

# Opioid prescriptions and overdose deaths in the U.S.

## “The Opioid Epidemic”



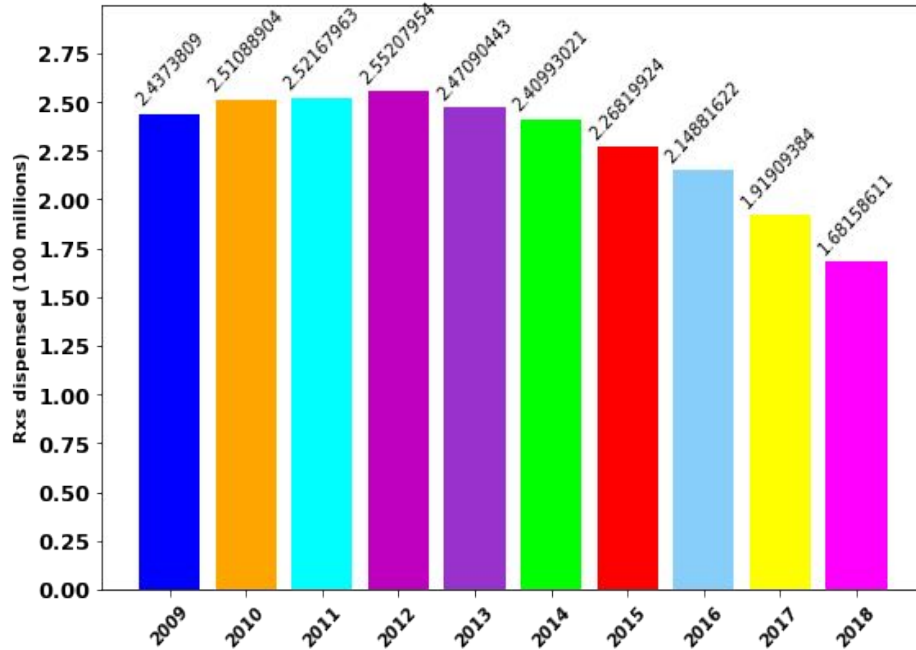
Alyssa Ma, Keturah Bardouille, Brandon McDermott, Ece Kalay, Linda Pikulin

# Opioids: a nationwide public health crisis

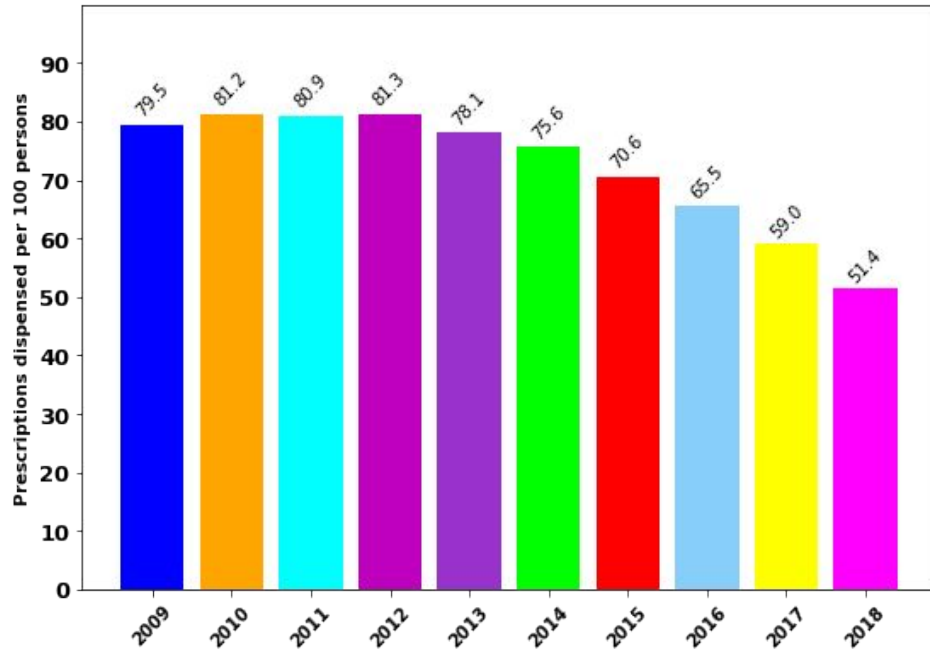
- **Research question:**
  - Are there **demographic groups or locations** where **fatal opioid overdoses are more prevalent**?
  - If so, is there a relationship between prescribing practices and opioid related mortalities in these demographics/locations?
- Analysis of current high quality surveillance data can lead to increased programmatic response and identify changing trends in these demographics/localities
- Data sources/tools:
  - [CDC Wonder](#)
  - [Kaiser Family Foundation](#)
  - [CMS Medicare Part D](#)
  - Utilization of **Google APIs**

