

Introduction

Between 2010 and 2020, rural Pennsylvania lost nearly 85,000 residents. To understand why rural areas lost so many people, the Center for Pennsylvania examined the number of births and deaths during this period, using data from the Pennsylvania Department of Health and the U.S. Census Bureau. The Center found that rural deaths outnumbered births for the entire decade.

Key Findings:

- Rural Pennsylvania had more deaths than births from 2010 through 2020.
- In 2020, the total fertility rate in rural Pennsylvania was 1.62; for population replacement, a rate of 2.1 is needed.
- Each year, from 2010 to 2020, the rural Pennsylvania mortality rate was higher than the urban rate.
- Since rural Pennsylvania is experiencing more deaths than births, it is highly unlikely that its population will grow naturally, and population growth would have to come from in-migration.

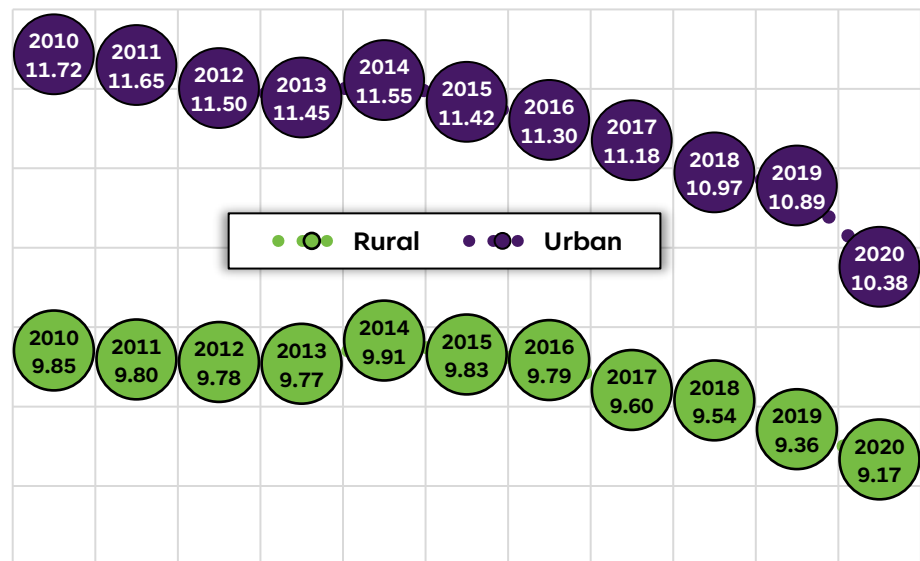
Birth Rates in Rural and Urban Pennsylvania

In 2020, the birth rate in rural Pennsylvania was 9.17 per 1,000 residents. The same year, the urban birth rate was 10.38 per 1,000 residents. Most notably, there have been steady declines in rural and urban birth rates since 2014 (See Figure 1).

The total birth rate in Pennsylvania from 2010 to 2020 was 10.84 per 1,000 residents. The five counties with the highest birth rates were Philadelphia, Lancaster, Dauphin, Mifflin, and Montour. Each had a rate of 10.70 or higher. The five counties with the lowest rates were Wayne, Centre, Sullivan, Pike, and Forest. Each had rates below 8.00 per 1,000 residents (See Figure 2).

Figure 1: Birth Rates in Rural and Urban Pennsylvania, 2010 to 2020
 (Births per 1,000 residents)

Data source: Pennsylvania Department of Health.

