



Presentation Slides for Mortality Data through 2021
10.2022

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October 2022*

Mortality Analysis – Key Points

For the 12 months ending December 2021, CDC projects for all ages:

- 107K-109K total drug-induced deaths, +16% vs. prior year.
- Over 72K (66%) of these deaths involved fentanyl & other synthetic opioids, mostly illicit, and often in combination with other drugs; this is +26% vs. prior year.

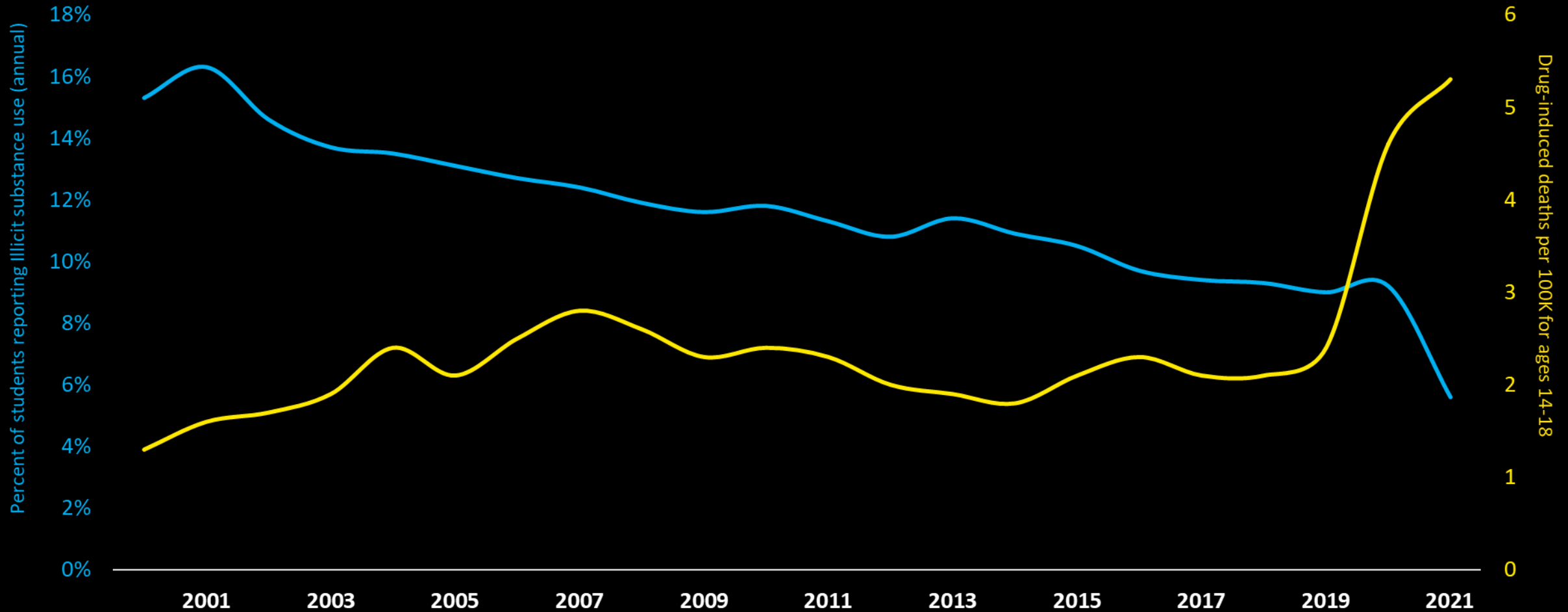
Youth (Age 14-23):

- In 2021, 6,000 youth will have died from drugs with fentanyl involved, 4,800 of them with fentanyl involved, 79% of all youth drug death. Drug deaths are second behind car accidents in accidental deaths, about equal to homicide & suicides in leading overall deaths.
- Youth drug deaths have quadrupled over 20 years, driven recently by Fentanyl involvement which has grown over 6X since 2015 (+558%).
- Meanwhile, in the same 5 years, deaths involving Meth, Cocaine, Heroin, Benzos, & Legit Opioids combined have been mostly flat (+16%).
- Fentanyl is involved in more youth death than all other drug types combined; many deaths involve multiple drugs.
- Since 2018, Teen (14-18) drug deaths have grown faster than any other age group (+152%) driven by fentanyl (+356%); this is about 3x faster than the U.S. all ages growth rates.
- Counterfeit pill seizures have grown 50-fold since beginning of 2018 to end of 2021, over 10M pills per year. Estimated 40% of the pills have a potentially lethal dose and essentially zero pills on the street are legit.



