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Key Inforbits

- History of the Opioid Crisis
- What is Harm Reduction?
- Different forms of harm reduction
- Breakdown of services by State

Harm Reduction – What is it?



The Opioid Crisis - How Did We Get Here?

In the late 1990s opioids were being prescribed at higher rates and concurrently more overdose deaths were occurring.^{1,2} The Increase in the number of opioid prescriptions was due to the issue of undertreating pain being called out and a call to action on the necessity of standardizing pain management. When this regulation was occurring the general agreement at the time was “opiate analgesics rarely result in addiction” when properly managed based on a study and the reassurance of the pharmaceutical companies.²⁻⁵ Since then, there has been 2 other waves of increased deaths due to opioid overdose. The second wave was in 2010 with an increase in heroin deaths, then the third wave in 2013 had the highest increase in opioid caused deaths due to synthetic opioids.¹ In 2017, the Department of Health and Human Services (HHS) declared the public health emergency that started the official crisis.¹⁻⁴ At the release of this emergency, a five point strategy was also released with the purpose of providing funding for HHS, the Drug Enforcement Administration (DEA), and other groups to allow for treatment of people who are addicted to opioids by increasing access to treatment, support services, and naloxone as well as providing funding for research and data collecting.⁶ From these many strategies to mitigate the harm of opioid overdose and its cascading effects have been created an umbrella term, harm reduction. In this article we will discuss a few of the programs that were created and the efficacy that each has shown.

Source: https://commons.wikimedia.org/wiki/File:Tablets_pills_medicine_medical_waste.jpg

What is Harm Reduction?

The Substance Abuse and Mental Health Services Administration (SAMHSA), a branch of the HHS, defines harm reduction as: “a proactive and evidence-based approach to reduce the negative personal and public health impacts of behavior associated with alcohol and other substance use at both the individual and community levels.”⁷ Harm reduction is rooted in human rights with the goal to provide positive change without discrimination. This view is shared by other countries and international organizations, such as; Harm Reduction International, Harm Reduction Australia, etc. that have created and researched strategies to combat drug addiction issues that are occurring globally.^{8,9,10} The ultimate goal is to provide more pathways to addiction treatment services to those in need.



Source: <https://www.flickr.com/photos/thegef/865259834/>

Harm Reduction Strategies



Source: [https://commons.wikimedia.org/wiki/File:Naloxone_2_\(cropped\).jpg](https://commons.wikimedia.org/wiki/File:Naloxone_2_(cropped).jpg)

Naloxone and Overdose Education Kits

Naloxone is an opioid antagonist that reverses the effects of opioid overdose. The education kits teach drug users, family, and friends how to use naloxone to prevent death by opioid overdose.

A survey conducted in 2013 by the Harm Reduction Coalition collected information from 93 organizations that provide naloxone to laypersons. This survey found they distributed a total of 37,920 kits and 68 of 93 organizations collect reports of use found 8,032 kits were reported to reverse an overdose; 21% of the kits distributed were shown to prevent an overdose.¹¹

One article showed that dispensing naloxone in an emergency department (ED) can be a successful way to provide kits to people who need them. After implementing a take home naloxone program, a hospital in Chicago had 669 visits to the ED for an opioid overdose in 16 months. The program was able to dispense 168 kits, averaging 10.5 kits dispensed per month.¹²

A scoping review by Moustaqim-Barrette et al states that, out of 47 studies reviewed, there were still gaps in data about cost-effectiveness, training parameters and strategies, and adverse drug events following naloxone use.¹³



Source: <https://gothamist.com/news/inside-nycs-supervised-drug-injection-sites-the-first-in-the-nation>

Overdose Prevention Sites

Also known as sanctioned/unsanctioned safe consumption sites, supervised consumption facilities, or supervised injection facilities; These sites allow people who inject drugs (PWID) to use previously obtained substances under the supervision of health professionals.

There are over 100 centers that are operating internationally and is a site that can also provide other strategies such as syringe programs, naloxone, counseling services, referrals for substance use disorder and preventive strategies in the case of an overdose. In America, current laws are under question in allowing the expansion of these facilities outside of New York which opened the first government approved overdose prevention site on November 30th 2021.^{14,15}

A systematic review looked at 22 studies done in Canada, Australia, and Spain from 2014-2019 and showed favorable and significant ($p < 0.05$) results. A majority of those studies showed a decrease in overdose morbidity and mortality, improved injection behaviors, reduced harm, increased access to addiction treatment, a decrease in petty theft, and a decrease in improper needle disposal.¹⁶



Source: <https://harmreduction.org/issues/fentanyl/>

Fentanyl Test Strips

Fentanyl test strips allows people with substance abuse disorder (PWSAD) to test illicit drugs for unwanted fentanyl to prevent accidental opioid overdose.

