

Drug-poisoning Deaths Involving heroin: Cuyahoga County, 2007-2013

Drug poisoning (fatal toxicity) is the number one cause of accidental death in Cuyahoga County behind only accidental falls, with 340 occurring in 2013 (out of a total of 43,982 in the US) and an estimated 352 in 2014. While much attention has been paid to the prescribed opioid analgesic deaths around the country, in Cuyahoga County, deaths involving heroin surpassed those of opioids in 2012. Cuyahoga County Medical Examiner’s Office has been intently studying many aspects of these deaths since 2012.

Key Findings

Data from the Cuyahoga County Medical Examiner’s Office

- From 2007-2013, heroin deaths nearly quintupled from 40 to 194. Most significant increases have taken place since 2011.
- Although the rate of increase for women has been on the rise, men still are nearly 3 times more likely to have a heroin involved death.
- Non-Hispanic white persons, between ages 45-60 is the largest age group of heroin involved deaths, but the fastest growing age group is 19-29.
- The number of drug-poisoning deaths involving heroin is split nearly evenly between City of Cleveland residents and residents of suburban communities.

Total drug-poisoning deaths involving opioid analgesics has remained steady in recent years, while deaths involving heroin have nearly quintupled since 2007.

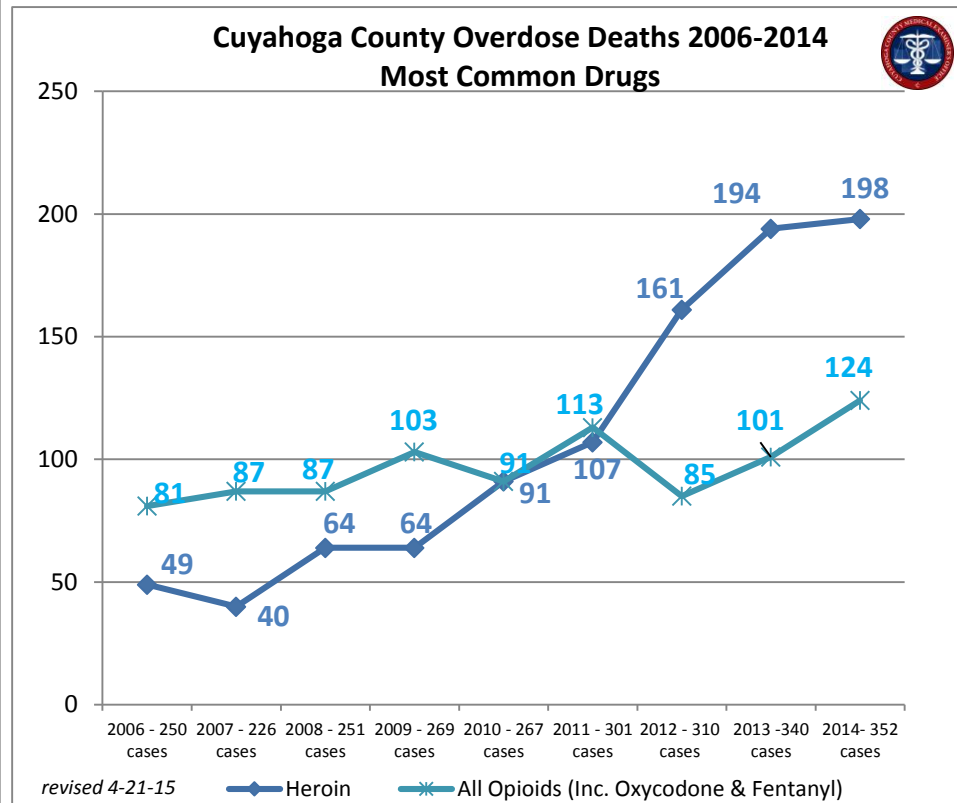


Figure 1 – Drug poisoning deaths, by type of drug: Cuyahoga County 2007-2014

NOTE: A subset of deaths involves both opioids and heroin each year, between 12% and 20% in recent years. 2014 data is still preliminary and subject to change.

From 2007-2011, the rate of drug-poisoning deaths involving opioid analgesics was higher than those for heroin (Fig.1). That changed with a dramatic increase in heroin related deaths in 2012 and which continued in 2013 while rates for opioids plateaued to some degree. 2014 data showed increases for both, with heroin related deaths still far outpacing those involving opioids.