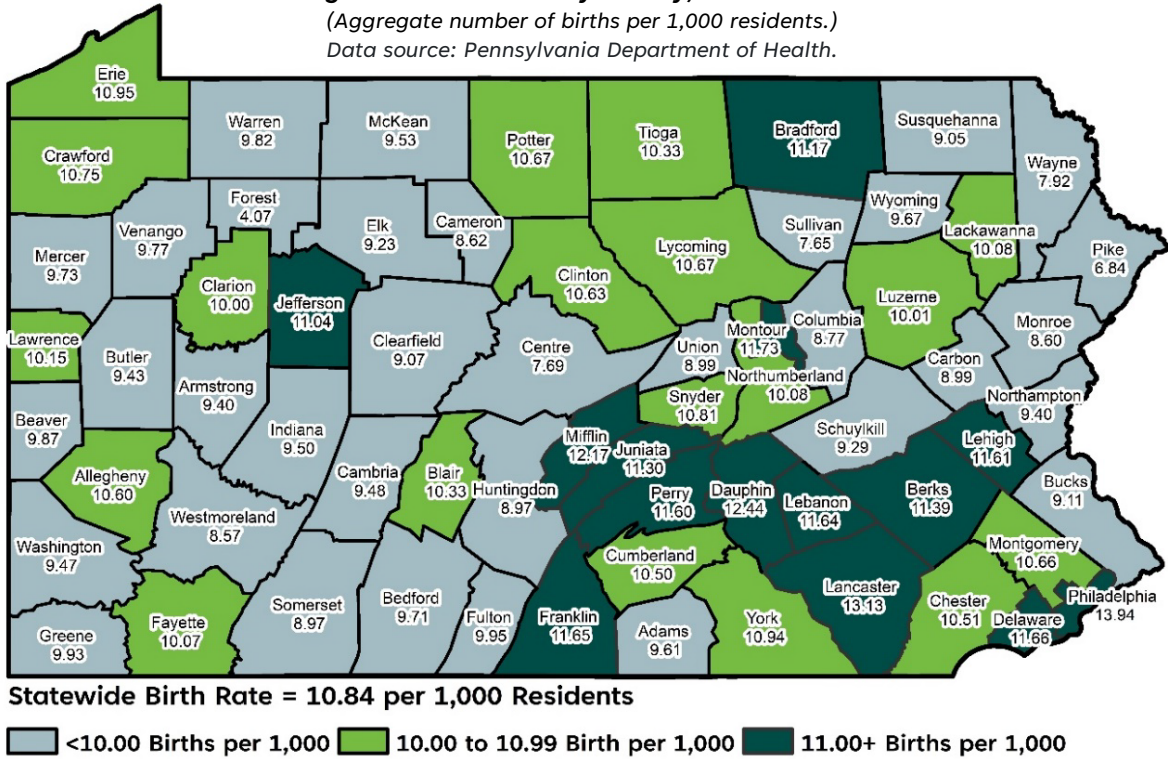


From 2010 to 2020, the U.S. birth rate was 12.13 per 1,000 residents. Utah, Alaska, North Dakota, and Texas had the highest rates, each with more than 14.00 births per 1,000. The New England states of Connecticut, Maine, Vermont, and New Hampshire had the nation's lowest rates, each with fewer than 10.00 births per 1,000. Pennsylvania had one of the nation's lowest birth rates, at 10.87 per 1,000 population, with only eight states having lower birth rates.

Figure 2: Birth Rates by County, 2010 to 2020

(Aggregate number of births per 1,000 residents.)

Data source: Pennsylvania Department of Health.



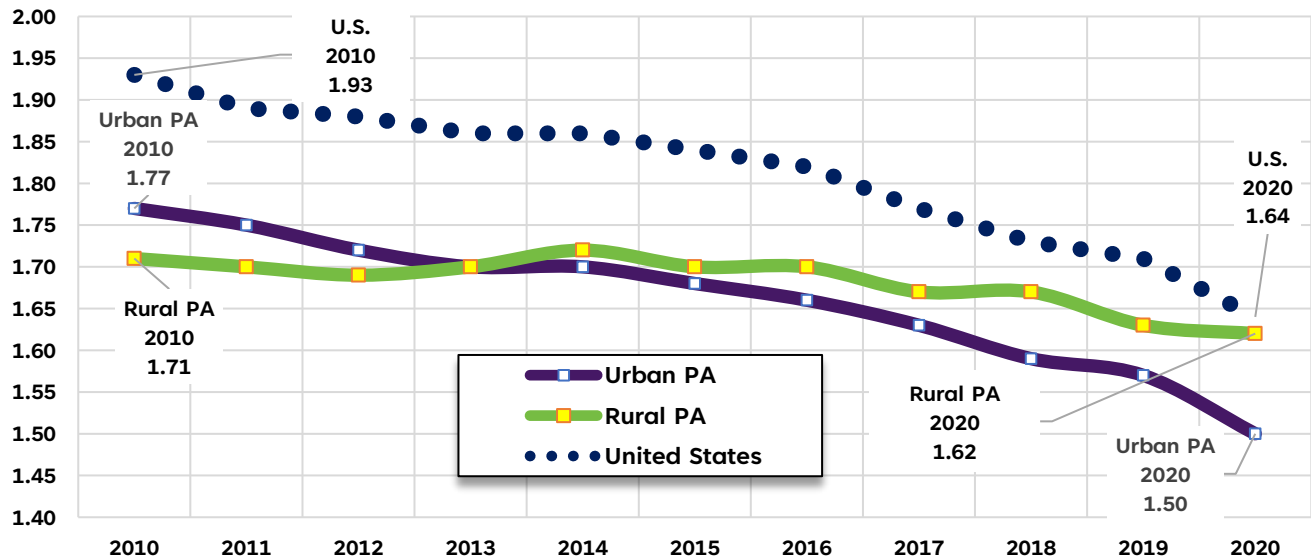
Total Fertility Rates in Rural and Urban Pennsylvania