One research paper published in ScienceDirect used a survey to see if PWID changed their drug use behavior when supplied with the test strips. They found that Among PWID 81% of those surveyed reported using a



Source: <https://www.flickr.com/photos/gotovan/49790716623>

Syringe Service Programs

Offers clean syringes to prevent infectious diseases which reduces the incidence of sharing used syringes and thus prevents the transmission of infections such as hepatitis C, HIV/AIDS, and others.^{9,19}

There is an incidence of injection-related injuries and diseases in PWID such as skin and soft tissue infections at the injection site and infective endocarditis, sepsis,

fentanyl testing strip (FTS) prior to consuming their drugs and 63% of those resulted in a positive FTS test result. Of those who used the strips, 43% reported a change in drug use behavior and 77% indicated increased perceived overdose safety by using FTS.¹⁷

In America the current obstacle of allowing this strategy to be a national solution is state laws that have criminal implications for possession of drug testing equipment. There are 32 states have these laws, and many states are going through legislation to allow fentanyl testing strips to be excluded from the language or allow exceptions for harm reduction groups.^{17,18}

bone and joint infections, thrombosis and emboli.²⁰ This incidence can be decreased with supplies that provide a clean injection site such as alcohol pads and sterile one-time use syringes.

A meta-analysis reviewed studies from 1980-2012 and found 12 studies that included a total of 12,023 people. After review there was an association of syringe services reducing HIV transmission that was significant ($p=0.001$). The confidence interval (CI) in cases that reported hazard ratios (HR) and studies that were scored to be higher quality with a HR of 0.60 (CI: 0.37-0.97) and 0.42 (CI: 0.22-0.81), respectively.²¹

These programs have been shown to increase public safety by decreasing the number of needle stick injuries to first responders and showed an 8 fold increase in safe disposal of syringes in cities who have these programs in place when compared to a comparable city.¹⁹



Source: https://commons.wikimedia.org/wiki/File:Suboxone_SL_Tabs.jpg

Supervised Medical Withdrawal Facilities

Patients who wish to stop taking opioids may undergo supervised medical withdrawal and take opioid agonists such as Suboxone (buprenorphine and naloxone) and methadone in place of the previously abused drug. Once the patient is not experiencing withdrawal symptoms and is opioid-free, they can take Suboxone to help them remain opioid free.

This strategy needs to be carefully considered by the patient with a focus on long term goals and after treatment plans due to the high return to opioid use rates that are seen with this strategy. Due to the nature of addiction a return to drug use is not considered a failure of this strategy and for the majority of patients this will occur and reinitiating is proper.^{21,22}

SAMHSA notes several studies that demonstrate the effectiveness of using medication for opioid use disorder. Randomized controlled trials shown include findings such as methadone, ER injectable naltrexone, and buprenorphine being more effective in reducing illicit opioid use than no medication. Methadone and buprenorphine have also been shown to reduce the risk of opioid overdose.²¹



Source: <https://www.flickr.com/photos/danielfoster/31304063124>

Counseling and Support

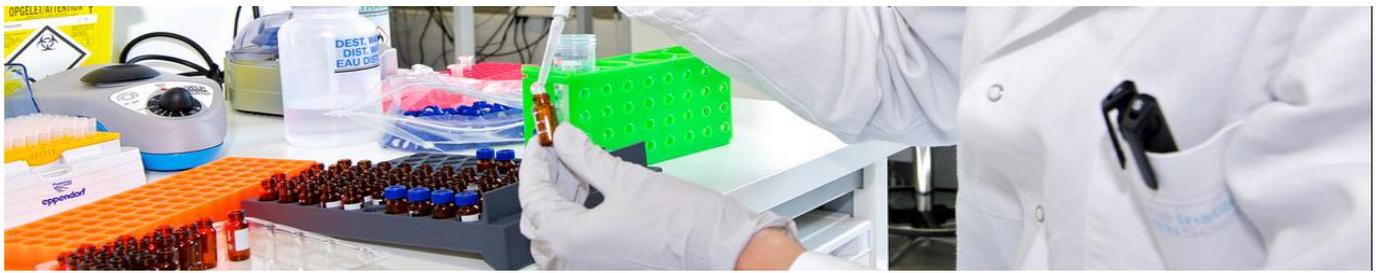
Psychological counseling is needed to help those struggling to overcome their drug addiction and all the attendant problems.

