



JMW Turner, *Ruins of West Front, Tintern Abbey, 1795*

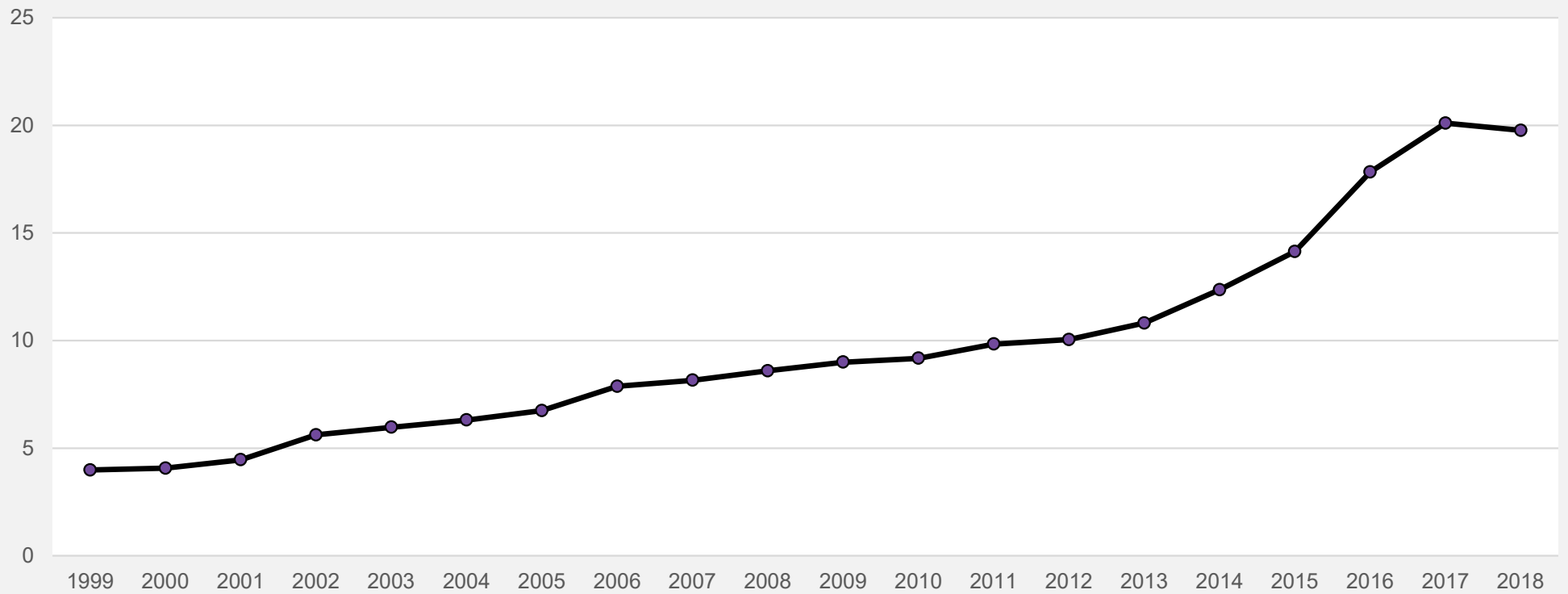
# Losing Ground in the Opioid Epidemic

Dr. Donald Sampson

Munich RE 

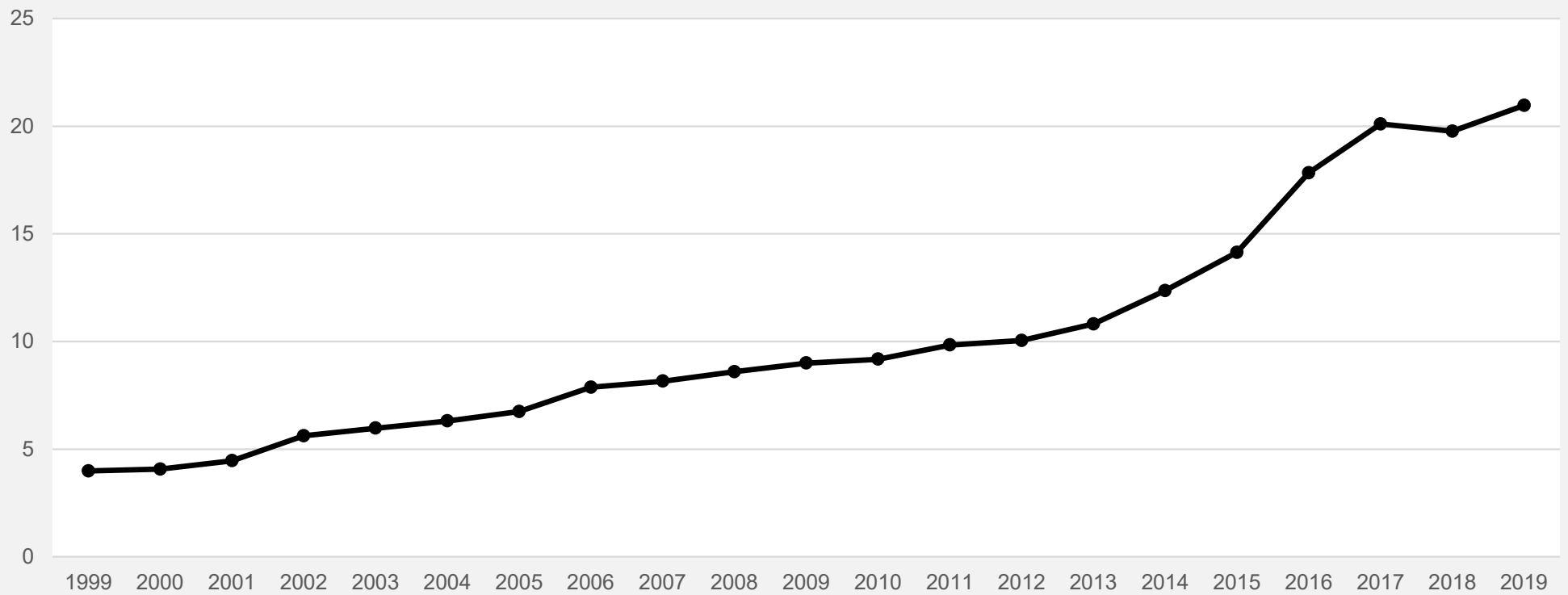
# Opioid Abuse and Overdose

## Opioid Abuse and Overdose Deaths per 100,000: Ages 25-84



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# How Are Deaths Recorded?

## Mortality Multiple Cause-of-Death Public Use Record

- Maintained by the National Center for Health Statistics (NCHS) at the CDC
- Created from all death certificates filed in the US
- Includes algorithm-interpreted 'underlying cause of death'
- Secondary or contributing conditions recorded on the death certificate are also reported
- All conditions are recorded using ICD codes (currently ICD-10)

# How Are *Opioid* Deaths Recorded?

## Overdoses

- Drug poisoning is reported in four different varieties:
