



Helping Health Care Providers Become Harm Reduction Advocates

By Stacey McKenna

Although health care providers undergo many years of formal schooling and apprenticeship-type training, many have limited understanding of substance use in general and harm reduction interventions in particular.

Executive Summary

In recent years—in an effort to stem the rising death toll related to the nationwide opioid epidemic—local, state and federal governments have sought to expand harm reduction services in the United States.¹ These types of services, which implement practical approaches to reduce the negative outcomes associated with potentially risky behaviors such as drug use, began to appear in the 1980s as communities sought to prevent the spread of human immunodeficiency virus (HIV) and hepatitis C virus.² Now, as policymakers seek

1. “FDA Permits Marketing of E-Cigarette Products, Marking First Authorization of Its Kind by the Agency,” U.S. Food & Drug Administration, Oct. 12, 2021. <https://www.fda.gov/news-events/press-announcements/fda-permits-marketing-e-cigarette-products-marking-first-authorization-its-kind-agency>; “Biden-Harris Administration Calls for Historic Levels of Funding to Prevent and Treat Addiction and Overdose,” The White House, May 28, 2021. <https://www.whitehouse.gov/ondcp/briefing-room/2021/05/28/biden-harris-administration-calls-for-historic-levels-of-funding-to-prevent-and-treat-addiction-and-overdose>; “CDC: Drug overdose deaths up 29.4% in 2020,” American Hospital Association, July 14, 2021. <https://www.aha.org/news/headline/2021-07-14-cdc-drug-overdose-deaths-294-2020>; Chelsea Boyd, “COVID-19 Is Here To Stay,” *Inside Sources*, May 25, 2021. <https://insidesources.com/covid-19-is-here-to-stay>.

2. “Principles of Harm Reduction,” National Harm Reduction Coalition, last accessed September 22, 2022. <https://harmreduction.org/about-us/principles-of-harm-reduction>; Katherine McLean, “The biopolitics of needle exchange in the United States,” *Critical Public Health* 21: 1 (March 1, 2011), pp. 71-79. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291106>.

Table of Contents

Executive Summary	1
Introduction	2
Table 1: Policies and Affected Providers	4
Health Care Professional Barriers to Providing Harm Reduction Services	4
Lack of Specialized Training	4
Attitudes and Beliefs	6
Improving Health Care Provider Engagement In Harm Reduction	7
Education	7
Institutional Policy	9
Conclusion	10
About the Author	10

to expand access to harm reduction, health care providers who have not historically worked in the field are being called upon to advocate and implement these strategies.³

However, research suggests that the most affected health care providers—physicians, physician assistants (PAs), nurse practitioners (NPs) and pharmacists—sometimes have insufficient knowledge, hold negative beliefs about people who use drugs (PWUD) or have misconceptions about how harm reduction facilitates health improvements.⁴ These barriers can hinder providers’ willingness and ability to serve effectively as harm reductionists.

In an effort to overcome such challenges, educational and professional organizations have implemented training on substance use and harm reduction strategies. Many of these programs have been found to increase provider knowledge and self-efficacy. Of note, those that are most effective at improving providers’ willingness to engage in harm reduction and most likely to translate into the provision of harm reduction services also include elements that reduce stigma around PWUD and harm reduction itself.⁵ Furthermore, evidence suggests that for optimal service provision, institutional policies must support providers and a harm reduction ethos.⁶

In this paper, we examine barriers that limit health care providers’ willingness to adopt these strategies and effectiveness in delivering them. We also highlight evidence-based, educational and institution-level interventions aimed at reducing those barriers.

Introduction

Harm reduction—the mitigation of potential risks associated with certain behaviors through tools, services and education—first took hold in the United States in the 1980s in an effort to combat the spread of infectious diseases like HIV and hepatitis C virus.⁷ These early projects operated as community-based interventions run by members of and allies to the vulnerable populations they served.⁸ In recent years, however, harm reduction has gained traction in mainstream public health: The U.S. Food and Drug Administration now recognizes certain vaping products as less-risky



Harm reduction first took hold in the United States in the 1980s in an effort to combat the spread of infectious diseases like HIV and hepatitis C virus.