In rates per 100,000 population, for comparison with national figures, the increase still mirrors overall totals, which are significantly ahead of the trends found in the national data. Whereas current national data shows that the total number of opioid involved deaths remains higher than those involving heroin, that is not the case in Cuyahoga County.

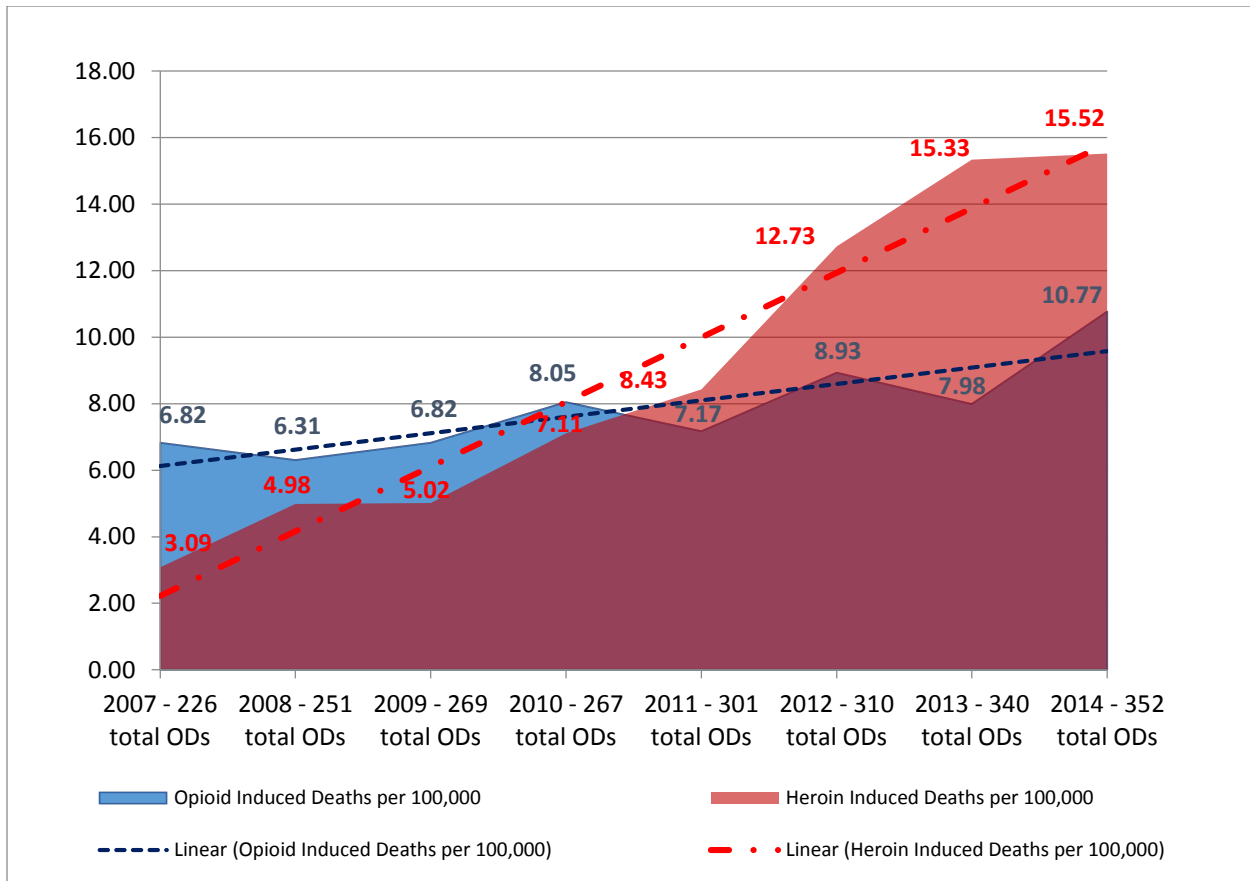


Figure 2 – Drug-poisoning deaths in Cuyahoga County, Heroin vs. Opioid involved, rates per 100,000 population

Also, while national data showed a statistically significant upward trend starting in 2010, that increase began in 2009 in Cuyahoga County.

Since 2007, deaths involving heroin quintupled per 100,000 population (Fig.2), with most of that increase coming after 2009, from 3.09 in 2007 to 15.33 in 2013 (15.52 in 2014). The national rate in 2013 was 2.7 deaths per 100,000.

In 2013, the number of drug-poisoning deaths involving heroin was nearly three times higher for men than women.

More men than women died from drug poisoning involving heroin (Fig.3). In 2013, the number for men (143) was nearly three times that for women (51). In 2014, that ratio widened to nearly four to one, matching the national data.