  - Accidental (X40-44)
  - Suicide (X60-64)
  - Assault (X85)
  - Undetermined (Y10-14)

## Abuse

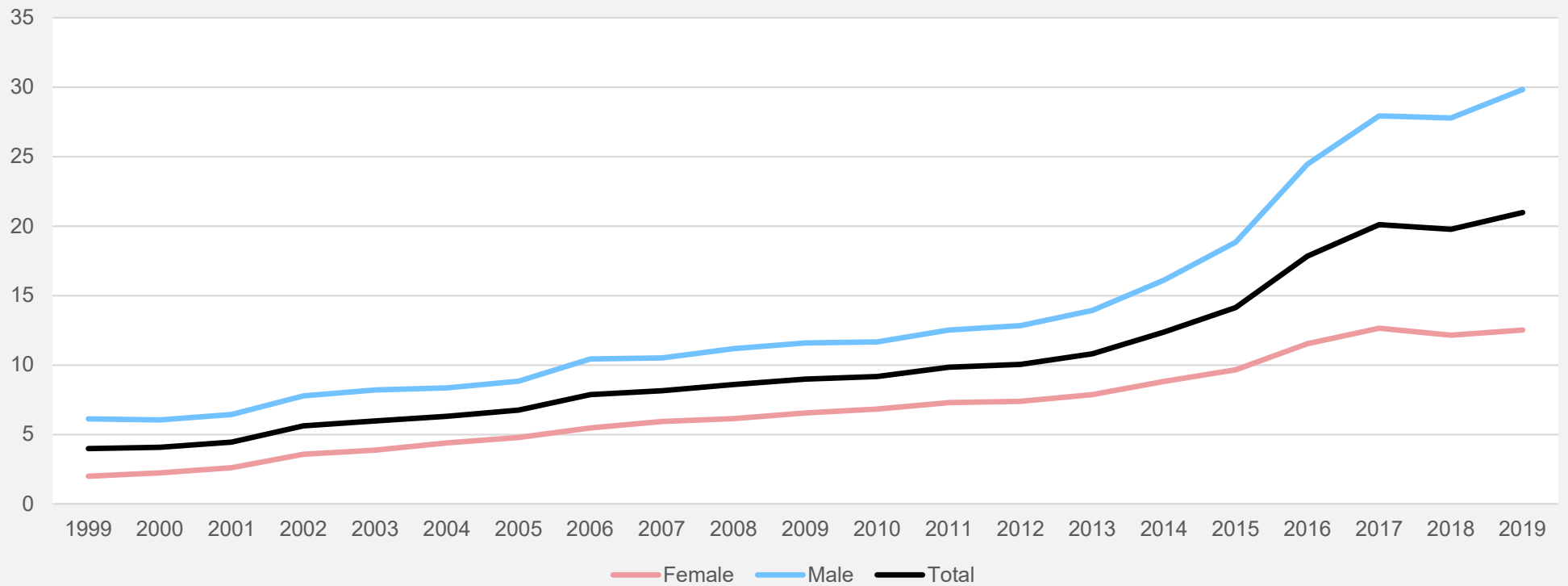
- Drug deaths were sometimes reported as a severe consequence of intoxication, instead of poisoning
- Mental and behavioral disorders due to psychoactive substance use (F10-19)
- Appears to be corrected after 2006

## How Are *Opioids* Recorded?

- Aside from general categories, underlying causes do not report the *type* of drug involved. These are recorded as secondary conditions
- Poisoning by narcotics and psychodysleptics [hallucinogens] (T40):
  - T40.0 Opium
  - T40.1 Heroin
  - T40.2 Other opioids
    - Codeine
    - Morphine
  - T40.3 Methadone
  - T40.4 Other synthetic narcotics (Fentanyl)
  - T40.6 Other and unspecified narcotics
- Using secondary conditions alone leads to false signals from palliative, hospice, and end of life care.

