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Breaking Issues in Opioid Use Disorder Treatment

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Executive Director, Implementation and Research Center for Healthy Communities

Associate Professor, Department of Pharmacy and Therapeutics

September 8, 2026

Conflicts of Interest

Dr. Hill reports receiving compensation as an expert witness and litigate consultant from Kroger and Publix

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Opioid Use Disorder: Emerging Therapeutic Approaches

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Learning Objectives

- Compare the mechanism, efficacy, and safety of FDA-approved medications for OUD
- Describe evidence-based buprenorphine initiation strategies
- Explain updated approaches to long-acting injectable buprenorphine initiation

Epidemiology

In 2022…

- 81,806 opioid-involved overdose deaths were reported in the U.S.
- 9.3 million adults (3.7% of the population) met criteria for OUD
- **25.1% were treated with FDA-approved medication**
- 30.0% received “treatment” without medication
- Non-Hispanic White men ages 35–49 were significantly more likely to receive medication treatment than other groups

Dowell D, Brown S, Gyawali S, et al. Treatment for Opioid Use Disorder: Population Estimates — United States, 2022. MMWR. 2024;73(25):567-574. doi:10.15585/mmwr.mm7325a1

MOUD

Medications for Opioid Use Disorder

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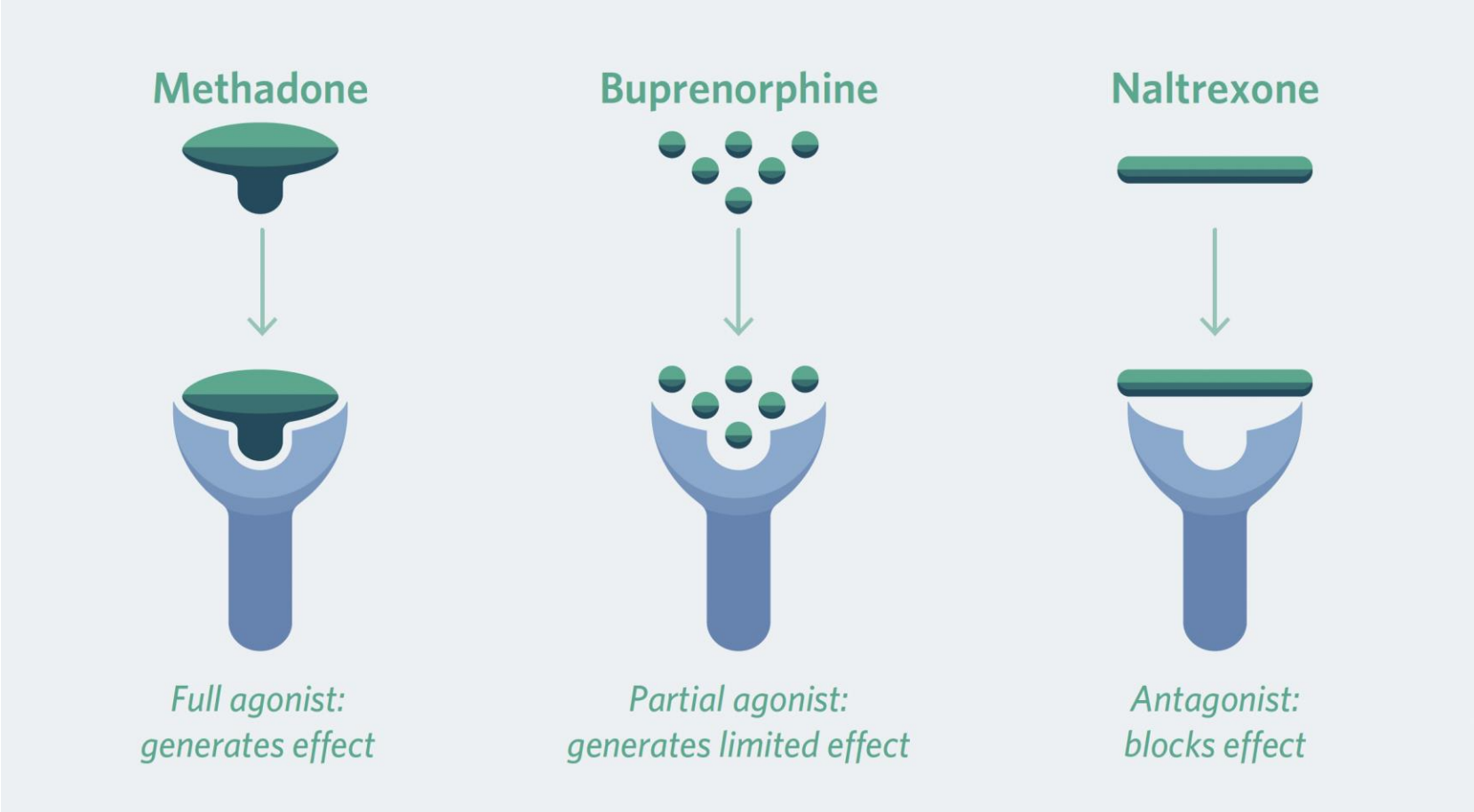
MOUD



Medication-Assisted Treatment Improves Outcomes for Patients With Opioid Use Disorder. The Pew Charitable Trusts. http://bit.ly/2f3cpDG. Used with permission.

