Department of State, 2020). In addition to this traditional workforce, the Pennsylvania State Board of Dentistry has certified more than 2,000 expanded function dental assistants (EFDAs) who have restorative services in their scope of practice, and nearly 900 certified public health dental hygiene practitioners (PHDHPs) who provide preventive treatment and education services without supervision in public health settings (Pennsylvania Department of State, 2020). However, as with dentists, these providers are inequitably distributed across Pennsylvania and do not meet the oral health needs of rural populations.

Rural counties are home to only 31 dentists per 100,000 residents, compared to 61 dentists per 100,000 residents in urban areas (ADA Health Policy Institute, 2021). Sixty-three (63) Pennsylvania counties contained a dental-HPSA designation; the rural counties of Cameron, Fulton, Juniata, and Potter have only 20 dentists per 100,000 residents.

The state also provides loan forgiveness programs for dental providers, many of whom apply from rural practice sites. The Pennsylvania Department of Health (DOH) provides loan repayment opportunities as an incentive to recruit and retain primary care practitioners interested in serving in federally designated areas of underservice. The state loan repayment program will reimburse dentists up to $80,000 in exchange for two years of full-time practice in an area that is designated as underserved. While this financial assistance may seem substantial, it only covers a fraction of a dentist's student debt and often is not enough incentive to keep a dentist in a rural area following their commitment. This leads to a high rate of provider turnover and causes instability for patients that are already vulnerable.

ORAL HEALTH INFRASTRUCTURE

Oral health infrastructure in Pennsylvania includes several components, including school-based programming, community water fluoridation efforts, and state surveillance.

DENTAL SERVICES FOR SCHOOL-AGED CHILDREN

Venango County – Little Sandy Creek

Pennsylvania has codified dental services for children. Through 28 PA Code (regulations) 23.3(a), "Dental examinations shall be required on original entry into school and in grades three and seven" (Commonwealth of Pennsylvania, 1982). Schools have two options for fulfilling this requirement: the mandated dental program or the dental hygiene services program (Pennsylvania Department of Health, 2002). The mandated dental program requires the completion of dental examinations by a dentist licensed within the Commonwealth of Pennsylvania. School districts must ensure that these examinations are completed by a dentist and that examinations in the mandated grades are provided free-of-charge to students.

The dental hygiene services program utilizes a Certified School Dental Hygienist (CSDH). This program requires that a dental hygienist must have at a minimum, a bachelor's degree, and either have an Educational Specialist Certificate issued by the Pennsylvania Department of Education (PDE) or be working towards acquiring this certificate. This individual is an employee of the school district and is responsible for writing and maintaining the district's dental program (Pennsylvania Department of Health, 2002). The program addresses the unique needs of individual school districts.

Dental hygiene services programs may include multiple offerings such as:

- Mandated state dental screenings and resulting documentation and referrals;
- Follow-up on referrals and advocacy for care;
- Coordination of dental care for students by connecting their families with community resources and other support;
- Organization and operation of a school fluoride supplement program;
- Classroom dental health education; and
- Preventive dental hygiene services to include: cleanings, sealants and fluoride varnish application, if the CSDH is also a certified PHDHP.

COMMUNITY WATER FLUORIDATION


Butler County – Parade

Community water fluoridation can be a cost-effective public health measure. Nearly 1.5 million Pennsylvania residents (11 percent of the state's population) do not have access to community water systems (Pennsylvania Department of Environmental Protection, 2020) which is exacerbated by geographic location. Only 64 percent of Pennsylvanians are served by a public water system that is fluoridated (Pennsylvania Department of Health, 2020-2030). For rural communities that rely heavily on wells and private water systems, the rate is significantly lower. For these families, the combined impact of fewer providers and reduced access to services can be detrimental to oral health.

STATE SURVEILLANCE

Data indicators in Pennsylvania continue to be tracked. Through the 2020-2030 State Oral Health Plan, the state tracks 22 measurable outcomes each year to address gaps in care. Rural disparities will remain a focus and rural populations will be prioritized as new policies are developed and programs are implemented.

SUMMARY AND RECOMMENDATIONS

A lack of access to oral health services is a critical issue facing rural Pennsylvanians and can be linked to several negative health implications. A multifaceted approach is imperative to improving rural oral health. The distribution of the dental workforce is one barrier to oral health access. Building the rural oral health infrastructure through programs that include the promotion of dental careers to high school students as well as tuition assistance and loan forgiveness will lead to an increase in the number of rural dental providers in the future. To improve oral health literacy and build value in oral health, medical-dental integration should be expanded. This expansion should include innovative models of care, including the utilization of PHDHPs and teledentistry. Finally, to prevent dental disease in rural communities, it is vital to maintain and grow the number of rural water systems that optimally fluoridate water for their rural residents.

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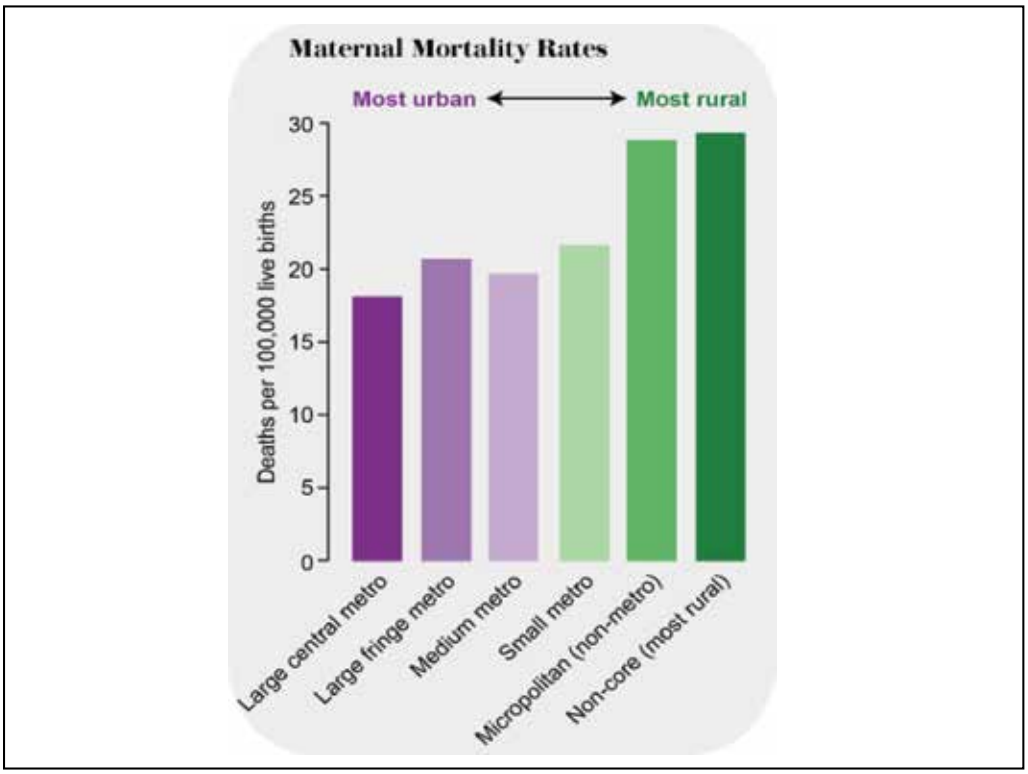
PRENATAL AND MATERNAL HEALTH IN RURAL PENNSYLVANIA

The maternal death rate is 60 percent higher in rural regions of the country than in central parts of metropolitan areas (Carey, 2019), as shown in Figure 1. These health disparities are due in part to the lack of primary care providers and other health care professionals available to them before, during, and after pregnancy (National Advisory Committee on Rural Health and Human Services, 2020). According to a survey of the members of the American College of Obstetricians and Gynecologists (ACOG) it is estimated that nationally, only six percent of the nation's obstetricians and gynecologists practice in rural areas (Maron, 2017).

Figure 1: National Maternal Mortality Rates



Source: Maron, 2017

Care for pregnant persons in rural regions also depends heavily on hospital infrastructure (National Advisory Committee on Rural Health and Human Services, 2020). More than 28 million potentially pregnant persons live in rural areas of the U.S. and over the last two decades, obstetric care provided at rural hospitals has steadily decreased (Hung, et al., 2016). Since 2005, 194 rural hospitals in the U.S. have closed their doors (Cecil B. Sheps Center for Health Services Research, 2023). Many rural hospitals that continue to operate are closing their obstetric (OB) units, leaving less than half of all rural counties across the country without this essential service (Becker's Healthcare, 2020). The percent of rural counties in the U.S. without hospital obstetric services increased from 46 percent in 2004 to 55 percent in 2014 (National Advisory Committee on Rural Health and Human Services, 2020).

More than 28 million women of reproductive age live in rural areas of the United States and over the last two decades, obstetric care provided at rural hospitals has steadily declined.

As a result, less than half of rural persons who could become pregnant live within a 30-minute drive of a hospital that offers obstetric services (Maron, 2017). These closures and lack of accessible obstetric services have increased the distance that pregnant persons must travel for maternity care, which has been associated with an increased risk of non-indicated induced Cesarean section, postpartum hemorrhage, prolonged hospital stay, and postpartum depression (National Advisory Committee on Rural Health and Human Services, 2020). This trend also has created problems for rural hospitals that remain open after the closure of their obstetric services, as they may still encounter challenges when providing care for emergency births or other obstetric traumas (Gilbertson, et al., 2020). Implementation of additional training and supplemental resources at rural hospitals operating without obstetrics services could potentially assist them in dealing with obstetric emergencies when patients are unable to travel to the nearest hospital offering specialized prenatal and maternal care (Gilbertson, et al., 2020).

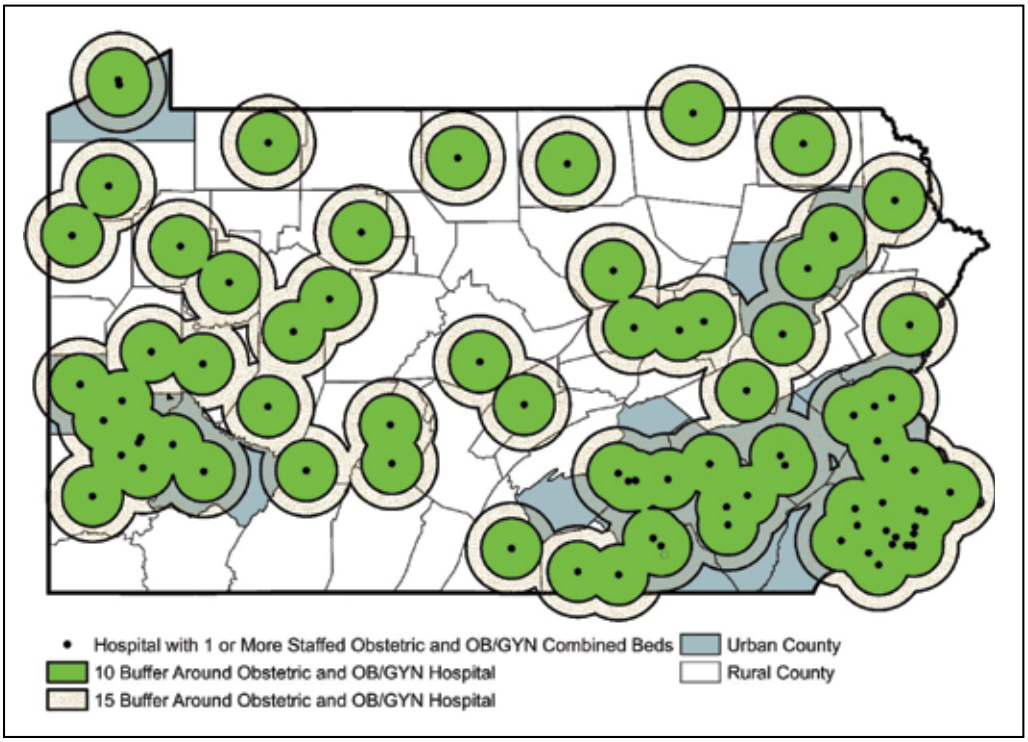
PRENATAL AND MATERNAL HEALTH CHALLENGES IN RURAL PENNSYLVANIA

Pregnant persons in rural Pennsylvania face these same challenges due to delivery room closures and lack of maternal and prenatal providers in rural regions (Young, 2017). In Pennsylvania, 50 OB units closed between 2010 and 2017, most drastically impacting western Pennsylvania (Hospital and Healthsystem Association of Pennsylvania, 2019). The number of Pennsylvania hospitals with neonatal intensive care units decreased by 10 percent between 2000 and 2017 (Hospital and Healthsystem Association of Pennsylvania, 2019). A former University of Pittsburgh Medical Center (UPMC) Altoona and UPMC Bedford President claims that these disparities are a reality in many rural areas of Pennsylvania because “there’s just such a shortage of resources” (Young, 2017). This trend of regionalization is predicted to continue due to an aging Pennsylvania population and declining birth rates throughout the state (Young, 2017).

Pennsylvania births have declined more than 12 percent from 148,934 births in 2008 to 130,730 in 2020 (Enterprise Data Dissemination Informatics Exchange, 2023). Lack of access to hospital-based delivery options is a struggle predominantly experienced by rural pregnant persons and is less of a concern for those persons living within 15 miles of major urban centers such as Pittsburgh or Philadelphia, where there are at least half a dozen delivery room options (Young, 2017).

Figure 2 depicts the licensed hospitals with obstetric and gynecologic units in Pennsylvania and demonstrates the areas of the state that have decreased access to these services, especially in the northern tier and the counties in the southwest and southcentral regions that border West Virginia and Maryland (Center for Rural Pennsylvania, 2023). The figure provides data for 10- and 15-mile buffer zones from each facility by rural and urban location.

Figure 2: Pennsylvania Hospitals with Obstetric Units and Population Proximity, 2021



10-mile and 15-mile Buffer Zone Populations by Rural and Urban

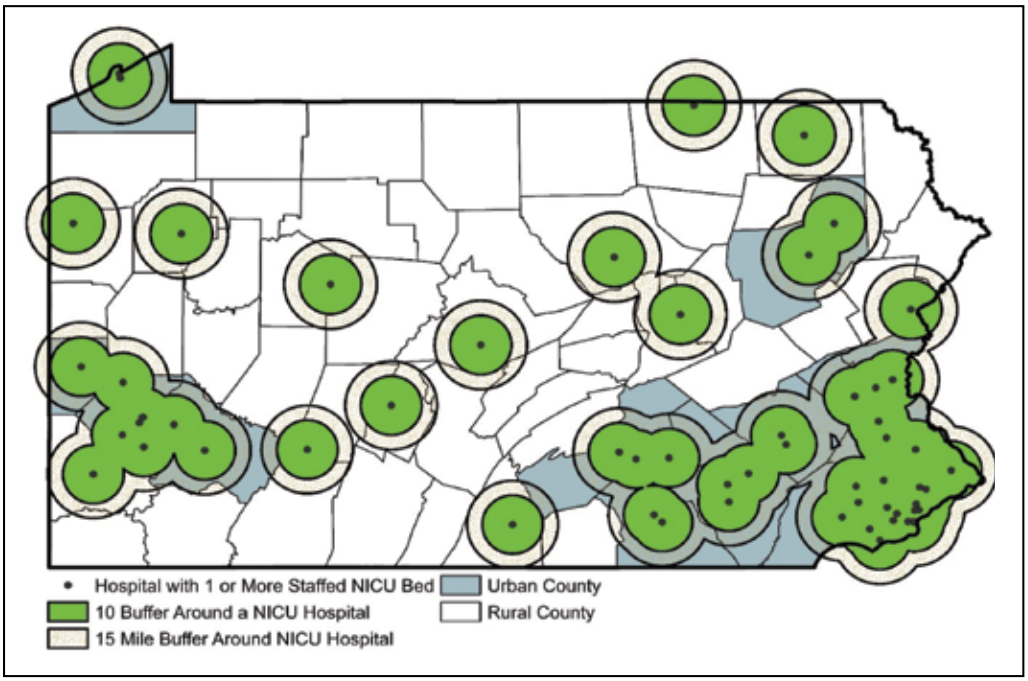
Buffer Zone	Rural	Urban
10 miles	1.70 million (50%)	8.56 million (89%)
15 miles	2.42 million (71%)	9.35 million (97%)

Sources: Pennsylvania Department of Health and U.S. Census Bureau; prepared by the Center for Rural Pennsylvania, 2023

These closures lead to increased travel times for rural pregnant persons, which is associated with higher costs; increased risk of complication; and additional financial, social, and psychological stress for patients (Hung, et al., 2016). Rural pregnant persons who are in labor may travel hours to reach hospitals where they can deliver and may require early elective deliveries using induction and cesarean section—procedures that increase the risk of complications. These challenges contribute to increases in births outside of hospitals, births in hospitals without OB units, and in preterm births, all of which carry greater risks for both delivering persons and newborns (Lewis, et al., 2019). UPMC Bedford closed their delivery room in 2017 due to a lack of physicians, nurses, and equipment; patients are directed to the nearest delivery room at UPMC Altoona, a 40-minute drive away (Young, 2017). Somerset Hospital closed its delivery room in 2016 and as a result, many pregnant persons in Somerset County travel about 30 miles to Conemaugh Valley Memorial Hospital in Johnstown to deliver their babies (Young, 2017).

Figure 3 shows the location of hospitals in Pennsylvania that provide Neonatal Intensive Care Units (NICU) by rural and urban location as well as data regarding 10- and 15-mile buffer zones from each facility. As with Figure 2, this demonstrates the lack of these services along the New York State border and adjacent to West Virginia in the southern part of the state (Center for Rural Pennsylvania, 2023).

