

SUICIDE

Data and Trends



**Montgomery County Department
of Behavioral Health and
Developmental Disabilities**

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Data Sources & Disclaimer

- Our local data is from the County coroner's office
 - Includes all suicides completed in-county
 - Does NOT include Montco residents who died outside the county
 - So, data in this report may differ somewhat from other sources
- National and state data is from the Centers for Disease Control (CDC) – National Center for Health Statistics
 - Historical data from the *Vital Statistics of the United States* report
- Some global data from Organisation for Economic Co-operation and Development (OECD)

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- **Means:** Data and trends in method of suicide for Montgomery County from 2008-2014

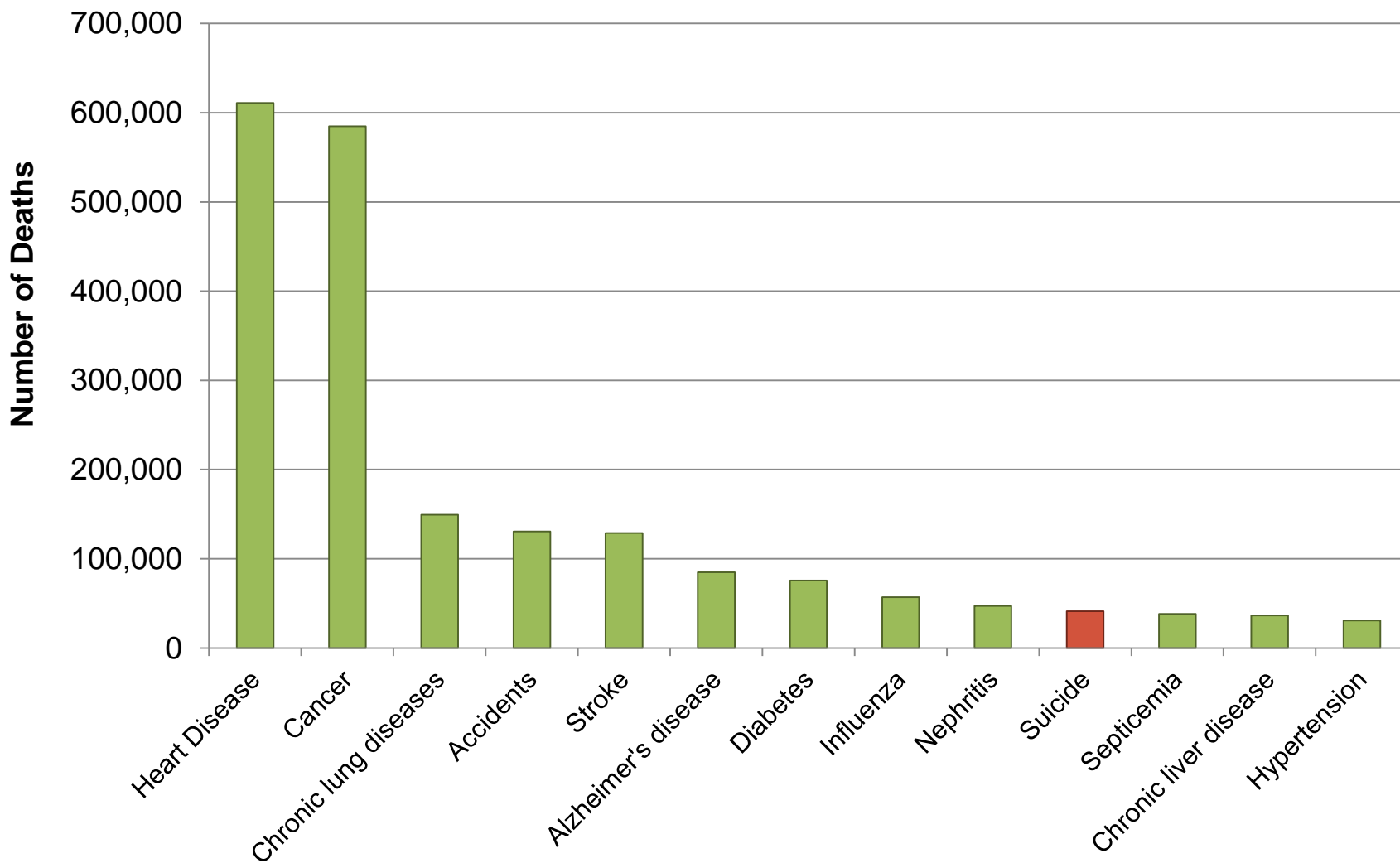
PREVALENCE

How Common is Suicide?

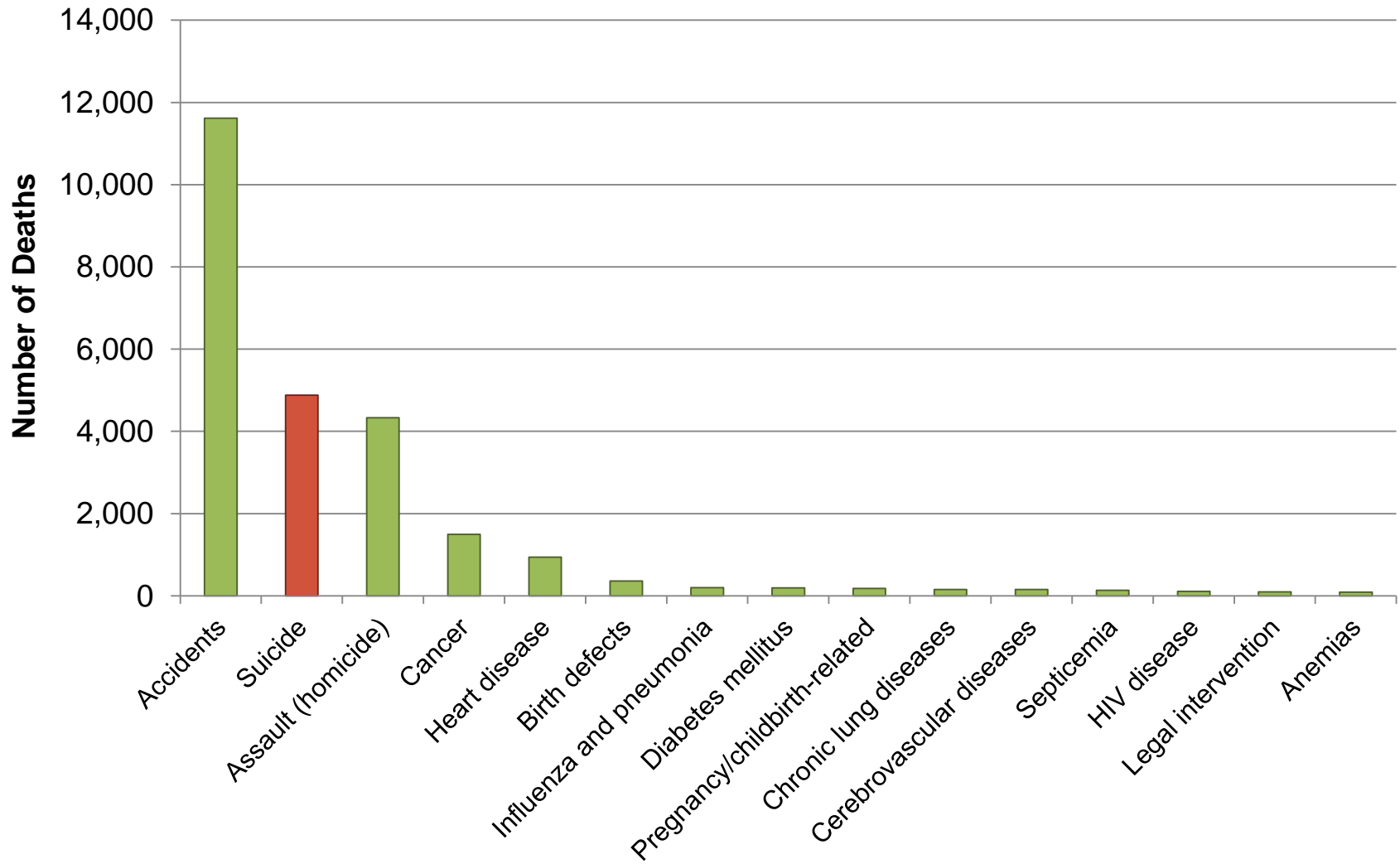
How Common is Suicide?

- Suicide is currently the 10th leading cause of death in the United States (all ages)
 - Was as high as 8th in 1977
 - Dropped to 11th in 2000
 - On the rise since 2001
- Suicide is the 2nd leading cause of death among 15-24 year olds
 - This is because, generally, young people don't die as often as adults from disease or illness
 - Top 3 leading causes for young people are all a result of human action (accidents, suicide, homicide)

Top Causes of Death in the United States, all ages, 2013



Top Causes of Death, 15-24 yr olds, United States, 2013

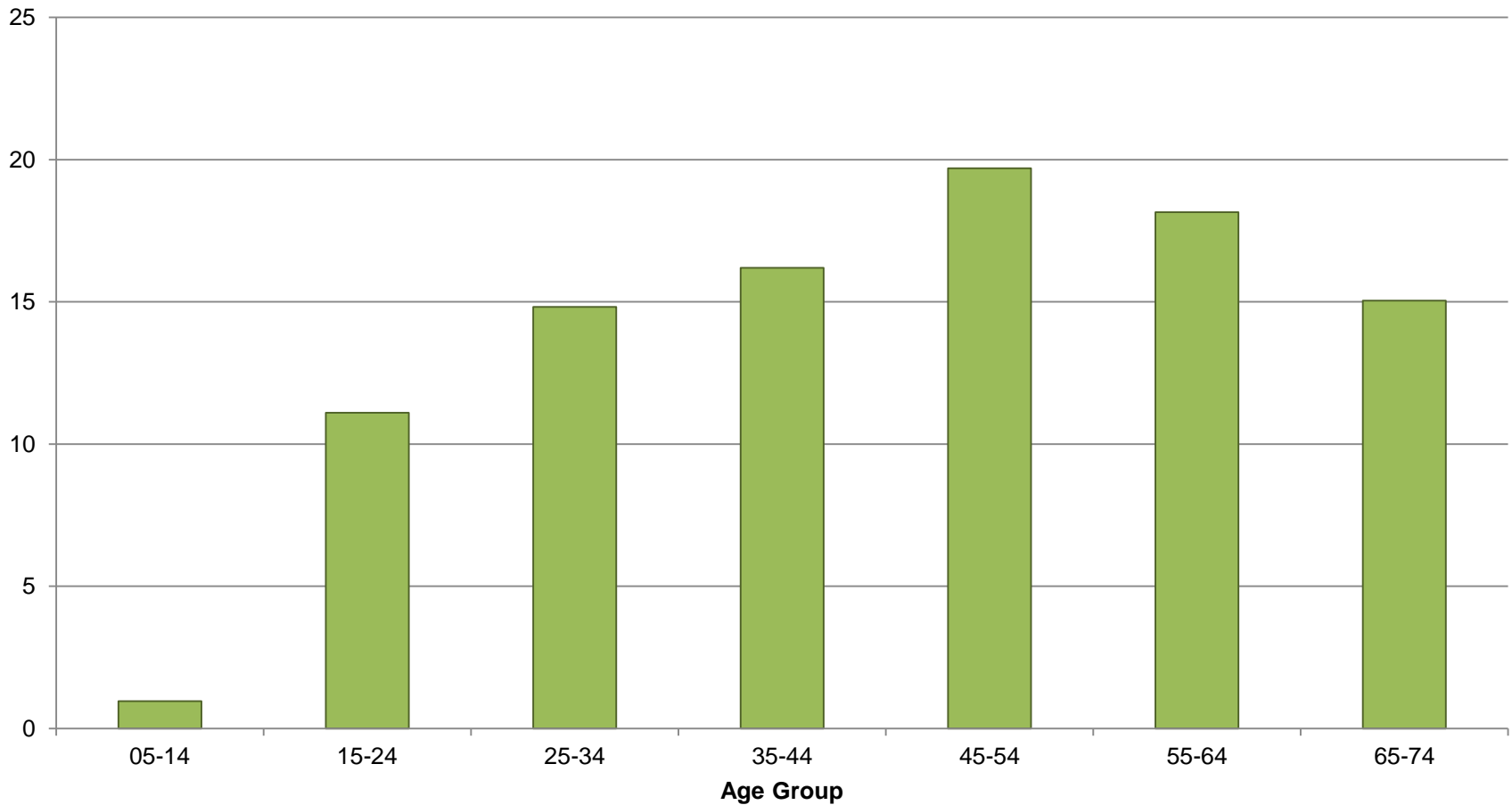


The Face of Suicide?

- 2nd leading cause (youth) vs. 10th leading cause (adults)...
So suicide is a young person's tragedy, right?
- Not quite. Suicide is only the #2 cause of death for young people because they rarely die from other factors (e.g. heart disease, cancer, etc.)
- Compared to same-age peers, the suicide rate among young people (ages 15-24) is lower than nearly every other age group
- (As we'll learn later, suicide predominantly affects middle-aged white males)

Suicide Across the Lifespan

Suicide Deaths per 100,000 (2013)



Youth Suicide

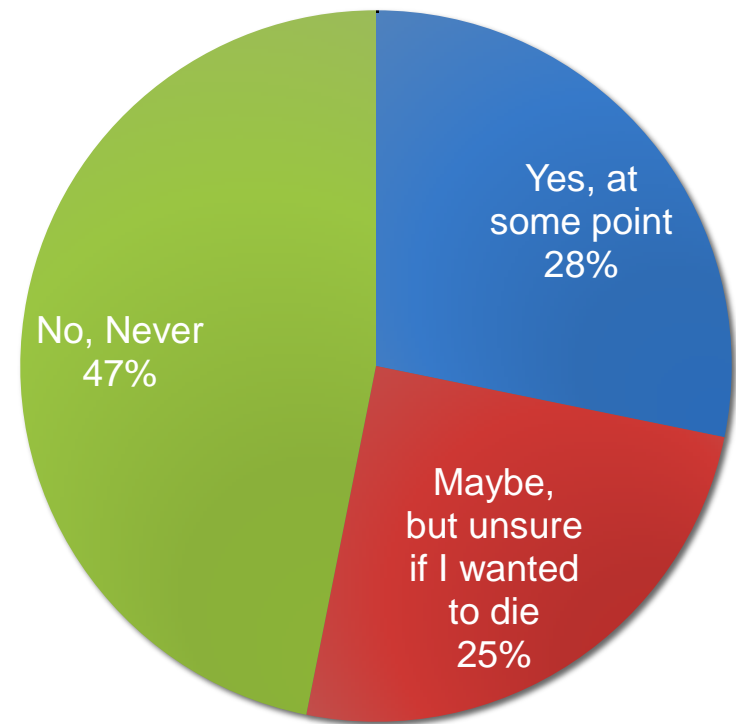
- While the rate for 15-24 year olds is lower than any of the adult age groups, it's over **10 times higher** than that of younger children
- So something happens, very suddenly and intensely, to youth as they move from elementary/middle school age to high school/college age
- And despite the low percentage of completed suicides in this age group, anecdotal data (Hope 4 Tomorrow, PAYS) shows the percentage of youth struggling is *far* higher

Hope 4 Tomorrow: Poll Results

- Asks students to respond to the following question:

Have you ever had thoughts of wanting to end your life?