However, for opioid related deaths, women are much closer to the totals of men than those seen for heroin related deaths (Fig.4). Since 2007, ratios fluctuate from 1.3 : 1 to nearly 1.6 : 1 in 2013 where it peaked. A of just over 1.4 : 1 occurred in 2014.

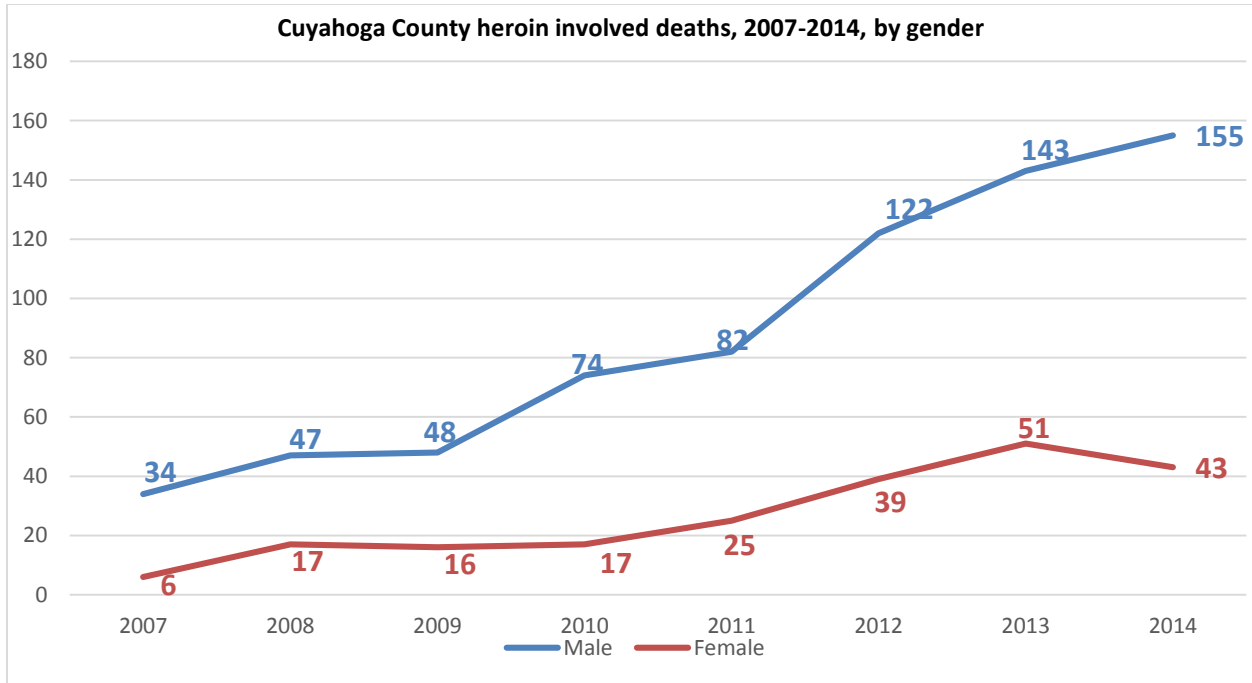


Figure 3 – Cuyahoga County heroin related deaths, 2007-2014, by Gender

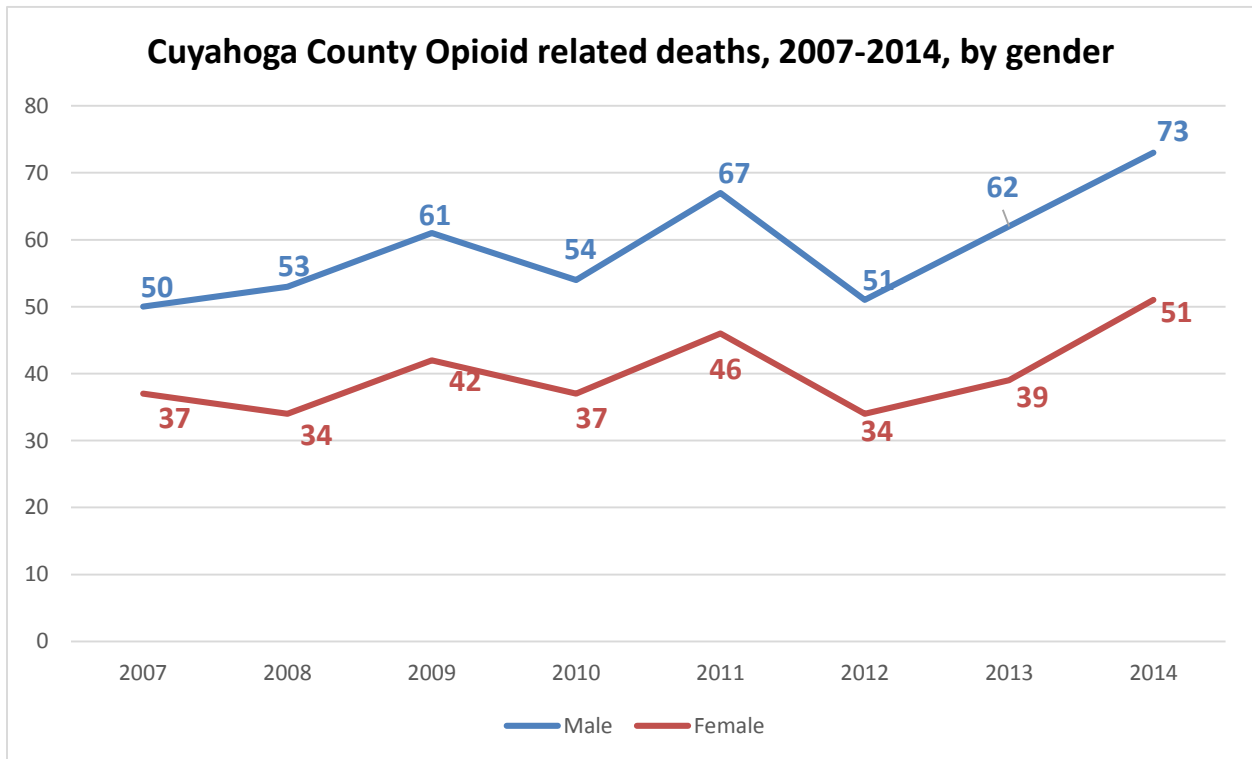


Figure 4 – Cuyahoga County opioid related deaths, 2007-2014, by Gender



The rate for heroin-related drug-poisoning deaths was highest among adults aged 45-60, from 2007-2013 followed closely in recent years by the 30-44 age group but the fastest growing age group are young people age 19-29.

Compared with adults aged 19-29, which is actually the fastest growing age demographic for heroin-related deaths in Cuyahoga County, those aged 45-60 had the highest rate for heroin involved drug poisonings, followed closely by the 30-44 age group. In 2014, the 45-60 age group decreased while the 30-44 age group increased. 19-29 year olds stayed the same as 2013. Prior to 2014, no one aged 18 or under had died from a heroin related poisoning in Cuyahoga County.

This differs slightly from national data, which states the largest group is aged 25-44. Because statistics in Cuyahoga are kept differently, the age groups overlap national data somewhat. In 2014, the gap between the 45-60 and 30-44 age groups closed to about even.