Street Drugs & Youth: A Surprising Trend

Illicit Substance Use vs. Drug-induced Mortality U.S. Teens Age 14-18



Substance Use: Monitoring the Future National Survey Results on Drug Use, 1975–2021: Volume I, Secondary school students. Ann Arbor: Institute for Social Research, The University of Michigan. Available at <http://monitoringthefuture.org/pubs.html#monographs>. “Trends in Annual Prevalence of Use of Various Drugs for Grades 8, 10, and 12 Combined, Any Illicit Drug other than Marijuana.” **Drug-induced Mortality:** 2021 Provisional reported deaths from: Centers for Disease Control and Prevention, National Center for Health Statistics. Multiple Cause of Death Provisional Mortality Statistics 2018- through last month on CDC WONDER Online Database, released in 2022. Pre 2021 Data from the Multiple Cause of Death Files, 1999–2020. Compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Accessed at <https://wonder.cdc.gov/mcd-icd10-provisional.html> & <https://wonder.cdc.gov/mcd-icd10.html> on Oct 2022. NCHS has defined selected causes of death groups for analysis of all ages mortality data: Drug overdose deaths are identified using underlying cause-of-death codes from the Tenth Revision of ICD (ICD–10): X40–X44 (unintentional), X60–X64 (suicide), X85 (homicide), and Y10–Y14 (undetermined). Drug overdose deaths involving selected drug categories are identified by specific multiple cause-of-death codes. “Fentanyl-involved = T40.4, synthetic opioid analgesics other than methadone, including drugs such as fentanyl and tramadol Multiple drugs may be involved in one drug death. 2021 is provisional and could change

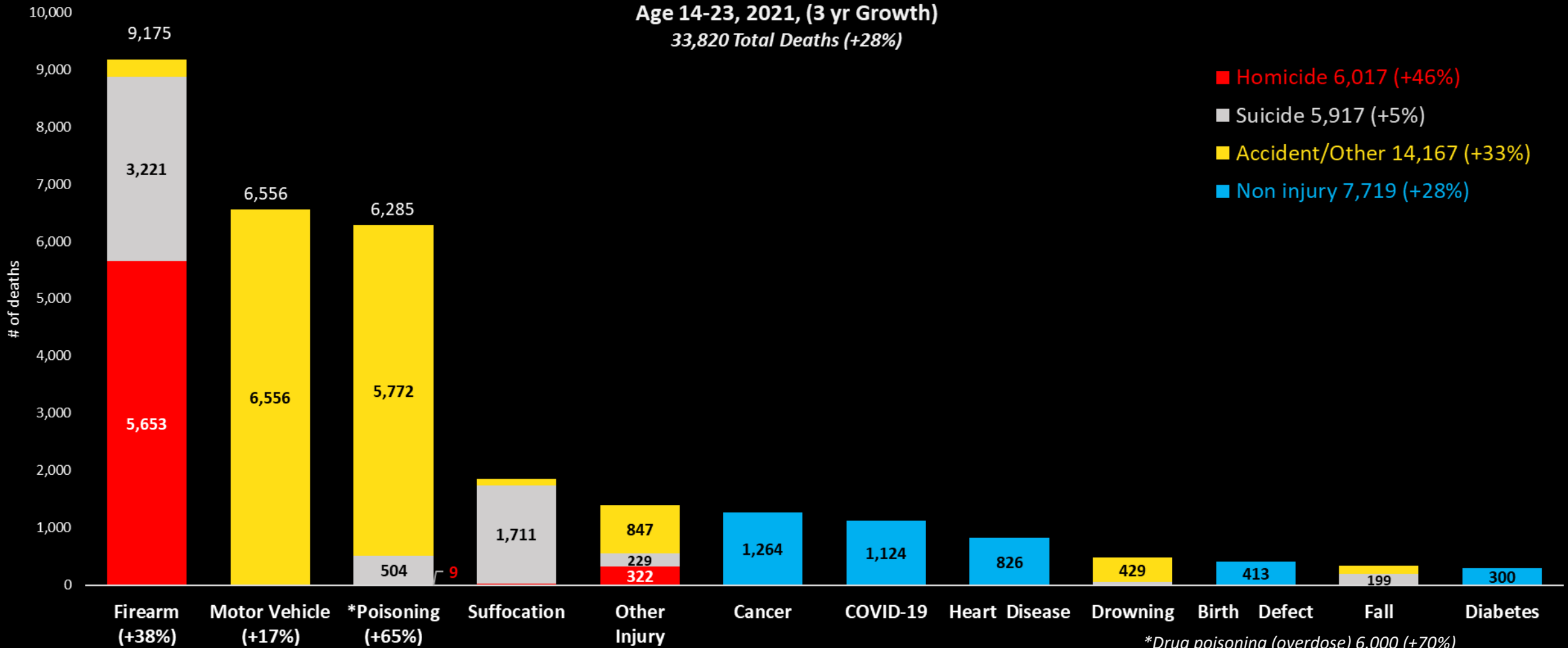


What is Preventable?