- Yes, at some point
- Maybe, but unsure if I wanted to die
- No, Never



- 53% said “Yes” or “Maybe”
 - Suggests the number of young people struggling is much higher than those who actually complete suicide

Implications

- The large number of students reporting thoughts of suicide is much larger than those who actually complete suicide
- This suggests that while the overall suicide rate for young people is (comparably) low, the need to provide support for this age group remains high
- Suicide-prevention interventions may have unintended positive effects outside of suicide rate reduction

RATES

Why Do We Use Them?

Counts vs. Rates

- Raw numbers (counts) are important – especially for suicide – but they only tell us part of the story
- If we want to know whether our efforts are having an effect, we need a sense of the whole picture
- For year-to-year comparisons, looking at total counts and not rates is similar to comparing apples with oranges – the population you're talking about is literally different from one year to the next

How does this apply to suicide?

- We need to be **really** careful about comparing year-to-year counts of suicide deaths
- Example (Montgomery County PA):
 - In 2009, there were 99 suicides
 - In 2010, there were 100 suicides
 - But! The population increased from 2009 to 2010
 - So the rate actually went *down*
 - i.e., a smaller percentage of the population committed suicide in 2010, even though technically more people died

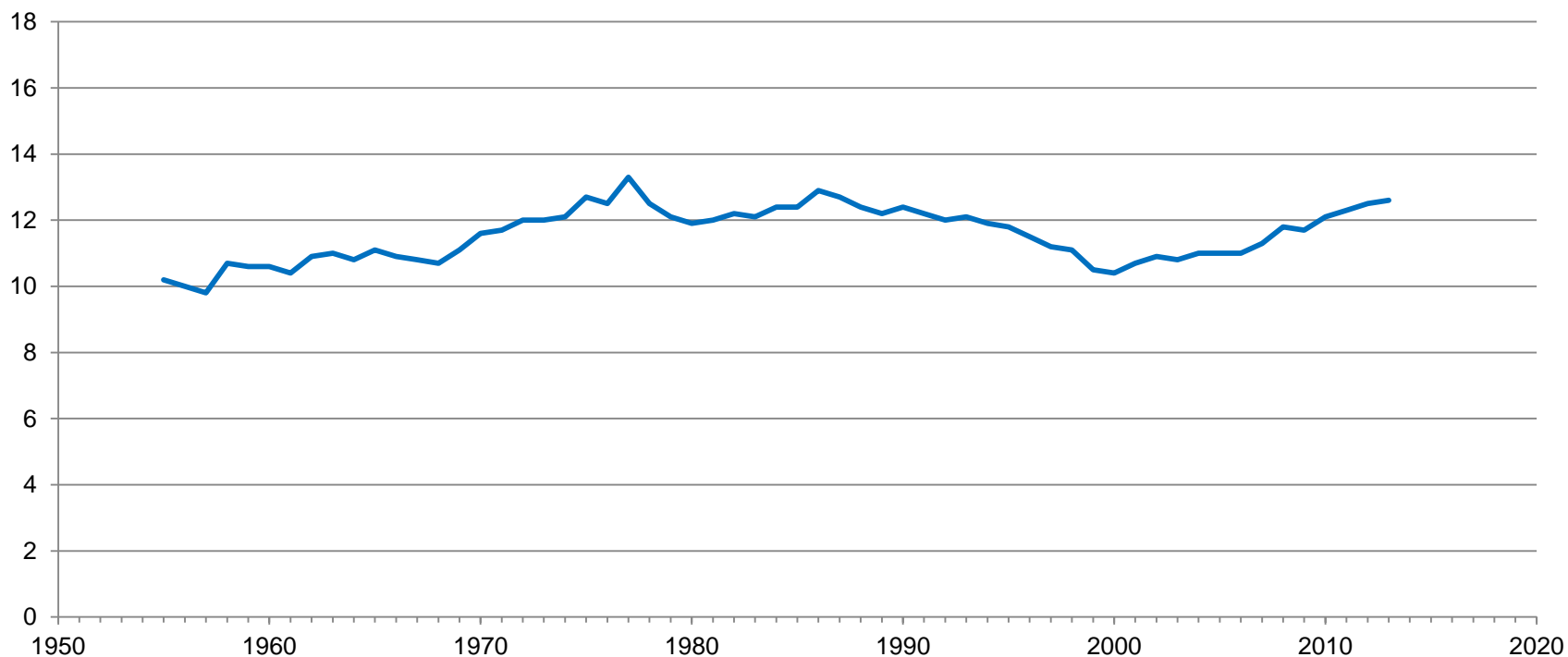
Also...

- The other important thing to keep in mind with demographic data is that numbers fluctuate year-to-year in ways that aren't explainable
- In statistics, this is called ***variance*** – the range within which data points fluctuate from the median
- Often a good idea to look at things like the suicide rate over several years to see whether a difference between years is an actual trend or just a year-to-year fluctuation

THE NUMBERS

Suicide Rates in the U.S.

Suicide Deaths (per 100,000) in the U.S., 1955-2013



The suicide rate was slightly on the rise in the United States from 1968 until its peak in 1977. It began to very slowly decline afterward, but remained relatively stable until 1986. It slowly but steadily declined until 2000. 2001 was the first year to reverse the trend, and it has been slowly but steadily rising ever since.

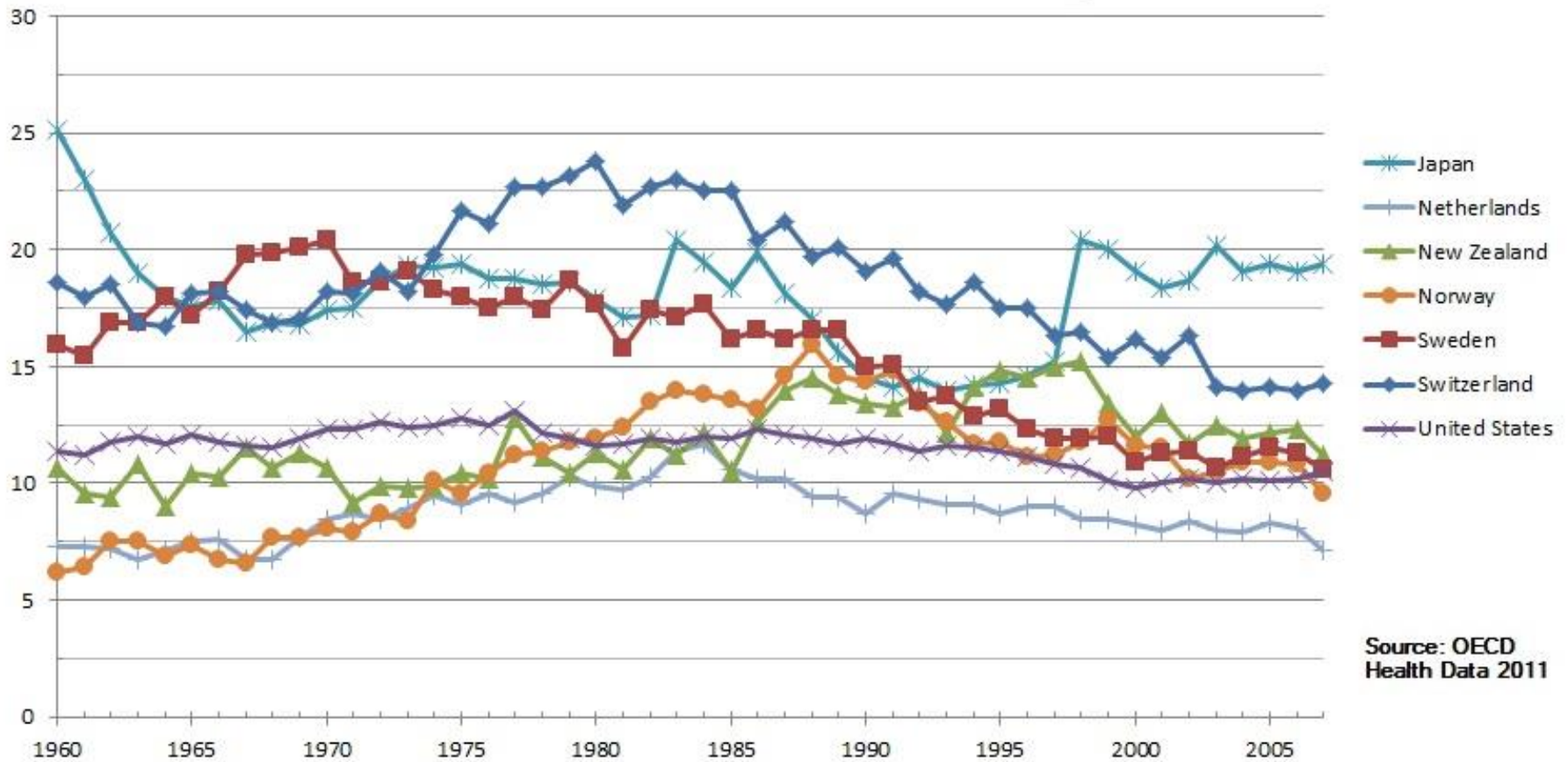
Sources: 1) Centers for Disease Control and Prevention, National Center for Health Statistics.
2) Vital Statistics of the United States

U.S. vs Global Trends

- Overall (and especially compared to some other countries), the trendline for suicide rates in the United States is relatively flat
- Some other countries have had much larger rate changes
 - Norway's rate tripled from 1960 to the mid 1980s
 - Sweden's rate today (~11) is half of what it was in 1970 (~21)
 - Japan (which once had the highest rate in the world) has been in decline since 2009
 - China's rate plummeted from the late 1990s to the late 2000s (although it may be on the rise again)
- **The United States has slowly but steadily increased in the last 10-15 years**

What about elsewhere?

Suicide Deaths Per Hundred Thousand Population

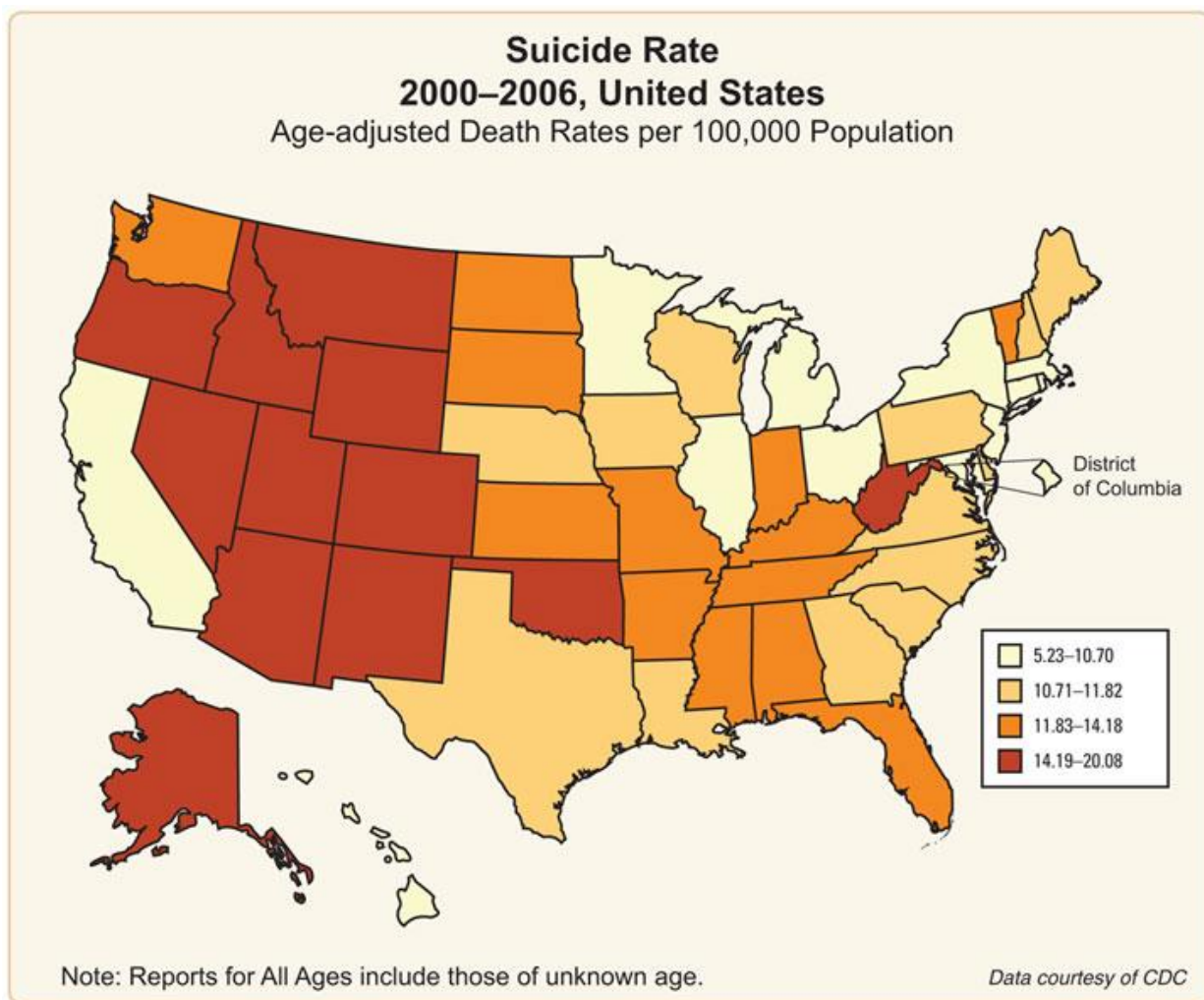


Source: OECD Health Data 2011

The U.S. Suicide Increase, 2001-now

- 2001 reversed a 15-year (or 25-year) downward trend
- Why? What happened in 2001?
 - New technology's impact on culture (increasing availability of the Internet, spread of cell phones, etc.)
 - 9/11 and its consequences (trauma, economic downturn, wars, fear of terrorism...)