Figure 3: Pennsylvania Hospitals with Neonatal Intensive Care Units (NICU) and Population Proximity, 2021



10-mile and 15-mile Buffer Zone Populations by Rural and Urban

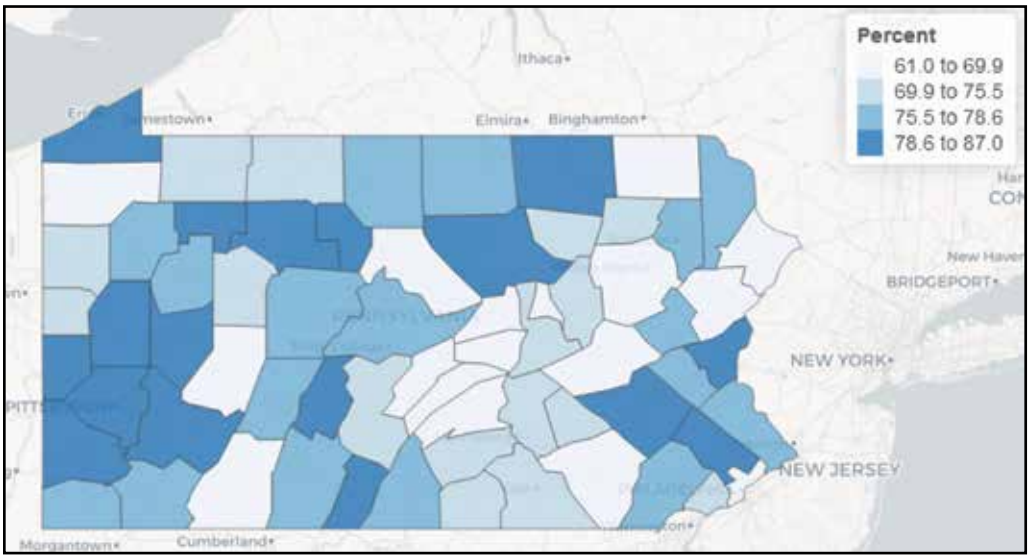
Buffer Zone	Rural	Urban
10 miles	.98 million (29%)	8.29 million (86%)
15 miles	1.54 million (46%)	9.17 million (95%)

Sources: Pennsylvania Department of Health and U.S. Census Bureau; prepared by the Center for Rural Pennsylvania, 2023

Pregnant persons in rural areas also face challenges in accessing prenatal care. Less than 50 percent of all rural counties have a practicing obstetrician or gynecologist. A lack of prenatal care increases pregnancy-related complications and death for delivering persons and infants (Lewis, et al., 2019). One way that health care providers in rural Pennsylvania have begun addressing this disparity is by discussing a patient's ability to travel at their routine prenatal visits (Young, 2017). Providers will assess their patient's options for traveling to delivery rooms and offer assistance such as gas cards if the necessary travel creates a financial burden (Young, 2017).

Figure 4 shows data for pregnant persons who had a prenatal care visit in the first trimester of pregnancy for the four-year period of 2016-2020.

Figure 4: Percent of Births to Pregnant Persons Who Had a Prenatal Care Visit in the First Trimester, 2016-2020



Source: Pennsylvania Department of Health, 2022

Another method that providers utilize to address the shortage of prenatal and maternity care in rural Pennsylvania is telemedicine. UPMC implemented a telemedicine program that allows doctors to interact with their patients via video or phone (Balser, 2019). This resource, stemming from a pilot program that included nearly 500 women with preeclampsia, eclampsia or hypertension, allows providers to reach postpartum women who require blood pressure monitoring (Balser, 2019). Through this service, pregnant persons check their blood pressure at home and report the numbers to a nurse who then assesses the results and determines if any issues need to be addressed (Balser, 2019). The program has resulted in "more frequently changing medicine, starting pregnant persons on medication who otherwise might not have been on treatment during this period" and the benefits have been projected to go beyond just six weeks postpartum (Balser, 2019). UPMC is just one example of a health system utilizing telemedicine in this way, as the practice is becoming more common across Pennsylvania in various health care networks and communities, particularly as a result of the COVID-19 pandemic.

POSTPARTUM CARE

Postpartum care is a critical time for the health of delivering persons and babies. All postpartum persons, regardless of geographic location, are at risk for postpartum depression and anxiety, pain, and a variety of other medical conditions and complications. More than half of all pregnancy-related maternal deaths occur after delivery versus during pregnancy and delivery. In Pennsylvania, postpartum persons who are covered by Medicaid have one year of continuous eligibility, as of April 2022 (Pennsylvania Department of Health and Human Services, 2022), although this support will end on December 31, 2024. Nationally though, according to the National Advisory Committee on Rural Health and Human Services, postpartum persons covered by Medicaid, which is more than half of persons giving birth in rural America, lose coverage after 60 days postpartum, resulting in a loss of care during a critical time (National Advisory Committee on Rural Health and Human Services, 2020). Without access to prenatal, delivery, and postpartum care, pregnant persons residing in rural areas face extreme disparities, which can lead to poor health outcomes.

BIRTH CENTER MODEL AND NURSE-LED CLINICS

The birth center model of care is one option that can expand labor and delivery services in rural areas (Jolles, et al., 2020). Birth centers are freestanding facilities that provide prenatal, labor and birth, and postpartum care using midwifery and wellness models. In the United States, 30 percent of birth centers are in rural areas. Another viable solution for providing postpartum care for rural pregnant persons are nurse-led clinics, under the leadership of nurse practitioners. There are currently 500 nurse-led clinics in the U.S. that provide holistic care to patients ranging from primary care services to postpartum care (Wilcox, 2014). As obstetric care options change across the country, and within rural areas, the expansion of access to facilities and models of care such as birth centers and nurse-led clinics should be considered.

ADDRESSING MATERNAL AND PRENATAL HEALTH CHALLENGES

Addressing the maternal mortality and morbidity health crisis, particularly in rural regions, is a top priority of the U.S. Department of Health and Human Services (HHS) (National Advisory Committee on Rural Health and Human Services, 2020). HHS released an Action Plan in December 2020 that "provides a roadmap for addressing risk factors before and during pregnancy, improving the quality of and access to maternity and postpartum care, and supporting a research agenda to fill gaps in current evidence." By the year 2025, HHS plans to:

- Reduce the maternal mortality rate by 50 percent;
- Reduce low-risk cesarean deliveries by 25 percent; and
- Achieve blood pressure control in 80 percent of women of reproductive age with hypertension.

Source: U.S. Department of Health and Human Services, 2020

The Action Plan's Executive Summary asserts that "these new initiatives will help us to support the long-term health of [pregnant persons] and babies and ensure the U.S. is one of the safest countries in the world for [pregnant persons] to give birth" (U.S. Department of Health and Human Services, 2020).

SUMMARY AND RECOMMENDATIONS

In rural regions across the country, the maternal death rate is approximately 60 percent higher than in central metropolitan areas (Carey, 2019). A leading cause of this disparity is a lack of prenatal, maternal, and postpartum services in rural areas. Many rural hospitals have ceased offering obstetric services and closed their delivery rooms completely in recent years, resulting in rural pregnant persons being forced to travel long distances for maternal care and birth-related emergencies. These barriers to care have increased maternal health risks and death rates for rural pregnant persons and can contribute to higher rates of postpartum depression. Telemedicine, birthing centers, and nurse-led clinics are a few methods that have been utilized to address rural maternal health disparities, but a lot of work remains to reduce maternal mortality and poor health outcomes in rural regions throughout Pennsylvania and the entire nation.

Further recommendations for addressing rural maternal health disparities include the implementation of additional training and supplemental resources at rural hospitals operating without obstetrics services. This could potentially assist these hospitals in dealing with obstetric emergencies when patients are unable to travel to the nearest hospital offering specialized prenatal and maternal care (Gilbertson, et al., 2020). Many providers also have begun addressing health disparities by discussing care plans and options with their patients during the early stages of pregnancy to determine the most feasible way for patients to receive routine prenatal care as well as where they can go in case of an emergency (Young, 2017). If travel to routine appointments becomes unfeasible for patients, telemedicine may be used to supplement office visits when physical exams are not necessary.

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HEALTH CARE TRANSFORMATION IN RURAL PENNSYLVANIA

One of the largest barriers to financial health for rural providers is the unpredictability of patient volumes, and therefore, revenue. Fee-for-service payment models, which pay based on the volume of patients and services, may be sufficient for urban providers who serve larger populations. However, with declining populations and the resulting instability of income from fee-for-service models, rural providers are left to constantly worry about the financial viability of their practice or facility. The resulting fear of negative margins and threat of closure prevent rural organizations from making large investments in long-term, transformational programs that would improve patient care and expand delivery of services.

Pennsylvania is a leader nationally in rural health care transformation.

To address these concerns, the federal Center for Medicare and Medicaid Innovation (CMMI) provided funds to Pennsylvania in 2017 to launch the Pennsylvania Rural Health Model (PARHM), to create sustainable access to health care in rural communities (Pennsylvania Office of Rural Health, 2021). Act 108 of 2019 established the Pennsylvania Rural Health Redesign Center Authority (RHRCA), which independently administers the PARHM and the Pennsylvania Rural Health Redesign Center Fund (Pennsylvania Department of Health, 2021). Subsequently, the Rural Health Redesign Organization (RHRCO) was established as a 501(c)(3) corporation to support RHRCA through fundraising. Pennsylvania is the first state to create such a model, centered entirely on rural providers, and more than a dozen other states have contacted these organizations to learn more about the model (Pennsylvania Department of Health, 2023).

The PARHM is an alternative payment model, which transitions eligible rural hospitals in Pennsylvania from fee-for-service payments to global budget payments (Pennsylvania Department of Health, 2023). Global budget payments are calculated for each participating hospital, based on the hospital's historical net patient revenue for either an average of the past three years or the most recent fiscal year—whichever is higher (Meyer, 2019). Together, Medicare, Medicaid, and participating private insurers contribute to the global budget payments, which can be used by the hospital to support efforts to serve their communities' unique needs (Meyer, 2019). These payments are provided by the program to participating hospitals in fixed monthly amounts for Medicare and through an alternative structure by Medicaid and participating private insurers. Such prospective payments shift the focus of care. Instead of relying on illness to bring patients to the hospital, participating hospitals are asked to develop Rural Hospital Transformation Plans that integrate programs to encourage health and wellbeing via preventive services. Hospitals are encouraged to coordinate with key community partners, such as social service agencies, businesses, and local government officials, to address the social determinants of health in their populations (Meyer, 2019). In 2019, five hospitals joined the PARHM. By 2023, there were eighteen hospitals participating in the model, along with six payors (Pennsylvania Department of Health, 2023). Of the hospitals who participate, five are Critical Access Hospitals (Rural Health Redesign Center, 2021).

These providers and payors covered 726,000 rural lives in Pennsylvania in 2020, backed by the global budget's $438 million in net patient revenue (Rural Health Redesign Center, 2021). Net patient revenue within the global budget is predicted to increase to approximately $725 million in 2021 and the model will cover approximately 1,000,000 rural lives in Pennsylvania (Rural Health Redesign Center, 2021). The success of the PARHM so far provides stability for participating providers as well as the communities those providers serve. Because hospitals are economic drivers for rural communities, the PARHM not only assists health care providers but also preserves local businesses and populations by providing sustainable access to rural health services (Pennsylvania Department of Health, 2020) as well as jobs and community support. Current participants make up 28 percent of eligible hospitals in the state (Pennsylvania Office of Rural Health, 2021). If more of the 65 total eligible hospitals joined, the positive impact of the PARHM could extend to that many more rural communities and economies. Successful implementation of the model through completion of this CMMI Demonstration in 2024 could form the basis of radically transformative care in rural areas across the country.

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PUBLIC HEALTH AND ITS IMPORTANCE TO RURAL HEALTH

Public health impacts every person in the United States, every day, but most Americans do not know the importance of public health in their everyday lives.

WHAT IS PUBLIC HEALTH?

Susquehanna County – County Attractions

According to the American Public Health Association (APHA), public health "promotes and protects the health of people and the communities where they live, learn, work, and play" (American Public Health Association, 2022a). The CDC Foundation further defines public health as "the science of protecting and improving the health of people and their communities" (CDC Foundation, 2023).

American bacteriologist, public health expert, and founder of Yale's Department of Public Health, Charles-Edward Amory Winslow succinctly summarized public health as "the science and art of preventing disease, prolonging life and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals" (Kemper, 2015; University of Tennessee Health Science Center, 2022).

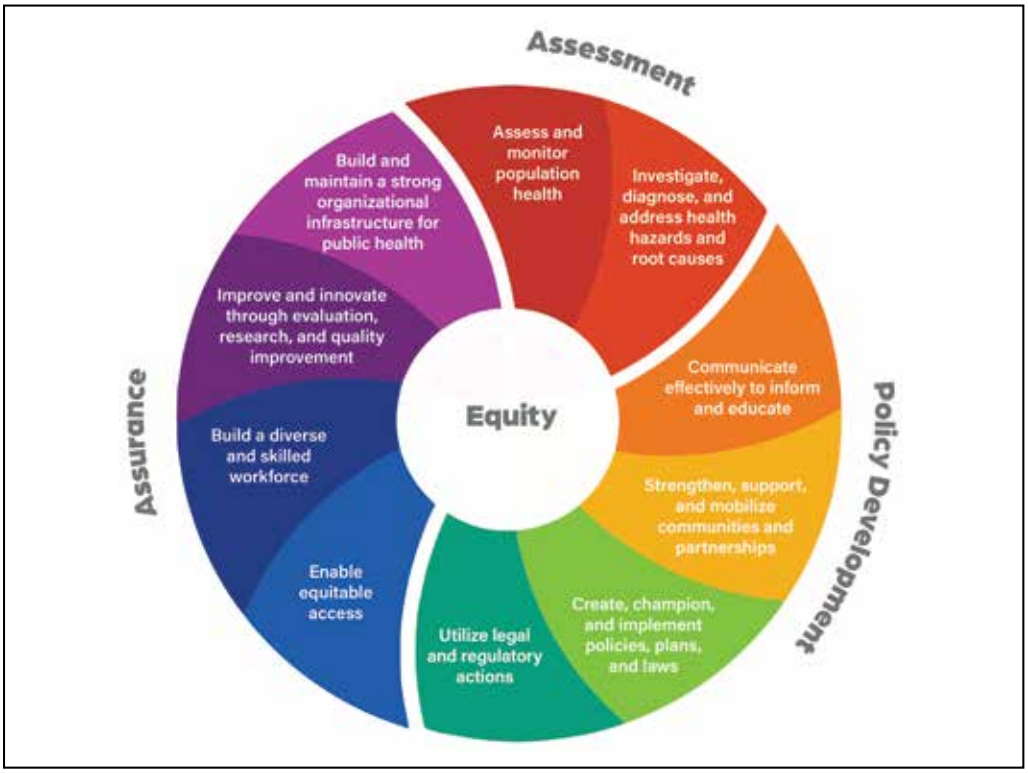
A primary goal of public health is to promote the wellness of individuals and communities by preventing disease and facilitating healthy behaviors (American Public Health Association, 2022a). The last few decades have benefitted from public health in several substantial ways. A few examples of notable public health successes within the past two decades include:

- Prevention and control of infectious diseases;
- Improved vaccinations against preventable diseases;
- Decreased use of tobacco;
- Improved maternal and infant health;
- Increased motor vehicle safety;
- Cardiovascular disease prevention;
- Improved occupational safety;
- Cancer prevention;
- Childhood lead poisoning prevention; and
- Expansion of public health preparedness and response.

Source: Centers for Disease Control and Prevention, 2011

As illustrated in Figure 1, the field of public health encompasses a full array of services categorized under the three overall principles of assessment, assurance, and policy development. These principles are grounded in research and contribute to overall system management and equity (Centers for Disease Control and Prevention, 2022a).

Figure 1: Ten Essential Public Health Services



Source: Centers for Disease Control and Prevention, 2022b

Public health is further defined by ten essential public health services (Centers for Disease Control and Prevention, 2022b):

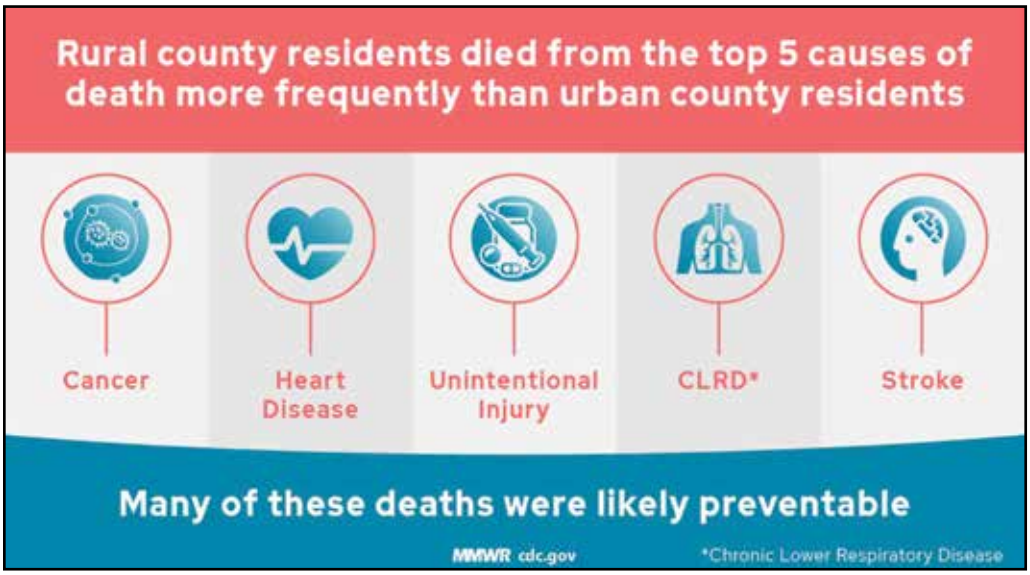
- Assess and monitor population health status, factors that influence health, and community needs and assets;
- Investigate, diagnose, and address health problems and hazards affecting the population;
- Communicate effectively to inform and educate people about health, factors that influence it, and how to improve it;
- Strengthen, support, and mobilize communities and partnerships to improve health;
- Create, champion, and implement policies, plans, and laws that impact health;
- Utilize legal and regulatory actions designed to improve and protect the public's health;
- Assure an effective system that enables equitable access to the individual services and care needed to be healthy;
- Build and support a diverse and skilled public health workforce;
- Improve and innovate public health functions through ongoing evaluation, research, and continuous quality improvement; and
- Build and maintain a strong organizational infrastructure for public health.

Source: Centers for Disease Control and Prevention, 2022b

RURAL PUBLIC HEALTH DISPARITIES

As noted, the goals of public health are to prevent disease, prolong life, and promote health through organizations, public and private communities, and individuals. It is for these very reasons that public health is of critical importance to rural communities. According to the Centers for Disease Control and Prevention (CDC), U.S. residents living in rural areas are more likely than their urban counterparts to experience premature death caused by the top five causes of death: heart disease, cancer, unintentional injury, chronic lower respiratory disease (CLRD), and stroke (Centers for Disease Control and Prevention, 2022c), as shown in Figure 2.