The total fertility rate (TFR) is a statistical indicator used to measure whether a population can replace itself. A rate of 2.1 or higher indicates that the population can replace itself. Rates below 2.1 indicate that the population will not grow solely because of births. The TFR in both rural and urban Pennsylvania, as well as the U.S., is below 2.1 and has declined since 2010 (See Figure 3).

Figure 3: Total Fertility Rates in Rural and Urban Pennsylvania and the U.S., 2010 to 2020

Data sources: Pennsylvania Department of Health and Centers for Disease Control and Prevention.

Calculations by the Center for Rural Pennsylvania.



Rural Pennsylvanians of Childbearing Age

Rural Pennsylvania has seen a total decline in the number of people of childbearing age (15 to 45). From 2010 to 2020, rural areas had an 8 percent decline in the number of people in that age group, while urban areas had a 2 percent increase.

Age of Mothers

According to Census data, the median age of rural Pennsylvanians who gave birth was 29 and for urban Pennsylvanians it was 31 in 2020. From 2010 to 2020, most rural births were to mothers in their 20s (See Figure 4). From 2010 to 2020, the number of births among urban mothers in their 40s increased 44 percent and among rural mothers in their 40s increased 2 percent.

Rural and Urban Death Rates

Each year, from 2010 to 2020, rural Pennsylvania had a higher death rate than urban Pennsylvania. The aggregate death rate in rural Pennsylvania during this period was 11.39 per 1,000 residents and in urban 9.97 per 1,000 residents. The COVID-19 pandemic caused both rural and urban death rates to spike in 2020 (See Figure 5).

The five counties with the highest death rates from 2010 to 2020 were Sullivan, Cambria, Schuylkill, Fayette, and Lawrence. Each had a rate above 13.40 deaths per 1,000 residents. During this same period, the five counties with the lowest death rates were Monroe, Union, Pike, Chester, and Centre. Each had a rate below 8.53 deaths per 1,000 residents (See Figure 6).

From 2010 to 2020, the U.S. death rate was 8.54 per 1,000 residents. West Virginia, Alabama, Mississippi, Arkansas, and Kentucky had the highest rates, each with more than 10.50 deaths per 1,000. The states with

Figure 4: Age of Mothers in Rural and Urban Pennsylvania, 2010 to 2020
Aggregate age of mothers by age cohort from 2010 to 2020.
Data source: Pennsylvania Department of Health.

