

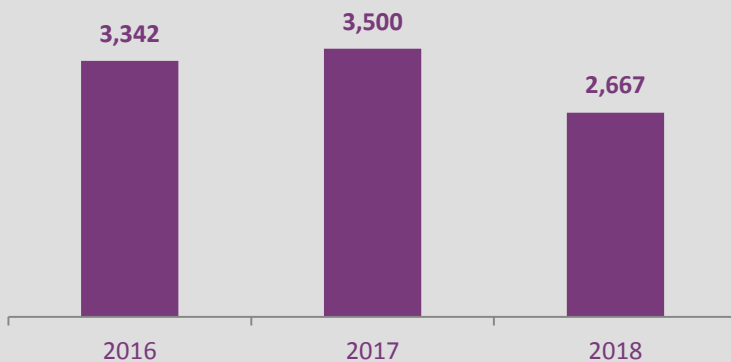
## Hospitalizations for Opioid Overdose: Three-Year Review



This research brief is part of a series produced by the Pennsylvania Health Care Cost Containment Council (PHC4) that studies opioid-related hospitalizations. This edition is a three-year review of calendar years 2016 to 2018. It includes Pennsylvania residents, age 15 and older, who were admitted to a Pennsylvania general acute care hospital. This analysis does not include overdoses that did not result in a hospital admission (e.g., those treated with naloxone and/or treated in the emergency department and not admitted to the hospital or overdose deaths that occurred outside the hospital setting).

### Hospitalizations for Opioid Overdose Decreased 23.8% between 2017 and 2018

Number of Opioid Overdose Hospitalizations



#### Cocaine and Amphetamines: Overdose Hospitalizations Increase

Admissions for overdose of cocaine and amphetamines increased between 2016 and 2018.

The number of hospitalizations for cocaine overdose increased 26.9%, from 949 in 2016 to 1,204 in 2018.

The number of hospitalizations for amphetamine overdose increased 66.1%, from 189 in 2016 to 314 in 2018.

- Between 2016 and 2017, the number of hospitalizations for opioid overdose increased from 3,342 to 3,500—a 4.7% increase. In 2018, the number dropped to 2,667—a 23.8% decrease from 2017.
- Hospitalizations for opioid overdose represented a smaller percentage of all drug-related overdose admissions in 2018 (46.8%) compared to 2017 (54.4%) and 2016 (52.6%).\*
- The total number of hospital days for opioid overdose patients amounted to 37,977 for the three-year period 2016 to 2018.
- Of the 9,509 hospital admissions for opioid overdose during 2016 to 2018, Medicaid was the anticipated payer for 47.1%, Medicare for 27.9% and commercial insurance for 18.8%, with 6.1% of the patients having no insurance or another type of insurance.

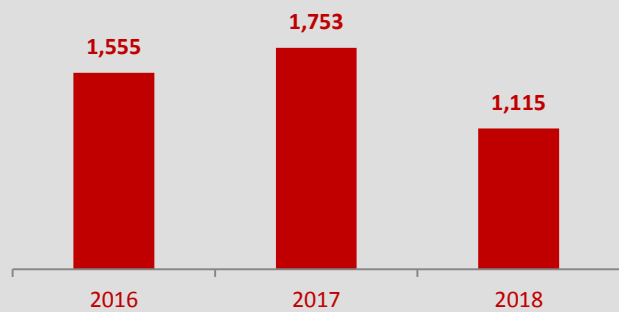
*Note: These numbers reflect overdoses that resulted in a hospital admission. They do not include all overdoses for Pennsylvania residents. It is unclear how these numbers might be affected by overdose cases that do not result in a hospital admission (e.g., the increased use of naloxone within community settings, the increased illegal use of fentanyl where overdose deaths might be more likely to occur prior to hospital admission, etc.). Emergency department visits for opioid overdose are not included in these numbers.*

\*Drug-related overdose admissions include those for overdose of amphetamines, benzodiazepines, cannabis, cocaine, LSD and other hallucinogens, and opioids. Alcohol-related overdose admissions are not included.

## Heroin Overdose Admissions

- 41.8% of the opioid overdose admissions in 2018 were reported as heroin overdoses (1,115 out of 2,667). Average age: 38.0.
- The number of heroin overdose admissions dropped 36.4% between 2017 and 2018 (from 1,753 to 1,115); 2018 numbers fell below those of 2016.
- The in-hospital mortality rate for heroin overdose dropped from 9.6% in 2017 to 9.2% in 2018.