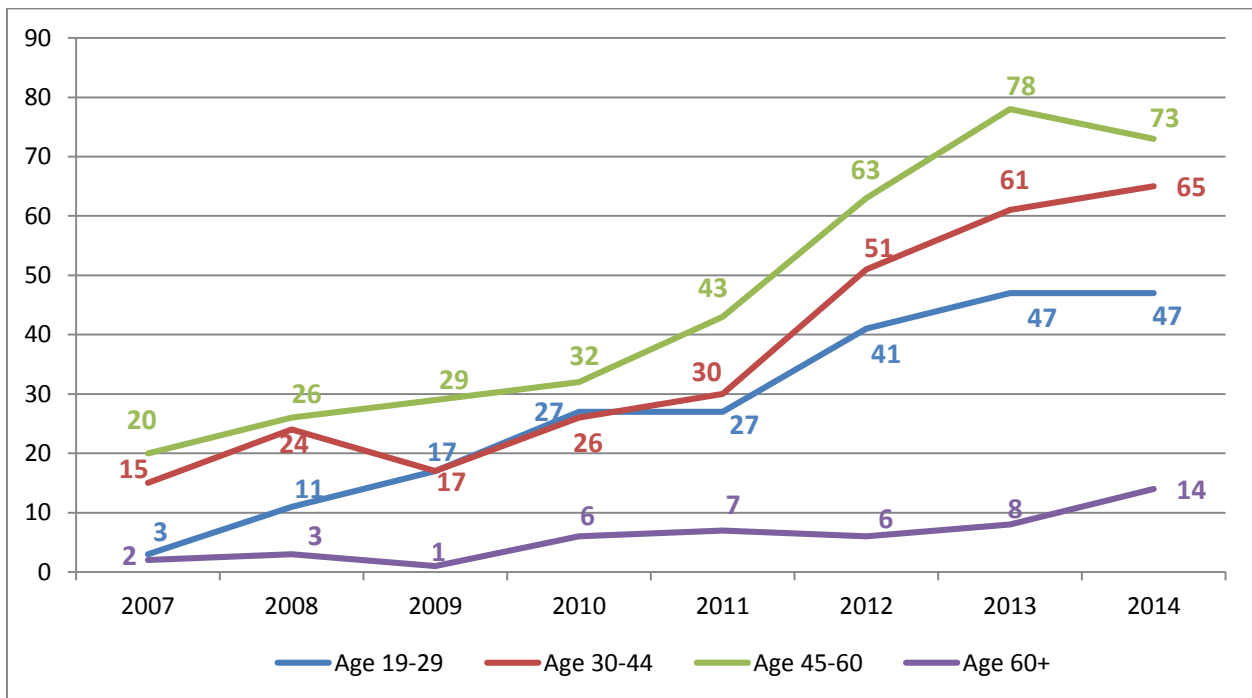


Figure 5 – Cuyahoga County heroin-related deaths, 2007-2014

In Cuyahoga County, increases between 2007 -2010 remained fairly steady for both the 30-44 and 45-60 year old age groups, with the over 60 age group nearly non-existent. The youngest age group, 19-29 years old made steady increases. In 2011 and beyond, all three age groups rose sharply and showed even some increase in the upper age category as well. Age 19-29 nearly doubled since 2010 (nationally rates rose 2.3 – fold) and both the 30-44 (2.35 – fold) and the 44-60 (2.43 – fold) more than doubled where national numbers increased 2.8 – fold in the 25-44 age range and 2.7 – fold in the 45-64 age range.



The rate for heroin-related drug-poisoning deaths was highest among Non-Hispanic white persons, from 2007-2013.

From a racial demographic breakdown, Non-Hispanic whites, by far make up the large majority of heroin-related deaths in Cuyahoga County (Fig.6) at least four to one and as high as 10:1 in 2008. Heroin-related deaths of Non-Hispanic blacks have generally declined, after peaking at about 17% from 2009-2011.

Hispanic deaths due to heroin have generally been between 3-4% with occasional fluctuations in 2010 and expected again in 2014 to about 6-7%, although, these according to Census reporting trends, Hispanic identification is generally underreported approximately 5%. Heroin-related deaths were so far, virtually non-existent in the other racial demographics