SAMHSA suggests starting psychological counseling before other strategies to have the highest likelihood of prolonged abstinence.²¹

Many studies include some form of counseling to improve efficacy and has been established as a core element of good clinical practice.²³

There are many behavioral therapies that provide different forms of support and it is important to match the right level of treatment to the patient. This could mean no need for counseling. No strategy is a panacea and steps to gauge willingness to change through motivational interviewing should be done before starting this strategy to get the most out of this experience. Once deemed appropriate healthcare providers can offer addiction counseling, contingency management, recovery coaching, and mental health services.²¹ These services can be provided at facilities that offer other strategies or can be stand-alone based on the needs of the patient.

To locate behavioral treatment services visit: <https://findtreatment.samhsa.gov/>



Source: <https://www.flickr.com/photos/nestle/8144370795>

Comparison to Supply Reduction

When looking at the Harm reduction strategies, a comparison would be the supply reduction strategy. This strategy focuses on disrupting the opioid formulation to make it harder to abuse or to decrease prescriptions for opioids.²⁴ Due to CDC prescribing guidelines and state efforts, dispensing rates of opioids have decreased with the peak in 2012 at a dispensing rate of 81.3 per 100 persons and has decreased to 43.3 per 100 persons in 2020.²⁵ Using dispensing rate data, number of PWSAD, and deaths from heroin or prescription opioids collected from 2012-2015, an impact model study was made to find the long (10 year) and short term (5 year) effects. The model showed fewer people dying of prescription opioids and heroin in the long term, but in the short term the number of deaths from heroin would spike causing overall deaths from opioids to be higher. This study also showed evidence that with the trend of reducing opioid prescribing for acute or transitioning pain it correlated to a reduction in addiction death by some degree in the long term.²⁶ A weakness of this study is that it did not account for another opioid product and the effect that it could cause. Based on overdose data collected, the number of deaths from heroin has decreased from 2015 to 2020 instead of spiking but a larger spike in synthetic opioids took its place.² Based on trends, current data on the waves of overdoses, and the added complexity that unknown variants of synthetic opioids add to the crisis; relying on one strategy will not work.^{2,26} The need to treat this crisis with more patient centered strategies is becoming more evident as more information is being provided. Adding harm reduction strategies to supply reduction will help target the underlying problem of addiction in current PWSAD while supply reduction will help reduce the number of patients who are unnecessarily being prescribed these medications.

Which States are Providing Harm Reduction Services?

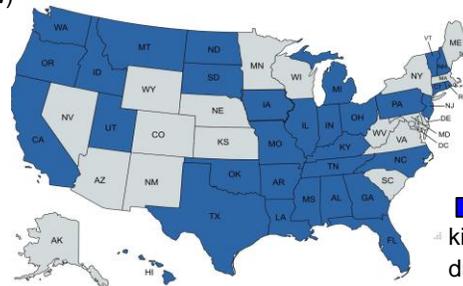
Forms of harm reduction services include: overdose prevention centers, naloxone access to the public, syringe service programs, and fentanyl testing kits. The states that offer these services can be seen on the maps below.^{14,17,18,27}

Due to how quickly this information is changing, check out this website for references on legislation changes on public safety and health: <https://legislativeanalysis.org/>.