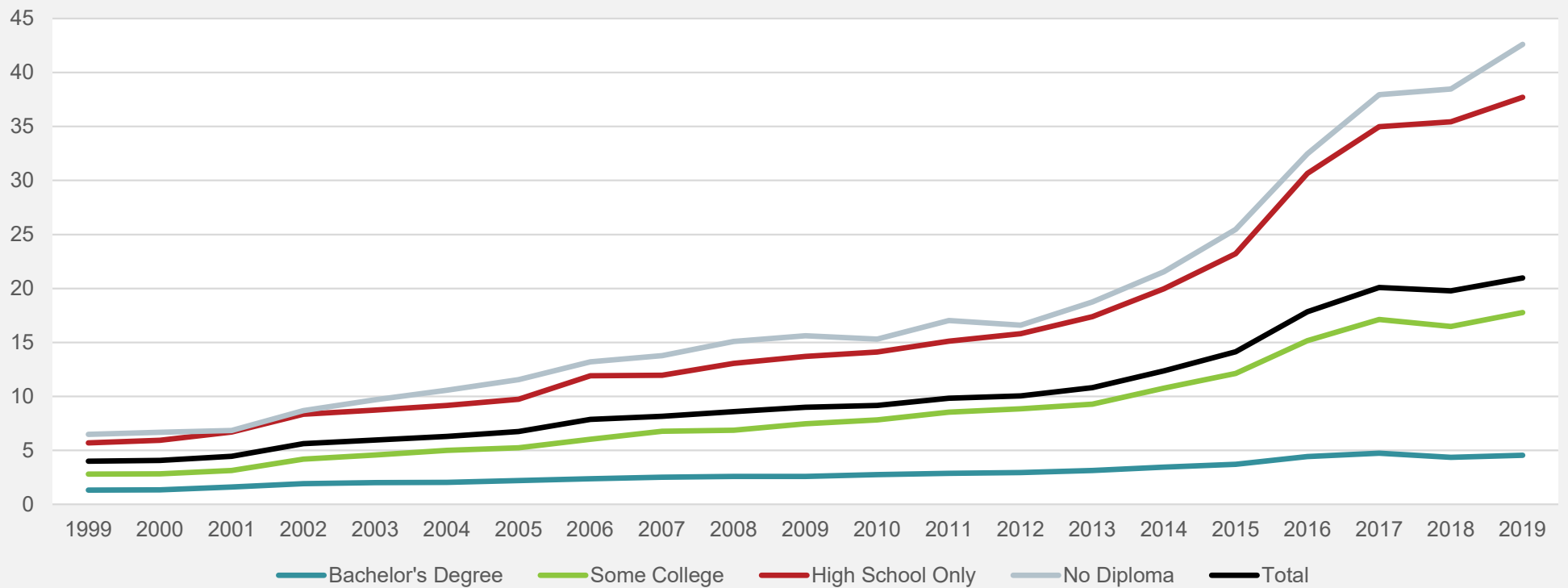
# Opioid Deaths by Gender

## Drug Abuse and Overdose Deaths per 100,000 by Gender: Ages 25-84



# Opioid Deaths by Education

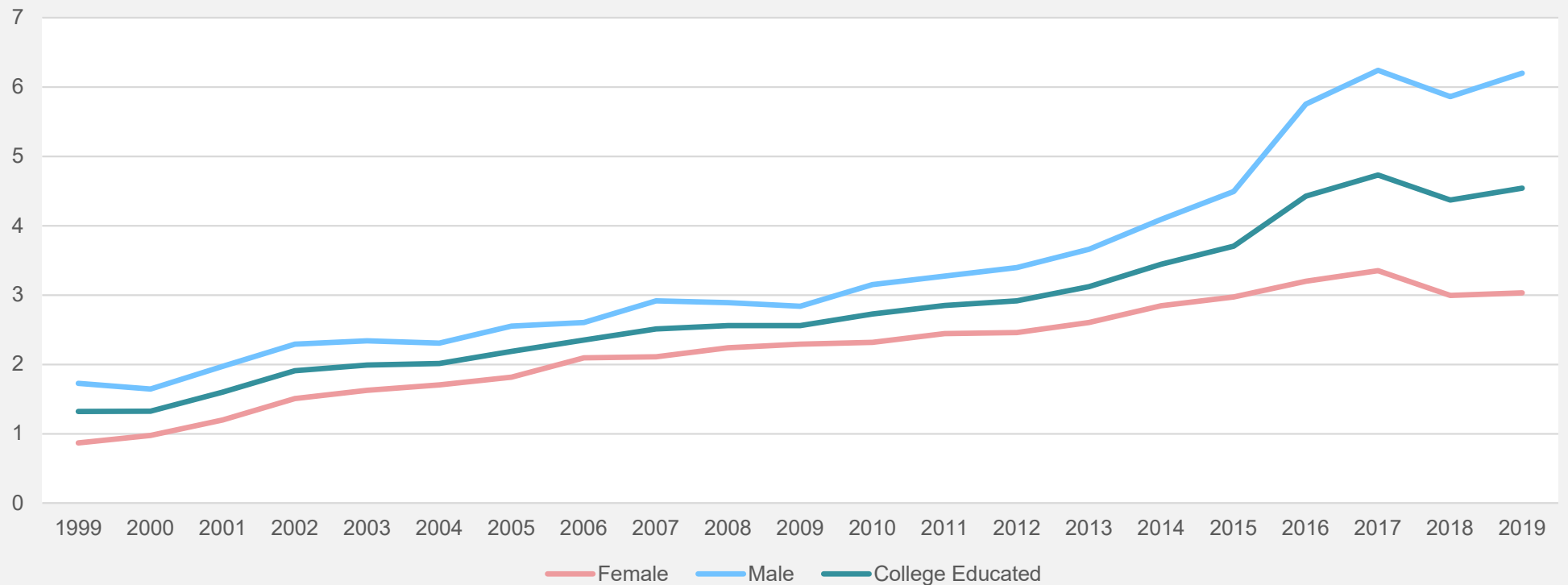
## Drug Abuse and Overdose Deaths per 100,000 by Education: Ages 25-84





