



### The Economic Impact of Opioid Abuse Locally

**Summary:** The scourge of drug overdose deaths has hit Allegheny County hard with 414 deaths in 2015. Of those an estimated 280 to 300 were due to opiates, primarily prescription painkillers and heroin, up from 168 since 2008. Deaths per 100,000 people from drug overdose in Pennsylvania and the County are significantly higher than the national rate. What is the economic impact of opioid abuse and overdoses?

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Nationally, overdose deaths from all drugs rose from 35,000 in 2008 to 55,000 in 2015—a death rate of 17.1 per 100,000 people. Opioid overdose deaths climbed from 20,000 to 33,000 (10.6 per 100,000) over the same period. Deaths from prescription drug overdose, moved from 15,000 to 17,000 between 2008 and 2011 and has actually leveled off and stood at 17,000 in 2015 (5.3 per 100,000). However, deaths from heroin rocketed from 3,000 in 2008 to 13,000 in 2015 (4.2 per 100,000) and account for most of the sharp rise in opioid deaths over the last four years.

Based on the latest data available from the Pennsylvania Coroners Association (PCA), Allegheny County's 2015 fatal overdose rate from all drugs per 100,000 people was 33.6, nearly double the national rate. County deaths per 100,000 for opioid medicines and heroin were also double the national rate. How does that compare to other counties in southwestern Pennsylvania? The overall drug deaths per 100,000 were as follows: Westmoreland (35.2), Butler (25.2), Beaver (20.7), Armstrong (41.8), Fayette (29.9) and Greene (37.3). Clearly, southwest Pennsylvania has a major problem with drug abuse.

Last year Allegheny County's Department of Health released a study titled "*Opiate Related Deaths in Allegheny County*" with 2008-14 data on overdose deaths in the County. That report found a steady increase with the number of deaths climbing from 168 in 2008 to 241 in 2014. Data from neighboring Westmoreland County in that same time frame for "drug and alcohol overdoses" shows a growth from 47 in 2008 to 174 in 2014. In light of the large jump in drug overdose deaths in Allegheny County in recent years, the national spike in heroin deaths over the last four years suggests most of the of the Allegheny County increase was due to heroin. The introduction of lethal additives such as fentanyl and acetyl fentanyl are adding enormously to the dangers of heroin use.

What is the economic impact—either of addiction or fatal overdose—on workforce costs, health care costs, the criminal justice system, etc.? The following reviews relevant studies produced the past few years.

A study by Birnbaum, et al, titled “*Societal Costs of Prescription Opioid Abuse, Dependence, and Misuse in the United States*” examined health care, workplace, and criminal justice costs. That study was national in scope and produced an estimate for 2007 of \$55.7 billion. Workplace costs accounted for \$25.6 billion (46%), health care costs accounted for \$25.0 billion (45%), and criminal justice costs accounted for \$5.1 billion (9%). As described in the study, “workplace costs were driven by lost earnings from premature death (\$11.2 billion) and reduced compensation/lost employment (\$7.9 billion). Health care costs consisted primarily of excess medical and prescription costs (\$23.7 billion). Criminal justice costs were largely comprised of correctional facility (\$2.3 billion) and police costs (\$1.5 billion).”

A study by C. Florence, et al, from the National Centers for Injury Prevention and Control in Atlanta provides estimates for costs of prescription opioid abuse for 2013. This study reports that in 2013 almost two million people abused or were dependent on prescription opioids. Of that number, 16,235 died of an overdose that year. This study determined prescription opioid abuse had an economic cost of \$78.5 billion. Of that, \$26 billion was for health care, \$2.8 billion for abuse treatment, \$7.6 billion for criminal justice costs and \$20.4 billion in lost productivity (a measure of lost wages and benefits). Productivity losses attributable to the estimated earnings of the deceased were calculated to be \$21.5 billion.

Another study from *Applied Health Economics and Policy* analyzed health insurance claims by employees at large self-insured firms. The study found that compared to members who had at least one insurance claim between 2006 and 2012, opioid abusers’ health care costs were four times as large as non-abusers (\$8,418 to \$2,129 per year). What is worse, the study estimates that, based on the surveys of drug use by the National Survey of Drug Use and Health, the undiagnosed opioid abuse figure could be three times the 18.6 diagnosed abusers per 10,000 employees at the self-insured firms.

This study put work related costs to businesses due to employee disability payments and medical absenteeism at \$3,770 per abuser. With a cost adjustment covering the last five years that number would be at least 10 to 15 percent higher. And using two million abusers as reported by the American Society of Addiction Medicine, the national cost to firms would be \$8.7 billion.