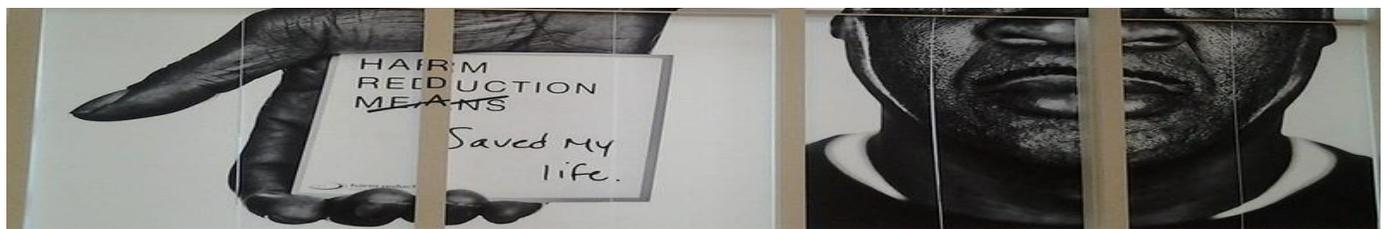
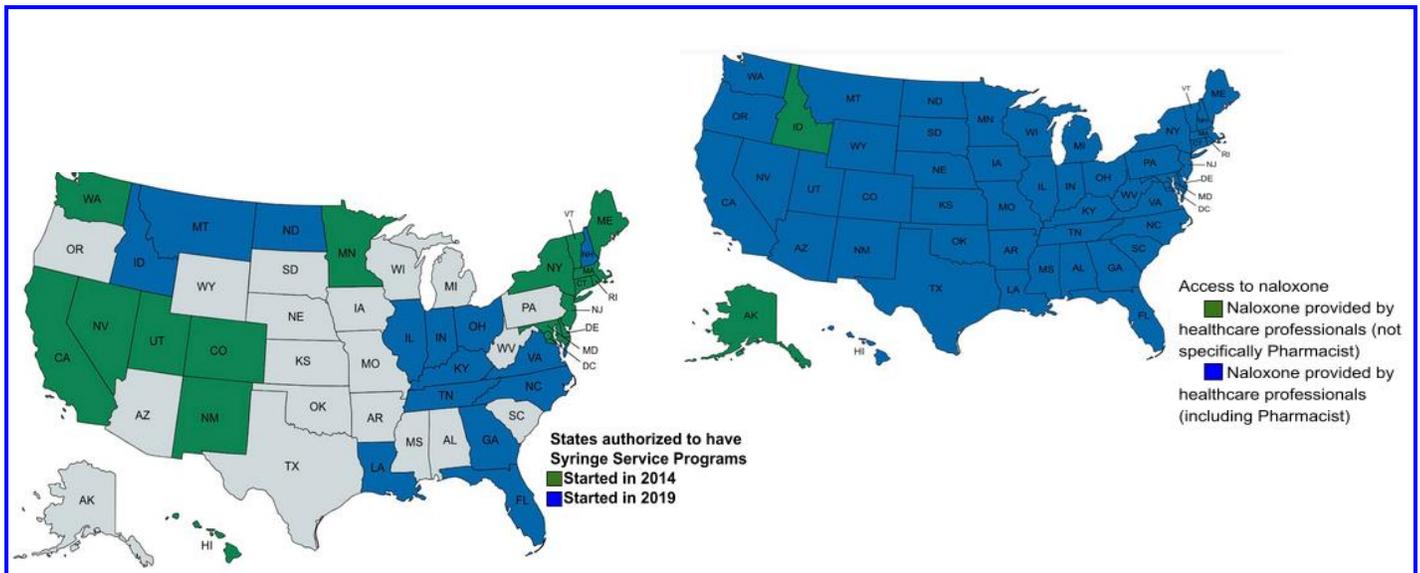
Overdose prevention centers

- Legally authorized (RI Pilot, NY 2 opened facilities)
- States that attempted to open facilities (stopped by federal law)



Drug paraphernalia

- Include fentanyl testing kits as illegal possession of drug paraphernalia



Source: <https://www.flickr.com/photos/90322037@N05/16731916110/>

Summary of Harm Reduction

Harm reduction is a global strategy to combat drug addiction and infectious disease issues through research, treatment, support services, and data collecting. It is meant to be an evidence-based approach and has a variety of strategies to be able to help everyone based on their needs at their current stage. It addresses health and social issues by identifying the gaps of care, improving policies where needed, and providing programs and practices that have been shown to be effective. In 2021 there was an estimated 107,622 drug overdose deaths in America and 80,816 of them are estimated to be due to opioids.²⁸ If you, or someone you know need help finding treatment please visit: <https://www.samhsa.gov/find-treatment>.