U.S.: State-level differences



Much higher rates
in rural states

Possible factors:

- Greater access to lethal means
- Physical, social isolation (and declining populations)
- Lack of access to medical care
- Stigmatization of mental illness, lack of access to mental health providers

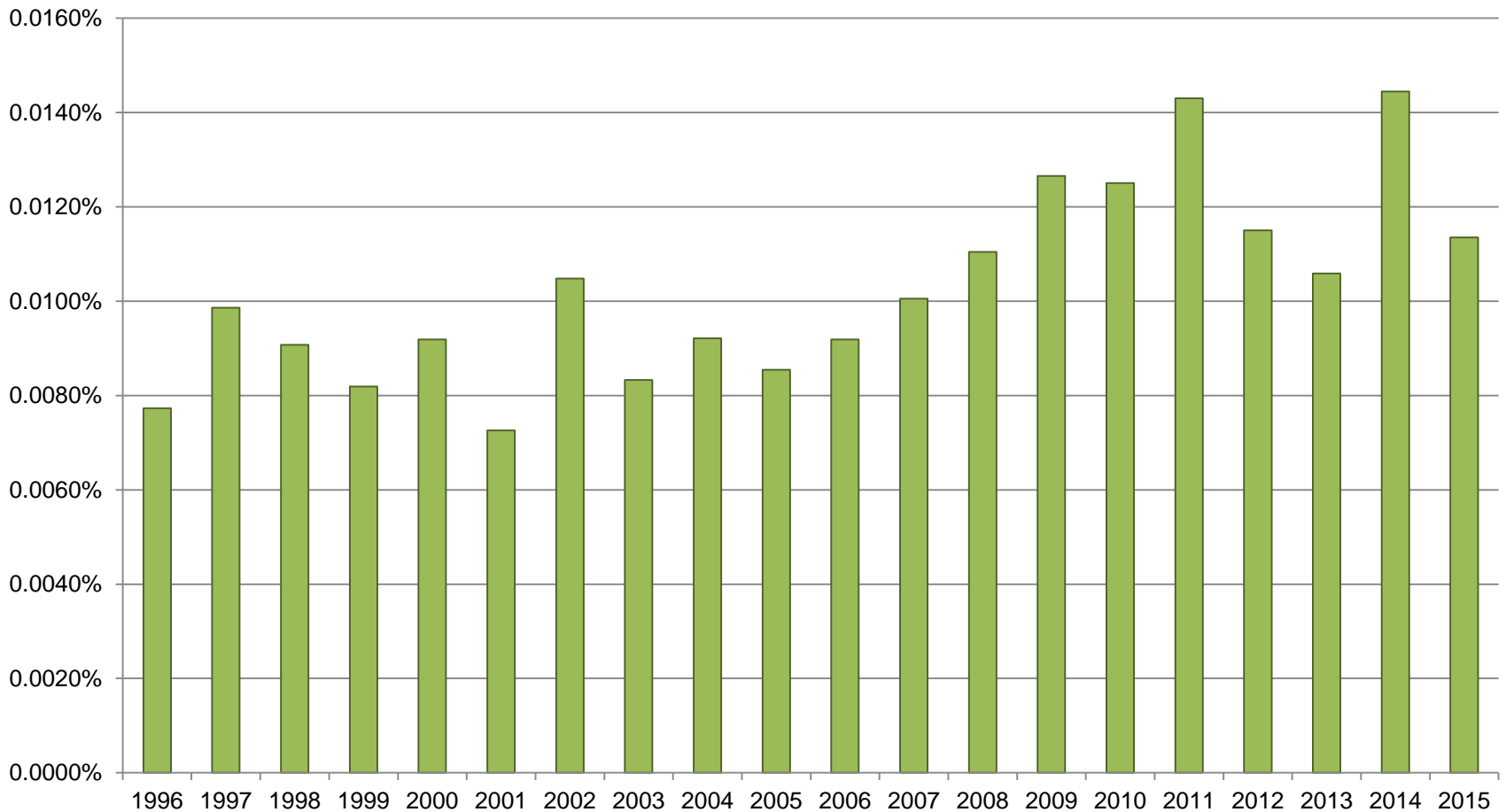
Source: Julie Beck, “The Growing Risk of Suicide in Rural America,” *The Atlantic*, 3/10/2015

Montgomery County, 2008-2015

Year	Population	Suicides	Percent of Population	Per 100,000
2008	778,452	86	0.0110%	11.0
2009	782,339	99	0.0127%	12.7
2010	799,874	100	0.0125%	12.5
2011	804,210	115	0.0143%	14.3
2012	808,460	93	0.0115%	11.5
2013	812,376	86	0.0106%	10.6
2014	816,857	118	0.0143%	14.3
2015	819,264	93	0.0114%	11.4

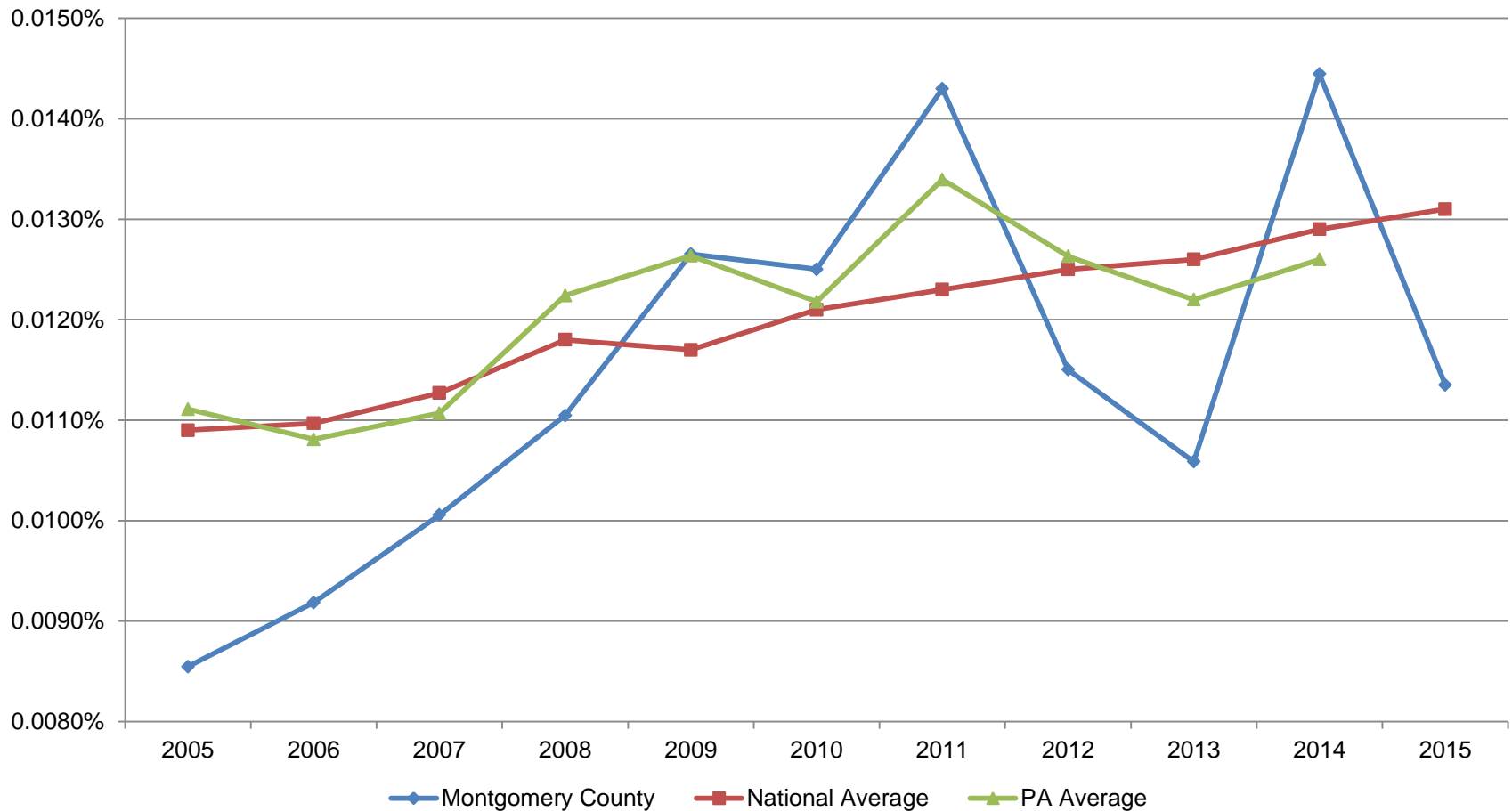
Montgomery County, 1996-2015

Montgomery County Suicide Rates, 1996-2015



Montco compared to PA, US rates

Suicide Rates, 2005-2015



Montco Suicide Profile, 2008-2014

698 total suicides
from 2008-2014

Sex/Gender	Total Suicides	Percent of Suicides
Male	512	73.4%
Female	186	26.6%

Race	Total Suicides	Percent of Suicides	Percent of County Population (2010)
White	642	92%	81%
Black	24	3.4%	8.7%
Asian	16	2.3%	6.5%
Hispanic*	7	1%	*

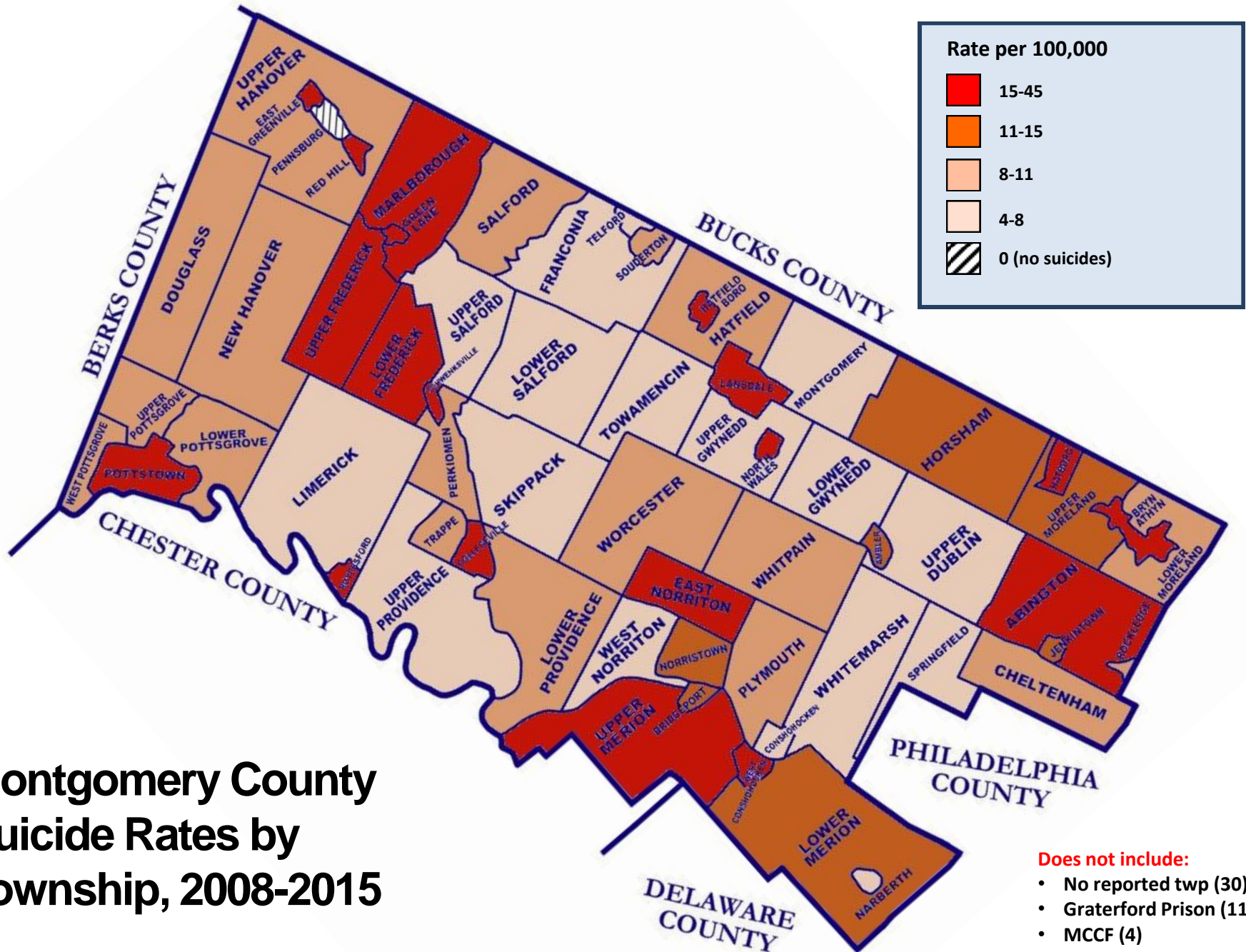
Hispanic is not a racial category (and not recognized as such by the County Planning Commission), but is reported on death certificates and thus appears in the Coroner's Office report on suicides

Local-level Patterns

- Because our data from the coroner's office has a lot of detail, including township, we can determine whether any “hotspots” exist in the County

How?

- Suicide data from 2008-2015 grouped by township
- Population is based on 2010 census (separated by township thanks to the County Planning Commission)
- Using this, we can extrapolate across the eight-year period



Montgomery County Suicide Rates by Township, 2008-2015

Raw numbers vs rates

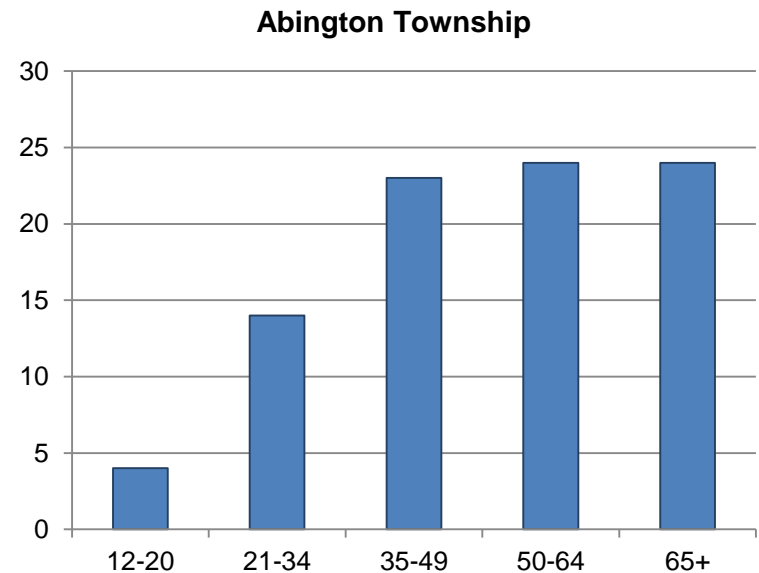
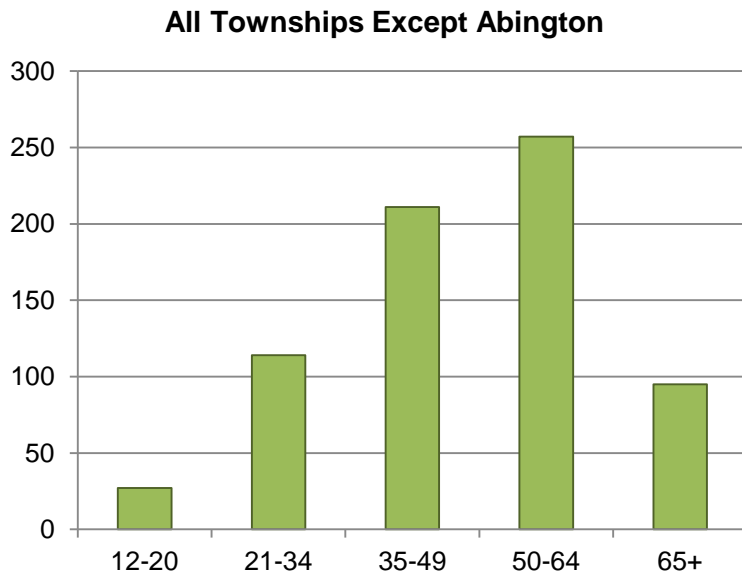
- Important to keep population in mind:
 - E.g. Schwenksville has had only 5 suicides over the last eight years, but because its population is so low (1,385 in 2010), its suicide rate is the highest in the County
 - Cheltenham has had 28 suicides during that same period, but because its population is much higher (36,793 in 2010), it has a rate lower than the national average
 - Where is the more urgent need for intervention?
 - My vote: **Abington**. Highest number of suicides (87) over the eight year period and one of the highest rates
 - But other population clusters in the County are in a similar situation

Highest Number of Suicides, 2008-15

Township	Population	Suicides	Per 100,000
Abington	55,310	87	19.6
Lower Merion	57,825	56	12.1
Pottstown	22,377	50	27.8
Upper Merion	28,395	38	16.7
Norristown	34,324	33	12.0
Cheltenham	36,793	28	9.5
East Norriton	13,590	25	22.9
Horsham	26,147	24	11.4
Upper Moreland	24,015	23	11.9
Hatboro	7,360	20	33.8
Lansdale	16,269	20	15.3
Lower Providence	25,436	19	9.0
Whitpain	18,875	16	10.6
Hatfield Twp.	17,249	15	10.8
Montgomery	24,790	14	7.0
Plymouth	16,525	13	9.8
Graterford Prison	3,251*	11	42.1*
Whitemarsh	17,349	11	7.9
Limerick	18074	11	7.6
Springfield	19,418	11	7.1

What's Going on in Abington?

