Health Care Services

Primary Health Care

Primary health care is intended to help individuals get well and stay well; it serves as the first line of defense against illness and disease. By offering cost-effective preventive and basic health care services close to home, primary health care can mitigate the need for more expensive trips to specialists and hospitals. Ideally, primary health care services are provided through a "health care or medical home" that can optimally and cost-effectively support improved health and quality of life as a result of quality care; continuity of providers; whole family care; integration of medical, behavioral and oral health care; patient partnerships; and coordination of specialty care needs.

Primary care is comprised of four main features:

- First contact for any new health issue or need;
- Long-term, person-focused care;
- Comprehensive care for most health needs; and
- Coordination of care when it must be received elsewhere, such as from a specialist.

Primary care providers include general practitioners, internal medicine physicians, family physicians, obstetricians, gynecologists, pediatricians, nurse practitioners, nurse midwives and physician assistants. These clinicians are supported in their work by social workers, case managers and other allied health professionals.

The World Health Organization (WHO), in its Alma Ata Declaration of 1978, defined primary health care as "essential health care based on practical, scientifically sound, and socially acceptable methods and technology made universally acceptable to individuals and families in the community through their full participation, and at a cost that the community and the country can afford to maintain at every stage of their development in the spirit of self-reliance and self-determination."[1] To provide this care, providers must reduce exclusion and social disparities, organize health services around people's needs and expectations, integrate health into all sectors, pursue collaborative models of policy dialogue and increase stakeholder participation.

The WHO identifies five basic principles that must be considered in the development of policies and programs to support primary health care as an essential part of an effective and comprehensive health system:[2]

- **Equitable distribution of health care.** Primary care and other services to meet the main health problems of a community must be provided equally to all individuals, regardless of gender, age, caste, color, urban/rural location and social class.[3]
- **Community participation.** Providers must make the fullest use of national, local and other available resources.
- **Health workforce development.** Comprehensive health care relies on adequate numbers and distribution of trained physicians, nurses, allied health professionals, community health workers and other members of a health team, supported at the local and referral levels.
- **Use of appropriate technology.** Medical technology should be accessible, affordable, feasible and culturally acceptable to the community.[4]
- **Multi-sectional approach.** Recognition that health cannot be improved by intervention within just the formal health sector and must involve other sectors (e.g., agriculture, education, communication, housing, public works).

National and state health care systems have faced shortages and uneven distribution of primary care physicians and other providers for years, due to such factors as high debt load of medical school graduates, comparatively

low wages, low reimbursement for primary care services, lower esteem accorded primary care within medical schools and health system cultures, job dissatisfaction, and poor work-home balance.[5]

National and State Goals

A significant difference between health care systems of the United States and other developed countries is the ratio of primary care providers to specialists. As per October 2018, in the U.S., the balance is tilted with specialists accounting for about 52 percent of physicians and primary care physicians for just 48 percent.[6] While the U.S. is a specialist-driven health care system, comparably developed countries have a stronger foundation of primary care providers and better access to primary care. The Affordable Care Act of 2010 includes provisions to shift the pendulum of health care more towards primary care.[7] According to an issue brief published by the Leonard Davis Institute of Health Economics, increases were found, "in primary care appointment availability for new patients with Medicaid in states that expanded Medicaid, with no offsetting decline in appointment availability for patients with private coverage."[8]

The U.S. Department of Health and Human Services has Healthy People 2020 goals for improving "access to comprehensive, quality health care services" related to four areas: coverage, services, timeliness and workforce:[9,10]

- **Health insurance coverage** helps patients enter the health care system. Uninsured persons delay care, are less likely to receive care, and are more likely to have poor health status and die at a younger age.
- **Improving health care services** depends in part on individuals having a usual and ongoing source of care. As research shows, when this is the case, outcomes are better and health care disparities and costs are reduced. Improving services also includes improving access to evidence-based preventive services and quality care. "AHS-3: Increase the proportion of persons with a usual primary care provider; AHS-5: Increase the proportion of persons who have a specific source of ongoing care."
- **Timeliness** is the health system's ability to respond to a need when it is identified. "AHS-6: Reduce the proportion of persons who are unable to obtain or delay in obtaining necessary medical care, dental care, or prescription medicines."
- **Adequate workforce** may be the most critical component; without it, services will be unavailable or inconsistent, health insurance coverage irrelevant and timeliness unattainable. "AHS-4: Increase the number of practicing primary care providers."

Insurance and Health Care Access

The Healthy People 2020 goal for health insurance coverage is 100 percent.[11] Pennsylvania has not yet met this goal. Progress has been made since the passing of the Patient Protection and Affordable Care Act, which was signed into law on March 23, 2010. Pennsylvania did not immediately opt into Medicaid expansion, so the initial increases in coverage were modest and more pronounced after 2015, when Medicaid expansion was implemented in Pennsylvania.

Figure 9.1 No Health Care Coverage, Adults 18-64, Pennsylvania and U.S. Median, 2011-2017[12,13]

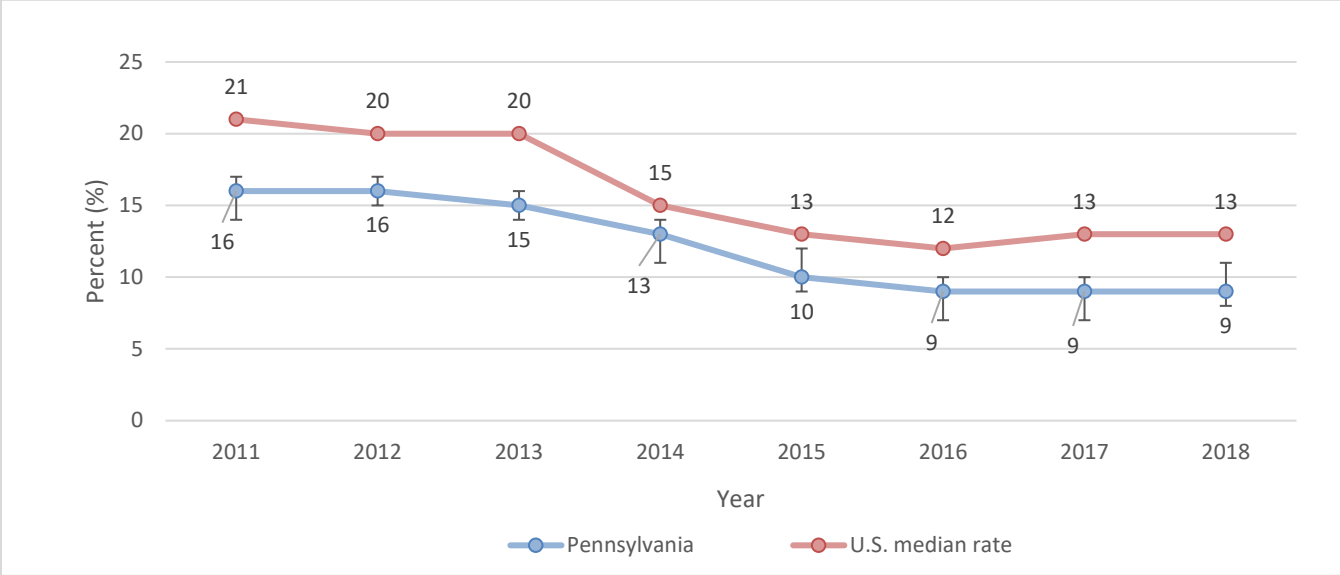
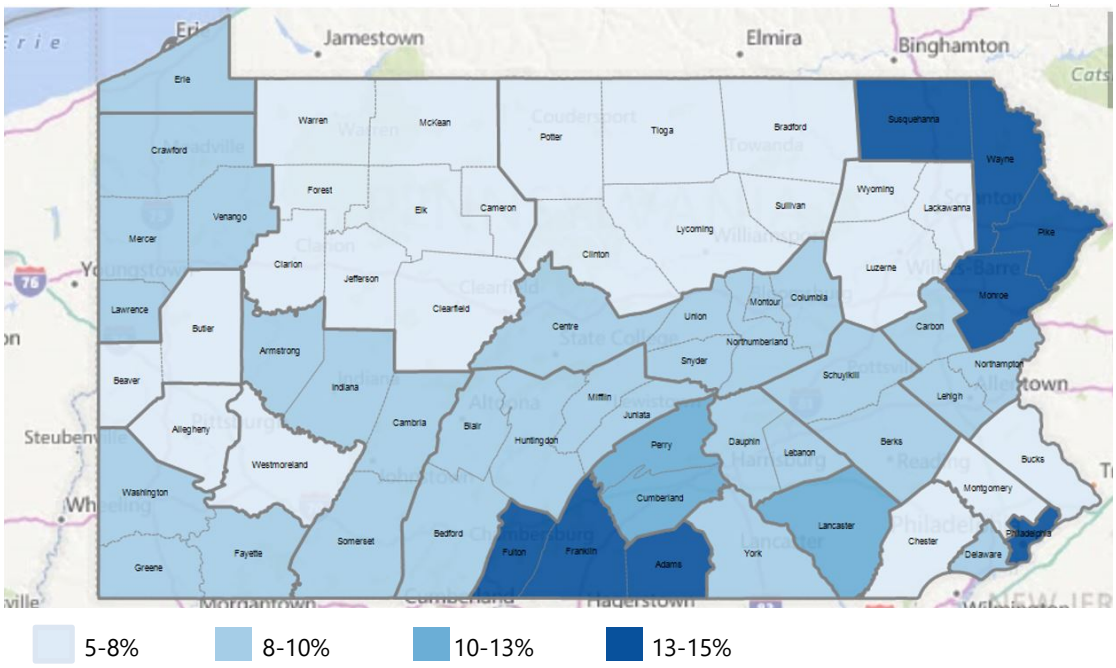


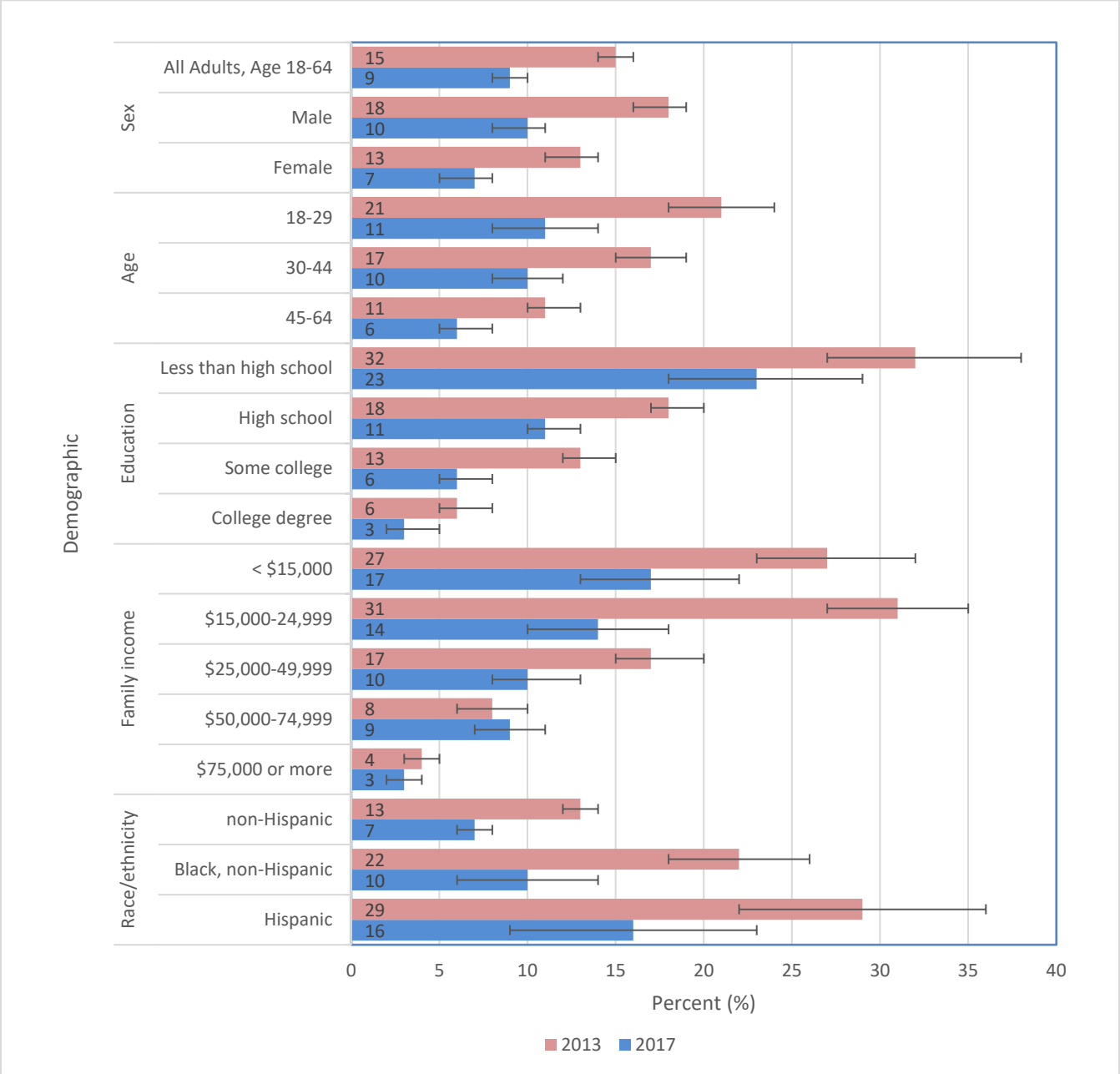
Figure 9.2 No Health Care Coverage, Adults 18-64 by Region, Pennsylvania, 2015-2017[14]



Certain regions of the state continue to have higher rates of uninsured, including the county of Philadelphia; the region that includes Fulton, Franklin and Adams counties; and the region that includes Susquehanna, Wayne, Pike and Monroe counites.

Figure 9.3 below illustrates the difference in health care coverage by demographic characteristic between 2013 and 2017. Nearly every demographic shows reductions in lack of insurance between the two years. The ones who remain with largest numbers of uninsured include those with less than a high school education (23 percent), those with a family income of less than $15,000 (17 percent), and individuals who identify as Hispanic (16 percent).

Figure 9.3 No Health Care Coverage, Adults 18-64 by Demographic, Pennsylvania, 2013, 2017[15]

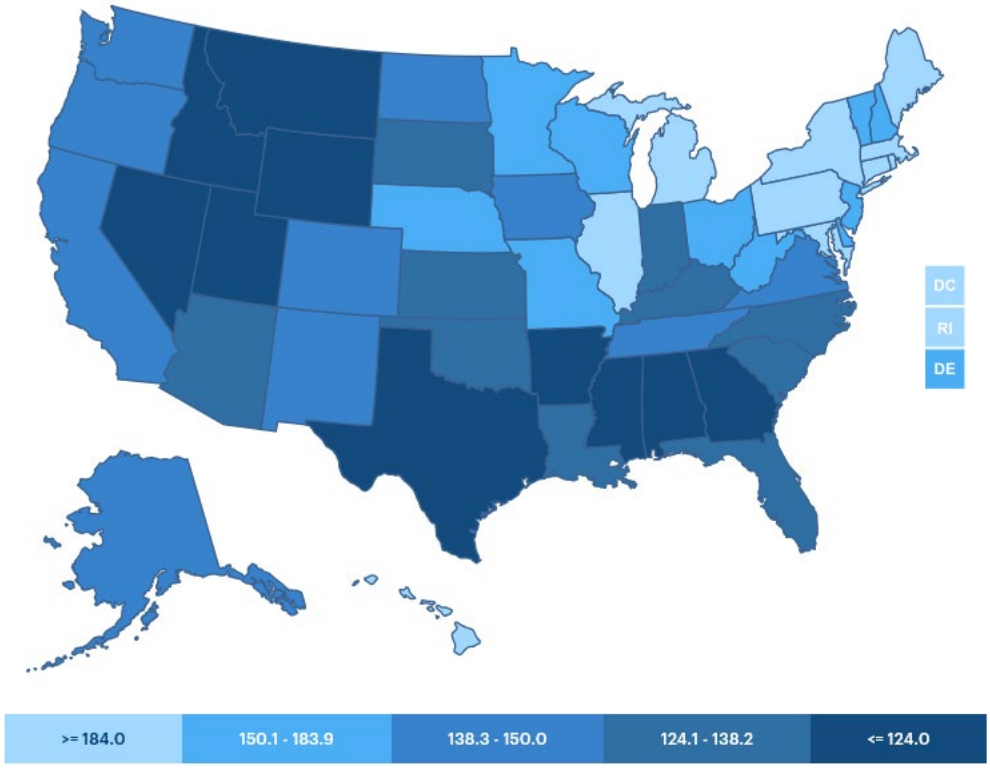


According to the Health Resources & Services Administration (HRSA), more than one in five U.S. residents, totaling nearly 75 million people,[16] live in areas where they do not have adequate access to primary health care due to a shortage of providers. Half of American doctors fifty years ago practiced primary care; half of them are in this field today as well.,[17] There were 91.7 active primary care physicians (PCP) per 100,000 population in the U.S. in 2016.[18] In 2016, 30 percent of active physicians in the U.S. were age 60 or older in the U.S., compared to 23 percent eight years earlier.[19]

Nearly all the growth in number of doctors per capita over the last several decades in the United States is due to a rise in the number of specialists. Between 1965 and 1992, the primary care physician-to-population ratio grew by only 14 percent, while the specialist-to-population ratio exploded by 120 percent. While in 2013, 49.1 percent of patient visits were for primary care,[20] in 2016, 37 percent of the nation's medical school residents or fellows were on duty in a primary care program.[21]

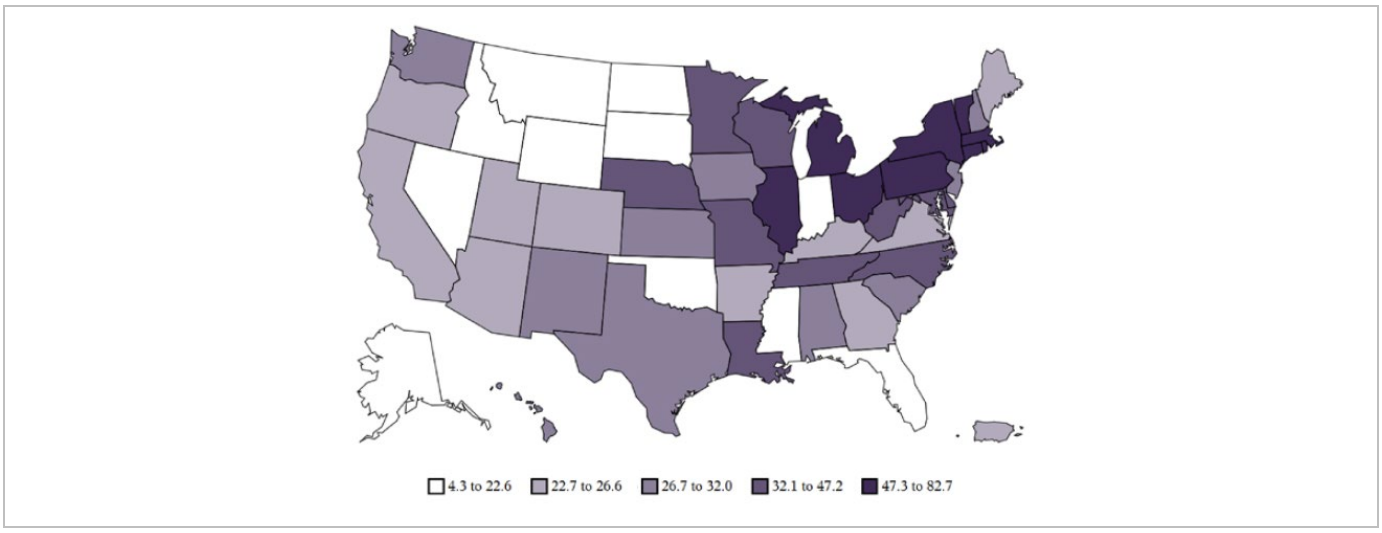
According to HRSA in 2019, about 14,900 primary care providers are needed to meet current demand,[22] By 2025, an additional 52,000 will be needed.[23]

Figure 9.4 Primary Care Physicians per 100,000 Population, United States, 2018[24]



Note: Includes general practice, family practice, obstetrics and gynecology, pediatrics, geriatrics, and internal medicine.

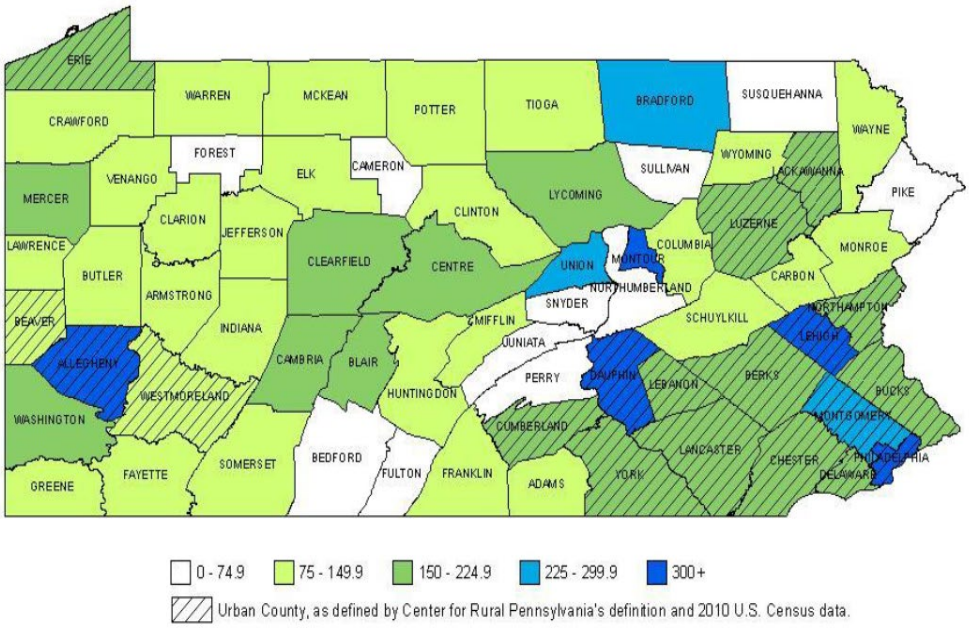
Figure 9.5 Primary Care Residents and Fellows per 100,000 Population, United States, 2016[25]



According to the Center for Rural Pennsylvania's definition of rural counties and the 2010 U.S. Census population, 87 percent of Pennsylvania's population resides in urban counties.[26] In 2014, 83 percent of practicing direct patient care physicians practiced in Pennsylvania's urban counties. The statewide rate of physicians practicing

direct patient care was 226.9 per 100,000 population in 2014. This rate varied widely between urban counties (260.2 per 100,000 population) and rural (138.2 per 100,000 population).[27]

Figure 9.6 Primary Care Physicians per 100,000 Population by County, Pennsylvania, 2014 [28]



Pennsylvania has not yet achieved the Healthy People goal of 89.4 percent of adults 18-64 who have a person or persons considered their source of health care. The chart below shows that there hasn't been much change in these numbers between 2012 and 2017. A specific source of ongoing care means that those who were asked about whether they had one person they think of as their personal doctor or health care provider either said yes or answered more than one person. The Hispanic population has a significantly lower percent of having a specific source of ongoing care. Males also are less likely to report having a specific source of ongoing care.

Table 9.1 Has a Specific Source of Ongoing Care, Adults Age 18-64, Pennsylvania, 2012, 2015, 2017 and Healthy People 2020 goal[29]

	Pennsylvania			Healthy People 2020
Adults 18 to 64	**2012**	**2015**	**2017**	**Goal**
	Percent (%)	Percent (%)	Percent (%)	Percent (%)
All	84± 1	84± 2	82± 2	89.4
Male	79± 2	77± 3	77± 2	89.4
Female	88± 1	91± 2	87± 2	89.4
Non-Hispanic white	86± 1	86± 2	84± 2	89.4
Non-Hispanic black	79± 3	81± 6	82± 5	89.4
Hispanic	80± 5	69± 11	71± 8	89.4
Urban	84± 1	84± 2	82± 2	89.4
Rural	86± 2	85± 3	84± 2	89.4

Below are the regions of the state that show where people have a personal health care provider. In Philadelphia and in the region with Washington, Greene and Fayette counties, adults are less likely to have a personal health care provider than in other parts of the state.

The charts below the map contain which populations in each region are significantly different than the state's corresponding figure. This allows regions to understand the populations that are most at risk or most successful at

having a personal health care provider. For example, in Table 9.2, we see that in Pennsylvania as a whole, 13 percent of adults with a college degree had a personal health care provider, while in Philadelphia 19 percent of adults with a college degree had a personal health care provider.

Figure 9.7 Does Not Have a Personal Health Care Provider, All Adults by Region, Pennsylvania, 2015-2017[30]

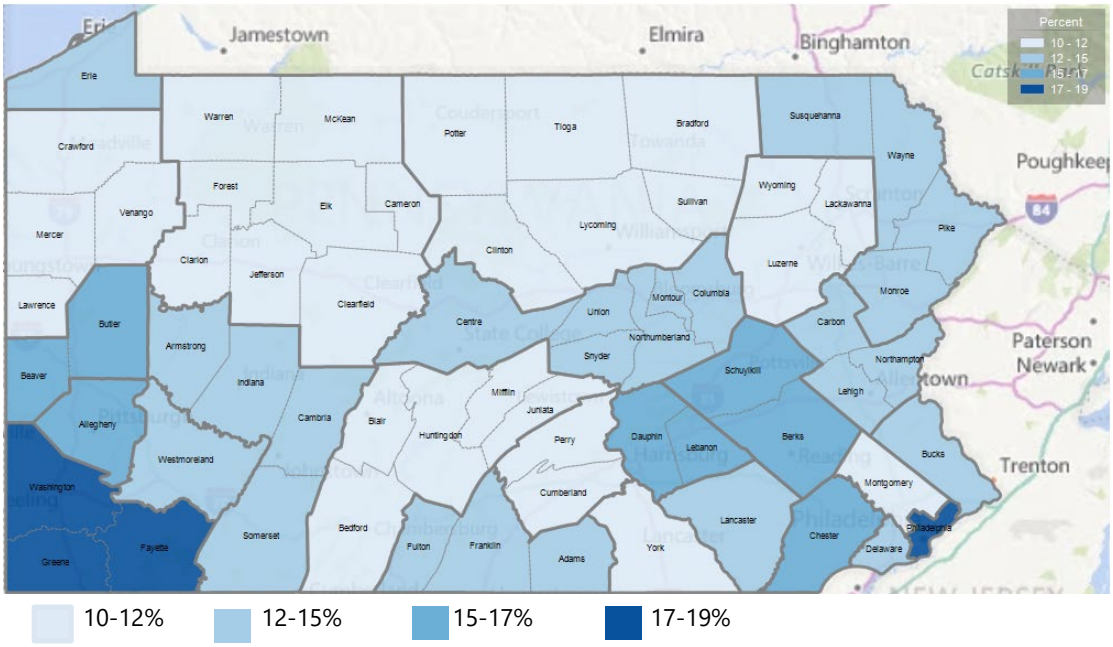


Table 9.2 Does Not Have a Personal Health Care Provider, All Adults by Region, Education and Income, Pennsylvania, 2015-2017[31]

Region	All Adults (%)	Education (%)			Income (%)		
		≤ High School	Some College	College Degree	≤ $25,000	$25,000-49,999	≥ $50,000
Pennsylvania	**14**	**15**	**14**	**13**	**16**	**16**	**12**
Lackawanna, Luzerne, Wyoming	10	12	10	6	10	13	6
Forest, Elk, Cameron, Clearfield, Jefferson, Clarion, McKean, Warren	10	8	14	13	7	15	8
Bradford, Sullivan, Tioga, Lycoming, Clinton, Potter	11	12	9	12	7	13	11
Crawford, Lawrence, Mercer, Venango	12	13	14	6	19	14	7
Indiana, Cambria, Somerset, Armstrong	13	11	14	17	8	11	20
Philadelphia	18	17	18	19	21	18	12
Fayette, Greene, Washington	19	23	14	21	24	15	21

- Numbers in red = significantly higher compared to state in this characteristic
- Numbers in blue = significantly lower compared to state in this characteristic
- Regions with non-significant numbers for all the categories are not displayed.

Table 9.3 Does Not Have a Personal Health Care Provider, All Adults by Region, Sex, Age, Pennsylvania, 2015-2017[32]

Region	All Adults (%)	Sex (%)		Age (%)		
		Female	Male	18-44	45-64	≥ 65
Pennsylvania	14	9	19	24	8	3
Forest, Elk, Cameron, Clearfield, Jefferson, Clarion, McKean, Warren	10	5	17	19	7	1
Delaware	13	10	18	26	1	2
Pike, Monroe, Susquehanna, Wayne	14	13	16	17	15	9
Philadelphia	18	12	25	28	10	2
Fayette, Greene, Washington	19	13	26	37	11	5

- Numbers in red = significantly higher compared to state in this characteristic
- Numbers in blue = significantly lower compared to state in this characteristic
- Regions with non-significant numbers for all the categories are not displayed.

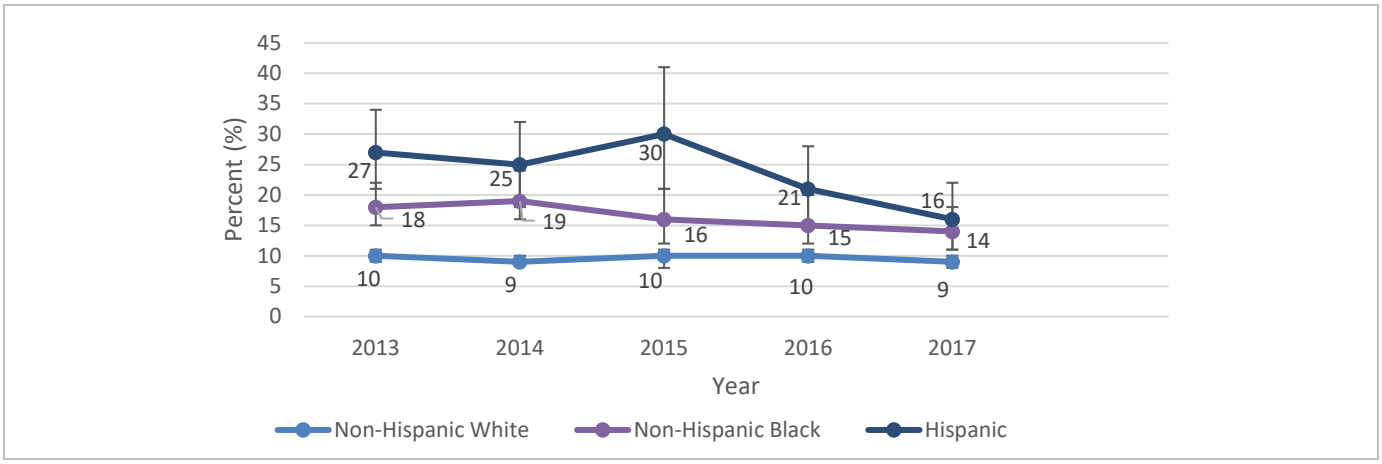
Table 9.4 Does Not Have a Personal Health Care Provider, All Adults by Region, Race, Ethnicity, Sexual Orientation, Transgender Status, Pennsylvania, 2015-2017[33]

Regions	All Adults (%)	Race and Ethnicity (%)		Sexual Orientation (%)		Transgender Status (%)	
		White	Other (Including Hispanic)	Lesbian, Gay or Bisexual	Straight	Transgender	Not Transgender
Pennsylvania	**14**	**12**	**21**	**16**	**12**	**22**	**12**
Lackawanna, Luzerne, Wyoming	10	8	n/a	n/a	7	n/a	8
Philadelphia	18	16	19	9	13	n/a	13
Fayette, Greene, Washington	19	19	n/a	n/a	18	n/a	19

- Numbers in red = significantly higher compared to state in this characteristic
- Numbers in blue = significantly lower compared to state in this characteristic
- Regions with non-significant numbers for all of the categories are not displayed.

In the figure below the findings of the question, "Was there a time in the past 12 months when you needed to see a doctor but could not because of cost?" are shown by race and ethnicity over the past five years. While the white population remained relatively flat over that period, some decline is seen among the black and Hispanic populations.