# Nationwide trend in number of opioid prescriptions

Opioid Rx's dispensed yearly



Opioid prescriptions dispensed yearly per 100 persons

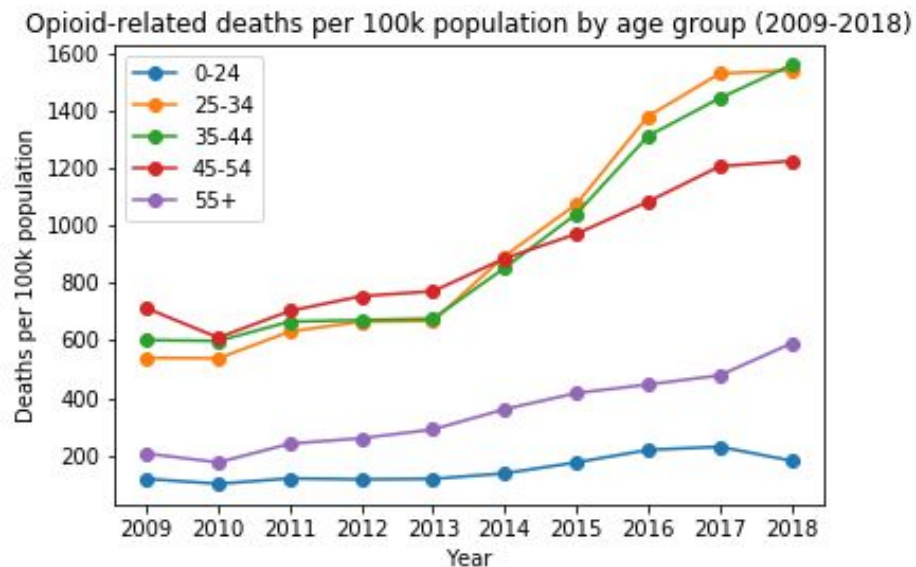
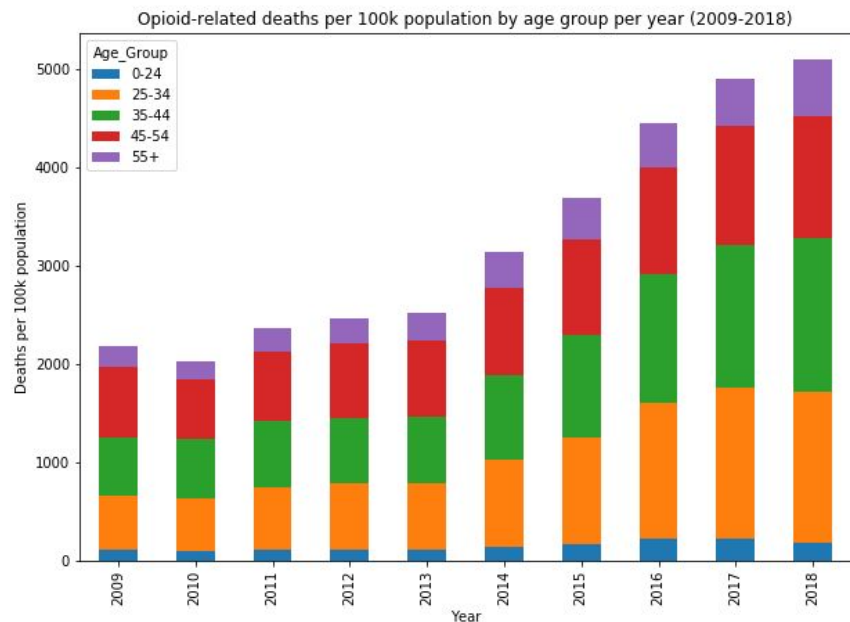