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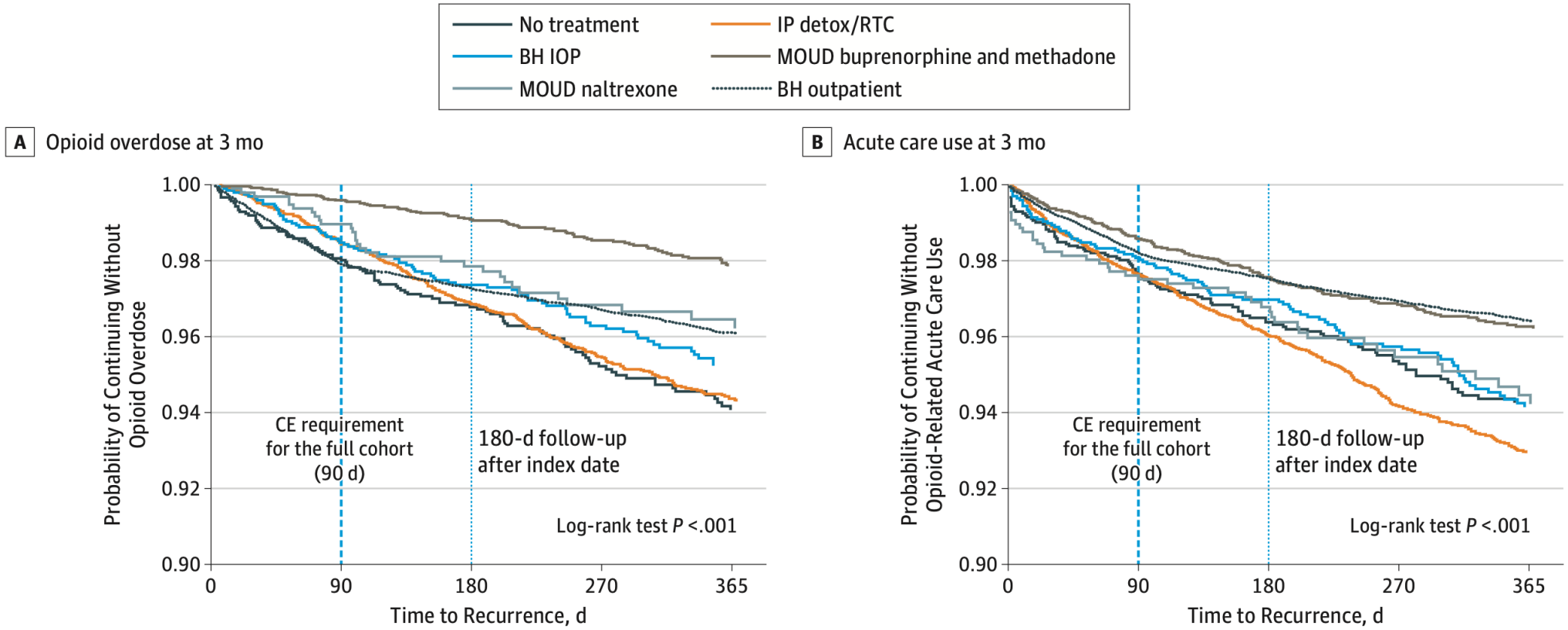
MOUD

	Methadone	Buprenorphine	Naltrexone
			
Mechanism	Agonist	Partial Agonist	Antagonist
Prescribers	OTP setting	DEA license	Any
Routes	Oral	Sublingual, subcutaneous	Intramuscular
Frequency	Daily	Daily–monthly	Monthly
Initiate	Replace next dose of drug	Moderate withdrawal	≥ 5 days abstinent

Treatment Outcomes

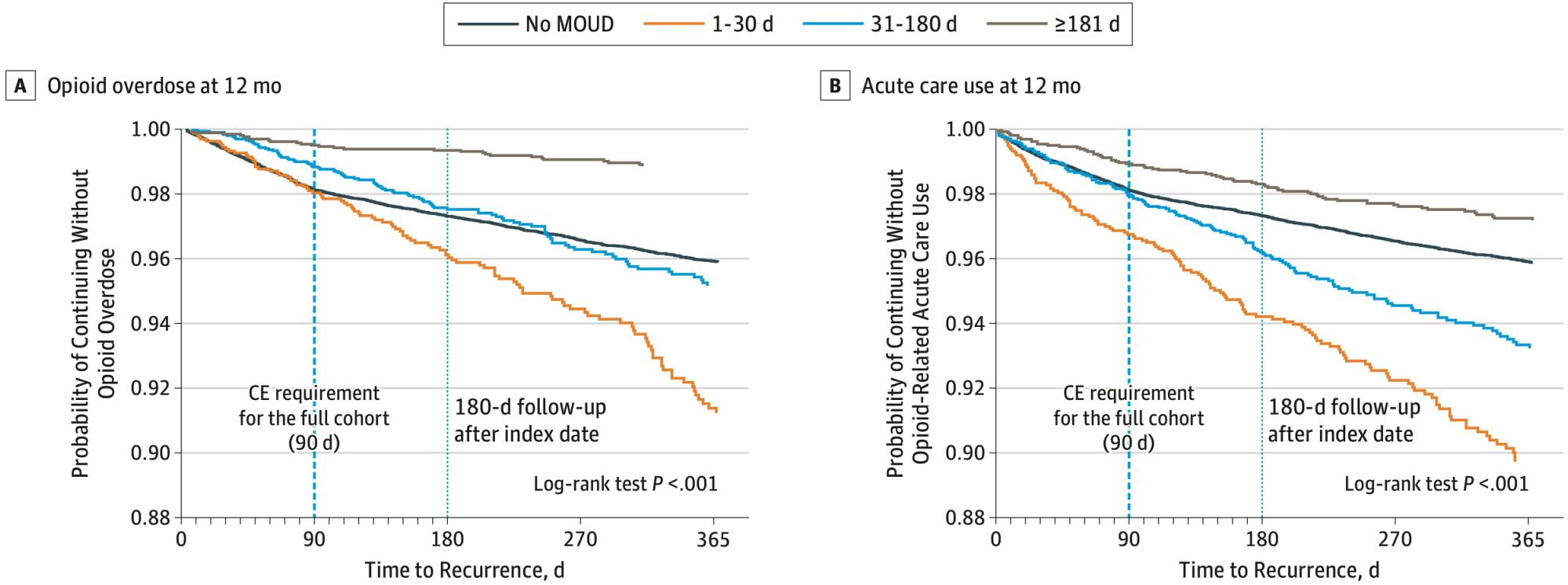
Figure 1. Probability of Opioid Overdose and Acute Care Use During the 3-Month Follow-up Period



BH indicates behavioral health; CE, continuing education; BH IOP, intensive behavioral health (intensive outpatient or partial hospitalization); IP detox/RTC, inpatient detoxification or residential services; and MOUD, medication for opioid use disorder.

Treatment Outcomes

Figure 2. Probability of Opioid Overdose and Acute Care Use During the 12-Month Follow-up Period



Methadone

- Methadone may be more effective at preventing overdose death compared to BUP/NX in the current context of potent synthetic illegal opioids
- Insufficient availability of OTPs and long drive times severely limit methadone access and undermine holistic recovery
- Methadone dispensing for OUD in community pharmacies is feasible and acceptable to patients and pharmacy staff
- The Modernizing Opioid Treatment Access Act (MOTAA) would allow non-OTP prescribing and pharmacy dispensing of methadone for OUD

- Kleinman RA, Larney S, Sule NO, Ma C, Hauck TS, Kurdyak P. Methadone vs Buprenorphine-Naloxone in Opioid Overdose Survivors. *JAMA Netw Open*. 2026;9(8):e2629313.
- Joudrey PJ, et al. Pharmacy-based methadone dispensing and drive time to methadone treatment in five states within the United States: A cross-sectional study. *Drug Alcohol Depend*. 2020;211:107968.
- Brooner RK, Stoller KB, Patel P, et al. Opioid treatment program prescribing of methadone with community pharmacy dispensing: Pilot study of feasibility and acceptability. *Drug Alcohol Depend Rep*. 2022;3:100067.