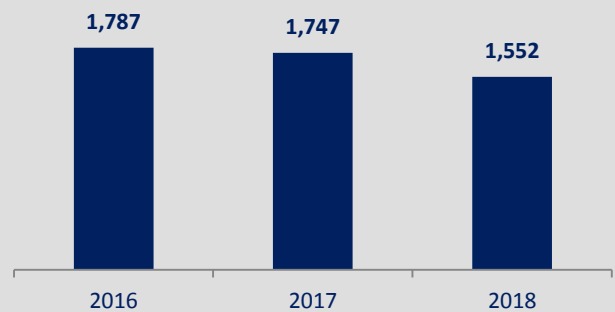
Number of Heroin Overdose Hospitalizations



## Pain Medication Overdose Admissions

- 58.2% of the opioid overdose admissions in 2018 were reported as pain medication overdoses (1,552 out of 2,667). Average age: 52.1.
- The number of pain medication overdose admissions dropped 11.2% between 2017 and 2018 (from 1,747 to 1,552) and decreased 13.2% since 2016.
- The in-hospital mortality rate for pain medication overdose increased from 5.0% in 2017 to 5.3% in 2018.

Number of Pain Medication Overdose Hospitalizations



### About PHC4

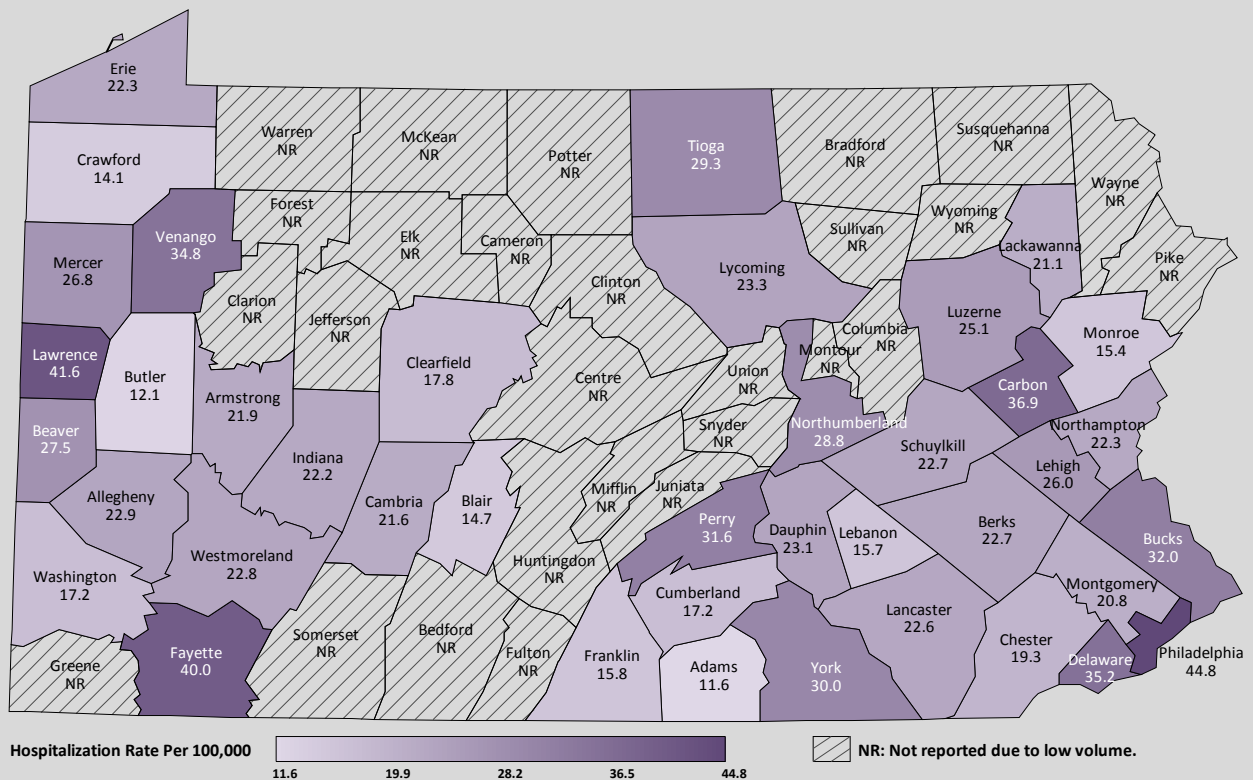
Created by the PA General Assembly in 1986, the PA Health Care Cost Containment Council (PHC4) is an independent state agency charged with collecting, analyzing and reporting information that can be used to improve the quality and restrain the cost of health care in the state. Today, PHC4 is a recognized national leader in public health care reporting. PHC4 is governed by a 25-member board of directors, representing business, labor, consumers, health care providers, insurers and state government.