Figure 9.8 Did Not Receive Care Due to Cost, Adults by Race/Ethnicity and Year, Pennsylvania, 2013- 2017[34]



The table below shows a slight increase among licensed physicians in Pennsylvania that are female and Asian.

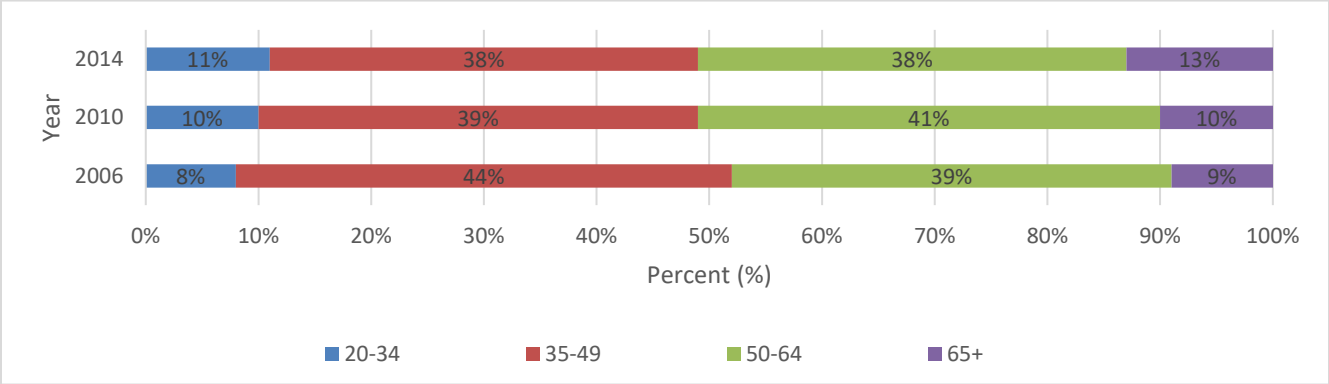
Table 9.5 Licensed Physicians by Sex, Race/Ethnicity, Pennsylvania, 2010 and 2014[35]

	2010 Percent (%)	2014 Percent (%)
Male	72	69
Female	28	31
White	76	77
Black	3	4
Asian	14	17
American Indian/ Alaska Native	1	<1
Native Hawaiian/ Other Pacific Islanders	<1	<1
Other	4	2
Hispanic/Latino	2	3

Note: Hispanic or Latino origin can be of any race. Ethnicity is asked separately from race in 2014, but as one question in 2010.

Between 2006 and 2014, the practicing physicians in the 65 and over age group grew from 9 to 13 percent, and the group between 35 and 64 fell from 83 to 76 percent. In 2014, the average age of physicians practicing in Pennsylvania was 50.1 years, an increase from 2004 when the average age was 48.2 years.

Figure 9.9 Practicing Physicians by Age Groups, Pennsylvania, 2006, 2010 and 2014[36,37]



In 2014, 36 percent of physicians providing direct patient care in Pennsylvania were primary care physicians, defined as family medicine/general practice, internal medicine, pediatrics and obstetrics/gynecology. The estimated number of primary care physicians providing direct patient care in Pennsylvania decreased between 2006 and 2014, from 12,221 to 10,488. The state rate of primary care physicians providing direct patient care in 2014 was 31.8 per 100,000 population. The rate was 29.8 for rural counties and 32.5 for urban counties.

Other Providers

The map below, Figure 9.10, shows the distribution of practicing physician assistants per 100,000 population by county. The darker blue indicates more and the lighter green and white fewer physician assistants. Statewide, there were 44.0 practicing physician assistants per 100,000 population, with no notable differences in the rates between rural and urban counties.

In Figure 9.11, we see that over 50 percent of physician assistants are in the 20-34-year age group and that the age distribution of physician assistants has been pretty steady over the past eight years.

Figure 9.10 Physician Assistants Practicing Direct Patient Care in Pennsylvania, by Age and Year, 2014[38]

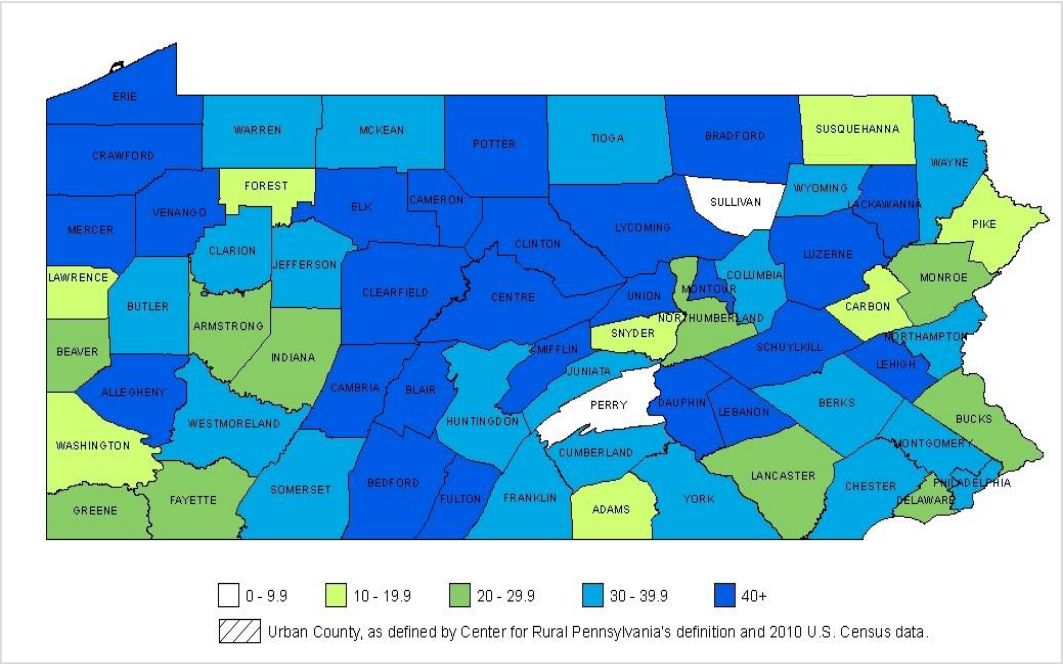
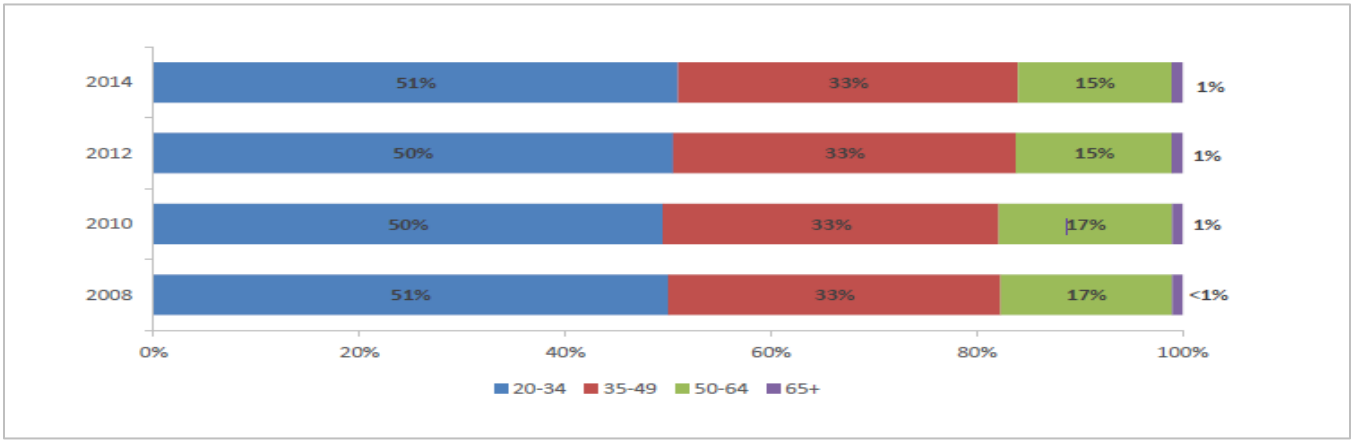


Figure 9.11 Physician Assistants Practicing Direct Patient Care in Pennsylvania, by Age and Year, 2008-2014[39]

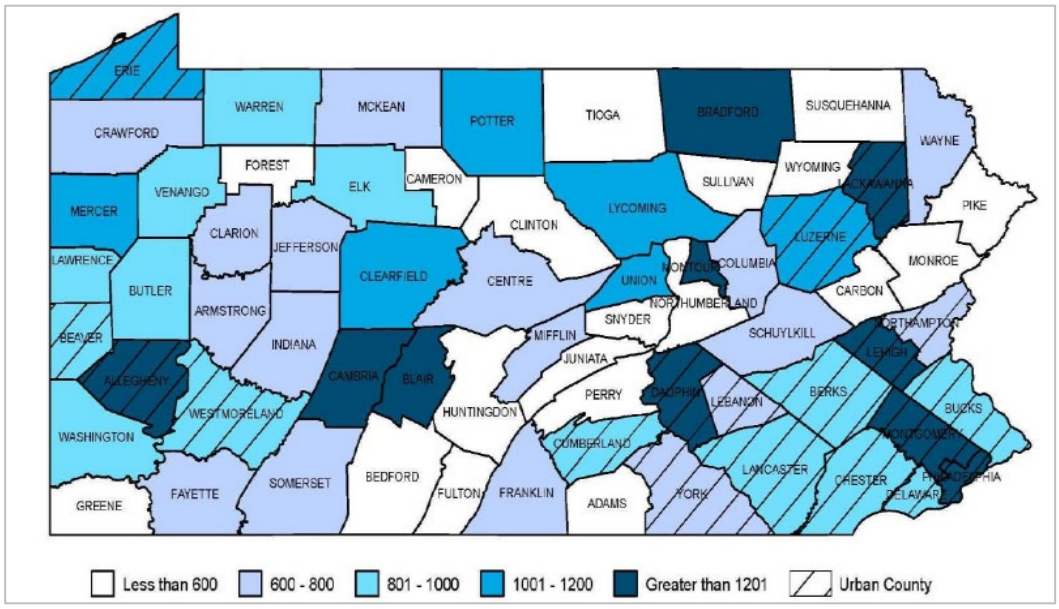


The map below displays the number of registered nurses per 100,000 population by county of primary job. In 2012 and 2013, 20 percent (28,656) of RNs employed in nursing in Pennsylvania worked in rural counties. The density of nurses in Pennsylvania was 826 in rural counties and 1,219 per 100,000 in urban counties. The map shows the variation in rates of RNs per 100,000 population across the commonwealth, with a high of 9,554 per 100,000 population in Montour to a low of 140 per 100,000 population in Pike county.[40]

In 2012 and 2013, 13 percent (18,297) of the RNs who completed the survey had completed an advanced nursing practice education program.

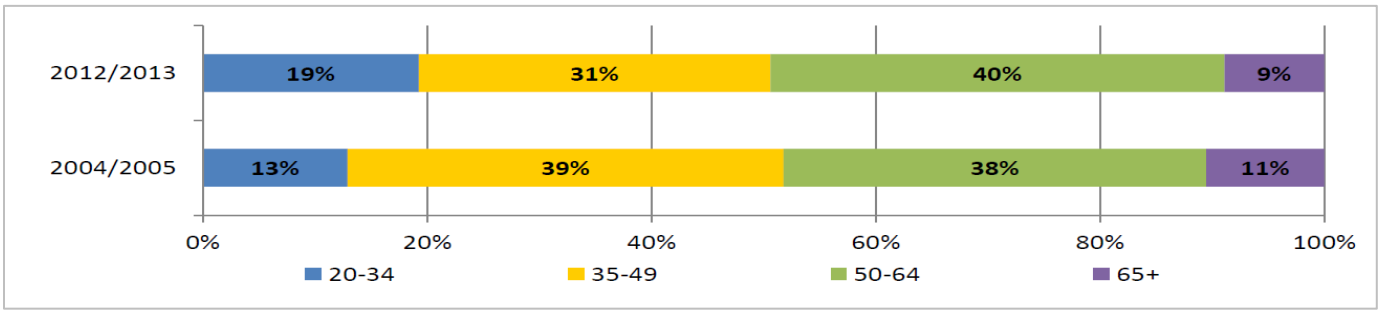
Seventy-six percent of those who were employed in nursing care in Pennsylvania were employed full-time, with hospitals employing 56 percent of the nurses.

Figure 9.12. Nurses Employed per 100,000 Population by County of Primary Job, 2012/2013, Pennsylvania[41]



In 2012/2013, the average age of employed nurses in Pennsylvania was 46.5 years, an increase from 45.5 years in 2004/2005. Figure 9.13 lists the distribution across age groups in 2012/2013, with the largest number (40 percent) in the 50-64 age group.

Figure 9.13 Licensed Nurses by Age Groups, Pennsylvania, 2004/2005 and 2012/2013[42]



Medicaid/Medicare

Not only is it important that people have health insurance when they need medical care, but also that providers are willing to accept their insurance. In response to a question on a survey completed with licensure renewal, 81 percent of Pennsylvania's physicians who provide direct patient care indicated that they accept Medicaid; 88 percent responded that they accept Medicare.[43]

Rates of acceptance varied widely among Pennsylvania physicians. Five of six specialties included in this definition of direct patient care providers increased Medicaid acceptance rates since the 2012 physician survey. Pediatricians had the highest Medicaid acceptance rate, at 92 percent. Family medicine, general practice, internal medicine, obstetrics and gynecology physicians had the highest rate of Medicare acceptance, at 96 percent.[44] However, this survey did not collect information about "caps," or limits put in place by some physicians to restrict the number of patients seen who are covered by a particular insurance, such as Medicaid. It also did not collect information about whether a physician's practice was accepting new patients or closed to them.

With the median student debt of medical students at graduation now exceeding $190,000,[45] and with around one-quarter of medical students owing higher than $200,000 in debt,[46] career and practice decisions may increasingly be influenced by financial considerations.[47]

Access to Care

Timing is a problem for many persons who need medical care. Unfortunately, due to payment policies and staffing shortages, only 29 percent of U.S. primary care practices provide access to care on evenings, weekends and holidays.[48] Persons who are unable to access care when it is needed typically must delay care or seek it in an emergency room. Those who visit an emergency room for care miss an opportunity to establish a regular, more cost-efficient and more effective source of primary and preventive health care.

Physician staffing also affects access to care. There must be an adequate number of health professionals available to provide services to the population. An area or population lacking adequate access can be designated as a health professional shortage area (HPSA) or medically underserved area/population (MUA/P) by the federal Health Resources and Services Administration (HRSA), according to federal criteria and regulations.[49]

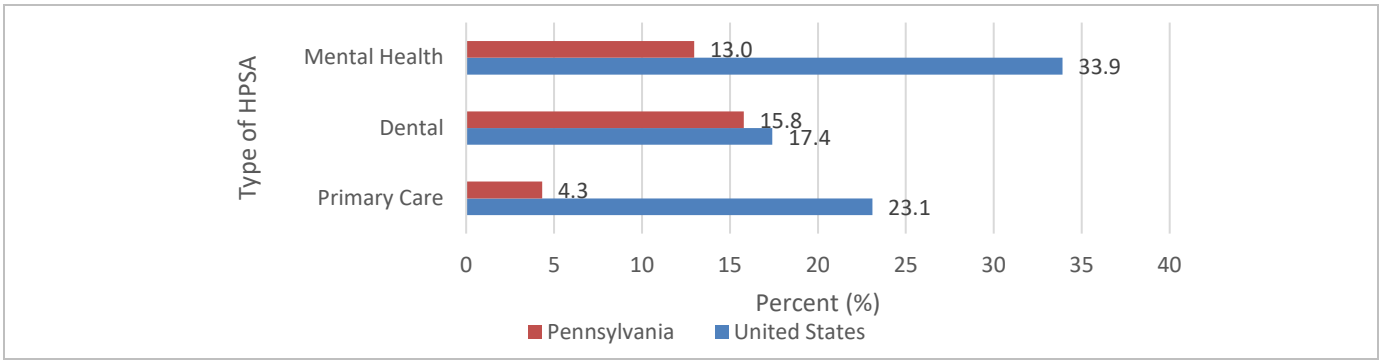
HPSAs are defined primary care service delivery areas with a critical shortage of primary care physicians, dentists or mental health providers. A HPSA can be a distinct geographic area (e.g., county, group of census tracts, township, borough), or a specific population group within a defined geographic area (e.g., low income, migrant farmworkers and other groups), or a public or non-profit facility (e.g., federally qualified health center, certified rural health clinic). The ratio of population to providers is a major factor in determining if an area or population can be designated as a HPSA, as defined by federal regulations.[50]

Primary care HPSAs are designated when the primary care physician to population ratio is at or below one physician per 3,500 persons in the service area. Dental HPSAs are designated when the general dentist to population ratio is at or below one dentist per 5,000 persons in the service area. Mental health HPSAs are designated when the psychiatrist to population ratio is at or below one psychiatrist per 30,000 persons in the service area.[51]

Table 9.6 Primary Care Health Professional Shortage Areas, Pennsylvania, United States, 2012, 2018[52,53,54]

	Pennsylvania		United States	
	2012	**2018**	**2012**	**2018**
Designated health professional shortage areas (DHSAs)	155	157	5,805	6,893
Population of DHSAs	746,398	553,336	55,340,531	75,218,285
Percent of population in DHSAs	5.88%	4.32%	17.58%	23.09%
Additional providers needed to achieve a population to provider to ratio of 3,500:1	167	122	15,431	14,136

Figure 9.14 Population in Primary Care, Dental and Mental Health HPSAs, Pennsylvania, United States, 2018[55,56]



The primary care providers identified by these HPSAs include physicians who practice family medicine/general practice, internal medicine, pediatrics and obstetrics/gynecology. Dental includes general practice dentists, and for mental health HPSAs, the identification is of psychiatrists.

Medically underserved areas/populations (MUA/Ps) are geographic areas or populations designated by HRSA as medically underserved according to a determination of underservice, looking at infant mortality rate, poverty rate at 100 percent of the federal poverty level, percent of population aged 65 years and older, and ratio of primary care physicians per 1,000 population. This data is entered into a calculation, and the product is an Index of Medical Underservice (IMU) score. If the area/population IMU score is 62 or less for the area or population, HRSA designates the area as a MUA/P.[57]

Table 9.7 Number of Medically Underserved Areas/Populations, Pennsylvania, United States, 2018[58]

	Pennsylvania	United States
Medically Underserved Areas/Populations Designations	156	4,248

Intervention Strategies

Community health centers (federally qualified health centers, FQHCs) serve as a model of primary care that aims to provide for equitable distribution of health care, community participation, health workforce development, use of appropriate technology and multi-sectional approach, the principles identified in the WHO's Alma Ata Declaration.[59]

Community health centers are in shortage areas and open to all, regardless of ability to pay. These centers are private, non-profit community organizations and, as part of a national network of providers, can share successful practices, participate in the national Uniform Data System, access guidance and resources through the U.S. Health Resources and Services Administration and secure support from state primary care associations. The health centers are covered by the Federal Tort Claims Act coverage for FQHC employees; are eligible as practice sites for National Health Service Corps, a state loan repayment program for clinicians; and more.

These community-based, patient-directed organizations serve medically underserved communities and vulnerable populations with comprehensive, quality primary health care services. Often, the centers provide dental and behavioral health services in addition to medical care.

Characteristics include:[60]

- Fees based on ability to pay (must offer a sliding fee discount for patients with incomes < 200 percent of federal poverty level);
- Quality primary health care, open to all (with stringent reporting and operational requirements);

- Highly competent health care professional team (usually with medical, dental and behavioral health care); and
- Community control (at least 51 percent of the governing board as patients of the center).

Community health centers all share the goal of increasing access to quality primary health care for underserved populations to eliminate health disparities. The FQHC payment system eliminates the incentive to order unnecessary tests and procedures for profit. The focus is on providing quality care and developing lifelong relationships with patients, to help them get and stay well.

In 2017, Pennsylvania had 332 FQHC sites operating throughout the state, up from 257 in 2013. About 40 percent are in rural areas and 60 percent in urban areas. More than 98 percent of them have implemented an electronic health record system.[61] The FQHCs served 804,008 patients and provided 2.8 million patient visits.[62]

Many FQHCs offer supportive services in addition to their required core services, including: 340B discount pharmacy services, urgent care, various specialty services, substance abuse services, nutritional counseling, smoking cessation, Nurse-Family Partnerships, and outreach and eligibility services. In addition, other important services are often located at the health centers, such as Healthy Start and WIC nutrition programs. Community health centers tend to partner with other community organizations and patients to address social determinants of health.

Rural areas may find the comprehensive FQHC model difficult to build and sustain. These areas tend to be smaller and more economically challenged. The population is generally older, on Medicare, in poor health and with a lower income base (e.g., uninsured, Medicaid). While the rural environment affords many opportunities, it also poses some unique problems, including a significant shortage of health professionals.[63]

According to the National Rural Health Association, although around 19 percent of U.S. residents live in rural areas,[64] fewer than 10 percent of physicians practice in these areas. Consequently, rural residents face greater challenges in accessing care, making early detection and regular treatment of diseases more difficult.[65]

In Pennsylvania, 48 counties are rural,[66] and these contain about 21 percent of the state's people.[67] A 2014 workforce report from the state Department of Health pegged the rate of rural physicians to 100,000 population as 138, compared with 260 per 100,000 population in urban areas.[68] It also found that two-thirds of the state's primary care providers practice in five urban counties. Access to medical care in rural areas of Pennsylvania is challenging, and access gaps still exist.[69]

Rural health clinics (RHCs) also help to address gaps in health care access. In Pennsylvania, as of May 23, 2017, approximately 72 RHCs provide health care services.[70] Some are freestanding, while others are provider-based; some are for-profit, and others are nonprofit. All are in non-urbanized shortage areas and use a non-physician provider (e.g., nurse practitioner, nurse midwife, or physician assistant) during at least half of the clinic's hours. RHCs do not have the same stringent operational and access requirements as FQHCs, but they do serve an important role in improving access to primary health care services in rural communities.

Incentive programs such as the National Health Service Corps (NHSC) and the Pennsylvania Primary Health Care Practitioner Loan Repayment Program are available to help both community health centers and rural health clinics obtain service providers. The state loan repayment program, with its multiple components, seeks to increase the number of primary care providers and services available to residents of designated areas. The state Department of Health, Bureau of Health Planning, Division of Health Professions Development, in partnership with the Pennsylvania Association of Community Health Centers (PACHC) is leading development of the Pennsylvania Primary Care Career Center to support primary health care providers in finding a sense of passion for their work and purpose through good job placement in the state.

The Primary Health Care Practitioner Program was established in 1992 as part of the Children's Health Care Act and gives the Department of Health the responsibility to develop programs that address the problems of supply and distribution of primary health care practitioners (i.e., family physicians, pediatricians, internists, obstetricians, general dentists, certified nurse midwives, physician assistants and certified registered nurse practitioners) in Pennsylvania. The Division of Health Professions Development (Division) administers this program. It consists of a number of programs to address areas of underservice and shortage, to increase access to primary care medical and dental services, and to recruit and retain primary health care practitioners in those areas, including: the HPSA and MUA/P assessment, grant programs to assist communities to increase access to care, the Pennsylvania Loan Repayment Program, the State Conrad 30 J-1 Visa Waiver Program, and the NHSC Scholar and Loan Repayment Program.

The Division of Health Professions Development, through a Cooperative Agreement with HRSA, is the lead for the assessment and designation of federal health professional shortage areas and medically underserved areas/populations within Pennsylvania. Once it determines that a given area meets the federal criteria, the Division submits an application to HRSA for designation.

The Pennsylvania Loan Repayment Program offers loan repayment assistance for primary care providers who choose to practice at sites in underserved areas. Physicians and general dentists may receive loan reimbursement up to $100,000 full-time service and up to $50,000 for part-time service. Other practitioners may receive up to $60,000 for a full-time commitment and up to $30,000 for a part-time commitment. The goal of this program is to retain practitioners in these underserved areas of the commonwealth.[71]

The State Conrad 30 J-1 Visa Waiver program allows for a non-citizen physician who is completing medical training in the U.S. under a J-1 Visa to be sponsored for a waiver of the visa residency requirement to return to the physician's home country upon completion of training. With a Visa Waiver, the physician must work at a site in a HPSA or MUA/P for at least three years. Physicians choosing and completing this program have the opportunity to immigrate to the United States. The goal is to have the physician remain beyond the three-year commitment.[72]

The National Health Service Corps (NHSC) is a federally funded program that assists primary health care organizations located in HPSAs to recruit and retain primary care, dental and mental health practitioners to meet the community's need for health care practitioners. The NHSC offers three programs: the NHSC Loan Repayment Program, the NHSC Scholar Program, and the Students to Service Loan Repayment Program. The NHSC Loan Repayment Program provides educational loan repayment to providers who agree to provide primary health care services in NHSC-designated sites in a HPSA. Providers must commit to a minimum participation of three years and may apply for additional years of loan repayment.[73]

The Scholarship Program pays tuition, reasonable educational costs, and a monthly stipend for a practitioner enrolled or accepted in the following primary care disciplines: physicians, dentists, family nurse practitioner, certified nurse midwife, and physician assistant. In exchange for the scholarship, a practitioner commits to provide primary care services in a HPSA of greatest need for a period of up to four years after completion of training.

The Students to Service Loan Repayment program provides medical students (MD or DO) and dental students (DMD or DDS) in their final year of school loan repayment assistance in return for providing health care in approved communities. The service commitment for this program is three years of full-time or six years of half-time service. Participants may apply for additional funding once their initial service obligation is competed.

The Community-Based Health Care Grant Program was established by Act 10 of 2013 and is administered by the Division of Health Professions Development. This is a competitive grant opportunity that provides funding assistance to community-based health clinics such as FQHCs, RHCs, free clinics, nurse managed clinics and hospital clinics which serve underserved and low-income communities to expand and improve primary and

preventive health care access and services. Funding assistance may be utilized to develop new community-based health clinics; expand and improve services at existing clinics; add or expand pre-natal, obstetric, postpartum and newborn care services; develop services to reduce unnecessary hospital emergency room utilization and to implement collaborative relationships with hospitals and other community health care providers to improve community-based health care.

Resources

Agency for Healthcare Research and Quality. (2008). Access to Healthcare. In *National Healthcare Disparities Report 2008*. Washington: AHRQ; 2008. Retrieved from http://www.ahrq.gov/qual/nhdr08/Chap3.htm

Brook, R., and Young, R. (2010). The Primary Care Physician and Health Reform. *JAMA*, 303:15.

Meyers, D. and Clancy, C. (2009). Primary Care: Too Important to Fail. *Annals of Internal Medicine*,150:272-273.

American College of Physicians. (2006.) The Impending Collapse of Primary Care Medicine and Its Implications for the State of the Nation's Health Care: A Report from the American College of Physicians.

Kaiser Commission on Medicaid and the Uninsured. (2011). Improving Access to Adult Primary Care in Medicaid: Exploring the Potential Role of Nurse Practitioners and Physician Assistants, March 2011.

Linzer, et al. (2009). Working Conditions in Primary Care: Physician Reactions and Care Quality. *Annals of Internal Medicine*, 151:28-36.

Bodenheimer, T., Berenson, R., and Rudolf, P. (2007). The Primary Care-Specialty Income Gap: Why It Matters. *Annals of Internal Medicine*, 146:301-6.

National Association of Community Health Centers. ACCESS for All America Reports:
Primary Care Access: An Essential Building Block of Health Reform, March 2009 ; Access Transformed: Building a Primary Care Workforce for the 21st Century, August 2008 ; Access Capital: New Opportunities for Meeting America's Primary Care Infrastructure Needs, March 2008 ; ACCESS GRANTED: The Primary Care Payoff, August 2007 ; Access Denied: A Look at America's Medically Disenfranchised, March 2007

Palmeri, M., et al. (2010). Economic Impact of a Primary Care Career: A Harsh Reality for Medical Students and the Nation, *Journal of the AAMC*, 85;11;1692-1697.

Adashi, E., et al. Health Care Reform and Primary Care—The Growing Importance of the Community Health Center, *New England Journal of Medicine*, 362;22, 2010.

Bodenheimer, T. and Pham, H. (2010). Primary Care: Current Problems and Proposed Solutions, *Health Affairs*, 29;5;799-805.

Hawkins, D., M., Proser, and Schwartz, R. (2007). Health Reform and Healthcare Homes: The Role of Community Health Centers. *Harvard Health Policy Review*, 8(2).

Dentzer S. (2010). Reinventing Primary Care: A Task That is Far 'Too Important to Fail', *Health Affairs*, 29;5;757.