3. Amina Moustaqim-Barrette et al., “Take-home naloxone programs for suspected opioid overdose in community settings: a scoping umbrella review,” *BMC Public Health* 21:597 (March 26, 2021). <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-10497-2>; Christopher M. Jones et al., “Receipt of Telehealth Services, Receipt and Retention of Medications for Opioid Use Disorder, and Medically Treated Overdose Among Medicare Beneficiaries Before and During the COVID-19 Pandemic,” *JAMA Psychiatry* (Aug. 31, 2022), pp. E1-E12. https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2795953?guestAccessKey=ee7219e9-7be8-4f85-bf27-6313250cfea3&utm_source=For_The_Media&utm_medium=referral&utm_campaign=ftm_links&utm_content=tf&utm_term=083122; “Drug Misuse: Most States Have Good Samaritan Laws and Research Indicates They May Have Positive Effects,” United States Government Accountability Office, March 2021, p. 10. <https://www.gao.gov/assets/gao-21-248.pdf>; Erin J. Stringfellow et al., “Removing The X-Waiver Is One Small Step Toward Increasing Treatment Of Opioid Use Disorder, But Great Leaps Are Needed,” *Health Affairs*, April 22, 2021. <https://www.healthaffairs.org/doi/10.1377/forefront.20210419.311749/full>.
4. Tanvee Thakur et al., “Pharmacist roles, training, and perceived barriers in naloxone dispensing: A systematic review,” *Journal of the American Pharmacists Association* 60:1 (January-February 2020), pp. 178-194. <https://www.sciencedirect.com/science/article/abs/pii/S1544319119303206>; Andrew Muzyk et al., “Pharmacists’ attitudes toward dispensing naloxone and medications for opioid use disorder: A scoping review of the literature,” *Substance Abuse* 40:4 (Aug. 16, 2019), pp. 476-483. <https://www.tandfonline.com/doi/abs/10.1080/08897077.2019.1616349?journalCode=wsu20>; Jerome M. Adams and Nora D. Volkow, “Ethical Imperatives to Overcome Stigma Against People With Substance Use Disorders,” *AMA Journal of Ethics* 22:8 (August 2020), pp. E702-E708. <https://journalofethics.ama-assn.org/sites/journalofethics.ama-assn.org/files/2020-07/pfor2-2008.pdf>.
5. Rachel Kavanaugh et al., “Combining simulated academic detailing with naloxone training to prepare student pharmacists for opioid risk mitigation strategies,” *Currents in Pharmacy Teaching and Learning* 13:12 (Oct. 2, 2021), pp. 1679-1682. <https://doi.org/10.1016/j.cptl.2021.09.030>; Noah Berland et al., “Opioid overdose prevention training with naloxone, an adjunct to basic life support training for first-year medical students,” *Substance Abuse* 38:2 (Feb. 16, 2017), pp. 123-128. <https://www.tandfonline.com/doi/full/10.1080/08897077.2016.1275925>; Tabitha E.H. Moses et al., “Long-term effects of opioid overdose prevention and response training on medical student knowledge and attitudes toward opioid overdose: A pilot study,” *Addictive Behaviors* 126 (March 2022). <https://doi.org/10.1016/j.addbeh.2021.107172>.
6. Robin Lennox et al., “Hospital policy as a harm reduction intervention for people who use drugs,” *International Journal of Drug Policy* 97 (November 2021), pp. 1-6. <https://www.sciencedirect.com/science/article/abs/pii/S0955395921002292?via%3Dihub>.
7. McLean. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3291106>.
8. “Syringe Services Programs (SSPs),” Centers for Disease Control and Prevention, May 23, 2019. <https://www.cdc.gov/ssp/index.html>.

alternatives to combustible cigarettes; the Biden administration designated a record \$30 million toward opioid harm reduction to combat the overdose crisis; and in the age of COVID-19, vaccines help reduce virus transmission and illness severity as people return to travel, dining out and gathering with loved ones.⁹

In fact, motivated by persistent and escalating overdose rates, lawmakers at all levels of government have proposed and enacted a variety of policies in an effort to expand the scope of opioid-harm-reduction services that health care professionals can provide.¹⁰ These efforts have included allowing emergency department providers to dispense take-home naloxone, expanding primary care physicians' abilities to prescribe medications for opioid use disorder (OUD), enacting emergency provisions to allow OUD to be treated via telehealth and implementing standing orders that permit pharmacists to dispense naloxone without a prescription.¹¹

As federal, state and local governments seek to apply harm reduction methods on a larger scale, policy and funding efforts are eliciting the support of many different types of health care professionals to provide these services, possibly for the first time. Engaging generalist health care providers in harm reduction is—if done right—an excellent way to encourage equitable, low-barrier access to an array of life-saving tools. Yet all of this progress is for naught if the generalists offering these products and services lack sufficient understanding of them.

In this policy paper, we:

- Examine factors that hinder health care providers' engagement in harm reduction programs;
- Highlight training and policy efforts that have been shown to mitigate resistance to offering these programs; and
- Make recommendations that health care educators, institutions and associations may take to optimize providers' roles in harm reduction.

Because the majority of policy aimed at expanding harm reduction access in recent years has targeted the overdose crisis—which is largely driven by opioids—this paper focuses primarily on opioid harm reduction.¹² In addition, although we recognize that all health care providers have a potential part to play in harm reduction and acknowledge that social workers and mental health providers are already often on the front lines of these efforts, we limit the current discussion to those medical providers whose scope of practice has been or may be most directly affected by key recent and forthcoming policies seeking to expand opioid harm reduction: physicians, PAs, NPs and pharmacists (Table 1).¹³



Opioid harm reduction efforts have included the attempt to expand primary care physicians' abilities to prescribe medication via telehealth and implementing standing orders that permit pharmacists to dispense naloxone without a prescription.

9. "FDA Permits Marketing of E-Cigarette Products, Marking First Authorization of Its Kind by the Agency," <https://www.fda.gov/news-events/press-announcements/fda-permits-marketing-e-cigarette-products-marking-first-authorization-its-kind-agency>; "Biden-Harris Administration Calls for Historic Levels of Funding to Prevent and Treat Addiction and Overdose," <https://www.whitehouse.gov/ondcp/briefing-room/2021/05/28/biden-harris-administration-calls-for-historic-levels-of-funding-to-prevent-and-treat-addiction-and-overdose>; "CDC: Drug overdose deaths up 29.4% in 2020," <https://www.aha.org/news/headline/2021-07-14-cdc-drug-overdose-deaths-294-2020>; Boyd, <https://insidesources.com/covid-19-is-here-to-stay>.

10. "Drug Overdose: Understanding the Epidemic," Centers for Disease Control and Prevention, March 17, 2021. <https://www.cdc.gov/drugoverdose/epidemic/index.html>; Substance Abuse and Mental Health Services Administration, "Harm Reduction," U.S. Department of Health & Human Services, Aug. 16, 2022. <https://www.samhsa.gov/find-help/harm-reduction>.