BUP = buprenorphine, NX = naloxone, OTP = opioid treatment program, OUD = opioid use disorder

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Buprenorphine Formulations

OUD Formulations	Route / Frequency	Notes
BUP Tablets	SL / daily, divided	~~Preferred in pregnancy~~
BUP/NX Tablets	SL / daily, divided	Combined to reduce risk for misuse and diversion
BUP/NX Films	SL / daily, divided	
XR-BUP Injection	SC / monthly	After one SL dose tolerated
	SC / weekly, monthly	

Buprenorphine Diversion

- Partial agonist mechanism of buprenorphine makes even the monoproduct less desirable for misuse compared to agonists
- Co-formulation with naloxone may further deter misuse, though evidence for this claim – which supported the patent for a new product – is poor
- Studies consistently find that…
  - Most non-prescribed use is for therapeutic purposes (e.g., tapering off illegal opioids)
  - More frequent use of non-prescribed buprenorphine is protective against overdose

- Chilcoat HD, Amick HR, Sherwood MR, Dunn KE. Buprenorphine in the United States: Motives for abuse, misuse, and diversion. J Subst Abuse Treat. Sep 2019;104:148-157. doi:10.1016/j.jsat.2019.07.005
- McDonald MJ, DeVeaugh-Geiss AM, Chilcoat HD, Havens JR. Assessing Motivations for Nonprescribed Buprenorphine Use Among Rural Appalachian Substance Users. J Addict Med. Aug 31 2022;doi:10.1097/ADM.0000000000001050
- Carlson RG, Daniulaityte R, Silverstein SM, Nahhas RW, Martins SS. Unintentional drug overdose: Is more frequent use of non-prescribed buprenorphine associated with lower risk of overdose? Int J Drug Policy. Apr 17 2020;79:102722.

Buprenorphine Dosing

Evidence-based dosing approaches may differ from original FDA-approved labeling

- Indefinite use is safe and effective in preventing morbidity and mortality
- Low-dose titrations while tapering off illegal opioids reduce risk for withdrawal symptoms
- High-dose initiations with illegal opioid abstinence reduce risk for withdrawal symptoms
- Higher maintenance doses are associated with superior retention and improved health outcomes

XR-BUP

- XR-BUP is currently available in two long-acting SC injectable formulations
- Sublocade (monthly)
  - Original label required ≥7 days of SL buprenorphine ≥8 mg/day before first injection
  - Feb 2025 FDA update allows for rapid induction after a single 4-mg SL dose
  - Rapid initiation achieves superior retention with similar adverse effects
- Brixadi (weekly or monthly)
  - Approved for rapid induction after a single 4-mg SL dose
  - First-week sequence up to three weekly injections (16 mg, 8 mg, 8 mg), consolidating to a higher weekly/monthly dose at week 2
  - Adjunctive SL buprenorphine is still common early with one case series finding 55% of patients needed supplemental SL dosing for breakthrough cravings/withdrawal

- FDA Sublocade (buprenorphine ER) Prescribing Information, 2025
- Shiwach R, Le Foll B, Alho H, et al. Rapid vs Standard Induction to Injectable Extended-Release Buprenorphine. JAMA Netw Open. 2025.
- FDA Brixadi (buprenorphine ER) Prescribing Information, 2025
- Peckham AM, et al. Real-World Outcomes With XR-BUP in a Low-Threshold Bridge Clinic. J Subst Abuse Treat. 2021

BUP = buprenorphine, SC = subcutaneous, SL = sublingual, XR = extended-release

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Naltrexone

- Oral naltrexone is not recommended for maintenance treatment of OUD
- X:BOT Clinical Trial
  - Open-label RCT comparing IM-NTX and SL-BUP/NX in 570 patients
  - NTX group more likely to: (1) use illegal opioids, and (2) experience non-fatal overdose
  - 28% of NTX patients dropped out during the withdrawal phase
- XR-NTX now has a black box warning related to increased risk of fatal overdose after missed dose or discontinuation

- Lee JD, et al. Comparative effectiveness of extended-release naltrexone versus buprenorphine-naloxone for opioid relapse prevention (X:BOT). *Lancet*. 2018;391(10118):309-18.
- Ajazi EM, et al. Revisiting the X:BOT Naltrexone Clinical Trial Using a Comprehensive Survival Analysis. J Addict Med. 2021
- Saucier R, Wolfe D, Dasgupta N. Review of case narratives from fatal overdoses associated with injectable naltrexone for opioid dependence. *Drug Saf*. 2018;41(10):981-8.

BUP = buprenorphine, IM = intramuscular, NTX = naltrexone, NX = naloxone, SL = sublingual

Pharmacy Practice

Scope Expansion and Stigma Reduction

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Expanded Scope for Pharmacists

- Groundbreaking RCT in Rhode Island (Green *NEJM*)
  - Physician-delegated BUP induction in six community pharmacies
  - 1-month retention higher for patients randomized to complete follow-up visits at a pharmacy (89%) vs at an outpatient clinic (17%)
- 16 states allows pharmacists to obtain DEA licensure to prescribe controlled substances, and clinical pharmacists within VHA have a strong track record of independent BUP prescribing
- June 2026 SAMHSA Advisory: Provides support and encouragement for expanding pharmacists' scope of practice in OUD treatment

- Green TC, Serafinski R, Clark SA, Rich JD, Bratberg J. Physician-Delegated Unobserved Induction with Buprenorphine in Pharmacies. N Engl J Med. Jan 12 2023;388(2):185–186. doi:10.1056/NEJMc2208055
- Colvard MD, Jorgenson TL, Alliu V, et al. Expanding Patient Access to Buprenorphine for Opioid Use Disorder Through Pharmacist Independent Prescriptive Authority. Subst Use Addctn J. Jul 19 2026:29767342261467580. doi:10.1177/29767342261467580
- Substance Abuse and Mental Health Services Administration. Expanding access to medications for opioid use disorder: The role of pharmacists and the settings in which they work. 2026.

BUP = buprenorphine, OUD = opioid use disorder, VHA = Veterans Health Administration

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Impact of Stigma on Patient Care

- People with SUD often delay seeking care for other medical issues due to past negative experiences in healthcare
- Stigmatizing care experiences are also a major cause of early treatment discontinuation
- Stigmatizing language in patient cases and electronic health records is associated with the provision of lower quality clinical care
- Stigma against medications is also widespread in 12-step peer support groups

- Paquette CE, Syvertsen JL, Pollini RA. Stigma at every turn: Health services experiences among people who inject drugs. Int J Drug Policy. Jul 2018;57:104-110. doi:10.1016/j.drugpo.2018.04.004
- Simon R, Snow R, Wakeman S. Understanding why patients with substance use disorders leave the hospital against medical advice: A qualitative study. Subst Abus. 2020;41(4):519-525.
- Kelly JF, Westerhoff CM. Does it matter how we refer to individuals with substance-related conditions? A randomized study of two commonly used terms. Int J Drug Policy. May 2010;21(3):202-7. Goddu AP, O'Conor KJ, Lanzkron S, et al. Do Words Matter? Stigmatizing Language and the Transmission of Bias in the Medical Record. J Gen Intern Med. May 2018;33(5):685-691.
- Andraka-Christou B, Totaram R, Randall-Kosich O. Stigmatization of medications for opioid use disorder in 12-step support groups and participant responses. Subst Abus. Jul 2 2021:1-10.