Endnotes

[1] World Health Organization. (1978, Sep). Declaration of Alma-Ata. Retrieved from https://www.who.int/publications/almaata_declaration_en.pdf

[2] World Health Organization. (1978, Sep). Declaration of Alma-Ata. Retrieved from https://www.who.int/publications/almaata_declaration_en.pdf

[3] Marcos, Cueto. (2004). The ORIGINS of Primary Health Care and SELECTIVE Primary Health Care. Am J Public Health. 22. 94: 1864–1874. doi:10.2105/ajph.94.11.1864

[4] Marcos, Cueto. (2004). The ORIGINS of Primary Health Care and SELECTIVE Primary Health Care. Am J Public Health. 22. 94: 1864–1874. doi:10.2105/ajph.94.11.1864

[5] Friedberg, MW, Chen, PG, VanBusum, KR, et al. (2013). Factors Affecting Physician Professional Satisfaction and Their Implications for Patient Care, Health Systems, and Health Policy. Santa Monica: RAND Corporation. Retrieved from https://www.rand.org/content/dam/rand/pubs/research_reports/RR400/RR439/RAND_RR439.pdf

[6] Henry J Kaiser Family Foundation. (2018, Oct). Professionally active physicians. Retrieved from https://www.kff.org/other/state-indicator/total-active-physicians/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[7] United States Senate Committee on Health, Education, Labor & Pensions. (2013*).* Primary care access—30 million patients and 11 months to go: who will provide their primary care? Retrieved from http://www.sanders.senate.gov/imo/media/doc/PrimaryCareAccessReport.pdf

[8] University of Pennsylvania Leonard Davis Institute of Health Economics. (2017, Mar). Candon M., Polsky D., et. al. Primary Care Appointment Availability and the ACA Insurance Expansions. Retrieved from https://ldi.upenn.edu/brief/primary-care-appointment-availability-and-aca-insurance-expansions

[9] United States Department of Health and Human Services. (n.d.). Healthy People 2020, access to health care, overview. Retrieved from http://www.healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=1

[10] United States Department of Health and Human Services. (n.d.). Healthy People 2020, access to health care, objectives. Retrieved from http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=1

[11] U.S. Department of health and Human Services, Office of Disease Prevention and Health Promotion. (2014, May). Healthy People 2020 Leading Health Indicators: Access to Health Services. Retrieved from https://www.healthypeople.gov/sites/default/files/HP2020_LHI_Acc_Hlth_Svcs_0.pdf

[12] Pennsylvania Department of Health, (2011-2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[13] U.S. Department of Health and Human Services, Centers for Disease Control and Prevention. (2019, May). Health Insurance Coverage: Early Release of Estimates From the National Health Interview Survey, 2018. Retrieved from https://www.cdc.gov/nchs/data/nhis/earlyrelease/insur201905.pdf

[14] Pennsylvania Department of Health, (2013, 2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[15] Pennsylvania Department of Health, (2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[16] Department of Health & Human Services, Health Resources & Services Administration. (2018, Dec). Shortage areas. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[17] Henry J Kaiser Family Foundation. (2018, Oct). Professionally active physicians. Retrieved from https://www.kff.org/other/state-indicator/total-active-physicians/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[18] Association of American Medical Colleges. (2017, Nov). 2017 State physician workforce data report. Retrieved from https://members.aamc.org/eweb/upload/2017%20State%20Physician%20Workforce%20Data%20Report.pdf

[19] Association of American Medical Colleges. (2017, Nov). 2017 State physician workforce data report. Retrieved from https://members.aamc.org/eweb/upload/2017%20State%20Physician%20Workforce%20Data%20Report.pdf

[20] Centers for Disease Control and Prevention, National Center for Health Statistics. (2016). Table 77. Visits to primary care generalist and specialty care physicians, by selected characteristics and type of physician: United States, selected years 1980–2013. Retrieved from https://www.cdc.gov/nchs/data/hus/2016/077.pdf

[21] Association of American Medical Colleges. (2017, Nov). 2017 State physician workforce data report. Retrieved from https://members.aamc.org/eweb/upload/2017%20State%20Physician%20Workforce%20Data%20Report.pdf

[22] Department of Health & Human Services, Health Resources & Services Administration. (2019, Jan). Shortage areas. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[23] Petterson S. M., Liaw, W. R.,et al. (2012). Projecting US primary care physician workforce needs: 2010-2025. *Annals of Family Medicine*, *10*(6), 503-509. Retrieved from http://www.annfammed.org/content/10/6/503.abstract

[24] United Health Foundation, America's health Rankings. (2019). Primary Care Physicians. Retrieved from https://www.americashealthrankings.org/explore/annual/measure/PCP/state/PA

[25] Association of American Medical Colleges (2017, Nov). 2017 State physician workforce data report. Retrieved from https://store.aamc.org/2017-state-physician-workforce-data-report.html

[26] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[27] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[28] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[29] Pennsylvania Department of Health. (2012-2016). Healthy People 2020, state level statistics. Retrieved from https://www.health.pa.gov/topics/HealthStatistics/HealthyPeople/Pages/healthy-people.aspx

[30] Pennsylvania Department of Health, (2015-2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[31] Pennsylvania Department of Health, (2015-2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[32] Pennsylvania Department of Health, (2015-2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[33] Pennsylvania Department of Health, (2015-2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[34] Pennsylvania Department of Health, (2013-2017). *Pennsylvania Behavioral Risk Factor Surveillance System (BRFSS*). [Data File]. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[35] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[36] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[37] Pennsylvania Department of Health, Bureau of Health Planning. (2012). 2010 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2010 surveys of physicians and physician assistants, Volume 4

[38] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[39] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[40] Pennsylvania Department of Health, Bureau of Health Planning. (2015). 2012/2013 Pulse of Pennsylvania's registered nurse workforce, a report on the 2012 and 2013 surveys of registered nurses, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[41] Pennsylvania Department of Health, Bureau of Health Planning. (2015). 2012/2013 Pulse of Pennsylvania's registered nurse workforce, a report on the 2012 and 2013 surveys of registered nurses, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[42] Pennsylvania Department of Health, Bureau of Health Planning. (2015). 2012/2013 Pulse of Pennsylvania's registered nurse workforce, a report on the 2012 and 2013 surveys of registered nurses, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[43] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[44] Pennsylvania Department of Health, Bureau of Health Planning. (2017, Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[45] Brin, D. W. (2017, Apr 4). Taking the sting out of medical school debt. *Association of American Medical Colleges News*. Retrieved from https://news.aamc.org/medical-education/article/taking-sting-out-medical-school-debt/

[46] Kessler, S. (2018, Jul 26). Average medical school debt in 2017. Student Debt Relief. Retrieved from https://www.studentdebtrelief.us/news/average-medical-school-debt/

[47] Department of Health & Human Services, Health Resources and Services Administration. (2017). Council on graduate medical education 23rd report. [PDF file] Retrieved from https://www.hrsa.gov/advisorycommittees/bhpradvisory/cogme/Reports/twentythirdreport.pdf

[48] O'Malley, A. S., Samuel, D., Bond, A. M., Carrier, E. (2012, Nov). After-hours care and its coordination with primary care in the U.S. *Journal of General Internal Medicine*. 27(11): 1406–1415. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3475839/

[49] Department of Health and Human Services, (2019, May). Health Professional Shortage Areas (HPSAs). Retrieved from https://bhw.hrsa.gov/shortage-designation/hpsas

[50] Department of Health and Human Services, (2019, Aug). Shortage Designation Scoring Criteria. Retrieved from https://bhw.hrsa.gov/shortage-designation/hpsa-criteria

[51] Department of Health & Human Services, Health Resources and Services Administration. (2018, Dec 27). Designated Health Professional Shortage Areas Statistics.

[52] Department of Health & Human Services, Health Resources and Services Administration. (2012). Shortage designation: health professional shortage areas and medically underserved areas/populations. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[53] Department of Health & Human Services, Health Resources and Services Administration. (2018, Oct 17). Shortage designation: health professional shortage areas and medically underserved areas/populations. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[54] United States Census Bureau. American FactFinder. (n.d.). Annual estimates of the resident population: April 1, 2010 to July 1, 2017. 2017 population estimates. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPANNRES&prodType=table

[55]Department of Health & Human Services, Health Resources and Services Administration. (2018, Oct 17). Shortage designation: health professional shortage areas and medically underserved areas/populations. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[56] United States Census Bureau. American FactFinder. (n.d.). Annual estimates of the resident population: April 1, 2010 to July 1, 2017. 2017 population estimates. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPANNRES&prodType=table

[57] Department of Health & Human Services, Health Resources and Services Administration Health Workforce. (2018). Medically underserved areas and population (MUA/Ps). Retrieved from https://bhw.hrsa.gov/shortage-designation/muap

[58] Department of Health & Human Services, Health Resources and Services Administration. (2018). Shortage designation: health professional shortage areas and medically underserved areas/populations. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[59] World Health Organization. (1978, Sep). Declaration of Alma-Ata. Retrieved from https://www.who.int/publications/almaata_declaration_en.pdf

[60] Centers for Medicare & Medicaid Services. (2018, Jan). Federally qualified health center. [PDF file]. Retrieved from https://www.cms.gov/Outreach-and-Education/Medicare-Learning-Network-MLN/MLNProducts/downloads/fqhcfactsheet.pdf

[61] Ryan, J., Doty, M. M., Abrams, M. K., Riley, P. (2014, May). The adoption and use of health information technology by community health centers, 2009-2013. *The Commonwealth Fund.* Retrieved from https://www.commonwealthfund.org/sites/default/files/documents/___media_files_publications_issue_brief_2014_may_1746_ryan_adoption_use_hlt_it_chcs_rb.pdf

[62] Pennsylvania Association of Community Health Centers. (2019, Jan).

[63] Pennsylvania Rural Health Association. (2010, Aug). Status check V: Pennsylvania rural health care. [PDF file]. Retrieved from http://www.paruralhealth.org/PARuralHealth_StatusCheck5.pdf

[64] National Rural Health Association. (n.d.). About rural health care. Retrieved from https://www.ruralhealthweb.org/about-nrha/about-rural-health-care

[65] Pennsylvania Rural Health Association. (2016, Nov). Status Check VI: Pennsylvania Rural Health Care. Retrieved from https://paruralhealth.org/post/_docs/Status-Check-VI.Final.pdf

[66] Pennsylvania Department of Health, Bureau of Health Planning. (2017 Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[67] United States Census Bureau. (n.d.) Urban and rural universe: total population 2010 Census Summary File 1. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF1_P2&prodType=table

[68] Pennsylvania Department of Health, Bureau of Health Planning. (2017 Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[69] Pennsylvania Rural Health Association. (2010, Aug). Status check V: Pennsylvania rural health care. [PDF file]. Retrieved from http://www.paruralhealth.org/PARuralHealth_StatusCheck5.pdf

[70] Henry J Kaiser Family Foundation. State health facts (2017, May 23). Number of Medicare certified rural health clinics. Retrieved from https://www.kff.org/other/state-indicator/total-rural-health-clinics/?currentTimeframe=0&selectedRows=%7B%22states%22:%7B%22pennsylvania%22:%7B%7D%7D%7D&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[71] Pennsylvania Department of Health. (n.d.). Pennsylvania primary care loan repayment program. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Loan-Repayment.aspx

[72] Pennsylvania Department of Health. (n.d.). J-1 and national interest waiver programs. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/J-1-and-National-Interest-Waivers.aspx

[73] Department of Health & Human Services, Health Resources & Services Administration. (n.d.). National health service corps.: prospective scholars. Retrieved from https://nhsc.hrsa.gov/scholarships/prospective-scholars/index.html

Patient-Centered Medical Homes

This section has been removed. Studies in Pennsylvania and Louisiana reflect only marginal gains in quality and cost reduction.[1,2] Further updates were not found.

Endnotes

[1] Friedberg, M.W., Schneider, E.C., Rosenthal, M.B., Volpp, K.G., Werner, R.M. (2014). Association Between Participation in a Multipayer Medical Home Intervention and Changes in Quality, Utilization, and Costs of Care. Journal of the American Medical Association

[2] Cole, Evan S., C. Campbell, M.L. Diana, L. Webber, and R. Culbertson. (2015). Patient-Centered Medical Homes in Louisiana Had Minimal Impact on Medicaid Population's Use of Acute Care and Costs. Health Affairs.

Prenatal and Preconception Care

This section has been moved to Maternal and Child Health section of SHA.

Dental Care

Oral health is crucial to overall physical health and well-being and reliant upon good self-care (i.e., brushing with fluoride toothpaste, daily flossing and professional treatment). Health behaviors that can affect oral health and thereby influence general health include tobacco use, excessive alcohol use and poor dietary choices, such as overindulgence in sugary foods or beverages. Barriers to use of preventive interventions and treatments include limited access to dental services (including lack of availability), lack of awareness of the need for care, cost and fear of dental procedures. The statistics tell that people with lower levels of education and income have higher rates of dental disease; poor oral health is also a greater risk for people who have disabilities and other conditions, such as diabetes.[1]

Although more than a decade old, a 2000 report by the U.S. Department of Health and Human Services gives a sense of the costs related to oral health in this country. According to that analysis, illness related to oral health results in 6.1 million days of bed disability, 12.7 million days of restricted activity and 20.5 million lost workdays annually. [2] Much of this hardship is preventable.

National and State Goals

Lack of access to dental care for people of all ages remains a public health challenge. The U.S. Department of Health and Human Services targets three areas for oral health improvement in its Healthy People 2020 Oral Health objectives:[3]

- **Awareness**: Increase awareness of the importance of oral health to overall health and well-being
- **Prevention**: Increase acceptance and adoption of effective preventive interventions
- **Disparities**: Reduce disparities in access to effective preventive and dental treatment services

Annual dental check-ups are encouraged by medical authorities, including the American Dental Association and others. The Healthy People 2020 target for percent of persons aged 2 years and older who have had a dental visit within the past year is 49.0 percent, which would be a 10 percent increase from the 2007 baseline rate of 44.5 percent of persons aged 2 years and older.[4]

The Pennsylvania Medicaid Policy Center at the University of Pittsburgh's Graduate School of Public Health has reported that, although most children on Medical Assistance are enrolled in managed care, only 48.3 percent of these children had an annual dental visit in 2017, including periodic oral exams and diagnostic and preventive care, such as fillings and fluoride treatment.[5]

Healthy People 2020 set a goal for FQHCs to include an oral health care component. At the 2007 baseline, 66.6 percent of FQHCs had an oral care component; the target for 2020 is 73.3 percent.[6] According to the Pennsylvania Association of Community Health Centers, currently 39 of Pennsylvania's 43 FQHCs provide on-site dental services. At 90.6 percent, the state is above national baseline as well as the 2020 goal for this indicator.[7]

According to a 2015 report from the Pew Charitable Trusts assessment of performance of sealant programs and the degree to which states can improve access to this treatment for at-risk children, Pennsylvania was given a D grade in 2014, placing it among the 17 lowest ranked states. Pennsylvania had a low percentage of high-need schools with sealant programs, less than 25 percent, while the highly ranked states had more than 75 percent.[8]

Pennsylvania had some rules restricting dental hygienist applying sealant to the kids. Without restricting rules, there are fewer obstacles that could hinder the ability of hygienists to place much needed sealants at schools. Pennsylvania submitted data to National Oral Health Surveillance System (NOHSS) that was more than five years old. The fourth criteria states meeting the Healthy People 2020 goal of 50 percent of 8-year-olds having sealants and that disparities in sealant rates among kids that occur by income levels or other factors be eliminated. Pennsylvania did not meet these goals.

Table 9.8 Assessment of Pennsylvania's Policy and Programs for Dental Health of Children[9]

State	2014 grade	2012 grade	Percentage of high-need schools with sealant programs	Rules restricting hygienists	Collecting, submitting data to NOHSS	Met Healthy People 2010 sealant goal?
Pennsylvania	D	D	<25%	Some restrictions	Yes, but no recent data	No

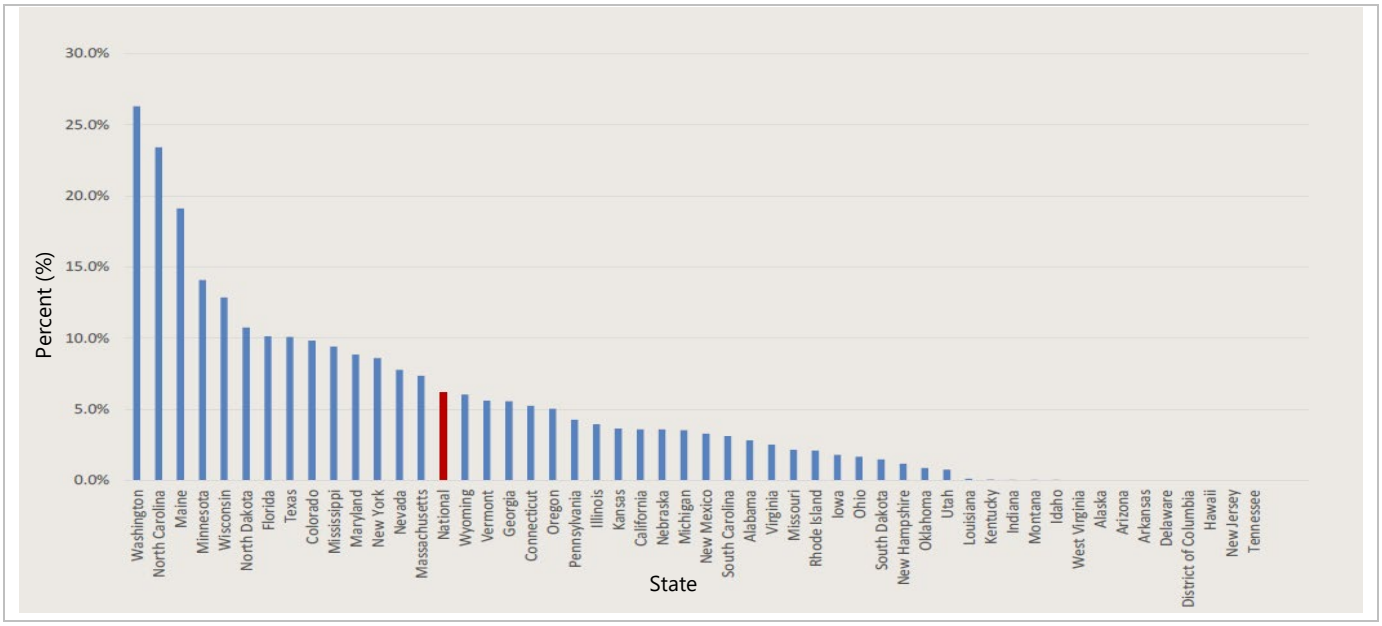
The Pennsylvania Department of Human Services (DHS) is pursuing oral health goals as outlined by the Centers for Medicare and Medicaid Services Oral Health Strategy:[10]

- **Preventive pediatric dental care**: Increase the rate of children ages 1 to 20 enrolled in Medicaid or CHIP who receive any preventive dental service by 10 percent over a five-year period.
- **Pediatric dental sealant**: Increase the rate of children ages 6 to 9 enrolled in Medicaid or CHIP who receive a dental sealant on a permanent molar tooth by 10 percent over a five-year period.

Pediatric Dental Care

The percentage of Pennsylvania children aged 1 to 5 years old in Medicaid who received dental care in 2014 was lower than the national percentage. Among the 50 states, Pennsylvania was ranked the 20th. Washington was ranked the first, the only state with a percentage higher than 25 percent.[11]

Figure 9.15 Percentage of Children Aged 1 to 5 Years Receiving Any Oral Health Services Provided by Medical Provider, United States, 2013[12]



DHS pursues its dental health goals by leveraging performance-based payment programs that are designed to focus managed care organization (MCO) attention on targeted measures. As can be seen from the charts below, use of these performance-based payment programs as an incentive has contributed to an overall increase in rates for the annual dental visit measure over the past three report years. In report year 2018, 63 percent of Medicaid recipients aged 2 through 20 years of age had at least one dental visit, up from 60 percent in the previous year.[13]

Although not part of a pay-for-performance program, DHS also collects data measuring the placement of dental sealants on children aged 6 to 9 with elevated caries risk. As is seen from the chart below, the DHS focus on this measure has contributed to increased performance over the past three report years. In 2018, for example, 25 percent of Medicaid recipients aged 6 to 9 with elevated caries risk underwent dental sealant placement, up from 22 percent in the previous report year. [14]

Figure 9.16 Annual Dental Visits for 2-20-Year-olds Trending Report, 2016-2018[15]

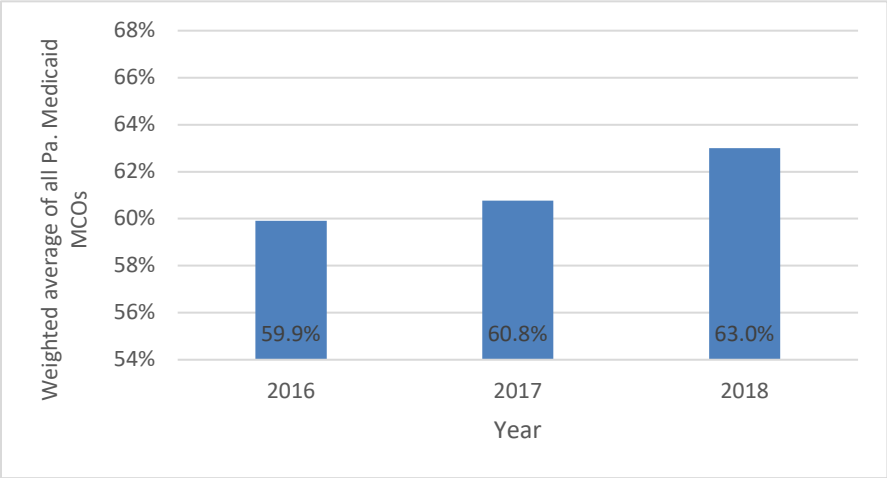
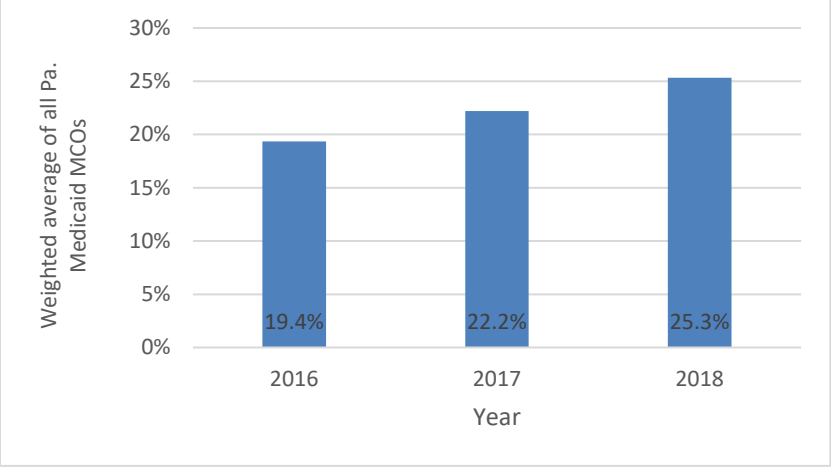


Figure 9.17 Dental Sealants for 6-9-Year-olds with Elevated Caries Risk Trending Report, 2016-2018[16]



To achieve their goals, the MCOs have implemented a variety of programs designed to engage both Medicaid members and providers. The department has strongly encouraged MCOs to employ Public Health Dental Hygiene Practitioners (PHDHPs) as dental care providers, coordinators and health education counselors. By 2018, all MCOs had a PHDHP program in place; some PHDHPs are embedded in Federally Qualified Health Centers, while others work from mobile dental vans.

Other initiatives include community dental events and educational workshops, using mobile dental vans to render dental services at pediatric primary care offices, and offering an incentive to members who have the necessary screenings completed. Currently, two MCOs have implemented dental home projects, which seek to assign a primary dental care provider to each member. The goal is that the dental home can build a relationship of trust with the member and thus better provide for continuity of care.

Finally, although CMS discontinued the Oral Health Initiative (OHI) in 2019, the department is still tracking the number of members aged 1-20 who have had a preventive dental service.

Availability of care

Recognizing that lack of dental care may, in part, be due to lack of providers, Tables 9.8 shows the number of dentists, dental hygienists in the state who renewed their license.

Table 9.9 Dental Care Providers, Pennsylvania, 2003-2015[17]

Dental Hygienists

	2003	2005	2007	2009	2011	2013	2015
Renewals	6,745	6,787	7,440	7,934	8,304	8,571	8,829

Dentists

	2003	2005	2007	2009	2011	2013	2015
Renewals	9,241	8,757	9,222	9,274	9,428	9,449	9,479

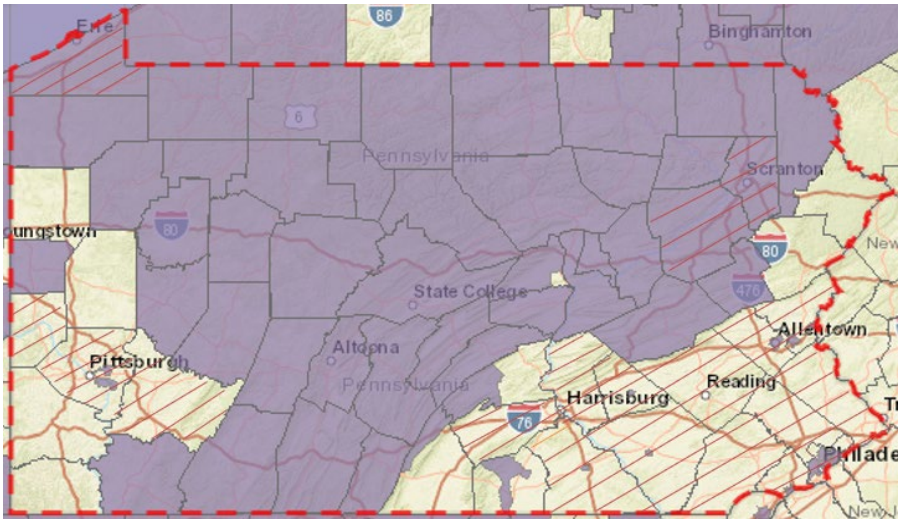
Health professional shortage areas

Health professional shortage areas (HPSAs) are health care service delivery areas with a critical shortage of primary care physicians, dentists or mental health providers, and they can be defined according to geography (e.g., county, census tract grouping, township, borough) or specific population group (e.g., significant low-income population with incomes < 200 percent of the Federal Poverty Level) or a public or non-profit facility (e.g., FQHC, certified rural health clinic). An area, population or facility is designated as a HPSA when it meets a specific, federally-determined population-to-provider ratio demonstrating a critical shortage of providers. Currently, a little more than 2 million Pennsylvania residents (15.8 percent) live in dental health professional shortage areas. This is 0.4 percent higher than the percentage in 2012 (15.4 percent).

Table 9.10 Dental Health Professional Shortage Areas, Pennsylvania and United States, 2012, 2018[18,19,20]

	Pennsylvania		The United States	
	2012	2018	2012	2018
Designated health professional shortage areas (HPSAs)	153	163	4,534	5,732
Population in HPSAs	1,959,788	2,021,508	44,579,445	56,708,760
Percent of total population residing in HPSAs	15.4%	15.8%	14.2%	17.4%
Additional providers needed to achieve a population to practitioner ratio of 5,000 to 1	388	293	8,692	10,425

Figure 9.18 Designated Dental Health Professional Shortage Areas, Pennsylvania, 2018[21]



= designated health professional shortage areas = urban county

****** Urban counties were identified using the Center for Rural Pennsylvania's definition and 2010 Census data.

According to license renewal survey data, the number of dental care providers who provided direct patient care in Pennsylvania and practiced in rural counties decreased from 22 percent in 2003 to 19 percent in 2015. Rural counties had 33.6 compared with urban counties that had 52.1 dentists per 100,000 population.[22,23]

Table 9.11 General Dentists Providing Direct Patient Care, Pennsylvania, 2015[24]

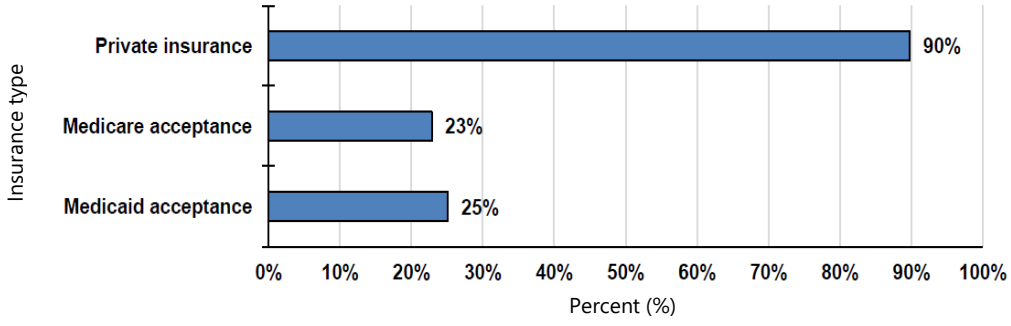
Practice Setting	Percent of General Dentists (%)	Percent of Population (%)
Rural counties	19%	13%
Urban counties	81%	87%

Note: Rural counties identified using Center for Rural Pennsylvania's definition and 2010 U.S. Census data

Persons with Medicaid

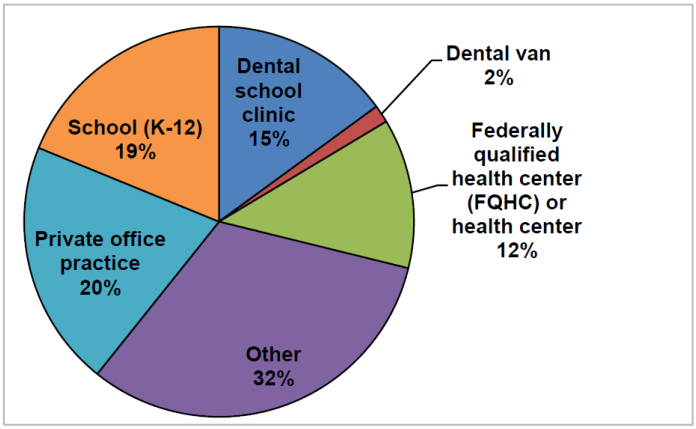
Acceptance of Medicaid by dentist respondents who provided direct patient care in Pennsylvania increased between 2011 and 2015, from 23 percent to 25 percent. Figure 9.19 compares acceptance of private insurance, Medicaid and Medicare by dentists providing direct patient care in the state.[25]

Figure 9.19 Dental Coverage Accepted by General Dentists Providing Direct Patient Care, Pennsylvania, 2015[26]



In 2015, twelve percent of dental hygienists who responded (856) said they provided dental care as unpaid volunteer work. Figure 9.20 shows some of these alternative locations of dental hygienist services (only one location can be selected).[27]

Figure 9.20 Locations Where Dental Hygienists Provided Care to Uninsured or Uninsured Residents (Not Including Primary Job), Pennsylvania, 2015[28]



The reimbursement rates provided by insurers and Medicaid are often cited as a limiting factor for acceptance of Medicaid patients by dentists. The table below lists the reimbursement rates compared to fees charged by dentists in Pennsylvania and nationwide. The private reimbursement rates for adults in Pennsylvania, 67.2 percent, and for children in Pennsylvania, 70.0 percent, were both only higher than two other states.

Table 9.12 Dental Reimbursement Rate, Pennsylvania and United States, 2016[29]

	Medicaid fee-for-service reimbursement relative to fees charged by dentists		Medicaid fee-for-service reimbursement relative to private dental insurance reimbursement		Private dental insurance reimbursement relative to fees charged by dentists	
	Pennsylvania	**U.S.**	**Pennsylvania**	**U.S.**	**Pennsylvania**	**U.S.**
Child dental services	45.3%	49.4%	64.8%	61.8%	70.0%	80.5%
Adult dental services	N/A	37.2%	N/A	46.1%	67.2%	78.6%

N/A= Not Available

Fluoridation

Poor dental health poses high risks for Pennsylvania adults as well as children. Invasive oral cavity and pharynx cancer was diagnosed in 1,929 persons in 2015 and caused 399 deaths.[30]

Although about 94 percent of Pennsylvania residents get their water from community water systems,[31] [10] the Centers for Disease Control and Prevention (CDC) reports that only 54.6 percent receive fluoridated drinking water, earning the state a rank of 41 out of 50 states.[32] For most cities, estimates suggest that every dollar invested in water fluoridation saves $38 in dental treatment costs.[33]

State Policy Changes

Increase care availability—To improve access to dental services, the Pennsylvania State Board of Dentistry now regulates the expanded function dental assistant (EFDA) position. These members of the dental team have completed a specific course of training that includes clinical instruction in restorative techniques. EFDAs are permitted to place restorative materials in cavity preparations, polish teeth and restorations, and perform other dental-assistant duties under the supervision of a dentist. An EFDA may not perform the services of a dental hygienist.

Another category of dental health professional was also created in recent years: the public health dental hygiene practitioner (PHDHP). These dental care providers can perform educational, preventive, therapeutic, intra-oral and radiologic procedures without the direct supervision of a dentist at identified practice sites, including: schools; correctional facilities; health care facilities (e.g., hospitals); personal care homes; domiciliary care facilities; older adult daily living centers; continuing care provider facilities (e.g., retirement communities); FQHCs and Look-alikes; public and private institutions under the jurisdiction of a federal, state, or local agency; and free and reduced-fee nonprofit health clinics. PHDHPs are required to refer patients to a dentist annually. At the end of 2015, the State Board of Dentistry oversaw 531 licensed PHDHPs.[34]

Medicaid policy changes—Benefit changes for fee-for-service adult Medicaid recipients age 21 and older went into effect in 2011, as part of a cost-saving strategy. The impact of the new dental policy changes has not yet been determined, but these include limits on dentures (unless a benefit limit exception is granted) and elimination of coverage for crowns, periodontal services and endodontic care (unless a BLE is granted). In 2015, dental coverage by Medicaid was accepted by 25 percent of providers in Pennsylvania, 23 percent for Medicare and 90 percent for private insurance.[35]

In 2010, Pennsylvania Medical Assistance began reimbursing enrolled physicians and certified registered nurse practitioners for the application of topical fluoride varnish for eligible children ages birth to 4 years.

Intervention Strategies

In Healthy People 2020, the U.S. Department of Health and Human Services identifies five strategies for oral health:[36]

- Implementing and evaluating activities that have an impact on oral health behavior;
- Promoting interventions to reduce tooth decay, such as dental sealants and fluoride use;
- Evaluating and improving methods of monitoring oral diseases and conditions;
- Increasing the capacity of state dental health programs to provide preventive oral health services; and
- Increasing the number of community health centers with an oral health component.

Strong oral health infrastructure in Pennsylvania -- Centers for Disease Control and Prevention (CDC) recommends that all states have an oral public health system led by a state government body that will build and/or maintain effective public health capacity for implementation, evaluation and dissemination of best practices associated with oral disease prevention and improvement of oral health.[37] The Pennsylvania Department of Health is building its Oral Health's Program's organizational capacity by funding a state dental director who can work with epidemiologists, other staff and state partners to build a state oral health surveillance system capable of monitoring the burden of oral health disease in Pennsylvania and to track oral health workforce data.

Community water fluoridation -- The Community Preventive Services Task Force recommends community water fluoridation based on strong evidence of effectiveness in reducing dental caries (tooth decay) across populations. Evidence shows the prevalence of caries is substantially lower in communities with community water fluoridation.[38,39] DOH and its partners are working to increase the number of community water systems that fluoridate and increase the population that is served by fluoridated community water systems by collaborating with water authorities to understand fluoridation barriers and providing funding for maintenance and modernization of existing fluoridation equipment and for the installation of new fluoridation equipment. Individuals and organizations can work with fluoridation advocacy programs to educate the public and policy makers on the benefit of community water fluoridation. Become a Statewide Water Action Team (SWAT) member and alert the Pennsylvania Coalition for Oral Health at www.paoralhealth.org if you hear a community is going to remove fluoridation.

