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**RESEARCH BRIEF**

## **Causes of Death in the Commonwealth:** *Pennsylvania Trends in Mortality, 2015*

HARRISBURG - Now an exciting time of year where one dresses in lavish costumes and overindulges in salty and sweet treats, Halloween's earliest purpose served as a remembrance of a culture's departed ones. Using data from Pennsylvania's Department of Health's Division of Health Informatics, this brief looks at state and county trends in mortality in Pennsylvania during 2015.

### **MORTALITY IN THE COMMONWEALTH**

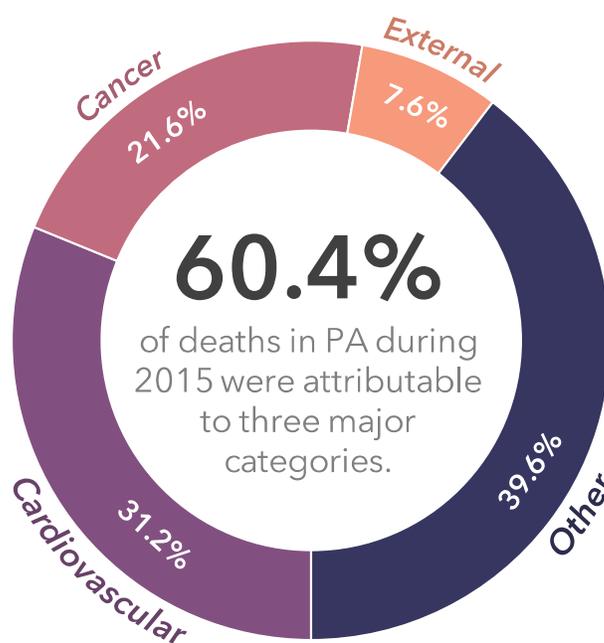
A total of 132,278 Pennsylvanians died during 2015 for an age-adjusted death rate (AADR) of 766.3 deaths per 100,000 persons. Nearly two-thirds (60.4 percent) of Pennsylvanians died from one of three causes: 1) major cardiovascular diseases, 2) cancer, and 3), external cause of death [Figure 1].

Approximately 41,241 Pennsylvanians died in 2015 from major cardiovascular diseases resulting in an AADR of 228.8 deaths per 100,000 persons. Major cardiovascular diseases encompass other prevalent causes of death such as coronary heart disease and ischemic heart disease.

Roughly 28,517 Pennsylvanians died as a result of cancer in 2015 resulting in an AADR of 166.2 deaths per 100,000 persons. Over a quarter (25.9 percent) of cancer deaths in Pennsylvania were cancer of lung and bronchus with nine percent the result of cancer of the colon and rectum.

External causes of death such as injuries and accidents accounted for 10,105 deaths in Pennsylvania in 2015 for an AADR of 73.0 deaths per 100,000 persons. Non-transport accidents represented the majority of accident-related deaths (81.0 percent) while suicide represented two thirds of non-accident related deaths.

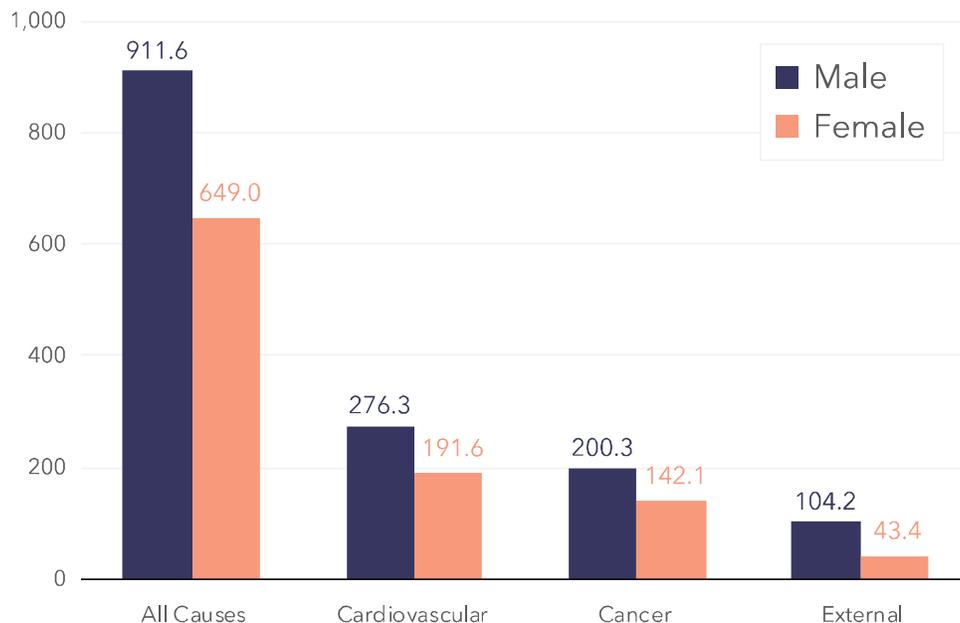
Other causes of death in Pennsylvania during 2015 included deaths related to mental and behavioral disorders (AADR = 42.0), chronic lower respiratory diseases (38.0), the digestive system (27.3) and drug-induced deaths (26.9).