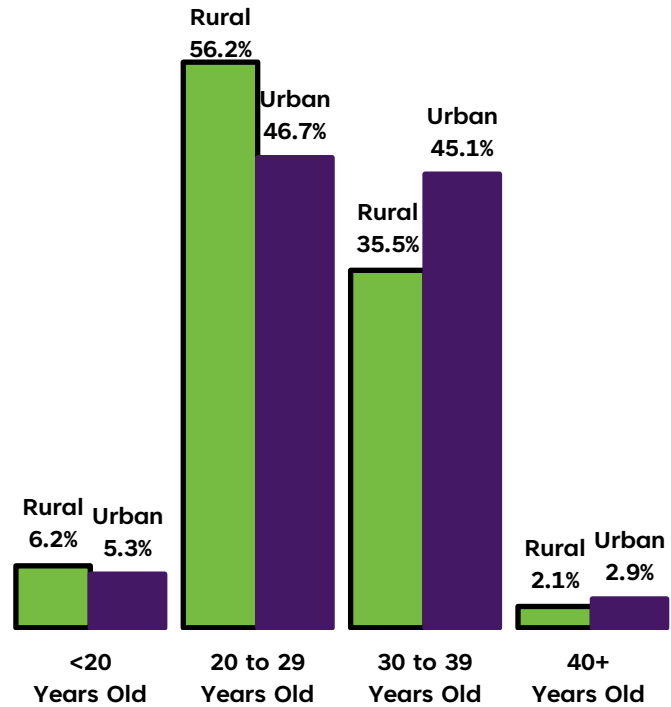
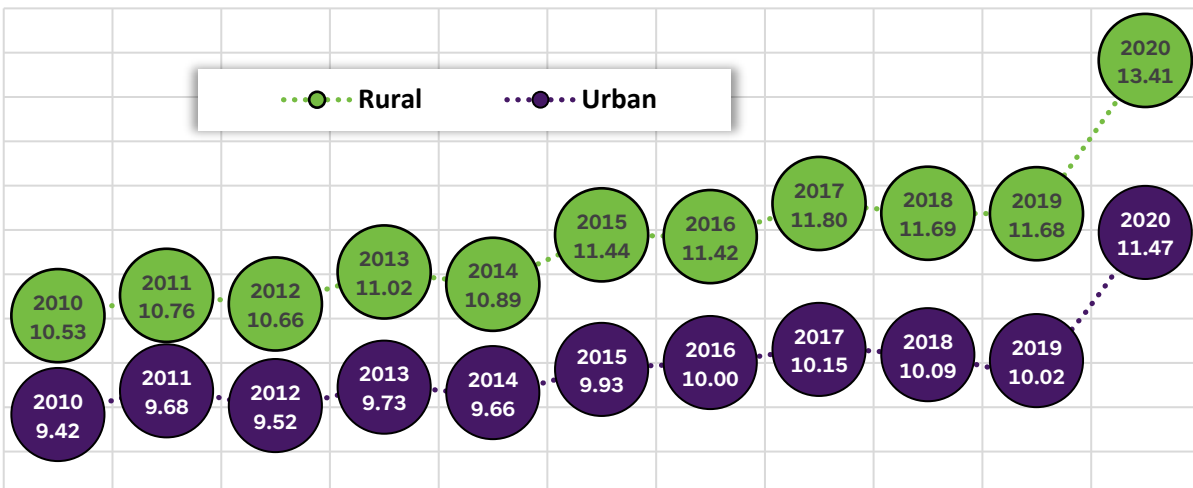


Figure 5: Death Rates in Rural and Urban Pennsylvania, 2010 to 2020

Number of deaths per 1,000 rural and urban residents. Data source: Pennsylvania Department of Health.