- No notable differences in gender, race, or method
 - Slightly elevated drug deaths compared to rest of county
- Senior deaths are the major factor:



Suicides in the Public MH System

- Cross-checked 2005-2015 suicides with MH databases
- 14% received public MH services (3% of general population)

- Methods are different:

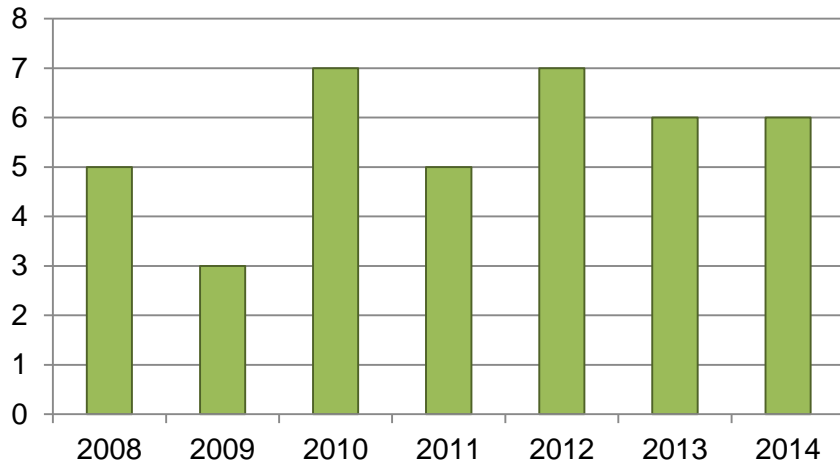
	MH System	Gen Population
Guns	20%	36%
Hanging	21%	24%
Drugs	40%	23%

- 44% aged 50-64
- Only 5 (4%) were under age 21
- Only 5 (4%) were age 65 or older
- Still primarily men, but gender gap is smaller (60/40 vs 74/26)

AGE DIFFERENCES

Youth Suicides (21 and under)

Youth Suicides by Year*



Remember! Population increases every year. However, without the population of youth in the County each year (unavailable), we cannot measure whether the rate has increased or not. So we cannot say conclusively, for example, whether 2014 was an actual increase from 2009, or simply a reflection of a larger population.

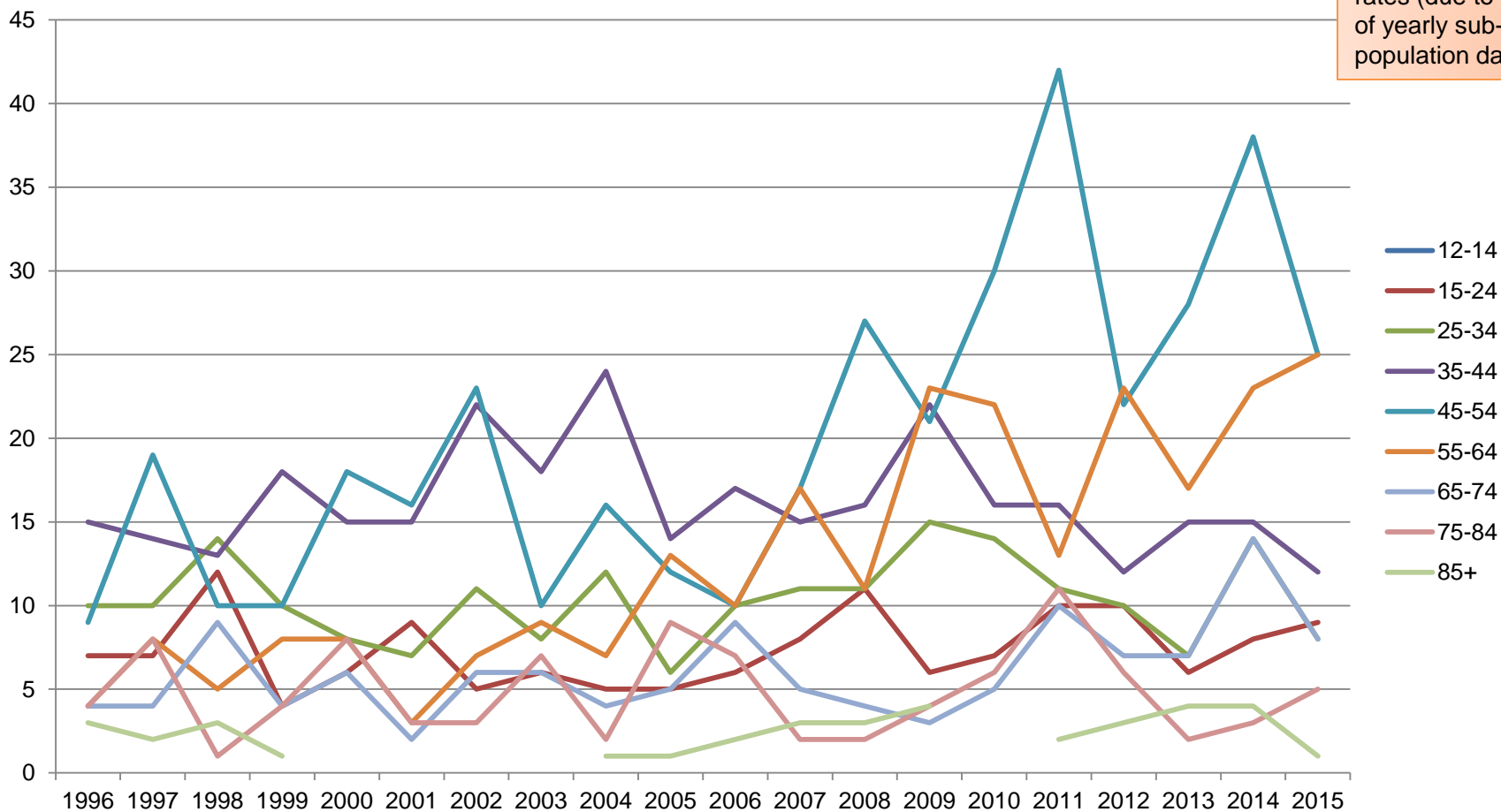
Suicides per District	School Districts
5	Norristown
4	Abington
3	Cheltenham
2	Hatboro-Horsham, North Penn, Perkiomen Valley, Pottsgrove, Pottstown, Souderton, Wissahickon
1	Methacton, Lower Merion, Springfield, Upper Dublin, Upper Moreland

* Includes additional data provided by Montgomery County Department of Health / PA Department of Health

Differences by Age (CDC Categories)

Total Suicides by Age Group, 1996-2015

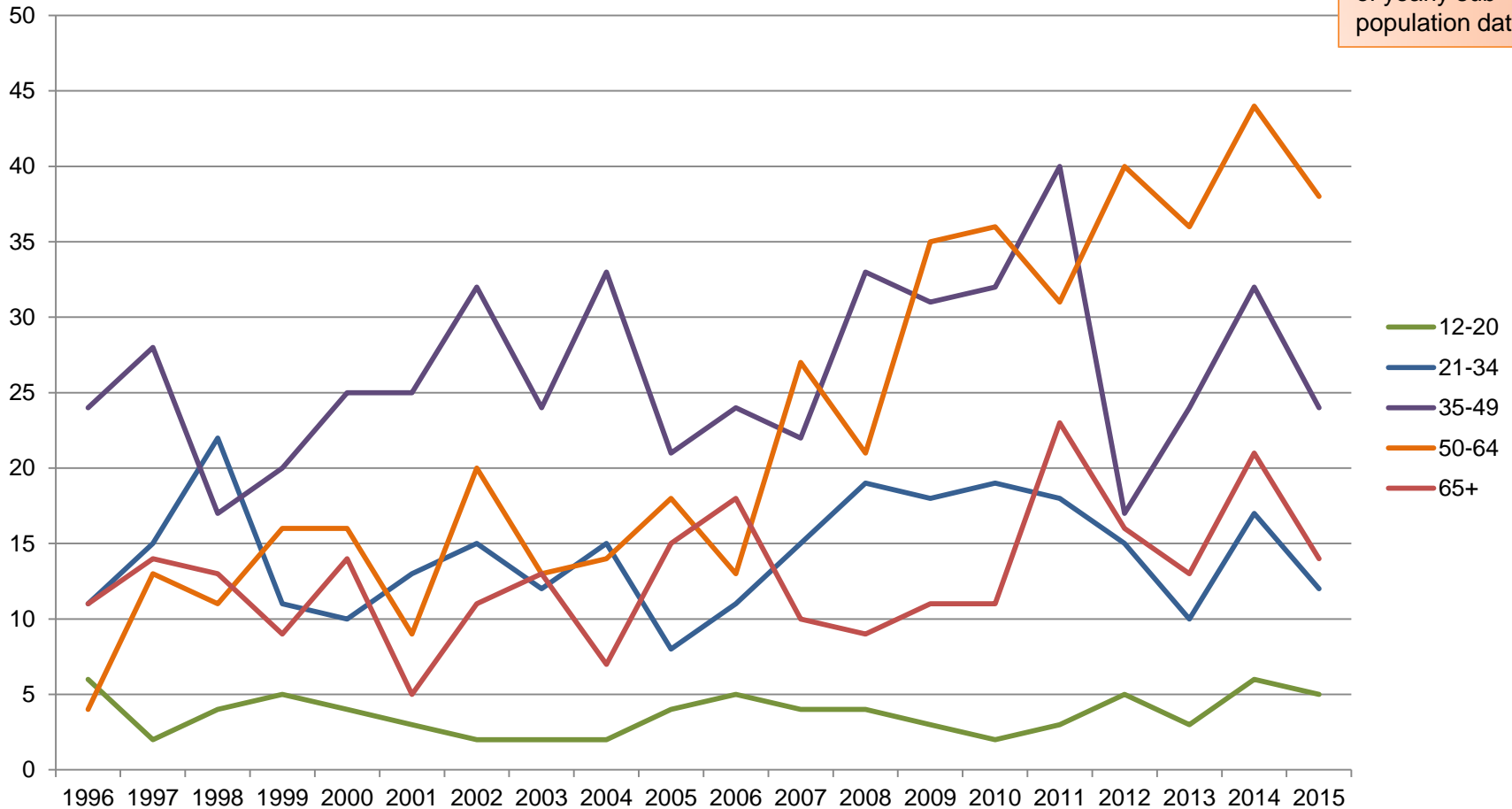
NOTE: These are raw numbers, not rates (due to lack of yearly sub-population data).



Differences by Age (Generations)

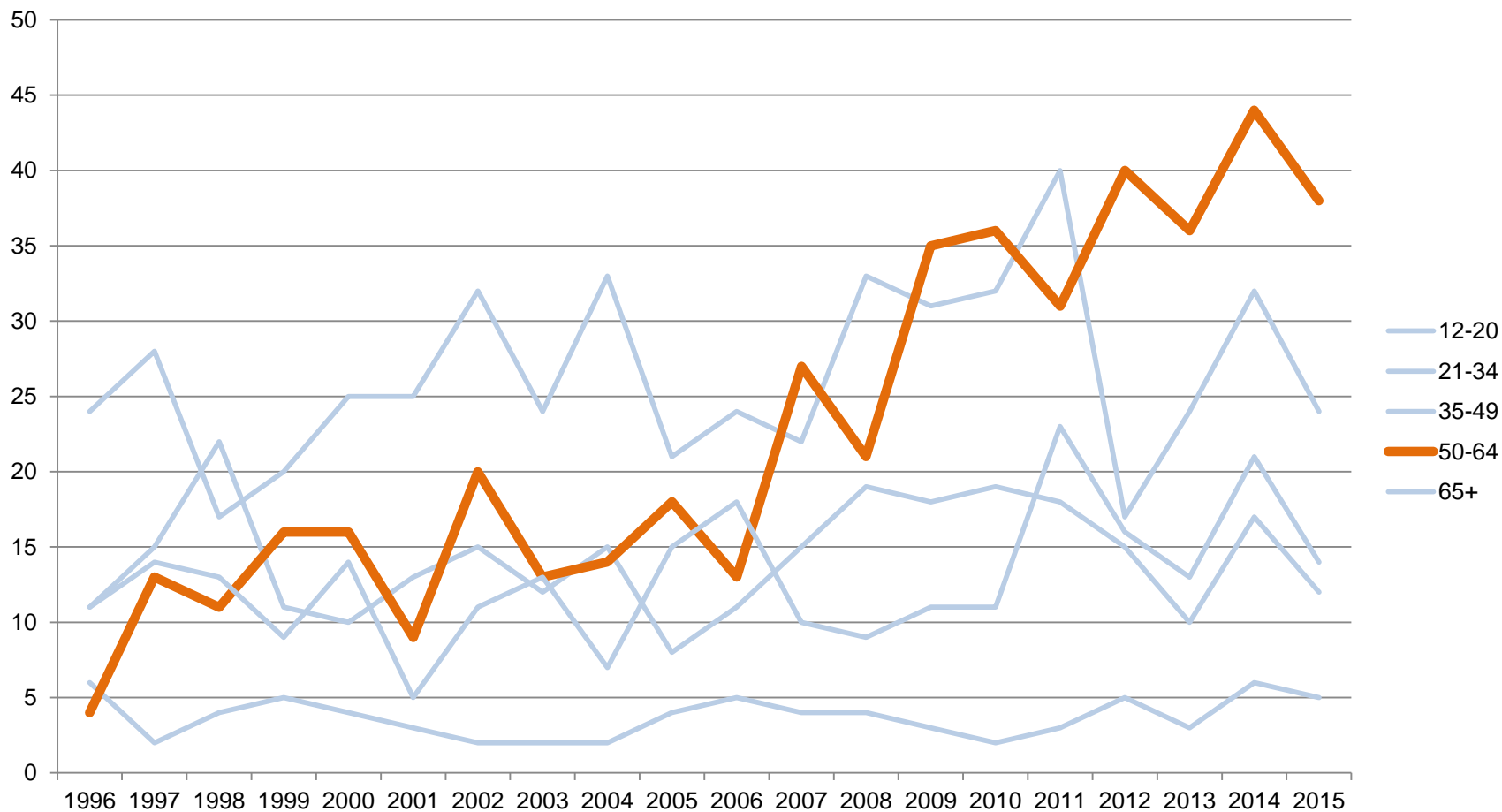
Total Suicides by Generation, 1996-2015

NOTE: These are raw numbers, not rates (due to lack of yearly sub-population data).