Data from: <https://www.cdc.gov/drugoverdose/maps/rxrate-maps.html>

# Visualization by age group

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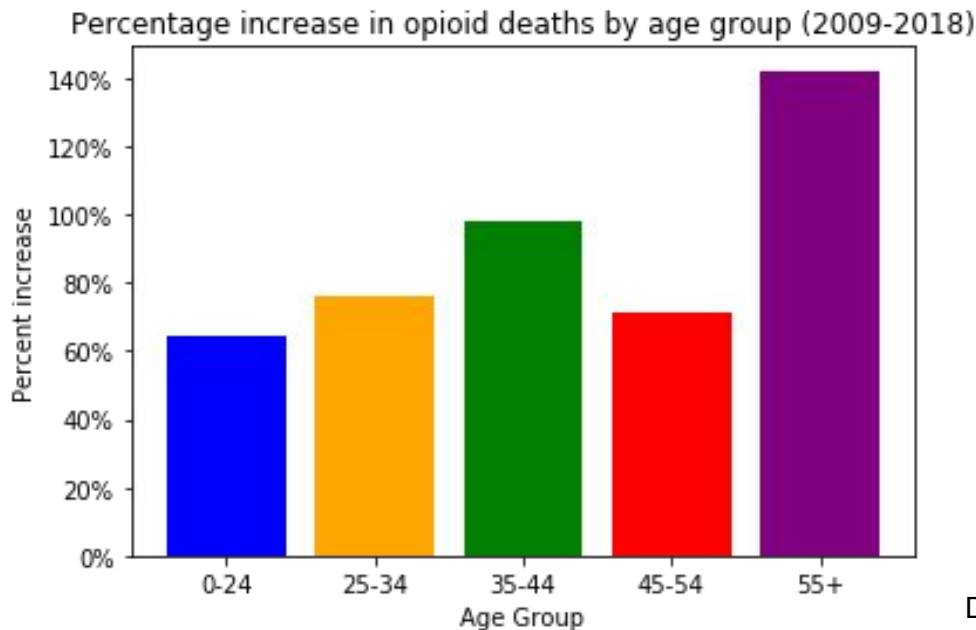
An overall increase in opioid-related deaths per 100K population across all age groups from 2009 to 2018



Data sources: CDC, Kaiser Family Foundation

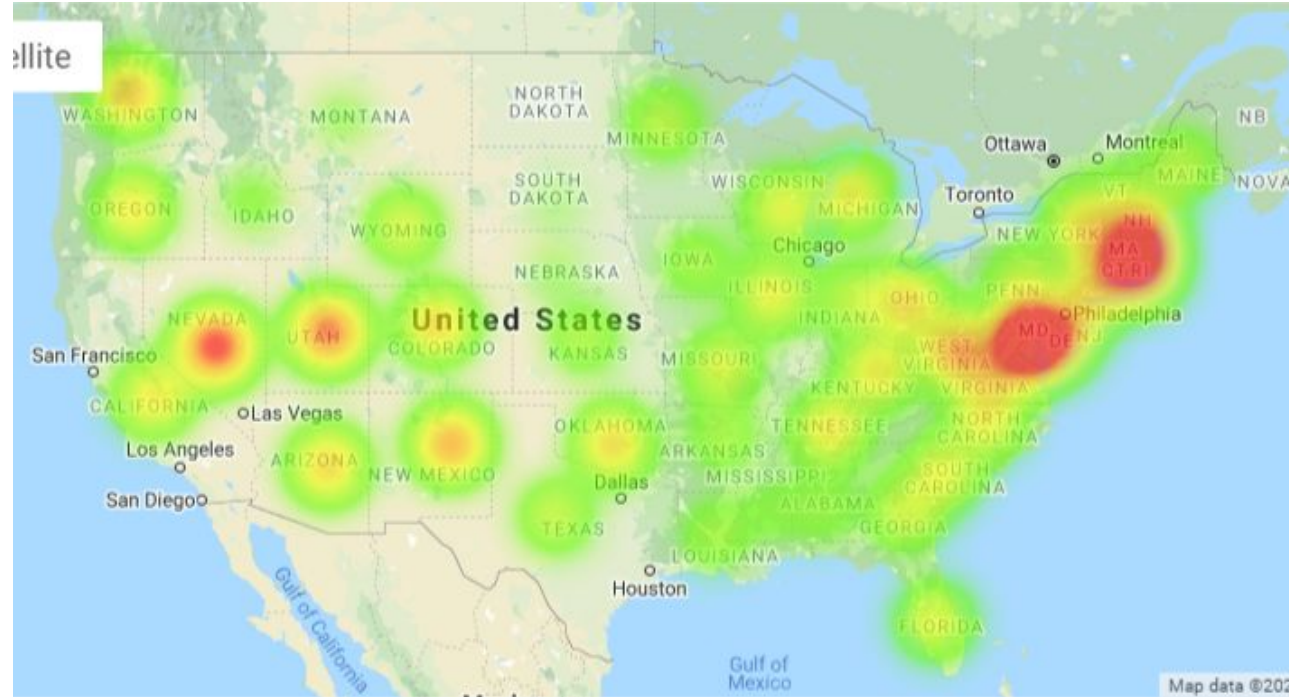
# Percent change in opioid deaths by age group (2009-2018)