**Figure 1.** Distribution of deaths in Pennsylvania among main causes including major cardiovascular diseases, cancer, external causes of death, and all other causes.

## GENDER DIFFERENCES

Overall, more females (n=67,343) died in 2015 than males (n=64,935). Males were more likely to die in Pennsylvania during 2015, however, with an AADR of 911.6 deaths per 100,000 persons due to all causes of death compared to an AADR of 649.0 for females. Males were more likely to die across all major causes of death [Figure 2].



**Figure 2.** Age-adjusted death rates for major causes of death by gender in PA during 2015.

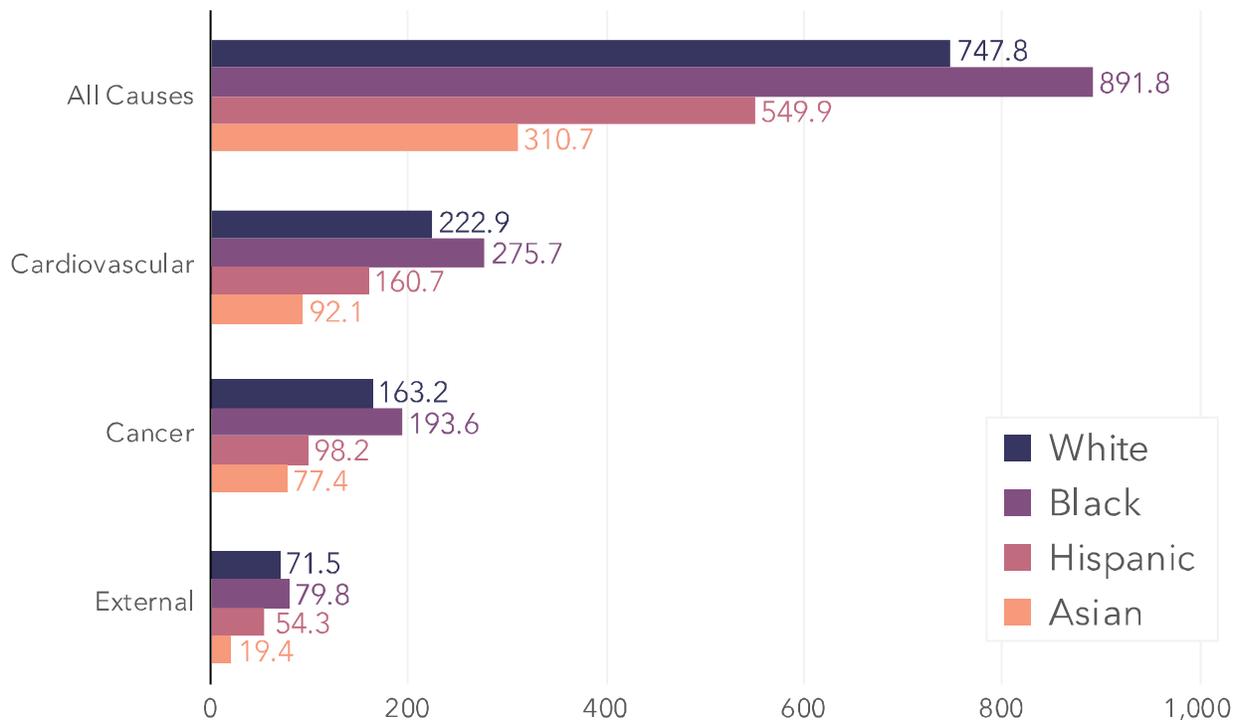
Males were at least twice as likely to die of HIV, accidental drug poisoning, alcoholic liver disease, and motor vehicle accidents. Males were over three times as likely to die by suicide and five times as likely to die by assault-based homicide. Males also suffer disproportionately from cancers of the esophagus (5.7x female rate), bladder (3.3x), mouth (3.1x), liver (2.7x) kidneys (2.5x), skin (2.3x), and stomach (2.3x).