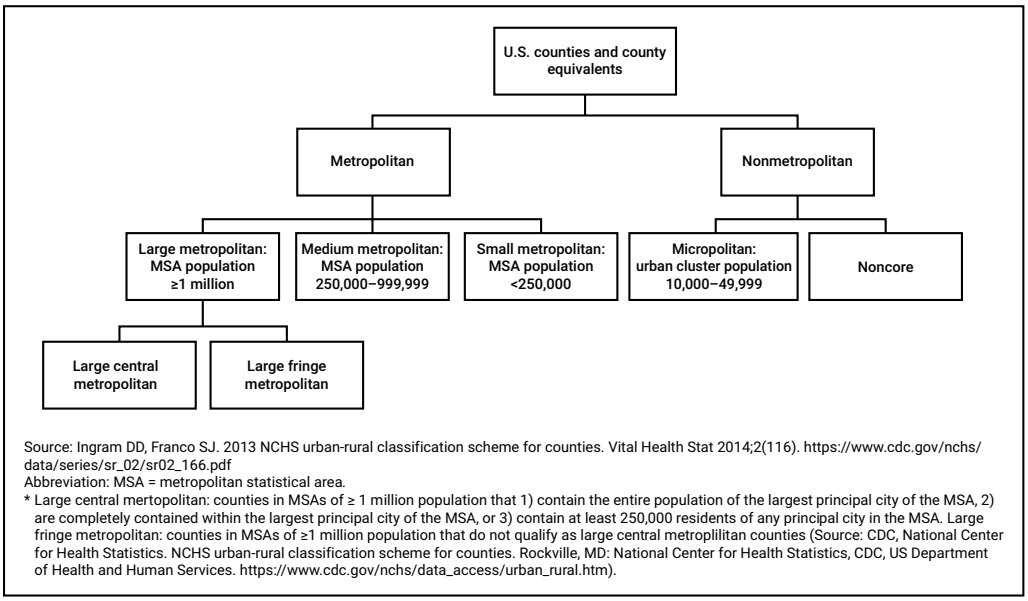
Figure 2: Top Five Leading Causes of Death in Rural America



Source: Garcia, et al., 2019

A 2017 study from the CDC utilized mortality data from the National Vital Statistics System to calculate the number of potentially excess deaths from the top five causes of death in both urban and rural settings (Garcia, et al., 2019). For the purpose of this study, potentially excess deaths were defined as "deaths among persons aged <80 years that exceeded the number expected if the death rates for each cause in all states were equivalent to those in the benchmark states (i.e., the three states with the lowest rates)" (Garcia, et al., 2019). The National Center for Health Statistics (NCHS) utilizes a six-level urban-rural classification scheme that was used in this study to categorize the number of potentially excessive deaths by county designation of large central metropolitan, large fringe metropolitan, medium metropolitan, small metropolitan, micropolitan, and noncore (Garcia, et al., 2019). Figure 3 below illustrates the NCHS urban-rural classification scheme to define each county's specific category (Garcia, et al., 2019).

Figure 3: Urban-Rural County Classification Scheme* for Counties, National Center for Health Statistics (2013)



Source: Ingram DD, Franco SJ. 2013 NCHS urban-rural classification scheme for counties. Vital Health Stat 2014;2(116). https://www.cdc.gov/nchs/data/series/sr_02/sr02_166.pdf
Abbreviation: MSA = metropolitan statistical area.
* Large central mertopolitan: counties in MSAs of ≥ 1 million population that 1) contain the entire population of the largest principal city of the MSA, 2) are completely contained within the largest principal city of the MSA, or 3) contain at least 250,000 residents of any principal city in the MSA. Large fringe metropolitan: counties in MSAs of ≥1 million population that do not qualify as large central metroplilitan counties (Source: CDC, National Center for Health Statistics. NCHS urban-rural classification scheme for counties. Rockville, MD: National Center for Health Statistics, CDC, US Department of Health and Human Services. https://www.cdc.gov/nchs/data_access/urban_rural.htm).

Source: Garcia, et al., 2019

In every year between 2010 and 2017, the percentage of potentially excess deaths from the top five causes of death were higher in rural counties than in urban counties throughout the U.S. (Garcia, et al., 2019). Study results reinforce that "percentages of potentially excess deaths in the most rural counties (noncore) were consistently higher than in the most urban counties (large central metropolitan)" during 2010-2017 (Garcia, et al., 2019). Percentages of potentially excess deaths from the top five causes of death in noncore counties during the year 2017 were 64.1 percent for unintentional injury, 57.1 percent for CLRD, 44.9 percent for heart disease, 21.7 percent for cancer, and 37.8 percent for stroke (Garcia, et al., 2019). CLRD accounted for the largest disparity in potentially excess deaths, with 57.1 percent in noncore counties compared to only 13.0 percent in large central metropolitan counties (Garcia, et al., 2019).

These rural/urban health disparities can be attributed, in part, to rural populations experiencing higher rates of unhealthy behaviors, less access to health care, and less access to healthy foods compared to their urban counterparts (Centers for Disease Control and Prevention, 2022b). As noted by Garcia and colleagues, (2019), studies have shown that rural residents throughout the U.S. have a higher prevalence of hypertension, tobacco use, obesity, and physical inactivity (Garcia, et al., 2019). Rural communities also tend to lack preventive care resources and many rural residents have reported both limited access to health care services (Garcia, et al., 2019). In addition to these inequalities, rural regions typically exhibit higher rates of poverty and individuals without health insurance (Centers for Disease Control and Prevention, 2017). A combination of these factors are key contributors to the poor health outcomes that are prevalent in rural areas throughout the U.S. (Centers for Disease Control and Prevention, 2017).

EFFECTIVE PUBLIC HEALTH STRATEGIES

Pike County – Shohola Falls

One of most effective ways to address health disparities in underserved areas such as rural regions is to utilize community-based public health (CBPH) systems. APHA defines CBPH as "the belief that Community lies at the heart of public health, and that interventions work best when they are rooted in the values, knowledge, expertise, and interests of the community itself" (American Public Health Association, 2022b). CBPH addresses and reduces health disparities in vulnerable populations by preventing illness, injury, disability, and premature death (Taylor, 2009). CBPH programs rely on equal partnerships between communities, researchers, academic institutions, public health practitioners, and health agencies (American Public Health Association, 2022b; Shodell, 2006). For CBPH to be effective and truly community-based, members of the community must be active participants in identifying health problems within their community as well as planning, designing, implementing, and evaluating interventions that address identified issues (American Public Health Association, 2022b).

To address the health disparities that exist in rural regions, the CDC recommends that health care providers and public health workers in rural areas (Centers for Disease Control and Prevention, 2017):

- Screen patients for high blood pressure and make blood pressure control a quality improvement goal;
- Increase cancer prevention and early detection;
- Encourage physical activity and healthy eating to reduce obesity;
- Promote smoking cessation;
- Identify additional support for families who have children with mental, behavioral or developmental disorders;
- Promote motor vehicle safety; and
- Engage in safer prescribing of opioids for pain.

Research has shown that CBPH is an effective strategy for identifying community-level public health issues that may have otherwise been overlooked by public health professionals (Shodell, 2006). While Pennsylvania's department of health system is not oriented specifically to CBPH, the state's mixed or shared model of public health infrastructure can still facilitate CBPH in various regions throughout the state (Pennsylvania Department of Health, 2023c).

PUBLIC HEALTH IN PENNSYLVANIA

The mission of the Pennsylvania Department of Health is to promote healthy behaviors, prevent injury and disease, and to assure the safe delivery of quality health care for all people in Pennsylvania.

Public health in the state is guided by the Pennsylvania Department of Health (PADOH), a cabinet agency within the commonwealth. The agency is led by a Secretary of Health, nominated by the Governor, and confirmed by the Pennsylvania General Assembly (Pennsylvania Department of Health, 2023a). The mission of the PADOH is to "promote healthy behaviors, prevent injury and disease, and to assure the safe delivery of quality health care for all people in Pennsylvania" (Pennsylvania Department of Health, 2023a). The PADOH is dedicated to utilizing community-based strategies to reduce the number of illnesses, injuries, and deaths caused by common health threats such as tobacco use, infectious disease, and accidental injury (Pennsylvania Department of Health, 2023a).The PADOH holds itself to be accountable to the nine values of communication, accountability, teamwork and collaboration, competence and effectiveness, quality, integrity, respect, reliability, and customer service (Pennsylvania Department of Health, 2023a). These values, combined with the mission of the PADOH, allow the agency to remain grounded in its vision to create "a healthy Pennsylvania for all" (Pennsylvania Department of Health, 2023a).

The PADOH includes fourteen bureaus, six district offices, and 60 state health centers (Pennsylvania Department of Health, 2023b, 2023d). The fourteen PADOH bureaus are (Pennsylvania Department of Health, 2023b):

- Bureau of Communicable Diseases;
- Bureau of Community Health Systems;
- Bureau of Community Program Licensure and Certification;
- Bureau of Emergency Medical Services;
- Bureau of Emergency Preparedness and Response;
- Bureau of Epidemiology;
- Bureau of Facility Licensure and Certification;
- Bureau of Family Health;
- Bureau of Health Planning;
- Bureau of Health Promotion and Risk Reduction;
- Bureau of Health Statistics and Registries;
- Bureau of Laboratories;
- Bureau of Managed Care; and
- Bureau of Woman, Infants and Children (WIC).

Each bureau has a unique mission and function intended to facilitate the overall success of the PADOH. The PADOH and its fourteen bureaus are headquartered in the state capital of Harrisburg; district offices are in six regions of the state (Pennsylvania Department of Health, 2023b). The district designation and location of the six offices are (Pennsylvania Department of Health, 2020b):

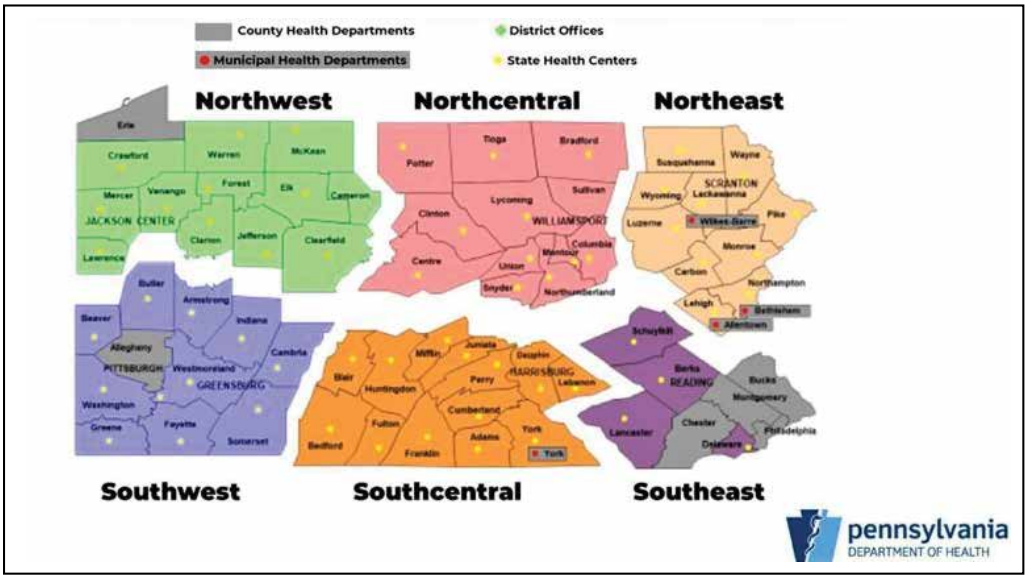
- Northcentral District (Williamsport, Lycoming County);
- Northeast District (Scranton, Lackawanna County);
- Northwest District (Jackson Center, Mercer County);
- Southcentral District (Harrisburg, Dauphin County);
- Southeast District (Reading, Berks County); and
- Southwest District (Greensburg, Westmoreland County).

The state health centers engage in community health assessment and quality assurance activities and provide other public health services, including community integration and outreach programs, to promote healthy behaviors (Pennsylvania Department of Health, 2023b).

Ten county or municipal health departments serve specific cities or counties in the state (Pennsylvania Department of Health, 2023d). Pennsylvania's Local Health Administration Law, also known as Act 315 "provides funding to improve local health administration by authorizing state grants to counties and to certain municipalities that have established departments of health and meet certain requirements" (Pennsylvania Department of Health, 2023d). These health departments also may receive additional federal, state, and local funds to achieve their overall goal of reducing morbidity and mortality by promoting healthy lifestyles (Pennsylvania Department of Health, 2023d). Under Act 315, these health departments are required to provide public health programs focused on administrative and supportive services, personal health services, and environmental health services and are responsible for providing most, if not all, public health for their residents (Pennsylvania Department of Health, 2023c; Wellever, et al., 2006).

As shown in Figure 4, the counties of Allegheny, Bucks, Chester, Delaware, Erie, Montgomery, and Philadelphia are designated as county health departments (Creason, 2020; Pennsylvania Department of Health, 2023d). Allentown (Lehigh County), Bethlehem (Northampton County), Wilkes-Barre (Luzerne County), and York (York County) are municipal health departments (Pennsylvania Department of Health, 2023d).

Figure 4: Pennsylvania Department of Health District Offices and County and Municipal Health Departments



Sources: Creason, 2020; Pennsylvania Department of Health 2023d

Approximately 60 state health centers are in Pennsylvania's counties; however, these centers do not provide comprehensive public health services (Wellever, et al., 2006). These state health centers are highly structured and uniformly regulated by the six district offices (Wellever, et al., 2006). State health centers provide services such as communicable disease clinical services including sexually transmitted disease and tuberculosis diagnosis and treatment, immunization, HIV testing, counseling, and education (Cardelle, 2005). State health centers are fully funded by the state or federal governmental through various grants, whereas county and municipal health departments only receive 50 percent of their funding directly from the state (Wellever, et al., 2006). Despite state laws that outline service requirements for county and municipal health departments, they are rather autonomous in their operation under local boards of health and, in some instances, provide services that the PADOH does not offer (Wellever, et al., 2006).

Wyoming County – Wyoming County Fair Winner

The 11 county and municipal health departments are in urban counties (Center for Rural Pennsylvania, 2014; Creason, 2020) and none of Pennsylvania's rural counties has a local health department (LHD) (Cardelle, 2005). According to the Kaiser Health Foundation, areas without LHDs lose the opportunity to access funds guaranteed to county and municipal health departments and a lack of LHDs in rural counties can contribute to inadequate access to the essential public health infrastructure needed to improve overall population health (Cardelle, 2005). The absence of LHDs in rural counties also contributes to the health disparities observed between rural and urban regions (Cardelle, 2005).

A solution in areas across the nation that lack LHDs has been "the creation of a network of coordinated entities that could provide essential functions of public health" (Cardelle, 2005).

Several states throughout the country have created such systems, including Colorado which implemented the San Luis Valley Public Health Partnership (SLVPHP) (Rural Health Information Hub, 2022). The San Luis Valley is a six-county region in southern Colorado that is geographically isolated (Rural Health Information Hub, 2022). Colorado has a decentralized public health infrastructure, in which each county is served by an LHD with its own board of health (Rural Health Information Hub, 2022). The SLVPHP was created to serve as a coalition of LHD directors in the San Luis Valley to optimize resources and staff (Rural Health Information Hub, 2022). The SLVPHP shares staff and projects to achieve their mission to "develop and sustain public health systems to improve health outcomes throughout the valley" (Rural Health Information Hub). The SLVPHP has seen great success in the implementation of various public health programs that were designed to address priorities in the region (Rural Health Information Hub, 2022). This is just one of many examples of how LHDs in conjunction with CBPH, can help to reduce health disparities and improve health outcomes in rural regions throughout the U.S.

Public Health Accreditation in Pennsylvania

The public health infrastructure in Pennsylvania has strengths, including accreditation from the Public Health Accreditation Board (PHAB) (Public Health Accreditation Board, 2023a). The PHAB is a "nonprofit organization dedicated to advancing the continuous quality improvement of Tribal, state, local, and territorial public health departments" (Public Health Accreditation Board, 2023a). The purpose of PHAB is to protect and promote public health by ensuring and advancing both the quality and performance of public health departments in the U.S. (Public Health Accreditation Board, 2023a). PHAB's vision is to achieve a healthier nation through high-performing governmental public health systems (Public Health Accreditation Board, 2023a). In addition to the PADOH, the Allegheny County Health Department, the Bethlehem Health Bureau, the Chester County Health Department, the Erie County Department of Health, and the Philadelphia Department of Public Health have achieved PHAB accreditation (Public Health Accreditation Board, 2023b). These significant accreditations indicate that Pennsylvania is recognized as a high-performing public health system (Public Health Accreditation Board, 2023a, 2023b).

Public Health Assessment and Planning in Pennsylvania

Based on standard tools and resources from the Association of State and Territorial Health Officials (ASTHO) and the National Association of County and City Health Officials (NACCHO), Pennsylvania has developed state health assessment and state health improvement plan (Pennsylvania Department of Health, 2021). The Pennsylvania State Health Assessment (SHA), developed in coordination with a broad group of public health partners, assesses and reports on the health status of the population throughout Pennsylvania (Pennsylvania Department of Health, 2021). The SHA reports on the health status of Pennsylvania's population, factors that contribute to health issues, and resources that can be mobilized to address population health improvement (Pennsylvania Department of Health, 2021). In August 2023, the DOH released an update to the SHA. It identified the populations most impacted by various health risks and outcomes and the possible causes for those disparate impacts. The assessment was developed through collection and analysis of qualitative and quantitative data with engagement of 82 organizations that participate in the Healthy Pennsylvania Partnership.

The State of Our Health: A Statewide Health Assessment of Pennsylvania, focuses on the components of the Social Determinants of Health:

- Access to Care;
- Substance Use;
- Chronic Diseases;
- Mental Health;
- Maternal and Infant Health;
- Injury and Violence Prevention;
- Infectious Diseases and Immunization; and
- Environmental Health.