School-based dental sealant programs -- The Community Preventive Services Task Force recommends school-based dental sealant delivery programs based on strong evidence of effectiveness in preventing dental caries among children.[40] DOH and its partners are promoting, coordinating, implementing and evaluating dental sealant programs within elementary and middle schools in which at least 50 percent of students qualify for Child and Adult Care Food Program.

Provider training that focuses on special needs population -- There are currently 163 dental health professions shortage areas (HPSAs) in Pennsylvania as reflected earlier in this section. Pennsylvania's Oral Health Program provides professional development for dentists that prepare them to serve vulnerable populations such as children/adults with disabilities. Training webinars will also resolve barriers to attending training by using a web-based, on-demand approach. These will be available through www.ACHIEVA.info soon.

Oral health literacy projects in community-based agencies -- Studies show that there are rising rates of obesity among low-income children and the rate of caries experienced by children with a low-income. Low health literacy affects both obesity and rate of caries experienced. There is a need at food pantries and libraries to ensure that health information is communicated at a low literacy level to ensure that people can understand nutrition, physical activity and oral health information. Pennsylvania's Oral Health program and its partners will soon offer oral health literacy training within community-based agencies, such as public libraries and food pantries.

Teledentistry Northwest Pennsylvania Head Start Project -- Pennsylvania's Oral Health program and its partners are implementing a tiered community of care model in which direct access public health dental hygiene practitioners provide dental screenings and preventive treatment using portable equipment and dentists perform dental exams and complete treatment plans using a tele dentistry.

Adding dental clinics to RHCs -- Pennsylvania's Oral Health program and its partners are working with clinics that will purchase dental equipment that enables licensed oral health professionals to provide community-based prevention oral health services in two rural health centers located in to 4,800 members of the target population.

Dental provider pipeline programs for dental and high school students -- Pennsylvania's Oral Health program and its partners are building the pipeline of public health professionals choosing to work in oral health by introducing dental and dental hygiene students to public health careers within their curriculum and providing funds to integrate oral health occupations into existing career events on an annual basis to reach high school students.

Endnotes

[1] United States Department of Health and Human Services. (2019, Oct). Oral Health. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/oral-health

[2] United States Department of Health and Human Services. (2000, May). Oral health in America: a report of the surgeon general. Retrieved from http://www.surgeongeneral.gov/library/reports/oralhealth/

[3] United States Department of Health and Human Services. (n.d.). Healthy People 2020 objectives: oral health. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/oral-health

[4] United States Department of Health and Human Services. (2009, Aug 26). Medical Expenditure Panel Survey. Retrieved from https://meps.ahrq.gov/mepsweb/data_stats/data_overview.jsp

[5] University of Pittsburgh, Pitt Public Health. (2010, Jun 10). Many Pennsylvania children on Medicaid lack adequate dental care, according to Pennsylvania Medicaid policy center report. Retrieved from

http://www.publichealth.pitt.edu/news/details/articleid/1419/many-pennsylvania-children-on-medicaid-lack-adequate-dental-care-according-to-pennsylvania-medicaid-policy-center-report

[6] United States Department of Health and Human Services. (n.d.). Healthy People 2020. Oral health: OH-10.1. increase the proportion of Federally Qualified Health Centers (FQHCs) that have an oral health care program. Retrieved from https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4996;

[7] Pennsylvania Association of Community Health Centers. (2019, Jan).

[8] The Pew Charitable Trusts. (2015, Apr). States stalled on dental sealant programs: a 50-state report. [PDF file]. Retrieved from https://www.pewtrusts.org/~/media/assets/2015/04/dental_sealantreport_final

[9] The Pew Charitable Trusts. (2015, Apr). States stalled on dental sealant programs: a 50-state report. [PDF file]. Retrieved from https://www.pewtrusts.org/~/media/assets/2015/04/dental_sealantreport_final

[10] Centers for Medicare & Medicaid Services. (2011, Apr 11). Improving access to and utilization of oral health services for children in Medicaid and CHIP programs, CMS oral health strategy. [PDF file]. Retrieved from https://www.medicaid.gov/medicaid/quality-of-care/downloads/cms-oral-health-strategy.pdf

[11] Centers for Medicare & Medicaid Services. (2015, May 27). Reducing Early Childhood Tooth Decay: Approaches in Medicaid. *Oral Health Initiative*. [PDF file]. Retrieved from https://www.medicaid.gov/medicaid/benefits/downloads/learninglabslides12.pdf

[12] Centers for Medicare & Medicaid Services. (2015, May 27). Reducing Early Childhood Tooth Decay: Approaches in Medicaid. *Oral Health Initiative*. [PDF file]. Retrieved from https://www.medicaid.gov/medicaid/benefits/downloads/learninglabslides12.pdf

[13] National Committee for Quality Assurance. (n.d.). HEDIS® 2019 Volume 2: Technical Specifications for Health Plans. Retrieved from http://store.ncqa.org/index.php/catalog/product/view/id/3381/s/hedis-2019-volume-2-epub/

[14] Pennsylvania Department of Human Services, Bureau of Managed Care Organizations. (2019, Jan). email.

[15] Pennsylvania Department of Human Services, Bureau of Managed Care Organizations. (2019, Jan). email.

[16] Pennsylvania Department of Human Services, Bureau of Managed Care Organizations. (2019, Jan). email.

[17] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[18] United States Department of Health and Human Services, Health Resources and Services Administration. (October 17, 2018). Shortage designation: health professional shortage areas and medically underserved areas/populations. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[19] United States Department of Health and Human Services, Health Resources and Services Administration. (2012, November 19). *Shortage designation: health professional shortage areas and medically underserved areas/populations*. Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas

[20] United States Census Bureau. (n.d.). American FactFinder. Annual estimates of the resident population: April 1, 2010 to July 1, 2017, 2017 population estimates. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPANNRES&prodType=table

[21] United States Department of Health and Human Services, Health Resources and Services Administration. (Oct, 2018). Shortage designation: health professional shortage areas. Retrieved from https://data.hrsa.gov/hdw/tools/MapTool.aspx

[22] Pennsylvania Department of Health. (2012, Nov). 2011 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2011 survey of dentists and dental hygienists, 5. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[23] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[24] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[25] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[26] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[27] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[28] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[29] Gupta N., Yarbrough C., Vujicic M., Blatz A., Harrison B. (2017, Apr). Medicaid fee-for-service reimbursement rates for child and adult dental care services for all states, 2016. *Health Policy Institute, American Dental Association.* [pdf file]. Available from: http://www.ada.org/~/media/ADA/Science%20and%20Research/HPI/Files/HPIBrief_0417_1.pdf

[30] Pennsylvania Department of Health. (2018). Enterprise Data Dissemination Informatics Exchange. *Underlying Cause of Death*. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/DeathCntySt.aspx

[31] Department of Environmental Protection, Bureau of Safe Drinking Water. (2015). Pennsylvania public water system compliance report. Retrieved from http://www.dep.pa.gov/business/water/bureausafedrinkingwater/pages/default.aspx

[32] Centers for Disease Control and Prevention. (2016, Aug 19). Community water fluoridation, 2014 water fluoridation statistics. [Data File]. Retrieved from https://www.cdc.gov/fluoridation/statistics/2014stats.htm

[33] American Dental Association and Centers for Disease Control and Prevention. (2006). Nature's way to prevent tooth decay: water fluoridation. [pdf file]. https://www.cdc.gov/fluoridation/pdf/natures_way.pdf

[34] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[35] Pennsylvania Department of Health. (2018, Mar). 2015 Pulse of Pennsylvania's dentist and dental hygienist workforce, a report on the 2015 survey of dentists and dental hygienists, Volume 7. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[36] United States Department of Health and Human Services. (n.d.). Healthy People 2020. (2018). Oral Health. https://www.healthypeople.gov/2020/topics-objectives/topic/oral-health

[37] United States Department of Health and Human Services. (2019, Feb). State-Based Oral Health Programs. Retrieved from https://www.cdc.gov/oralhealth/state_programs/index.htm

[38] The Community Guide. (n.d.). Dental Caries (Cavities): Community Water Fluoridation. Retrieved from https://www.thecommunityguide.org/findings/dental-caries-cavities-community-water-fluoridation

[39] United States Department of Health and Human Services. (2016, Apr). Community Water Fluoridation. Retrieved from https://www.cdc.gov/fluoridation/faqs/community-water-fluoridation.html

[40] The Community Guide. (n.d.). Dental Caries (Cavities): School-Based Dental Sealant Delivery Programs. Retrieved from https://www.thecommunityguide.org/findings/dental-caries-cavities-school-based-dental-sealant-delivery-programs

Behavioral Health Care

In 2017, Mental Health America (MHA) reports that 19 percent of adults with a mental illness were uninsured in states that did not expand Medicaid vs. 13 percent in states that did.[1]

As with physical illness, mental illness and substance abuse problems span a broad range of conditions from self-limiting adjustment reactions to lifelong alcoholism or bipolar illness. The cost of treating these conditions and the effectiveness of these treatments also varies widely. Historically, access to mental illness and substance abuse problems has been extremely limited, and those in greatest need of these services have the least access. Further, the stigma of these conditions strongly inhibits education and dissemination of information that might begin to address some of these difficulties.[2]

National and State Goals

Healthy People 2020

The U.S. Department of Health and Human Services set Healthy People 2020 goals to improve mental health through prevention and ensure access to appropriate, quality mental health services.[3]

For children with mental health problems, Healthy People 2020 includes an objective of increasing the proportion of those who receive treatment from a 2008 baseline of 68.9 percent to 75.8 percent.[4]

For adults aged 18 years and older who have serious mental illness (SMI), the Healthy People 2020 objective is to increase the proportion who receive treatment from a 2008 baseline of 65.7 percent to 72.3 percent.[5]

Pennsylvania

In Pennsylvania, the Department of Human Services (DHS), Office of Mental Health and Substance Abuse Services (OMHSAS), has identified the following priorities:[6]

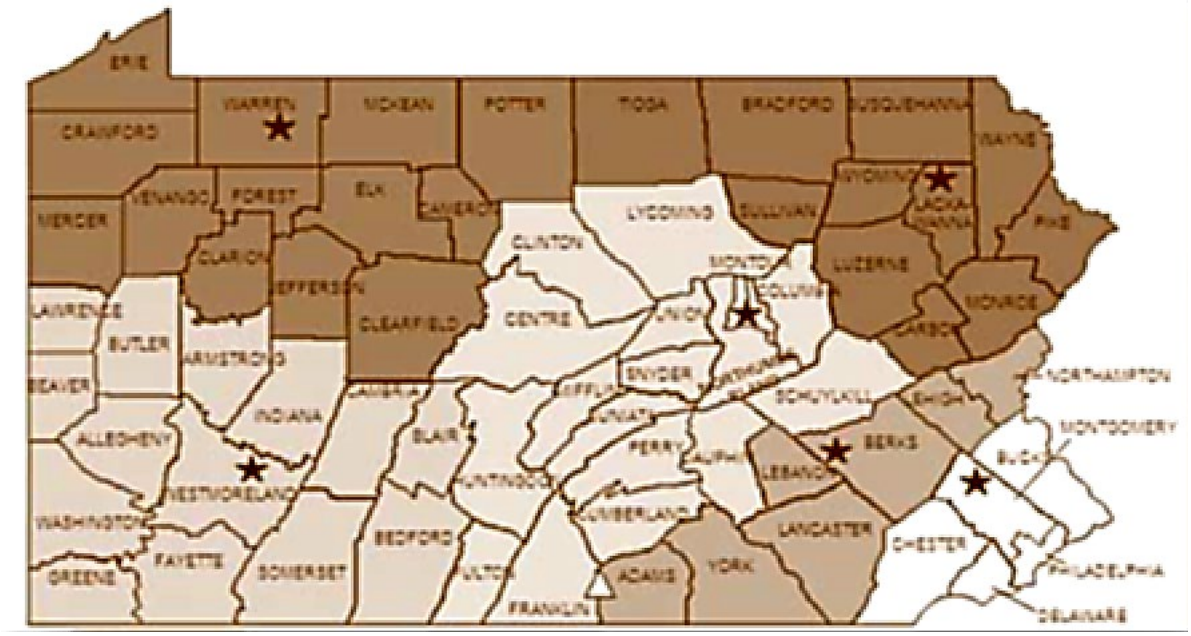
- Transform the children's behavioral health system to one that is family-driven and youth-guided;
- Implement services and policies to support recovery and resiliency in the adult behavioral health system; and
- Assure that behavioral health services and supports recognize and accommodate the unique needs of older adults.

In 2017, there were 573,568 individuals provided state mental health services through Medicaid and other mental health funding sources, a rate of 44.87 per 1,000 population, compared to the national rate of 23.0 per thousand. This was an increase of 5.6 percent from the 2016 total individuals served figure. Of these individuals, 96 percent were funded by Medicaid only. Females accounted for 52.0 percent and males, 48.0 percent of individuals served. Individuals through age 20 made up 35.9 percent, ages 21 through 64 were 59.6 percent and 65 and greater was 4.4 percent. Use of mental health services in 2017 by whites was 64.5 percent, blacks was 22.0 percent, and Hispanics was 12.9 percent. The remaining were other races or not available. The rate of individuals unemployed was 80.2 percent and homeless was 18.7 percent.[7]

Additionally, 47 percent of those individuals are adults with a significant mental illness (SMI) or children with a serious emotional disturbance (SED). The national rate for SMI/SED is 66 percent. In adults that received services, 12 percent have co-occurring mental health and substance use disorders. In children that received services, six percent have co-occurring mental health and substance use disorders. The national rate for adults is 25 percent and children is seven percent.[8]

The remaining state mental health hospitals are indicated in the map below.

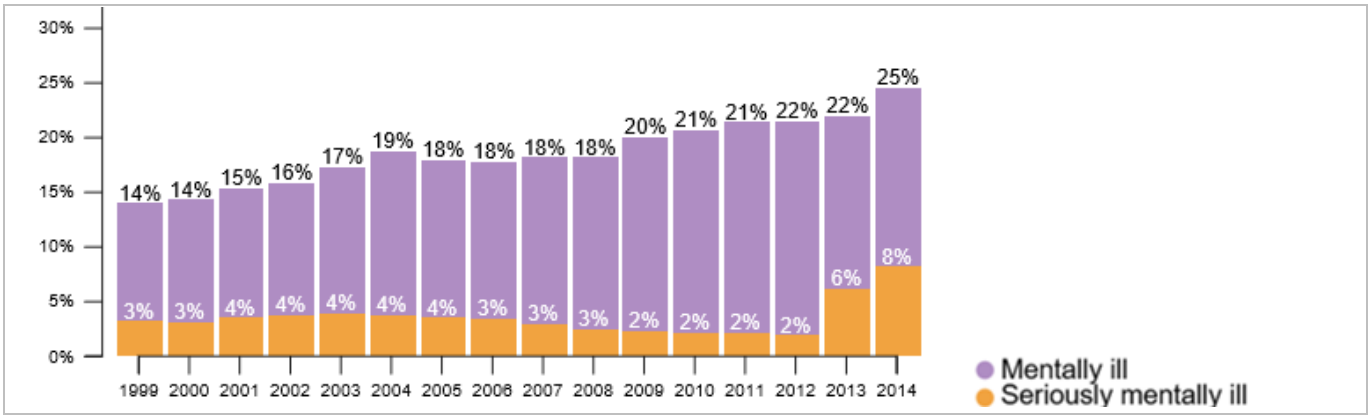
Figure 9.21 State Mental Health Hospitals, Pennsylvania, 2014[9]



Note: The stars indicate the locations of the six state psychiatric hospitals operated by the Pennsylvania Department of Human Services.

The chart below shows prison population in Pennsylvania that was assessed as having mental illness and serious mental illness. The increase in the seriously mentally ill was caused in large part in 2013 by a lawsuit and investigation by the U.S. Department of Justice that resulted in a look at how the department was assessing mental illness and, specifically, serious mental illness. The prison population in 1999 was around 36,000, and in 2014 it was over 51,000.[10]

Figure 9.22 State Prison Population with Mental Illness and Serious Mental Illness, Pennsylvania, 1999-2014[11]

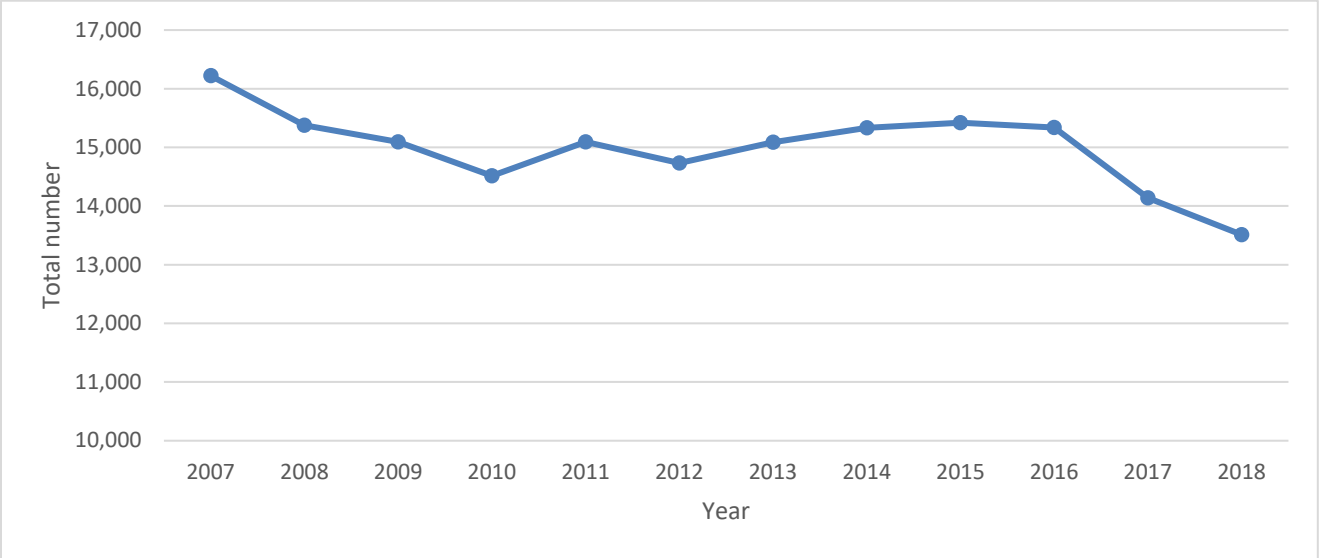


According to Leonard D. Schaeffer Center for Health Policy & Economics, the total economic burden due to serious mental illness in Pennsylvania in 2015 was $5.2 billion (schizophrenia), $5.4 billion (bipolar disorder) and $8.6 billion (major depressive disorder). In 2013, Pennsylvania state mental health agency expenditure was the fifth highest in the nation ($292 per person), with the U.S. average of $127 per person. In 2014, Medicaid-to-Medicare

reimbursement ratio for mental health problems was 0.67, very similar to the U.S. average of 0.66. This could hinder mental health patients from getting the health care they need.[12]

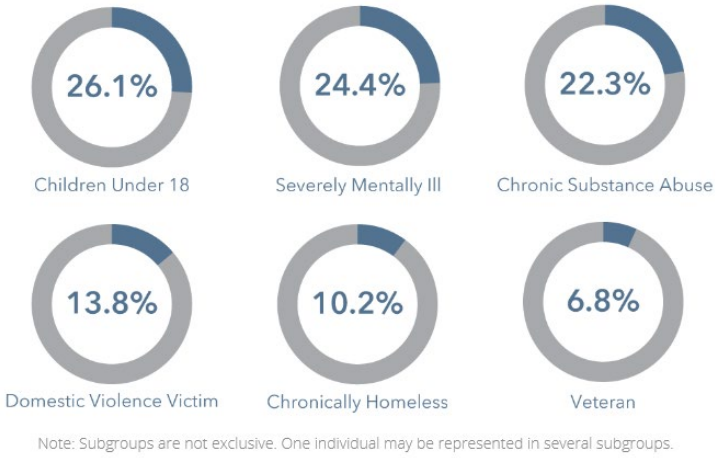
Mental illness is a risk factor for incarceration. In 2014, annual costs due to serious mental illness in Pennsylvania state prisons amounted to almost half a billion dollars.[13] Mental illness is also a risk factor for homelessness. Of homeless people in Pennsylvania in 2017, 24.4 percent were severely mentally ill (Figure 9.24.)

Figure 9.23 Total Number of Homeless People, Pennsylvania, 2007-2018[14]



Of a total of 14,138 persons in 2017, over half (53.3 percent) of the homeless population were black or African-American. White persons represented 40.9 percent, and just under 6 percent of Pennsylvania's homeless individuals were of another race. Over 10 percent were Hispanic.

Figure 9.24 Homeless Population by Subgroup, Pennsylvania, 2017[15]



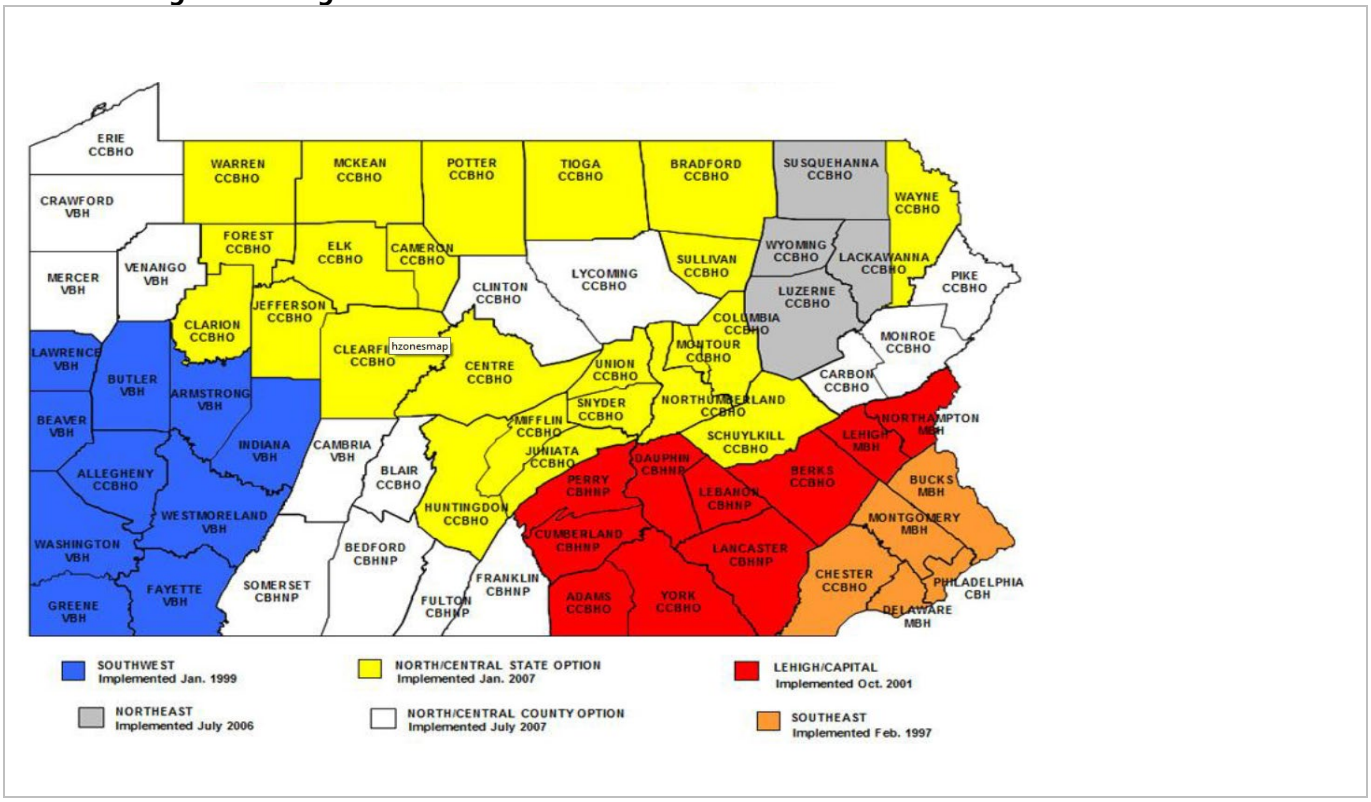
Availability of Care

DHS first implemented the HealthChoices Behavioral Health (HC-BH) program in southeast Pennsylvania in 1997 to ensure greater access to services and improve quality while managing costs. Ten years later, OMHSAS completed the statewide implementation of Medicaid behavioral health managed care in all 67 counties.

The HC-BH program functions in partnership with county government, which is legally responsible for providing and managing mental health services under the Mental Health Act of 1966. County government is given the "right

of first opportunity" to bid on the HC-BH program to manage risk-based contracts. Medicaid-eligible individuals enrolled in the program are automatically enrolled in the BH program in their county of residence. The HC-BH program allows flexibility to make decisions that meet the unique needs of the county and, if savings are created, the county must reinvest the money in approved programs and supports that meet the needs of the population.

Figure 9.25 HealthChoices Behavioral Health Program Coverage Map, by County, Zone and Behavioral Health Managed Care Organization 2018[16]



Adolescents — Recent national studies of adolescents' access to mental health services noted that, although about 20 percent of adolescents have mental health disorders, only a small number receive treatment.[17] Groups with the greatest need for mental health services include: lesbian, gay, bisexual and transgender adolescents; adolescents overseen by the child welfare and juvenile justice systems; and homeless adolescents.[18,19,20]

The mental health needs of adolescents are often identified at school, where students spend much of their time. However, a severe shortage of trained providers hampers efforts to address these needs.[21]

The best opportunity to reduce the health and economic costs associated with these disorders involves intervention before the development of a mental health disorder in adolescence. This offers the best opportunity to reduce health and economic costs associated with these disorders.[22,23]

Adults — As shown in Figure 9.26, sex-related variances exist in numbers of adults who self-reported poor mental health. For both the state and the nation, just under one-third of men report poor mental health. However, the percent of women who report poor mental health in Pennsylvania, 44 percent, is higher than the national rate of 40.4 percent.[24]

Individuals who identified as lesbian, gay or bisexual (57 percent) were more likely than individuals who identified as straight (3 percent) to have poor mental health days. The map below gives this same data analyzed using three

years of data by regions and shows that Erie and Philadelphia have greater risk of adults reporting poor mental health days than the rest of the state.

Figure 9.26 Adults Reporting Mental Health Not Good 1 or More Days in the Past Month by Demographics, Pennsylvania, 2017[25]

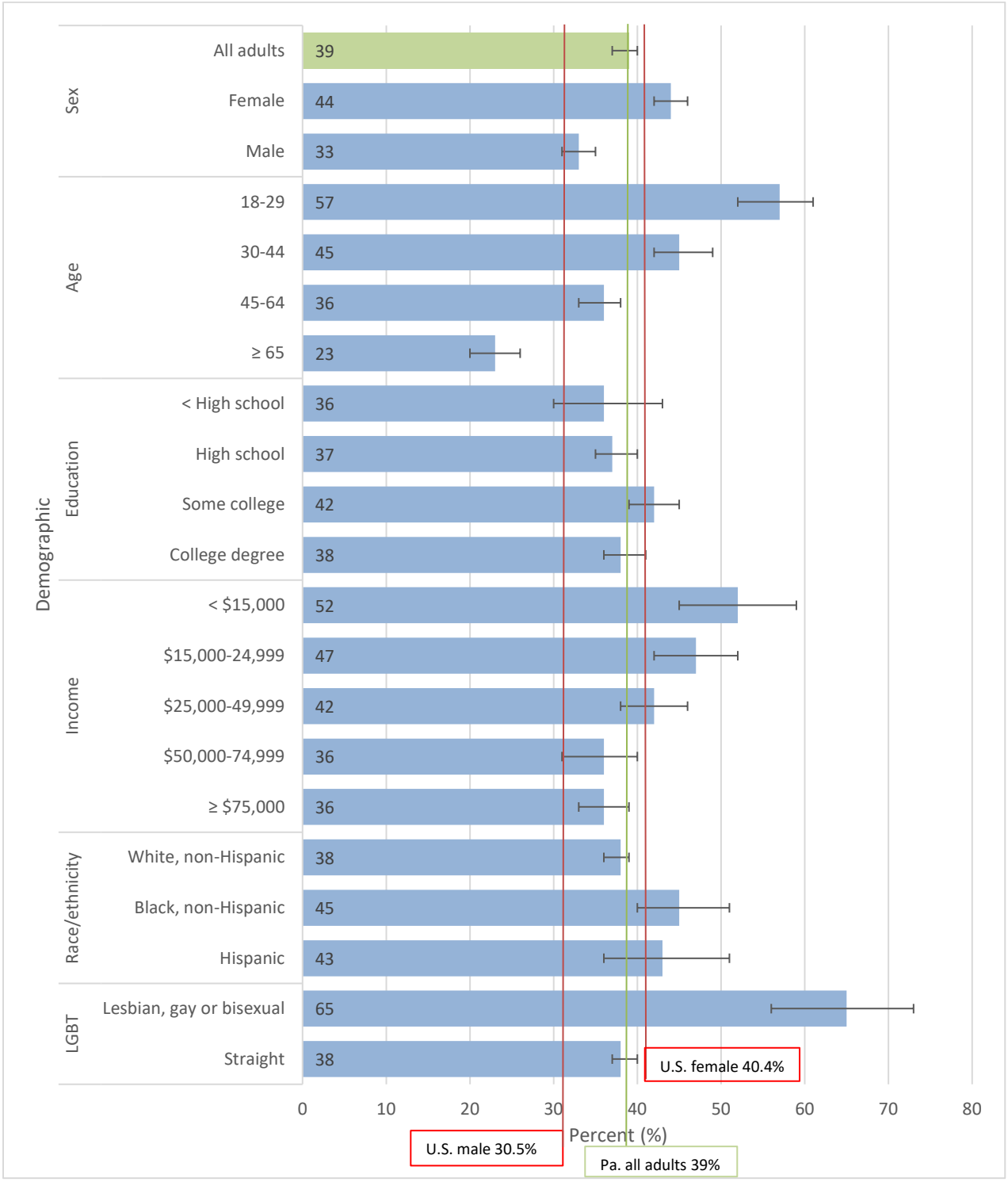
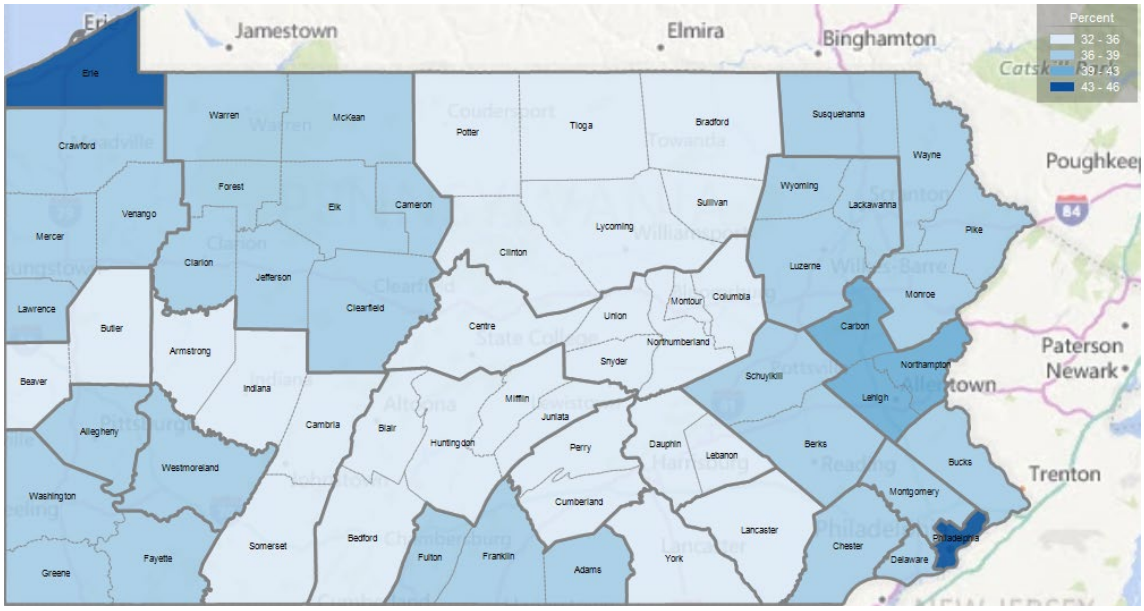


Figure 9.27 Adults Reporting Mental Health Not Good 1 or More Days in the Past Month, Pennsylvania, 2015-2017[26]



The table below, 9.13, shows higher rates of poor mental health days by region, education and income. The region is only shown if one or more of these factors showed statistically significant differences from that factor with the state overall. For example, in Philadelphia, people with less than high school education are more likely to have poor mental health days than people with similar education levels in the state.