# College Educated Opioid Deaths by Gender

## Drug Abuse and Overdose Deaths per 100,000 by Gender: Ages 25-84

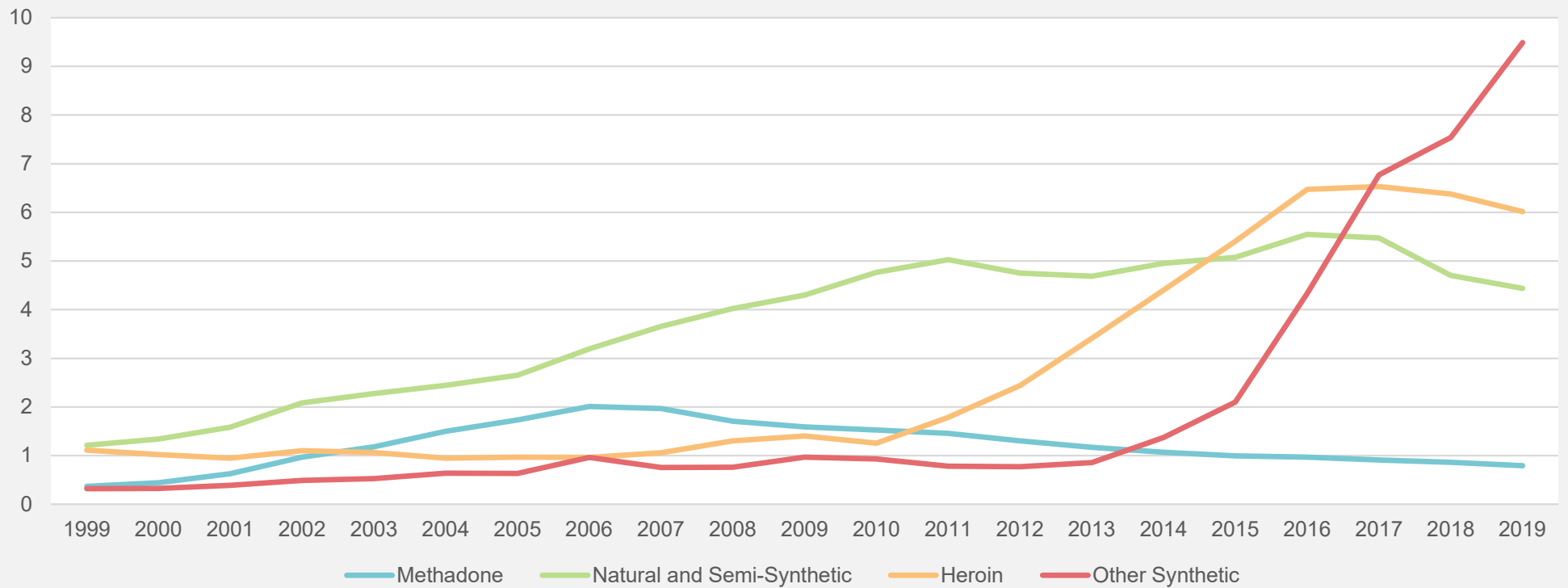


# Categories and potency of opioids

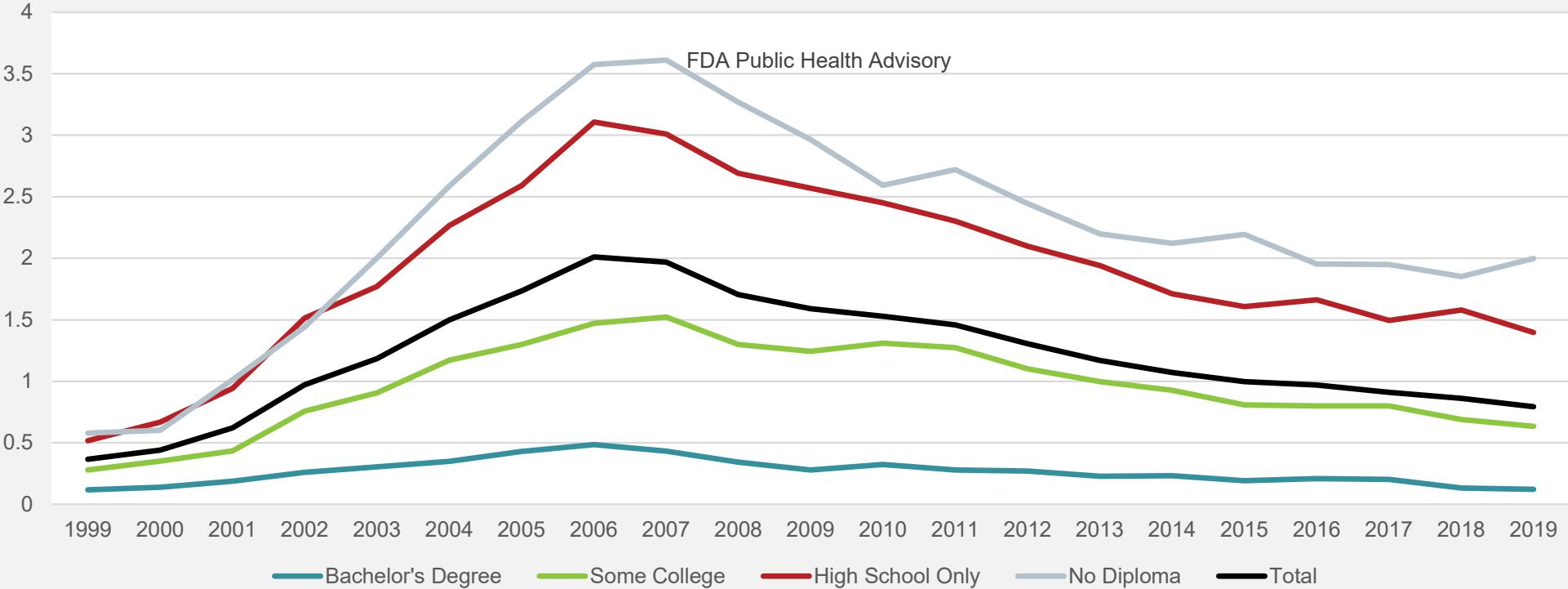
Opioid	Type	Strength Comparison
Codeine	Natural Opiate	0.15
Morphine	Natural Opiate	1
Hydrocodone*	Semi-synthetic	1