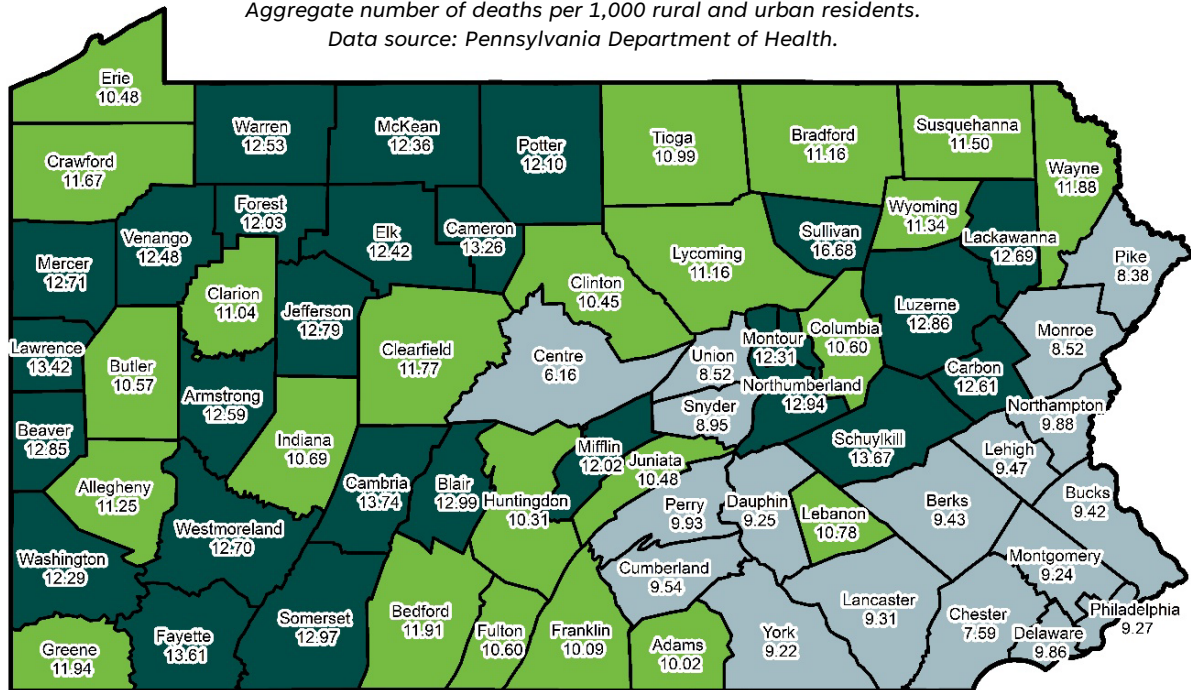


the lowest rates were Texas, Colorado, California, Alaska, and Utah. Each had fewer than 7.50 deaths per 1,000. Pennsylvania had the nation's 7th highest rate with 10.41 deaths per 1,000.

Figure 6: Death Rates by Pennsylvania County, 2010 to 2020

Aggregate number of deaths per 1,000 rural and urban residents.

Data source: Pennsylvania Department of Health.



Statewide Death Rate = 10.35 per 1,000 Residents

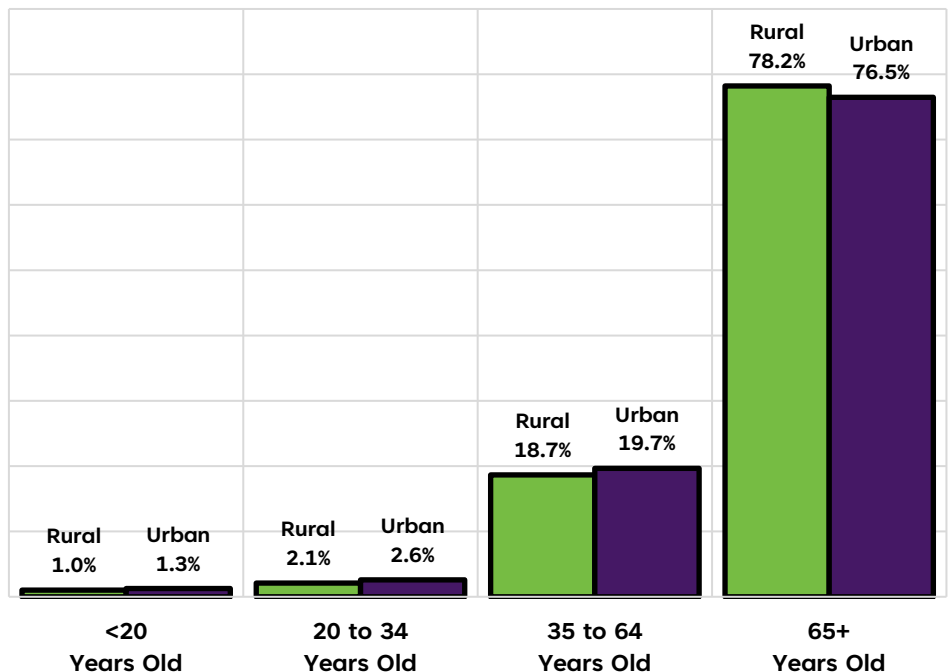
Legend: <10.00 Deaths per 1,000 (light blue), 10.00 to 11.99 Deaths per 1,000 (green), 12.00+ Deaths per 1,000 (dark green)

Age at Death

In both rural and urban Pennsylvania, most deaths were among people aged 65 years old and older (See Figure 7). From 2010 to 2020, the rural per capita death rate was 47.14 deaths per 1,000 people aged 65 years and older. In urban areas, the rate was 46.47 deaths per 1,000 people aged 65 years and older. Among those under age 65, the rural death rate was 3.06 per 1,000 people under age 65 and the urban rate was 2.81 per 1,000 people under age 65.