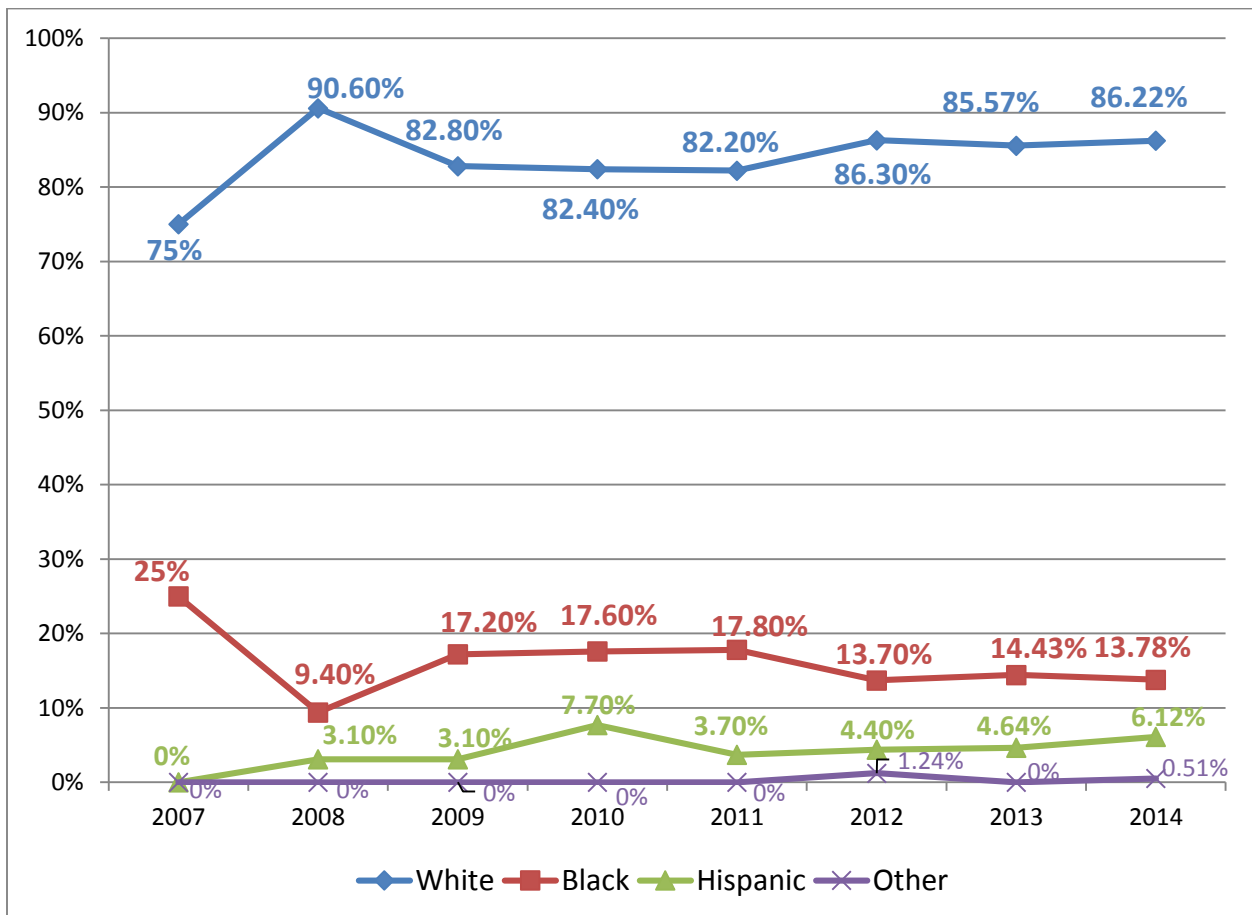


Figure 6 – Cuyahoga County, Heroin-related deaths, 2007-2014, by Race and Ethnicity

These trends generally match national data reported. In 2013, the national rate was highest among non-Hispanic white persons aged 18-44. Merging Cuyahoga County data for those two age categories would mirror that national statistic.



National data shows that the Midwest, followed closely by the Northeast of the United States, saw the greatest increases in the rate for heroin-related drug-poisoning deaths from 2000-2013. In Cuyahoga County, the rates in the suburban communities rose greater than that of the Central City (Cleveland).

The Cuyahoga County Medical Examiner’s Office tracks heroin-related deaths by the residence of those decedents as well as where the incident occurred, if known. Often residence (Fig.7) and incidence locations (Fig.8) are the same and trends show that the highest concentration of heroin activity for both overlap in the western neighborhoods of the City of Cleveland and the Northwestern suburban communities that share its border.

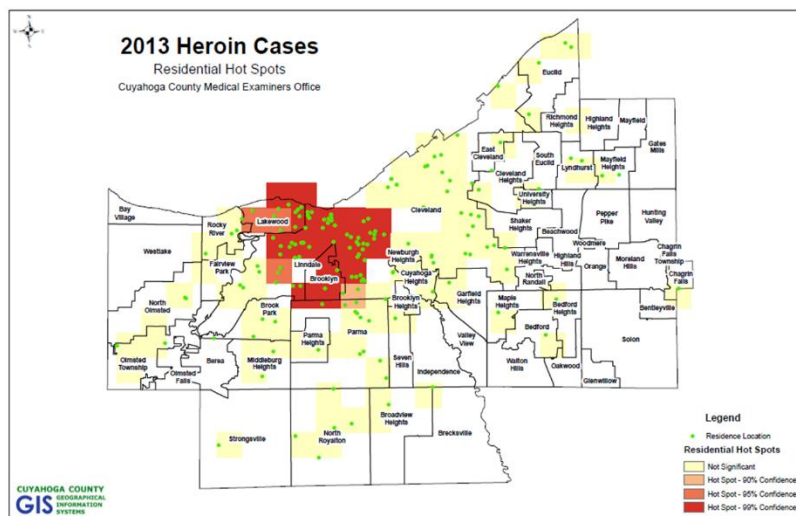


Figure 7 – Cuyahoga County heroin-related deaths, Place of Residence, 2013

City of Cleveland residents still are the largest single group of decedents from heroin-related deaths but in total, they make up less than 50% of the total of heroin-related deaths in Cuyahoga County (Fig.9). Some deaths, under jurisdiction of the Cuyahoga County Medical Examiner, are residents of other counties or states but their deaths occur and are recorded in Cuyahoga County.