11. Moustaqim-Barrette et al. <https://bmcpublichealth.biomedcentral.com/articles/10.1186/s12889-021-10497-2>; Jones et al. https://jamanetwork.com/journals/jamapsychiatry/fullarticle/2795953?guestAccessKey=ee7219e9-7be8-4f85-bf27-6313250cfea3&utm_source=For_The_Media&utm_medium=referral&utm_campaign=ftm_links&utm_content=tfi&utm_term=083122; "Drug Misuse: Most States Have Good Samaritan Laws and Research Indicates They May Have Positive Effects," <https://www.gao.gov/assets/gao-21-248.pdf>; Stringfellow et al. <https://www.healthaffairs.org/doi/10.1377/forefront.20210419.311749/full>.

12. "Opioids: Understanding the Epidemic," Centers for Disease Control and Prevention, June 1, 2022. <https://www.cdc.gov/opioids/basics/epidemic.html#:~:text=Nearly%2075%25%20of%20the%2091%2C799,death%20rates%20increased%20by%2017%25.>

13. Stacy Weiner, "As drug overdoses soar, more providers embrace harm reduction," AAMCNEWS, Feb. 15, 2022. <https://www.aamc.org/news-insights/drug-overdoses-soar-more-providers-embrace-harm-reduction>.

Table 1: Policies and Affected Providers

Policy Type	Provider Type Affected
Pharmacy-based syringe access	Pharmacists
Standing orders for naloxone	Pharmacists
Take-home naloxone	Emergency department physicians, PAs and NPs
Co-prescribing naloxone with opioids	Physicians, PAs, NPs and dentists
Remove X waiver for prescribing medications for OUD	Physicians, PAs and NPs
Telehealth provisions for prescribing medications for OUD	Physicians, PAs and NPs

Health Care Professional Barriers to Providing Harm Reduction Services

Most health care professionals naturally practice some version of harm reduction with their patients, though they may not identify it as such.¹⁴ Some clinicians are on the movement's front lines, providing life-saving services and championing the cause to a growing audience of lawmakers, journalists and fellow providers.¹⁵ Others continue to view harm reduction as an unfamiliar gray area that is at odds with key aspects of medical philosophy, including its emphasis on definitive cures, provider (versus patient) expertise and a "do no harm" ethos.¹⁶ Consequently, the uptake of harm reduction policies by health care providers is not always optimal—pharmacists may resist stocking or dispensing harm reduction products; providers may be unwilling to recommend harm reduction strategies or products; and patients continue to report experiencing stigmatizing interactions that deter them from seeking these helpful services.¹⁷ In this section, we review the literature on two key provider-level barriers to engaging with harm reduction in general and opioid harm reduction in particular: lack of specialized training and attitudes and beliefs.

Lack of Specialized Training

Although health care providers undergo many years of formal schooling and apprenticeship-type training, many have limited understanding of substance use in general and harm reduction interventions in particular.¹⁸ The lack of knowledge and associated confidence in providing this type of care hinder the effective implementation of harm reduction policies and suggests that additional education is needed to expand provider scope of practice.

Indeed, in a study of pharmacists in North Carolina, a majority of participants scored low on an assessment of their naloxone- and overdose-related knowledge, and more



The lack of knowledge and associated confidence in providing substance use care hinder the effective implementation of harm reduction policies.

14. Amy Faith Ho, "Move over Hippocrates: Harm reduction as the new paradigm for health care," *STAT*, May 30, 2017. <https://www.statnews.com/2017/05/30/harm-reduction-health-care>.

15. Weiner. <https://www.aamc.org/news-insights/drug-overdoses-soar-more-providers-embrace-harm-reduction>.

16. K.K. Aggarwal, "Do No Harm or Harm Reduction: The Ethical Dilemma," *Indian Journal of Clinical Practice* (April 10, 2019). https://ijcp.in/Pages/Post_Detail.aspx?wid=20307; Dalia Heller et al., "An invisible barrier to integrating HIV primary care with harm reduction services: philosophical clashes between the harm reduction and medical models," *Public Health Reports* 119:1 (January-February 2004), pp. 32-39. <https://pubmed.ncbi.nlm.nih.gov/15147647>.

17. Samuel O. Adeosun, "Stigma by Association: To what Extent is the Attitude Toward Naloxone Affected by the Stigma of Opioid Use Disorder?" *Journal of Pharmacy Practice* (May 3, 2022). https://journals.sagepub.com/doi/full/10.1177/08971900221097173?casa_token=62UdV9ncrCwAAAAA%3APqFjuPcpcxO8lw2Es2hc0OPktZ62gsxMGZTqfEXkf4AefLZIX0NVvsC9gNQugpG7oWNks2DFrk5nCW#bibr77-08971900221097173; Shannon E. Rudolph et al., "Identifying barriers to dispensing naloxone: A survey of community pharmacists in North Carolina," *Journal of the American Pharmacists Association* 58:4 (July-August 2018), pp. S55-S58.e3. <https://www.sciencedirect.com/science/article/abs/pii/S1544319118301985>; Julia Dickson-Gomez et al., "You're Not Supposed to be on it Forever": Medications to Treat Opioid Use Disorder (MOUD) Related Stigma Among Drug Treatment Providers and People who Use Opioids," *Substance Abuse: Research and Treatment* (June 27, 2022). <https://journals.sagepub.com/doi/full/10.1177/11782218221103859>.