Over 2,000 females died in 2015 from breast cancer compared to 26 males. Women were over twice as likely as men to die of asthma and more likely to die from malnutrition (1.6x), multiple sclerosis (1.5x), and Alzheimer's disease (1.3x).

## RACIAL DIFFERENCES

Black or African American\* residents had the highest AADR due to all causes of death (891.8) in Pennsylvania during 2015 [Figure 3]. Whites (747.8) and Hispanics (549.9) followed with Asian residents of the state facing the lowest AADR (310.7) at less than half of the rate of Whites.

\*All references to races refer to single race alone. References to the Hispanic population include residents of any race.



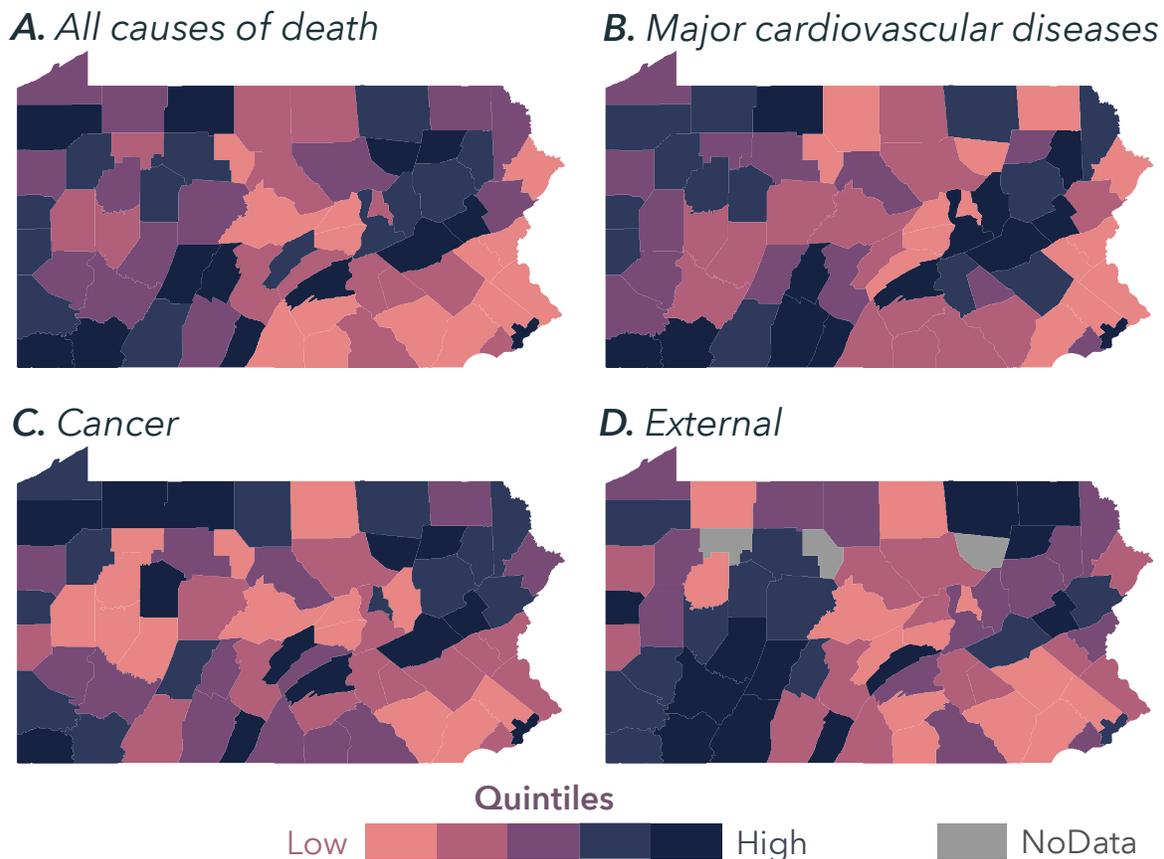
**Figure 3.** Age-adjusted death rates for major causes of death by race and ethnicity in PA during 2015.

Black or African American Pennsylvanians were 14 times more likely to die from homicide than White Pennsylvanians, and Hispanic Pennsylvanians were five times as likely as Whites. White residents of the Commonwealth were more than twice as likely to commit suicide than persons of any other single race or ethnicity.