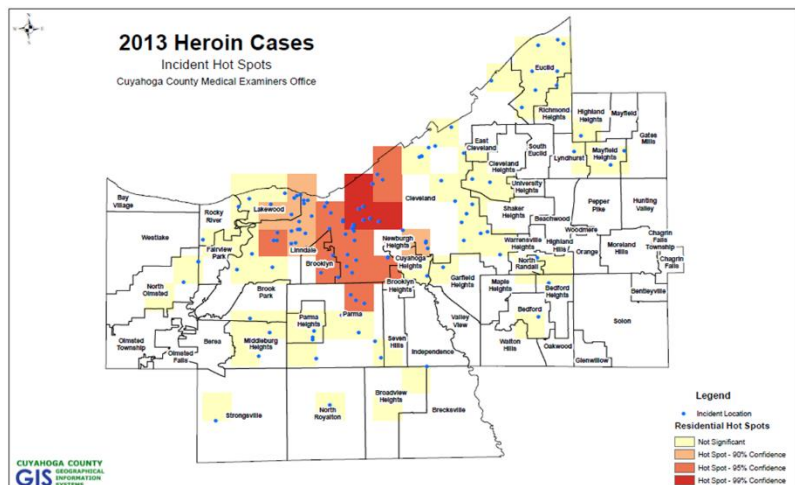


Figure 8 – Cuyahoga County heroin-related deaths, Place of Incident, 2013



Meanwhile, the place of incident (Fig.10) becomes less and less known as the number of overall incidents climbs. About 7% were unknown in 2007 to a high above 20% in 2012 and 16.5% in 2013. What information can be documented shows again that City of Cleveland has the single largest number of incidents but that in recent years, suburban communities have grown more as a percentage of the whole.