18. Emma Gugala, "Opioid harm reduction: A scoping review of physician and system-level gaps in knowledge, education, and practice," *Substance Abuse* 43:1 (2022), pp. 972-987. <https://pubmed.ncbi.nlm.nih.gov/35426772>.

than half reported being uncomfortable dispensing the overdose reversal medication.¹⁹ Furthermore, the analysis revealed a statistically significant positive correlation between pharmacists' knowledge and willingness to dispense, such that pharmacists who were better educated about opioid use, overdose and naloxone were more willing to distribute the life-saving drug.²⁰ Systematic reviews of the literature support this finding: A majority of pharmacists believe individuals at risk of an overdose should have access to naloxone and medications for OUD (MOUD) and look favorably on the role of pharmacists in facilitating this access.²¹ However, study participants often cite insufficient education and training as key barriers to their own willingness and ability to dispense the medications.²²

Similarly, although evidence suggests that MOUD are more effective than abstinence-only therapies when it comes to reducing long-term opioid use and preventing overdose, roughly one in five rural pharmacies do not dispense these drugs.²³ Some pharmacists are apprehensive because of misinformation about Drug Enforcement Agency caps on how much buprenorphine they can legally stock and dispense, whereas others recognize that they lack sufficient knowledge about MOUD and opioid use.²⁴

Pharmacists are not the only health care providers with identified harm-reduction-related knowledge gaps. In the primary care and hospital/emergency settings, for example—where harm reduction tends to fit most naturally—physicians and other health care providers may lack specialized knowledge in substance use and harm reduction, which can lead to suboptimal care.²⁵ In addition, in a study of PAs and NPs practicing in a variety of specialties that included primary care and emergency medicine, interviewed providers felt better equipped to identify people with a substance use disorder than to treat them.²⁶ Furthermore, although study participants were familiar with standard MOUD, they knew much less about newer formulations such as injected or implanted buprenorphine.²⁷ Other research has found that even as emergency department physicians become more willing to perform interventions to reduce harms associated with opioid use, they may hesitate to actually engage in these interventions due to a lack of confidence, knowledge, training and institutional support.²⁸



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19. Rudolph et al. <https://www.sciencedirect.com/science/article/abs/pii/S1544319118301985>.

20. Ibid.

21. Thakur et al. <https://www.sciencedirect.com/science/article/abs/pii/S1544319119303206>; Muzyk et al. <https://www.tandfonline.com/doi/abs/10.1080/08897077.2019.1616349>; Oliver Frenzel et al., "Examining Attitudes and Beliefs that Inhibit Pharmacist Implementation of a Statewide Opioid Harm Reduction Program," *Innovations in Pharmacy* 11:4 (Oct. 29, 2020). <https://pubs.lib.umn.edu/index.php/innovations/article/view/3446>.

22. Ibid.

23. Sarah E. Wakeman et al., "Comparative Effectiveness of Different Treatment Pathways for Opioid Use Disorder," *Substance Use and Addiction* 3:2 (Feb. 5, 2020), pp. 1-12. <https://jamanetwork.com/journals/jamanetworkopen/fullarticle/2760032>; Alison Knopf, "Treatment with OUD agonists lowers risk of OD death by 80% compared to psychosocial treatment," *Alcoholism & Drug Abuse Weekly* 32:9 (March 2, 2020), pp. 4-5. <https://onlinelibrary.wiley.com/doi/abs/10.1002/adaw.32642>; Neda J. Kazerooni et al., "Pharmacy-related buprenorphine access barriers: An audit of pharmacies in counties with a high opioid overdose burden," *Drug and Alcohol Dependence* 224 (July 1, 2021). <https://www.sciencedirect.com/science/article/abs/pii/S0376871621002246?via%3Dihub>.

24. Insaf Mohammad et al., "Pharmacists and opioid use disorder care during COVID-19: Call for action," *Journal of the American College of Clinical Pharmacy* 5:2 (Oct. 28, 2021), pp. 203-213. <https://accpjournals.onlinelibrary.wiley.com/doi/full/10.1002/jac5.1556>; Hannah L.F. Cooper et al., "Buprenorphine dispensing in an epicenter of the U.S. opioid epidemic: A case study of the rural risk environment in Appalachian Kentucky," *International Journal of Drug Policy* 85 (November 2020), pp. 1-38. <https://europepmc.org/backend/ptpmcrender.fcgi?accid=PMC7529684&blobtype=pdf>; Bayla Ostrach et al., "DEA Disconnect Leads to Buprenorphine Bottlenecks," *Journal of Addiction Medicine* 15:4 (July/August 2021), pp. 272-275. https://journals.lww.com/journaladdictionmedicine/Abstract/2021/08000/DEA_Disconnect_Leads_to_Buprenorphine_Bottlenecks.3.aspx.

25. Rob Monks et al., "The dissonant care management of illicit drug users in medical wards, the views of nurses and patients: a grounded theory study," *Journal of Advanced Nursing* 69:4 (July 8, 2012), pp. 935-946. https://onlinelibrary.wiley.com/doi/full/10.1111/j.1365-2648.2012.06088.x?casa_token=IMivH4nBuTQAAAAA%3AKH7E-kjd5iIPRH7eXN3ZndI79TTTH2ITLuwQlvGzlegvfk4VvZBNnpj0Imlt-94pB-rmSdx8zIIQOV2rg;Gugala. <https://pubmed.ncbi.nlm.nih.gov/35426772>.