SUD = substance use disorder

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Stigma Reduction Practices

- Use technically accurate, person-first language
- Don’t conflate illegal substance use with SUD

Stigmatizing	Supportive
Junkie / addict	Person with a substance use disorder
Drug abuser	Person who uses drugs
Relapse	Recurrence of use
Medication-assisted treatment	Medication / pharmacotherapy
Clean / dirty	Drug screen = positive / negative Drug use = in recovery / in active use

SUD = substance use disorder

Botticelli MP, Koh HK. Changing the Language of Addiction. JAMA. 2016;316(13):1361-1362.

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Opioid Use Disorder: Challenges for Pharmacists

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September 8, 2026

Learning Objectives

- Identify barriers and facilitators to pharmacist dispensing of buprenorphine and provision of naloxone and syringes
- Describe recent regulatory and policy changes affecting pharmacy-based OUD care
- Apply evidence-based, non-stigmatizing practices to reduce dispensing delays and improve access to OUD treatment

Pharmacy Opportunities

- 89% of people in U.S. live ≤ 5 miles from a pharmacy
- Pharmacists can facilitate access to evidence-based interventions for substance use and addiction
  - Dispense BUP for OUD
  - Sell or dispense NX
  - Sell non-Rx syringes
  - Implement SBIRT

- Berenbrok LA, Tang S, Gabriel N, et al. Access to Community Pharmacies: A Nation-Wide Geographic Information Systems Cross-sectional Analysis. *J Am Pharm Assoc*. 2022; 62(6):1816-1822.e2
- Hill LG, Evoy KE, Reveles KR. Pharmacists are missing an opportunity to save lives and advance the profession by embracing opioid harm reduction. *J Am Pharm Assoc*. 2019;59(6):779-782.

BUP = buprenorphine, NX = naloxone, OUD = opioid use disorder, Rx = prescription, SBIRT = screening, brief intervention, and referral to treatment

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Pharmacy Challenges

- Lack of reimbursement for cognitive services
- Knowledge deficits and stigmatized attitudes
- Regulatory concerns re: controlled substances
  - Wholesaler controlled substance monitoring
  - DEA, state board, and employer pressure
  - Civil litigation costs for “red flag” dispensing

- Ostrach B, Hill L, Carpenter D, Pollini R. Addressing Buprenorphine Bottlenecks in the Context of MAT Act Implementation: A Shared Responsibility. J Am Pharm Assoc. 2023;63(4):1044-1048.
- Varisco TJ, Wanat M, Hill LG, Thornton D. The Impact of the Mainstreaming Addiction Treatment Act and Associated Legislative Action on Pharmacy Practice. J Am Pharm Assoc. 2023;63(4):1039-1043.

Buprenorphine Access

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Regulatory Changes

- Abolition of “X-waiver”
  - *[Effective 12/9/2022]* Any clinician in any setting or specialty authorized to prescribe C-III substances may prescribe BUP for OUD
- Telehealth Prescribing
  - *[Extended through 12/31/2026]* CII–V medications can be prescribed by DEA registered clinicians via telehealth, including audio-only
  - *[Beginning 1/1/2027]* BUP can be prescribed via telehealth for up to six months, and indefinitely via special registration that has not yet been clearly defined

- Waiver Elimination (MAT Act). Substance Abuse and Mental Health Services Administration (SAMHSA). Updated November 6, 2024. Accessed May 1, 2025. https://www.samhsa.gov/substance-use/treatment/statutes-regulations-guidelines/mat-act
- Fourth Temporary Extension of COVID-19 Telemedicine Flexibilities for Prescription of Controlled Medications. Federal Register. Published December 31, 2025. https://www.federalregister.gov/documents/2025/12/31/2025-24123/fourth-temporary-extension-of-covid-19-telemedicine-flexibilities-for-prescription-of-controlled
- Expansion of Buprenorphine Treatment via Telemedicine Encounter. Federal Register. Published January 17, 2025. https://www.federalregister.gov/documents/2025/01/17/2025-01049/expansion-of-buprenorphine-treatment-via-telemedicine-encounter

Access Barriers

- 2016 West Virginia pharmacist survey found:
  - Many did not stock BUP/NX (25.2%) and BUP (46.7%)
- 2019 interviews with 14 Kentucky pharmacists found:
  - Four refused to dispense buprenorphine
  - Eight others limited dispensing
  - Ten expressed concern re: ordering limits
  - Lack of trust for prescribers due to opioid crisis

- Thornton JD, Lyvers E, Scott VGG, Dwibedi N. Pharmacists' readiness to provide naloxone in community pharmacies in West Virginia. *J Am Pharm Assoc* (2003). 2017;57(2S):S12-S18 e4.
- Cooper HL, Cloud DH, Freeman PR, et al. Buprenorphine dispensing in an epicenter of the U.S. opioid epidemic: A case study of the rural risk environment in Appalachian Kentucky. *Int J Drug Policy*. Nov 2020;85:102701.

BUP = buprenorphine, NX = naloxone

Dispensing Delays

- Survey of 139 people in rural WV on BUP for OUD
  - 34.1% reported problems filling BUP (e.g., out of stock, refused, insurance)
  - Most missed at least one dose, mean duration 5 days
  - Reporting problems = 9x more likely to use non-Rx BUP
- Even a minor delay in buprenorphine dispensing can lead to a clinically significant gap in treatment
- It is critical that pharmacists participate in OUD care & recognize the urgency of BUP dispensing

BUP = buprenorphine, OUD = opioid use disorder, RX = prescription

Winstanley EL, et al. Patient-reported problems filling buprenorphine prescriptions and motivations for illicit use. Drug and Alcohol Dependence Reports. 2022; DOI: 10.1016/j.dadr.2022.100091