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## Opioid Overdose Hospitalization Rate per 100,000 County Residents, 2018



Note that higher rates for some counties might reflect larger numbers of residents with high risk characteristics (e.g., factors related to income, race/ethnicity and gender). County rates were not adjusted for these population differences so that important effects of these patient characteristics were not masked by such adjustment.

**Statewide Population-based Rates.** Statewide, there were 25.1 hospitalizations for opioid overdose per 100,000 residents in 2018. Rates varied by income, education, race/ethnicity and gender:

- **by Income.** The rate was 54.4 per 100,000 for residents living in lower income areas (where the average income is less than \$30,000). The rate was 17.3 for residents living in higher income areas (where the average income is \$90,000 or higher).
- **by Education.** The rate was 46.2 per 100,000 for residents living in areas with lower levels of education (where less than 10% of the population has a bachelor’s degree). The rate was 14.6 for residents living in areas with higher levels of education (where 60% or more of the population has a bachelor’s degree).
- **by Race/Ethnicity.** The rates for black (non-Hispanic), white (non-Hispanic), and Hispanic residents were 28.9, 25.2 and 20.0, respectively.
- **by Gender.** The rate was 30.6 for males and 19.9 for females.

*Rate Calculations:* Rates include residents age 15 and older and were calculated using PHC4 hospital discharge data and US Census Bureau data (2016, 2017 and 2018 population figures). Rates by income and education were based on 2017 Census estimates of median household income and percent of residents with a bachelor’s level education at the zip code level.

**Opioid Overdose Hospitalizations, Number and Rate per 100,000 County Residents  
2016 through 2018**

	2016 Hospitalizations		2017 Hospitalizations		2018 Hospitalizations	
	Number	Rate	Number	Rate	Number	Rate
<b>Statewide</b>	<b>3,342</b>	<b>31.6</b>	<b>3,500</b>	<b>33.0</b>	<b>2,667</b>	<b>25.1</b>
<b>Adams</b>	<b>26</b>	<b>30.6</b>	<b>18</b>	<b>21.1</b>	<b>10</b>	<b>11.6</b>
<b>Allegheny</b>	<b>362</b>	<b>35.0</b>	<b>425</b>	<b>41.2</b>	<b>236</b>	<b>22.9</b>
<b>Armstrong</b>	<b>16</b>	<b>28.7</b>	<b>13</b>	<b>23.5</b>	<b>12</b>	<b>21.9</b>
<b>Beaver</b>	<b>57</b>	<b>40.7</b>	<b>44</b>	<b>31.7</b>	<b>38</b>	<b>27.5</b>
<b>Bedford</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Berks</b>	<b>87</b>	<b>25.7</b>	<b>107</b>	<b>31.4</b>	<b>78</b>	<b>22.7</b>
<b>Blair</b>	<b>32</b>	<b>31.2</b>	<b>38</b>	<b>37.1</b>	<b>15</b>	<b>14.7</b>
<b>Bradford</b>	<b>11</b>	<b>22.0</b>	<b>15</b>	<b>30.1</b>	<b>NR</b>	<b>NR</b>
<b>Bucks</b>	<b>178</b>	<b>34.1</b>	<b>200</b>	<b>38.2</b>	<b>168</b>	<b>32.0</b>
<b>Butler</b>	<b>31</b>	<b>19.9</b>	<b>41</b>	<b>26.2</b>	<b>19</b>	<b>12.1</b>
<b>Cambria</b>	<b>58</b>	<b>51.3</b>	<b>58</b>	<b>51.8</b>	<b>24</b>	<b>21.6</b>
<b>Cameron</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Carbon</b>	<b>17</b>	<b>31.8</b>	<b>13</b>	<b>24.2</b>	<b>20</b>	<b>36.9</b>
<b>Centre</b>	<b>22</b>	<b>15.5</b>	<b>11</b>	<b>7.7</b>	<b>NR</b>	<b>NR</b>
<b>Chester</b>	<b>103</b>	<b>24.6</b>	<b>105</b>	<b>24.9</b>	<b>82</b>	<b>19.3</b>
<b>Clarion</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Clearfield</b>	<b>12</b>	<b>17.6</b>	<b>14</b>	<b>20.7</b>	<b>12</b>	<b>17.8</b>
<b>Clinton</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Columbia</b>	<b>21</b>	<b>37.2</b>	<b>25</b>	<b>44.6</b>	<b>NR</b>	<b>NR</b>
<b>Crawford</b>	<b>14</b>	<b>19.6</b>	<b>14</b>	<b>19.7</b>	<b>10</b>	<b>14.1</b>
<b>Cumberland</b>	<b>49</b>	<b>23.8</b>	<b>28</b>	<b>13.5</b>	<b>36</b>	<b>17.2</b>
<b>Dauphin</b>	<b>70</b>	<b>31.4</b>	<b>68</b>	<b>30.3</b>	<b>52</b>	<b>23.1</b>
<b>Delaware</b>	<b>187</b>	<b>40.6</b>	<b>204</b>	<b>44.2</b>	<b>163</b>	<b>35.2</b>
<b>Elk</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Erie</b>	<b>81</b>	<b>35.7</b>	<b>84</b>	<b>37.3</b>	<b>50</b>	<b>22.3</b>
<b>Fayette</b>	<b>37</b>	<b>33.2</b>	<b>42</b>	<b>37.9</b>	<b>44</b>	<b>40.0</b>
<b>Forest</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Franklin</b>	<b>34</b>	<b>27.2</b>	<b>21</b>	<b>16.7</b>	<b>20</b>	<b>15.8</b>
<b>Fulton</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Greene</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Huntingdon</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>
<b>Indiana</b>	<b>14</b>	<b>19.3</b>	<b>20</b>	<b>27.7</b>	<b>16</b>	<b>22.2</b>
<b>Jefferson</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>	<b>NR</b>