U.S. Youth Leading Mechanism/Cause of Death & Intent

Age 14-23, 2021, (3 yr Growth)

33,820 Total Deaths (+28%)



*Drug poisoning (overdose) 6,000 (+70%)

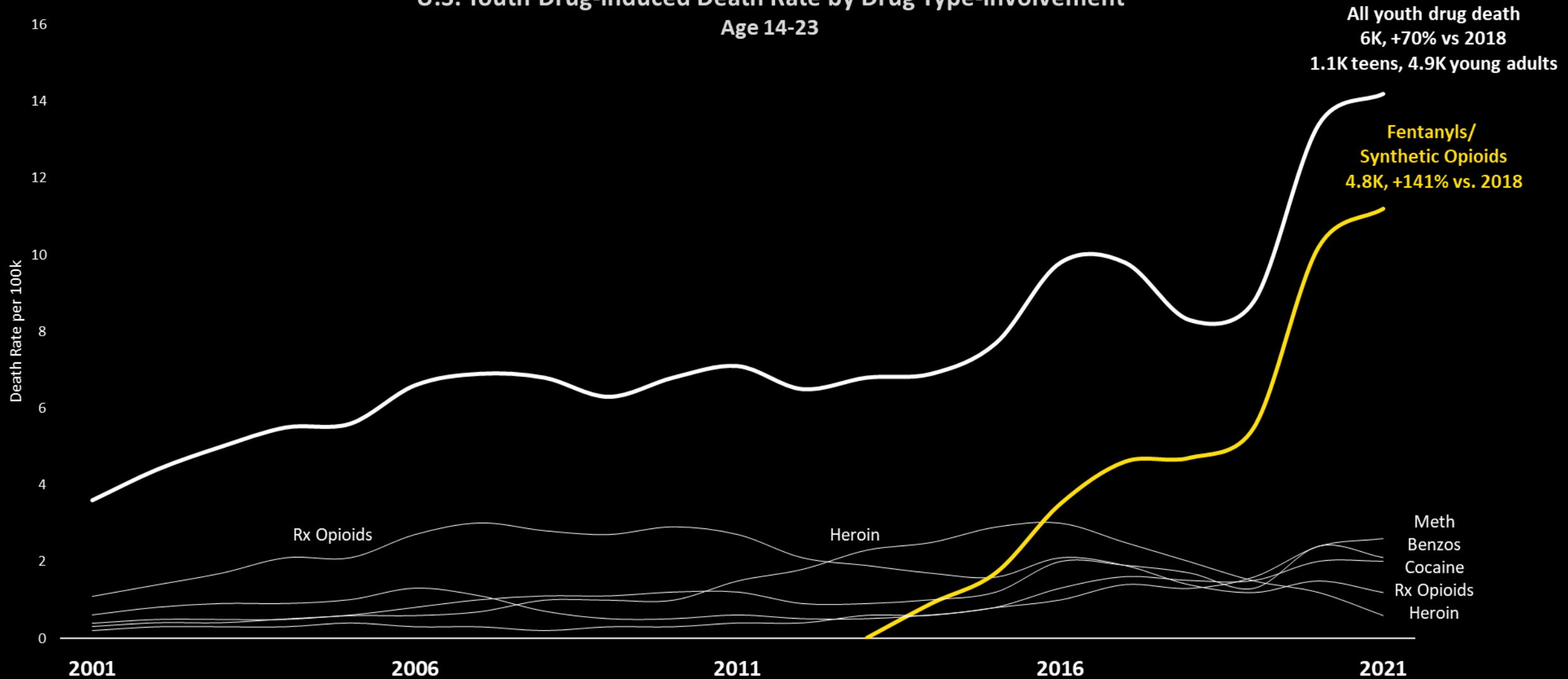
*Fentanyl/synthetic opioids-involved 4,765 (+141%)

Derived from: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Provisional Mortality & Mortality 1999-2020 on CDC WONDER Online Database. Data are from the provisional data for years 2021-2022 and final Multiple Cause of Death Files, 1999-2020, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Provisional data for 2021 may change until ~12.2022. Accessed at <http://wonder.cdc.gov/mcd-icd10-provisional.html> & <http://wonder.cdc.gov/mcd-icd10.html> on Oct, 2022. Reported data, not predicted. NCHS has defined selected causes of death groups for analysis of all ages mortality data: "Drug poisoning (overdose)" deaths are identified using underlying cause-of-death codes from the Tenth Revision of ICD (ICD-10): X40-X44 (unintentional), X85 (homicide), and Y10-Y14 (undetermined). Drug overdose & poisoning deaths involving selected drug categories are identified by specific multiple cause-of-death codes: heroin (T40.1); natural opioid analgesics, including morphine and codeine, and semisynthetic opioids, including drugs such as oxycodone, hydrocodone, hydromorphone, and oxymorphone (T40.2); methadone, a synthetic opioid (T40.3); synthetic opioid analgesics other than methadone, including drugs such as fentanyl and tramadol (T40.4); cocaine (T40.5); Benzodiazepines (T42.4), and psychostimulants with abuse potential, which includes methamphetamine (T43.6). "Rx Opioids" uses T40.2+T40.3, "Fentanyl/Synthetic opioid-involvement" uses T40.4, "Fentanyl % of all drug deaths" is (MCD T40.4/Drug overdose deaths). "Fentanyl-only" uses (Any T40.4 minus (Any T40.4 + any involvement of T40.1 and/or T40.2 + T40.3, and/or T40.5, and/or T42.4 and/or T43.6)). Multiple drugs may be involved in one drug death. Death rates are per 100K population.