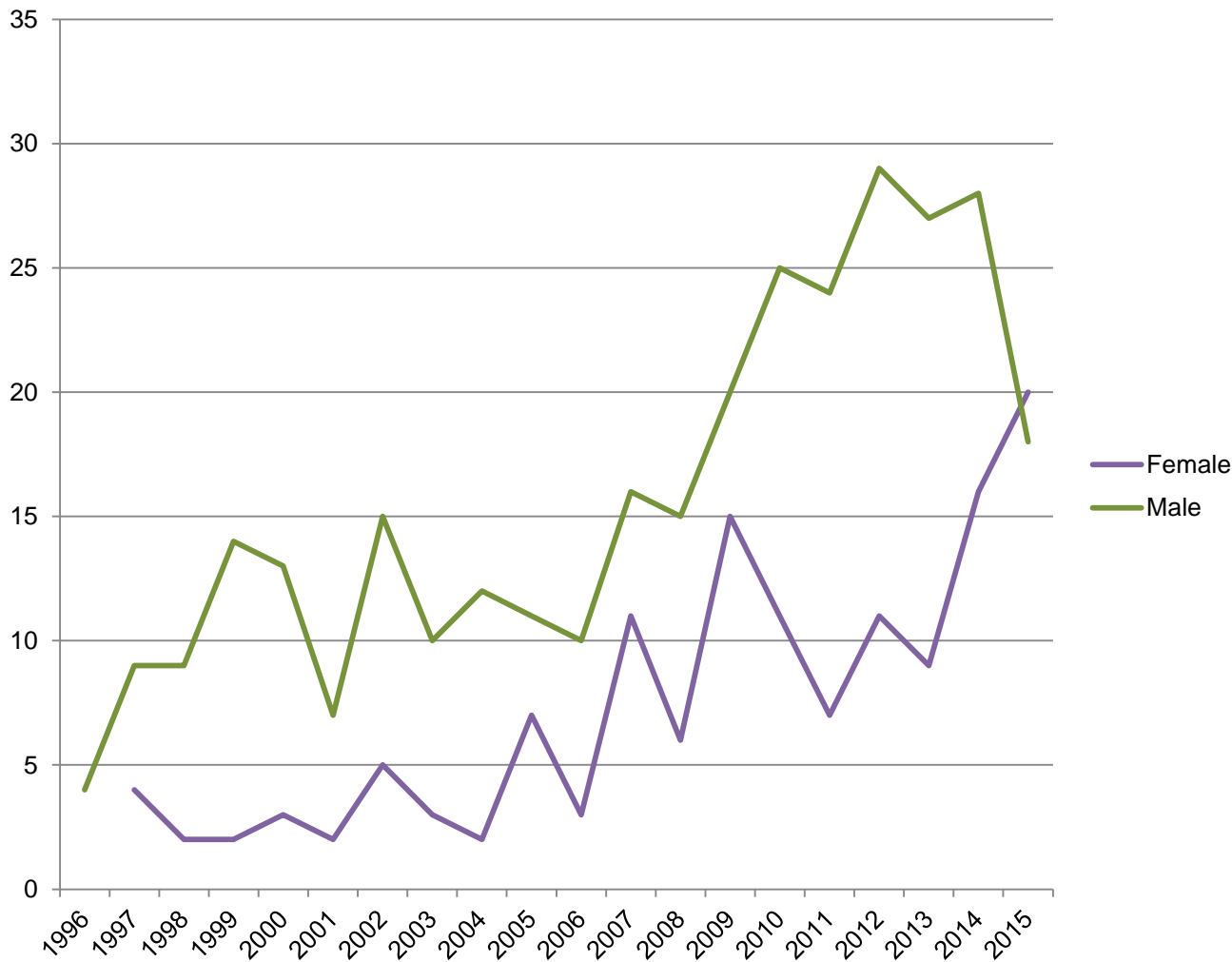


Increase Among 50-64 Year-olds

Suicides by Age Group, 1996-2015



50-64 Year-olds by Gender

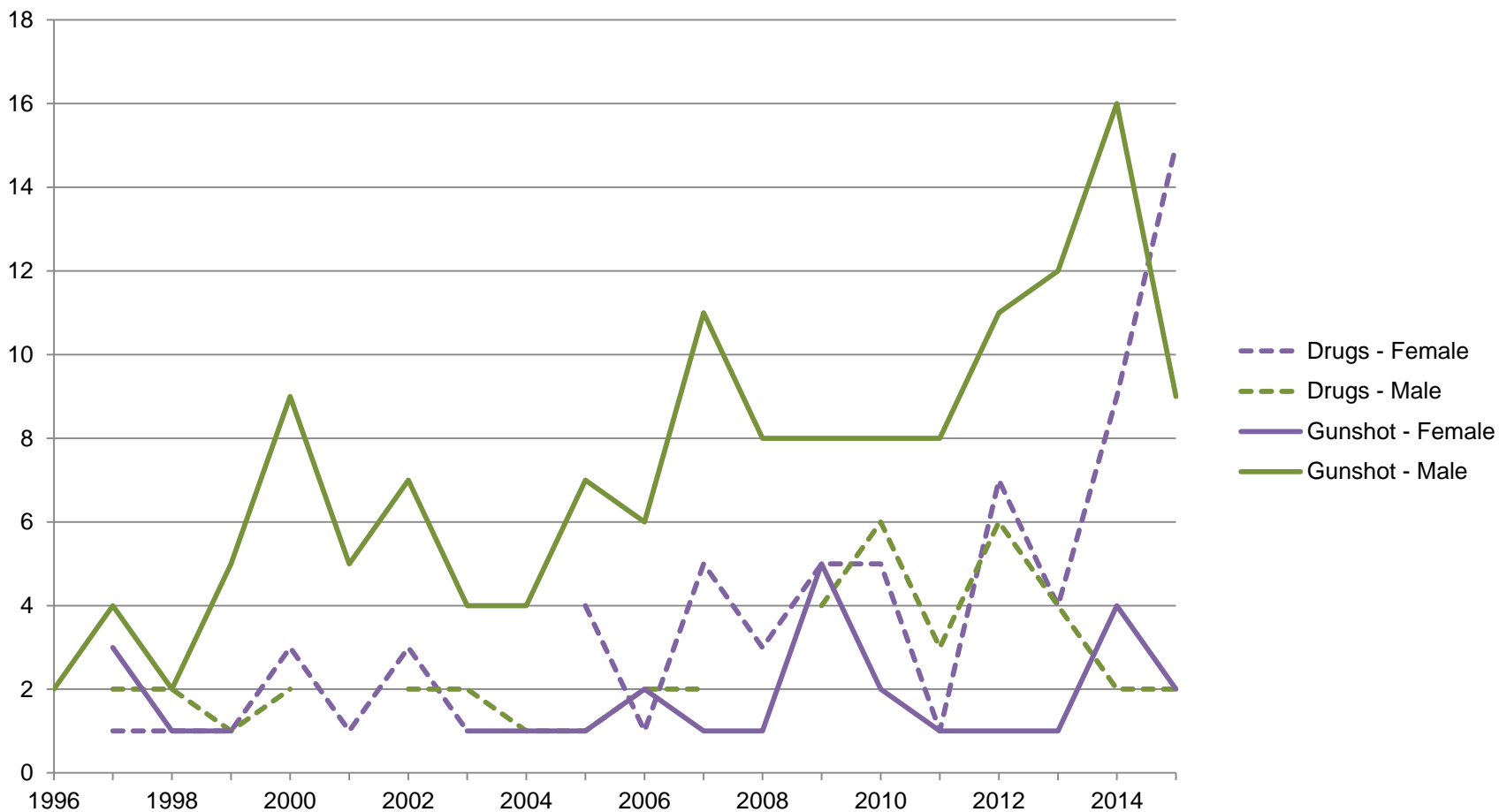


In 2015, this age group saw more women than men commit suicide

- This almost never happens
- The difference is primarily in the drop in gunshot deaths among men in 2015, combined with a several-year increase in drug suicides among women

Understanding the Gender Pattern

Suicide Method by Gender, 50-64 year olds, 1996-2015



What Does This Mean?

- Not only does suicide predominantly affect middle aged-people, but this is the only age group in Montgomery County that is ***noticeably increasing***
- ***Middle-aged people are driving the overall increase*** in suicide, both nationally and in Montgomery County
- “Historically, across all generations, suicide rates rise dramatically during adolescence and young adulthood. For men, rates tend to level off in maturity and middle age and then start to increase again in old age. But with boomers, this doesn’t seem to be the case. The rise that we’ve seen in suicide rates since 1999 among boomers while in their 40s and 50s is unusual.” – Dr. Julie Phillips, Rutgers University

What's Going on with the Boomers?

According to Dr. Phillips:

- During the social upheaval of the 1960s and 1970s, fewer people were getting married while more were getting divorced
 - Result: Today, more people in this age group are living alone
- Religion tends to be a protective factor against suicide, and boomers tend to be less religious than previous generations
- National health problems (such as obesity rates) and economic downfall (Great Recession of 2008-2009) hit boomers harder than other age groups

Boomers' Diminishing Quality of Life

- 2015 Princeton study (Ann Case & Angus Deaton) on mortality rates
- Every age and racial category has enjoyed increased lifespans and reduced disease rates, except one: ***middle aged (45-54) white Americans***
- Why? Three causes: acute substance poisoning, suicide, and chronic liver disease
 - Marshall: “In other words, either literal suicide or the slow motion suicide of chronic substance abuse.”

What Do We Do?

- How to fix a history of divorce, lack of religiosity, later-age health problems, and the largest economic crisis since the Great Depression?
- Intervention strategies:
 - QPR, especially for high-risk groups like middle-age people
 - Ensure mental and physical health care providers are aware of the increase in drug suicides among middle aged women

SEASONAL PATTERNS

National Trends

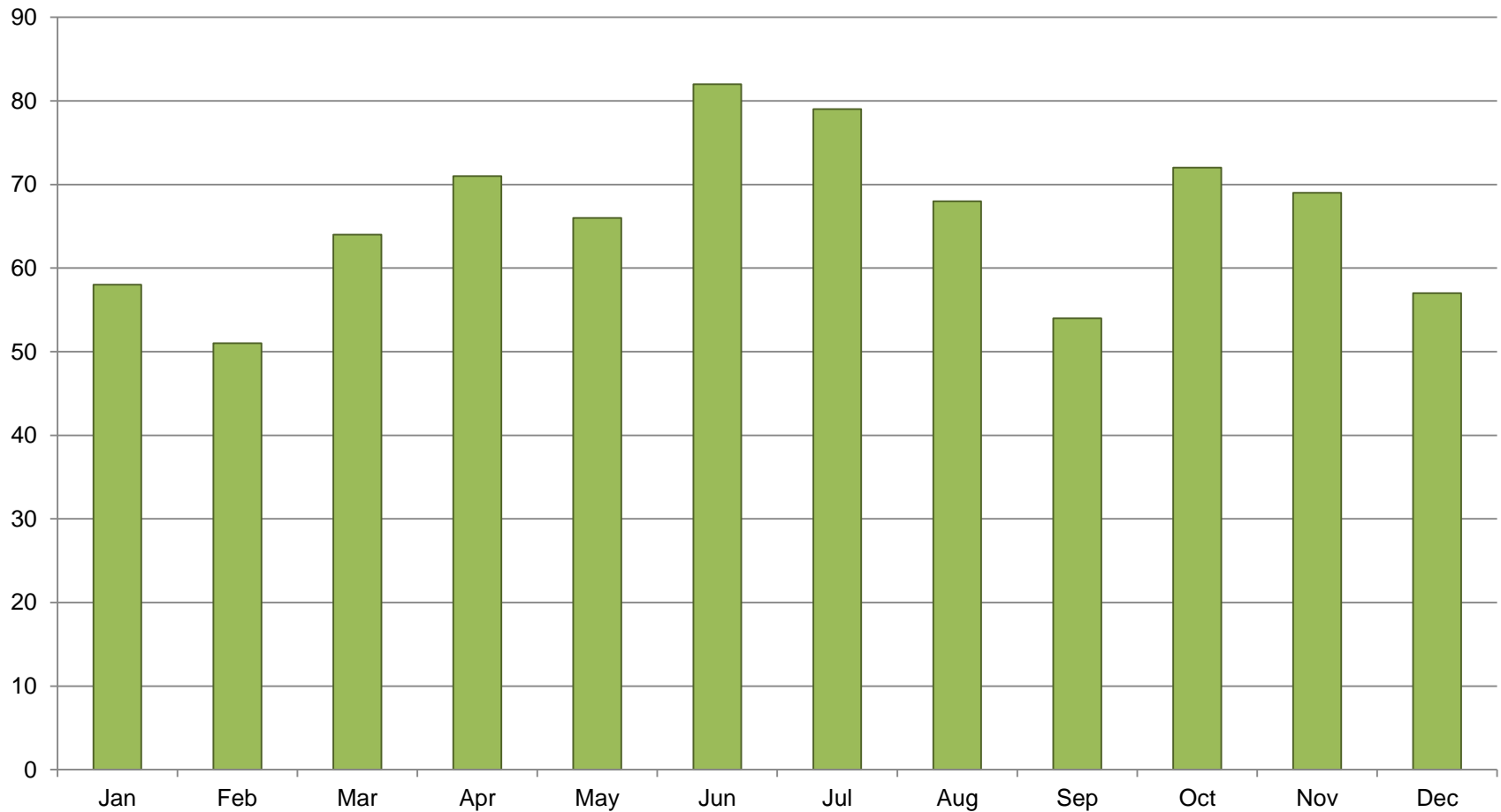
- Myth: Suicide peaks in winter months
 - Likely related to general knowledge of seasonal affective disorder
 - People “know” that SAD exists and is related to lack of sunlight, as well as the connection between suicide and depression, but...
- Research disagrees
 - Suicides peak in spring and early summer, and are lowest in winter months (CDC, F.S. Bridges 2005, et al).
 - F.V. Wenz (1977): Seasonal loneliness is highest in spring and winter; suggests that people may postpone suicide attempts to participate in annual events (i.e. waiting until after Thanksgiving, Christmas, New Years holidays) – contrary to belief that holidays can trigger suicide