Table 9.13 Adults Reporting Mental Health Not Good 1 or More Days in the Past Month by Regions, Education and Income, Pennsylvania, 2015-2017[27]

Region	All Adults (%)	Education (%)			Income (%)		
		≤ High School	Some College	College Degree	≤ $25,000	$25,000-49,999	≥ $50,000
Pennsylvania	**38**	**38**	**41**	**36**	**48**	**37**	**35**
Bradford, Sullivan, Tioga, Lycoming, Clinton, Potter	34	32	39	36	47	36	25
Indiana, Cambria, Somerset, Armstrong	34	31	40	39	43	25	37
Philadelphia	46	48	47	41	51	42	43

- Numbers in red = significantly higher compared to state in this characteristic
- Numbers in blue = significantly lower compared to state in this characteristic
- Regions with non-significant numbers for all the categories are not displayed.

The table below, 9.14, shows higher rates of poor mental health days by region, sex and age. The region is only shown if one or more of these factors showed statistically significant differences from that factor with the state overall. For example, in Erie, males are more likely to have poor mental health days than males in the state.

Table 9.14 Adults Reporting Mental Health Not Good 1 or More Days in the Past Month by Regions, Sex and Age, Pennsylvania, 2015-2017[28]

Region	All Adults (%)	Sex (%)		Age (%)		
		Female	Male	18-44	45-64	≥ 65
Pennsylvania	**38**	**43**	**32**	**47**	**36**	**23**
Dauphin, Lebanon	33	38	28	37	37	19
Erie	44	46	41	55	43	22
Philadelphia	46	50	41	50	47	30

- Numbers in red = significantly higher compared to state in this characteristic
- Numbers in blue = significantly lower compared to state in this characteristic
- Regions with non-significant numbers for all the categories are not displayed.

Table 9.15 Adults Reporting Mental Health Not Good 1 or More Days in the Past Month by Regions, Race, Ethnicity, Sex Orientation and Transgender Status, Pennsylvania, 2015-2017[29]

Region	All Adults (%)	Race/Ethnicity (%)		Sex Orientation (%)		Transgender Status (%)	
		White, non-Hispanic	Other (Including Hispanic)	Lesbian, Gay or Bisexual	Straight	Transgender	Not Transgender
Pennsylvania	**38**	**37**	**42**	**58**	**37**	**46**	**38**
York	33	30			33		34
Dauphin, Lebanon	33	33	33		30		30
Philadelphia	46	46	45	70	44		46

- Numbers in red = significantly higher compared to state in this characteristic
- Numbers in blue = significantly lower compared to state in this characteristic
- Regions with non-significant numbers for all the categories are not displayed.

Unmet Needs

According to the Agency for Healthcare Research and Quality, "barriers to high-quality mental health care include cost of care, lack of sufficient insurance for mental health services, social stigma, fragmented organization of services and mistrust of providers. In rural and remote areas, limited availability of skilled care providers is also a major problem. For racial and ethnic populations, these problems are compounded by the lack of culturally and linguistically competent providers."[30]

Mental disorders are among the most common causes of disability, accounting for 25 percent of all years of life lost due to disability and premature mortality.[31] Mental health has a major role in a person's ability to maintain good physical health; mental illnesses such as depression and anxiety affect the ability to engage in health-promoting behaviors. In turn, physical health issues such as those related to chronic disease can have a serious impact on mental health and decrease a person's ability to participate in treatment and recovery.[32]

The National Institute of Mental Health reports an estimated 13 million American adults (approximately one in 17) have a seriously debilitating mental illness.[33,34] Additionally, suicide is the 10th leading cause of death in the United States in 2016[35] and the 11th leading cause in Pennsylvania, accounting for the deaths of 1,960 Pennsylvanians in 2016.[36] For more information about the populations in Pennsylvania at highest risk for suicide, see the section Major Risk and Protective Factors of this report.

Table 9.16 Estimated Number of Persons Needing but Not Receiving Treatment by Age Group, Pennsylvania, 2016[37]

	Age Groups Estimated numbers (in thousands) and percent (%)				
	12 to 17	18 to 25	26 and up	12 and up Youth & adults	18 and up Adults only
Needing but not receiving treatment for illicit drug use	21 (2.23%)	82 (6.79%)	158 (6.09%)	261 (2.41%)	240 (2.42%)
Needing but not receiving treatment for alcohol use	19 (2.03%)	156 (15.08%)	419 (11.60%)	594 (5.48%)	575 (5.8%)

Table 9.16 provides some detail about youth and adults who are "needing but not receiving treatment." This refers to respondents who are classified as needing treatment for use of illicit drugs or alcohol, but not receiving treatment for that problem at a specialty facility (i.e., inpatient or outpatient drug and alcohol rehabilitation facility, inpatient hospital, or mental health center). This information is estimated.

The Pennsylvania Department of Drug and Alcohol Program (DDAP) compiles a Case Management Resource Report (CMRR) annually, based on data reported to DDAP by Single County Authorities (SCAs), providers of publicly-funded services. The report does not include data from those whose treatment services were paid by private insurance and, therefore, provides an incomplete picture of treatment services in Pennsylvania.

Intervention Strategies

Preventive mental health services, expansion of services, increased access to mental health care, and the integration of behavioral health and physical health all promote evidence-based patient outcomes.

Prevent suicide — Suicide claimed the lives of 2,030 Pennsylvanians in 2017, an average of 5.6 lives each day.[38] Pennsylvania has a newly developed statewide suicide prevention organization, funded by the Office of Mental Health and Substance Abuse Services (OMHSAS) that represents both the former Adult/Older Adult Suicide Prevention Coalition and the Pennsylvania Youth Suicide Prevention Initiative. Prevent Suicide PA has its own website that provides resources for suicide prevention across the lifespan, as well as information for family members, survivors and professionals. The site also offers information on the efforts of county suicide prevention task forces and other community organizations and links people to resources within their local communities. In December 2017, through support of the Garrett Lee Smith Suicide Prevention Grant, Prevent Suicide PA launched a new online learning center with 15 free courses for stakeholders in school, health care and mental health settings.

In September 2014, Pennsylvania received its third Garrett Lee Smith Youth Suicide Prevention Grant (i.e., Suicide Prevention in Pennsylvania Schools and Colleges Initiative) funded by the Substance Abuse and Mental Health Services Administration (SAMHSA). The goal of this project is to implement suicide prevention and early intervention strategies for youth ages 10 to 24 years at risk for suicide, with emphasis on educational settings and the Pennsylvania Student Assistance Program (SAP). The grant includes coverage for gatekeeper training, suicide risk management training, standardized screening, and training in empirically supported treatments with goals of raising awareness, increasing identification of at-risk youth, facilitating referrals to treatment, and improving treatment outcomes.

This project is statewide in scope and aims to achieve the following goals:

- Increase the staff in schools, colleges and universities trained to identify and refer youth at risk of suicide;

- Increase the number of youths screened, identified and referred to treatment;
- Increase the number of clinical service providers (i.e., those working in educational and behavioral health settings) trained to assess, manage and treat youth at risk of suicide;
- Increase awareness about youth suicide prevention among youth, families, educators and community members, with an emphasis on promotion and utilization of the National Suicide Prevention Lifeline;
- Implement sections of the National Strategy for Suicide Prevention (2012) to reduce rates of suicidal ideation, suicide attempts and suicide-related deaths; and
- Promote statewide, systems-level change to advance youth suicide prevention efforts in Pennsylvania schools and colleges.

Improve geriatric behavioral health care — New Hope Behavioral Health Unit at Corry Memorial Hospital, a critical access hospital, is an inpatient treatment center for geriatric patients who are a danger to themselves or others. All area hospitals contract with a single group of behavioral health professionals through Deerfield Behavioral Health, which provides psychiatrists who treat patients in the Behavioral Health Unit, as well as social workers who conduct free, in-home behavioral health assessments for community residents. The Behavioral Health Unit has a 50- to 75-mile service radius covering the rural, tri-state area of northwestern Pennsylvania, Chautauqua County in southwestern New York and Ashtabula County in northeastern Ohio. The New Hope Behavioral Health Unit is the only behavioral health unit in the state and one of a few behavioral health units in the country. The Behavioral Health Unit sees its impact on availability to rural residents as the most important service provided.[39]

Expand services — The 2009 National Alliance on Mental Health comprehensive state-by-state analysis of mental health care systems rated Pennsylvania with a C grade, which represented progress, although not a standard of excellence. Strengths included: national leader in reducing use of seclusion and restraints; consumer and family satisfaction teams in the counties; and implementation of assertive community treatment (ACT), integrated dual diagnosis treatment (IDDT) and other evidence-based practices. Identified needs in the report were an adequate mix of hospital and community services, expansion of mental health courts and jail diversion programs statewide, and statewide police crisis intervention teams.[40] In 2014 and 2015, Pennsylvania increased the state mental health authority budget, along with most states of the U.S.[41,42]

The 2008 Mental Health Parity and Addiction Equity Act (MHPAEA) sought to improve access to mental health and substance use services. Insurers are required to make formulation of benefits, utilization management and out-of-pocket payments equivalent between behavioral health services and other medical services. However, it is important to note that MHPAEA does not mandate that a plan provide mental health/substance use disorder benefits. Rather, if a plan provides medical/surgical and mental health/substance use disorder benefits, it must comply with the MHPAEA's parity provisions. Also, MHPAEA does not apply to issuers who sell health insurance policies to employers with 50 or fewer employees or who sell health insurance policies to individuals.[43] In addition to MHPAEA, Pennsylvania has Act 106 of 1989 that requires minimum coverage for alcohol and substance abuse treatment.[44]

Pennsylvania has joined the national movement to enhance trauma-informed care and services within residential facilities. The goal is to provide best practices, high quality programming, technical assistance and resources to assist residential facilities in achieving the ultimate goal of eliminating the need for the use of coercive techniques in residential facilities.

Focus on recovery — The Community Support Program (CSP) provides consumers, family members and professionals a forum to help shape the continued transformation of mental health services in Pennsylvania into a recovery-oriented system. The CSP has four regional committees that support the development of local committees and coalitions. All committees are comprised of mental health consumers, family members and

professionals. Both the regional and local CSP committees provide a community-based avenue for education, information-sharing and for collective input on major successes and concerns regarding community mental health services. Concerns and recommendations are then shared with the OMHSAS Adult Advisory Committee.[45]

The public children's behavioral health system in Pennsylvania is based on the principles and framework developed through the Child and Adolescent Service System Program (CASSP). The principles are child-centered, family-focused, community-based, multi-system, culturally competent and least restrictive/least intrusive.[46]

The Special Pharmacy Benefits Program for Mental Health (SPB-MH) provides payment for certain atypical antipsychotic medications, in any form as prescribed, for eligible participants with behavioral health needs. The SPBP-MH formulary includes Abilify, Clozaril, Clozapine, Geodon, Invega, Risperdal, Risperidone, Seroquel or Zyprexa.[47]

Endnotes

[1] Mental Health America. (n.d.). 2017 State of mental health in America – access to care data. Retrieved from http://www.mentalhealthamerica.net/issues/2017-state-mental-health-america-access-care-data

[2] Stuart, H. (2016). Reducing the stigma of mental illness. *Global Mental Health*, Vol. 3. Retrieved from https://www.cambridge.org/core/journals/global-mental-health/article/reducing-the-stigma-of-mental-illness/261AB4B0FCF056F137883350AF1133BF/core-reader

[3] United States Department of Health and Human Services. (n.d.). Healthy people 2020, mental health and mental disorders. Retrieved from http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=28

[4] United States Department of Health and Human Services. (n.d.). Healthy People 2020, mental health and mental disorders. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives

[5] United States Department of Health and Human Services. (n.d.). Healthy People 2020, mental health and mental disorders. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders/objectives

[6] Pennsylvania Department of Human Services. (n.d.). Office of Mental Health and Substance Abuse Services. Retrieved from http://www.dhs.pa.gov/learnaboutdhs/dhsorganization/officeofmentalhealthandsubstanceabuseservices/index.htm

[7] Substance Abuse and Mental Health Services. (2017). Pennsylvania 2017 Mental Health National Outcome Measures. SAMHSA Uniform Reporting System. Retrieved from https://www.samhsa.gov/data/sites/default/files/cbhsq-reports/Pennsylvania-2017.pdf

[8] Pennsylvania Department of Human Services (2013). Office of Mental Health and Substance Abuse Services. [Data Request]

[9] Pennsylvania Department of Human Services. (n.d.). State hospitals. Retrieved from http://www.dhs.pa.gov/citizens/statehospitals/

[10] Pennsylvania Department of Corrections, Bureau of Planning, Research, and Statistic. (2019). Email.

[11] Pennsylvania Department of Corrections, Bureau of Planning, Research, and Statistic. (2019). Email.

[12] Heun-Johnson, H., Menchine, M., Goldman, D., Seabury, S. (2017, Feb). The Cost of Mental Illness: Pennsylvania Facts and Figures. *USC Schaeffer, Leonard D. Schaeffer Center for Health Policy and Economics.* [pdf file]. Retrieved from https://healthpolicy.usc.edu/wp-content/uploads/2018/07/PA-Facts-and-Figures.pdf

[13] Heun-Johnson, H., Menchine, M., Goldman, D., Seabury, S. (2017, Feb). The Cost of Mental Illness: Pennsylvania Facts and Figures. *USC Schaeffer, Leonard D. Schaeffer Center for Health Policy and Economics.* [pdf file]. Retrieved from https://healthpolicy.usc.edu/wp-content/uploads/2018/07/PA-Facts-and-Figures.pdf

[14] United States Department of Housing and Urban Development. (2018, Dec). Retrieved from https://www.hudexchange.info/resource/3031/pit-and-hic-data-since-2007/

[15] Pennsylvania State Data Center. (n.d.) Homelessness in the commonwealth. [storymap] Retrieved from https://pasdc.maps.arcgis.com/apps/Cascade/index.html?appid=0f41a2dc12a14adb94e1ccf41fc70eba

[16] Pennsylvania Department of Human Services. [n.d.]. HealthChoices Behavioral Health Zones. [pdf file] Retrieved from http://www.dhs.state.pa.us/cs/groups/WebContent/documents/Document/P_035976.pdf

[17] Knopf, D., Park, M. J., & Mulye, T. P. (2008). The mental health of adolescents: A national profile, 2008. *National Adolescent Health Information Center.* [pdf file]. Retrieved from http://nahic.ucsf.edu/downloads/MentalHealthBrief.pdf

[18] Mustanski, B. S., Garofalo, R., & Emerson, E. M. (2010, Dec). Mental health disorders, psychological distress, and suicidality in a diverse sample of lesbian, gay, bisexual, and transgender youth. *American Journal of Public Health, 100*(12), 2426-2432. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2978194/

[19] Morrow, S., & Howell, E. (2010). State mental health systems for children. *Urban Institute.* Retrieved from https://www.urban.org/sites/default/files/publication/29126/412207-state-mental-health-systems-for-children-a-review-of-the-literature-and-available-data-sources.pdf

[20] United States Interagency Council on Homelessness. (2015, July 15). *Opening doors: Federal strategic plan to prevent and end homelessness. executive summary*. [pdf file]. Retrieved from https://www.usich.gov/resources/uploads/asset_library/USICH_OpeningDoors_Amendment2015_FINAL.pdf

[21] Murphey, D, Vaughn, B, Barry, M. (2013). Access to Mental Health Care. *Child Trends.* Retrieved from https://www.childtrends.org/wp-content/uploads/2013/04/Child_Trends-2013_01_01_AHH_MHAccessl.pdf

[22] Schwarz, S. W. (2009, Jun). Facts for Policymakers: Adolescent mental health in the United States. *National Center for Children in Poverty.* [pdf file]. Retrieved from http://nccp.org/publications/pdf/text_878.pdf

[23] Merikangas, K. R., He, J., Burstein, M., Swanson, et al. (2010, Oct). Lifetime prevalence of mental disorders in U.S. adolescents: results from the national comorbidity study-adolescent supplement (NCS-A). *Journal of the American Academy of Child and Adolescent Psychiatry, 49*(10), 980-989. Retrieved from https://psychiatry-training.wiki.otago.ac.nz/images/2/22/Merikangas10.pdf

[24] Pennsylvania Department of Health. (2017). *Enterprise Data Dissemination Informatics Exchange, Behavioral Risk Factor Surveillance System (BRFSS)*. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[25] Pennsylvania Department of Health. (2017). *Enterprise Data Dissemination Informatics Exchange, Behavioral Risk Factor Surveillance System (BRFSS)*. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[26] Pennsylvania Department of Health. (2017). *Enterprise Data Dissemination Informatics Exchange, Behavioral Risk Factor Surveillance System (BRFSS)*. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSregMap.aspx

[27] Pennsylvania Department of Health. (2017). *Enterprise Data Dissemination Informatics Exchange, Behavioral Risk Factor Surveillance System (BRFSS)*. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[28] Pennsylvania Department of Health. (2017). *Enterprise Data Dissemination Informatics Exchange, Behavioral Risk Factor Surveillance System (BRFSS)*. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[29] Pennsylvania Department of Health. (2017). *Enterprise Data Dissemination Informatics Exchange, Behavioral Risk Factor Surveillance System (BRFSS)*. Retrieved from https://www.phaim1.health.pa.gov/EDD/WebForms/BRFSSstate.aspx

[30] Agency for Healthcare Research and Quality. (2018, Dec). National health care disparities report. Retrieved from https://www.ahrq.gov/research/findings/nhqrdr/index.html

[31] World Health Organization. (n.d.). The World Health report 2004: Changing history, annex table 3: burden of disease in DALYs by cause, sex, and mortality stratum in WHO regions, estimates for 2002, A126-A127. Retrieved from https://www.who.int/whr/2004/annex/en/

[32] United States Department of Health and Human Services. (2019, Nov.). Mental Health and Mental Disorders. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/mental-health-and-mental-disorders

[33] Kessler R. C., Chiu W. T., Demler O, et al. (2005, Jun). Prevalence, severity, and comorbidity of twelve-month DSM-IV disorders in the National Comorbidity Survey Replication. *JAMA Psychiatry (formerly Archives of General Psychiatry).62*(6):617-27. Retrieved from https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2847357/

[34] National Institute of Mental Health. (2013, Oct 1). The numbers count: mental disorders in America. [pdf file] Retrieved from http://www.lb7.uscourts.gov/documents/12-cv-1072url2.pdf

[35] Centers for Disease Control and Prevention. (2017). Leading causes of death and numbers of deaths, by sex, race, and Hispanic origin: United States, 1980 and 2016. [pdf file]. Retrieved from https://www.cdc.gov/nchs/data/hus/2017/019.pdf

[36] Pennsylvania Department of Health. (n.d.). Pennsylvania vital statistics, table C-11A, selected causes of death by age group. [pdf file]. Retrieved from https://www.health.pa.gov/topics/HealthStatistics/VitalStatistics/PAVitalStatistics/Documents/PA_Vital_Statistics_Death_2016.pdf

[37] Substance Abuse and Mental Health Services Administration. (n.d.). 2015-2016 National survey on drug use and health (NSDUH) State-Specific Tables. Retrieved from https://www.samhsa.gov/data/report/2015-2016-nsduh-state-specific-tables

[38] Centers for Disease Control and Prevention, National Center for Health Statistics. (2019, Jan 10). Suicide mortality by state. Retrieved from https://www.cdc.gov/nchs/pressroom/sosmap/suicide-mortality/suicide.htm

[39] LECOM Health, Corry Memorial Hospital. 2018. Behavioral health. Retrieved from http://corryhospital.com/services/behavioral-health/

[40] National Alliance on Mental Health. (2009). Grading the states 2009. Retrieved from https://www.nami.org/grades

[41] National Alliance on Mental Health. (2014, Dec). State mental health legislation 2014: trends, themes & effective practices. Retrieved from https://www.nami.org/legreport2014

[42] National Alliance on Mental Health. (2015, Dec). State mental health legislation 2015: trends, themes & effective practices. [pdf file]. Retrieved from https://www.nami.org/About-NAMI/Publications-Reports/Public-Policy-Reports/State-Mental-Health-Legislation-2015/NAMI-StateMentalHealthLegislation2015.pdf

[43] United States Department of Labor. (2016, Jan). Improving health coverage for mental health and substance use disorder patients, report to congress. [pdf file]. Retrieved from https://www.dol.gov/sites/default/files/ebsa/laws-and-regulations/laws/mental-health-parity/improving-health-coverage-for-mental-health-and-substance-use-disorder-patients.pdf

[44] Pennsylvania Insurance Department. (n.d.). Mental health parity FAQs. Retrieved from https://www.insurance.pa.gov/Coverage/Pages/Mental-Health-Parity-FAQs.aspx

[45] Pennsylvania Department of Human Services. (n.d.). Pennsylvania community support program (CSP). Retrieved from http://www.dhs.pa.gov/communitypartners/pennsylvaniacommunitysupportprogramcsp/index.htm

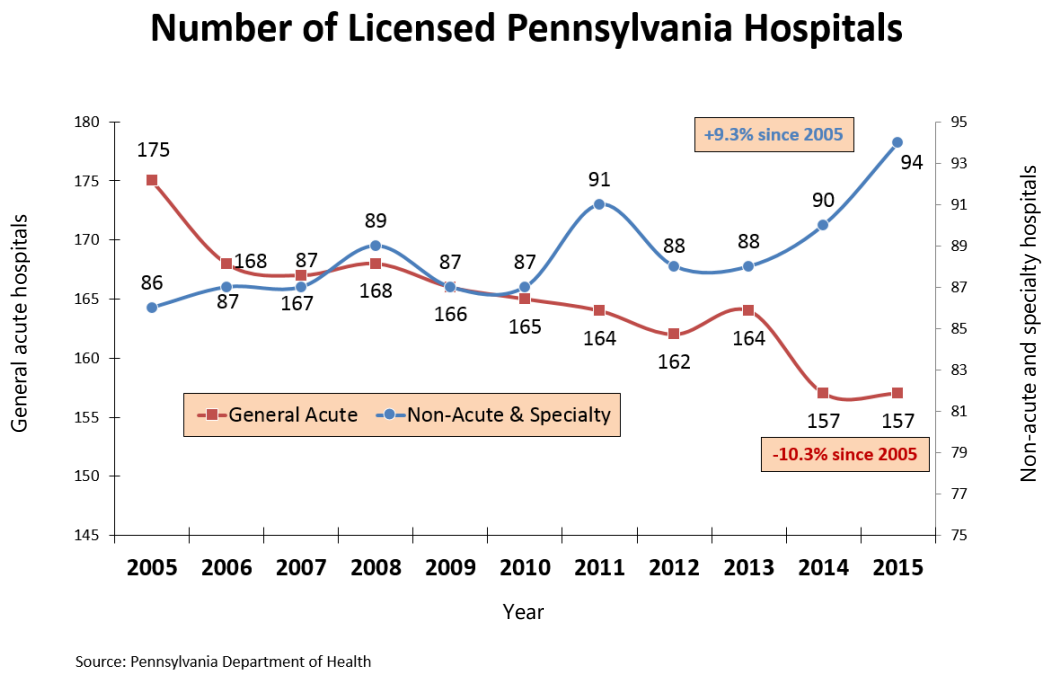
[46] Pennsylvania Department of Human Services. (n.d.). PA recovery, child and adolescent social service program (CASSP). Retrieved from http://www.dhs.pa.gov/parecovery/guildingprinciples/cassp/index.htm

[47] Pennsylvania Department of Human Services. (n.d.). Special pharmaceutical benefits program – mental health. Retrieved from http://www.dhs.pa.gov/provider/healthcaremedicalassistance/specialpharmaceuticalbenefitsprogram/

Hospitals

Pennsylvania's hospitals and health systems ensure that health care services are available 24 hours a day all year long. There were 247 hospitals licensed by the Pennsylvania Department of Health in 2014.[1] During Jan. 1 through Dec. 31, 2017 reporting period, hospitals across the state admitted more than 1.5 million persons, treated nearly 31 million patients in outpatient settings, evaluated about 6.2 million people in the emergency department and delivered nearly 125,000 babies.[2,3]

Figure 9.28 Licensed Hospitals, Pennsylvania, 2005-2015[4,5]



Source: Pennsylvania Department of Health

General Acute Care Hospitals

Due to changes in the health care delivery system, the number of licensed general acute care hospitals has declined. As shown in Figure 9.28, the number of general acute facilities has decreased by 10.3 percent since 2005.[6] Consequently, fewer hospitals are serving more patients and providing these services more efficiently. About 37 percent of the 169 general acute care hospitals in Pennsylvania had negative total margins in fiscal year 2017, an increase from fiscal year 2016 when 30 percent did.[7]

Uncompensated care in general acute care hospitals declined from $843.7 million during fiscal year 2016 to $761 million in fiscal year 2017, continuing the decline that began in 2015.[8]

Table 9.17 Hospitals' Adjusted Expenses per Patient per Day, Non-elderly Uninsured Percentage and Percentage of Non-elderly Population with Employer-based Health Care Coverage, Pennsylvania, 2016, 2017[9,10,11]

Pennsylvania vs. United States	Pennsylvania	United States	Year
Hospital adjusted expenses per inpatient day	$2,332	$2,338	2016
Adults, 19 to 64, uninsured percentage	7.4%	12.3%	2017
Percent of population under 65 with employer-based health care coverage	64.9%	59.1%	2017

Critical Access Hospitals

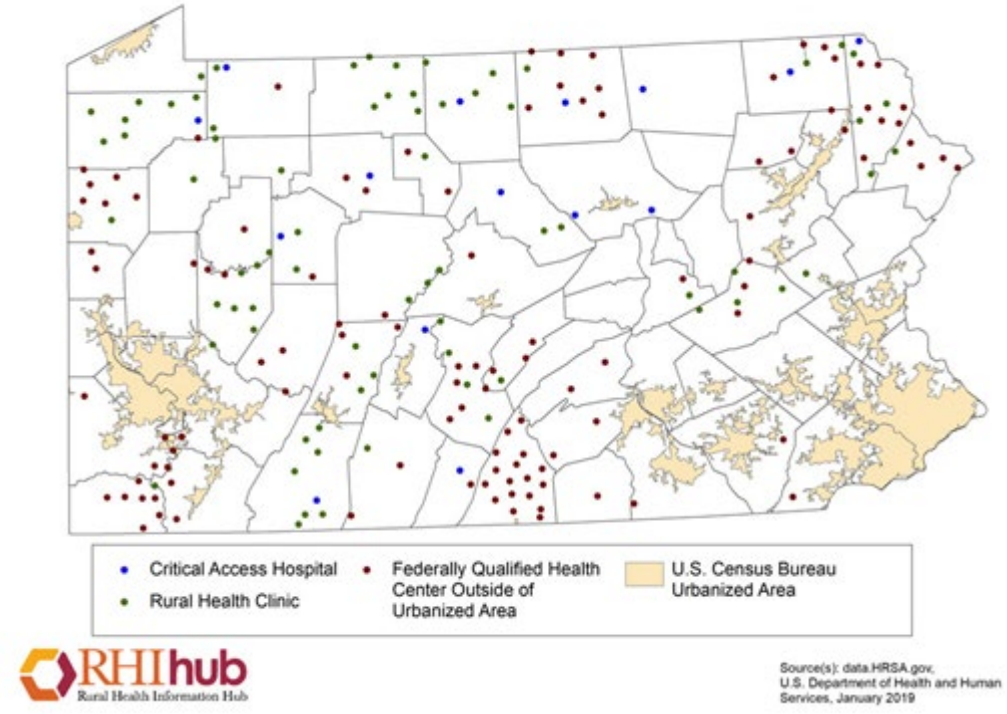
The Medicare Rural Hospital Flexibility Program (Flex) administered by the Federal Office of Rural Health Policy, was created to improve rural residents' access to hospitals and other services. The program created critical access hospitals (CAHs), which are limited service rural hospitals designed to provide essential services.

CAHs are designated by the Centers for Medicare and Medicaid Services as meeting certain criteria: located in a rural area; provides 24-hour emergency care services; provides no more than 25 inpatient beds; has an average length of stay of 96 hours or less; located either > 35 miles from a hospital or another CAH or > 15 miles with mountainous terrain or secondary roads.[12]

Once designated as a CAH, a hospital is eligible for reimbursement of Medicare inpatient and outpatient services at 101 percent of their allowable and reasonable costs, since many lower-volume hospitals need an enhanced payment structure to remain financially viable.[13]

According to the Flex Monitoring Team, 1,349 CAHs are designated nationally (as of Jan. 31, 2019). Of those, Pennsylvania has 15 designated CAHs, as shown by blue dots in Figure 9.29.[14]

Figure 9.29 Selected Rural Health Care Facilities, Pennsylvania, 2018[15]



Resources

National Rural Health Resource Center Technical Assistance and Service Center—http://www.ruralcenter.org

Pennsylvania Healthcare Cost Containment Council—http://www.phc4.org/

Endnotes

[1] Pennsylvania Department of Health. 2017. *Hospital Reports*. Retrieved from https://www.health.pa.gov/topics/HealthStatistics/HealthFacilities/HospitalReports/Pages/hospital-reports.aspx

[2] Pennsylvania Department of Health. 2017. *Hospital Reports*. Retrieved from https://www.health.pa.gov/topics/HealthStatistics/HealthFacilities/HospitalReports/Pages/hospital-reports.aspx

[3] Hospital Association of Pennsylvania. (2016, Mar 30). Facts about Pennsylvania's hospitals and health system. [pdf file]. Retrieved from https://www.haponline.org/Portals/0/docs/Reports-FactSheets/Facts-About-Pennsylvanias-Hospitals-and-Health-SystemsMarch2016.pdf

[4] Hospital Association of Pennsylvania. (2016, Mar 30). Facts about Pennsylvania's hospitals and health system. [pdf file]. Retrieved from https://www.haponline.org/Portals/0/docs/Reports-FactSheets/Facts-About-Pennsylvanias-Hospitals-and-Health-SystemsMarch2016.pdf

[5] Pennsylvania Department of Health. (n.d.). *Hospital reports*. Retrieved from https://www.health.pa.gov/topics/HealthStatistics/HealthFacilities/HospitalReports/Pages/hospital-reports.aspx

[6] Hospital Association of Pennsylvania. (2016, Mar 30). Facts about Pennsylvania's hospitals and health system. [pdf file]. Retrieved from https://www.haponline.org/Portals/0/docs/Reports-FactSheets/Facts-About-Pennsylvanias-Hospitals-and-Health-SystemsMarch2016.pdf

[7] Pennsylvania Health Care Cost Containment Council. (2018, May). Financial analysis 2017, general acute care hospitals. [pdf file]. Retrieved from http://www.phc4.org/reports/fin/17/docs/fin2017report_volumeone.pdf

[8] Pennsylvania Health Care Cost Containment Council. (2018, May). Financial analysis 2017, general acute care hospitals. [pdf file]. Retrieved from http://www.phc4.org/reports/fin/17/docs/fin2017report_volumeone.pdf

[9] United States Census Bureau. (n.d.). American FactFinder. Selected characteristics of health insurance coverage in the United States, 2017 American Community Survey 1-Year estimates. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_1YR_S2701&prodType=table

[10] United States Census Bureau. (n.d.). American FactFinder. Employer-based health insurance by sex by age, universe: civilian noninstitutionalized population, 2017 American Community Survey 1-Year Estimates. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_17_1YR_B27004&prodType=table

[11] Henry J. Kaiser Family Foundation. (2016). State Health Facts, Hospital Adjusted Expenses per Inpatient Day. Retrieved from https://www.kff.org/health-costs/state-indicator/expenses-per-inpatient-day/?currentTimeframe=0&sortModel=%7B%22colId%22:%22Location%22,%22sort%22:%22asc%22%7D

[12] Centers for Medicare and Medicaid Services. (2013, Apr 9). Critical access hospitals. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandComplianc/CAHs.html

[13] Centers for Medicare and Medicaid Services. (2013, Apr 9). Critical access hospitals. https://www.cms.gov/Medicare/Provider-Enrollment-and-Certification/CertificationandComplianc/CAHs.html

[14] Flex Monitoring Team. (2019, Jan 31). Critical access hospital locations. Retrieved from http://www.flexmonitoring.org/data/critical-access-hospital-locations/

[15] United States Department of Health and Human Services. (2019, Jan). Selected rural health care facilities in Pennsylvania. Retrieved from https://www.ruralhealthinfo.org/states/images/pennsylvania-rural-health-facilities.jpg

Emergency Medical Service System

Oversight for Pennsylvania's Emergency Medical Service (EMS) system is based in the Pennsylvania Department of Health's (DOH) Bureau of Emergency Medical Services (BEMS). The EMS system is the bridge between public safety and Pennsylvania's health care system; it includes first responders, emergency vehicles, emergency departments, rescue services, and receiving facilities specializing in trauma, burns, spinal cord injuries, pediatrics, stroke, cardiac disease and rehabilitation. All work together to ensure the provision of timely, quality care.