An Evolving Epidemic

U.S. Youth Drug-induced Death Rate by Drug Type-involvement Age 14-23

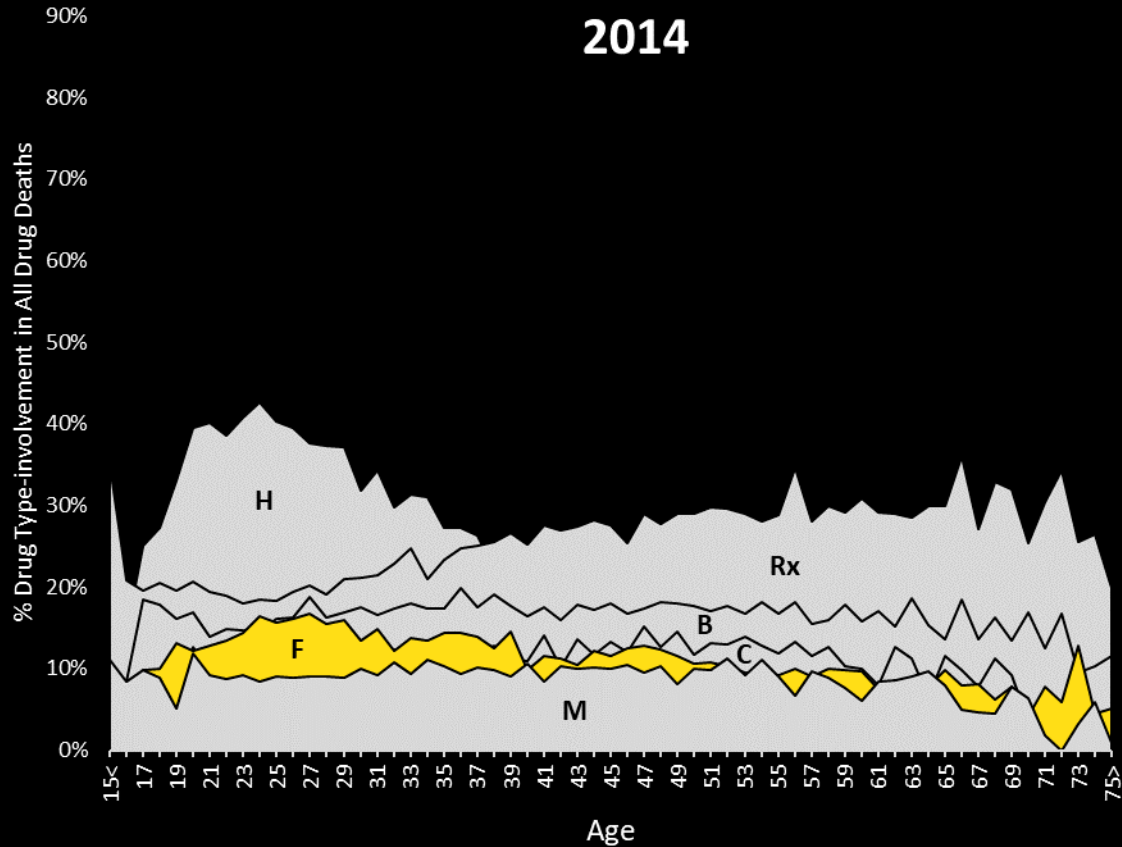


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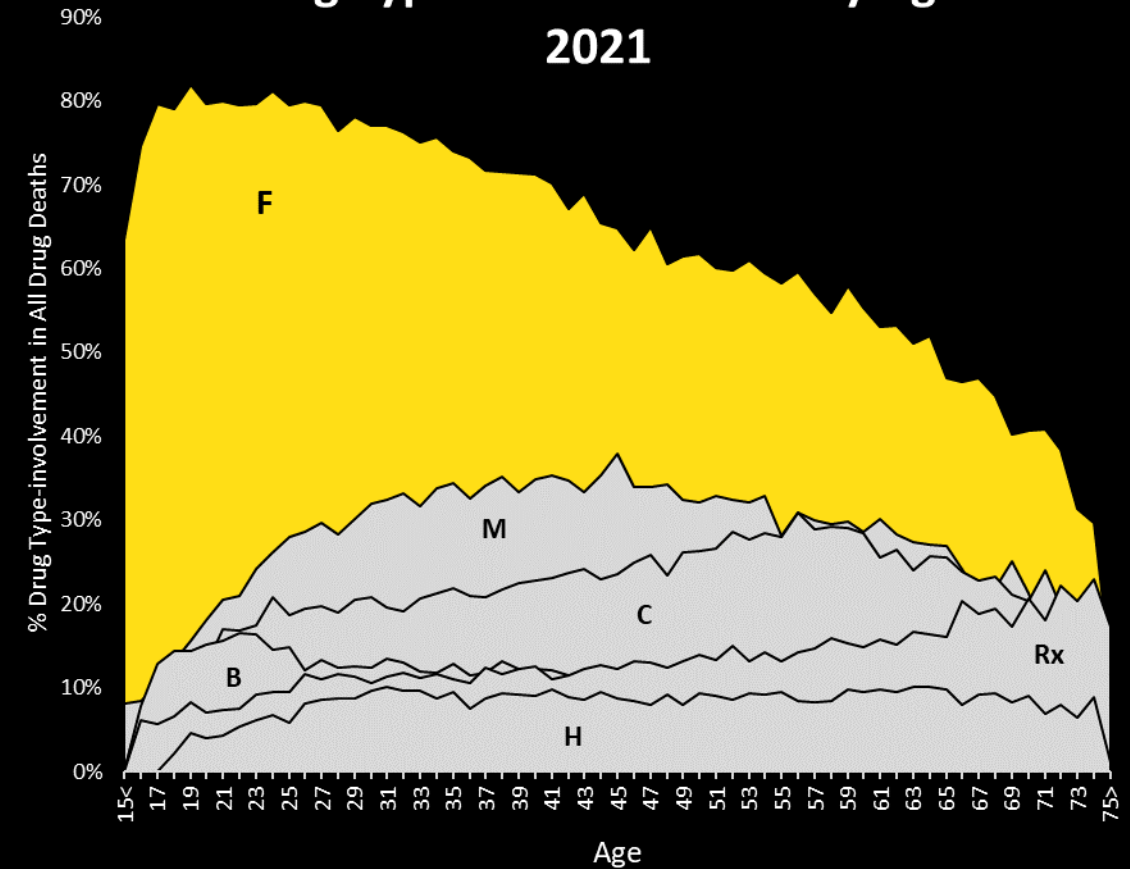


Fentanyl's Growth, Multi-substance, Youth Impact

*** Drug Type-Involvement % by Age**
2014