NR: Not reported due to low volume.



**Opioid Overdose Hospitalizations, Number and Rate per 100,000 County Residents  
2016 through 2018 (continued)**

	2016 Hospitalizations		2017 Hospitalizations		2018 Hospitalizations	
	Number	Rate	Number	Rate	Number	Rate
Juniata	NR	NR	NR	NR	NR	NR
Lackawanna	74	42.1	48	27.4	37	21.1
Lancaster	127	29.4	103	23.7	99	22.6
Lawrence	22	30.1	29	40.0	30	41.6
Lebanon	39	34.8	27	23.8	18	15.7
Lehigh	70	23.8	85	28.6	78	26.0
Luzerne	73	27.4	72	27.0	67	25.1
Lycoming	32	33.6	26	27.5	22	23.3
McKean	NR	NR	NR	NR	NR	NR
Mercer	31	32.7	40	42.5	25	26.8
Mifflin	NR	NR	NR	NR	NR	NR
Monroe	27	19.2	34	24.0	22	15.4
Montgomery	162	24.1	171	25.2	142	20.8
Montour	NR	NR	NR	NR	NR	NR
Northampton	80	31.7	76	30.0	57	22.3
Northumberland	28	36.2	16	20.8	22	28.8
Perry	14	37.0	11	29.0	12	31.6
Philadelphia	608	47.4	676	52.5	579	44.8
Pike	NR	NR	NR	NR	NR	NR
Potter	NR	NR	NR	NR	NR	NR
Schuylkill	30	24.9	33	27.6	27	22.7
Snyder	NR	NR	NR	NR	NR	NR
Somerset	12	18.8	18	28.4	NR	NR
Sullivan	NR	NR	NR	NR	NR	NR
Susquehanna	NR	NR	NR	NR	NR	NR
Tioga	NR	NR	NR	NR	10	29.3
Union	NR	NR	NR	NR	NR	NR
Venango	NR	NR	NR	NR	15	34.8
Warren	NR	NR	NR	NR	NR	NR
Washington	59	33.9	50	28.7	30	17.2
Wayne	NR	NR	NR	NR	NR	NR
Westmoreland	116	38.5	109	36.4	68	22.8
Wyoming	NR	NR	NR	NR	NR	NR
York	104	28.7	145	39.8	110	30.0

NR: Not reported due to low volume.