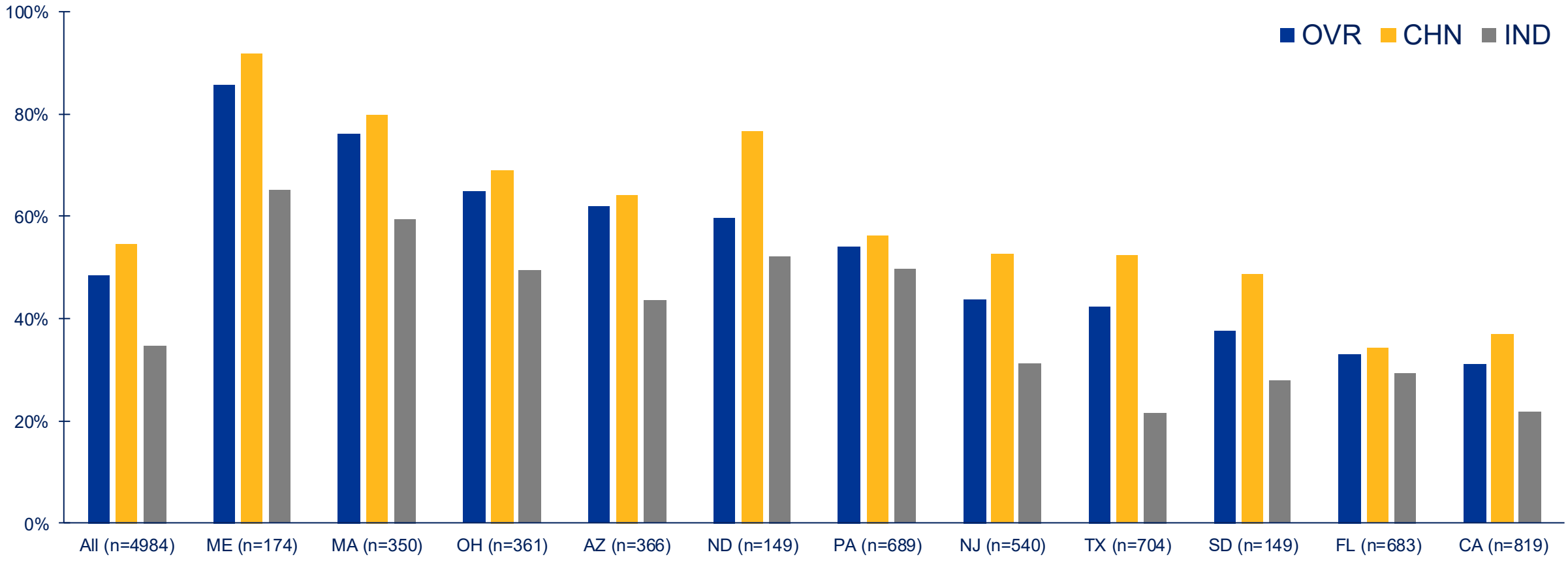
Secret Shopper Audit

- Method: Telephone encounter
- Timeframe: May 2020 – April 2021
- Population: 5,734 random pharmacies in 11 U.S. states
- Outcomes
  - Availability of BUP/NX and NNS with Rx
- Comparisons
  - Pharmacy type (CHN vs IND)
  - Medicaid expansion status
  - State overdose death rate

BUP/NX = buprenorphine/naloxone films 8/2mg, CHN = chain, IND = independent, NNS = naloxone 4mg nasal spray, Rx = prescription

Hill LG, Loera LJ, Torrez SB, et al. Availability of buprenorphine/naloxone films and naloxone nasal spray in community pharmacies in 11 U.S. states. Drug and Alcohol Dependence. 2022;doi:10.1016/j.drugalcdep.2022.109518

Availability of BUP/NX



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APhA Survey

- Method: Online survey
- Timeframe: Oct 2021 – Nov 2021
- Population: 281 community-based pharmacists in U.S.
- Purpose: Identify and explore policies, barriers, facilitators, and practices related to BUP dispensing for OUD

APhA = American Pharmacists Association, BUP = buprenorphine, OUD = opioid use disorder

Hill LG, Light AE, Green TC, Burns AL, Sanaty Zadeh P, Freeman PR. Perceptions, policies, and practices related to dispensing buprenorphine for opioid use disorder: A national survey of community-based pharmacists. J Am Pharm Assoc. 2023;63(1):252-260 e6.

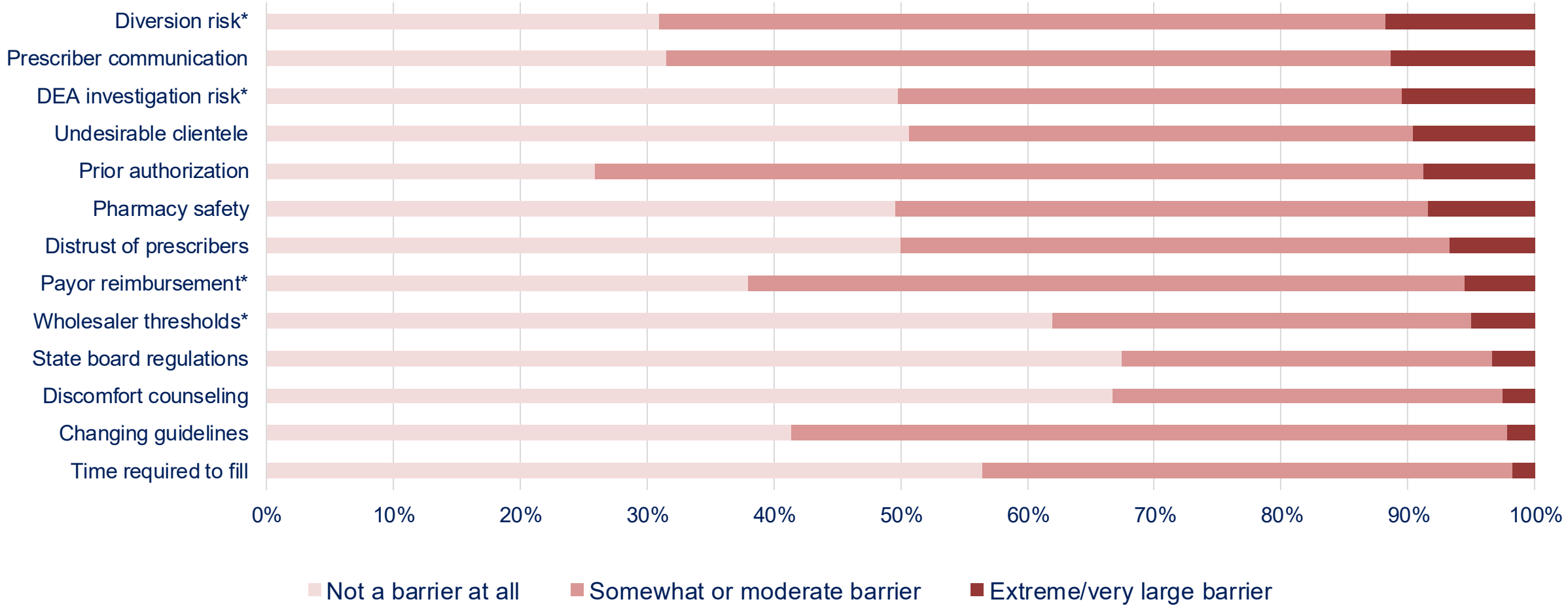
Pharmacy Policy	OVR (n=265)	CHN (n=135)	IND (n=92)	INST (n=38)
Prescription drug monitoring program query required	71.3%	68.1%	77.2%	68.4%
Validation of x-waiver required prior to dispensing	44.9%	37.8%	52.2%	52.6%
Dispensing limited to prescribers that practice locally*	37.4%	27.4%	47.8%	47.4%
Refills prohibited if greater than one day before refill due date	35.8%	34.1%	39.1%	34.2%
Dispensing limited to usual dosing range (2–16mg)	30.9%	27.4%	35.9%	31.6%
Dispensing limited to whole dosing units	30.2%	30.4%	30.4%	28.9%
Dispensing limited to patients with local addresses*	30.2%	18.5%	51.1%	21.1%
Dispensing limited to established patients on buprenorphine*	14.0%	7.4%	22.8%	15.8%
Dispensing limited to buprenorphine/naloxone combination	8.3%	8.1%	10.9%	2.6%
Quantity dispensed must be in full box/bottles	6.0%	5.9%	6.5%	5.3%