*** Drug Type-Involvement % by Age**
2021



*Will sum to greater than 100% because multiple substances can be involved in one death

H = Heroin (T40.1)

C = Cocaine (T40.5)

Rx = Prescription Opioids (T40.2)

B = Benzos (T42.4)

F = Fentanyl/Synthetic Opioids (T40.4)

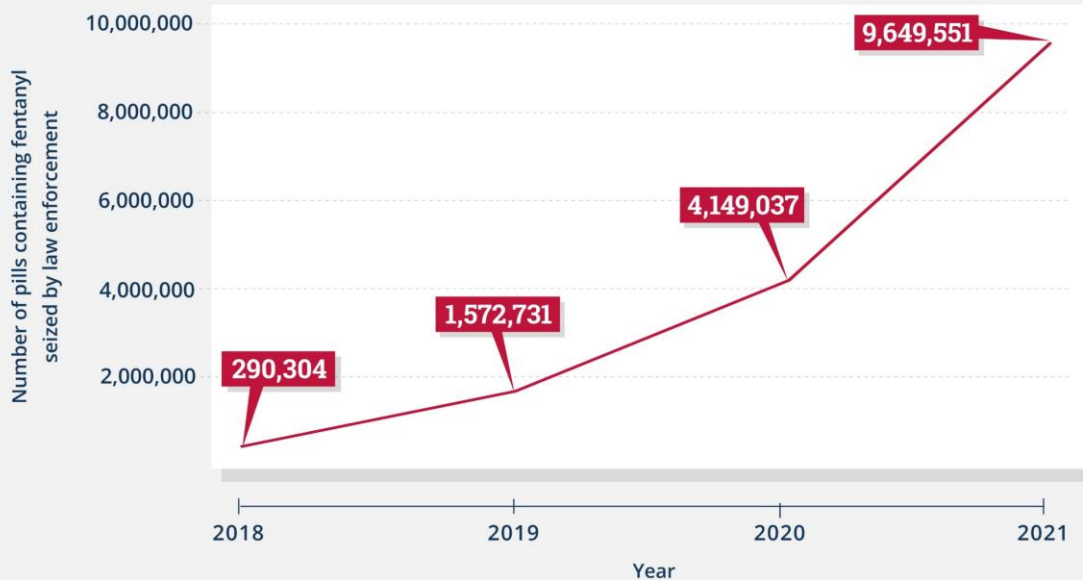
M = Methamphetamine (T43.6)