Source: Pennsylvania Department of Health, 2021

The SHA, in addition to other public health assessments, provides key areas for overall health planning and improvement. The PADOH developed a multi-year strategic State Health Improvement Plan (SHIP) that identifies health priorities and includes strategies, collaborating organizations, and progress measures for each priority (Pennsylvania Department of Health, 2022). The three Pennsylvania health priorities identified in the 2023-2028 SHIP are:

- The health equity workgroup focuses on improving health equity by addressing social determinants of health through three goals: increasing financial well-being, food security, and safe affordable housing; increasing community safety by reducing the number of violent incidences that occur due to racism, discrimination or domestic disputes; and improving environmental health, focusing on environmental justice communities (Pennsylvania Department of Health, 2023).
- Chronic diseases prevention focuses on reducing chronic disease risk factors and societal impact through increasing the population at a healthy weight through increasing the availability and accessibility of physical activity and affordable nutritious food and reducing the impact of tobacco and nicotine use (Pennsylvania Department of Health, 2023).
- The whole person care workgroup addresses increasing access to culturally humble whole person care through the lifespan by increasing access to medical and oral health care; improving mental health and substance use outcomes through improved mental health services, trauma informed trainings, and substance use interventions; improving health outcomes through improved chronic diseases management; and improving maternal and infant health outcomes by improving prenatal, perinatal, and postnatal care (Pennsylvania Department of Health, 2023).

Source: Pennsylvania Department of Health, 2023

The Pennsylvania Department of Health created a multi-year strategic State Health Improvement Plan (SHIP) that addresses health equity, chronic diseases prevention, and whole person care.

The SHIP identifies health goals, objectives, strategies, and assets to enable the stakeholders of the public health system to organize efforts and provide effective and cohesive programs to address the three priorities (Pennsylvania Department of Health, 2022). The SHIP is intended for use by state, regional, and local community health improvement planning and to serve as a resource for marketing, grant seeking, and identifying research and innovation opportunities (Pennsylvania Department of Health, 2022). The SHIP also is used to inform, educate, and empower Pennsylvania residents about key health issues in the state (Pennsylvania Department of Health, 2022).

The SHA and SHIP form the foundation for the Healthy Pennsylvania Partnership, a collaboration for developing the SHA and SHIP as well as implementing the evidence-based and promising practices to address identified priorities (Pennsylvania Department of Health, 2022).

The public health planning and assessment strategies utilized in Pennsylvania aid in the comprehensive improvement of public health in the Commonwealth. The SHA and SHIP, in collaboration with the PADOH and its affiliates, as well as stakeholders, researchers, educators, health care professionals, community members, and policymakers impact the health of all Pennsylvanians.

SUMMARY AND RECOMMENDATIONS

U.S. residents living in rural areas are more likely than their urban counterparts to experience premature death caused by the top five causes of death (Centers for Disease Control and Prevention, 2022b). These rural/urban health disparities can be attributed, in part, due to rural populations experiencing higher rates of unhealthy behaviors, less access to health care, and less access to healthy foods compared to their urban counterparts (Centers for Disease Control and Prevention, 2022b). Rural communities also tend to lack preventive care resources and many rural residents have reported both limited access to health care services and poor-quality health care (Garcia et al., 2019).

Public health in Pennsylvania is guided by the PADOH (Pennsylvania Department of Health, 2023a). None of Pennsylvania's rural counties have a local health department (LHD) and this absence of LHDs in rural regions contributes to the health disparities observed between rural and urban areas (Cardelle, 2005). Pennsylvania has developed an assessment and strategic planning processes to identify public health goals, objectives, strategies, and assets to enable the stakeholders of the public health system to organize efforts and provide effective and cohesive programs to address public health priorities (Pennsylvania Department of Health, 2022).

One of most effective ways to address health disparities in underserved areas such as rural regions is to utilize community-based public health (CBPH) systems. CBPH is defined as "the belief that community lies at the heart of public health, and that interventions work best when they are rooted in the values, knowledge, expertise, and interests of the community itself" (American Public Health Association, 2022b). CBPH addresses and reduces health disparities in vulnerable populations by preventing illness, injury, disability, and premature death (Taylor, 2009).

To address the health disparities that exist in rural regions, the CDC recommends that health care providers and public health workers in rural areas screen patients for high blood pressure and make blood pressure control a quality improvement goal, increase cancer prevention and early detection, encourage physical activity and healthy eating to reduce obesity, promote smoking cessation, identify additional support for families who have children with mental, behavioral or developmental disorders, promote motor vehicle safety, and engage in safer prescribing of opioids for pain (Centers for Disease Control and Prevention, 2017). A solution in areas across the nation that lack LHDs has been "the creation of a network of coordinated entities that could provide essential functions of public health" (Cardelle, 2005). This is just one of many examples of how LHDs in conjunction with CBPH, can help to reduce health disparities and improve health outcomes in rural regions throughout the U.S.

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SAFETY NET PROVIDERS AND THEIR ROLE IN THE RURAL HEALTH CARE DELIVERY SYSTEM

The Institute of Medicine (IOM), defines safety net providers (practices) as "those providers that organize and deliver a significant level of health care and other needed services to uninsured, Medicaid and other vulnerable patients" (Lewin and Altman, 2000). In other words, safety net providers maintain an "open door" to patients regardless of their ability to pay (Lewin and Altman, 2000). Examples of safety net providers include:

- Critical Access Hospitals (CAHs);
- Rural Health Clinics (RHCs);
- Federally Qualified Health Centers (FQHCs);
- Free Medical Clinics (FMCs);
- Family Planning Clinics;
- School-Based Health Centers;
- Homeless Health Centers;
- Migrant Health Centers; and
- Tribal Health Centers.

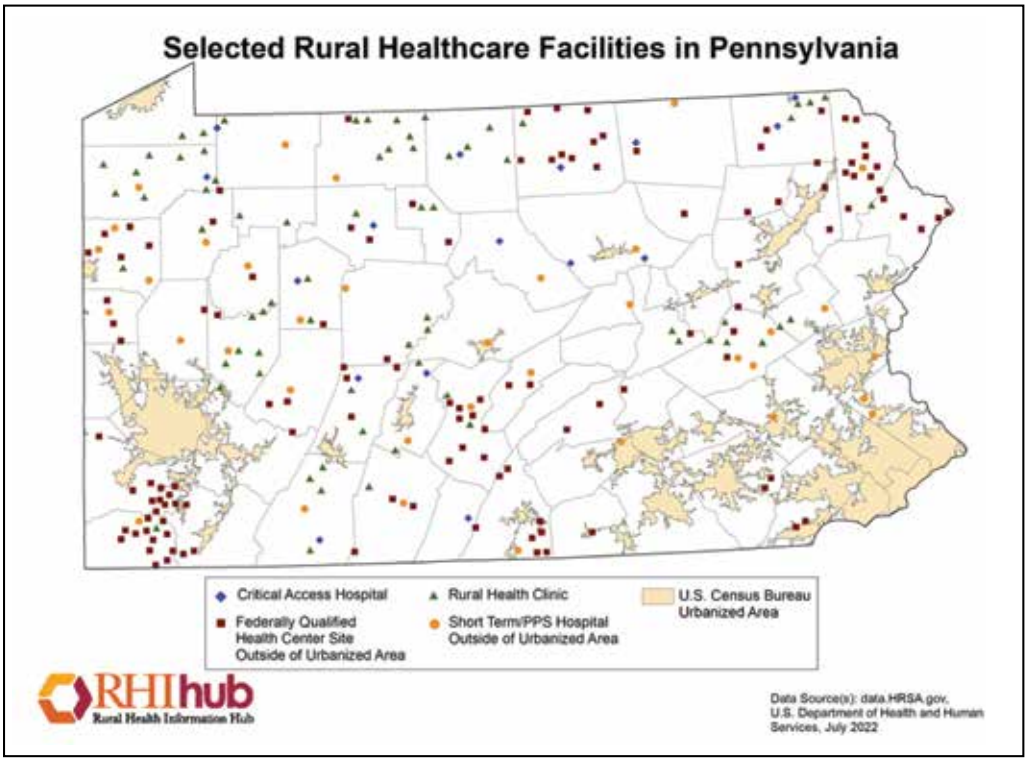
Safety net providers are crucial for providing affordable health care to rural populations and are well equipped to meet the specialized needs of vulnerable populations, such as language barriers, cultural accommodations, and transportation services.

Safety net providers play a significant role in filling coverage gaps created by traditional insurance systems (Hagan and Nguyen, 2019). Safety net providers ensure that health care is accessible and affordable for uninsured individuals or those with high-deductible or high cost-sharing plans that limit their access to health care (Hagan and Nguyen, 2019). Throughout the Commonwealth, 2.6 million Medicaid recipients (Pennsylvania Department of Human Services, 2024) and one million uninsured residents receive disproportionate amounts of care from Pennsylvania's safety net providers (Safety-Net Association of Pennsylvania, 2020a). These providers are crucial for providing affordable health care to rural populations and are well equipped to meet the specialized needs of vulnerable populations, such as language barriers, cultural accommodations, and transportation services (Cunningham, et al., 2012).

Safety Net Providers in Pennsylvania

According to the Safety-Net Association of Pennsylvania, 41 safety-net hospitals, predominately located in rural counties in the state, provide a significant portion of care to Pennsylvania's uninsured residents and Medicaid recipients (Safety-Net Association of Pennsylvania, 2020b). In addition, 16 CAHs, 70 RHCs, and 124 FQHC sites located outside of urbanized areas offer a variety of services, as of 2022 (Rural Health Information Hub, 2022c). There are hundreds of other safety net providers located throughout the state, including FMCs, family planning clinics, school-based health centers, homeless health centers, and migrant health centers. Because Pennsylvania does not have any recognized Native American tribes, no Tribal health centers are in the state.

Figure 1: Safety Net Providers in Pennsylvania



Source: Rural Health Information, 2022c

Critical Access Hospitals

Critical Access Hospitals (CAHs) "reduce the financial vulnerability of rural hospitals and improve access to health care by keeping essential services in rural communities" (Rural Health Information Hub, 2022a). The Centers for Medicare and Medicaid Services (CMS) designates eligible hospitals as CAHs that meet the following eligibility criteria (Rural Health Information Hub, 2022a):

- Have 25 or fewer acute care inpatient beds;
- Be located more than 35 miles from another hospital (exemptions may apply); Maintain an annual average length of stay of 96 hours or less for acute care patients; and
- Provide 24/7 emergency care services.

Hospitals designated as CAHs receive cost-based reimbursement through Medicare and, in many states, through Medicaid programs (Rural Health Information Hub, 2022a).

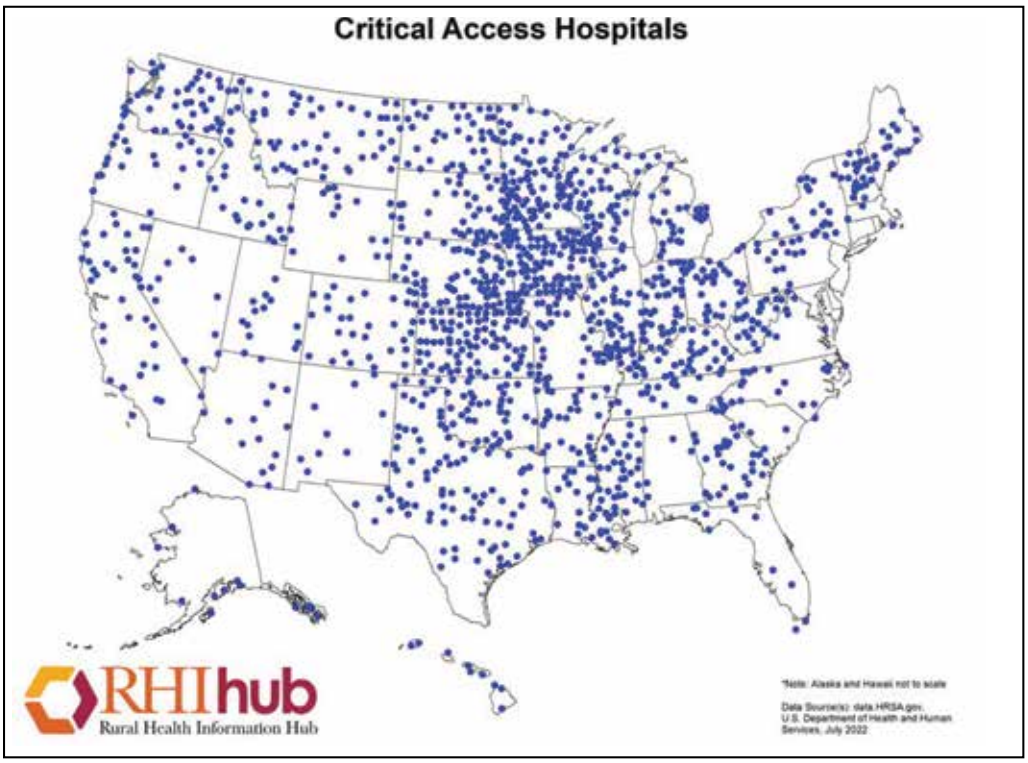
The Balanced Budget Act of 1997, through which Congress created the CAH designation, also established the Medicare Rural Hospital Flexibility Program (Flex Program) to support CAHs (Rural Health Information Hub, 2022a). The Flex Program is a federally funded and state-based program that provides resources to CAHs regarding:

- Payment, reimbursement, and financial information;
- Regulations and information regarding CAH status and the Flex Program;
- Key organizations in the field;
- Funding opportunities; and
- Challenges to operation.

Source: Rural Health Information Hub, 2022a

As of July 2022, 1,360 CAHs were located throughout the U.S. (Rural Health Information Hub, 2022a) as shown in Figure 2.

Figure 2: Critical Access Hospital Locations in the U.S.



Source: Rural Health Information Hub, 2022a

As of January 2023, Pennsylvania had 16 CAHs that serve rural communities in Pennsylvania with high quality care (Pennsylvania Office of Rural Health, 2023):

- Barnes-Kasson County Hospital;
- Bucktail Medical Center;
- Corry Memorial Hospital;
- DLP Conemaugh Meyersdale Medical Center;
- DLP Conemaugh Miners Medical Center;
- Endless Mountain Health System;
- Fulton County Medical Center;
- Geisinger Jersey Shore;
- Guthrie Troy Community Hospital;
- LECOM Corry Memorial Hospital;
- Penn Highlands Brookville;
- Penn Highlands Elk;
- Penn Highlands Tyrone;
- Titusville Area Hospital;
- UPMC Cole;
- UPMC Kane;
- UPMC Susquehanna Muncy Valley; and
- UPMC Wellsboro.

Rural Health Clinics

In 1977, Congress passed the Rural Health Clinic Services Act (PL 95-210) to improve access to primary health care in rural, underserved communities and promote a collaborative model of health care delivery using physicians, nurse practitioners, and physician assistants. In subsequent legislation, Congress added nurse midwives to the core set of primary care professionals and included mental health services provided by psychologists and clinical social workers as part of the Rural Health Clinic (RHC) provider team. Improving access to primary care services in underserved rural communities and utilizing a team approach to health care delivery are still the main areas of focus of the RHC program (Health Resources and Services Administration, 2004).

As of December 2024, Pennsylvania had approximately 70 RHCs serving rural communities in the state.

Rural Health Clinics (RHCs) can be public, nonprofit, or for-profit health care facilities and in order to be certificated they must:

- Be in rural, underserved area (Health Professional Shortage Area, Medically
- Underserved Area, or governor-designated and secretary-certified shortage area);
- Use a team approach of physician and non-physician providers such as nurse practitioners (NP), physician assistants (PA), and certified nurse midwives (CNM);
- Be staffed at least 50 percent of the time with a NP, PA, or CNM; and
- Provide outpatient primary care and basic laboratory services.

Source: Rural Health Information Hub, 2021b

RHCs receive enhanced reimbursement for the Medicare and Medicaid services they provide (Rural Health Information Hub, 2021b). RHCs can provide general primary care or be focused on specific types of practice such as pediatrics or obstetrics and gynecology since there are no minimum service requirements (Rural Health Information Hub, 2021b). As of December 2024, Pennsylvania has approximately 70 RHCs serving rural communities in the state (Pennsylvania Office of Rural Health, personal communication, December 28, 2024).

Federally Qualified Health Centers

Federally Qualified Health Centers (FQHCs), also known as Community Health Centers (CHCs), are private, non-profit entities that deliver health care services based on consumer influence and participation (Rural Health Information Hub, 2021b).

Since the nation's first health centers opened in 1965, expansion of the federally-supported health center system to over 1,400 organizations have created an affordable health care option for more than 29 million people. Health centers help increase access to crucial primary care by reducing barriers such as cost, lack of insurance, distance, and language for their patients. In doing so, health centers provide substantial benefits to the country and its health care system.

Health centers provide efficient and cost-effective care, increase access to timely primary care, deliver a broad array of primary and preventive care services, and services such as transportation, translation, case management and health education (National Association of Community Health Centers, 2020b). FQHCs serve as one-stop health care homes to reduce barriers to care that social determinants of health, like poverty, can create.

Examples of services that can be provided at FQHCs include well-visit checkups, illness treatment, prenatal care, immunizations, dental care, prescription drugs, mental health, and substance abuse services (Rural Health Information Hub, 2021a). Payment for services is based on a sliding fee scale (Safety-Net Association of Pennsylvania, 2020b). Individuals and families without insurance and those with Medicare or Medicaid may also receive care from an FQHC (Rural Health Information Hub, 2021a).

There are approximately 395 FQHC and FQHC Look Alike sites throughout Pennsylvania.

To qualify as an FQHC, an organization must be a nonprofit or public facility, provide care for patients of all ages, have a board of directors with a composition of at least 51 percent of directors being patients of the health center, treat all patients with charges based on a sliding fee scale, have an ongoing quality assurance program, and meet many other program requirements. There are approximately 395 FQHC and FQHC Look Alike sites throughout Pennsylvania (Pennsylvania Association of Community Health Centers, 2023 Health Resources and Services Administration Health Center Program Data, 2022a).