Oxycodone*	Semi-synthetic	1.5
Hydromorphone	Semi-synthetic	5
Methadone*	Synthetic	3
Heroin	Illegal Semi-synthetic	2 – 7
Fentanyl	Synthetic	75-100
Illegally-made fentanyl	Illegal Synthetic	1000 – 10,000

# Opioid Deaths by Opioid Type

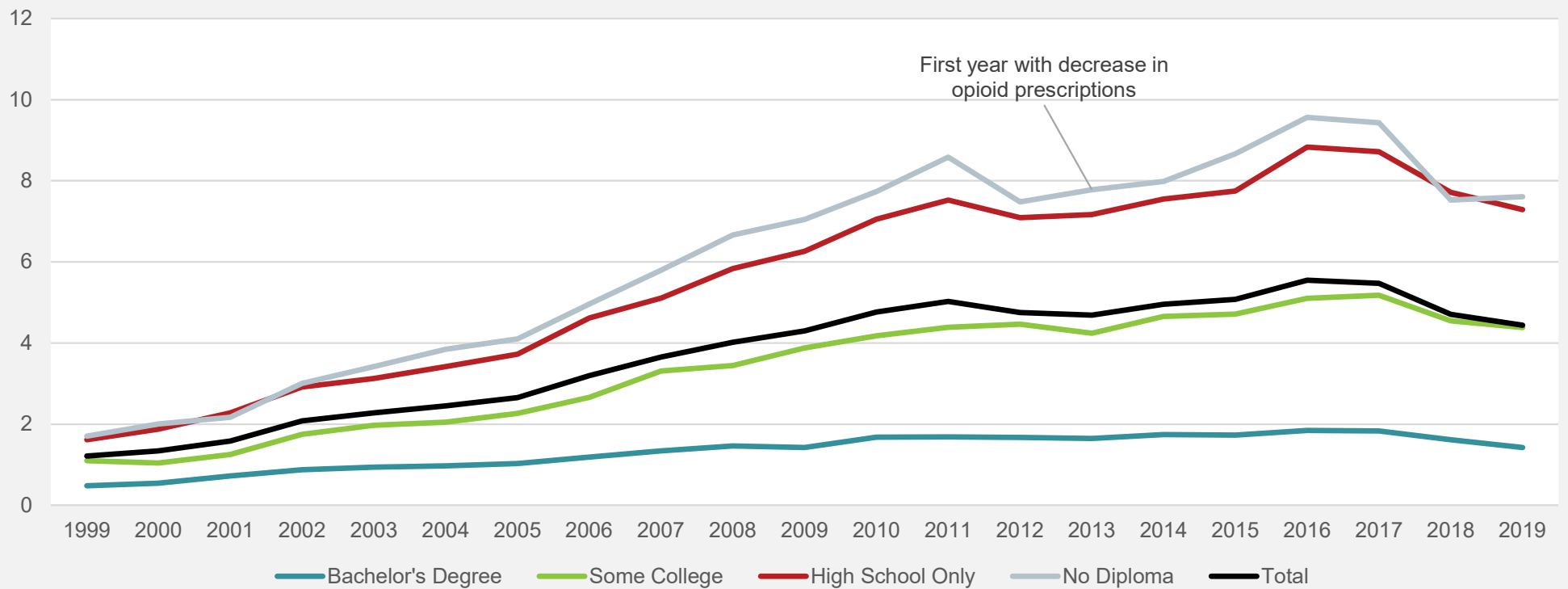
## Drug Abuse and Overdose Deaths per 100,000 by Opioid Type: 25-84