Derived from: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Provisional Mortality & Mortality 1999-2020 on CDC WONDER Online Database. Data are from the provisional data for years 2021-2022 and final Multiple Cause of Death Files, 1999-2020, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Provisional data for 2021 may change until ~12.2022. Accessed at <http://wonder.cdc.gov/mcd-icd10-provisional.html> & <http://wonder.cdc.gov/mcd-icd10.html> on Oct, 2022. Reported data, not predicted. NCHS has defined selected causes of death groups for analysis of all ages mortality data: "Drug poisoning (overdose)" deaths are identified using underlying cause-of-death codes from the Tenth Revision of ICD (ICD-10): X40-X44 (unintentional), X85 (homicide), and Y10-Y14 (undetermined). Drug overdose & poisoning deaths involving selected drug categories are identified by specific multiple cause-of-death codes: heroin (T40.1); natural opioid analgesics, including morphine and codeine, and semisynthetic opioids, including drugs such as oxycodone, hydrocodone, hydromorphone, and oxymorphone (T40.2); methadone, a synthetic opioid (T40.3); synthetic opioid analgesics other than methadone, including drugs such as fentanyl and tramadol (T40.4); cocaine (T40.5); Benzodiazepines (T42.4), and psychostimulants with abuse potential, which includes methamphetamine (T43.6). "Rx Opioids" uses T40.2 "Fentanyl/Synthetic opioid-involvement" uses T40.4, "Fentanyl % of all drug deaths" is (MCD T40.4/Drug overdose deaths). "Fentanyl-only" uses (Any T40.4) minus (Any T40.4 + any involvement of T40.1 and/or T40.2 + T40.3, and/or T40.5, and/or T42.4 and/or T43.6). Multiple drugs may be involved in one drug death. Death rates are per 100K population.



“Dramatic Increase” in Counterfeit Pills

Number of Pills Containing Fentanyl Seized by Law Enforcement in the United States, 2018 – 2021



Estimates based on data reported by the Office of National Drug Control Policy's High Intensity Drug Trafficking Areas program

Reference: JJ Palamar, et al. *Drug and Alcohol Dependence*. DOI: 10.1016/j.drugalcdep.2022.109398 (2022)



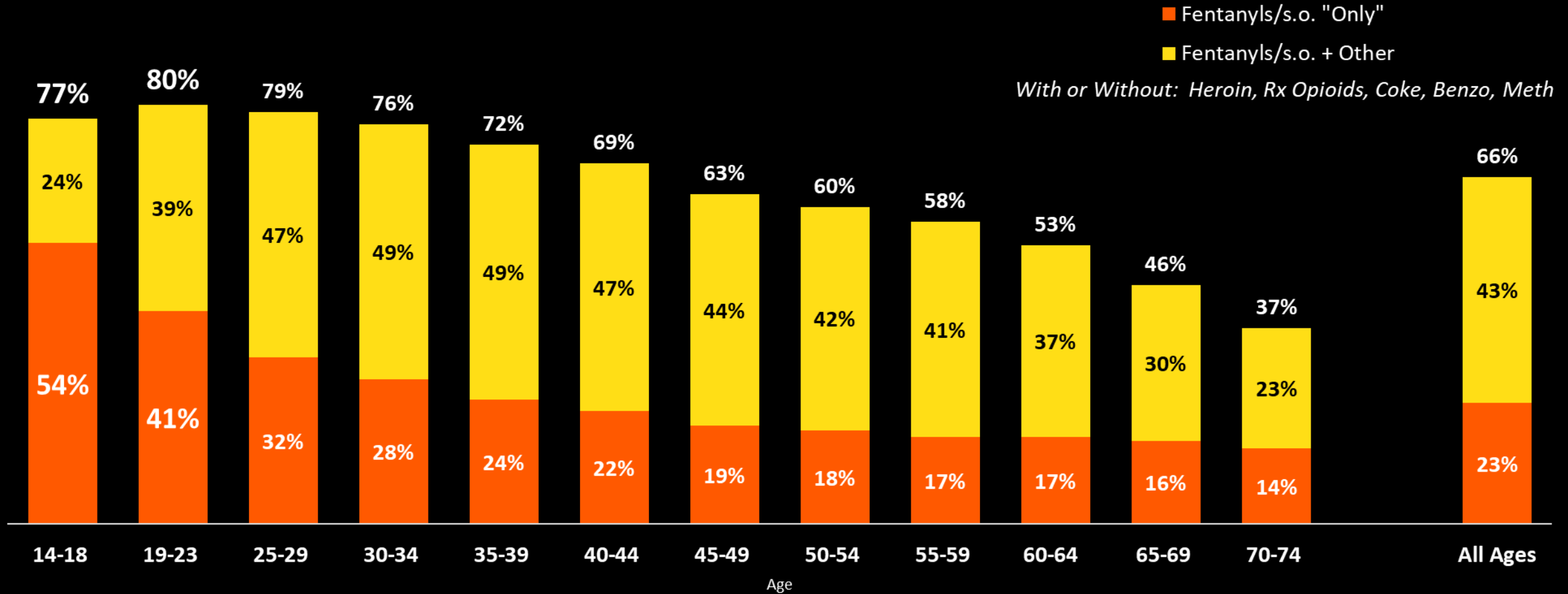
nida.nih.gov

- “Growing, dangerous trend, particularly for people new to drug use”
- 50-fold increase in seized IMF pills from Q1 2018 to Q4 2021
- Proportion of pills to seizures more than doubled.
- DEA studies show 40% of pills contain a potentially lethal dose
- Various reports that there are 0-2% real Rx pills seized over last 2 years