While the overall number of deaths for the 55+ age group is small, they have shown the greatest increase over time

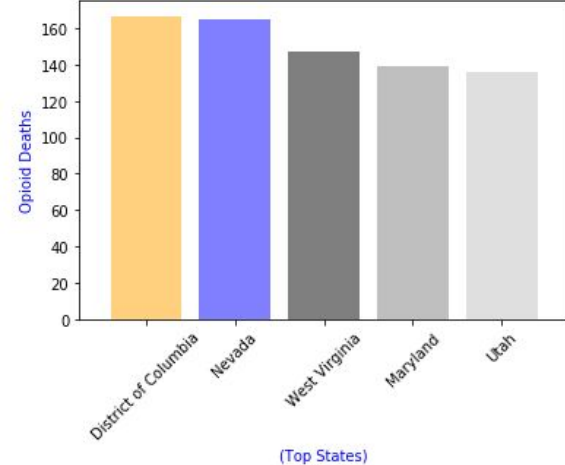


Data source: Kaiser Family Foundation

# % of deaths for 55+ years old that are opioid related by state, 2009-2018



Highest 55+ Opioid Deaths by State 100K



Data sources: CDC, Kaiser Family Foundation

# Examining prescribing practices of Medicare Part D providers of opioids

— — One in three Medicare Part D beneficiaries received a prescription opioid.



In total, 1,162,898 providers wrote prescriptions for opioids.



\*HHS OIG Data Brief • July 2017 • OEI-02-17-00250

<https://oig.hhs.gov/oei/reports/oei-02-17-00250.pdf#:~:text=In%20addition%20to%20the%20risk,likelihood%20of%20falls%20and%20fractures>



# Number of top providers for Part D population (2017)

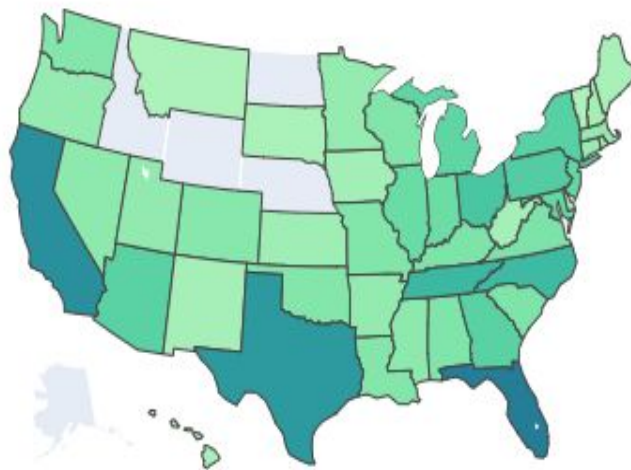
Top opioid prescribers (2017)