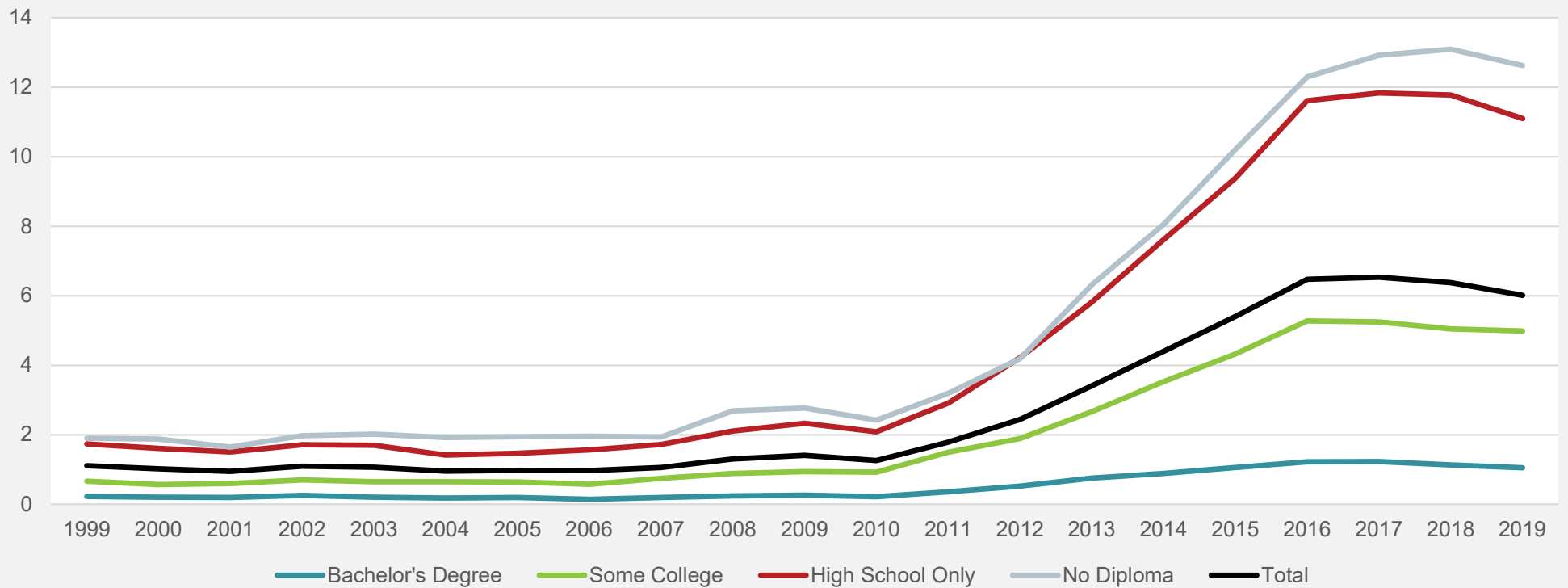
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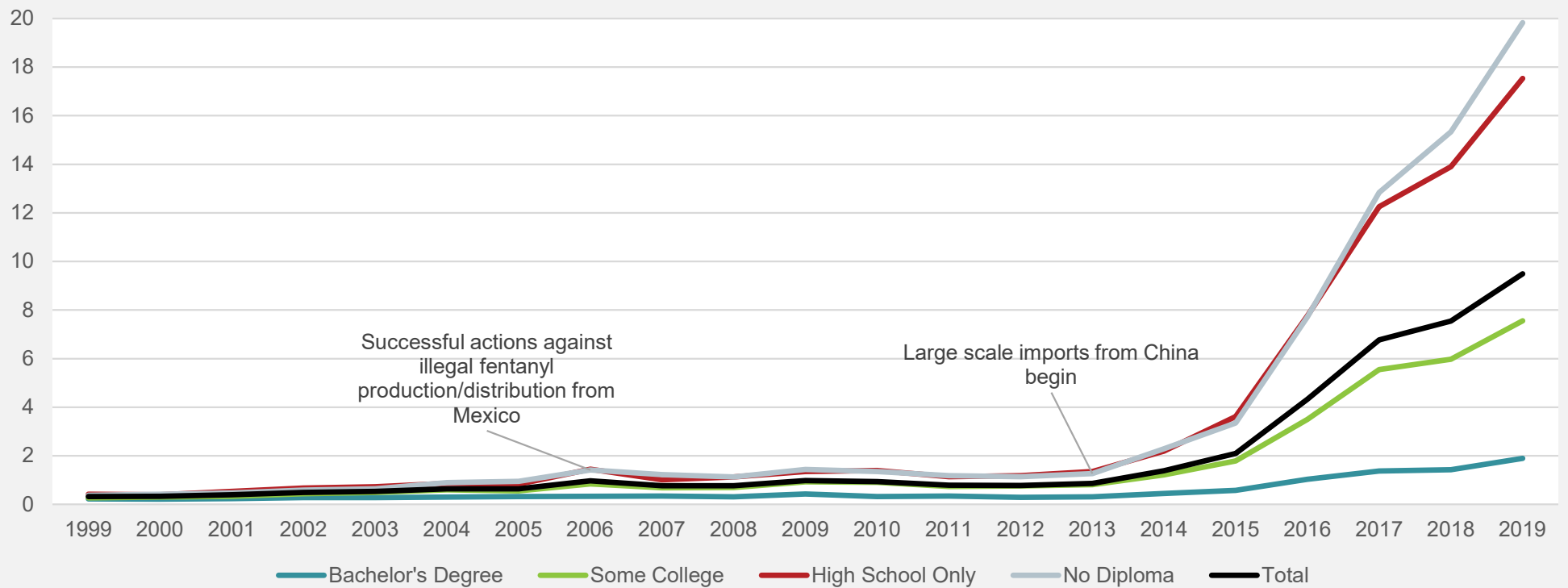