Free Medical Clinics

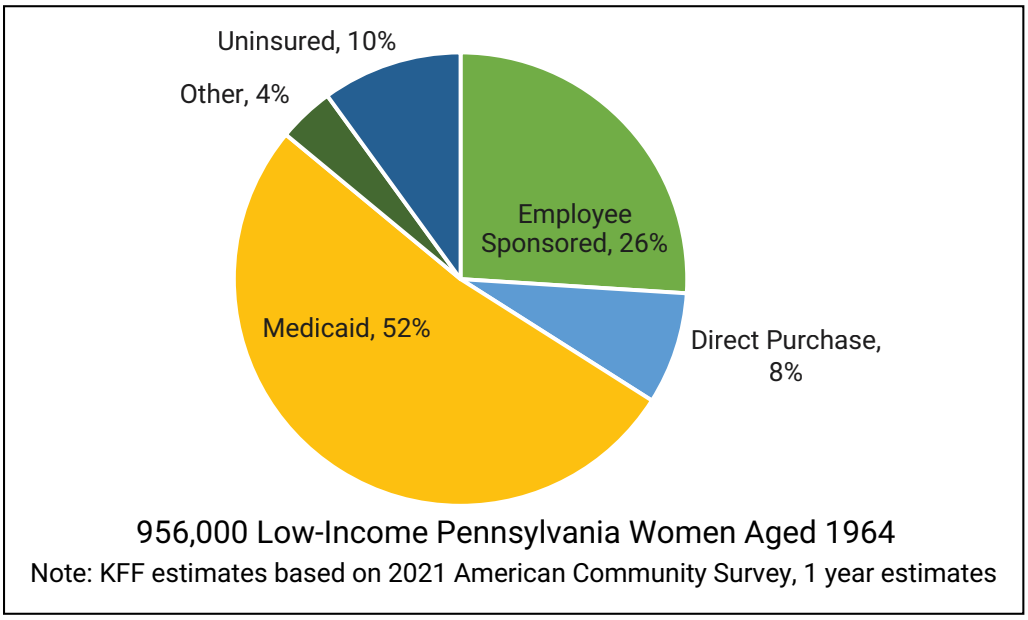
An FMC is defined as a "health care community safety net that is established, operated, and maintained for the purpose of providing primary health care to socioeconomically and geographically underserved patient populations" (American Health Lawyers Association, 2016). FMCs are typically staffed by volunteers or paid professionals who provide medical, dental, pharmacy, vision, and behavioral health services to individuals who would otherwise not be able to afford those services (American Health Lawyers Association, 2016). FMCs most commonly serve low-income, uninsured adults who reside within the county where the FMC is located (American Health Lawyers Association, 2016).

While eligibility requirements vary from clinic to clinic, an individual's income that is at or below 200 percent of the federal poverty level is typically recognized as low-income by FMCs (American Health Lawyers Association, 2016). Some FMCs treat patients of all ages, while others may tailor their services to individuals with inadequate health insurance coverage, certain health conditions, or specific ethnic groups (American Health Lawyers Association, 2016). FMCs typically provide primary care services for minor and non-life-threatening illnesses and injuries, but may also offer additional services such as mental health, behavioral health, and dental services based on funding, staffing, and community needs (American Health Lawyers Association, 2016). FMCs can be funded or sponsored by individuals or organizations such as hospitals, medical associations, secular community organizations, faith-based entities, or other foundations, most of which often provide support through fundraising efforts and charitable donations (American Health Lawyers Association, 2016).

Family Planning Clinics

Family planning services are offered at a variety of safety net providers throughout the U.S., including FQHCs, health departments, independent clinics, hospital facilities, and Planned Parenthood sites (Guttmacher Institute, 2019). A national network of family planning clinics is federally funded by Title X of the Public Health Service Act, the only federal program dedicated specifically to providing subsidized family planning services to individuals who do not meet Medicaid eligibility requirements (Guttmacher Institute, 2019). Medicaid, which accounted for 75 percent of 2015 family planning expenditures, reimburses providers for contraceptives and other related services delivered to Medicaid-enrolled patients (Guttmacher Institute, 2019). Millions of people, especially women, annually rely on family planning clinics for contraception or other reproductive health services (Guttmacher Institute, 2019). Family planning clinics typically offer services such as pregnancy testing, cervical cancer screenings, sexually transmitted disease (STD) testing, HIV testing, STD treatment, HPV vaccines, and various contraceptive services (Guttmacher Institute, 2019). Figure 3 shows the high percentage of women's health services that are paid through state Medicaid programs.

Figure 3. Payment Sources for Health Care Services for Low-Income Women of Reproductive Age in Pennsylvania, 2021



Source: Kaiser Family Foundation, 2022

School-Based Health Centers

School-based health centers, also known as School-Based Service Sites (SBSS), are located within schools and serve as a center of health for students and their families (Health Resources and Services Administration, 2022a). Services offered at these centers typically include primary medical care, mental and behavioral health care, dental and oral health care, health education and promotion, substance abuse and counseling, case management, and nutrition education (Health Resources and Services Administration, 2022a). School-based health centers, while capable of treating acute illnesses, are primarily focus on prevention, early intervention, and risk reduction (Health Resources and Services Administration, 2022a).

School-based health centers typically are established as a partnership between the school or school district and a community health organization such as a community health center, hospital, or local health department (Health Resources and Services Administration, 2022a). There are nearly 2,000 operating school-based health centers throughout the U.S., offering a variety of services based on needs (Health Resources and Services Administration, 2022a). Approximately 20 percent of school-based health centers receive funding from the federal Health Center Program (Health Resources and Services Administration, 2022a).

Crawford County - Grand Champion

Homeless Health Centers

Required primary health services for HCH participants include:

- Basic health services related to family medicine, internal medicine, pediatrics, obstetrics, or gynecology; diagnostic laboratory and radiologic services; preventive health services; emergency medical services; and pharmaceutical services (where applicable);
- Substance abuse treatment and referrals to providers of specialty services including mental health services;
- Patient case management services;
- Services that enable individuals to use the services of the health center (including outreach, transportation, and translation services); and
- Education of patients regarding the availability and proper use of health services.

Source: National Association of Community Health Centers, 2020a

Migrant Health Centers

According to the National Center for Farmworker Health, Inc. (NCFH) "the federal Migrant Health Program provides funds to health centers located around the country to provide health care to nearly 800,000 farmworkers and their families every year" (National Center for Farmworker Health, Inc., 2021). Migrant workers are more likely to experience health disparities due to unique health challenges such as:

- Hazardous work environments;
- Poverty and insufficient support systems;
- Inadequate or unsafe housing;
- Limited availability of clean water and septic systems;
- Inadequate health care access;
- Continuity of care issues;
- Lack of insurance;
- Cultural and language barriers;
- Fear of using health care due to immigration status; and
- Lack of transportation.

Source: Rural Health Information Hub, 2021c

Migrant Health Centers receive funding from the Public Health Service Act to provide "culturally competent and comprehensive primary and preventive health care to migratory and seasonal farmworkers and their families" (Rural Health Information Hub, 2021c). In 2019, there were 175 Migrant Health Centers across the U.S. that served over 900,000 migrant and seasonal farmworkers and their families (Rural Health Information Hub, 2021c). In Pennsylvania, the migrant health program is administered through Keystone Rural Health Center, located in Chambersburg, PA.

Tribal Health Centers

Warren County – Black Bears

Tribal Health Centers are outpatient health care facilities that specialize in caring for American Indians and Alaska Natives and are operated by either Tribes or Tribal, under the Indian Self-Determination Act (Health Resources and Services Administration, 2022b). Urban Indian Health Centers are specially designated FQHCs that provide comprehensive primary care and related services to American Indians and Alaska Natives (Health Resources and Services Administration, 2022b). Urban Indian organizations own or lease these FQHC facilities and receive funding through the Indian Health Care Improvement Act to provide care and services to Tribal populations (Health Resources and Services Administration, 2022b).

Challenges and Gaps of Safety Net Providers

Due to their duty of serving poor and uninsured populations, safety net providers often experience unique challenges that are not always shared by other health care providers (Agency for Healthcare Research and Quality, 2018). Physical gaps such as workforce and provider shortages are some of the major challenges faced by safety net providers (Changes in Health Care Financing and Organization, 2008). Additional examples of challenges that can create physical gaps in safety net care are:

- Demand that exceeds supply;
- Reimbursement rules may create barriers to implementing new treatments and care models;
- Improvement can create costs for practice;
- Complex and layered administrative structures;
- Complex staffing patterns;
- Limited management experience of practice leadership;
- Insufficient staff and human resources; and
- Suboptimal health information technology.

Source: Agency for Healthcare Research and Quality, 2018

Safety net providers provide care to their patients by typically offering a comprehensive set of enabling services, such as transportation assistance, translation services, and enrollment in insurance and other supports for vulnerable patients.

These challenges can result in "overcrowded waiting rooms, stressed clinicians and staff, and practices that view anything that takes time away from direct patient care, including quality improvement (QI), as a problem" (Agency for Healthcare Research and Quality, 2018). Many safety net providers are typically under resourced or underfunded, which only further exacerbates existing challenges and gaps in care (Agency for Healthcare Research and Quality, 2018). While many safety net providers exist throughout the nation and Pennsylvania specifically, physical gaps in the supply of providers and the demand of populations, combined with a lack of funding, make it challenging for safety net providers to fully meet the needs of all their patients (Changes in Health Care Financing and Organization, 2008).

These gaps and challenges can create significant holes in the system that is designed to serve all individuals who cannot afford the health care they need (The Kaiser Commission on Medicaid and the Uninsured, 2005). "Ideally, the safety net would operate as a system—effectively connecting basic health care services together for its patients. Yet, health services in this country are often disjointed…and care in the safety net is even more fragmented" (The Kaiser Commission on Medicaid and the Uninsured, 2005). In many cases, safety net providers are only capable of providing care to their patients by partially patching together pieces of the system that operate separately (The Kaiser Commission on Medicaid and the Uninsured, 2005). This often results in patients receiving care or services from multiple facilities to access the medications, equipment, lab and imaging services, therapies, or specialty care that they require (The Kaiser Commission on Medicaid and the Uninsured, 2005). These physical gaps have led to increasing rates of the uninsured either postponing or going without care, resulting in thousands of premature American deaths each year due to a lack of health coverage and access to care (The Kaiser Commission on Medicaid and the Uninsured, 2005).

In addition to systematic challenges experienced by safety net providers, patients may present additional challenges that create gaps in care (Agency for Healthcare Research and Quality, 2018). Even if no physical gaps existed in the safety net system, in order to have good health care access patients must also possess:

- Means to reach and use services, such as transportation to services that may be located at a distance, and the ability to take paid time off work to use such services;
- Confidence in their ability to communicate with health care providers, particularly if the patient is not fluent in English or has poor health literacy;
- Trust that they can use services without compromising privacy; and
- Belief that they will receive quality care.

Source: Rural Health Information Hub, 2022b

In response to these patient challenges, safety net providers typically offer a comprehensive set of enabling services, such as transportation assistance, to close care gaps and improve access to care for critical populations (Institute of Medicine, 2000). Examples of strategies that some facilities have used to fill transportation gaps include:

- Offering transportation services for health care appointments using paid or volunteer drivers;
- Coordinating a shared ride/cost transportation program;
- Brokering out coordinated trips to qualified vendors;
- Using telehealth to decrease the travel required for local patients to access specialty care; and
- Starting a mobile clinic to take health care services to patients in remote areas.

Source: Rural Health Information Hub, 2022d

Other enabling services that address healthy literacy, language barriers, and cultural competencies, such as on-site translators and culturally appropriate material, also may be utilized in safety net facilities based on the needs of the population being served. By utilizing these unique services, providers are better equipped to meet the needs of their patients and deliver more effective care, despite gaps that may still exist throughout the safety net system.

Safety net providers are defined as "those providers that organize and deliver a significant level of health care and other needed services to uninsured, Medicaid and other vulnerable patients," in other words, providers that maintain an "open door" to patients regardless of their ability to pay for care or services (Lewin and Altman, 2000). Safety net providers include critical access hospitals, rural health clinics, federally qualified health centers, free medical clinics, family planning clinics, school-based health centers, homeless health centers, migrant health centers, and tribal health centers. Safety net providers ensure that health care is accessible and affordable for the uninsured or those with high-deductible or high cost-sharing plans that limit their access to health care (Hagan and Nguyen, 2019). Due to their duty of serving low income and uninsured populations, safety net providers often experience unique challenges such as workforce and provider shortages, demand that exceeds supply, reimbursement restrictions, complex staffing patterns, limited management resources, and suboptimal health information technology (Agency for Healthcare Research and Quality, 2018). These issues challenges can create challenges for a system that is designed to serve all individuals who cannot afford the health care they need.

Safety net providers maintain an "open door" to patients regardless of their ability to pay for care or services.

In response to challenges faced by patients, safety net providers typically offer a comprehensive set of enabling services, such as transportation assistance, to close care gaps and improve access to care for critical populations (Institute of Medicine, 2000). Examples of strategies that some facilities have used to fill transportation gaps include offering transportation services for health care appointments using paid or volunteer drivers, coordinating a shared ride/cost transportation program, brokering out coordinated trips to qualified vendors, using telehealth to decrease the travel required for local patients to access specialty care and starting a mobile clinic to take health care services to patients in remote areas (Rural Health Information Hub, 2022d).

Services that address healthy literacy, language barriers, and cultural competencies, such as on-site translators and culturally appropriate material, may also be utilized in safety net facilities based on the needs of the population being served. By utilizing these unique services, providers are better equipped to meet the needs of their patients and deliver more effective care, despite gaps that may still exist throughout the safety net system.

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RURAL INJURY AND TRAUMA IN PENNSYLVANIA

While injuries are a leading cause of death overall in the United States, rural injury patients are almost twice as likely to die before reaching hospitals when compared to their urban counterparts (Rapaport, 2016). The rate of deaths resulting from accidents involving motor vehicles, heavy machinery, and pedestrians rises as rurality increases (Jarman, et al., 2016). Many rural environmental, behavioral, occupational, and geographical factors contribute to this disparity. Poor road conditions, risky decision making, and dangerous occupations such as mining and agriculture contribute to higher rates of rural injuries and traumas (Abdalla, et al., 2017).

Rural injury and trauma patients are almost twice as likely to die before reaching a hospital when compared to their urban counterparts. Treatment at an accredited trauma center can significantly reduce fatalities.

The availability of emergency medical services (EMS) is also a contributor to increased rural trauma morbidity and mortality (Berwick, et al., 2016). EMS response teams focus on stabilizing patients while transporting them to the appropriate level of care for further treatment (Berwick, et al., 2016). Dependent on geographic location and EMS availability, rural trauma patients may experience longer EMS response and transport times to trauma centers, resulting in an increased risk for rural trauma deaths (Berwick, et al., 2016).

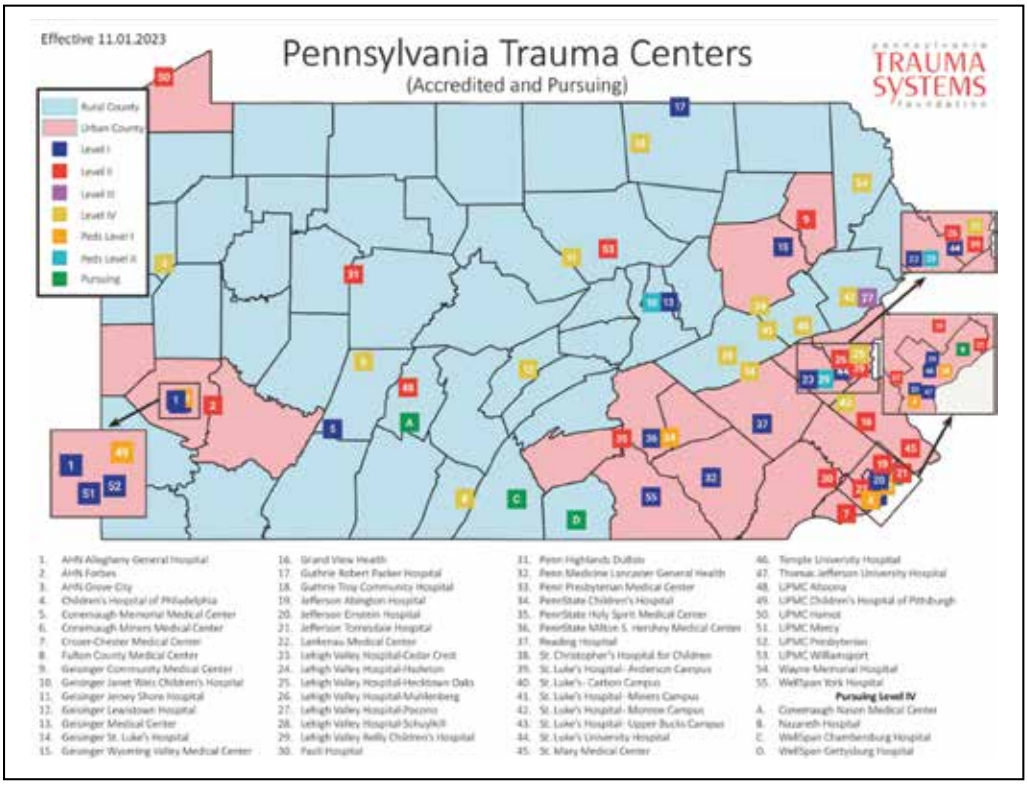
Treatment at an accredited trauma center can significantly reduce fatalities associated with rural injury and trauma; however, many rural residents lack timely access to trauma centers (Jarman, et al., 2016). This geographic barrier has resulted in a higher probability that fatality rates will be higher for rural residents compared to their urban counterparts who may have a higher likelihood of access to a trauma center (Jarman, et al., 2016).

In Pennsylvania, there are four levels of trauma centers. Level I trauma centers provide the highest degree of resources with a full spectrum of specialists and must have trauma research and surgical residency programs. Level II trauma centers require the same high level of care but do not require research and surgical residency programs. Level III trauma centers are smaller community hospitals that do not require neurosurgeons and focus on stabilizing severe trauma patients prior to transport to a higher-level trauma center. They may admit patients with mild and moderate injuries. Level IV trauma centers provide enhanced care to injured patients within the emergency department and focus on stabilization and quick transfer of severely injured patients to a higher-level trauma center. They may admit mildly injured patients. As of November 1, 2022, there are 14 Level IV trauma centers in Pennsylvania, four of which are Critical Access Hospitals (Pennsylvania Trauma Systems Foundation, 2022).

Each trauma center, regardless of its level, is an integral component of the emergency medical services (EMS) system. This system assures appropriate patient care management from the time of injury to treatment at a local hospital or trauma center through the rehabilitative phase of care.

As of November 1, 2022, Pennsylvania has a total of 50 trauma centers. Fifteen of these trauma centers are in rural counties: two are Level I centers, two are Level II centers and eleven are Level IV trauma centers. Four hospitals are pursuing accreditation, three of which are in rural counties. Other facilities, as shown in the boxes in Figure 1, are pursuing accreditation. Of note, the northern region of Pennsylvania lacks access to a trauma center within 60 minutes of the location of an injury.