*significant variance by setting

CHN = chain, IND = independent, INST = institutional, ORV = overall

Hill LG, Light AE, Green TC, Burns AL, Sanaty Zadeh P, Freeman PR. Perceptions, policies, and practices related to dispensing buprenorphine for opioid use disorder: A national survey of community-based pharmacists. J Am Pharm Assoc. 2023;63(1):252-260 e6.

Barriers to BUP Dispensing (n=239)



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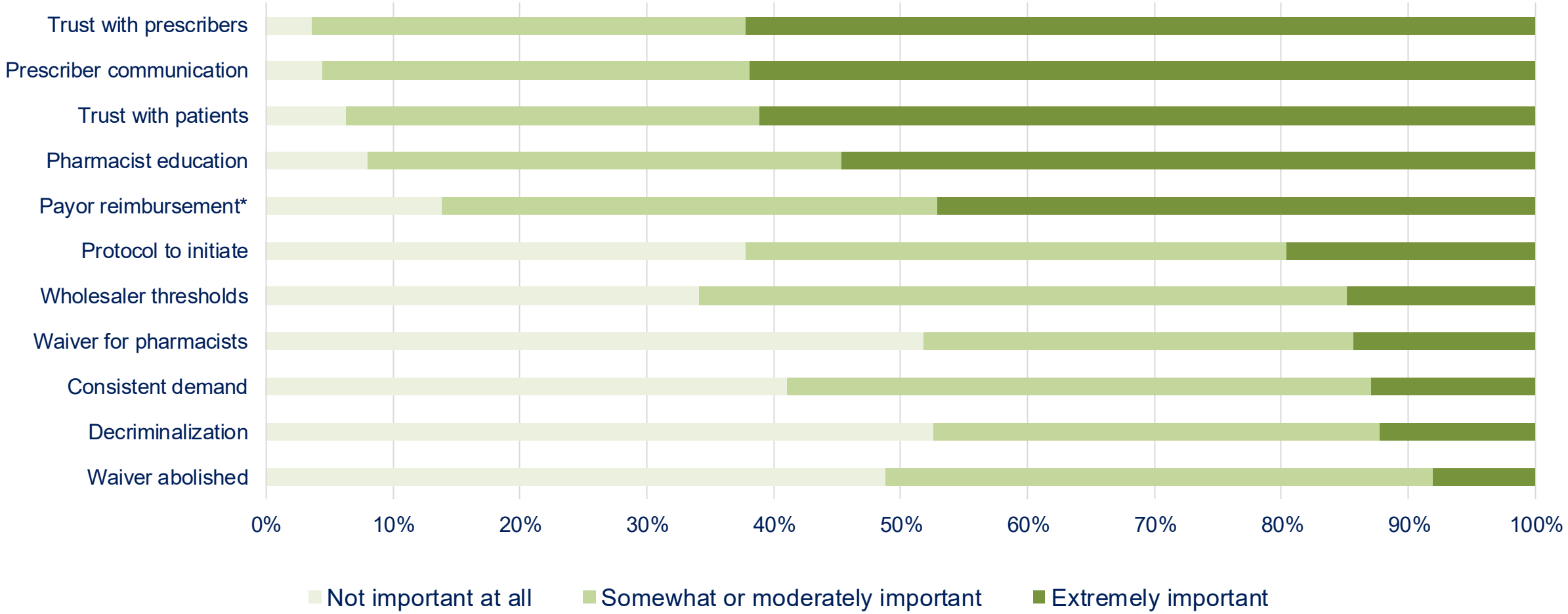
Facilitators of BUP Dispensing (n=225)



*significant variance by setting

CHN = chain, IND = independent, INST = institutional, ORV = overall

Hill LG, Light AE, Green TC, Burns AL, Sanaty Zadeh P, Freeman PR. Perceptions, policies, and practices related to dispensing buprenorphine for opioid use disorder: A national survey of community-based pharmacists. J Am Pharm Assoc. 2023;63(1):252-260 e6.

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Telehealth Challenges

- Telehealth prescribers and patients have reported challenges accessing BUP in pharmacies
- In addition to “red flag” concerns about the prescriber’s physical distance, some pharmacists are skeptical of low-barrier treatment methods
  - Long-term continuation
  - High-dose maintenance
  - High- and low-dose initiation
  - Tolerance of illegal drug use

- Textor L, Ventricelli D, Aronowitz SV. 'Red Flags' and 'Red Tape': Telehealth and pharmacy-level barriers to buprenorphine in the United States. Int J Drug Policy. May 10 2022;105:103703. DOI: 10.1016/j.drugpo.2022.103703.
- Hendy LE, Hill LG, Olguin A, et al. Pharmacy Barriers to Receiving Buprenorphine Among Patients Undergoing Telemedicine Addiction Treatment. *JAMA Netw Open*. Aug 1 2025;8(8):e2527418. doi:10.1001/jamanetworkopen.2025.27418

Naloxone and Syringes

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Pharmacist Provision of Naloxone

- As of 8/1/23, every U.S. state had a law facilitating direct distribution of NX by pharmacists
  - Laws providing greater autonomy to pharmacists are associated with reduction in overdose mortality
- As of 1/1/23, 18 states had a law requiring prescribing, dispensing, or offering NX to specific patients
  - Laws mandating co-prescribing of NX have been associated with a 255% increase in NX dispensing