Youth Deaths Involve Fentanyl's More

U.S. Fentanyl/Synthetic Opioids-involvement Share of Drug-Induced Deaths
By Age, MCD grouping, 2021

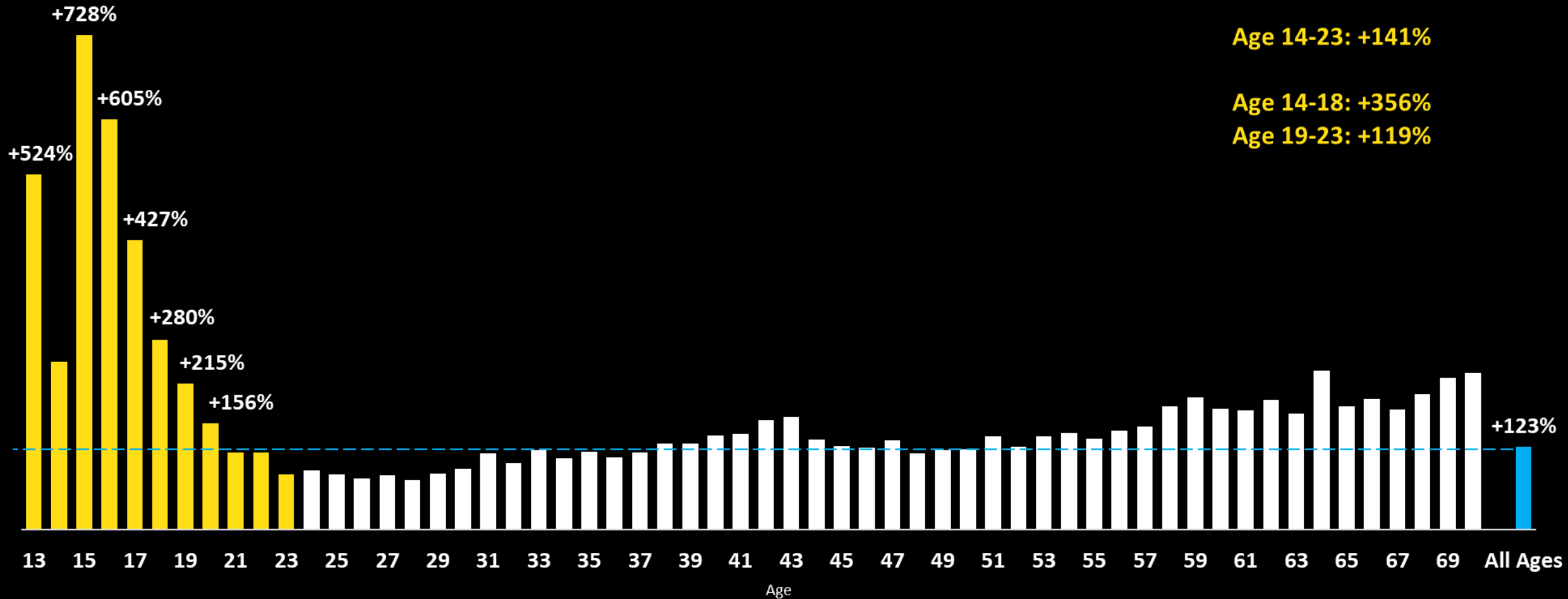


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Youth Deaths Growing Faster

U.S. Fentanyl/Synthetic Opioid-involved Death Rate Growth
By Age, 2021 vs 2018



Age 14-23: +141%

Age 14-18: +356%

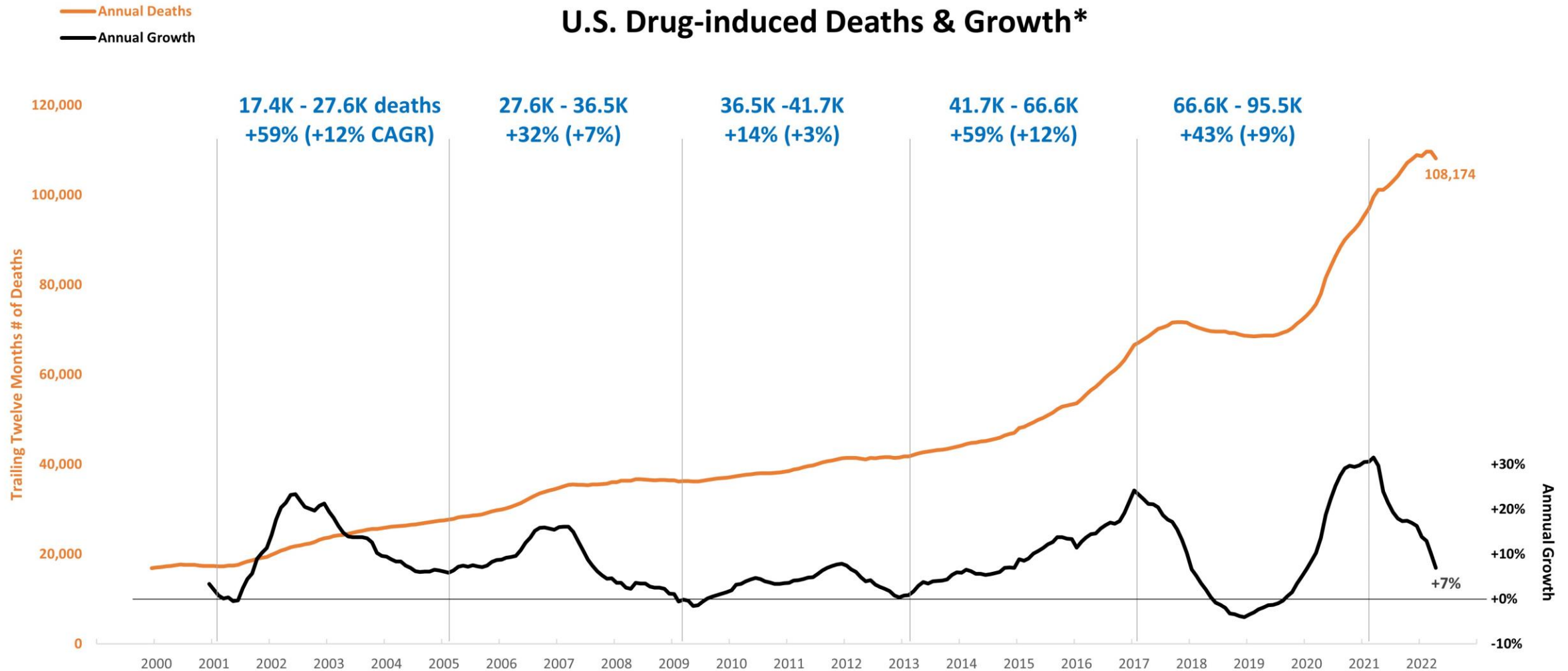
Age 19-23: +119%

Derived from: Centers for Disease Control and Prevention, National Center for Health Statistics. National Vital Statistics System, Provisional Mortality & Mortality 1999-2020 on CDC WONDER Online Database. Data are from the provisional data for years 2021-2022 and final Multiple Cause of Death Files, 1999-2020, as compiled from data provided by the 57 vital statistics jurisdictions through the Vital Statistics Cooperative Program. Provisional data for 2021 may change until ~12.2022. Accessed at <http://wonder.cdc.gov/mcd-icd10-provisional.html> & <http://wonder.cdc.gov/mcd-icd10.html> on Oct, 2022. Reported data, not predicted. NCHS has defined selected causes of death groups for analysis of all ages mortality data: "Drug poisoning (overdose)" deaths are identified using underlying cause-of-death codes from the Tenth Revision of ICD (ICD-10): X40-X44 (unintentional), X85 (homicide), and Y10-Y14 (undetermined). Drug