Figure 1: Hospitals Accredited and Pursuing Trauma Center in Pennsylvania as of November 1, 2023



Source: Pennsylvania Trauma Systems Foundation, 2023

The Pennsylvania Trauma Systems Foundation (PTSF) is the accrediting body for trauma centers in the state and is committed to achieving zero preventable deaths from injury in Pennsylvania (Pennsylvania Trauma Systems Foundation, 2023). PTSF collaborates to "achieve equity in, and access to quality health care for Pennsylvania's rural residents" (Pennsylvania Trauma Systems Foundation, 2023). The agency includes a Trauma System Development Committee, which focuses on enhancing trauma care services to rural areas by promoting education, hospital partnerships, trauma system research, and the development of trauma centers in rural underserved areas of Pennsylvania (Pennsylvania Trauma Systems Foundation, 2023). Through the efforts of PTSF, the Pennsylvania Office of Rural Health, the Center for Rural Pennsylvania and other community partners, rural injury and trauma death rates in Pennsylvania can be reduced through improved access to high quality trauma care regardless of location of injury.

SUMMARY AND RECOMMENDATIONS

Access to trauma center care within 60 minutes of injury remains an issue in rural areas of Pennsylvania due in part, to shortages of EMS personnel and lack of trauma centers. To increase these vital services, Critical Access Hospitals should be supported in efforts to be certified as trauma centers. Securing federal funding, especially through the Health Resources and Services Administration (HRSA), will enable the waiver of costs for these hospitals to purse trauma center designation. Coupled with education and mentoring from PTSF, this funding will enhance trauma services in rural communities. National and state EMS legislative advocacy efforts will assure financial support of EMS agencies and make EMS an attractive career opportunity.

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THE IMPORTANCE OF EMERGENCY PREPAREDNESS IN RURAL PENNSYLVANIA

Emergency preparedness is essential for individuals, towns, communities, and cities across Pennsylvania. Due to the unique nature of rural areas, adequate emergency preparedness in rural Pennsylvania is key to successfully minimizing disaster threats, both natural and man-made. These threats can affect rural populations in varying degrees tied to the severity and scope of the event. Initial emergency preparedness planning and training begins in the home. Beyond that, all disasters are local. The disaster planning and response and recovery begins on the local level, in boroughs, townships, municipalities, and across regions. When local resources are overwhelmed, county officials respond.

Every county in the state has an office staffed by Emergency Management Coordinators and guided by a county-specific Emergency Operations Plan (EOP).

To coordinate plans and response, every county in the state has an office staffed by Emergency Management Coordinators and guided by county-specific Emergency Operations Plan (EOP). The Commonwealth of Pennsylvania Emergency Operations Plan (CEOP) may be activated when required, granting special powers to the Governor of Pennsylvania.

Disaster Threats

Rural Pennsylvania is vulnerable to multiple disaster threats, and each requires focused thought toward mitigation, planning, response, and recovery efforts. The Pennsylvania Department of Health (DOH), the Pennsylvania Emergency Management Agency (PEMA) and the Pennsylvania Department of Human Services (DHS) cite the most frequent possible disaster emergencies in the Pennsylvania Emergency Preparedness Guide (Pennsylvania Department of Health, 2017). These are outlined below.

Floods, Dam Failures, and Flooding

Flooding, Pennsylvania's most common natural disaster, may be caused by long periods of rain, tropical systems, or rapid snowmelt. Three of the top 10 deadliest floods in U.S. history occurred in Pennsylvania. Floods haves the potential to cause deaths due to drowning, trauma, injury, and hypothermia, destroy property, and disrupt water and power supply. There also is the post-event long-term risk of infection from water-borne diseases such as typhoid fever, cholera, and hepatitis A (World Health Organization, 2005). The deadliest flood in U.S. history, known as the Great Johnstown Flood of 1889, occurred in a rural Pennsylvania county causing an estimated 2,209 deaths (Kiprop, 2017).

Fires

Fires can consume homes and other buildings within minutes or cause occupants to succumb to smoke inhalation, the leading cause of fire-related deaths. Rural residents also face the additional threat of wildfires. Pennsylvania averages 1,000 to 2,000 wildfires per year (small and large) of which an estimated 99 percent are caused by humans (Crisis Equipped, 2021). The 2016 16-mile Fire in rural Monroe County burned 8,030 acres (Gabbert, 2016).

Fires may be of significant concern for rural communities, where the response time for the local volunteer fire department may depend on having volunteers available or the proximity of the fire station to the fire. The number of volunteer firefighters continues to decrease across the commonwealth.

Winter Storms

Winter storms are known as “deceptive killers” by the National Weather Service since most injuries and fatalities are not a direct result of the storm but are due to traffic accidents or hypothermia. Winter storms include snow, high winds, freezing rain, and ice storms, which often cause loss of electrical power.

Tropical Storms, Tornadoes and Thunderstorms (Summer Storm Threats)

In Pennsylvania, typically, any tropical system is downgraded from a hurricane to a tropical storm or tropical depression by the time they affect Pennsylvania with their high winds and serious flooding. However, these storms can cause billions of dollars in widespread property damage as well as human casualties. Examples of tropical systems causing extensive damage in Pennsylvania include Hurricane Sandy in 2012 and the remnants of Hurricane Lee in 2011.

Somerset County – Flight 93 Memorial

Pennsylvania averages 17 tornadoes per year and these storms will have a more concentrated wind-related damage area (Dozier, 2019). Thunderstorms bring dangerous lightning causing injury and death, but also can cause flash flooding and damaging winds. Severe thunderstorms and the associated winds and damage can be just as severe as the winds from a tornado.

Influenza (Flu) and Other Pandemics

Influenza, the seasonal flu, is spread by infected people coughing or sneezing and touching surfaces. When a pandemic occurs, it often means that it is a new virus and people have little or no immunity protection against the new virus, which can lead to sickness and death. Pandemics usually continue for a long period of time, causing disruptions to all facets of everyday life. During the 1918 Influenza outbreak, over 60,000 Pennsylvania residents died due to the pandemic (Shetty, 2018).

The COVID-19 pandemic affected Pennsylvania, causing not only a number of deaths, but also hundreds of thousands of cases, economic loss due to public health measures taken, and more. As of February 1, 2023, Pennsylvania experienced 49,791 COVID-19 and variant-related deaths (Pennsylvania Department of Health, 2023a).

Hazardous Material Incidents

Hazardous materials are chemicals, liquids or gases that, if released, may pose a threat to the environment or human population. These materials are transported daily via roads, railways, waterways, and pipelines.

Earthquakes and Landslides

Earthquakes are rare in Pennsylvania but may cause property damage and injury. In 1996, the largest recorded Pennsylvania earthquake occurred in rural Mercer County, causing minor property damage yet greatly affecting the local groundwater system (Pennsylvania Department of Conservation and Natural Resources, 2023). Landslides in Pennsylvania are usually slow-moving events that, when noticed, should be quickly reported.

Nuclear Threat

Although nuclear power plants are closely regulated, accidents releasing dangerous levels of radiation are possible. Currently, all four major Pennsylvania nuclear power plants are located in urban counties (Robey, 2017), but hazardous contamination may be dispersed in any direction by the wind, depending on weather conditions.

Terrorism

Terrorism is the unlawful use of violence or intimidation to achieve a political goal. Threats or acts of violence, cyber-attacks or the use of chemical, biological, and nuclear/radiologic weapons are the most likely type of terrorism. The severity and extent of incidents may vary dramatically.

Mass Casualty Event

A mass casualty event occurs when the number of casualties exceeds the resources normally required from local responders (Boston Public Health, n.d.). This event can range from a severe vehicle accident with many victims to any disaster threat. Most emergency response units practice at least annually for a significant event with numerous casualties.

PLANNING AND RESPONSE

Planning and response for disaster events occur at increasing levels, each step crucial toward successful mitigation and response. In rural areas, individual personal preparation and response are critical to initial timely survival. Planning information and checklists are available on various county and state websites (Pennsylvania Department of Health, 2017). Neighbors, religious groups, emergency response (i.e., police, fire, and emergency medical services), and local medical facilities all provide core initial response. Many of these same organizations draft localized emergency plans and conduct annual trainings. County, state, and national agencies plan for and respond to disasters on the local level when required.

Careful planning for, and responding to, disasters ensures successful mitigation and response.

Planning at the Local Level

Every municipality, township, or regional government is highly encouraged to draft and coordinate an EOP and share that plan with county and state governments. At this level, local emergency responders are the first to respond. They will conduct a survey of the damage, create reports, and provide updates to county officials. When local resources are overwhelmed, the county Emergency Operations Center (EOC) is mobilized to provide resources and coordinate activities.

County Response Planning

Indiana County – Christmas Parade Indiana, PA

Each county in Pennsylvania has an Office of Emergency Management/Services to plan for the prevention of, mitigation of, preparation for, response to, and recovery from any disaster situation. This service is required under the Commonwealth of Pennsylvania Emergency Management Services Code or Title 35, Pa. C.S.A. Section 7503 (1) (Pennsylvania Emergency Management Agency, 2021). Each county office is unique but every plan utilizes the same format as the state's emergency plan. This county office is the link between local municipalities and state government and incorporates National Response Framework (NRF) organizational concepts following the National Incident Management System (NIMS) specified by the U.S. Department of Homeland Security. Counties may utilize the Pennsylvania Intrastate Mutual Aid System to secure assistance from neighboring counties (Centre County Government, 2021). The county Emergency Management Agency (EMA) is responsible for forwarding event status reports and requests for assistance to the state EOC and the PEMA area office.

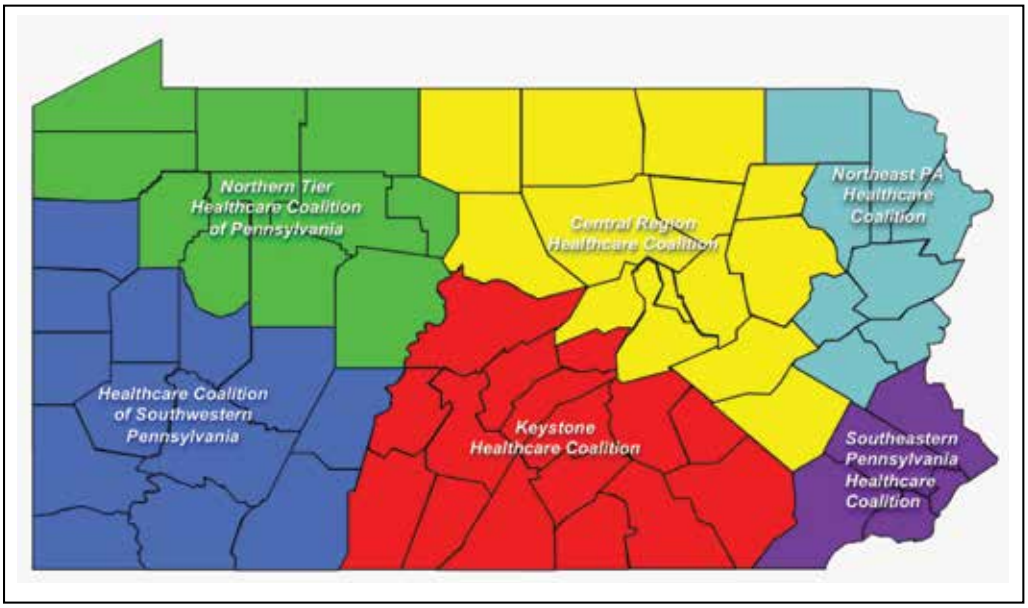
Pennsylvania Declaration of Disaster

The Pennsylvania Emergency Management Services Code empowers state, county, and local governments to declare a disaster emergency when a disaster event has occurred or is imminent (Pennsylvania Emergency Management Agency, 2021). The Governor of Pennsylvania has general direction and control over statewide response once the CEOP has been activated. Direct communication and coordination between the Commonwealth Response and Coordination Center and both the U.S. Department of Homeland Security (U.S. DHS) and the Federal Emergency Management Agency (FEMA) are critical during all event phases. The Governor may proclaim a Declaration of Disaster Emergency when the safety and welfare of people are in jeopardy, issue evacuation or quarantine orders, activate the Pennsylvania National Guard for emergency, and request appropriate federal assistance when the event's extent is beyond the state's ability to effectively respond.

Health Care Coalitions

The Pennsylvania Healthcare Preparedness Program, coordinated by the Pennsylvania Department of Health (DOH), consists of six Health Care Coalitions (HCCs) in the state. These are formal collaborations among health care organizations, public, and private partners organized to prepare for, respond to, and recover from an emergency, mass casualty or catastrophic event (Pennsylvania Department of Health, 2023b). Figure 1 shows the HCC regions in Pennsylvania.

Figure 1: Regional Health Care Coalitions in Pennsylvania



Source: Pennsylvania Department of Health, 2023b

Nationally, HCCs ensure a regional presence developed within states and territories to cover larger geographic areas and focus on emergency preparedness through plans, exercises, trainings, response, and after-action reports. HCCs may be viewed primarily as planning organizations, but they also are an opportunity for health care facilities to work together to address disaster mitigation, planning, response, and recovery. Major responsibilities include regional emergency plan development, regional budget development and sustainment, membership sustainment and growth, incident response coordination at the regional level, coordinating and facilitating HCC meetings and records, and regional training and exercise facilitation (Pennsylvania Department of Health, 2023b).

In Pennsylvania, HCC leadership comes from many corners of the preparedness spectrum. In partnership with the Public Health Management Corporation (PHMC), HCC leadership supports Pennsylvania's hospitals, health care facilities, and regional health care coalitions; provides regional collaboration and health care preparedness and response by encouraging the development and sustainment of health care coalitions; collaborates with the DOH Bureau of Emergency Preparedness and Response and with the Emergency Management Agency's (EMA) Task Forces and EMS Regional Councils; and has strong ties to local resources, fire departments, law enforcement, emergency medical services, and county public health (Pennsylvania Department of Health, 2023b).

National Emergency Planning

The President of the United States may declare an Emergency or Major Disaster for any portion of Pennsylvania. When a federal disaster is declared, a Commonwealth Coordinating Officer (CCO) will be appointed to organize the state's response and recovery activities consistent with the federal assistance provided through the National Response Framework (NRF) (Pennsylvania Emergency Management Agency, 2021).

SUMMARY AND RECOMMENDATIONS

Emergency preparedness is vital at all levels in Pennsylvania. This preparedness begins at the individual level, with the actions each person takes to protect themselves and those they love. From there, each disaster is local, and as a result, the local municipality and its emergency response units are the primary first responders and emergency managers. County emergency management will step in when local resources are overwhelmed, and state emergency management when the county level is stretched beyond capacity. Planning and continual training at all levels for multiple disaster scenarios is key to minimizing their catastrophic impact. Clear, timely, and thorough communication between emergency response units and levels allows appropriate response when and where it is needed. Emergency preparedness exercises are important and should be conducted annually with key stakeholders in order to better understand successes and challenges with the planned system.

Although there are some disaster threats that may not occur, preparing for even the most unlikely even to occur, could make an immense difference.

Minimizing the effects of a disaster starts with appropriate preparation and planning. For the individual or family, this might be discussing what to do in case of a house fire or various options to leave the home with a pre-packed bag when provided only 15 minutes notice. An Emergency Preparedness Guide with checklists for these and many other scenarios may be found on the Pennsylvania Department of Health website (Pennsylvania Department of Health, 2017).

Municipality, township, and regional governments must ensure that first responders (i.e., police, fire, and emergency medical services (EMS)) are appropriately staffed, trained, and funded to address small scale emergencies (Murphy, 2019). It is critical for every county Emergency Management Office to build a network of contacts within and outside their respective counties. This ensures a rapid, knowledgeable response when time is of the essence. These same officials must ensure adequate planning and training is conducted by emergency, medical, or government response teams. State and national emergency response agencies should always have a clear line of communication and an understanding of their direct responsibilities and consequences.

In addition to planning for disasters that are most likely to occur in a community, tabletop exercises at all levels addressing various low likelihood disasters are vital.

An example would be an electromagnetic pulse, rendering all electronic equipment inoperable. As new threats become more likely, such as a highly contagious, high-mortality pandemic situation or the threat of a cyberattack, response teams must practice to prepare to implement alternative options that might be utilized during catastrophes. The experience, information, and areas of improvement gained from this preparation will improve a community's all-hazards response. Preparation for emergencies will increase the knowledge and ability to make critical time-based decisions and respond effectively.

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HEALTH CARE SUPPORTING INFRASTRUCTURE IN PENNSYLVANIA

Pennsylvania Rural Health Plan

RURAL BROADBAND ACCESS

According to the Federal Communications Commission (FCC), "high-speed internet access, or broadband, is critical to economic opportunity, job creation, education, and civic engagement. But there are too many parts of this country where broadband is unavailable" (Federal Communications Commission, 2023). A 2018 report from the FCC indicated that approximately 80 percent of the 24 million American households that do not have access to reliable, affordable high-speed internet are in rural areas (Federal Communications Commission, 2018). Barriers to rural broadband access include geographical isolation, terrain limitations, affordability, relevancy, and digital literacy (Federal Communications Commission, 2023).

The disparity in broadband access for rural Pennsylvania impacts lives daily whether at work, home, or school.

By utilizing 2010 Census findings and 2016 FCC data, the Center for Rural Pennsylvania issued a report that identified that 187,000 Pennsylvanians lack access to minimal broadband connectivity levels that meet federal standards (Meinrath, et al., 2019). Rural Pennsylvanians who have access to those services describe the offerings as "low-quality, unreliable, low-speed, and high-cost" (Meinrath, et al., 2019). This disparity in broadband access for rural Pennsylvanians impacts lives on a daily basis whether at work, home or school (Strawser, 2019).

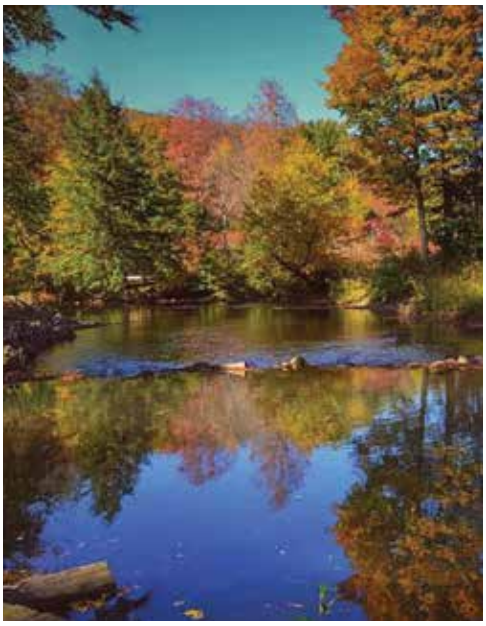
Lack of broadband access impacts rural Pennsylvania households and health care providers.