A report entitled “The Opioid Crisis in America’s Workforce” from *Castlight*, a benefits firm, found that “Nearly one-third of painkiller prescriptions funded by employer plans are being abused”. The report looked at data covering 2011 to 2015. *Castlight* reported that workers who abuse painkillers account for nearly half of all spending by employer plans on painkillers, and incur nearly twice as much in annual medical costs—on average \$19,450—as non-abusers. The study says that employers are losing \$10 billion a year

from absenteeism and lost productivity—fairly close to our \$8.7 billion estimate above. That figure is almost certainly conservative.

Comparable recent studies for heroin, the other major opioid being abused, have not been located. However one study (*T L Mark, et al, US National Library of Medicine, Jan 2001*) reports a \$22 billion cost for heroin abusers in 1996. “Of these costs, productivity losses accounted for approximately U.S. \$11.5 billion (53%), criminal activities U.S. \$5.2 billion (24%), medical care U.S. \$5.0 billion (23%), and social welfare U.S. \$0.1 billion (0.5%).” Given that user numbers have doubled and health care cost have also doubled, it is not unreasonable to put today’s societal and economic costs of heroin at double the 1996 level or \$44 billion—and it is likely even higher.

What do these national statistics and economic impact estimates suggest about the local economic effects of opioid abuse? Granted there can be problems with extrapolating national results to a local area, but they can be a useful approximation.

As a first step, the estimates for 2015 will focus on Allegheny County and Westmoreland Counties (the two largest in the region) as an indication of the magnitude of the problem. Other counties will be estimated in an upcoming *Brief*. In the simplest extrapolation, one would multiply the national cost of drug abuse per person in the U.S. by the county population.

However for a more precise calculation two pieces of information are required before national cost estimates can be applied; (1) the number of deaths from opioid medicines and heroin and (2) the number of abusers of heroin and opioid drugs. Estimates of county deaths can be obtained from PCA data. However, since recent county by county data for number of abusers is not readily available, estimates of number of abusers of each drug class will require an assumption, namely that the ratio of deaths to abusers of each class of drug is the same in the two counties as in the nation.

The latest national estimates for the cost of opioid medicine abuse and a 2015 estimate of heroin abuse cost based on extrapolating 1996 results are multiplied by the calculated number of abusers in the counties to produce cost of drug abuse. Note that if the assumption that death rates per user locally are equal to the national rates is not correct, but in fact local rates are actually much higher than the national rates, then the calculation of the number of abusers will be too high and the cost of abuse estimates will also be too high. Unfortunately, local data that could answer that question are not available.

This is dealt with by creating a second estimate of the number of abusers and costs of abuse through assuming that the death rate per abuser in the two counties is double the national rate. The assumption is reasonable in light of the fact that the counties’ overdose death rates per 100,000 people are double the national ratio. This assumption will cut the estimate of abusers in half and therefore the annual economic cost of drug abusers in half. The actual figures for the number of abusers and cost of abuse probably lie somewhere between the two estimates.

In the first estimate, the number of opioid medicine abusers in Allegheny County is put at 16,000 and the number of heroin abusers at 5,000. The costs for health care, crime, and lost wages and benefits are \$472 million for opioid medicine abuse and \$350 million for heroin. In the second calculation that uses a double the national death rate per abuser, the costs for opioid medicine abuse will be \$236 million and heroin \$175 million.

Note that the second estimates are close to the figures that would be obtained by simply multiplying the national costs of abuse per person in the U.S. by the county population.

Westmoreland costs by the first estimation are placed at \$102 million for opioid medicines and \$108 million for heroin. In the second estimate, the costs would be halved to \$51 million for opioid medicine and \$54 million for heroin.

It is important to note that all the estimates are just that although they are likely reasonable approximations of actual costs. They will diverge from actual costs depending on the degree of accuracy of the national findings in the studies used to estimate the local impact.

But, one thing is certain. These estimates show the costs of opioid abuse to be very high.

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**Jake Haulk, Ph.D., President**

**Eric Montarti, Senior Policy Analyst**

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<p>Allegheny Institute for Public Policy 305 Mt. Lebanon Blvd.* Suite 208* Pittsburgh PA 15234 Phone (412) 440-0079 * Fax (412) 440-0085 E-mail: <a href="mailto:aipp@alleghenyinstitute.org">aipp@alleghenyinstitute.org</a></p>
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