## Top opioid prescribers:

Top 5th percentile for opioid  
claim count

&

Top 5th percentile for opioid  
prescribing rate



Number of top prescribers

600

400

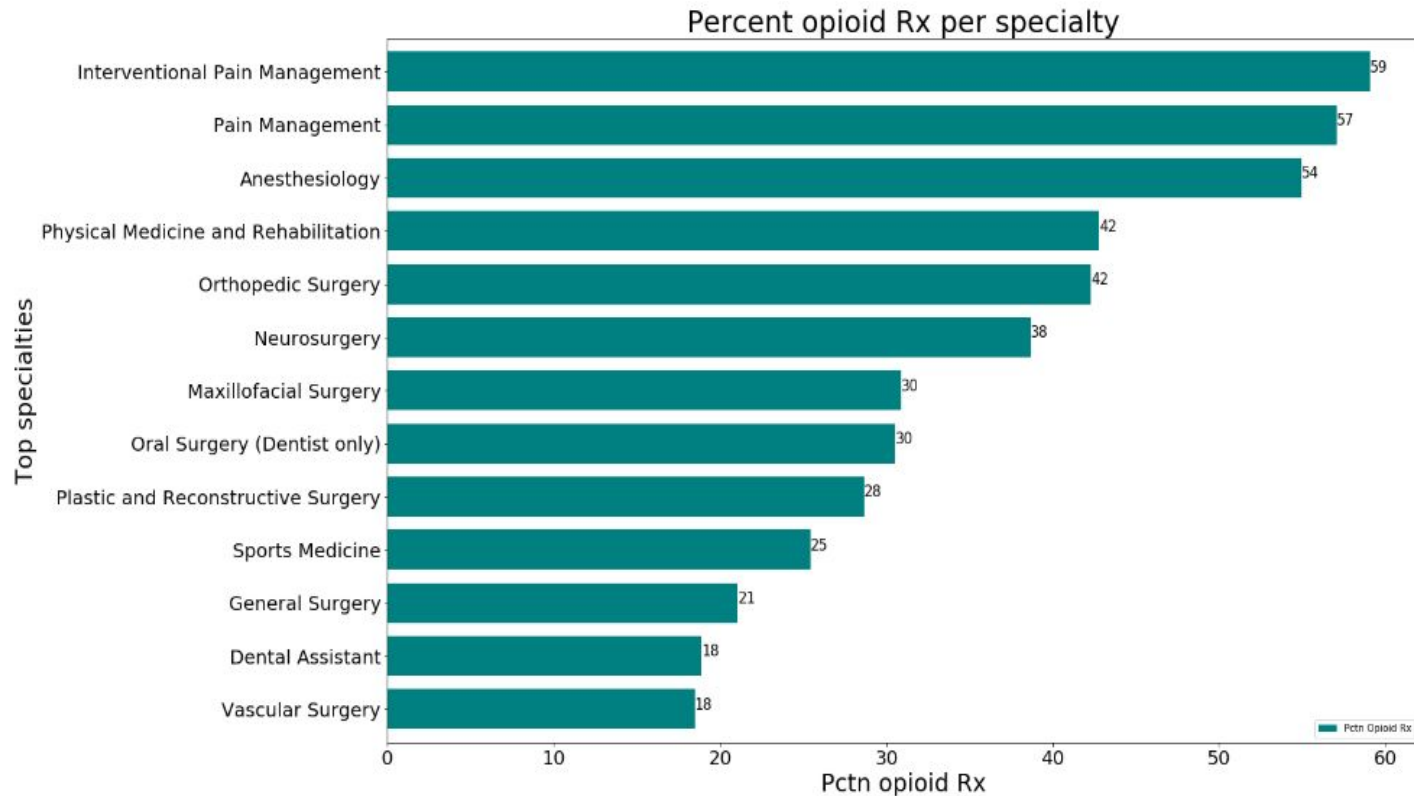
200



# Prescriptions by top medical specialties

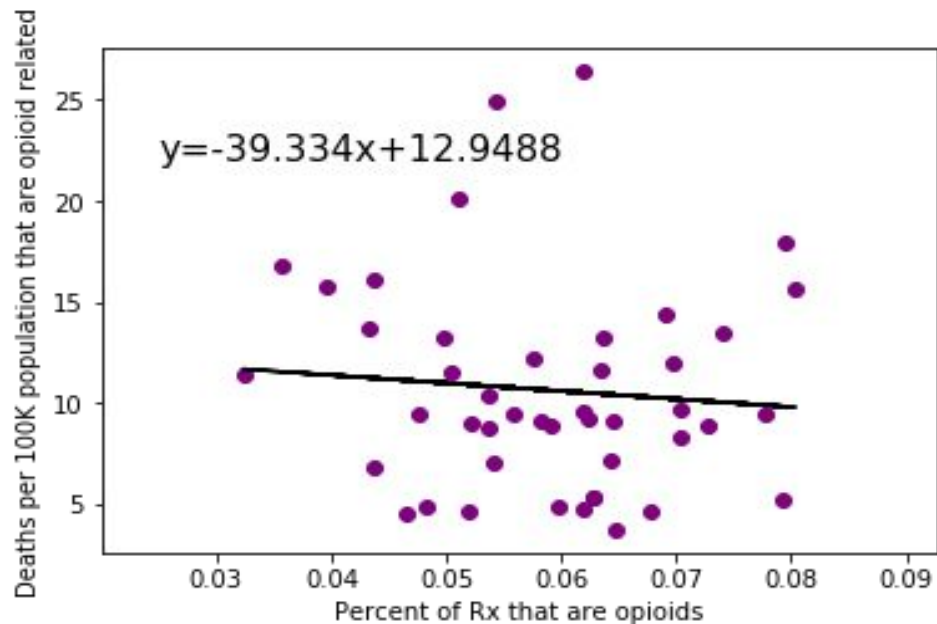
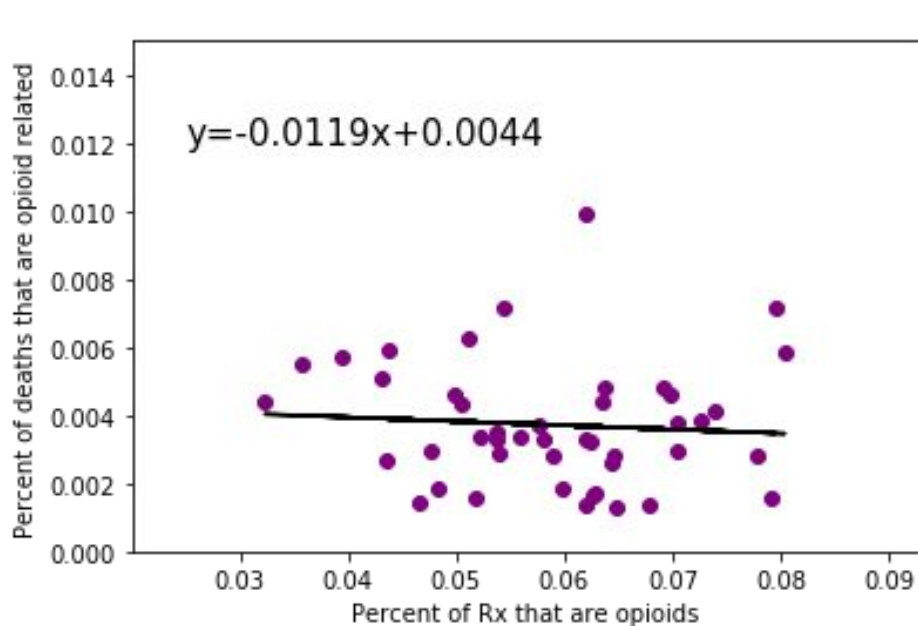
## Top opioid prescribing specialties:

Top 25th percentile for  
opioid claim count  
&  
Top 25th percentile for  
opioid prescribing rate



Data source: CMS Medicare Part D Opioid Prescriber Summary File 2017

# Relationship between opioid scripts and opioid deaths



# Conclusion

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- **Findings**

- The number of opioid prescriptions are decreasing, but opioid deaths are increasing
  - National Center for Health Statistics: drug overdose deaths involving synthetic opioids other than methadone (drugs such as) increased by 10%, from 9.0 in 2017 to 9.9 in 2018.
- Opioid deaths are increasing most in the 55+ population
- States with high levels of prescribing do not correspond to those with the highest death rates

- **Limitation of our analyses**

- Age group for death and prescriptions not directly aligned (55/65)
- CMS data does not include prescriptions filled through private insurance or illegally obtained opioids
- Data is delayed 3 years, limiting functionality for surveillance