The lack of broadband access in Pennsylvania not only affects individual rural households, but also rural health centers and other rural health service providers. Rural providers with weak or limited broadband access often face challenges when attempting to utilize technologies such as electronic health records and telehealth opportunities. Technologies such as telehealth are becoming increasingly important, especially for rural residents that otherwise may not have access to health care, however, the broadband shortage makes utilizing these services challenging for both rural providers and patients.

In 2018, Pennsylvania's governor remarked, "high-speed internet access is essential to growing our economy, expanding educational opportunities for our children, increasing access to modern health care, and improving the safety of our communities" (Governor's Office of Communications, 2018). In order to address the challenge of broadband access, the governor announced the Pennsylvania Broadband Incentive Program in 2018 that offers up to $35 million in financial incentives to private broadband providers that bid on service areas within the Commonwealth (Governor's Office of Communications, 2018). The governor's 2019 Restore Pennsylvania plan also provides funding to bridge the digital divide in communities across Pennsylvania (Rehabilitation & Community Providers Association, 2020). The FCC announced in late 2020 that "nearly $369 million would be allocated to expand high-speed broadband access in Pennsylvania…the latest development in the effort to give rural residents better internet service" (Prose, 2020). These funds from the FCC would impact approximately 327,000 Pennsylvanians across nearly 185,000 underserved homes and businesses over the next 10 years (Prose, 2020).

In February 2022, Pennsylvania Governor Tom Wolf's administration launched the creation of the Pennsylvania Broadband Development Authority that manages at least $100 million in federal funding to coordinate the rollout of broadband internet across the state. This funding comes from the recent 2021 Infrastructure Investment and Jobs Act. The law dedicates $65 billion to the energy sector, roads, internet access and connectivity (Gross, 2022).

The governor praised this additional funding for the opportunities it will create in assisting Pennsylvanians in accessing telemedicine appointments, participating in virtual learning, and working remotely amid the COVID-19 pandemic and beyond (Prose, 2020).


McKean County – Kinzua Creek

The Pennsylvania Broadband Development Authority (Authority) was signed into law on December 22, 2021. Their mission is to foster and create equitable, affordable, and robust high-speed broadband infrastructure and services connecting Pennsylvania for the 21st century and beyond. The November 2022 Statewide Broadband Plan states "that broader access to reliable and affordable broadband contributes to economic growth, yields higher personal incomes, and lowers unemployment rates. Additionally, it can help improve social outcomes by democratizing access to education and fostering social connections. Innovations such as telehealth can directly improve health outcomes." Through the Broadband Plan, the Authority will continue to work towards improving broadband infrastructure availability, ensuring affordability for all Pennsylvanians, and addressing the need for digital literacy and device provision in many Pennsylvania households.

The Authority held a series of listening sessions across the state on the National Broadband Map published by the FCC in the fall of 2022 to educate broadband consumers on assessing their work and home broadband accessibility. On January 17, 2023, the Authority announced that approximately 35,000 locations were submitted as part of a bulk broadband challenge to the FCC. This action is intended to prompt the FCC to work directly with internet service providers to verify the information submitted.

The commonwealth continues to make progress in its efforts to expand broadband, which is shown in Acts 98 and 132, both of 2020. Act 98 "expands access to broadband by allowing electric cooperatives to utilize existing utility poles to place fiber-optic lines" (Pennsylvania General Assembly, 2020, October), while Act 132 provides funding to improve high-speed broadband internet access in underserved rural regions throughout Pennsylvania (Pennsylvania General Assembly, 2020, November). While these various efforts have contributed to improved broadband access across the commonwealth, universal broadband access remains the goal to be achieved one day in Pennsylvania.

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HEALTH INFORMATION TECHNOLOGY AND TELEHEALTH USE IN RURAL AREAS

Lycoming County – Santa Express Train Excursion

Health information technology (HIT), as described by the U.S. Department of Health and Human Services (HHS), "involves the processing, storage, and exchange of health information in an electronic environment" (U.S. Department of Health and Human Services, 2022). The health care industry utilizes HIT to improve the quality of care, prevent medical errors, reduce health care costs, increase administrative efficiency, decrease paperwork, and expand access to affordable health care (U.S. Department of Health and Human Services, 2022). The utilization of HIT contributes to the increased use of telehealth.

The Health Resources and Service Administration (HRSA) defines telehealth as "the use of electronic information and telecommunication technologies to support long-distance clinical health care, patient and professional health-related education, public health, and health administration" (Health Resources and Services Administration, 2022). Telehealth strategies include, but are not limited to, two-way video, smartphone applications, and wireless tools such as blood pressure monitors for remote patient monitoring (The Hospital and Healthsystem Association of Pennsylvania, 2023).

In rural areas specifically, telehealth can be used to provide specialty services as an alternative to staffing rural health care facilities with specialty providers (Rural Health Information Hub, 2021). "Telehealth allows specialists and subspecialists to visit rural patients virtually, improving access as well as making a wider range of health care services available to rural communities via telemedicine, including":

- Radiology;
- Psychiatry;
- Dermatology;
- Dentistry;
- Audiology;
- Cardiology;
- Oncology; and
- Obstetrics.

Source: Rural Health Information Hub, 2021

Health care facilities utilize telehealth services in wide range of approaches to best meet the needs of their patients. As examples, emergency care facilities such as hospitals can use telehealth for real time evaluations and emergency consultations in cases dealing with potential stroke patients and other services (Rural Health Information Hub, 2021). Primary care facilities utilize telehealth to facilitate home monitoring in order to engage patients between their routine visits to assist them in effectively managing their health conditions (Rural Health Information Hub, 2021). The use of telehealth increases access to behavioral and mental health services such as therapy and counseling, telepharmacy, which includes medication counseling, and other follow-up or routine monitoring services after a medical procedure (Rural Health Information Hub, 2021).

While telehealth had gained traction across Pennsylvania, the public health emergency in 2020 and 2021 amplified the need for, and increased the use of, this technology. During the pandemic, all health care professionals licensed under any of the Pennsylvania Department of State's Bureau of Professional and Occupational Affairs licensing boards were granted the ability to provide services to patients via telehealth (Pennsylvania Department of State, 2020). This increased availability of telehealth services enabled Pennsylvania hospitals to expand health care services and address regional specialty shortages, which helped many Pennsylvanians receive virtual care (The Hospital and Healthsystem Association of Pennsylvania, 2023). These telehealth practices also have become increasingly critical in rural and remote areas that lack sufficient health care services, especially specialist providers (Health Resources and Service Administration, 2022).

Barriers such as poor broadband access have created significant challenges for expanding telehealth. Many individuals, especially in rural areas, lack access to broadband services, which severely limits their ability to utilize telehealth services.

Reimbursement rates also have created challenges for telehealth access in Pennsylvania. Pennsylvania's Medicaid program will only reimburse telehealth services that include live video telemedicine or audio if beneficiary does not have video capability or an emergency situation exists, specifically for specialty consultations (The Center for Connected Health Policy, 2022). To be reimbursed by the state's Medicaid program, telehealth services must be provided by physicians, certified nurse practitioners, certified nurse midwives, and psychiatrists (The Center for Connected Health Policy, 2022). Many Pennsylvania providers and legislators are anticipating that the passage of future bills will include payment parity that will require "insurance companies in that state…to reimburse for telemedicine care in the same way they would for in-person care…so physicians who utilize telemedicine wouldn't have to worry about how they are being compensated" (Miller, 2020).

SUMMARY AND RECOMMENDATIONS

To address health care shortages in Pennsylvania, telehealth services enabled hospitals to expand health care services; however, barriers like poor broadband access stand in the way of expansion.

The future of telehealth in Pennsylvania beyond public health emergencies remains uncertain due to a lack of statewide regulations or guidelines governing the practice (Miller, 2020). While telehealth has proven to be beneficial for many Pennsylvania residents—especially rural populations, homebound patients, and individuals with transportation barriers—legislation regarding the practice continues to be proposed and debated (Miller, 2020). Despite the lack of government regulation, health care systems throughout the state independently integrate telehealth into their practices to continue to care for patients, especially those in rural areas that would otherwise lack access to services (Miller, 2020).

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THE IMPACT OF TRANSPORTATION ON ACCESS AND RURAL HEALTH STATUS

Across the country, more than three million adults don't receive health care services due to transportation issues (Smith, et al., 2017), preventing access to preventive screenings, medical tests, treatments and interventions, necessary and time-sensitive prescription medications, and the important relationship with a medical provider that improves health education and decision-making. According to a rural transportation challenges survey conducted by the University of Minnesota Rural Health Research Center, nearly two million rural residents across the country do not have access to a car, and rural public transportation services are difficult or impossible to access (Henning-Smith, et al., 2017). Rural transportation challenges range across infrastructure, geography, funding, accessibility, political support and public awareness, and socio-demographics. A Pennsylvania respondent to the study stated, "If elderly don't qualify for medical assistance (the state's Medicaid program), there is no transportation available." Most notably, rural residents in this survey did not anticipate any positive changes to these transportation challenges; if anything, they expected the challenges to get worse as the population ages further (Henning-Smith, et al., 2017). Additionally, the lack of childcare options in rural areas leaves parents without the parenting resources they need when attending or transporting another family member to an appointment (Smith, et al., 2017). Coordination of care becomes increasingly complex because of these transportation challenges.

Unlike in urban areas, rural residents have limited public transportation services, if any at all. Where public transportation is available, it is generally lacking in options and convenience, and it becomes difficult to coordinate the schedule of transportation with the time of a medical appointment (Rural Health Information Hub, 2020). Additionally, rural residents often require greater accommodation in their travels. An aging rural population means patients often need space in their mode of transportation for wheelchairs, walkers, and other assistive devices (Smith, et al., 2017), but these accommodations may not be available in rural public transportation options. For those who qualify, Medicaid provides emergency and non-emergency medical transportation, but when applied to rural transportation this becomes very costly because only "loaded" miles, meaning time when patients are in the vehicle, qualify for reimbursement from government-funded sources (Henning-Smith, et al., 2017). A report published in 2020 found that, among consumers eligible for free transportation to medical appointments under the state's Medical Assistance Transportation Program, the most common barriers included lack of awareness of the program, difficulties in coordination, unclear communication in scheduling, limited availability of specialized vehicles or off-hours rides, long wait times, and accountability for safety (Pennsylvania Health Access Network, 2020). Transportation barriers may additionally limit health care employees' mobility, including those providing at-home care to home-bound residents (Henning-Smith, et al., 2017).

Unlike in urban areas, rural residents have limited public transportation services.

Agricultural and migrant workers in rural Pennsylvania face unique challenges in their health care transportation needs. Most of these workers cannot take time off from work for a medical appointment, so they must seek medical care after working hours, sometimes after 7:00 PM. If agricultural workers need transportation to appointments, they have the additional burden of coordinating transport during these off-hours. Language barriers in this population, as well as others, can also complicate the coordination of transportation. The language most spoken by migrant workers is Spanish, although some Asian dialects are sometimes spoken as well. Communicating health care transportation needs in a predominantly English-speaking community can contribute to added stress for the patient and misunderstandings, further limiting access to care.

Furthermore, lack of access to transportation limits an individual's ability to access social services, community engagement activities, consumer needs, employment, or education opportunities (Rural Health Information Hub, 2019). Social isolation is exacerbated by transportation challenges and is associated with worse self-rated mental and physical health (Henning-Smith, et al., 2017). Creative minds at companies such as Uber, Lyft, and Circulation have developed services specifically for transporting patients with medical appointments, with the capability of working directly with local providers to schedule rides well in advance. However innovative it is, this option may not be viable for rural areas, and it does not address the social aspect of transportation needs. Uber and Lyft are not widely used in rural areas and do not consistently offer adequate accommodation for parents with children who require car seats or for residents with disabilities who use assistive devices. There is a great need for innovative and realistic transportation options for rural Pennsylvanians.

The Pennsylvania Department of Transportation (PennDOT) offers a Public Transportation Services and Programs Map which allows individuals to locate programs and services available by county. Shared-Ride/Demand Response Services, detailed in Table 1, are available in every Pennsylvania county except Philadelphia County.

Table 1: Ride Share Programs in Pennsylvania

Program Name	Eligibility / Details	Cost
Shared-Ride Program	• Senior citizens 65 years of age or older can utilize curb-to-curb, demand-responses transportation services • Prior-day advance registration required with local shared-ride provider	• Senior citizens (or approved third-party sponsor) pays 15% of fare. • Lottery Fund pays 85% of service
Rural Transportation Program Person with Disabilities (PwD) Program	• Persons with disabilities aged 18-64 may utilize shared-ride, curb-to-curb, advance registration transportation services	• Persons with disabilities pay a portion of the fare and the PwD program covers up to 85% of the remaining cost (for trips not eligible for other funding source)

Source: Pennsylvania Department of Transportation, 2023

Programs like those provided in the state are beneficial in serving rural Pennsylvanians' transportation needs. However, gaps remain. These issues are complex and require creative, community-level solutions, expanded state and federal assistance, and additional research to demonstrate best practices and current gaps in transportation access. The Rural Health Information Hub has created an evidence-based toolkit of eight models aimed at improving access to transportation, complete with funding sources for rural communities, examples, and additional considerations, many of which may be applicable to rural Pennsylvania communities.

Mercer County – WaterFire Event, Sharon

Transportation is a primary social determinant of health, and the necessity of accessible, reliable transportation is paramount in improving health care access for rural Pennsylvanians.

SUMMARY AND RECOMMENDATIONS

Transportation barriers prevent access to necessary health care services for rural patients. In addition to creating health inequities, lack of access to transportation also limits other aspects of daily life including social, career, and education needs. For individuals with disabilities and those requiring special supports, transportation challenges are exacerbated. Considering rural Pennsylvania's wide landscapes, dispersed populations, and consolidated health care resources, it is essential that inclusive transportation options be available to help rural residents meet their needs despite the geographic distance to those facilities.

Although access to transportation is often overlooked as a factor in a person's health, there is a great need for innovative and realistic transportation options for rural Pennsylvanians. PennDOT offers a Public Transportation Services and Programs Map to help individuals locate transportation programs and services in each Pennsylvania county. However, these services may not be available in all rural areas or provide necessary supports for persons with disabilities and those requiring special services. State, regional, and local planning agencies should integrate transportation services into strategic and operational plans, in coordination with health care providers, social services, educators, and major local employers, to address the needs of rural residents and ensure that all residents, regardless of geographic location, have access to reliable transportation options.

Companies like Uber and Lyft created a potential solution to improve access to transportation, but this option may not be viable for rural areas. These ride share programs are not widely available in rural areas.

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RECOMMENDATIONS

Pennsylvania Rural Health Plan

INTRODUCTION

Developing a comprehensive and sustainable health care strategy for rural areas is critical to ensuring equal access to high quality health care services for every community member. Given the complexities of health care, it's important to recognize the unique challenges faced by rural populations: geographic isolation, limited resources, and a scarcity of health care professionals. Crafting an effective rural health plan demands innovation, collaboration, and a deep understanding of the specific needs of these communities. This plan aims to bridge gaps and cultivate a strong, inclusive health care ecosystem that prioritizes wellness, accessibility, and adaptability in the rural landscape to reduce disparities. The Pennsylvania Rural Health Plan, 2025-2030 endeavors to improve and transform health care delivery in rural areas, empowering Pennsylvania's rural communities to thrive and flourish.

The Plan, and the recommendations, are for consideration and use by stakeholders which is defined as any individual, group, organization or agency that has an interest in the health and well-being of their community, may be impacted by actions, and can influence future direction. Examples of stakeholders include, and are not limited, to:

- Elected officials and policymakers
- Business and industry representatives
- Banking and other financial institutions
- Community foundations
- Academic institutions
- School districts
- Law enforcement
- Health care providers and facilities
- Insurance companies
- Social service agencies
- Service organizations
- Community support systems
- Faith-based organizations
- Sports teams
- Families
- Individuals
- Other individuals, agencies, and organizations focused on the community's health

To successfully address rural health care challenges, it is suggested that stakeholders use a multi-pronged approach to guide short- and long-term strategies to ensure that health care in their community meets and exceeds the needs of residents.

EVALUATION

It is important that stakeholders put in place a strategy for evaluating improvement to ensure meaningful change. Several national strategies are available that evaluate improvement, which vary in scope and complexity and can be adapted for local use. Local organizations and agencies also may have evaluation models that can be used. The evaluation strategy that is selected should focus on fundamental objectives to guide improvement. Stakeholders and community leaders seeking to improve rural health care should begin by addressing the following:

- The goal of the project or initiative.
- The change(s) needed to achieve the project or initiative.
- Measures of success.
- Strategies to maintain and/or expand successful projects and initiatives or changes that need to be made if a positive outcome is not achieved.

One of the most frequently used strategies, the Plan-Do-Study-Act (PDSA) process for evaluation of change was developed by the Institute for Healthcare Improvement (IHI), a nationally recognized organization. This process provides a framework for creating a strategy for change (the "Plan" component), implementing the change on a small scale (the "Do" component), evaluating the strategy (the "Study" component), and either adopting, revising or abandoning the change (the "Act" component). Once small tests of change are adopted, the change can be implemented more broadly. The PDSA flowchart is included in Appendix 1 as an example of how an evaluation model can be organized (Institute for Healthcare Improvement, 2009).

RECOMMENDATIONS

Seven recommendations are identified that include a goal and specific activities that can be implemented. Stakeholders should choose which recommendations and activities are most appropriate for their needs, prioritize actions to address specific issues, and adapt as needed to best fit the unique needs of their community. Timelines and metrics for success should be developed for each activity. It also is important to note that some activities may either already be started and/or completed, and stakeholder groups should consider those as successes!

The recommendations are organized into two sets of focus:

- **Recommendations 1-3** address the policy, infrastructure, and collaborations that serve as the foundation for rural health care delivery.
- **Recommendations 4-7** address specific challenges in rural health care: workforce, health care facility viability, the needs of vulnerable populations, and sustainable payment policies.

Addressing these sets of recommendations will provide a holistic approach to problem-solving, leveraging the strengths and insights from each set to formulate a comprehensive and effective strategy that not only addresses immediate concerns but also supports sustainable solutions for the health care needs of rural communities.

Recommendation 1: Engage Policymakers and Elected Officials to Address Rural Health Issues

Engaging policymakers and elected officials to address rural health issues is crucial for creating lasting solutions. These key stakeholders can ensure that policies are developed and implemented to improve access to health care, address health care disparities, and support the unique needs of rural communities. This collaborative approach can lead to innovative strategies, increased funding, and enhanced support systems that prioritize the health and well-being of rural residents. Health care leadership and others should develop a communication framework to address current and future health care concerns.