overdose & poisoning deaths involving selected drug categories are identified by specific multiple cause-of-death codes: heroin (T40.1); natural opioid analgesics, including morphine and codeine, and semisynthetic opioids, including drugs such as oxycodone, hydrocodone, hydromorphone, and oxymorphone (T40.2); methadone, a synthetic opioid (T40.3); synthetic opioid analgesics other than methadone, including drugs such as fentanyl and tramadol (T40.4); cocaine (T40.5); benzodiazepines (T42.4), and psychostimulants with abuse potential, which includes methamphetamine (T43.6). "Rx Opioids" uses T40.2+T40.3, "Fentanyl/Synthetic opioid-involvement" uses T40.4, "Fentanyl % of all drug deaths" is (MCD T40.4/Drug overdose deaths). "Fentanyl-only" uses (Any T40.4) minus (Any T40.4 + any involvement of T40.1 and/or T40.2 + T40.3, and/or T40.5, and/or T42.4 and/or T43.6). Multiple drugs may be involved in one drug death. Death rates are per 100K population.



All Ages Drug-induced Deaths – Exponential Growth

U.S. Drug-induced Deaths & Growth*



*Growth based on death counts, not rate, so not population adjusted.
~9% CAGR 2001-2022, population growth ~1% CAGR

Monthly trailing twelve month "drug poisoning (overdose)" all intents.
2000-2014: <https://wonder.cdc.gov/mcd-icd10.html>. 2015-2022 (predicted): <https://www.cdc.gov/nchs/nvss/vsrr/drug-overdose-data.htm>