Montco Seasonal Suicides

- County pattern only somewhat fits the national research
- County suicides are indeed lowest in winter months (December-February)
- But...from 2008-2015, Montgomery County suicides rise in spring but peak in **mid-summer** (June/July) and **mid-fall** (October/ November)

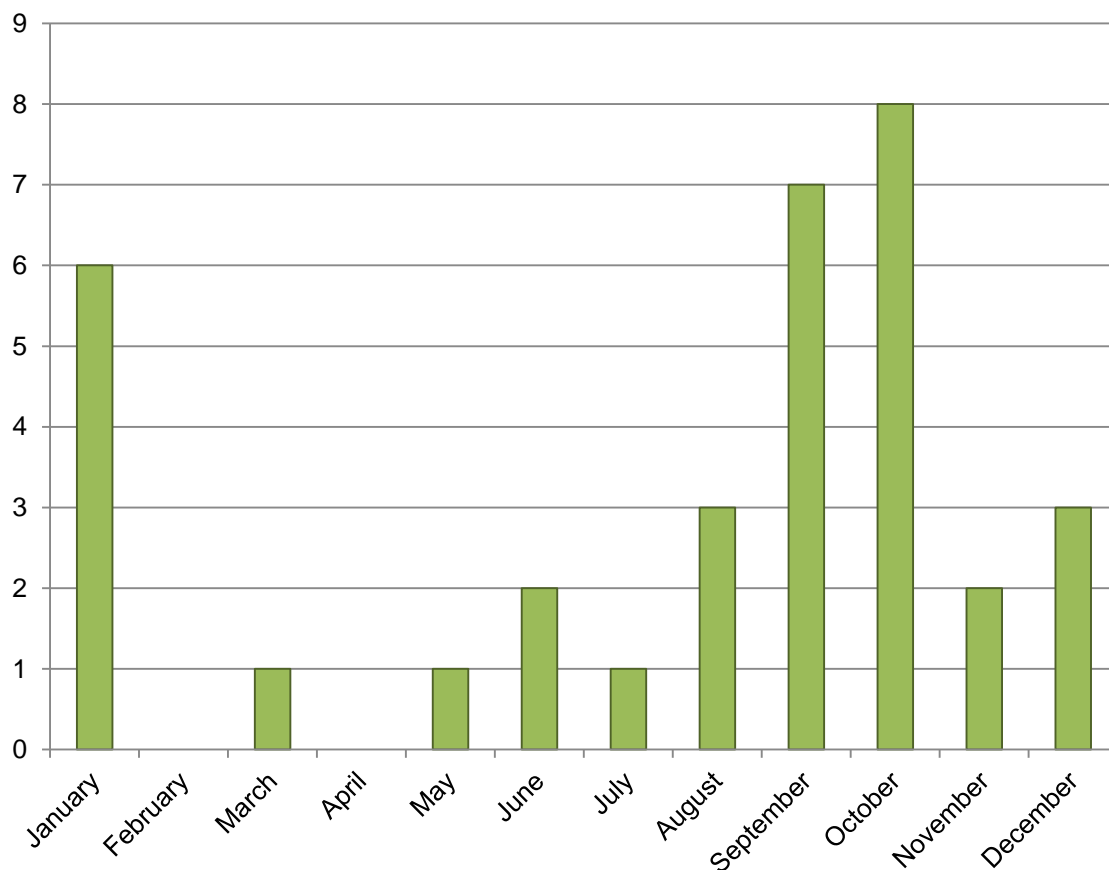
Montco Seasonal Suicides

Suicides by Month (all ages), 2008-2015



Montco Seasonal Suicides: Youth

Suicides by Month, Ages 13-19, 2005-2015



For teenage youth (ages 13-19), the pattern is completely different:

- Suicides begin in late summer and escalate through the fall
- Few in November, December
- Peak again in January
- Very few suicides in the spring and early summer

Montco Seasonal Suicides: Youth

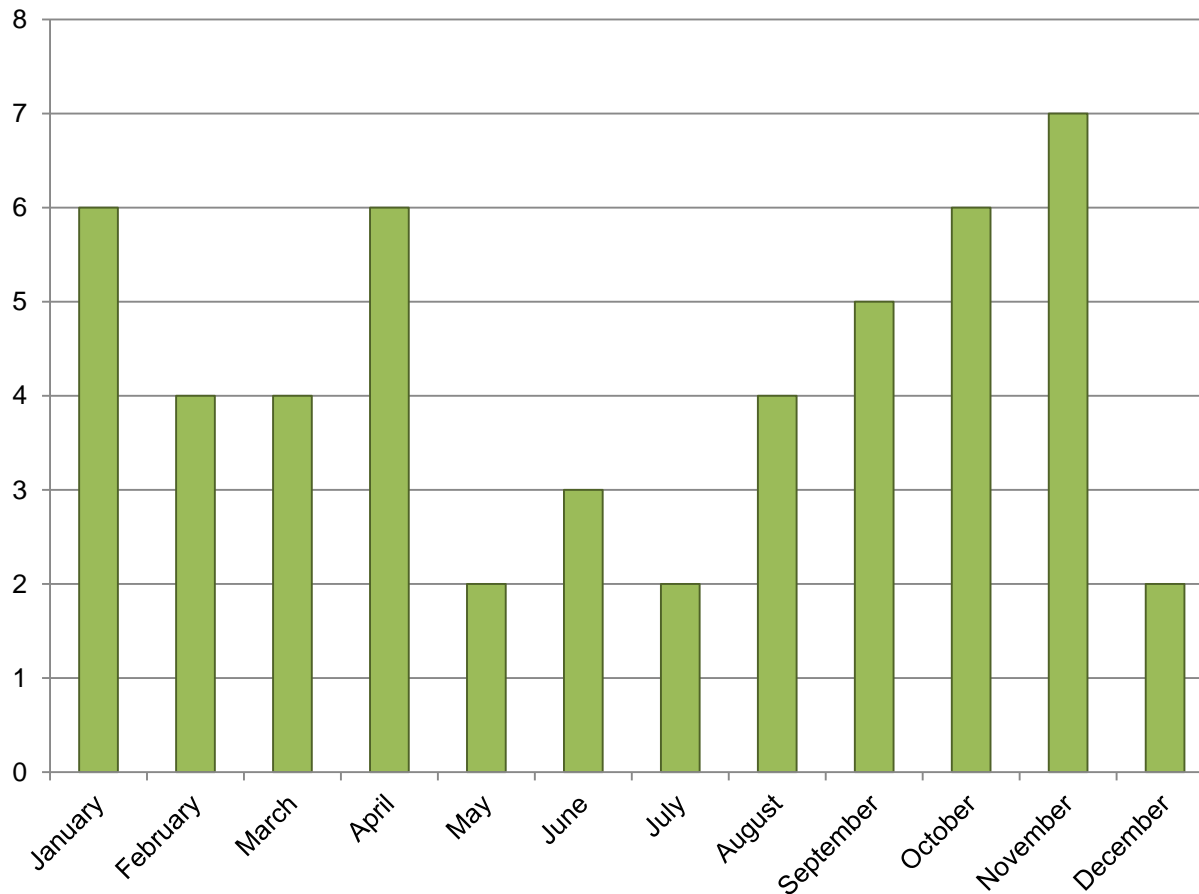
- Despite research using national data that suggests otherwise, Montgomery County schools should focus on suicide prevention efforts at the ***beginning of each new term, soon after students return from summer and winter breaks***
- The “seasonal effects” for youth are probably related more to the transition back to a stressful environment (school) and not the weather
- There have been a few studies that support this, but in general it is an underreported message

Montco Seasonal Suicides: Youth

- **Important to note:** Pattern is based on only 34 suicides across an 11 year period (3.4% of total Montco suicides)
- That means we shouldn't make general statements (e.g. "youth suicides peak in months after transitioning back to school") – *at least not until more research has been done*
- But we **can** say: "In Montgomery County, youth suicides have been more common in the months after transitioning back to school"

Montco Seasonal Suicides: College-Age

Suicides by Month, Ages 18-22, 2005-2015



Difficult to make conclusions about college-age (18-22)

REMEMBER: Data only includes those who died inside the county

So, this chart is only:

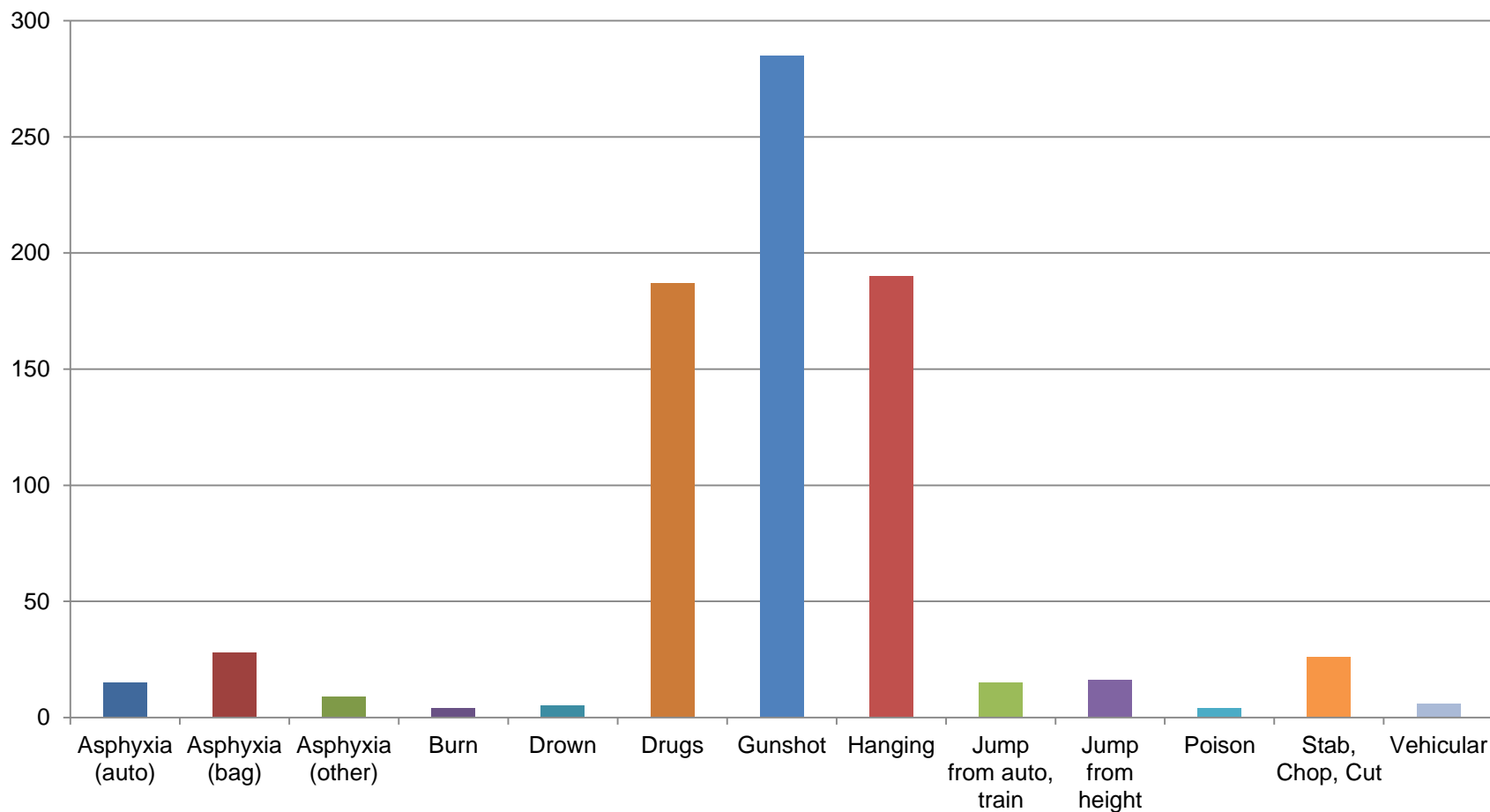
- 1) Students attending in-county colleges,
- 2) Suicides completed while on break, or
- 3) Not students