In 1999, the Bureau of EMS was developed at the DOH. The focus was on having EMS participate as a member of the public health system, and disaster preparedness became a major priority of the EMS office. Following the 9/11 attack, the federal government-funded Public Health Improvement Act provided funding to address shortfalls identified in the public health system. In addition to activities supported by the EMS office, the commonwealth created the Bureau of Public Health Preparedness (BPHP).

The BEMS developed the concept of creating strike teams that could be used in the event of disasters occurring within Pennsylvania. The first use of strike teams was sending resources to New Orleans following Hurricane Katrina. This program has been used successfully in Pennsylvania to respond to flooding that affected Pennsylvania, New York, New Jersey and all New England. Working with the Bureau of Public Health Preparedness, regional EMS councils, EMS Agencies and the Pennsylvania Emergency Management Agency (PEMA), BEMS has built a system capable of responding to all hazard incidents.

The DOH is supported by the Pennsylvania Emergency Health Services Council (PEHSC), which serves as an official advisory body on matters related to the provision of emergency medical services. In providing advice to the department, PEHSC draws upon the expertise of its diverse membership representing hospitals and health care systems, physicians and nurses, ambulance services, fire/rescue services, healthcare insurers, and other related statewide organizations.

Operations

Pennsylvania's EMS resources in 2018 include 444 basic life support ambulance services, 366 advanced life-support ambulances, 17 helicopter emergency medical services and 431 quick response services. Staffing capability for Pennsylvania includes: 3,256 first responders, 29,642 EMTs, 6,948 paramedics, 1,210 pre-hospital registered nurses, 193 pre-hospital physicians and 2,197 medical command physicians. Between Jan. 1 and June 30, 2018, Pennsylvania EMS ambulances responded to over 1.1 million calls for service.

Pennsylvania's poison control system has two accredited poison control centers. The Pittsburgh Poison Center is based at the University of Pittsburgh Medical Center, providing services to 41 percent of Pennsylvania's population. The second Poison Control Center is based at Children's Hospital of Philadelphia, serving 59 percent of Pennsylvania's population and the state of Delaware.[1]

The Pennsylvania 9-1-1 system is overseen by the Pennsylvania Emergency Management Agency. In 2015, Act 12 was passed to allow for changes of technology, governance, instituting efficiencies and reforms, funding and distribution of funds, and public safety answering point (PSAP) inventorying and assessment of current capabilities. The 9-1-1 systems are evolving to use Next Generation 9-1-1 (NG9-1-1) technology to allow communication with PSAPs via text, video and images, in addition to traditional voice.[2]

National Goals

The U.S. Department of Health and Human Services includes trauma system goals with a national target measurable in Pennsylvania:

- Increase the proportion of the population with access to trauma care to 91.4 percent;[3] and
- Increase the proportion of the land mass with access to trauma care to 31.6 percent.[4]

Of Pennsylvania's population, 96 percent has access to a trauma center within 60 minutes by air or ground transportation. The proportion of land mass with access to trauma care by air or ground is 77 percent. However, under conditions in which helicopters cannot be used, that percent decreases to 32 percent.[5]

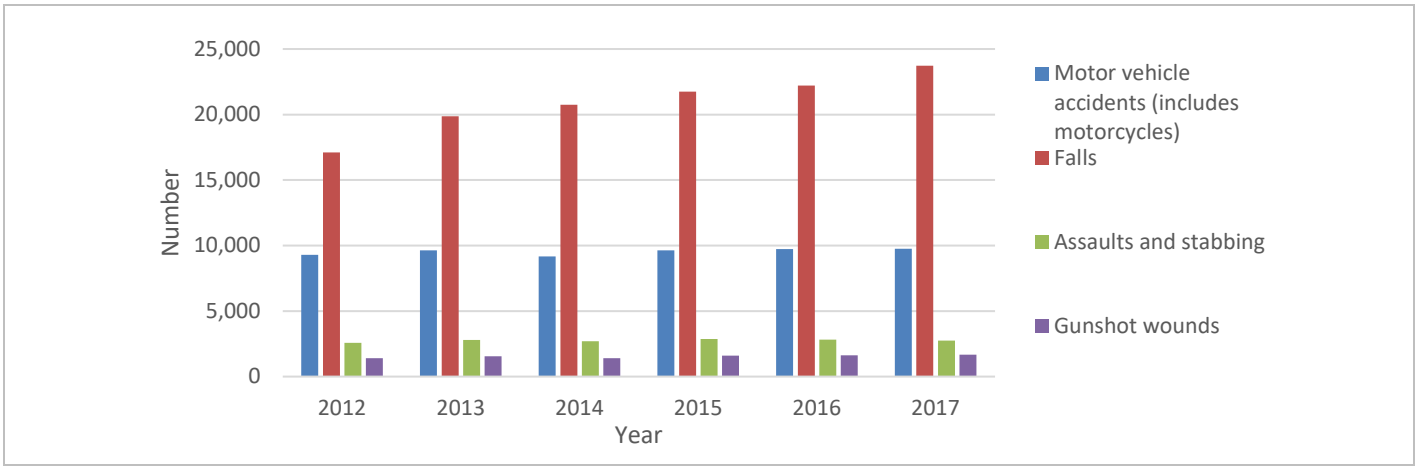
Although Pennsylvania exceeds the Healthy People 2020 target when considering both air and ground transport, the DOH goal is to achieve equal access to trauma center care for all residents.

Trauma System

In Pennsylvania, in 2015, unintentional injury is the leading cause of death for individuals age 1 to 44 and the third leading cause of death in all age groups.[6] The leading cause of injury is falls, followed by motor vehicle collisions. The leading role of falls may be in part due to Pennsylvania's rapidly growing geriatric population. Pennsylvania ranks fifth in percentage of total population age 65 and over and fifth for age 85 and over.[7] Figure 9.30 provides some detail about the leading mechanisms of injury in the state.

Pennsylvania's trauma system is a component of the larger EMS system and involves EMS, acute care facilities, rehabilitation, injury prevention and research.

Figure 9.30 Leading Mechanisms of Injury, Pennsylvania, 2012-2017[8]



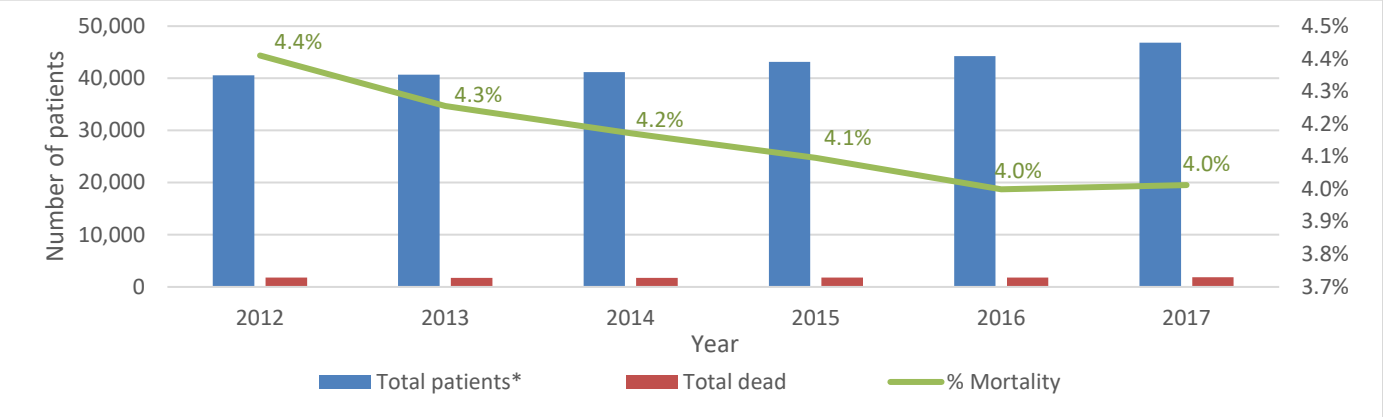
The Pennsylvania Trauma Systems Foundation (PTSF) was established as the accrediting body for trauma centers in Pennsylvania as part of the EMS Act of 1985. The system continues to be a voluntary one, in which hospitals apply to be trauma centers and are accredited based on their compliance with PTSF Standards. At a minimum, a trauma center must meet requirements set by the American College of Surgeons Committee on Trauma. Board members are nominated by state organizations as mandated in the EMS Act. These organizations include the five organizations that were founding members, in addition to the Pennsylvania Trauma Nurse Advisory Council and the majority and minority chairs of the Senate Health and Welfare Committee and the House Health Committee.

There are currently 41 trauma centers in Pennsylvania, encompassing six types of accreditation: Adult Levels I, II, III and IV and Pediatric Levels I and II; all but 10 of the trauma centers are in urban counties. In 2017, a total of 46,828 trauma patients were cared for in Pa. trauma centers. Mortality in Pennsylvania trauma centers has decreased from 4.4 percent to 4.0 percent over a six-year period, even though admissions and severity of injury has increased over the same period.[9] Further, recent data has shown mortality in a county drops because of trauma center accreditation pursuit even if accreditation is not achieved.

Table 9.18 Defining Characteristics of Pennsylvania Trauma Centers[10]

Level I	Can be categorized as either adult trauma centers or pediatric trauma centers. These hospitals provide multidisciplinary treatment and the highest degree of specialized resources for trauma patients. They are required to conduct trauma research and have a surgical residency program. Adult Level I centers are required to treat an annual volume of 600 major trauma patients per year; Pediatric Level I centers are required to treat 200 major pediatric trauma patients per year.
Level II	Can be categorized as either adult trauma centers or pediatric trauma centers These hospitals provide similar experienced medical services and resources, but they do not have research and residency components. The volume requirement is 350 major trauma patients per year for Adult Level II trauma centers and 100 major pediatric trauma patients per year for Level II pediatric trauma centers.
Level III	Smaller community hospitals that have services to care for patients with moderate injuries and the ability to stabilize severe trauma patients in preparation for transport to a higher-level trauma center. These do not require neurosurgical resources. The Trauma Program medical director must be a physician who is a surgeon. No volume requirement.
Level IV	These trauma centers must be able to provide initial care and stabilization of traumatic injury while arranging transfer to a higher level of trauma care. They may also admit trauma patients with minor injuries. These centers do not need surgeon support; the Trauma Program medical director must be a physician but does not need to be a surgeon. No volume requirement.

Figure 9.31 Trauma Patient Cases and Mortality, Pennsylvania, 2012-2017[11]



***P**atients cared for in accredited Pa. trauma centers that meet Pennsylvania Trauma Outcome Study (PTOS) criteria for inclusion

The Ground EMS (GEMS) 60-minute service area is the drive time to each trauma center (all levels, including level 3 and 4), accounting for the average response time and average scene time for scene GEMS transports in PTOS in 2017. These are separated these into rural and urban counties based on the classification used in the PTSF map indicating centers seeking accreditation in September 2018.

For rural counties, the service area is a 31-minute transport time based on an average 11-minute response time and 18-minute scene time. For urban counties, the service area is a 35-minute transport time based on an average nine-minute response time and 16-minute scene time.

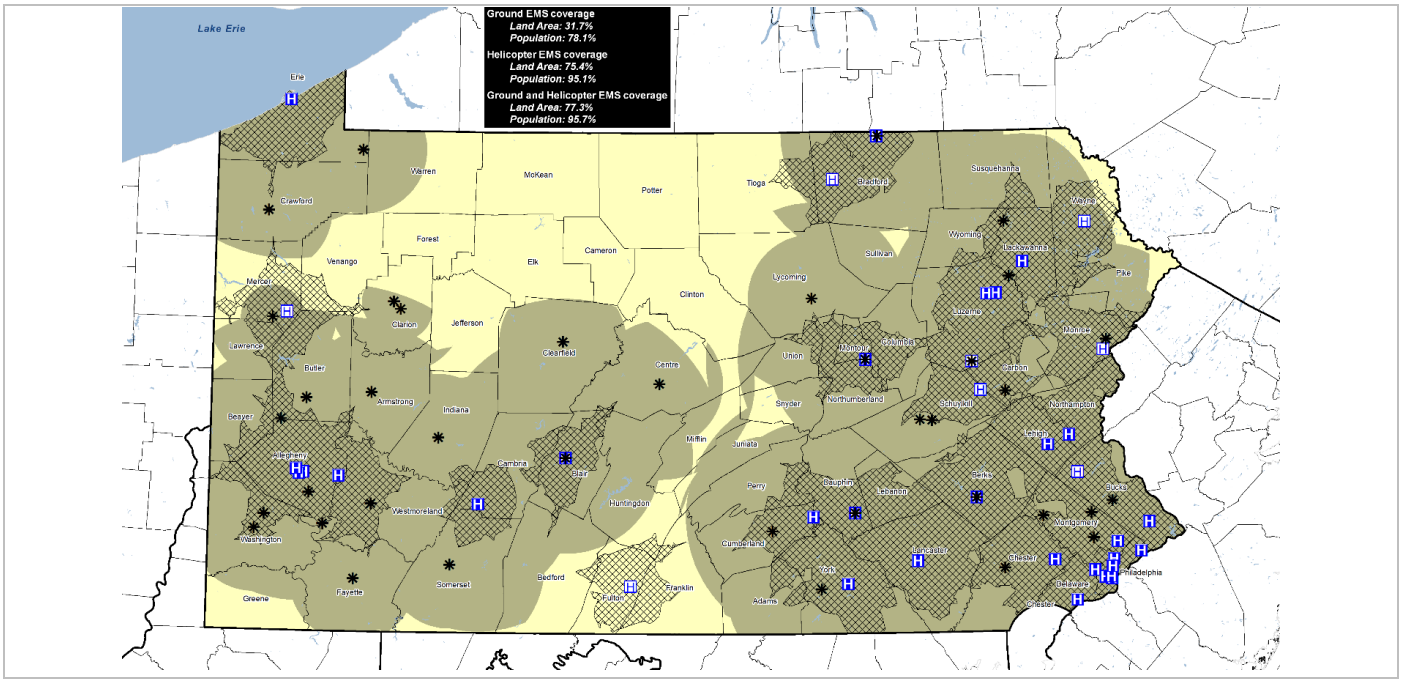
Since there are areas that don't overlap between helicopter EMS (HEMS) and GEMS, these are both calculated.

The GEMS 60-minute service area covers 31.7 percent of the land area and 78.1 percent of population (based on population within U.S. census blocks contained within the service area)

The HEMS 60-minute service area covers 75.4 percent of the land area and 95.1 percent of population.

Combining both HEMS and GEMS 60-minute service areas covers 77.3 percent of the land area and 95.7 percent of population.

Figure 9.32 Access to Trauma Centers, Pennsylvania, 2017-2018[12]



Legend: Helicopter emergency medical service 60 minutes

Ground emergency medical service 60 minutes

Burn Center Care

Pennsylvania is fortunate to have six burn centers within its borders, five as part of accredited Level I trauma centers and five verified by the American Burn Association.[13] Verification of burn centers is a joint program of the American Burn Association and the American College of Surgeons that is designed to verify resources are available on site to provide optimal care to burn patients from the time of injury through rehabilitation.

In 2017, in the five trauma centers that are burn centers, 1,504 burn patients were treated.[14] At these five centers, burn mortality was 2.93 percent in 2017.[15]

Rural Disparities

Pennsylvania has 48 rural counties and 19 urban counties. About 3.5 million residents, or 27 percent of the state's 12.7 residents, lived in rural counties in 2010.[16] The challenges posed for EMT services in Pennsylvania are like those faced in other rural areas. Nationally, death rates from unintentional injuries and suicides are highest in the most rural counties.[17] In 2004, the state passed legislation that mandated that PTSF create standards of accreditation for Level III trauma centers, which were meant to increase access to trauma center care in rural underserved areas of Pennsylvania and required surgeons to provide a leadership role and respond to the needs of moderately or severely injured trauma patients within a 30-minute time frame.

The Level III trauma center effort has had minimal effect; currently, the state has only one such center. In 2011, Pennsylvania Trauma Systems Foundation (PTSF) distributed a questionnaire to gain insight about the reluctance of hospitals to pursue or maintain Level III accreditation. Results of the study showed that one of the chief reasons hospitals had not sought out the credential was difficulty in garnering support from general surgeons in rural communities, where they were in shorter supply than urban areas. According to 2010 data from the DOH, about 18 percent of Pennsylvania's surgeons are in rural areas, even though 27 percent of the population resides in these areas.[18] This urban versus rural workforce disparity is even greater with respect to neurosurgeons. Of the neurosurgeons practicing in Pennsylvania in 2010, only 9 percent delivered care in rural counties. A 2012 study found

that an increased population density of neurosurgeons was associated with decreased risk of death from motor vehicle crashes nationally.[19]

Even though rural Level III development in Pennsylvania has been a challenge, an analysis of hospitals pursuing Level III accreditation has been encouraging. Most notably, injury-related mortality rates plummeted between 2.5 and 3.5 percent in three counties where accreditation was pursued, even if a hospital did not achieve accreditation. These outcomes can be attributed to increased education of staff, implementation of standardized trauma management guidelines and aggressive trauma performance improvement processes.[20]

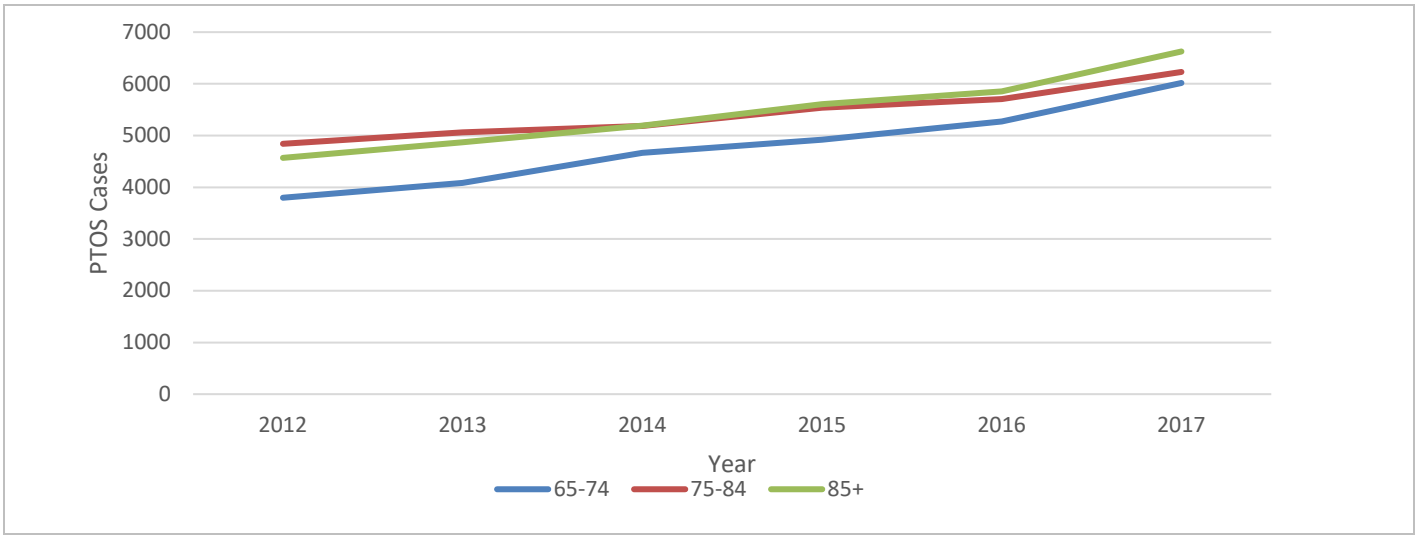
These beneficial practices are now being promulgated in hospitals pursuing Pennsylvania's newest level of accreditation: Level IV trauma centers. After a careful analysis of trauma system development practices in other states, PTSF finalized standards of accreditation for Level IV trauma centers in 2010, and the first Level IV trauma center was accredited in 2013. Currently there are seven accredited Level IV trauma centers, two of which are critical access hospitals. An additional, seven hospitals are pursuing Level IV accreditation. These trauma centers, intended for the most rural areas of a state, enhance care to injured patients through stabilization and expeditious transport to a higher-level trauma center. Unlike Level I, II, or III trauma centers, surgeons aren't needed at these centers.

In addition to accreditation, education of non-trauma centers is also a statewide focus. Level I and II trauma centers are teaching the American College of Surgeons Rural Trauma Team Development Course © (RTTDC) to their receiving hospitals to enhance their care of injured patients and expedite transfer. Studies done nationally have shown that RTTDC has improved transfer times between rural hospitals and trauma centers.[21]

Geriatric Population

Geriatric trauma continues to escalate in Pennsylvania. Between 2013 and 2017, the number of patients age 65 or older in trauma centers grew by nearly 50 percent. Patients age 85 or older continue to be the fastest growing trauma population in Pennsylvania.[22]

Figure 9.33 Geriatric Patients of Trauma Centers by Age, Pennsylvania, 2012-2017[23]



Pennsylvania's population is aging. From 2010 to 2016, the number of residents 65 and older increased 13 percent, while the number of residents under age 18 decreased 4 percent.[24] Mortality rates have decreased as the denominator of injured elderly increases, but the absolute number of elderly deaths continues to climb. Trauma centers in Pennsylvania will need to be prepared for the continued growth in this population. In addition, pre-hospital EMS triage for the injured geriatric patient will have to change. Current guidelines from the American College of Surgeons Committee on Trauma recommend consideration of trauma center transport for geriatric injury

with low energy mechanism (i.e., falls). However, a recent study from the University of Pittsburgh involved analysis of PTSF data and Pennsylvania Healthcare Cost Containment Council data, and the researchers found that trauma center care improves outcome in even the minimally injured elderly.

Stroke Care

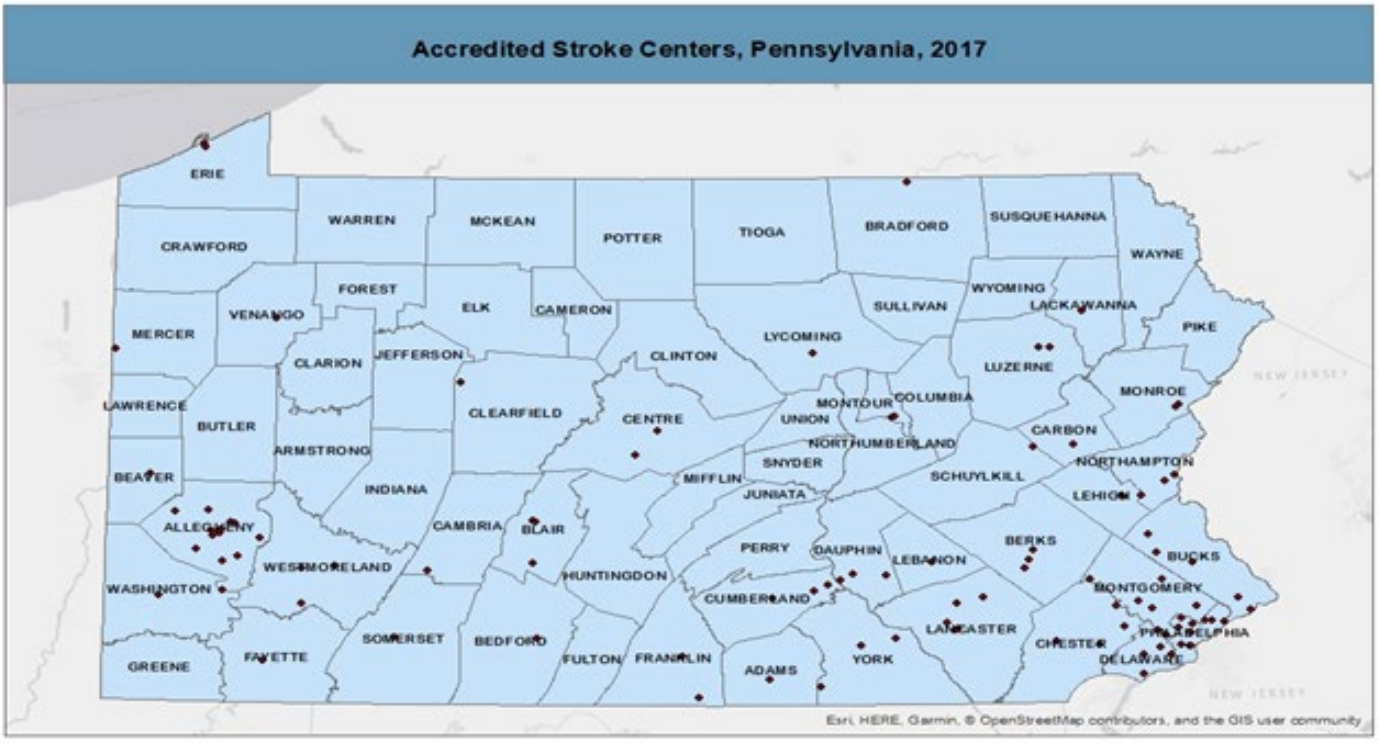
In Pennsylvania, in 2015, stroke was the fourth leading cause of death and the leading cause of disability.[25]

In July 2012, the "Primary Stroke Center Recognition Act" (Act) took effect, creating a mechanism for the identification of acute care hospitals designated as primary stroke centers. Under the Act, the Department of Health can recognize hospitals as primary stroke centers upon submission of an application that states that the hospital is certified as a primary stroke center by the Joint Commission or another nationally recognized accreditation organization.[26]

The Act also mandates that the Department of Health establish protocols "related to pre-hospital assessment, treatment and transport of stroke patients by licensed emergency medical service providers. The protocol shall include plans for triage and transport of acute stroke patients to the closest primary stroke center or a facility that can provide appropriate treatment if the primary stroke center is not within a specified timeframe from onset of symptoms."[26]

In 2017, two additional classifications of stroke care at acute care hospitals were created. Now they can be designated as comprehensive stroke centers, acute stroke-ready hospitals, and primary stroke centers. In January 2019, there are 89 accredited primary stroke centers in Pennsylvania, and 20 of these are in rural counties.

Figure 9.34 Accredited Stroke Centers, Pennsylvania, 2017[27]



As of June 2017, none of the 15 federally-defined critical access hospitals in Pennsylvania were primary stroke accredited.[28]

Key factors for improving access to acute stroke care include:[27]

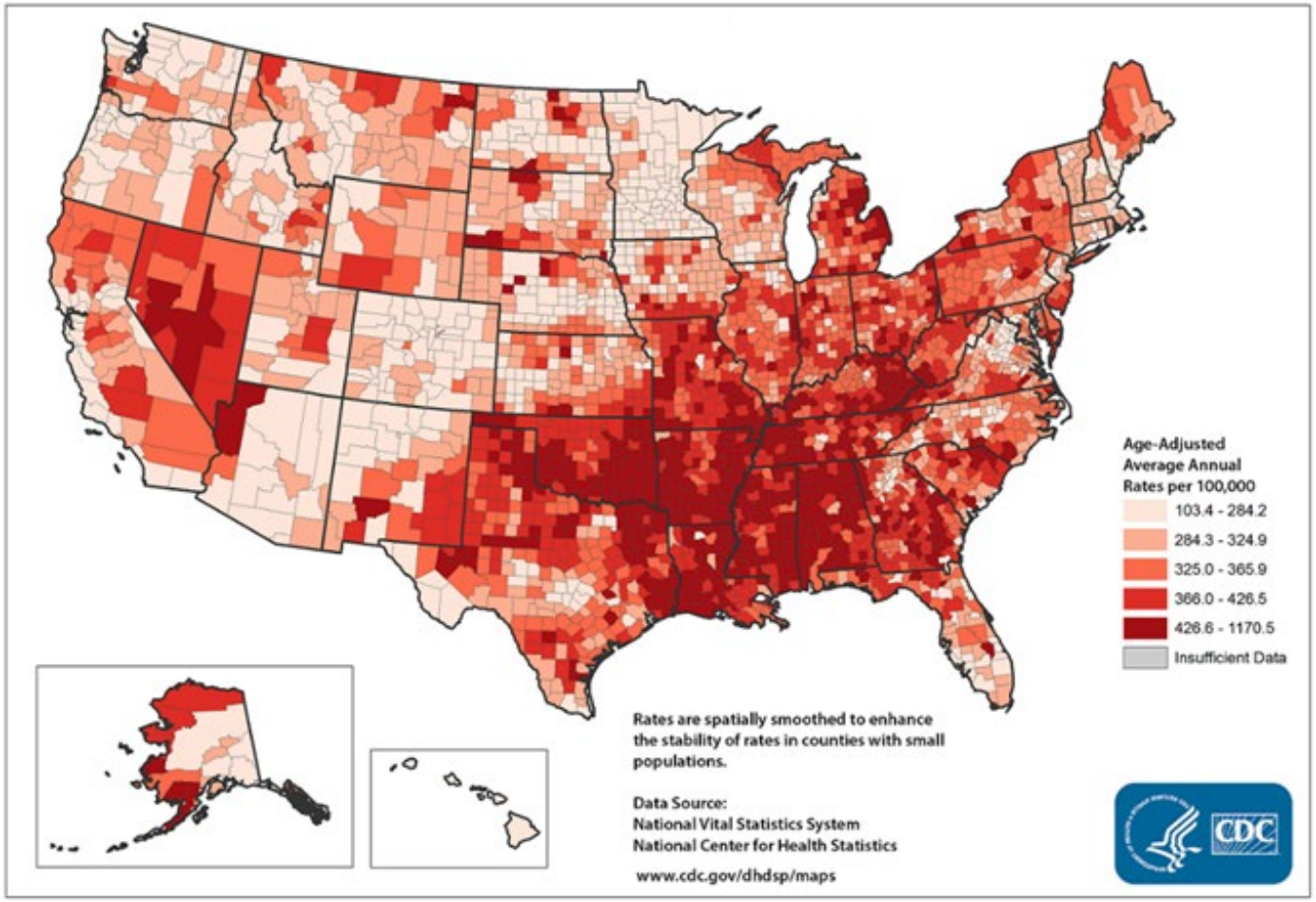
- Aggressive training of pre-hospital providers with appropriate tools to recognize an acute stroke;

- Education of all participating stakeholders, including hospital administrators, medical societies, government and professional organizations;
- Establishment of multidisciplinary protocols, establishing acute and emergency triage protocols and standardized imaging protocols;
- Stroke center certification or, in areas where this is not feasible (e.g., rural areas), networking between rural hospitals and larger facilities through telemedicine;
- Legislation supporting stroke care infrastructure and resources; and
- Appropriate reimbursement to hospitals and providers for telemedicine services.

Emergency Cardiac Care

Heart disease is the leading cause of death in the United States for both men and women. About 630,000 people die of heart disease in the United States every year, or one in every four deaths.[29] Coronary heart disease is the most common type of heart disease, killing more than 366,000 people annually in 2015. Every year, about 790,000 Americans have a heart attack which involves a blockage in the arteries supplying the heart. Of these, 580,000 are a first event, and 210,000 happen in people who have already had a heart attack. Heart disease costs the United States $200 billion each year.[30] This total includes the cost of health care services, medications and lost productivity.

Figure 9.35 Heart Disease Death Rates by County, Adults Age ≥ 35, United States, 2014-2016[31]



Mortality from heart disease is a significant problem, particularly for some counties. It is also among the most preventable cause of mortality. Many of these preventable risk factors are addressed in other sections of this report. This section addresses the acute treatment and systems in place to treat coronary heart disease on a state level.