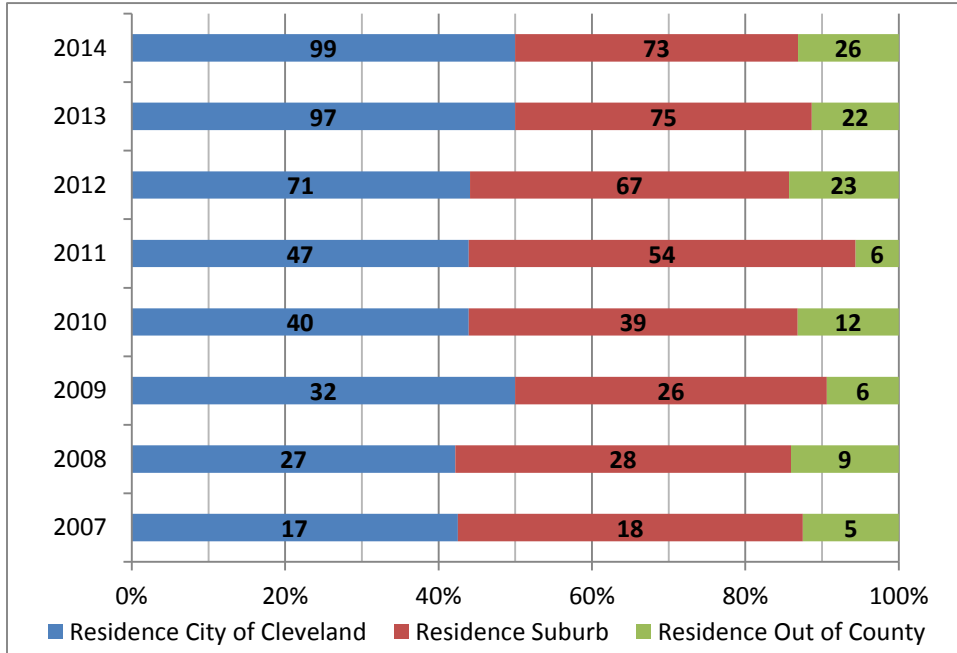


Figure 9 – Cuyahoga County heroin-related deaths, 2007-2014, place of residence

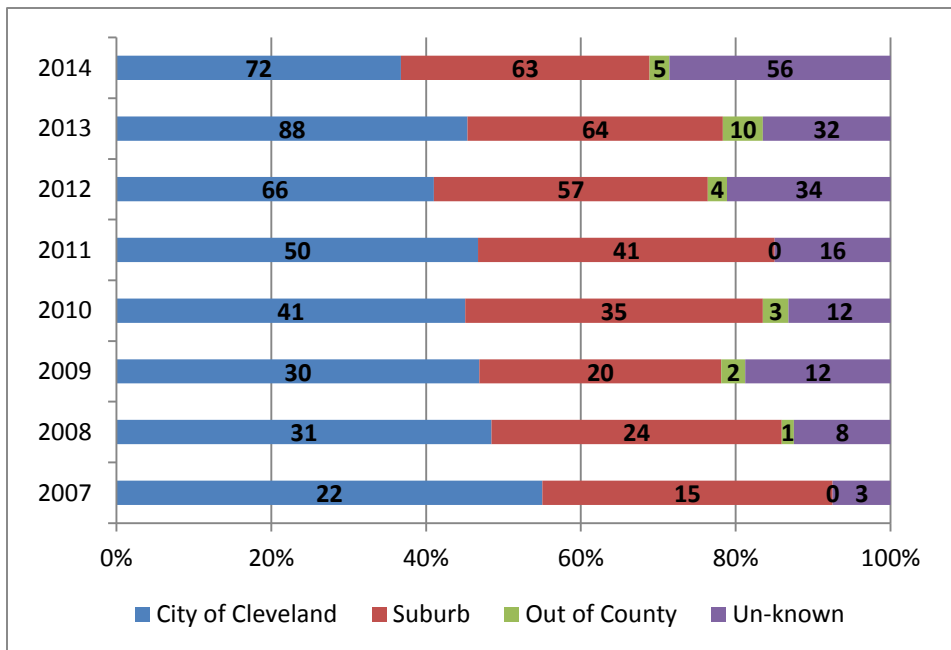


Figure 10 – Cuyahoga County, heroin-related deaths, 2007-2014, place of incident

The increase in the number of residents in heroin-related deaths for the City of Cleveland increased 470% from 2007 to 2013. During that period, the increase in suburban Cuyahoga County was 317% and from suburban communities outside the County was 340%.

From places of incidence, Cleveland incidents that could be identified increased 300% from 2007 until 2013. Suburban communities of Cuyahoga County saw an identified rate of incidence rise 327%. While the numbers of incidents originating outside of Cuyahoga County is relatively small, it has been a steady increase from none in 2007 to 10 in 2013.



More recent trends

In Cuyahoga County in 2014, heroin-related deaths show a reduction in the rate of incidence of women and younger people aged 19-29 were flat from 2013. As in 2013, an equal number of decedents were residing in the suburban communities in 2014, whereas in previous years, it has outpaced residents of the City of Cleveland.

The emergence of fentanyl either as an adulterant or a substitute (knowingly or not) for heroin has plagued several areas of the country and Ohio. Previously, it would appear that outbreaks would occur when suppliers received limited amounts, triggering a rash of deaths. The emerging trend is now multiple sources and a more constant presence in the local drug market. Fentanyl has been counted in the opioid related death numbers but the behavior in obtaining it more closely mirrors the illicit purchase of heroin.

Benzodiazapines are also a growing co-intoxicant in heroin-related deaths, now rivaling the opioid prescription deaths. Alarming rates of growth are found in drug poisonings for alprazolam and especially diazepam. Benzodiazapines show up in cause of death of heroin-related cases about 15-20% of the time, with 18.5% in 2013 cases, nearly equaling the frequency of other opioids.

Summary

This report provides the latest statistics for Cuyahoga County on fatal drug poisonings involving heroin, highlighting substantial increases in death rates and those most at risk.

From 2007 to 2013 the rate of heroin related deaths has nearly quintupled, from 40 to 194. The rate of increase from 2007 until 2009 remained relatively modest in aggregate, from 40 to 64 but from 2009 on, increasing at a much higher rate, 90 to 194.

White males aged 19-44 are most likely to be found among heroin-related deaths and occur just as often in the City as the suburbs.

Data source and methods

All data gathered is from the Cuyahoga County Medical Examiner's Office. No outside data is used.

Due to the fact that metabolic breakdown of heroin in the body is rapid, it can make distinguishing heroin from other opiate or opioid deaths difficult. CCMEO has the Regional Forensic Science Laboratory, so toxicology and drug chemistry testing is available in-house. Methodologies for testing for heroin, opioids and fentanyl have been in place for the entirety of the study period. This makes the results of heroin-related deaths very accurate in terms of confidence. As stated previously, multiple drugs are likely to be listed in the cause of death. Stand-alone heroin deaths occur about 25% of the time.