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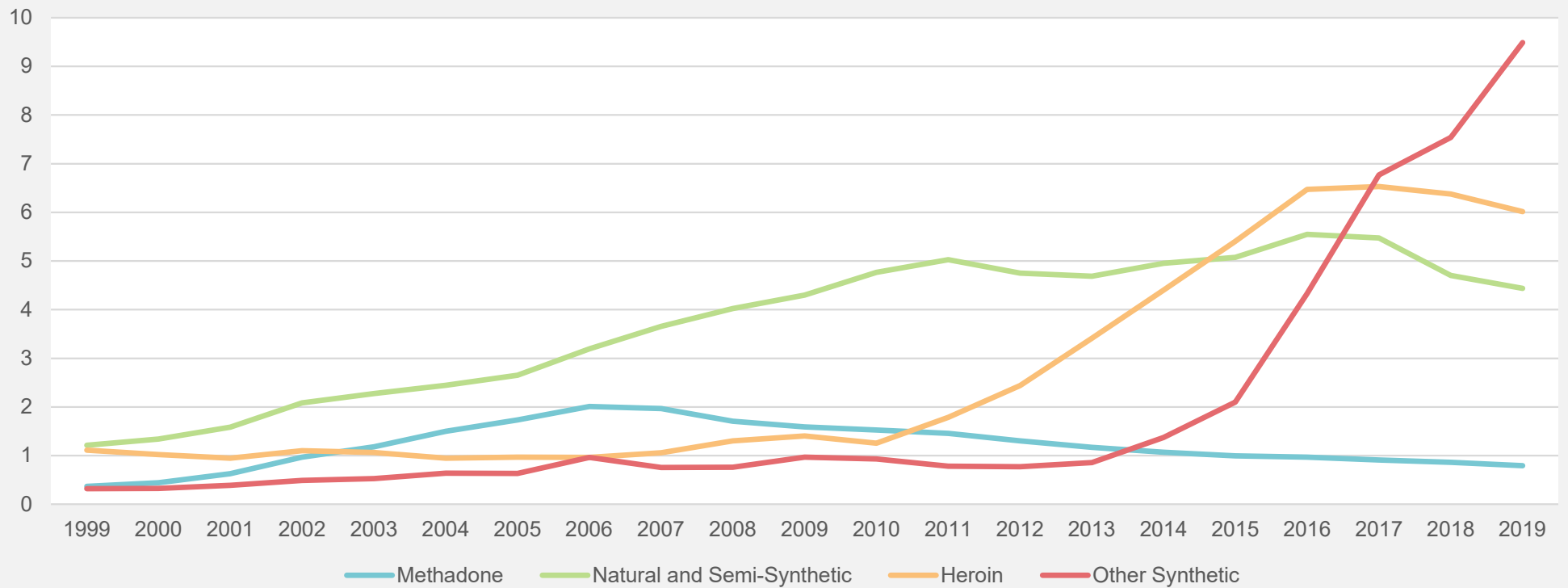