The Healthy People 2020 objectives that apply to emergency cardiac systems examine the timeliness of fibrinolytic therapy and percutaneous cardiac intervention (PCI).[32] These treatments treat coronary heart disease involving blockage of the arteries supplying blood to the heart.

Percutaneous cardiac intervention (PCI) — Healthy People 2020 sets the goal to increase the proportion of eligible patients with myocardial infarctions who receive artery-opening therapies within 90 minutes of hospital arrival.[33]

Although Pennsylvania allows any hospital with a catheterization laboratory to perform PCI on a patient undergoing a kind of myocardial infarction involving the blockage of the coronary arteries, access to this type of treatment is limited by the availability of hospitals that have a catheterization lab and a physician willing to perform the procedure. In some of these facilities, physicians travel between hospital sites, which makes obtaining the exact estimate of which facilities perform primary PCI (that is, PCI in the setting of a myocardial infarction) difficult. Of the 157 acute care hospitals in 2015, 97 of them report having a catheterization lab.[34] There is not an even distribution of catheterization labs throughout the state, the middle of the state having fewer catheterization labs and, thus, less access to this procedure.

Figure 9.36 Adult Cardiac Catheterization Labs by County, Pennsylvania, 2017[35]

Fibrinolytics — Any acute care hospital with the proper protocols, equipment and personnel can provide fibrinolytic therapy to a patient with an acute heart attack. Most acute care hospitals can provide fibrinolytic treatment. It is recommended that the delay from first patient contact with the health care system (typically, arrival at the emergency room or contact with paramedics) to initiation of fibrinolytic therapy be less than 30 minutes.[36] The Healthy People 2020 objective is to increase the proportion of eligible patient who receive this treatment in a timely manner.[37]

STEMI Systems and Community Initiatives — STEMI (which stands for ST Elevation Myocardial Infarction) is a term used to describe a particular type of heart attack. It is recognized by a special finding on an EKG (electrocardiogram), a test that measures electrical impulses in the heart. When heart muscle is injured, it transmits electrical distress signals, and this is shown on an EKG in the form of elevation of an "ST" wave. The heart muscle is usually injured by a

blockage of a blood vessel that supplies the heart. STEMI are one of the particular kinds of heart attacks that often best can be treated with PCI.[38]

A STEMI center is a voluntary center that registers with the American Heart Association (AHA) and has approved protocols to treat this kind of a heart attack. Ideally it is connected to EMS services so that the patient can be triaged to a hospital that can most effectively treat this kind of heart attack.

Most of the adult care hospitals in Pennsylvania are registered as STEMI centers with the American Heart Association.[39] Because catheterization labs are not evenly distributed in the state, the ability to receive timely PCI, one of the optimal treatments for a STEMI, may also be affected. While the AHA has guidelines for a STEMI referral or receiving center, it is a completely voluntary program, and there are no regulations in Pennsylvania regarding whether those recommendations must be met.

Endnotes

[1] Pennsylvania Department of Health, Emergency Medical Services. (n.d.). Education, information and resources. Retrieved from https://www.health.pa.gov/topics/EMS/Pages/Resources.aspx

[2] Pennsylvania Emergency Management Agency. (2016, Jul). Statewide 9-1-1 plan. [pdf file]. Retrieved from https://www.pema.pa.gov/planningandpreparedness/Documents/9-1-1%20plans%20guides%20and%20templates/PEMA%20Statewide%209-1-1%20Plan.pdf

[3] United States Department of Health and Human Services. (2018). Healthy people 2020, injury and violence prevention. Retrieved from https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4794

[4] United States Department of Health and Human Services. (2018). Healthy people 2020, injury and violence prevention. Retrieved from https://www.healthypeople.gov/2020/data-search/Search-the-Data#objid=4795

[5] Pennsylvania Trauma Systems Foundation. (2019). Personal email.

[6] Centers for Disease Control and Prevention. (2017, Sep 29). Deaths, percent of total deaths, and death rates for the 15 leading causes of death: United States and each state. [pdf file]. Retrieved from https://www.cdc.gov/nchs/data/dvs/LCWK9_2015.pdf

[7] United States Census Bureau. (n.d.). American FactFinder. Annual estimates of the resident population for selected age groups by sex for the United States, states, counties, and Puerto Rico commonwealth and municipios: April 1, 2010 to July 1, 2017. Retrieved from https://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=PEP_2017_PEPAGESEX&prodType=table

[8] Pennsylvania Department of Health, Bureau of Emergency Medical Services. (2012-2017). Pennsylvania Emergency Medical Service Statistics. Data is not available publicly yet.

[9] Pennsylvania Trauma Systems Foundation. (2019, Jan). Email.

[10] Pennsylvania Trauma Systems Foundation. (n.d.) What is a trauma center. Retrieved from http://ptsf.org/index.php/our-trauma-centers/whats-trauma

[11] Pennsylvania Trauma Systems Foundation. (2019, Jan). Email.

[12] Pennsylvania Trauma Systems Foundation. (2019, Jan). Email.

[13] American Burn Association. (2018, Nov 9). Verified Burn Centers. Retrieved from http://ameriburn.org/quality-care/verification/verified-burn-centers/#pennsylvania

[14] Pennsylvania Trauma Systems Foundation. (2019, Jan). Email.

[15] Pennsylvania Trauma Systems Foundation. (2019, Jan). Email.

[16] Center for Rural Pennsylvania. (n.d.). Rural/urban Pennsylvania. Retrieved from http://www.rural.palegislature.us/rural_urban.html

[17] National Rural Health Association. (n.d.). About rural health care. Retrieved from https://www.ruralhealthweb.org/about-nrha/about-rural-health-care

[18] Pennsylvania Department of Health, Bureau of Health Planning. (2017 Aug). 2014 Pulse of Pennsylvania's physician and physician assistant workforce, a report on the 2014 surveys of physicians and physician assistants, Volume 6. Retrieved from https://www.health.pa.gov/topics/Health-Planning/Pages/Reports.aspx

[19] Desai D., Bekelis, M. D., Zhao W., & Ball P. (2012, Jul 24). Increased population density of neurosurgeons associated with decreased risk of death from motor vehicle accidents in the United States. *Journal of Neurosurgery*, 212, 862-866.

[20] Snavely, T. (n.d.). Performance Improvement Primer. Pennsylvania Trauma Systems Foundation. Retrieved from http://ptsf.org/upload/PTSF_PI_Primer_Updated.pdf

[21] Kappel D., Rossi D., Pollack E., Avtgis E., & Martin, M. (2011, Feb). Does the rural trauma team development course shorten the interval from trauma patient arrival to decision to transfer? *Journal of Trauma*, 70, 315-19.

[22] Pennsylvania Trauma Systems Foundation. (2019, Jan). Email.

[23] Pennsylvania Trauma Systems Foundation. (2019, Jan). Email.

[24] U.S. Census Bureau. (2016). American Community Survey 1-Year Estimate, 2016, Table S0103 [Data file]. "American Factfinder." Retrieved from https://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml

[25] Centers for Disease Control and Prevention. (2017, Sep 29). Deaths, percent of total deaths, and death rates for the 15 leading causes of death: United States and each state. [pdf file]. Retrieved from https://www.cdc.gov/nchs/data/dvs/LCWK9_2015.pdf

[26] Legiscan. (2012, May 7). Pennsylvania house bill 1400. Retrieved from http://legiscan.com/PA/text/HB1400/id/639445

[27] Pennsylvania Department of Health. (n.d.). Recognized stroke centers. Retrieved from https://www.health.pa.gov/topics/EMS/Pages/Recognized-Stroke-Centers.aspx

[28] The Hospital and Healthsystem Association of Pennsylvania. (2017, Jun 15). Pennsylvania's critical access hospitals are key to rural health care. Retrieved from https://www.haponline.org/Newsroom/News/ID/2474/Pennsylvanias-Critical-Access-Hospitals-are-Key-to-Rural-Health-Care

[29] Centers for Disease Control and Prevention. (2017, Aug 23). Heart disease fact sheet. Retrieved from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm

[30] Centers for Disease Control and Prevention. (2017, Aug 22). Know the signs and symptoms of a heart attack. Retrieved from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heartattack.htm

[31] Centers for Disease Control and Prevention. (2017, Aug 23). Heart disease fact sheet. Retrieved from https://www.cdc.gov/dhdsp/data_statistics/fact_sheets/fs_heart_disease.htm

[32] United States Department of Health and Human Services. (n.d.). Healthy People 2020, heart disease and stroke. Retrieved from http://www.healthypeople.gov/2020/topicsobjectives2020/objectiveslist.aspx?topicId=21

[33] United States Department of Health and Human Services. (2018). Healthy People 2020. HDS-19.2 Increase the proportion of eligible patients with heart attacks who receive percutaneous intervention (PCI) within 90 minutes of hospital arrival. Retrieved from https://www.healthypeople.gov/2020/topics-objectives/topic/heart-disease-and-stroke/objectives?topicId=21

[34] Pennsylvania Department of Health. (2017). Hospital reports: availability of 49 selected services. Retried from https://www.health.pa.gov/topics/HealthStatistics/HealthFacilities/HospitalReports/Pages/hospital-reports.aspx

[35] Pennsylvania Department of Health. (2017). Hospital reports: availability of 49 selected services. Retried from https://www.health.pa.gov/topics/HealthStatistics/HealthFacilities/HospitalReports/Pages/hospital-reports.aspx

[36] The Joint Commission. (2010). Specifications Manual for Joint Commission National Quality Core Measures (2010A1). Retrieved from https://manual.jointcommission.org/releases/archive/TJC2010B/MIF0022.html

[37] United States Department of Health and Human Services. (2018). Healthy People 2020. HDS-19.1 Increase the proportion of eligible patients with heart attacks who receive fibrinolytic therapy within 30 minutes of hospital arrival. Retrieved from https://www.healthypeople.gov/node/4579/data_details

[38] National Clinical Guideline Centre. (2013). Myocardial infarction with ST-segment elevation: the acute management of myocardial infarction with ST-segment elevation. Retrieved from https://www.ncbi.nlm.nih.gov/books/NBK259097/

[39] American Heart Association. (2019, Jul). Know before you go. Retrieved from https://hospitalmaps.heart.org/AHAMAP/map/qimap.jsp

Long-Term Care

Pennsylvania has the fourth-largest elderly state population in the United States, with almost 2.9 million residents age 60 and older.[1] The most significant growth for the senior population has been in the 85 and older age group, which now includes more than 300,000 residents.[2] By the year 2030, Pennsylvania's age 60 and older population, is projected to exceed 3.8 million persons.[3] These demographics reflect a very large and diverse mature-adult population, which continues to grow in numbers as well as clinical complexity. Demographic, geographic, health and socioeconomic factors affecting the long-term care system, combined with recent fiscal reform efforts at the state level, have strained the long-term care system at a time when demands for services are ballooning dramatically. Recent studies have shown a huge increase in from the incidence of Alzheimer's disease among seniors, with the count now at an estimated 280,000.[4] By the year 2025, the number of people living with Alzheimer's disease in Pennsylvania is predicted to reach 320,000, an increase of 14.3 percent.[5]

'As the State Unit on Aging, Pennsylvania Department of Aging (PDA) is responsible to serve as an effective and visible advocate for older Pennsylvanians and to coordinate all state activities related to the purposes of the Older Americans Act. To uphold these responsibilities, PDA laid out core principles that will guide the operation of the organization over the course of the next four years. Mission, Foundation, Values, and Goals – these principles, first and foremost, are crucial to understanding the vision that PDA has for aging services in the Commonwealth of Pennsylvania. The State Plan on Aging embraces two key initiatives: aging in place and elder justice.'[6]

For Pennsylvania, the growth of the long-term care system has been aided by the availability of resources through the state lottery fund. Pennsylvania is the only state in the nation with a lottery dedicated to supporting its older citizens, and this funding source has been an essential ingredient for the expansion of long-term care options. Since its inception in 1972, the lottery fund has provided nursing facility services, in-home services, reduced-fare transit services, property tax and rent rebates, and prescription drug benefits.[7] During fiscal year 2014-15, more than 522 million dollars were spent on services and supports for older Pennsylvanians.[8]

Endnotes

[1] Pennsylvania Department of Aging. (n.d.). 2016-20 State plan on aging: aging in place, elder justice. Retrieved from https://www.aging.pa.gov/publications/state-plan-on-aging/Pages/default.aspx

[2] Pennsylvania Department of Aging. (n.d.). 2016-20 State plan on aging: aging in place, elder justice. Retrieved from https://www.aging.pa.gov/publications/state-plan-on-aging/Pages/default.aspx

[3] Pennsylvania Department of Aging. (n.d.). 2016-20 State plan on aging: aging in place, elder justice. Retrieved from https://www.aging.pa.gov/publications/state-plan-on-aging/Pages/default.aspx

[4] Pennsylvania Department of Aging. (2014, Feb). Pennsylvania State Plan for Alzheimer's Disease and Related Disorders. [pdf file]. Retrieved from https://www.aging.pa.gov/publications/alzheimers-related-disorders/Documents/Pennsylvania%20State%20Plan%20for%20Alzheimer%27s%20Disease%20and%20Related%20Disorders.pdf

[5] Alzheimer's Association. (2018). 2018 Alzheimer's Disease Facts and Figures. [pdf file]. Retrieved from https://www.alz.org/media/Documents/facts-and-figures-2018-r.pdf

[6] Pennsylvania Department of Aging. (n.d.). 2016-20 State plan on aging: aging in place, elder justice. Retrieved from https://www.aging.pa.gov/publications/state-plan-on-aging/Pages/default.aspx

[7] Pennsylvania Lottery. (2017-18). About the PA lottery. Retrieved from https://www.palottery.state.pa.us/Benefits/Benefits-Info/Benefits_Guide.aspx

[8] Pennsylvania Department of Aging. (n.d.). 2016-20 State plan on aging: aging in place, elder justice. Retrieved from https://www.aging.pa.gov/publications/state-plan-on-aging/Pages/default.aspx

Hospice Care

Hospices provide comfort and support for individuals who are facing a life-limiting illness that no longer responds to cure-oriented treatment. Hospice care advocates neither the prolonging of life nor the hastening of death. Staff and volunteers offer specialized knowledge of end-of-life care, especially in the area of pain management and symptom control. The goal of every hospice admission is to improve the quality of a patient's last months of life by offering comfort, respect and dignity.

Hospice care extends beyond the patient to support the loved one's family. Unlike traditional medical care, hospice care is guided by a multidisciplinary team headed by a physician who views the patient and the family as the recipient of hospice care. Also, rather than focus strictly on the physical symptoms of an illness, hospice includes the emotional, spiritual, psychosocial and bereavement needs of both the patient and family.

Hospice team members include registered nurses, licensed practical nurses, social workers, volunteers, home health aides, counselors, chaplains, physicians, bereavement counselors, music and massage therapists, and others. These team members meet regularly to update the care plan for each patient/family, adjusting services to meet changing needs as time progresses. Services are increased or decreased depending on what best suits the needs of the patient and their loved ones. In addition to these supportive services, some hospice centers have inpatient beds and admit patients to receive care 24 hours a day, seven days a week until they die, either on a residential basis or in an acute care capacity.[1] However, due to the high cost of such programs, most hospices in Pennsylvania are not able to offer dedicated inpatient or residential care facilities.

Among these hospice team members, nurses and physicians focus on the physical care of the patient, providing education to the family on how to best care for their loved one, monitoring pain and symptoms and offering medications to manage them. Home health aides provide hands-on care for the patient. Social workers link the family with services that might be beneficial (e.g., transportation, meal programs, help with insurance questions). Counselors help to facilitate conversations between the person who is dying and loved ones. Chaplains provide spiritual counseling and perform funeral services. Music and massage therapists may focus on either the patient or the family. Volunteers in hospice have all completed training in end-of-life care, although this can vary widely, from a short one-session introduction to 33 hours spread out over many weeks. Medicare regulations require that a minimum amount of time be provided by volunteers each year.[2]

In addition to the patient care services provided, community hospices often offer a variety of bereavement and counseling services to families before and after a patient's death. Some provide support groups, individual counseling, respite care, children's bereavement camps, memorial services, get-togethers and other services. Many hospices offer their services for a 12- to 14-month period following a loved one's death.

Traditional admission guidelines for hospice programs are: survival prognosis of approximately six months or less, willingness on the part of the patient/family to receive hospice care, and desire by the patient and the family to focus on palliation and quality of life as opposed to cure for the illness.[3]

Hospice agencies that receive federal or state reimbursement are licensed by Pennsylvania Department of Health, to provide care within the minimum health and safety standards established by federal and state regulations and rules. Reimbursement for hospice care has become "standardized" throughout the third-party payer system. Medicare pays for services provided by hospice agencies that voluntarily seek and are approved for certification by the federal Centers for Medicare and Medicaid Services (CMS). CMS contracts with the Department of Health to evaluate compliance with the federal hospice regulations by periodically conducting unannounced surveys of these agencies. Medicaid also provides reimbursement for hospice programs in Pennsylvania.

Most hospice care is reimbursed on a per-diem basis, but some third parties reimburse on a per-visit basis. Most hospice care is provided to individuals for whom Medicare is the primary insurer. In the U.S., Medicare paid hospice providers a total of $15.9 billion dollars for care provided in 2015. The average spending in 2015 per Medicare hospice patient was $11,510, and the median spending in that year was $4,765 dollars.[4] Because of the limitations in third-party reimbursement, most nonprofit hospice programs raise funds to help provide care that goes beyond the reimbursement rates that are set or for individuals who have no insurance.

Hospice care is provided throughout Pennsylvania by 180 agencies.[5]

In 2015, 28 percent of Medicare patients admitted to hospice care in the United States died within seven days, making the care more acute in nature than the traditional six-month hospice guideline suggests.[6] The median length of stay nationwide in 2015 was 23 days, up from 19 days in 2011, so half of these patients died in just over three weeks.[7] Nationally, hospice programs paid by Medicare in 2015 cared for more women (58.7 percent) than men (41.3 percent), and close to 65 percent of hospice patients that were paid by Medicare were over 80 years of age.[8] Some programs provide special pediatric hospice care.

In 2015, in the U.S., most hospice care (77 percent) was received in a place the patient calls "home," either their own home, an assisted living facility or a nursing home. The remaining hospice care is provided in acute care hospitals (8 percent) or hospice inpatient facilities (15 percent).[9]

Insurers recognize different reimbursement levels for hospice care. The most frequent level is called "routine home care" by Medicare; over 97 percent of hospice care provided in the United States is classified in this category. Of the remaining reimbursement levels, 2 percent is inpatient; 0.3 percent is continuous care, in which the hospice program places an individual under a period of continued hospice staffing; and 0.3 percent is called respite care, in which the patient is placed in another setting for up to five days.[10]

Table 9.19 Patients in Hospice by Principal Diagnosis, United States, 2015[11]

Principal Diagnosis	Percentage (%)
Cancer	27.7
Cardiac and circulatory	19.3
Dementia	16.5
Other	16.7
Respiratory	10.9
Stroke	8.8

In 2015, there were 4,199 hospices paid by CMS to provide care nationally, down from 5,300 in 2011. Of these, 31 percent were nonprofit, 65 percent for-profit and the remaining programs are run by government entities. Some states have passed CON (certificate of need) legislation for hospice programs, requiring a hospice entity to provide proof of need before opening another hospice program. Pennsylvania is not a CON state and has more hospice agencies than many states.

Trends in the hospice industry include increased oversight by payers, primarily due to the rise in for-profit programs and perceived "appropriateness" for hospice care if a patient does not die within the "prescribed" six-month window. The federal Office of the Inspector General has undertaken initiatives that target hospices. In addition, the federal government contracts with recovery audit contractors, who have started to examine hospice care providers and practices. Some Medicare intermediaries have also begun to require more stringent documentation of a person's continued eligibility for hospice care, resulting in the denial of more claims.

Endnotes

[1] Pennsylvania Hospice & Palliative Care Network. (n.d.). Hospice care. Retrieved from https://www.pahospice.org/Public/Public/HospiceCare/Hospice_Care_Home_Page.aspx

[2] Conditions of participation – Volunteers, 42 CFR § 418.78. Retrieved from https://www.law.cornell.edu/cfr/text/42/418.78

[3] Centers for Medicare and Medicaid Services. (2018, Sep.). Coverage of Hospice Services Under Hospital Insurance. In *Medicare Benefit Policy Manual*. Retrieved from https://www.cms.gov/Regulations-and-Guidance/Guidance/Manuals/downloads/bp102c09.pdf

[4] National Hospice and Palliative Care Organization. (2018, Apr). NHPCO facts and figures: hospice care in America (2016 edition). Retrieved from https://www.nhpco.org/sites/default/files/public/2016_Facts_Figures.pdf

[5]Pennsylvania Department of Health. (n.d.). Hospice agencies. Retrieved from https://www.health.pa.gov/topics/facilities/hospice/Pages/Hospice.aspx

[6] National Hospice and Palliative Care Organization. (2018, Apr). NHPCO facts and figures: hospice care in America (2016 edition). Retrieved from https://www.nhpco.org/sites/default/files/public/2016_Facts_Figures.pdf

[7] National Hospice and Palliative Care Organization. (2018, Apr). NHPCO facts and figures: hospice care in America (2016 edition). Retrieved from https://www.nhpco.org/sites/default/files/public/2016_Facts_Figures.pdf

[8] National Hospice and Palliative Care Organization. (2018, Apr). NHPCO facts and figures: hospice care in America (2016 edition). Retrieved from https://www.nhpco.org/sites/default/files/public/2016_Facts_Figures.pdf

[9] National Hospice and Palliative Care Organization. (2018, Apr). NHPCO facts and figures: hospice care in America (2016 edition). Retrieved from https://www.nhpco.org/sites/default/files/public/2016_Facts_Figures.pdf

[10] National Hospice and Palliative Care Organization. (2018, Apr). NHPCO facts and figures: hospice care in America (2016 edition). Retrieved from https://www.nhpco.org/sites/default/files/public/2016_Facts_Figures.pdf

[11] National Hospice and Palliative Care Organization. (2018, Apr). NHPCO facts and figures: hospice care in America (2016 edition). Retrieved from https://www.nhpco.org/sites/default/files/public/2016_Facts_Figures.pdf

Health Information Technology

Health information technology (HIT) is the area of information technology involving the design, development, creation, use and maintenance of information systems for the health care industry. Automated and interoperable health care information systems are expected to lower costs, improve efficiency and reduce errors, while also providing better patient care and service. The electronic health record (EHR) is the central component of the health IT infrastructure. An EHR is an individual's official, digital health record, which may be shared among multiple facilities and agencies. Health information exchange (HIE) is a specific area of HIT involving the electronic movement of health-related information among unaffiliated organizations according to nationally recognized standards.[1]

This section provides information regarding various programs occurring in Pennsylvania to support the adoption of HIT among commercial and private sector health care providers and related organizations in the state. More specifically, it addresses efforts to encourage adoption of EHR systems and HIE. These efforts will help keep the Pennsylvania health care sector competitive within the national health care system; more importantly, they will improve efficiency and quality, which will benefit Pennsylvania residents.

Background

The Office of the National Coordinator for Health Information Technology (ONC) is the principal federal entity tasked with coordinating nationwide efforts to implement the most advanced health technology and support the electronic exchange of health information. In February 2009, President Obama signed the American Recovery and Reinvestment Act (ARRA), which included $19 billion in funding earmarked to stimulate HIT with additional provisions in ARRA health care-related allocation (e.g., Medicaid) also encouraging HIT progress. ONC administered a grant program to enable state-level health information exchange (HIE) efforts with a portion of this ARRA funding.

Pennsylvania applied for and received $17.1 million of this funding to help enable HIE. The state had to match these federal funds at a rate of 33 percent. In July 2011, an executive order established the Pennsylvania eHealth Collaborative (PAeHC) with the objective to enable the use of information technology and advance HIE. This executive order required the collaborative to develop and implement a market-driven strategy to leverage the federal grant to enable HIE in Pennsylvania.

More than 150 leaders from the health care community, patient advocacy groups, local and state government, academia and the legal community met to formulate recommendations to advance HIE in Pennsylvania. Both ONC and the governor's office approved a Strategic and Operational Plan (SOP) in 2012.

As part of the SOP, and because of the passage of the Pennsylvania eHealth Information Technology Act of July 5, 2012 (P.L. 1042, No. 121), the Pennsylvania eHealth Partnership Authority (Authority) was established as an independent state agency with three aims: [1]

- Communication — promote efficient and effective communication among multiple health care providers, payers and participants;
- Facilitation — create efficiencies and promote accuracy in the delivery of health care; and
- Infrastructure — support the ability to improve community health status.

On July 8, 2016, Pennsylvania Act 76 of 2016 was passed, repealing Act 121, and consolidating the Authority into the Pennsylvania Department of Human Services (DHS), changing the name of the Authority to the Pennsylvania eHealth Partnership Program (PA eHealth), and calling for the establishment of an advisory board. PA eHealth continues the goals of the prior Authority, including the above listed three aims.[2] A new strategic plan was crafted

in furtherance of the same goals of increasing and improving HIE. PA eHealth was able to take advantage of more federal funds and state resources due to the consolidation with DHS.

The program was further integrated into DHS on July 1, 2018, by being placed in the Office of Medical Assistance Programs (OMAP). OMAP provides PA eHealth with additional expertise, staff and collaboration opportunities. PA eHealth has several certified Health Information Organizations (HIOs) as members: ClinicalConnect Health Information Exchange (CCHIE), Healthshare Exchange (HSX), Keystone Health Information Exchange (KeyHIE), Mount Nittany Exchange (MNX), and one provisionally certified HIO, Central PA Connect Health Information Exchange (CPCHIE).

Promoting Interoperability and Meaningful Use

"Meaningful use" came to the forefront of the health care industry in 2009, as an umbrella term for rules and regulations that hospitals and health care providers must meet if ARRA is to authorize CMS to authorize reimbursement incentives as they progress towards becoming "meaningful users" of certified electronic health record (EHR) technology. This included using an EHR for functions that both improved and demonstrated the quality of care, as well as submission of quality measures to CMS. Meaningful use set goals about health care, rather than information technology, including:[3]

- Improve the quality of care, efficiencies and safety in treating patients;
- Reduce health disparities;
- Engage patients and families;
- Improve care coordination;
- Improve population and public health; and
- Guarantee adequate privacy and security protection of personal health information (PHI).

Nationally, meaningful use was deployed in stages. Stage 1 mostly involved implementation of an EMR system capable of doing things like ordering lab tests and prescriptions for patients, checking for possible interactions between drugs before prescribing a drug to a patient, maintaining current lists of patient allergies, adequately protecting electronic health information and engaging in HIE. Regional extension centers (REC) were created using funding under the Health Information Technology for Economic and Clinical Health (HITECH) Act to assist small health care providers with the selection and implementation of EHR technology.[4] Stage 2 expanded the requirements of Stage 1, while also necessitating more robust digital exchange of information with patients. Stage 3 further modified objectives and reporting requirements.

The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) was implemented Jan. 1, 2017. MACRA instituted the Merit-based Incentive Payment System (MIPS) with goals of tying payments to quality and cost-efficient care, improving care and reducing costs for Medicare and CHIP.[5]

The Medicaid Medical Assistance EHR Incentive Program is now called the Promoting Interoperability Program. Starting in 2019, Medicaid providers must use a 2015 certified EHR to participate. Only 24 percent of Pennsylvania participants in 2016 and 2017 were using a 2015 certified her, so the number of participants in 2019 may be lower than in previous years.[6]

By January 2018, 58,279 Incentive Provider Payments were made to professionals and hospitals in Pennsylvania under the Medicare program, and 16,499 payments were made under the Medicaid program. This translates into nearly $1.7 billion in payments.[7]

Health Information Exchange (HIE)

The term HIE may refer to the sharing of health information between unaffiliated organizations or to single organizations themselves as they enable sharing. HIE is about making sure all important medical information about a patient is available to a health care provider any time they need it during diagnosis and treatment. Use of HIE enables faster and more accurate diagnosis and treatment, due to more complete information; ability to spot and address gaps in care (e.g., preventive, chronic maintenance); and avoiding redundancy, saving time and money, while reducing risk for the patient (i.e., radiation exposure from unnecessary/redundant testing). Pennsylvania uses HIE locally within individual health systems, regionally and statewide.

Examples of use of HIE include:

- **Health information organizations (HIOs) —** HIOs are defined as organizations that provide information technology infrastructure with an interoperable system established by a health care provider and/or payer or that connects participating health care providers and/or payers to ensure the secure digital exchange of health information among participants engaged in the care of the patient.[8] Often HIOs will exchange data primarily within a certain geographic region, although they may accept providers statewide or nationally. They each offer varying services to their members. Pennsylvania offers certification to HIOs to enable them to join various state initiatives.
- **The Pennsylvania Patient and Provider Network (P3N) — This is** PA eHealth's secure health information exchange that facilitates HIE between its certified member HIOs statewide, a federated network of networks. HIOs meet various criteria to become a certified P3N HIO. When a provider joins a certified HIO, it has access to electronic documents from throughout the state, via the P3N, with more care data from more sources instantaneously available to providers at the point of care.
- **Admission Discharge Transfer (ADTs) notifications —** Providers receive real-time ADT alerts to notify them when their patients are admitted to the emergency department, transferred, discharged, etc. for the purposes of care coordination. PA eHealth provides a statewide ADT service. Real-time care coordination, especially for emergency visits, helps reduce preventable inpatient admissions. This new ADT service crosses regional and business network barriers to enable better patient care. ADTs travel via PA eHealth's P3N HIE via participating HIOs to quickly alert providers of their patients' admittance to an emergency department in another HIO. All certified HIOs plan to be participating in the P3N ADT service by July 2018. Hospitals can use participation in the P3N ADT project to satisfy the new Opioid Use Disorder Emergency Department Reporting Requirement beginning in July 2019.[9]
- **Exchanging continuity of care documents (CCDs)** — CCDs are an electronic document exchange standard for sharing patient clinical care summaries. CCDs can contain lab results, encounters, diagnostic imagery, procedures, prescriptions, allergies, diagnoses, etc. While most providers request a medical history from patients, this fills in the gap if the patient's memory is incomplete or inaccurate, or if the patient is severely ill or injured. CCDs allow providers to quickly and easily get accurate and nearly comprehensive information, reducing the burden on patients to remember, while helping providers to make faster and better diagnoses, avoid prescription of ineffective or even harmful treatments, and, in some cases, helps to avoid unnecessary expense due to repeated procedures and tests. All PA eHealth certified HIOs allow the exchange of CCDs internally and via the P3N.
- **Coordination of care/transition of care** — Both of these processes benefit from timely and complete HIE. HIE enables more collaborative care models, such as patient-centered medical homes. HIE supports partnering between health care providers to sustain and coordinate ongoing care. Pennsylvania advances care coordination via the P3N, which enables document and ADT exchange between HIOs across the state.

Pennsylvania also has managed care organizations (MCOs) that coordinate care for Medicaid recipients. Pennsylvania requires MCOs to join certified HIOs to facilitate HIE use in care management. Some P3N-certified HIOs also provide active care coordination.

- **Public Health Gateway (PHG)** — Providers can perform public health reporting and data retrieval via a single connection in a secure and efficient manner with the PHG. The PHG leverages provider connections to certified HIOs and the P3N to reduce the need to develop and maintain individual connections between providers and Pennsylvania state government registries/reporting programs. Providers can meet some promoting interoperability program requirements by using the PHG.
- **ePrescribing** — Physicians enter a prescription into an automated data entry process and it is delivered to the pharmacy automatically. Not only do these systems simplify administrative processes, they help to avoid clinical errors due to illegible instructions. More advanced systems also include clinical decision support (CDS) features such as dosage and alternative medication suggestions, duplicate therapy warnings, and drug-drug and drug-allergy interaction checking. ePrescribing helps avoid mistakes due to incomplete information. Studies by SureScripts, the nation's largest provider of ePrescribing services indicate that there is an even better chance of patients filling prescriptions when they are done via ePrescription. In Pennsylvania, more than 95 percent of all pharmacies were enabled for ePrescribing as of 2014.[10] Pennsylvania enacted Act 96 of 2018, a law that requires all Schedule II through V controlled substances to be electronically prescribed, with certain exceptions.
- **Computerized provider order entry (CPOE) and results delivery** — CPOE enables providers to use computer-based systems to order procedures or diagnostic tests. Results are delivered back to the ordering physician in the same way. Often this links the information directly into the EHR system of that physician. This helps to reduce administrative burden and avoid clinical errors. CPOE is often used in conjunction with ePrescribing systems and with CDS to alert physicians to abnormal results or orders that go unfulfilled. In Pennsylvania, as of 2014, nearly 90 percent of all labs were enabled to receive electronic orders and send back electronic results.[11]

The Pennsylvania Patient and Provider Network (P3N)

Pennsylvania's health information exchange in advancement of care coordination via the P3N and certified HIOs is illustrated in Figure 9.37.