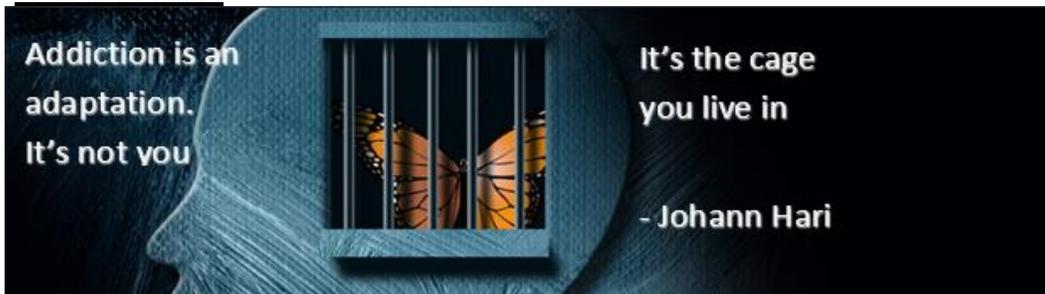
References:

1. HHS: What is the U.S. Opioid Epidemic? [Internet]. U.S. Department of Health and Human Services. Washington D.C. Updated 2021 Oct 27 [cited 2022 May 23]. Available from: <https://www.hhs.gov/opioids/about-the-epidemic/index.html>
2. CDC: Understanding the Epidemic [Internet]. U.S. Department of Health and Human Services. Atlanta (GA): Centers for Disease Control and Prevention. Updated 2021 Mar 17 [cited 2022 May 23]. Available from: <https://www.cdc.gov/drugoverdose/epidemic/index.html#:~:text=The%20first%20wave%20began%20with%20overdose%20deaths%20involving%20heroin4.>
3. Baker, DW. History of the joint commission's pain standards: lessons for today's prescription opioid epidemic. JAMA [AUHSOP intranet]. 2017 Mar 21 [cited 2022 May 23]; 317(11): 1117-1118. Available from: <https://jamanetwork.com.spot.lib.auburn.edu/journals/jama/fullarticle/2606790>
4. Chisholm-Burns MA, Spivey CA, Sherwin E, Wheeler J, Hohmeier K. The opioid crisis: origins, trends, policies and the roles of pharmacists. Am J Health Syst Pharm. 2019;76(7):424-435. Available from: <https://academic.oup.com/ajhp/article/76/7/424/5382447?login=true>
5. Max MB. Improving outcomes of analgesic treatment: is education enough? Ann Intern Med. 1990 Dec [cited 2022 May 23];113(11):885-889. Available from: <https://pubmed.ncbi.nlm.nih.gov.spot.lib.auburn.edu/2240903/>
6. HHS:HHS Acting secretary declares public health emergency to address national opioid crisis [Internet]. Washington D.C. Updated 2017 Oct 26 [cited 2022 May 23]. Available from: <https://public3.pagefreeser.com/browse/HHS.gov/31-12-2020T08:51/https://www.hhs.gov/about/news/2017/10/26/hhs-acting-secretary-declares-public-health-emergency-address-national-opioid-crisis.html>
7. Harm reduction [Internet]. SAMHSA. Atlanta (GA): Center for Substance Abuse Treatment Updated 2022 April 6. [Cited 2022 May 22]. Available from: <https://www.samhsa.gov/find-help/harm-reduction>
8. Harm Reduction Australia [Internet]. Leura, NSW: Harm Reduction Australia; 2020 [cited 2022 May 24]. Available from: <https://www.harmreductionaustralia.org.au/m>
9. Willans K. Harm reduction Model [internet]. 2022 Jan 25. [cited 2022 May 24]; [about 10 screens]. Available from: <https://www.addictiongroup.org/treatment/therapies/harm-reduction/>