Black or African American residents were also more likely to die of HIV (13.0x), perinatal conditions (3.3x), and asthma (1.9x). Hispanic residents were 3.6x, 1.8x, and 3.0x as likely as Whites to die by those conditions. Asian residents were only more likely than Whites by two causes: cancers of the stomach (1.6x) and liver (1.4x).

**MORTALITY IN THE COUNTIES**

Philadelphia County had the most deaths in 2015 at 14,078 deaths followed by Allegheny County with 13,866 deaths resulting in AADRs of 866.4 and 783.3, respectively. Fulton County (1,027.9) had the highest AADR among Pennsylvania’s counties in 2015, followed by Greene (962.9), Carbon (911.6), Crawford (903.3), and Fayette (902.8). Counties with the highest AADR of any cause were located primarily in the northeastern and western regions of the state [Figure 4A]. The most common cause of death in nearly all of Pennsylvania’s counties was due to major cardiovascular diseases, with the exception of Mifflin, Montour, and Sullivan Counties, which all reported cancer as the most common cause of death.



**Figure 4.** Age-Adjusted Death Rates by county in Pennsylvania during 2015 classified by quintile for A) all causes of death, B) major cardiovascular diseases, C) cancer, and D) external causes.

Counties with high AADRs due to major cardiovascular diseases were also located in the northeastern area of the state and throughout the northwestern and southwestern corners of the state [Figure 4B]. Fulton County (322.7) had the highest AADR for major cardiovascular diseases followed by Schuylkill (296.4), Lackawanna (285.1), Columbia (279.9), and Fayette (278.8). Allegheny County had the most deaths attributed to major cardiovascular diseases at 4,440 followed by Philadelphia County with 4,388.

High-cancer counties were clustered along the northern tier of the state and in the northeastern and southwestern corners [Figure 4C]. Sullivan County (243.7) had the highest AADR due to cancer followed by Fulton (236.7), Mifflin (219.2), Greene (208.5), and Carbon (197.2). Philadelphia County had the most cancer deaths in 2015 at 3,058 followed by Allegheny County with 2,933 cancer deaths.

Counties with high AADRs due to external causes such as injuries and or accidents were situated in the northeast corner and southwest region of the state [Figure 4D]. Fulton County (169.4) had the highest AADR due to external causes in 2015 followed by Cambria (109.8), Wyoming (108.4), Juniata (107.7), and Indian (107.4). Philadelphia had the highest number of deaths due to external sources in 2015 at 1,407 followed by Allegheny County with 1,115.

**Table 1.** County with the highest age-adjusted death rate by select causes of death in Pennsylvania during 2015.

Cardiovascular Diseases (major)	Fulton	322.7
Heart disease	Fulton	253.2
Coronary heart disease	Schuylkill	189.7
Heart failure	Greene	71.6
Cerebrovascular diseases	Berks	57.0
Hypertensive heart disease	Philadelphia	27.7
Cancer	Sullivan	243.7
Cancer of lung and bronchus	Wyoming	66.1
Cancer of colon and rectum	Greene	35.0
Cancer of breast	Warren	26.2
Cancer of pancreas	Adams	20.2
Cancer, leukemia	Lawrence	10.8
External Cause of Death	Fulton	169.4
Accidents, motor vehicle	Juniata	48.9
Accidental drug poisoning	Lawrence	48.8
Suicide (intentional self-harm)	Carbon	27.1
Homicide (assault)	Philadelphia	18.1
Suffocation and strangulation	Schuylkill	11.5
Other Causes of Death	--	--
Chronic lower respiratory diseases	Greene	101.2
Mental and behavioral disorders	Indiana	64.2
Alzheimer's disease	Crawford	60.5
Diabetes mellitus	Warren	52.6
Drug-induced deaths	Lawrence	49.5
Infectious and Parasitic diseases	Philadelphia	37.7
Perinatal conditions	Delaware	7.0
Congenital malformations, deformations, chromosomal abnormalities	Lancaster	4.5

**Source:** Division of Health Informatics, Pennsylvania Department of Health. 2015 County and State Age-Adjusted Mortality Rates by Underlying Cause of Death. The Pennsylvania Department of Health disclaims responsibility for any analyses, interpretations, or conclusions. Find your own data with the Department's [EDDIE](#) system.

The Pennsylvania State Data Center is the Commonwealth's official source for population and economic statistics. It is based at Penn State Harrisburg's Institute of State and Regional Affairs. The Pennsylvania State Data Center is part of the U.S. Census Bureau's National State Data Center Program.

Questions? Contact the Pennsylvania State Data Center at **717.948.6336** or online at [pasdc.hbg.psu.edu](http://pasdc.hbg.psu.edu).