Figure 9.37 Work Flow of Health Information Exchange in Pennsylvania[12]

The **PA Patient & Provider Network**, or **P3N**, improves and coordinates your care by helping your health care provider find your medical records — in real time — anywhere on the P3N network.

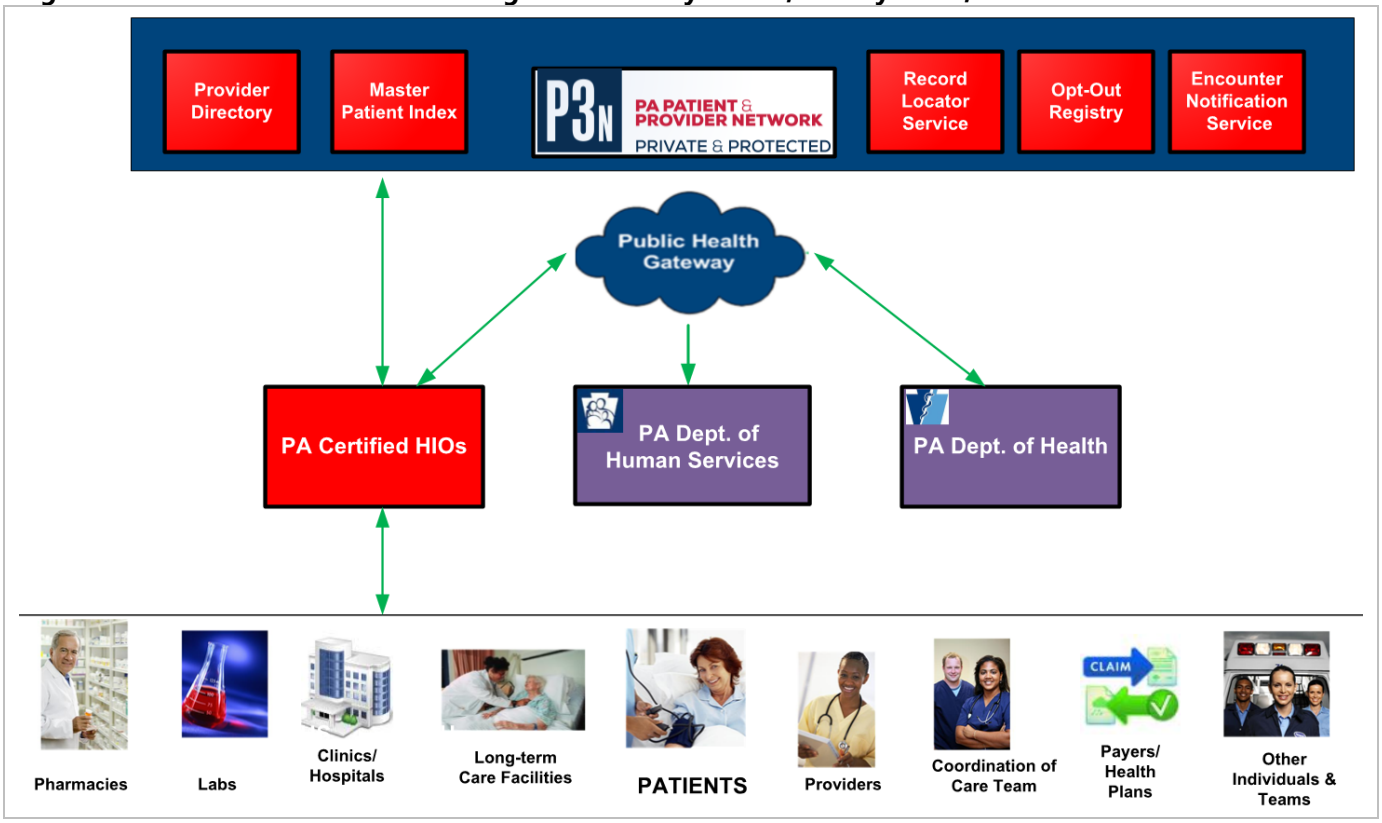
To protect the security of your health information, the P3N network does not store your health records. It simply finds and moves your up-to-date health information between the providers who have it and the providers who need it.

If you are seen by a provider participating with a P3N-connected HIO, your health information will be available to other providers who are involved in your care and participating in a P3N-connected HIO. However, if you don't want to share your information, you may opt out.

Go to **www.paehealth.org/consent** for more information about your consent options in the P3N.

In general, HIE may involve point-to-point exchanges, in which one provider sends the information directly to another provider, or it may involve storing information on a network and allowing participants to query the system for records related to a particular patient. The P3N is a multiple-tier "network of networks." Figure 9.38 reflects, at a high level, the HIE connectivity model (network of networks) for Pennsylvania:

Figure 9.38 Health Information Exchange Connectivity Model, Pennsylvania, 2018[13]



Starting at the bottom of Figure 9.38, health care providers, patients and others involved in health care services conduct HIE via a certified HIO. All the HIE providers in turn are connected to one another via the P3N. The P3N includes the PHG, which provides a single connection from the commercial sector for a variety of interactions with the DOH and DHS.

Use cases for the P3N

Here is a typical use case of how the P3N works:

Jim Smith is visiting a new specialist, Dr. Jones, who wants to get as much information about Jim's medical history and current condition as he can. Dr. Jones sends a request for Jim's medical records to the network of networks via Acme HIE, with whom he is enrolled, and which has provided Dr. Jones with software to access HIE. Acme HIE then sends the request to the P3N, where a series of things happen:

- The P3N checks Dr. Jones in a provider directory to make sure that Dr. Jones is authorized to access HIE.
- The P3N checks an Enterprise Master Patient Index (MPI) to uniquely identify Jim Smith. This must be done because there are no universal patient identifiers across our health system. So MPIs use various demographic information to make sure that all records associated with this Jim Smith are not comingled with records for other persons named Jim Smith.
- The P3N checks to see whether Mr. Smith is registered in the statewide opt-out registry. This is a database that registers whether someone has sent in a formal opt-out request that their medical records not be shared electronically via the P3N. Anyone may place themselves on this registry by sending the opt-out form to PA eHealth, or they can ask their provider to send the form on their behalf. Providers must then forward the forms filled out by the patient to their certified HIO or directly to PA eHealth within five business days. Opting-out of the P3N does not eliminate a patient's electronic records, it just prevents anyone from exchanging their records via the P3N. That way, no information has been lost if a patient

later decides to opt-back-in. The P3N opt-out form only applies to the P3N. Patients may also wish to opt-out individually from certified HIOs or check with their providers as to what other information sharing they participate in and how to opt-out.

- Assuming Mr. Smith is not opted-out, P3N then checks to see where records might exist for Mr. Smith across all network participants in a records locater service database. Please note that no actual clinical information about the patient is stored in this database, just pointers to where records do exist, usually in EHR systems operated by that patient's caregiver organizations.
- Finally, the P3N presents a listing of all information available about Jim Smith to Dr. Jones, via Acme HIE. Dr. Jones picks what he wants, P3N pulls all the data from the sources and sends it to Acme HIE, which organizes it and presents it to Dr. Jones in the format that is most useful to Dr. Jones, who can then choose which information about Jim Smith to make part of Mr. Smith's record in Dr. Jones's EHR system.

Health Information Organizations

As previously mentioned, as of February 2019, PA eHealth has four certified HIOs, CCHIE, HSX, KeyHIE, MNX and one provisionally certified HIO, CPCHIE. While certified HIOs are each generally concentrated in different geographic regions of the state, they all now accept providers from throughout the state.

By October 2018, 63.5 percent of Pennsylvania's licensed hospitals, 601 physician practices, 3.4 percent of licensed ambulatory surgical care facilities, 18.7 percent of licensed long-term care facilities, 0.6 percent home care facility headquarters, and 5.6 percent of licensed home health agencies were affiliated with an HIO.[14] Please see the following maps.

Figure 9.39 Percent and Number of Department of Health Licensed Hospitals That are Affiliated With an HIO, Pennsylvania, October 2018[15]

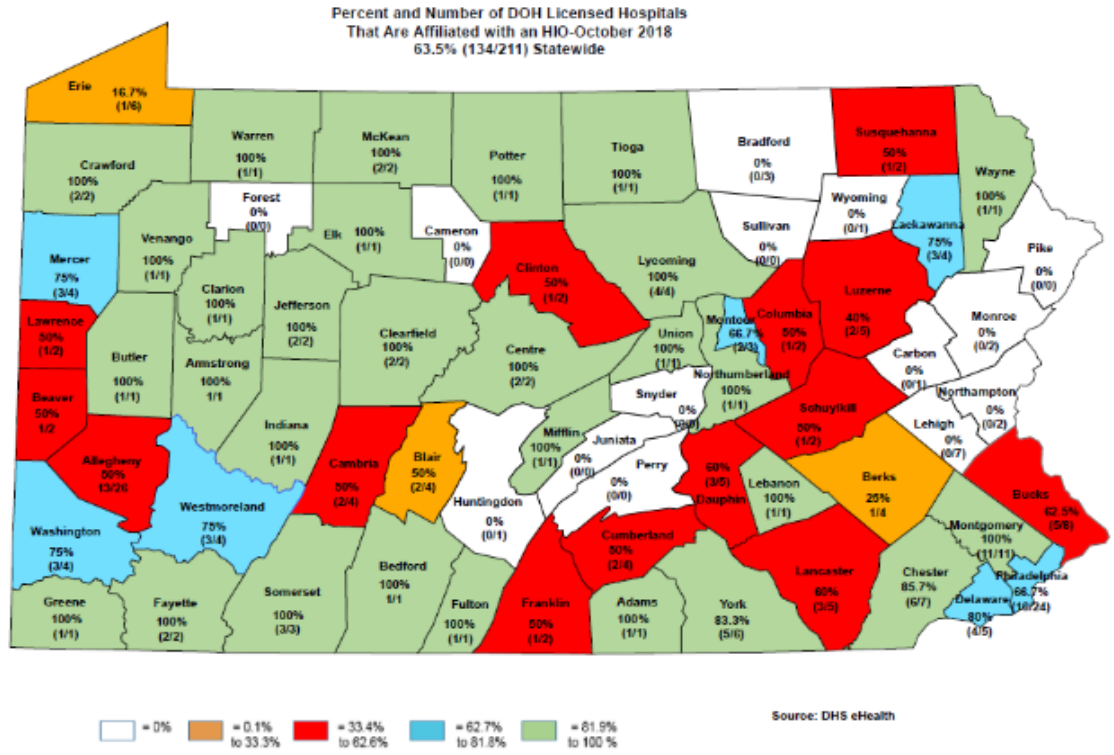
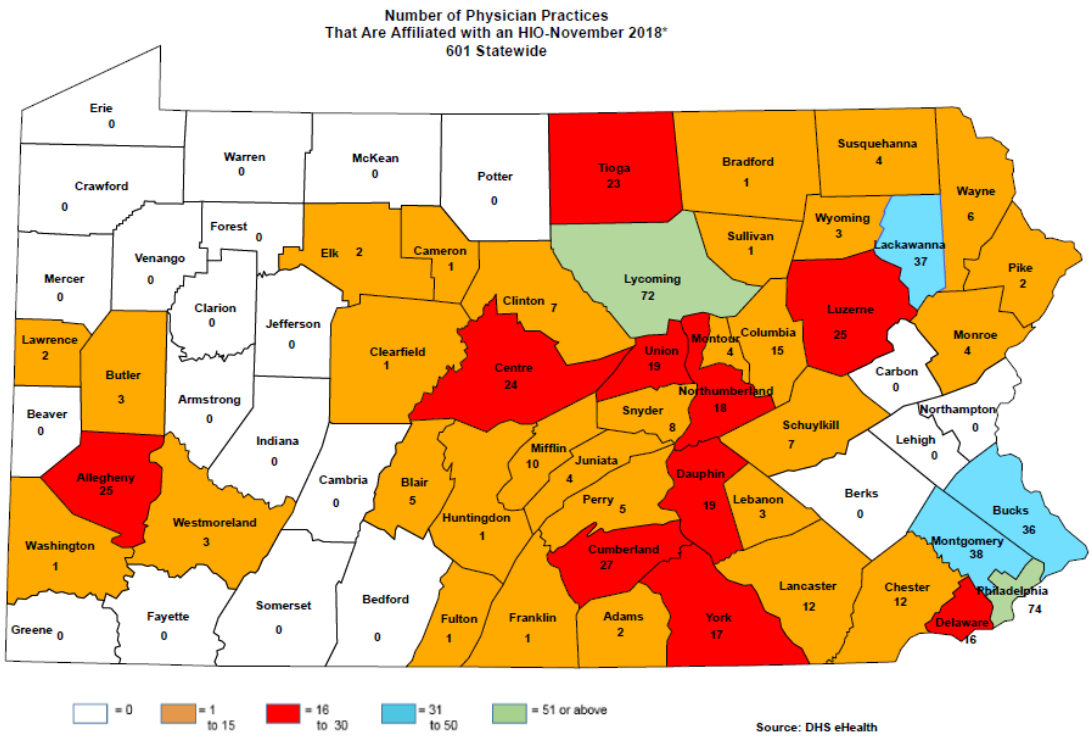


Figure 9.40 Number of Physician Practices That Are Affiliated With an HIO, Pennsylvania, November 2018[16]



There were various challenges in determining Figure 9.40, including classification of practice type, reporting methods and available data. This is the best currently available data. However, this can already provide us with a

snapshot of counties with relatively large numbers of physician practices affiliated with HIOs, such as Philadelphia, Lycoming, Montgomery, Lackawanna and Bucks. PA eHealth is actively trying to improve the classification of practice type and reporting methods and, most importantly, to have more physicians become affiliated with an HIO.

Figure 9.41 Percent and Number of Department of Health Licensed Ambulatory Surgical Care Facilities That Are Affiliated with an HIO, Pennsylvania, October 2018[17]

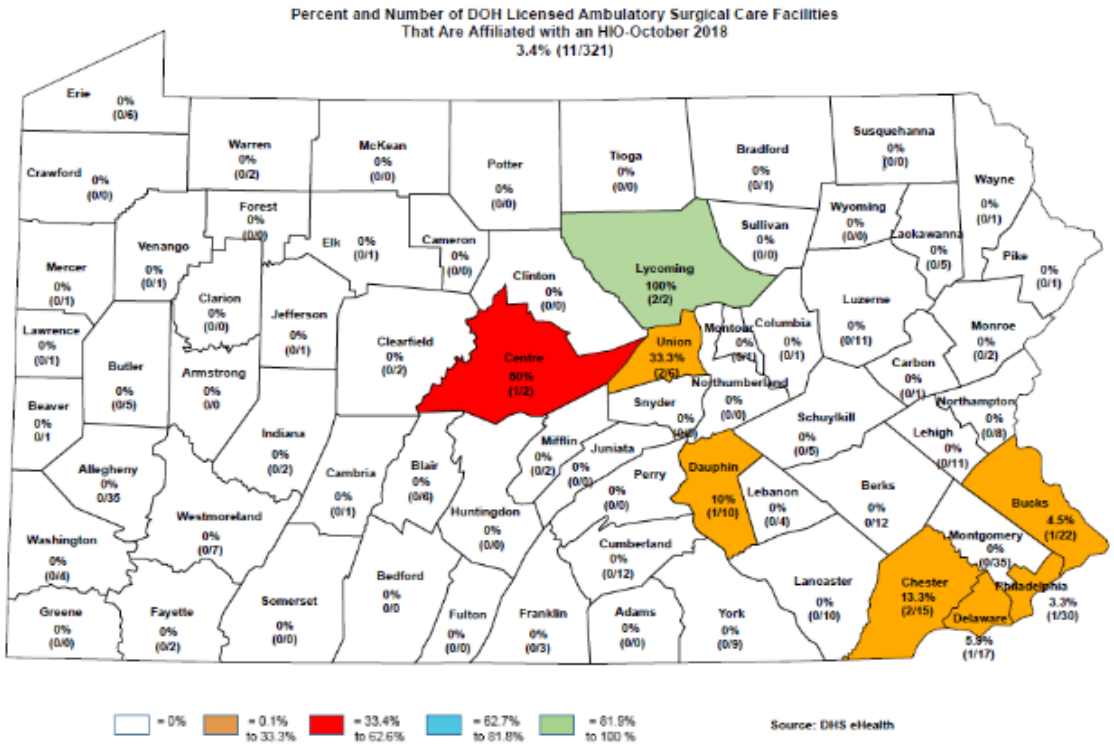


Figure 9.42 Percent and Number of Department of Health Licensed Long-term Care Facilities That Are Affiliated With an HIO, Pennsylvania, October 2018[18]

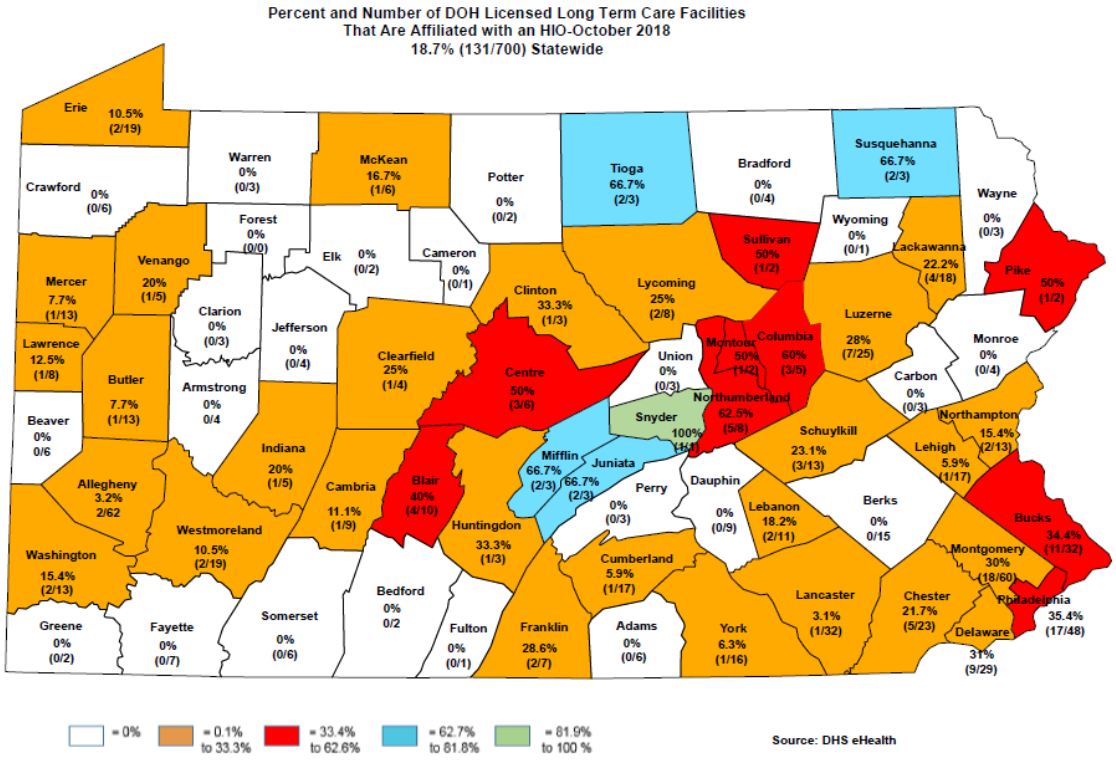
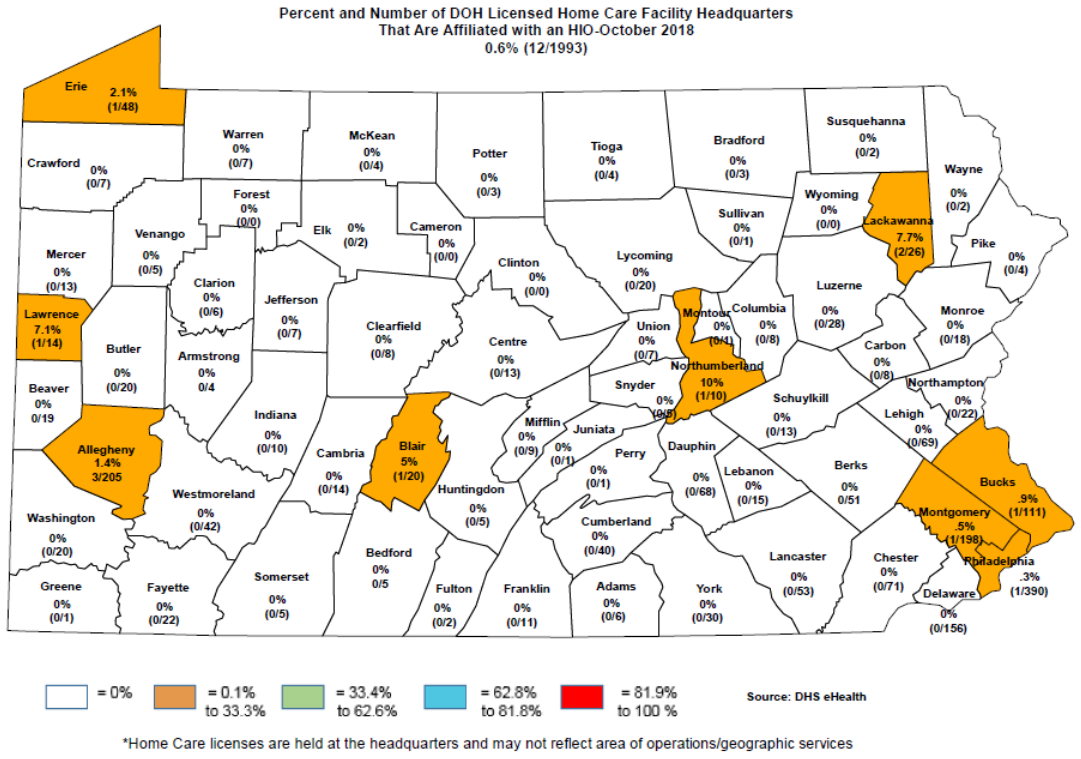
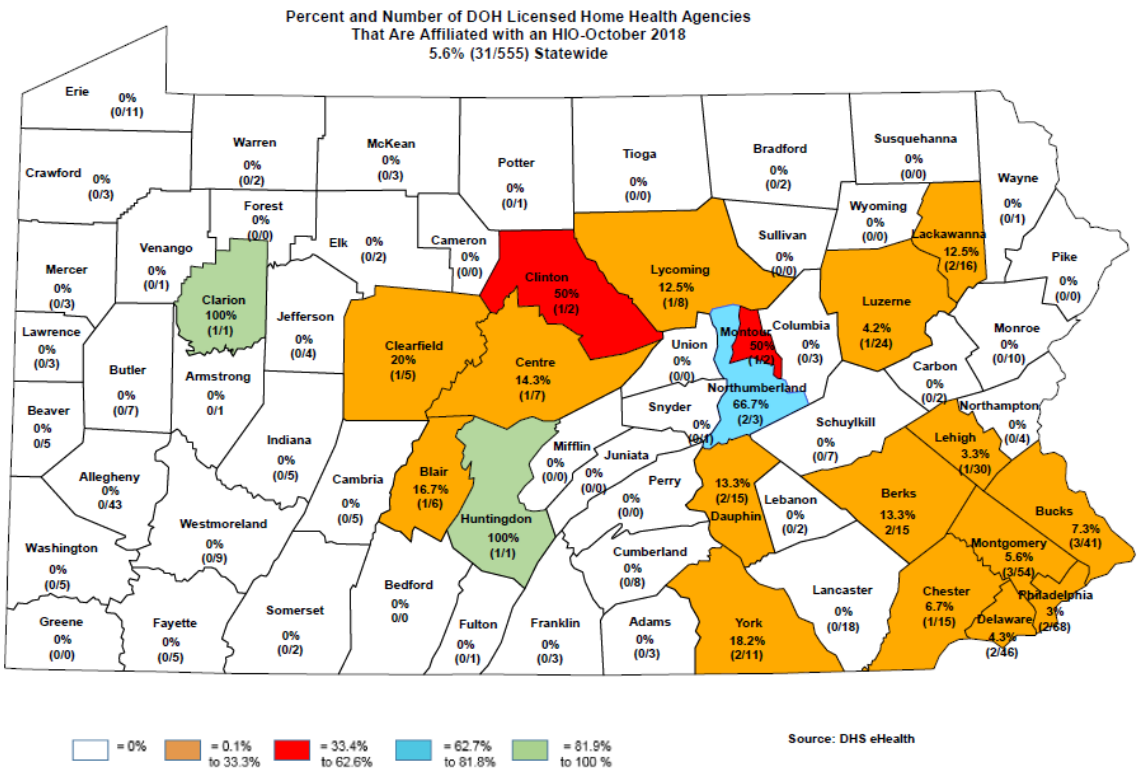


Figure 9.43 Percent and Number of Department of Health Licensed Home Care Facility Headquarters That Are Affiliated With an HIO, Pennsylvania, October 2018[19]



*Home Care licenses are held at the headquarters and may not reflect area of operations/geographic services

Figure 9.44 Percent and Number of Department of Health Licensed Home Health Agencies That Aare Affiliated With an HIO, Pennsylvania, October 2018[20]



Public Health Gateway (PHG)

The PHG's mission is to promote interoperability and access to health information, advanced usage of electronic health record technology, clinical quality improvement and public health reporting across the commonwealth. The PHG will leverage providers' connections to the P3N and certified HIOs, helping to reduce the need to develop and maintain individual connections between providers and commonwealth programs. Pennsylvania maintains a variety of registries of health information for various reasons. For example, certain private-sector entities must report information to the government regarding infectious and other diseases, so that this information can be used to identify potential threats to public health in concert with organizations like the national Centers for Disease Control and Prevention. In the past, individual health care providers across the commonwealth have had to cooperate with commonwealth agencies on a one-by-one basis to establish and maintain these reporting relationships. With PHG and standards-based transactions, these registries should be much easier to create and maintain.

As of February 2019, six public health reporting options are available via the PHG with plans to develop more underway.

- Electronic Clinical Quality Measures
- Electronic Lab Reporting
- Cancer Registry
- Immunization Registry
- Prescription Drug Monitoring Program
- Syndromic Surveillance

Future reporting registries may include the Birth Registry, Electronic Case Reporting and Death Registry.

The PHG was developed to allow the Pennsylvania state agencies, providers and other stakeholders to collect information that they need to fulfill program responsibilities and helps to expand HIE. Effective HIE provides tools that stakeholders can use to:

- Meet meaningful use requirements in the Promoting Interoperability Program and other quality payment programs;
- Engage in streamlined public health reporting via a single "one stop shop" with consistent secure connectivity to public health registries and programs; and
- Eliminate the need for multiple point-to-point connections and technical protocols to various individual registries and programs.

Resources

For more information on Health Information Exchange activities within Pennsylvania, please visit the Pennsylvania eHealth Partnership Program web page at www.paehealth.org

For information on national-level Health Information Technology and Health Information Exchange activities and initiatives, please visit the Office of the National Coordinator for Health Information Technology website at www.healthit.gov

For details concerning Promoting Interoperability/Meaningful Use and Electronic Health Record Incentive Programs, please visit the Centers for Medicare and Medicaid Services website at https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/index.html

For details of national and international Health Information Technology technical standards, please visit https://www.nist.gov/itl/ssd/systems-interoperability-group/healthcare-standards-testing and https://www.healthit.gov/hitac/committees/health-it-standards-committee and https://www.himss.org/library/interoperability-standards/standards-101

For details of national-level Health Information Technology privacy and security policies, please visit http://www.markle.org/health/markle-common-framework/connecting-professionals and https://www.hhs.gov/hipaa/index.html

Endnotes

[1] U.S. Department of Health and Human Services. (2003, Mar). First Federal eGov Health Information Exchange Standards. Retrieved from https://aspe.hhs.gov/federal-health-information-exchange-standards

[2] Pennsylvania General Assembly. (2016, Jul 8). Pennsylvania act 76 of 2016, sec. 1403-c (1). Retrieved from https://www.legis.state.pa.us/cfdocs/legis/li/uconsCheck.cfm?yr=2016&sessInd=0&act=76

[3] Office of the National Coordinator for Health Information Technology. (n.d.). Health IT Playbook. Retrieved from https://www.healthit.gov/playbook/

[4] Office of the National Coordinator. (2018, Nov 7). Regional extension centers (RECs). Retrieved from https://www.healthit.gov/topic/regional-extension-centers-recs

[5] Department of Health and Human Services, Centers for Medicare & Medicaid Services. (n.d.). Quality payment program: MIPS overview." Retrieved from https://qpp.cms.gov/mips/overview

[6] Department of Human Services. (2018, Dec 6). Pennsylvania eHealth partnership program advisory board meeting, slide 35. [PowerPoint presentation]. Retrieved from http://www.dhs.pa.gov/cs/groups/webcontent/documents/document/c_284398.pdf

[7] Centers for Medicare & Medicaid Services. (2018). Combined Medicare and Medicaid payments by state, January 2011 to January 2018. Retrieved from https://www.cms.gov/Regulations-and-Guidance/Legislation/EHRIncentivePrograms/Downloads/January2018_PaymentsbyStateProgramandProvider.pdf

[8] Pennsylvania Department of Human Services. (2018, Sep 5). P3N policy #1 terms and definitions. [pdf file]. Retrieved at: http://dhs.pa.gov/cs/groups/webcontent/documents/document/c_281611.pdf

[9] Pennsylvania Department of Human Services. (2019). HAP Q & A: opioid use disorder program. [pdf file]. Retrieved from http://www.dhs.pa.gov/cs/groups/webcontent/documents/document/c_279175.pdf

[10] Pennsylvania eHealth Partnership Authority. (2014). Figures based in part on SureScripts data not publicly available at the time. Authority general info & resources, reports and research findings, PA e-Prescribing study and ePrescribing survey 2013.

[11] Pennsylvania eHealth Partnership Authority. (2014). Figures based in part on SureScripts data not publicly available at the time. Authority general info & resources, reports and research findings, PA e-Prescribing study and ePrescribing survey 2013.

[12] Pennsylvania Department of Human Services. (n.d.). Health information exchange in PA, how it works to improve your care. [Informational flyer] Retrieved from http://dhs.pa.gov/cs/groups/webcontent/documents/document/c_256399.pdf

[13] Department of Human Services. (2018, Dec 6). Pennsylvania eHealth partnership program advisory board meeting, slide 27. [PowerPoint presentation]. Retrieved from http://www.dhs.pa.gov/cs/groups/webcontent/documents/document/c_284398.pdf

[14] Pennsylvania Department of Human Services. Pennsylvania eHealth Partnership. http://www.dhs.pa.gov/learnaboutdhs/dhsorganization/ehealthpartnership/

[15] Ciccocioppo, M. (2019). Pennsylvania eHealth Partnership Program, Office of Medical Assistance Programs, Pennsylvania Department of Human Services.

[16] Ciccocioppo, M. (2019). Pennsylvania eHealth Partnership Program, Office of Medical Assistance Programs, Pennsylvania Department of Human Services.

[17] Ciccocioppo, M. (2019). Pennsylvania eHealth Partnership Program, Office of Medical Assistance Programs, Pennsylvania Department of Human Services.

[18] Ciccocioppo, M. (2019). Pennsylvania eHealth Partnership Program, Office of Medical Assistance Programs, Pennsylvania Department of Human Services.

[19] Ciccocioppo, M. (2019). Pennsylvania eHealth Partnership Program, Office of Medical Assistance Programs, Pennsylvania Department of Human Services.

[20] Ciccocioppo, M. (2019). Pennsylvania eHealth Partnership Program, Office of Medical Assistance Programs, Pennsylvania Department of Human Services.