10. What is harm reduction? [Internet], 2022 Harm reduction international. [cited 2022 May 25]; [about 5 screens]. Available from: <https://www.hri.global/what-is-harm-reduction>
11. Wheeler E, Jones TS, Gilbert MK, Davidson PJ. Opioid overdose prevention programs providing naloxone to laypersons –United States. 2014. MMWR Morb Mortal Wkly Rep. 2015 Jun 19;64(23):631-35. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4584734/>
12. Eswaran V, Allen K, Cruz D, Lank P, McCarthy D, Kim H. Development of a take-home naloxone program at an urban academic emergency department. J Am Pharm Assoc. 2020 Nov 1;60(6):324-331. Available from [https://www.japha.org/article/S1544-3191\(20\)30283-1/fulltext](https://www.japha.org/article/S1544-3191(20)30283-1/fulltext)
13. Moustaqim-Barrette A, Dhillon D, Ng J, et al. Take-home naloxone programs for suspected opioid overdose in community settings: a scoping umbrella review. BMC Public Health. 2021 Mar 26;21(1):597. Available from <https://pubmed.ncbi.nlm.nih.gov/33771150/>
14. Mann B, Lewis C. New York City allows the nation's 1st supervised consumption sites for illegal drugs [Internet]. NPR. NPR; 2021 [cited 2022 May 23]. Available from: <https://www.npr.org/2021/11/30/1054921116/illegal-drug-injection-sites-nyc>
15. Naeem AH, Davis CS, Samuels EA. The importance of federal action supporting overdose-prevention centers. N Engl J Med. 2022 May 21;386:1965-1967. Available from <https://www.nejm.org/doi/full/10.1056/NEJMp2119764>
16. Levengood TW, Yoon GH, Davoust MJ, et al. Supervised injection facilities as harm reduction: A systematic review. Am J Prev Med. 2021 Nov;61(5):738-749. Available from <https://pubmed.ncbi.nlm.nih.gov/34218964/>
17. Peiper NC, Clarke SD, Vincent LB, Ciccarone D, Kral AH, Zibbell JE. Fentanyl test strips as an opioid overdose prevention strategy: Findings from a Syringe Services Program in the Southeastern United States. International Journal of Drug Policy. 2019;63:122–8.
18. Fentanyl testing strips [Internet]. Washington D.C.: Legislative analysis (US); 2021 May [cited 2022 May 24]. Available from: <http://legislativeanalysis.org/wp-content/uploads/2021/06/Fentanyl-Test-Strips-FINAL.pdf>
19. CDC: Summary of Information on the Safety and Effectiveness of Syringe Service Programs [Internet]. U.S. Department of Health and Human Services. Atlanta (GA): Centers for Disease Control and Prevention. Updated 2019 Jul 19 [cited 2022 May 24]. Available from: <https://www.cdc.gov/ssp/docs/SSP-Summary.pdf>
20. Larney S, Peacock A, Mathers BM, Hickman M, Degenhardt L. A systematic review of injecting-related injury and disease among people who inject drugs. Drug Alcohol Depend. 2017 Feb 1;171:39-49. Available from: <https://pubmed.ncbi.nlm.nih.gov/28013096/>
21. SAMHSA: TIP 63 [Internet]. U.S. Department of Health and Human Services. Atlanta (GA): Center for Substance Abuse Treatment. Updated 2021 [cited 2022 May 23]. Available from: <https://store.samhsa.gov/product/TIP-63-Medications-for-Opioid-Use-Disorder-Full-Document/PEP21-02-01-002>
22. Medically supervised withdrawal (detoxification) from opioids [Internet]. Providers Clinical Support System. 2021 [cited 2022 May 25]. Available from: <https://pcssnow.org/resource/detoxification-from-opioids/>
23. Popescu G, Negrei C, Bălălaşu D, Ciobanu AM, Baconi D. The relevance of the psychological evaluation in drug dependence. J Med Life. 2014;7 Spec No. 3(Spec Iss 3):120-2. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4391414/>
24. Gugala E, Briggs O, Moczygomba LR, Brown CM, Hill LG. Opioid harm reduction: A scoping review of physician and system-level gaps in knowledge, education, and practice. Substance Abuse. 2022;43(1):972-987. Available from <https://www.tandfonline.com/spot.lib.auburn.edu/doi/full/10.1080/08897077.2022.2060423>
25. CDC: Drug overdose: US opioid dispensing rate map [Internet]. U.S. Department of Health and Human Services. Atlanta (GA): Centers for Disease Control and Prevention. Updated 2021 Nov 10 [cited 2022 May 28]. Available from <https://www.cdc.gov/drugoverdose/rxrate-maps/index.html>
26. Pitt AL, Humphreys K, Brandeau ML. Modeling health benefits and harms of public policy responses to the US opioid epidemic. Am J Public Health. 2018 Oct;108(10):1394-1400. Available from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6137764/>
27. Naloxone Access [Internet]. Washington D.C.: Legislative analysis (US); 2021 April [cited 2022 May 24]. Available from: <http://legislativeanalysis.org/wp-content/uploads/2022/04/Fact-Sheet-Naloxone-FINAL.pdf>
28. CDCU.S. Overdose deaths in 2020 increased half as much as in 2020- but are still up 15% [Internet]. U.S. Department of Health and Human Services. Atlanta (GA): Centers for Disease Control and Prevention. Updated 2022 May 11 [cited 2022 May 28]. Available from https://www.cdc.gov/nchs/pressroom/nchs_press_releases/2022/202205.htm



The last “dose” ...



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