26. University of Michigan Behavioral Health Workforce Research Center, "Nurse Practitioner and Physician Assistant Provision of Medication-Assisted Treatment for Opioid Use Disorder: A Survey of Knowledge, Engagement, and Perceptions," University of Michigan School of Public Health, October 2018, pp. 1-18. <https://www.behavioralhealthworkforce.org/wp-content/uploads/2019/01/Y3-FA3-P2-NP-PA-MAT-Full-Report.pdf>.

27. Ibid.

28. Elizabeth A. Samuels et al., "Emergency Department-based Opioid Harm Reduction: Moving Physicians From Willing to Doing," *Academic Emergency Medicine* 23:4 (April 2016), pp. 455-465. <https://pubmed.ncbi.nlm.nih.gov/26816030>.

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know?**

**Misinformation: A Barrier to
Tobacco Harm Reduction**

While the focus of this publication is on opioid-related policy and intervention, knowledge gaps also represent a barrier to health care providers' engagement in other areas of harm reduction. In the case of tobacco harm reduction, for example, knowledge gaps fueled by misinformation are a significant issue.

Specifically, combustible cigarette smoking is known to cause cancer, kills upwards of 480,000 people annually in the United States and is extremely difficult to quit.¹ However, a majority of doctors wrongly believe that nicotine—rather than the toxins and tar in cigarettes—is the main culprit.² This sometimes causes doctors to avoid recommending alternative products such as e-cigarettes, snus or nicotine gums/patches that can reduce risk and potentially help aspiring quitters work toward abstinence.³

>480,000

people die annually from
cancer caused by smoking
combustible cigarettes.

1. "Tips From Former Smokers: Burden of Cigarette Use in the U.S.," Centers for Disease Control and Prevention, Aug. 3, 2022. [https://www.cdc.gov/tobacco/campaign/tips/resources/data/cigarette-smoking-in-united-states.html#:~:text=Cigarette%20smoking%20remains%20the%20leading,than%20480%2C000%20Americans%20each%20year.&text=In%202019%2C%20an%20estimated%2014.0,adults%20were%20current%20cigarette%20smokers](https://www.cdc.gov/tobacco/campaign/tips/resources/data/cigarette-smoking-in-united-states.html#:~:text=Cigarette%20smoking%20remains%20the%20leading,than%20480%2C000%20Americans%20each%20year.&text=In%202019%2C%20an%20estimated%2014.0,adults%20were%20current%20cigarette%20smokers;); "Smoking & Tobacco Use: Smoking Cessation: Fast Facts," Centers for Disease Control and Prevention, March 21, 2022. https://www.cdc.gov/tobacco/data_statistics/fact_sheets/cessation/smoking-cessation-fast-facts/index.html.

2. Michelle T. Bover Manderski et al., "Persistent Misperceptions about Nicotine among US Physicians: Results from a Randomized Survey Experiment," *International Journal of Environmental Research and Public Health* 18:14 (July 21, 2021). <https://www.mdpi.com/1660-4601/18/14/7713/htm>; Michael B. Steinberg et al., "Nicotine Risk Misperception Among US Physicians," *Journal of General Internal Medicine* 36 (Sept. 1, 2020), pp. 3888-3890. <https://link.springer.com/article/10.1007/s11606-020-06172-8>.

3. Maciej L. Goniewicz et al., "How effective are electronic cigarettes for reducing respiratory and cardiovascular risk in smokers? A systematic review," *Harm Reduction Journal* 17 (Nov. 23, 2020). <https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-020-00440-w>; Elizabeth Clarke et al., "Snus: a compelling harm reduction alternative to cigarettes," *Harm Reduction Journal* 16 (Nov. 27, 2019). <https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-019-0335-1>; J Hartmann-Boyce et al., "Can electronic cigarettes help people stop smoking, and do they have any unwanted effects when used for this purpose?," *Cochrane Database Systematic Reviews* 9 (Sept. 14, 2021). https://www.cochrane.org/CD010216/TOBACCO_can-electronic-cigarettes-help-people-stop-smoking-and-do-they-have-any-unwanted-effects-when-used.

Attitudes and Beliefs

Although providers often report insufficient knowledge and education as a major hindrance to providing harm reduction services—specifically naloxone and MOUD—PWUD have identified stigma as a significant problem in their interactions with health care professionals.²⁹

PWUD and those with substance use disorders are deeply stigmatized groups in the United States.³⁰ Unfortunately, research suggests that a substantial proportion of health care professionals do, in fact, hold negative beliefs about PWUD. A recent study found that less than 30 percent of nearly 700 primary care physicians surveyed would be willing to have a person with OUD as a neighbor or family member-by-marriage, even if the individual was currently being treated with appropriate

29. Catherine E. Paquette et al., "Stigma at every turn: Health services experiences among people who inject drugs," *International Journal of Drug Policy* 57 (July 2018), pp. 104-110. <https://www.sciencedirect.com/science/article/abs/pii/S0955395918301051?via%3Dihub>; Chunki Fong et al., "Medical Provider Stigma Experienced by People Who Use Drugs (MPS-PWUD): Development and Validation of a Scale Among People Who Currently Inject Drugs in New York City," *Drug and Alcohol Dependence* 221 (Feb. 13, 2021). <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8029599>; Gugala. <https://pubmed.ncbi.nlm.nih.gov/35426772>.

30. Fong et al. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8029599>.

medications.³¹ These stigmatizing beliefs translate into real-world consequences, affecting both the willingness of PWUD to engage with health care systems and the nature of care providers deliver.