- Lieberman A, Davis C. Legal Interventions to Reduce Overdose Mortality: Naloxone Access Laws. The Network for Public Health Law. Published October 31, 2024. Accessed May 1, 2025. https://www.networkforphl.org/resources/legal-interventions-to-reduce-overdose-mortality-naloxone-access-and-good-samaritan-laws/
- Abouk R, Pacula RL, Powell D. Association Between State Laws Facilitating Pharmacy Distribution of Naloxone and Risk of Fatal Overdose. JAMA Intern Med. Jun 1 2019;179(6):805-811.
- Hill LG, Reveles KR, Evoy KE. State-level approaches to expanding pharmacists' authority to dispense naloxone may affect accessibility. JAMA Intern Med. 2019;179(10):1442-3.
- Lieberman A, Davis C. Naloxone Prescription Mandates. Published September 17, 2024. Accessed May 1, 2025. https://www.networkforphl.org/resources/naloxone-prescription-mandates/
- Green TC, Davis C, Xuan Z, Walley AY, Bratberg J. Laws Mandating Coprescription of Naloxone and Their Impact on Naloxone Prescription in Five US States, 2014-2018. Am J Public Health. 2020;110(6):881-887.
- Sohn M, Talbert JC, Huang Z, Lofwall MR, Freeman PR. Association of Naloxone Coprescription Laws With Naloxone Prescription Dispensing in the United States. JAMA Netw Open. 2019;2(6):e196215.

Naloxone Availability

Systematic Review and Meta-Analysis of 30 Audit Studies of Naloxone Availability in Community Pharmacies, 2015–2022

Outcome	OVR	CHN	IND	P-value
NX in stock	**62.8%** (26.4–96.1%)	**69.7%** (35.4–89.1%)	**36.4%** (19.1–89.7%)	**<0.0001**
NX without Rx	**62.9%** (23.5–97.0%)	**67.4%** (31.6–89.0%)	**22.2%** (7.5–77.8%)	**<0.0001**
Composite	**51.9%** (21.1–89.6%)	**64.0%** (35.4–86.1%)	**20.2%** (11.7–53.0%)	**<0.0001**

CHN = chain, IND = independent, NX = naloxone, OVR = overall, RX = prescription

Lai RK, Friedson KE, Reveles KR, et al. Naloxone accessibility without an outside prescription from U.S. community pharmacies: A systematic review. *J Am Pharm Assoc*. 2022;62(6):1725-1740.

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Opioid Overdose Reversal

OTC

- Naloxone 3mg nasal spray (RiVive®)
- Naloxone 4mg nasal spray* (Narcan® + generics)

Rx

- Naloxone 0.4mg vial
- Naloxone 8mg nasal spray (Kloxxado®)
- Naloxone 5mg auto-injector (Zimhi®)
- Nalmefene 2.7mg nasal spray (Opvee®)
- Nalmefene 1.5mg auto-injector (Zurnai™)

*OTC version available for sale since Sep 2023
OTC = over-the-counter, Rx = prescription

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Opioid Antagonist Arms Race

Stronger and longer-acting opioid antagonists have been developed and marketed for overdose reversal

- Evidence of need for these products is lacking
- Higher doses of naloxone are associated with more frequent and severe symptoms of opioid withdrawal
- Longer-acting opioid antagonists may have additional risks, especially in populations likely to decline hospital transport

- Hill LG, Zagorski CM, Loera LJ. Increasingly powerful opioid antagonists are not necessary. Int J Drug Policy. 2022;99:103457. doi:10.1016/j.drugpo.2021.103457
- Russell E, Hawk M, Neale J, et al. A call for compassionate opioid overdose response. International Journal of Drug Policy. 2024;133doi:10.1016/j.drugpo.2024.104587
- Stolbach AI, Mazer-Amirshahi ME, Nelson LS, Cole JB. American College of Medical Toxicology and the American Academy of Clinical Toxicology position statement: nalmefene should not replace naloxone as the primary opioid antidote at this time. Clin Toxicol (Phila). Dec 1 2023:1-4. doi:10.1080/15563650.2023.2283391

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Non-Rx Syringe Sales

- Injection drug use and rates of related infections (e.g., HCV, HIV, IE) have increased substantially over the past decade
- Surveys and purchase audits have consistently found pharmacists are wary to sell syringes to PWID
- A 2022 survey of 88 pharmacists in Pittsburgh, PA found:
  - 87% agreed non-Rx syringes reduce the spread of HIV
  - 73% had ever sold non-Rx syringes
  - 54% had refused to sell non-Rx syringes

- Fleischauer AT, Ruhl L, Rhea S, Barnes E. Hospitalizations for endocarditis and associated health care costs among persons with diagnosed drug dependence — North Carolina, 2010–2015. MMWR Morb Mortal Wkly Rep. 2017;66(22):569-73.
- Zibbell JE, Asher AK, Patel RC, et al. Increases in Acute Hepatitis C Virus Infection Related to a Growing Opioid Epidemic and Associated Injection Drug Use, United States, 2004 to 2014. Am J Public Health. Feb 2018;108(2):175-181. doi:10.2105/AJPH.2017.304132
- Russell DM, Meyerson BE, Mahoney AN, et al. Come back when you're infected: pharmacy access to sterile syringes in an Arizona Secret Shopper Study, 2023. Harm Reduction Journal. 2024;21(1)doi:10.1186/s12954-024-00943-w
- O'Brien C, Klipp S, Jawa R, Wilson JD. Community pharmacists' attitudes toward and practice of pharmacy-based harm reduction services in Pittsburgh, PA: a descriptive survey. Harm Reduction Journal. 2024;21(1)doi:10.1186/s12954-024-01018-60

HCV = hepatitis C virus, HIV = human immunodeficiency virus, IE = infective endocarditis, PWID = people who inject drugs, Rx = prescription

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Secret Shopper Audit

- Method: In-person purchase
- Timeframe: Feb – Apr 2024
- Population: 125 community pharmacies in Austin, TX
- Outcomes
  - OTC NNS: availability, cost, theft-deterrence
  - Non-Rx syringes: success, cost, barriers

NNS = naloxone 4mg nasal spray, OTC = over-the-counter, Rx = prescription

Loera LJ, Lines JE, Mayberry SR, Hilzendager SA, Ferguson AP, Hill LG. Over-the-Counter Naloxone and Nonprescription Syringe Availability in Community Pharmacies. JAMA Netw Open. Feb 3 2025;8(2):e2458095. doi:10.1001/jamanetworkopen.2024.58095

Table 1. Over-the-Counter Naloxone Availability in 125 Pharmacies

Variable	Pharmacies, No. (%)		
	Any	Branded	Generic
Location on shelf for product	69 (55.2)	69 (55.2)	12 (17.4)
Theft deterrent measures[a]	35 (50.7)	35 (50.7)	6 (50.0)
Alarm sensor	17 (48.6)	17 (48.6)	1 (16.7)
Redeemable cards	11 (31.4)	11 (31.4)	3 (50.0)
Lock box	8 (22.9)	8 (22.9)	2 (33.3)
At least 1 physical box in stock	45 (65.2)	45 (65.2)	1 (8.3)
Available boxes of product, median (range)	4 (1-10)	4 (1-7)	10 (NA)
Cost, median (range), US $	44.99 (39.99-49.99)	44.99 (44.97-49.99)	39.99 (39.99-39.99)

Abbreviation: NA, not applicable.