## Drug Abuse and Overdose Deaths per 100,000 by Education: 25-84



# Opioid Deaths by Opioid Type

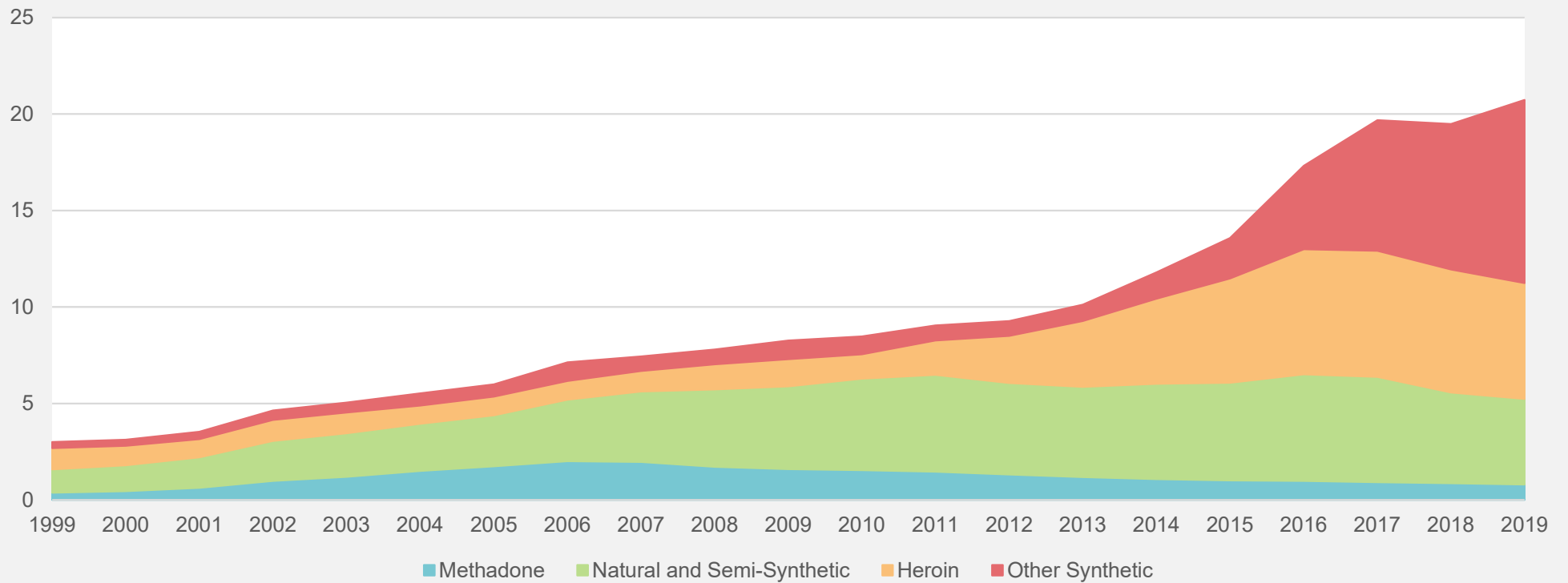
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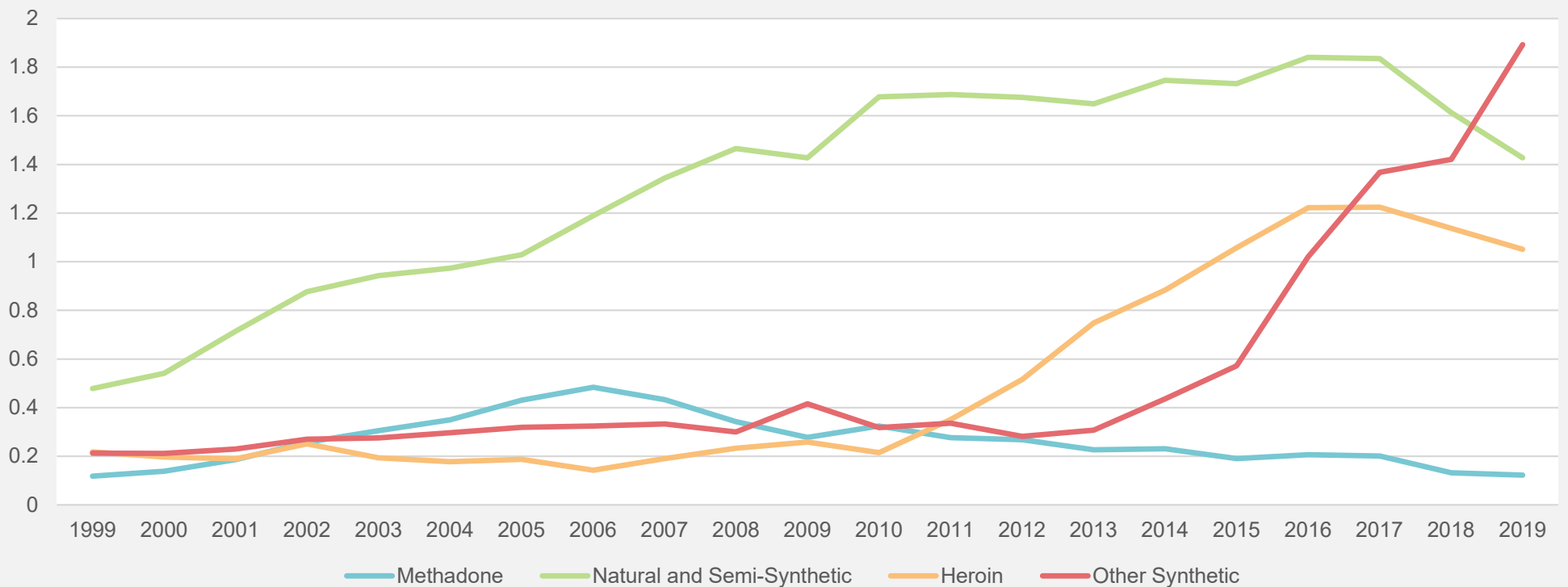
# Opioid Deaths by Opioid Type

## Drug Abuse and Overdose Deaths per 100,000 by Opioid Type: Ages 25-84



# College Educated Opioid Deaths by Opioid Type

## Drug Abuse and Overdose Deaths per 100,000 by Opioid Type: 25-84



# Provisional Drug Overdoses Reported for 2020-2021



## Monthlitized Drug Overdose Death Counts, 2014-2021