For example, beginning in 2015, California law gave pharmacists the discretion to provide needles and syringes to adults without a prescription.³² In a qualitative study conducted in the wake of the law's implementation, many participants reported that pharmacists refused to sell them syringes based on their appearance.³³ Consequently, the fear of being outed as a person who injects drugs or being refused service altogether led some individuals to dress conservatively and hide tattoos or visible signs of injection drug use and discouraged others from even attempting to purchase syringes. Similarly, research among PWUD has found that patients report that doctors and other practitioners in primary care and hospital settings regularly address them with discriminatory language and a judgmental demeanor.³⁴

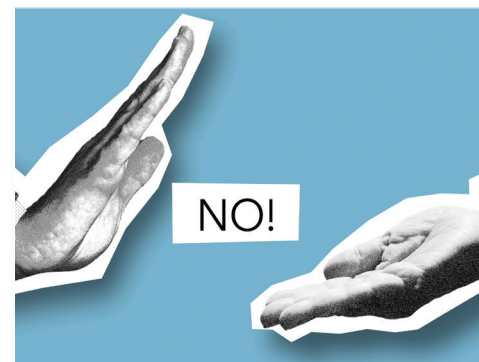
In addition to shaping providers' interactions with PWUD, stigma can limit their willingness to provide specific services. A 2006 study found that fewer than one-quarter of interviewed physicians were familiar with the overdose reversal drug naloxone.³⁵ While that particular statistic has likely changed in recent years, another finding from that study remains salient—doctors who had fewer negative perceptions of PWUD were more likely to prescribe and promote the medication than counterparts who held more stigmatizing beliefs.³⁶ In a more recent study, higher levels of primary care provider stigma toward people who use opioids were associated with a lower likelihood of prescribing MOUD.³⁷

Improving Health Care Provider Engagement In Harm Reduction

Because health care providers are less willing and able to serve as effective harm reduction advocates and implementers when they lack information or have negative beliefs about PWUD, it is critical that schools, professional organizations and health care institutions provide education specifically intended bridge this gap. With improved information, practitioners will be better equipped with the knowledge needed to advocate for and implement effective harm reduction strategies. It is equally important that institutions adopt policies to help improve provider workflow, shift attitudes and foster patient-focused environments.

Education

Research indicates that many current and aspiring health care professionals are not only aware of their lack of knowledge regarding substance use disorders and harm reduction but also report wanting more education and institutional support.³⁸ For



In a qualitative study conducted in the wake of a California law allowing needles and syringes to be provided to adults without a prescription, many participants reported that pharmacists refused to sell these products to PWUD based on their appearance.

31. Elizabeth M. Stone et al., "The role of stigma in U.S. primary care physicians' treatment of opioid use disorder," *Drug and Alcohol Dependence* 221 (April 1, 2021), pp. 1-16. <https://pubmed.ncbi.nlm.nih.gov/33621805>.

32. Office of AIDS, "Fact Sheet for Syringe Exchange Programs and Law Enforcement: Non-Prescription Sale and Provision of Syringes," California Department of Public Health, January 2017. https://www.cdph.ca.gov/Programs/CID/DOA/CDPH%20Document%20Library/Fact%20Sheet%20-%20What%20the%20Law%20Says_ADA.pdf.

33. Paquette et al., (2018). <https://www.sciencedirect.com/science/article/abs/pii/S0955395918301051?via%3Dihub>.

34. Brandon Muncan et al., "They look at us like junkies': influences of drug use stigma on the healthcare engagement of people who inject drugs in New York City," *Harm Reduction Journal* 17:53 (2020), pp. 1-9. <https://harmreductionjournal.biomedcentral.com/counter/pdf/10.1186/s12954-020-00399-8.pdf>.

35. Leo Beletsky et al., "Physicians' Knowledge of and Willingness to Prescribe Naloxone to Reverse Accidental Opiate Overdose: Challenges and Opportunities," *Journal of Urban Health* 84:1 (January 2007), pp. 126-136. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2078257>.

36. Ibid.

37. Stone et al. <https://pubmed.ncbi.nlm.nih.gov/33621805>.

38. Elizabeth S. Davenport et al., "Indiana community pharmacist preceptors' knowledge and perceptions of medication-assisted treatment," *Journal of the American Pharmacists Association* 60:3 (May-June, 2020), pp. S20-S28.e4. <https://www.sciencedirect.com/science/article/abs/pii/S1544319120300054>.

example, in 2016, students at the Yale Schools of Medicine, Nursing and Public Health petitioned for more training about overdose risk and response.³⁹

The vast majority of medical schools do provide some training on substance use disorder in general and OUD in particular, but these courses and clerkships generally do not focus on harm reduction.⁴⁰ As such, targeted educational efforts—both formal and informal—may have an important role to play in filling this gap among current providers and students.

Pharmacy schools and continuing education providers have leapt to the front of these efforts, with trainings focused on identifying and responding to overdose as well as dispensing and administering naloxone.⁴¹ Most of these courses consist of lectures alongside laboratory sessions and simulations, and, overall, they have been well-received. Furthermore, they have been shown to increase students' and pharmacists' knowledge related to both overdose and naloxone.⁴²

Similarly, overdose and naloxone-oriented trainings—some incorporating the skills into basic life support, others operating as stand-alone courses—have been shown to improve medical student, resident and PA readiness to respond to an overdose compared to their counterparts who did not take the courses.⁴³ Some nursing schools are even drawing direct links between the ethics of nursing practice and the role of harm reduction and highlighting the approach as part of their curriculum.⁴⁴