MEANS

Data and Trends for Montgomery County PA

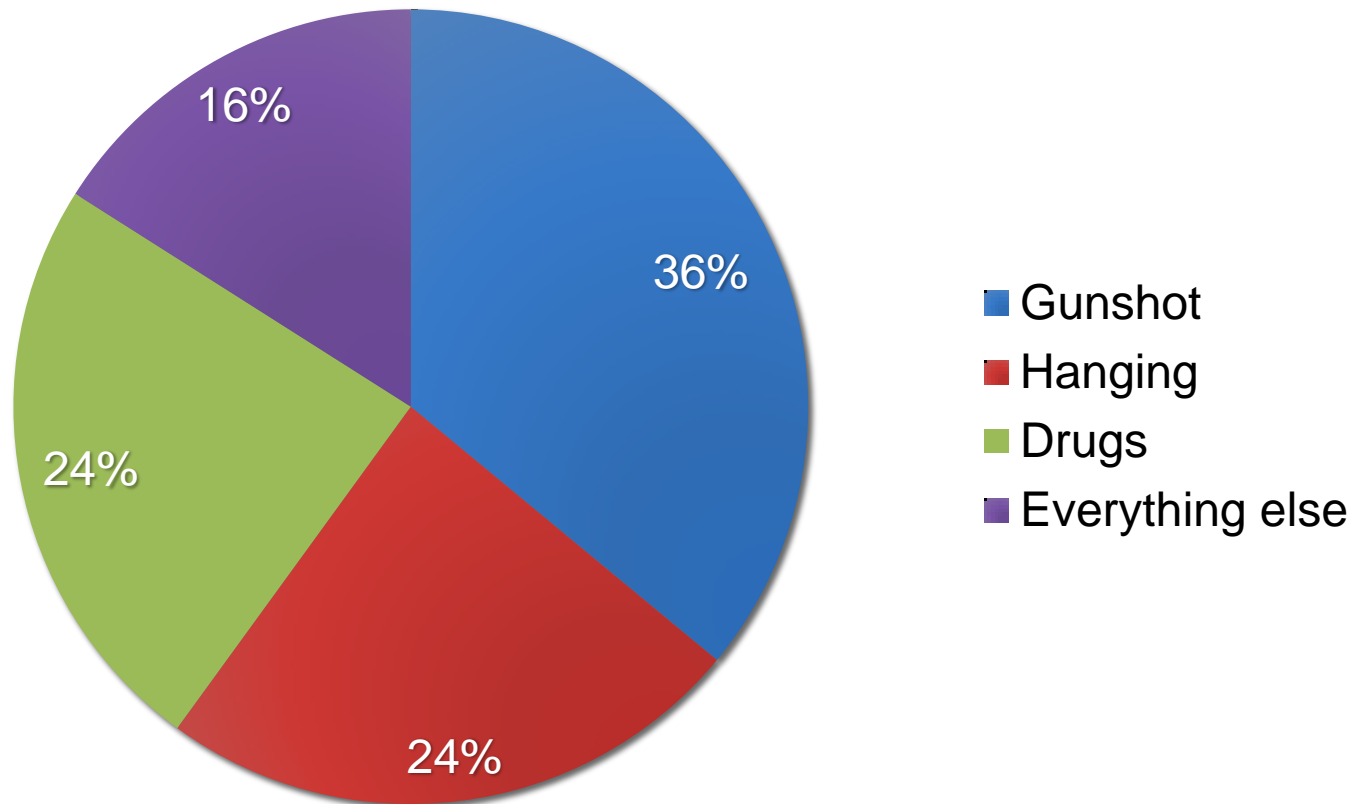
Means: Montgomery County

Suicides by Method (all ages), 2008-2015



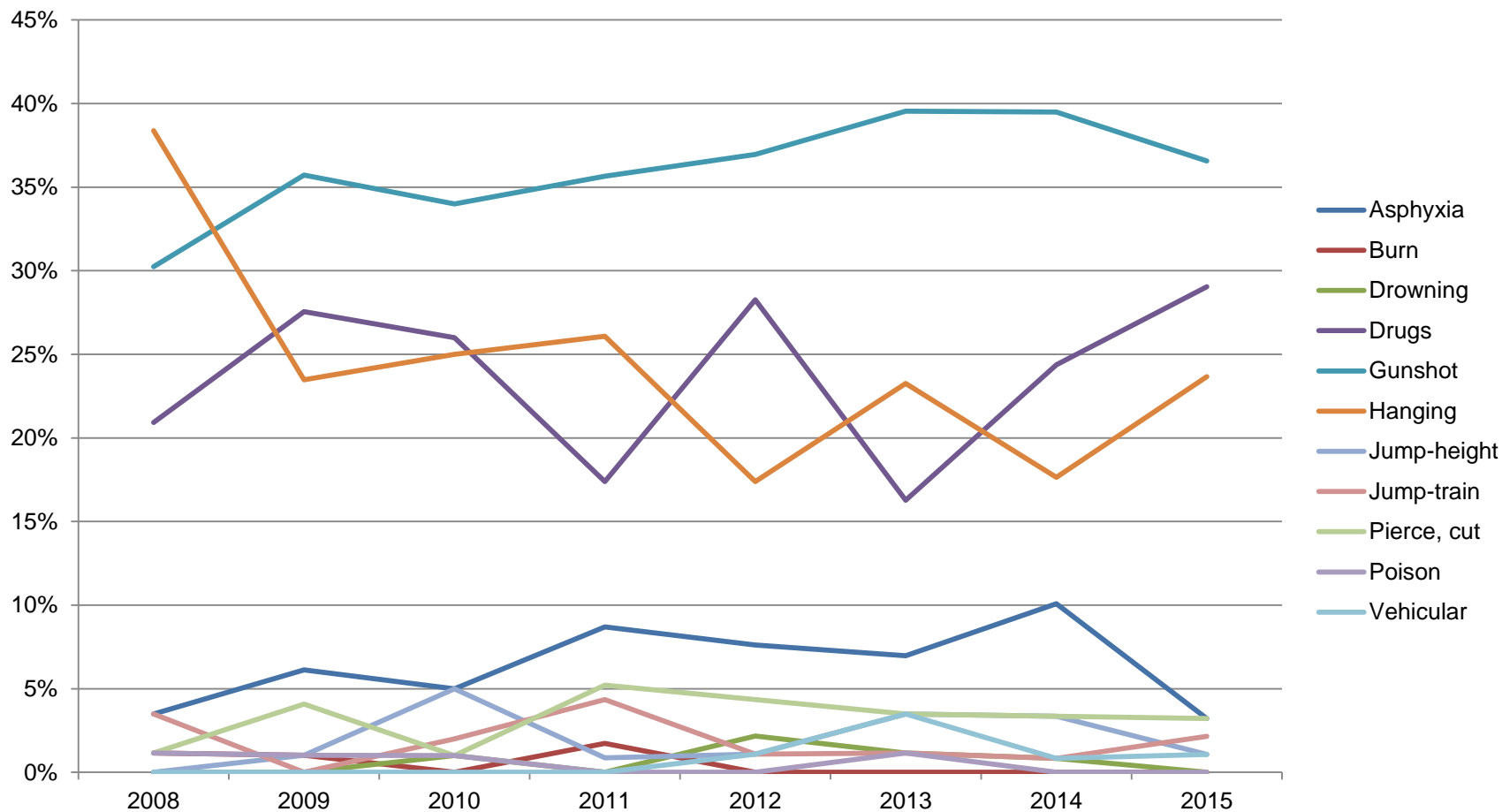
Means: Montgomery County

- 791 suicides (all ages) from 2008-2015



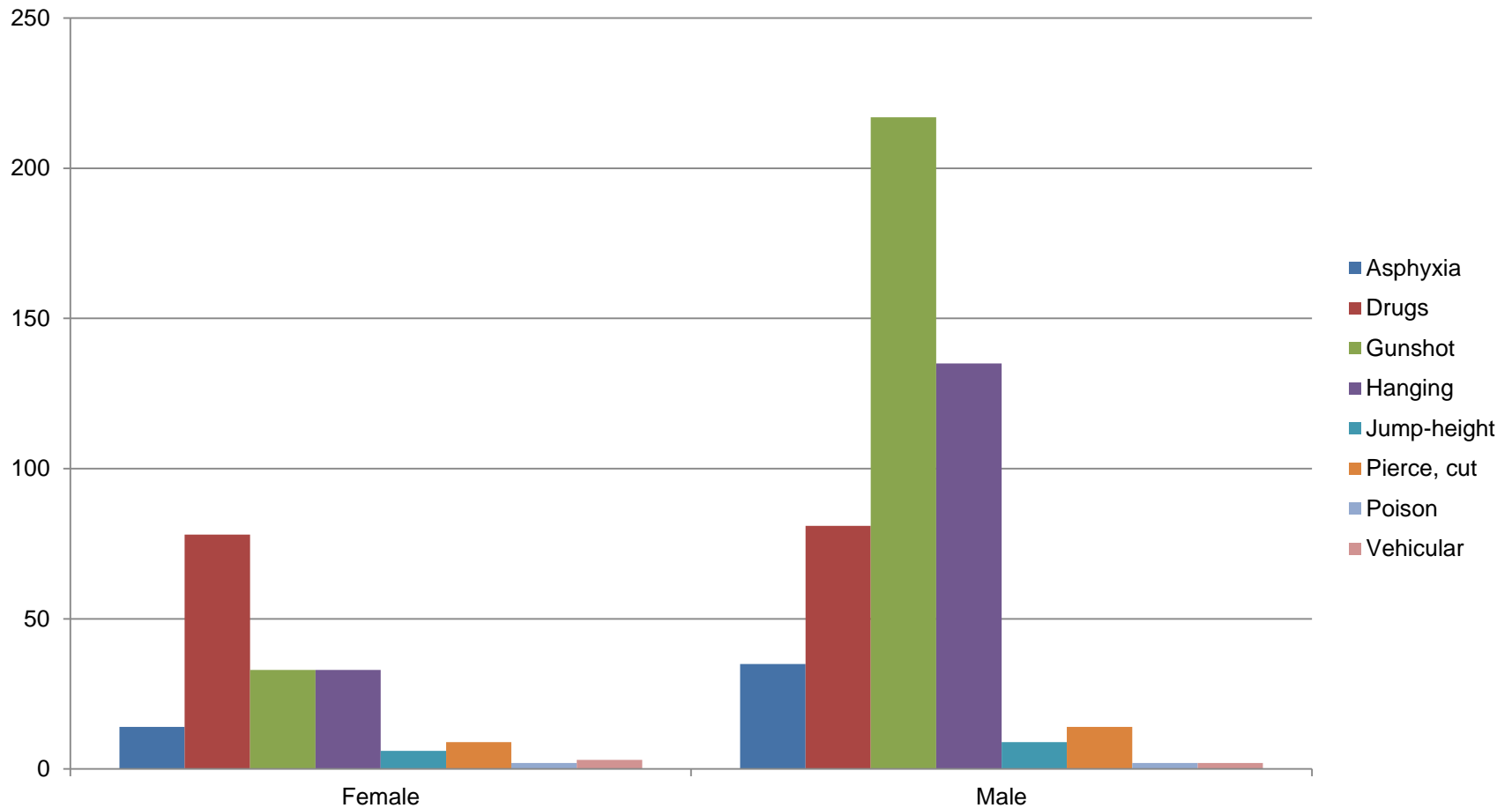
Means: Change Over Time

Suicide by Method (all ages), 2008-2015



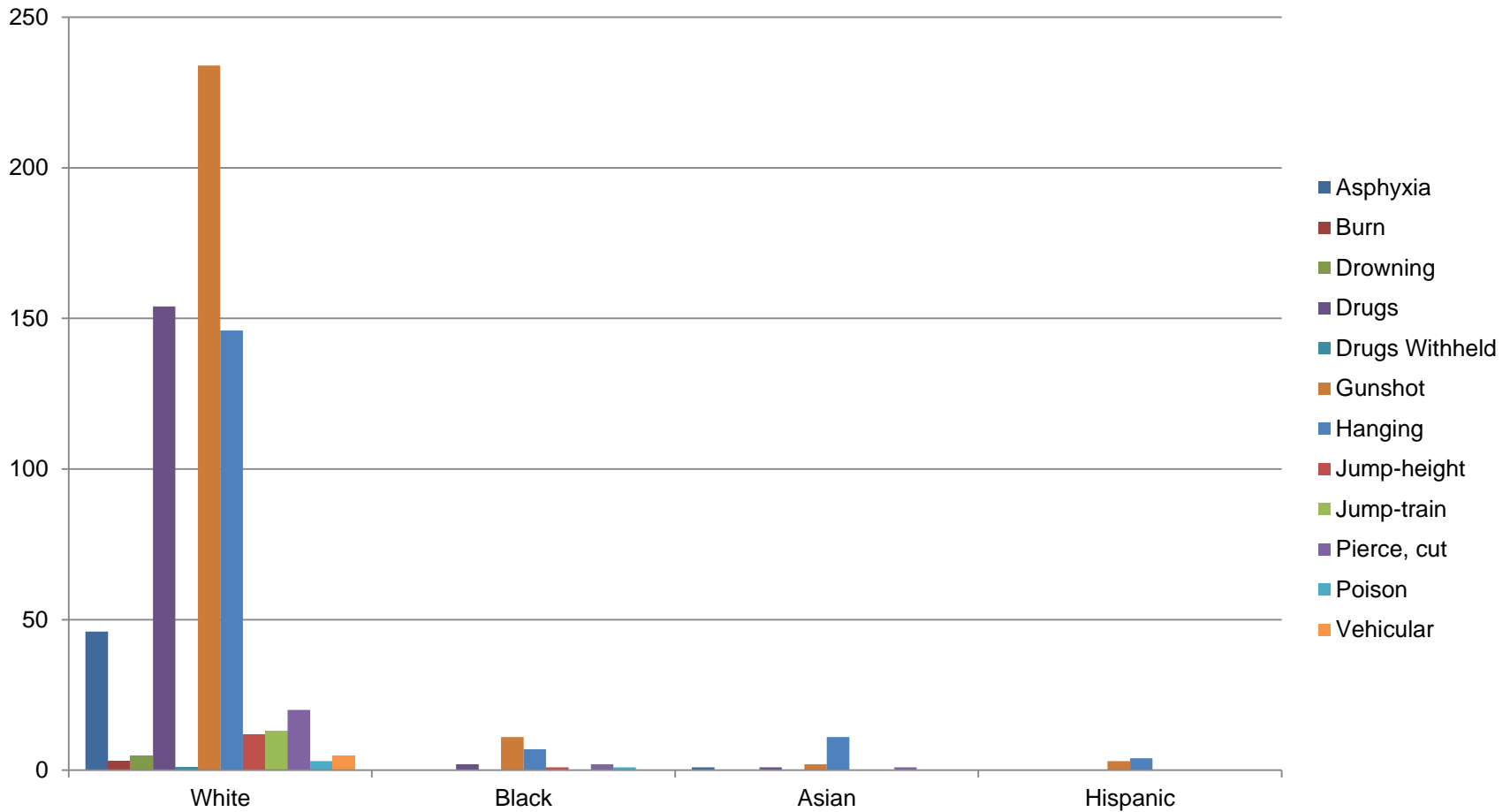
Means: Differences by Gender

Suicides by Gender, 2008-2014



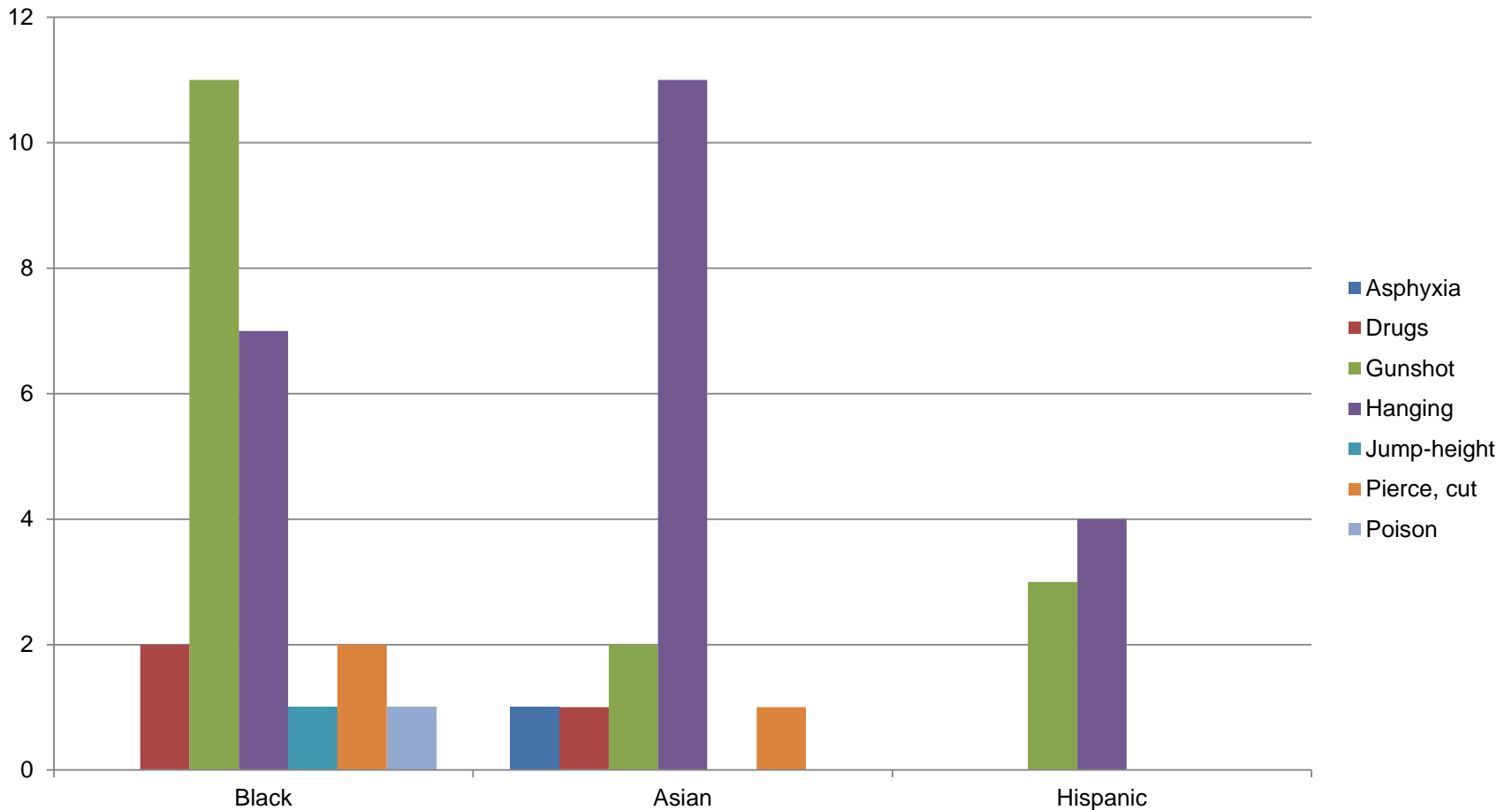
Means: Differences by Race

Suicides by Race, 2008-2014



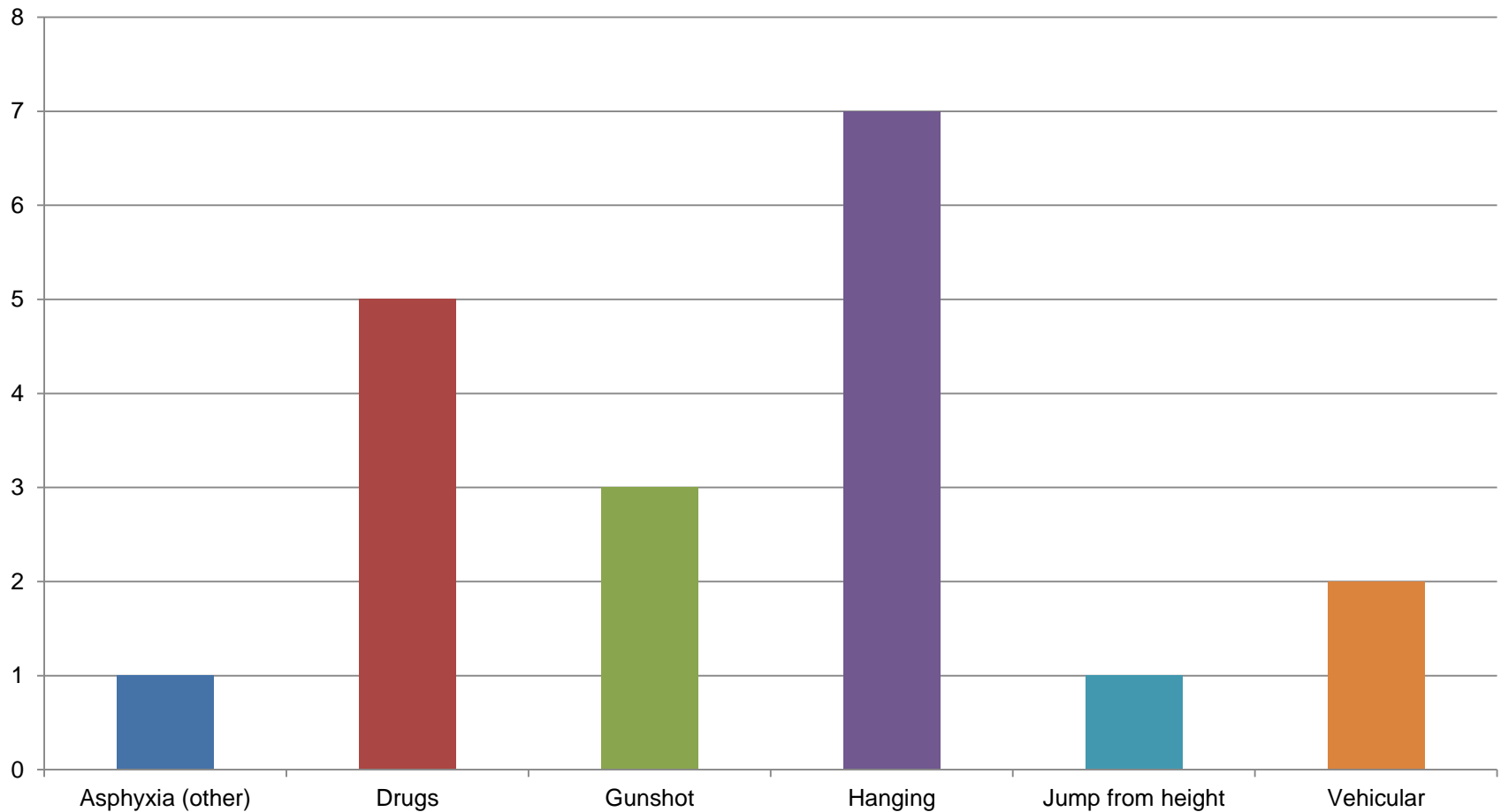
Means: Differences by Race (non-white)

Suicides by Race (non-white), 2008-2014



Means: High School-Age

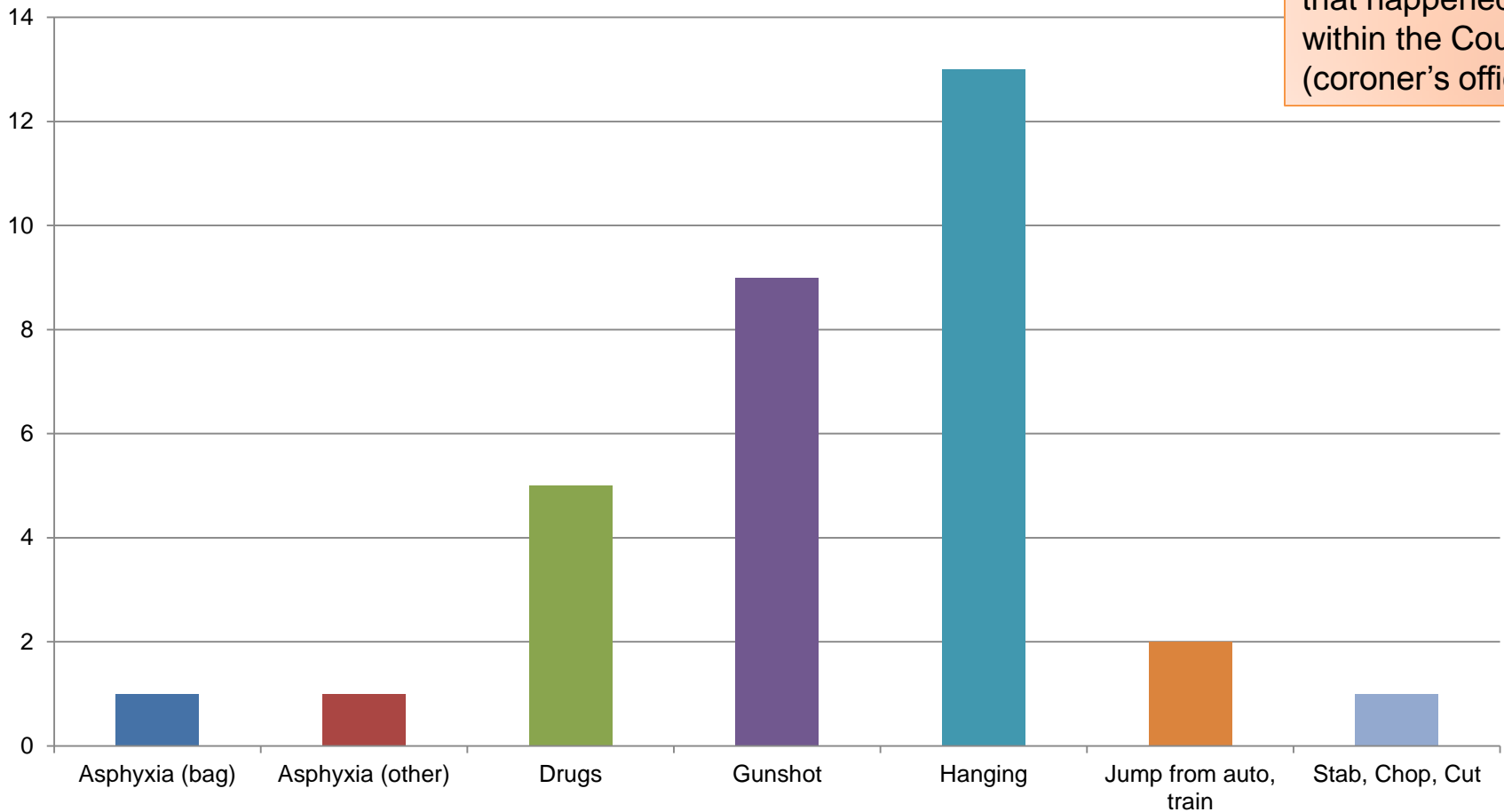
Suicides by Method (ages 14-18), 2008-2015



Means: College Age

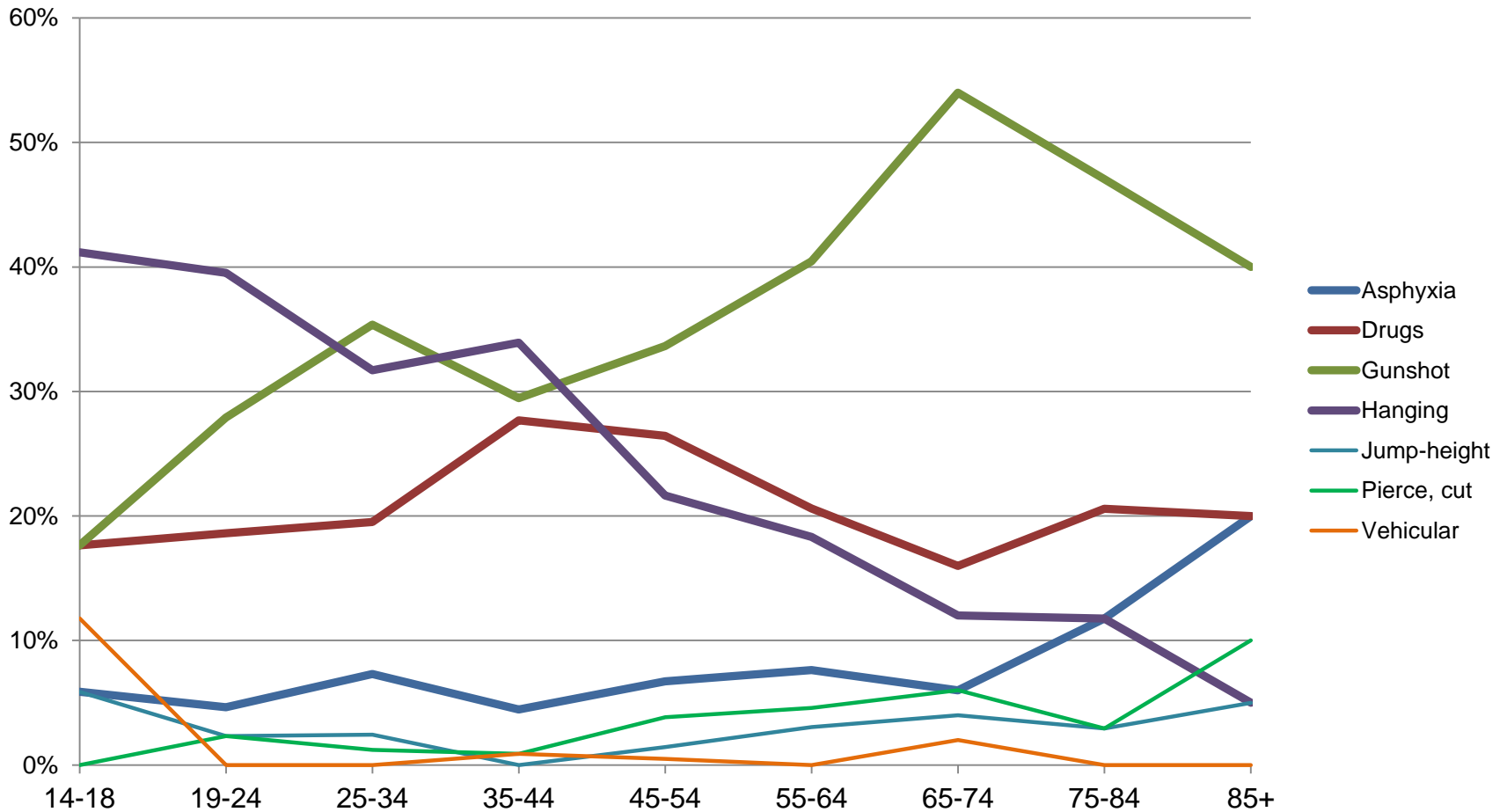
Suicides by Method (ages 19-22), 2008-2015

Remember:
These data only
include suicides
that happened
within the County
(coroner's office)



Means: Change Over the Lifespan

Percentage of Suicides by Age Group, 2008-2014



Means: Summary for Montco

- For young people, hanging is by far the most-often used method of suicide (40%)
 - But begins to drop steadily after early adulthood
 - Becoming less common overall, dropping from 38% of all suicides in 2008 to 18% in 2014
- Gun suicides increase until their peak in the 65-74 age group
 - Gun suicides have increased overall from 2008 (30%) to 2014 (39%)
- Older adults (75+) still primarily use guns, but also asphyxia
 - Asphyxia has increased from 3% in 2008 to 10% in 2014
- Consistently across all ages, 20-25% are committed by drugs

Implications

- Montgomery County's suicide rate is roughly in line with the PA and national averages; however, its suicides have primarily been concentrated in specific "hot spot" areas
- The profile of suicide is white, middle-aged, male, and primarily committed by gunshot. Intervention strategies should be sure to keep this in mind.
- Patterns in County youth suicides do not match those of the general population. Interventions to address youth suicides should be strategically targeted to the unique aspects of their seasonality and methods.



“The Fine Print”

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