Goal: Start and expand clear and consistent messaging from rural health care leaders and advocates to ensure rural health care is addressed in all relevant policy, legislation, and regulation at local, state, and national levels.

Activity: Develop materials on rural health issues for distribution and update as needed
Activity: Name legislative and policy champions to develop and/or expand collaboration
Activity: Hold annual rural legislative briefings and other events
Activity: Meet regularly with legislators, legislative staff, and relevant state agencies and their policy office staff
Activity: Establish a rural impact analysis for relevant state and national policy and legislation
Activity: Establish and/or expand subject matter experts as resources

Recommendation 2: Address Rural Infrastructure Challenges

Addressing rural infrastructure challenges requires a collective approach that includes short-term strategies and extended solutions. Engaging local, state, and national policymakers, elected officials, and subject matter experts is essential to prioritize infrastructure needs in rural areas to support health care facilities, expand broadband technologies, cybersecurity, set up transportation options and systems, and ensure that travel routes are safe.

Collaboration with local communities, businesses, and stakeholders is crucial to identify specific needs, implement tailored solutions, and ensure sustainable development. This collective effort can drive economic growth, enhance connectivity, and improve the overall quality of life for rural residents, addressing infrastructure challenges and fostering thriving rural communities.

Goal: Ensure that rural communities, residents, and health care providers have access to well-developed infrastructure to include safe public water and sewer systems, broadband, transportation, funding, local and statewide 911 and 211 access, and safe roads.

Activity: Develop and expand partnerships with county elected officials, community and economic development authorities, transportation authorities, and infrastructure service providers to advocate for rural health support
Activity: Hold community town halls and other events to promote strong transportation, broadband, safe travel routes, and more
Activity: Collaborate with transportation authorities at the state and local levels to improve rural roads and bridges
Activity: Invest in telehealth infrastructure, including high-speed internet and teleconferencing equipment, using federal, state, and local funding opportunities
Activity: Provide training for health care providers on telehealth platforms and practices
Activity: Promote telehealth services to rural residents and communities and educate them on how to access care remotely
Activity: Implement social media and outreach strategies to raise awareness and build support
Activity: Seek grants, loans, and other funding opportunities from government agencies, foundations, and private organizations

Recommendation 3: Create Collaboration Between Partners

Partnerships are essential for building trust and ensuring progress. Partners include local, state, and national government and non-government organizations, non-profits, civic leaders, educational systems, academic leaders, health care providers, community leaders, insurance plans, and more. Consistent and clear interaction increases trust, provides opportunities to contribute and expands partners' interest to create projects with benefit partners. By implementing these strategies, efforts between partners can be effective and address rural health needs and improve health outcomes for rural communities.

Goal: Build and expand effective collaboration, coordination, and trust with partners at the local, state, and national levels to address rural health needs.

Activity: Recognize and respect the diverse cultural, social, and economic factors that influence the health and well-being of rural communities and promote cultural competency and sensitivity among partners through education, awareness, and training to ensure interventions are respectful, inclusive, and tailored to the unique needs and preferences of rural populations
Activity: Name and include key stakeholders at the local, state, and national levels, including health care providers, community organizations, elected officials, government agencies, and advocacy groups
Activity: Develop clear and measurable goals and aims that align with addressing rural health needs now and in the future
Activity: Name and use available resources, including funding, expertise, and services, from each partner. Invest in projects that build opportunities for new actions to strengthen the skills, knowledge, and capabilities of partners to effectively address rural health needs
Activity: Provide training, technical help, and support to partners to increase their ability to collaborate, coordinate, and implement interventions
Activity: Set up a strong monitoring and evaluation system to track progress, measure outcomes, and find areas for improvement
Activity: Remain adaptable and flexible in response to changing needs, priorities, and challenges faced by rural communities and partners
Activity: Continuously assess and adjust strategies, approaches, and interventions based on feedback, lessons learned, and evolving circumstances to ensure relevance and effectiveness

Recommendation 4: Address Rural Health Care Workforce Challenges

Addressing rural health care workforce challenges requires a coordinated approach due to the unique barriers and circumstances faced by these communities. Workforce activities need to focus on primary care, specialty care, oral health, mental and behavioral health, emergency care, first responders, maternity and child health, community health workers, network adequacy, and more. All members of the health care team must be included to include physicians, nurses, advanced practice providers, oral health providers, medical assistants, technical staff, long-term care providers, first responders, community health workers, and other health care workforce needs.

Also included in this goal are partnerships with clinical training programs that focus on promoting rural careers and guaranteeing that community needs are reflected in training and placement of health care providers.

By implementing a combination of actions, a sustainable and effective rural health care workforce will be trained to improve health outcomes for rural populations.

Goal: The full spectrum of health care providers is trained to practice in rural communities and meet the health care needs of rural communities.

Activity: Engage with local school districts and other organizations to introduce and encourage students in grades K-12 on careers in health care
Activity: Implement medical education programs to train students in rural settings
Activity: Offer incentives for clinical providers and professionals who commit to working in rural areas
Activity: Provide opportunities for rural health care providers to access ongoing training and professional development
Activity: Offer incentives such as competitive salaries, signing bonuses, relocation aid, and housing subsidies to attract health care professionals to rural areas
Activity: Create professional and social support networks to reduce isolation and burnout among rural health care providers
Activity: Develop clear career professional opportunities to support long-term commitment to rural health care
Activity: Expand telehealth services to reduce the burden on local providers
Activity: Increase the use of remote monitoring technologies to manage chronic diseases and other health conditions, reducing the need for frequent in-person visits
Activity: Advocate for policies that address reimbursement rates, regulatory flexibility, and funding for rural health initiatives and work with local, state, and national governments to prioritize rural health care in policymaking and resource distribution
Activity: Work with schools, businesses, and community organizations to promote health education and wellness programs
Activity: Invest in upgrading health care facilities and equipment
Activity: Address transportation barriers that patients face, such as through mobile health clinics and improved public transport options
Activity: Gather and analyze data on rural health needs and workforce trends to inform policy and program development
Activity: Support research initiatives focused on rural health care challenges to develop evidence-based solutions

Recommendation 5: Ensure Rural Hospital and Facility Viability

Ensuring the viability of rural hospitals and facilities is essential for keeping health care access in rural communities. The approach includes securing increased funding and fair reimbursement, implementing cost management strategies, and expanding telehealth services. Workforce development through recruitment incentives and continuous education is crucial. Community engagement, policy advocacy, local and regional collaborations, and quality improvement activities also play vital roles. By adopting innovative care models such as new payment models, mobile health units, and community paramedicine, rural health care facilities can expand access, efficiency, and sustainability, ensuring they continue to meet the health needs of their communities.

Goal: Ensure the long-term viability of rural hospitals and facilities through sustainable funding, operational efficiencies, access through telehealth and innovative care models, a skilled health care workforce, community engagement, policies, and quality improvement.

Activity: Increase external funding for hospitals and clinics
Activity: Conduct Community Health Needs Assessments
Activity: Increase collaboration and partnerships
Activity: Implement Quality Assurance programs

Recommendation 6: Assure Access to Care for Vulnerable Groups

Assuring access to care for vulnerable groups addresses barriers that prevent or reduce specific individuals from receiving services. Vulnerable populations are, in general, groups of individuals who are more likely to experience poor health outcomes due to income and education levels, age, disability, geographic location, cultural and linguistic barriers, and more.

Examples of vulnerable groups include low-income individuals and families, ethnic and racial minorities, older persons, children and youth, individuals with disabilities, and rural and remote populations. Other vulnerable groups include homeless persons, the LGBTQ+ community, immigrants and refugees, persons with mental and behavioral health disorders, and those experiencing substance misuse.

Understanding and addressing the specific needs and barriers faced by vulnerable groups is crucial for developing policies, programs, and health care services that promote equal access to care and improve health outcomes for all individuals. Focusing on the needs of vulnerable groups ensures that everyone in the community has access to high-quality, affordable health care. Reducing barriers to care for vulnerable groups can potentially reduce the overall cost of health care and can lead to economic benefits for the community since healthy persons are generally more productive. Assuring access to health care services also strengthens public health preparedness and response capabilities since, during public health emergencies or pandemics, vulnerable groups are often disproportionately affected.

Goal: Health care systems and communities assure access to care high-quality, affordable health care for vulnerable groups, improve health outcomes, and promote equity in health care delivery.

Activity: Identify specific groups in the community that are considered vulnerable
Activity: Determine barriers in accessing health care such as access to providers, health insurance, transportation, etc.
Activity: Advocate for policies that support health care access for vulnerable
Activity: Conduct educational campaigns to inform vulnerable groups about available health care services, how to access them, and their rights
Activity: Collaborate with community-based organizations that have established trust within vulnerable groups
Activity: Use telehealth and technology to improve access to care, especially in remote or underserved areas
Activity: Reduce health disparities through preventive care, chronic disease management, and mental health services
Activity: Monitor and evaluate the effectiveness of activities through data on health care utilization, health outcomes, patient satisfaction, and barriers
Activity: Ensure that vulnerable groups are aware of their legal protections.
Activity: Develop strategies for ensuring long-term access to care for vulnerable groups

Recommendation 7: Secure Comprehensive Payment Options for Services

Comprehensive and accurate payment is crucial for health care facilities. Payme and/or reimbursement for services that are provided ensure financial stability, e patient access and satisfaction, comply with regulations, build community trust, support the mission of providing high-quality care affordable to all patients. Wel designed payment options can mitigate the risk of services that are not reimbur also known as bad debt, which reduces financial strain and allows resources to allocated more efficiently. Adequate payment for services also helps health care providers adapt to the changing health care landscape and evolving reimbursem models, insurance coverage, and patient demographics.

Goal: Health care providers take a proactive and patient-centered approach to s comprehensive payment options, ensure that patients have access to payment for services, explore new strategies for payment, and contribute to better health outcomes for all individuals.

Activity: Conduct a thorough assessment of existing payment options availab the health care provider and identify gaps
Activity: Assess current and potential reimbursement sources and compare t patient demographics
Activity: Review the facility's list of cost for services (i.e., the Chargemaster) a revise as needed
Activity: Review current reimbursement contracts with insurance companies, Medicaid, and Medicare and identify strategies to realign payment to expense
Activity: Identify innovative payment programs in the state and nation and exp options for participation
Activity: Advocate for the expansion of insurance coverage options, such as Medicaid and subsidized insurance plans, to cover more individuals who may otherwise be uninsured or underinsured
Activity: Explore options to establish or expand sliding fee scales based on pa income levels
Activity: Develop or expand flexible payment plans that accommodate patient financial situations
Activity: Collaborate with public entities, private health care providers, and no organizations to develop sustainable payment solutions
Activity: Continuously monitor the effectiveness of implemented payment opt and make adjustments as needed. Track financial outcomes, such as revenue metrics and charity care utilization, to assess the impact on financial health a access to care

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APPENDIX 1

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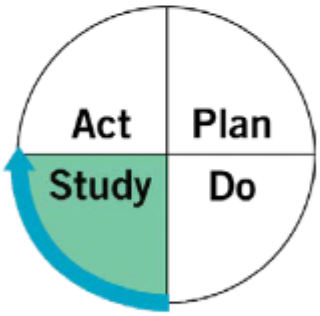
The Plan-Do-Study-Act (PDSA) Model for Change

Plan: Plan the test, including a plan for collecting data.

- State the question you want to answer and make a prediction about what you think will happen.
- Develop a plan to test the change. (Who? What? When? Where?)
- Identify what data you will need to collect.

Do: Run the test on a small scale.

- Carry out the test.
- Document problems and unexpected observations.
- Collect and begin to analyze the data.



Study: Analyze the results and compare them to your predictions.

- Complete, as a team, if possible, your analysis of the data.
- Compare the data to your prediction.
- Summarize and reflect on what you learned.

Act: Based on what you learned from the test, make a plan for your next step.

- Adapt (make modifications and run another test), adopt (test the change on a larger scale), or abandon (don't do another test on this change idea).
- Prepare a plan for the next PDSA.

Institute for Healthcare Improvement, 2009

APPENDIX 2

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ABBREVIATIONS

AAA	Area Agency on Aging
AAAQ	Availability, Accessibility, Acceptability, and Quality Framework
ACA	Patient Protection and Affordable Care Act
ACOG	American College of Obstetricians and Gynecologists
ADA	American Dental Association
AHA	American Hospital Association
AHAR	Annual Homeless Assessment Report
AHLA	American Health Lawyers Association
AHRQ	Agency for Healthcare Research and Quality
AP	Associated Press
APHA	American Public Health Association
APP	Advanced Practice Provider
ASTHO	Association of State and Territorial Health Officials
BRFSS	Behavioral Risk Factor Surveillance System
CAH	Critical Access Hospital
CBOC	Community Based Outreach Center
CBPH	Community-based Public Health
CBSA	Core-Based Statistical Area
CCHP	The Center for Connected Health Policy
CCO	Commonwealth Coordinating Officer
CDC	Centers for Disease Control and Prevention
CEOP	Commonwealth of Pennsylvania Emergency Operations Plan
CHC	Community Health Center
CHIP	Children's Health Insurance Program
CLRD	Chronic Lower Respiratory Disease
CMMI	Center for Medicare and Medicaid Innovation
CNM	Certified Nurse Midwife
CMS	Centers for Medicare and Medicaid Services
CON	Certificate of Need
CRNP	Certified Registered Nurse Practitioner
CSDH	Certified School Dental Hygienist
DAV	Disabled Veterans of America
DHPSA	Dental Health Professional Shortage Area
DoD	U.S. Department of Defense
DOH	Pennsylvania Department of Health
ED	Emergency Department
EFDA	Expanded Function Dental Assistant
EMA	Emergency Management Agency
EMS	Emergency Medical Service

EMTALA	Emergency Medical Treatment and Labor Act
EOC	Emergency Operations Center
FAR	Frontier and Remote
FCC	Federal Communications Commission
FEDVP	Federal Employees Dental and Vision Insurance Program
FEMA	Federal Emergency Management Agency
Flex Program	Medicare Rural Hospital Flexibility Program
Flex	Medicare Rural Hospital Flexibility Program
FMC	Free Medical Clinic
FORHP	Federal Office of Rural Health Policy
FPL	Federal Poverty Level
FQHC	Federally Qualified Community Health Center
GDP	Gross Domestic Product
HAP	Hospital and Healthsystem Association of Pennsylvania
HCB	Home- and Community-Based
HCH	Health Care for the Homeless
HHS	U.S. Department of Health and Human Services
HIE	Health Information Exchange
HIT	Health Information Technology
HIV	Human Immunodeficiency Virus
HMO	Health Maintenance Organization
HPSA	Health Professional Shortage Area
HRSA	Health Resources and Services Administration
HUD	The U.S. Department of Housing and Urban Development
IGH	Institute of Global Homelessness
IOM	Institute of Medicine
JSGC	Joint State Government Commission
K-12	Kindergarten through 12th Grade
Kbps	Kilobits per second
LHD	Local health department
MA	Medical Assistance (Pennsylvania's Medicaid program)
MATP	Medical Assistance Transportation Program
Mbps	Megabits per second
MBQIP	Medicare Beneficiary Quality Improvement Program
MCO	Managed Care Organization
MHA	Mental Health Alliance
MSA	Metropolitan Statistical Area
MUA	Medically Underserved Area
NACCHO	National Association of County and City Health Officials
NACHC	National Association of Community Health Centers
NACRHHS	National Advisory Committee on Rural Health and Human Services
NAMI	National Alliance on Mental Illness
NAS	Neonatal Abstinence Syndrome

NCFH	National Center for Farmworker Health, Inc.
NCHS	National Center for Health Statistics
NCSL	National Conference of State Legislatures
NICU	Neonatal Intensive Care Unit
NIFA	National Institute of Food and Agriculture
NIMS	National Incident Management System
NIOSH	National Institute for Occupational Safety and Health
NP	Nurse Practitioner
NRF	National Response Framework
OB	Obstetric
OB/GYN	Obstetrician/Gynecologist
OED	Outpatient Emergency Department
OSHA	Occupational Safety and Health Administration
P3N	Pennsylvania Patient and Provider Network
PA DHS	Pennsylvania Department of Human Services
PA RHM	Pennsylvania Rural Health Model
PA	Physician Assistant
PACHC	Pennsylvania Association of Community Health Centers
PADDC	Pennsylvania Developmental Disabilities Council
PDA	Pennsylvania Department of Aging
PDE	Pennsylvania Department of Education
PDOH	Pennsylvania Department of Health
PEMA	Pennsylvania Emergency Management Agency
PennDOT	Pennsylvania Department of Transportation
PHAB	Public Health Accreditation Board
PHAN	Pennsylvania Health Access Network
PHC4	Pennsylvania Health Care Cost Containment Council
PHCA	Pennsylvania Health Care Association
PHDHP	Public Health Dental Hygiene Practitioner
PHMC	Public Health Management Corporation
PORH	Pennsylvania Office of Rural Health
PTSF	Pennsylvania Trauma Systems Foundation
PUC	Pennsylvania Public Utility Commission
PwD	Persons with Disabilities
REH	Rural Emergency Hospital
RHC	Rural Health Clinic
RHIHub	Rural Health Information Hub
RHRCA	Pennsylvania Rural Health Redesign Center Authority
RHRCO	Rural Health Redesign Center Organization
RRS	Rural Ruggedness Scale
RUCA	Rural-Urban Commuting Area
SAMHSA	Substance Abuse and Mental Health Services Administration
SBSS	School-Based Service Sites
SCC	Senior Community Center

SDOH	Social Determinants of Health
SHA	State Health Assessment
SHIP	Small Rural Hospital Improvement Program
SLVPHP	San Luis Valley Public Health Partnership
SNAP	Supplemental Nutrition Assistance Program
SNAP-Ed	SNAP Education
TAMP	Transitional Assistance Management Program
tele-ED	Telemedicine Emergency Department
U.S. DHS	U.S. Department of Homeland Security
UA	Urbanized Area
UC	Urbanized Cluster
UPMC	University of Pittsburgh Medical Center
U.S.	United States
USCB	U.S. Census Bureau
USDA	U.S. Department of Agriculture
VA	U. S. Department of Veterans Affairs
VHA	Veterans Health Administration
VISN	Veterans Integrated Service Network
WHO	World Health Organization
WIC	Women, Infants, and Children

APPENDIX 3

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