However, while the above courses do provide students and practitioners with key information and enhance self-efficacy, they are not necessarily effective tools to substantially change provider behaviors.⁴⁵ For example, a study conducted among NPs working in a pain clinic explored the utility of the Opioid Overdose Prevention Toolkit, a skills- and information-based program.⁴⁶ The training did not affect nurses' likelihood of co-prescribing naloxone to patients receiving opioids.⁴⁷ This translational challenge may be due, at least in part, to the fact that skills-oriented trainings do not sufficiently address stigmatizing attitudes and beliefs.⁴⁸

Additionally, as discussed previously, negative perceptions of PWUD and harm reduction itself can reduce practitioners' willingness to become advocates for the approach. Fortunately, when educational efforts directly address stigma, they do have some success. Interventions that provide insights regarding the importance of non-stigmatizing language; teach positive, supportive body language; and challenge misinformation about substance use disorder and medication-based treatments have all been shown to have a positive impact on attitudes of the general public



Research indicates that many current and aspiring health professionals are not only aware of their lack of knowledge regarding substance use and harm reduction but also report wanting more education and institutional support.

39. Benjamin J. Oldfield et al., "Opioid overdose prevention education for medical students: Adopting harm reduction into mandatory clerkship curricula," *Substance Abuse* 41:1 (June 18, 2019), pp. 29-34. <https://www.tandfonline.com/doi/full/10.1080/08897077.2019.1621241>.

40. "Curriculum Reports," Association American Medical Colleges, last accessed Sept. 19, 2022. <https://www.aamc.org/data-reports/curriculum-reports/interactive-data/opioid-addiction-content-required-curriculum>.

41. Kavanaugh et al. <https://doi.org/10.1016/j.cptl.2021.09.030>.

42. Ibid.

43. Berland et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2016.1275925>; Moses et al. <https://doi.org/10.1016/j.addbeh.2021.107172>; Daniel Hargraves et al., "Evaluation of an interprofessional naloxone didactic and skills session with medical residents and physician assistant learners," *Pharmacy Practice* 17:3 (Sept. 12, 2019), pp. 1-9. <https://scielo.org/scii/doi/pdf/pharmacy/v17n3/1885-642X-pharmpract-17-03-1591.pdf>.

44. "Harm Reduction Techniques for Nurses," Eastern Illinois University, June 30, 2020. <https://learnonline.eiu.edu/programs/rn-to-bsn/harm-reduction-techniques-for-nurses>.

45. Moses et al. <https://doi.org/10.1016/j.addbeh.2021.107172>; Berland et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2016.1275925>.

46. Nichole Brown, "Implementing Harm Reduction Strategies to Reduce Opioid Overdoses," *The Journal for Nurse Practitioners* 17: 7 (July 1, 2021), pp. 870-873. [https://www.npjjournal.org/article/S1555-4155\(21\)00117-3/fulltext](https://www.npjjournal.org/article/S1555-4155(21)00117-3/fulltext).

47. Ibid.

48. Moses et al. <https://doi.org/10.1016/j.addbeh.2021.107172>; Berland et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2016.1275925>.

and health care providers alike.⁴⁹ Furthermore, curricula that explicitly teach harm reduction principles such as non-judgment in addition to skills or information about responding to the current overdose crisis has been shown to lead to small but significant reductions in stigma.⁵⁰ In addition to education, research indicates that contact with individuals with lived experience—that is, people living with a substance use disorder—also has a significant impact on provider attitudes.⁵¹ For example, a mandatory educational intervention for medical students covered overdose risk, naloxone distribution and harm reduction theory.⁵² The workshop led to improvements in students' knowledge and awareness as well as reductions in stigmatizing views about PWUD.⁵³

Importantly, these types of shifts in thinking may translate into behavioral changes. A course on opioid harm reduction—including both lecture and interactive, small-group sessions—was administered to residents at a medical teaching hospital. On a follow-up assessment, residents demonstrated improved knowledge about naloxone and prescribed the overdose reversal medication at higher rates than did faculty who had not received the intervention.⁵⁴

Institutional Policy

Although education is an essential part of improving health care providers' willingness and ability to provide harm reduction resources, research suggests that it is not enough. Supportive institutional policies can facilitate provider workflow, help drive attitudinal shifts and foster an environment in which patients feel safe and supported.

Programs that foster prescriber-pharmacist collaborations are appearing in some communities. For example, substance-use-disorder treatment providers may establish a relationship with a local pharmacy and direct patients to fill prescriptions there.⁵⁵ This type of relationship can ensure adequate medication stocks and streamline processes for patients while also giving pharmacists comfort that their purchased supply will not sit on shelves.⁵⁶ In addition to such logistical benefits, these types of partnerships—which can take a variety of forms—can reduce stigma and misinformation around substance use, substance use disorder and harm reduction.⁵⁷

In the primary care setting, low-barrier buprenorphine access can be facilitated by fostering an organizational mission that prioritizes equitable, low-stigma health care; builds a harm-reduction-oriented workforce; and supports providers by minimizing



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49. Malika Sharma et al., "Harm reduction in hospitals," *Harm Reduction Journal* 14 (June 5, 2017), pp. 1-4. <https://harmreductionjournal.biomedcentral.com/articles/10.1186/s12954-017-0163-0>; Robert D. Ashford et al., "Substance use, recovery, and linguistics: The impact of word choice on explicit and implicit bias," *Drug and Alcohol Dependence* 189 (Aug. 1, 2018), pp. 131-138. https://www.sciencedirect.com/science/article/abs/pii/S037687161830320X?casa_token=tV4Il4W8cLEAAAAA:_GuN7wg6BjrCYEvVWLZO2fUxYJ-ksc9jUvD5PcnBxc4CPzwCMF5Mmtv2HqQRXFOsL7njvHcPfbXa; Mohammad et al. https://accpjournals.onlinelibrary.wiley.com/doi/full/10.1002/jac5.1556.