Figure 7: Deaths by Age Cohort in Rural and Urban Pennsylvania, 2010 to 2020

Aggregate deaths by age cohort 2010 to 2020.



Birth and Death Rates in Rural and Urban Pennsylvania

Each year, from 2010 to 2020, there were more deaths in rural Pennsylvania than births, with the gap widening with each year (See Figure 8). In urban Pennsylvania, the opposite was true, as there were more births than deaths each year, except for 2020.

In rural Pennsylvania, the picture is not entirely bleak. From 2010 to 2020, 10 of Pennsylvania’s 48 rural counties had more births than deaths. The four counties of Snyder, Perry, Franklin, and Centre each had 800 or more births than deaths. The four rural counties with the highest number of deaths than births were Schuylkill, Washington, Cambria, and Fayette, each with 5,000 or more deaths than births.

The counties with more births than deaths were generally in the southeastern and central region of the state (See Figure 9).

Figure 8: Births and Deaths Rates in Rural Pennsylvania, 2010 to 2020

Number of births and deaths per 1,000 residents. Data source: Pennsylvania Department of Health.

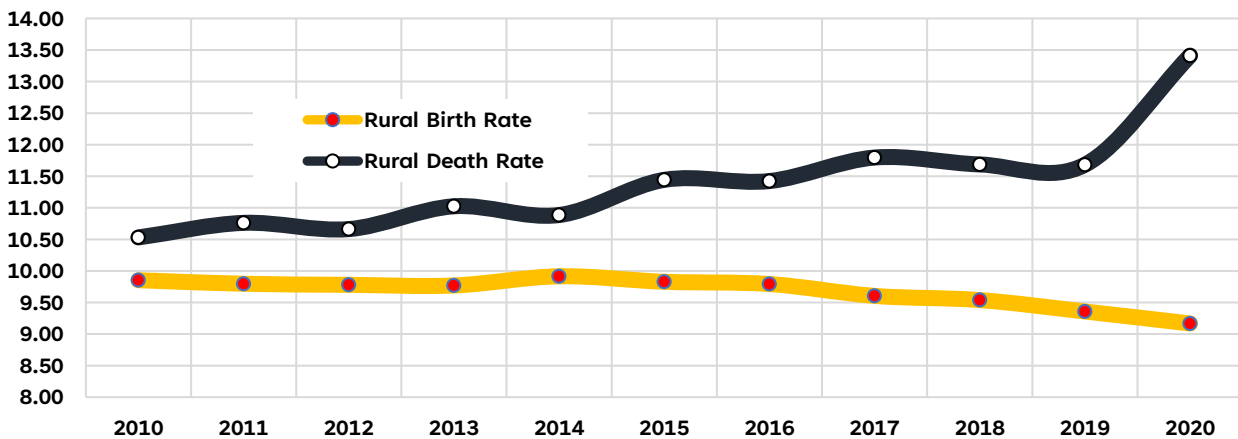
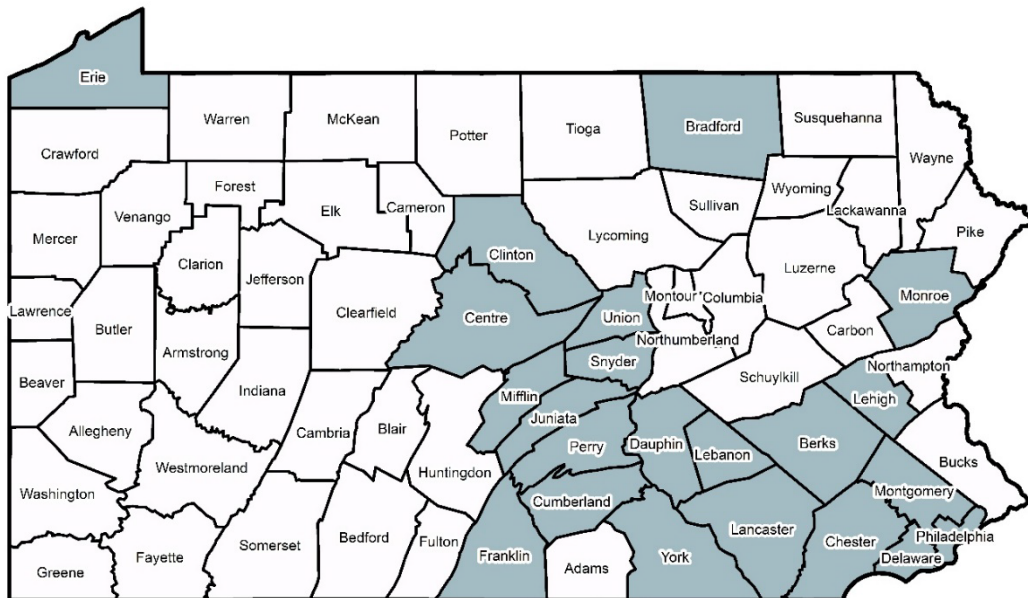