50. Oldfield et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2019.1621241>; Jessica Lee Taylor et al., "An opioid overdose curriculum for medical residents: Impact on naloxone prescribing, knowledge, and attitudes," *Substance Abuse* 39:3 (May 15, 2018), pp. 371-376. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8916048>.

51. Jennifer Bielenberg, "A systematic review of stigma interventions for providers who treat patients with substance use disorders," *Journal of Substance Abuse Treatment* 131 (May 24, 2021), pp. 1-25. [https://www.journalofsubstanceabusetreatment.com/article/S0740-5472\(21\)00212-9/fulltext](https://www.journalofsubstanceabusetreatment.com/article/S0740-5472(21)00212-9/fulltext).

52. Oldfield et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2019.1621241>.

53. Ibid.

54. Taylor et al. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8916048>.

55. Bayla Ostrach et al., "Ensuring buprenorphine access in rural community pharmacies to prevent overdoses," *Journal of the American Pharmacists Association* 62:2 (March 1, 2022), pp. 588-597.E2. [https://www.japha.org/article/S1544-3191\(21\)00420-9/fulltext](https://www.japha.org/article/S1544-3191(21)00420-9/fulltext).

56. Ibid.

57. Ibid.; *Report of the Task Force on Medication Assisted Treatment*, National Association of Boards of Pharmacy, last accessed Sept. 22, 2022, pp. 1-9. <https://nabp.pharmacy/wp-content/uploads/2021/03/Task-Force-Report-Medication-Assisted-Treatment-2021.pdf>.

administrative barriers to providing treatment.⁵⁸ Furthermore, research on the experiences of health care providers and PWUD supports the role of harm-reduction-positive policies in hospital settings. For example, permitting people with a substance use disorder to continue using nonprescribed substances or offering access to MOUD enhances trust and decreases the likelihood of those individuals leaving against medical recommendations; similarly, developing inpatient addiction services can streamline experiences for patients and providers.⁵⁹

Conclusion

In response to the ongoing opioid epidemic and the growing call for health care providers to take an active role in harm reduction interventions, many schools and professional organizations are adding targeted courses to their primary and continuing education curricula.⁶⁰ These programs are typically aimed at improving knowledge, skills and attitudes about opioid harm reduction services such as prescribing, distributing and administering the overdose reversal drug naloxone. Research suggests that educating current and training health care professionals on the identification of individuals with substance use disorders or people at risk for overdose is an important step toward increasing provider willingness and effectiveness in engaging in harm reduction.⁶¹ However, several pilot programs and case studies indicate that providing targeted knowledge and concrete skills is not sufficient.⁶² Rather, in order to truly address the multilevel barriers that providers face to becoming harm reduction advocates and implementers, education must incorporate efforts to combat stigma, and institutions must establish internal policies that support harm reduction.⁶³ We posit that by taking this broad and inclusive approach to harm reduction education and support, educators and organizations will position providers to offer nonjudgmental, health-improving, potentially life-saving care to patients, whether they smoke cigarettes, use opioids or are living with diabetes.



Research suggests that permitting people with a substance use disorder to continue using nonprescribed substances or offering access to MOUD enhances trust.

58. Shashi N. Kapadia et al., "A Harm Reduction Approach to Treating Opioid Use Disorder in an Independent Primary Care Practice: a Qualitative Study," *Journal of General Internal Medicine* 36 (Jan. 19, 2021), pp. 1898-1905. <https://link.springer.com/article/10.1007/s11606-020-06409-6>.

59. Lennox et al. <https://www.sciencedirect.com/science/article/abs/pii/S0955395921002292?via%3Dihub>.

60. Taylor et al. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8916048>; "Harm Reduction Techniques for Nurses." <https://learnonline.eiu.edu/programs/rn-to-bsn/harm-reduction-techniques-for-nurses>; Moses et al. <https://doi.org/10.1016/j.addbeh.2021.107172>; Berland et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2016.1275925>; Kimberly Sue, "Harm Reduction for Health Care Providers," Clinical Education Initiative, March 31, 2020. https://ceitraining.org/courses/course_detail.cfm?mediaID=829#Yy3uzMKWC.

61. Kavanaugh et al. <https://doi.org/10.1016/j.cptl.2021.09.030>; Berland et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2016.1275925>; Moses et al. <https://doi.org/10.1016/j.addbeh.2021.107172>.

62. Oldfield et al. <https://www.tandfonline.com/doi/full/10.1080/08897077.2019.1621241>; Taylor et al. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8916048>; Bielenberg. [https://www.journalofsubstanceabusetreatment.com/article/S0740-5472\(21\)00212-9/fulltext](https://www.journalofsubstanceabusetreatment.com/article/S0740-5472(21)00212-9/fulltext).

63. Marilyn Freimuth, "The 'New Look' in Addiction Assessment: Implications for Medical Education," *Integrative Physiological and Behavioral Science* 16:1 (March 2010), pp. 30-34. https://www.researchgate.net/publication/230867684_The_New_Look_in_Addiction_Assessment_Implications_for_Medical_Education; Lennox et al. <https://www.sciencedirect.com/science/article/abs/pii/S0955395921002292>; Bielenberg et al. [https://www.journalofsubstanceabusetreatment.com/article/S0740-5472\(21\)00212-9/fulltext](https://www.journalofsubstanceabusetreatment.com/article/S0740-5472(21)00212-9/fulltext).

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