Figure 9: Natural Population Change in Pennsylvania Counties, 2010 to 2020

Aggregate number of births minus deaths. Data source: Pennsylvania Department of Health.



Statewide, there were 69,098 More Births than Deaths, 2010 to 2020

□ More Deaths than Births ■ More Births than Deaths

Conclusions and Implications

Rural Pennsylvania's Population Cannot Grow Naturally

For rural Pennsylvania to increase or sustain its current population, it must rely on in-migration. While some rural areas did attract new residents through in-migration, most did not. (See the fact sheet, *Rural Pennsylvania is Experiencing Positive Net Migration.*)

Rural Pennsylvania is Aging

Rural Pennsylvania's population is aging. As a result, there are fewer people in the childbearing age group (ages 15 to 45). Also, one in five rural Pennsylvanians are 65 years old and older. This number will likely increase as the Baby Boom generation (born between 1946 and 1964) turns 65 years old. With an aging population, an increase in deaths is inevitable. The bottom line is that the trend of more deaths than births will not change in the near future, and will have implications on school enrollments, workforce participation rates, and volunteerism.

Rural Pennsylvania is Not Alone

According to Census Bureau data, from 2010 to 2020, one-half of the 2,714 rural counties in the U.S. had more deaths than births. These counties are clustered in the Appalachian region, New England, and upper Midwest. It's clear that rural America is in a significant and long-term demographic shift.

Methods

Data are from the Pennsylvania Department of Health; Vintage 2020 Population Estimates, U.S. Census Bureau; and Centers for Disease Control and Prevention.

Rural was defined as a county with a population density below the statewide rate of 291 people per square mile. Urban counties have a density at or above the statewide density.

Center for Rural Pennsylvania Board of Directors

Senator Gene Yaw, Chairman

Representative Eddie Day Pashinski, Vice Chairman

Dr. Nancy Falvo, Pennsylvania Western University Clarion, Secretary

Stephen M. Brame, Governor's Representative, Treasurer

Senator Judy Schwank

Representative Dan Moul

Richard Esch, University of Pittsburgh

Dr. Timothy Kelsey, Pennsylvania State University

Shannon M. Munro, Pennsylvania College of Technology

Dr. Charles Patterson, Shippensburg University of Pennsylvania

Susan Snelick, Northern Pennsylvania Regional College

Darrin Youker, Governor's Representative

Center for Rural Pennsylvania Staff

Kyle C. Kopko, Ph.D., Executive Director

Laura R. Dimino, Ph.D., Assistant Director

Jonathan Johnson, Senior Policy Analyst

Christine Caldara Piatos, Communications Manager

Linda Hinson, Office Manager

David W. Martin, Public Policy Data Analyst



625 Forster St., Room 902, Harrisburg, PA 17120

717-787-9555 | www.rural.pa.gov