[a] The number of cases in which at least 1 theft deterrent measure was identified. This may be an underestimate given some measures are only identifiable when physical boxes are in stock.

Table 2. Nonprescription Syringe Availability in 125 Pharmacies

Variable	Pharmacies, No. (%)
Successful purchase	73 (58.4)
Cost, median (range), US $	3.19 (0-45.95)[a]
Reasons for denial	
Injectable medication prescription required	46 (88.5)
Pharmacy does not sell syringes	3 (5.8)
Syringes currently out of stock	3 (5.8)

[a] The range reflects 2 pharmacies who offered a free 10-pack and 7 pharmacies who indicated they would only sell boxes of 100 syringes.

PhARM-OUD Guideline

Developed in collaboration with NABP and NCPA

University of Pittsburgh®

Implementation and Research Center for Healthy Communities

PhARM-OUD Recommendations

1. Maintenance pharmacotherapy with buprenorphine

Pharmacists should maintain a sufficient supply of buprenorphine in their pharmacies and be willing to dispense buprenorphine to patients with OUD. **Declining to dispense buprenorphine can lead to interruptions in OUD treatment, force patients into withdrawal, and increase risk of recurrent opioid use, and death.**

2. Potential indicators of misuse or diversion and prescription drug monitoring programs

Pharmacists should use their state's PDMP, where operational and available, to make informed buprenorphine dispensing decisions. **The information in the PDMP profile should be used as a supplement, rather than as a substitute for clinical judgement.**

Some of these recommendations have been paraphrased for brevity

Varisco TJ, Fish H, Bolin J, Dadiomov D, Hill LG, Essien E, Wanat MA, Ginsburg D, Waggener J, Thornton D. The pharmacy access to resources and medication for opioid use disorder (PhARM-OUD) guideline: A joint consensus practice guideline from the National Association of Boards of Pharmacy and the National Community Pharmacists Association. DOI: 10.52713/PhARM-OUD.

PhARM-OUD Recommendations

3. Early refills

Occasional requests to refill buprenorphine early are unlikely to indicate misuse of buprenorphine... Before making a dispensing decision, pharmacists should discuss the context of the request with the patient, contact the prescriber, and document their rationale for dispensing or declining the prescription.

4. Telehealth

Pharmacists should dispense buprenorphine prescriptions issued by telehealth prescribers if they are legitimate, and the pharmacist can fulfill their corresponding responsibility. **Pharmacists are encouraged to evaluate telehealth prescriptions in the same manner and to the same standard that they would prescriptions originating from in-person encounters.**

Some of these recommendations have been paraphrased for brevity

Varisco TJ, Fish H, Bolin J, Dadiomov D, Hill LG, Essien E, Wanat MA, Ginsburg D, Waggener J, Thornton D. The pharmacy access to resources and medication for opioid use disorder (PhARM-OUD) guideline: A joint consensus practice guideline from the National Association of Boards of Pharmacy and the National Community Pharmacists Association. DOI: 10.52713/PhARM-OUD.

PhARM-OUD Recommendations

5. Buprenorphine monoproduct

Current clinical evidence supports the efficacy of buprenorphine monoproduct for the treatment of OUD. **Pharmacists may discuss the indication for monoproduct with the prescriber but should not prefer combination products to monoproduct.**

6. Optimizing the safety and effectiveness of buprenorphine pharmacotherapy

Pharmacists and pharmacy technicians should optimize the quality of care for persons prescribed buprenorphine:

- Counsel on effects, storage, and interactions
- **Offer to dispense naloxone**

Some of these recommendations have been paraphrased for brevity

Varisco TJ, Fish H, Bolin J, Dadiomov D, Hill LG, Essien E, Wanat MA, Ginsburg D, Waggener J, Thornton D. The pharmacy access to resources and medication for opioid use disorder (PhARM-OUD) guideline: A joint consensus practice guideline from the National Association of Boards of Pharmacy and the National Community Pharmacists Association. DOI: 10.52713/PhARM-OUD.

PhARM-OUD Recommendations

7. Care coordination and prescriber communication

Pharmacists can meet the comprehensive care needs of their patients and prevent interruptions in pharmacotherapy:

- CPAs to monitor buprenorphine
- Prepare for appropriate referrals
- **Pursue prompt communication with prescribers (NOT fax!)**
- **Consider dispensing partial supply**

8. Stigma toward persons with OUD

All pharmacy staff should approach persons living with OUD with empathy, compassion, and support, recognizing and addressing how their biases may impact their ability to provide care and make appropriate, patient-centered decisions. **Pharmacists should not require patients to transfer prescriptions for non-controlled substances to their pharmacy before dispensing buprenorphine.**

Some of these recommendations have been paraphrased for brevity

Varisco TJ, Fish H, Bolin J, Dadiomov D, Hill LG, Essien E, Wanat MA, Ginsburg D, Waggener J, Thornton D. The pharmacy access to resources and medication for opioid use disorder (PhARM-OUD) guideline: A joint consensus practice guideline from the National Association of Boards of Pharmacy and the National Community Pharmacists Association. DOI: 10.52713/PhARM-OUD.

PhARM-OUD Recommendations

9. Employer oversight

Pharmacy policies for buprenorphine dispensing should prioritize flexibility, allowing individual pharmacists to exercise their professional judgment when deciding whether to dispense a prescription for buprenorphine. **Pharmacy policies defined by numerical thresholds …should not be used to guide clinical decision making [or]…to deny …prescriptions.**

Note on declining to dispense

"In the rare case that a pharmacist feels that dispensing buprenorphine would not benefit their patient, would not be appropriate, or would otherwise cause harm, pharmacists should carefully document their decision and explain their rationale to the patient and prescriber as appropriate."

Some of these recommendations have been paraphrased for brevity

Varisco TJ, Fish H, Bolin J, Dadiomov D, Hill LG, Essien E, Wanat MA, Ginsburg D, Waggener J, Thornton D. The pharmacy access to resources and medication for opioid use disorder (PhARM-OUD) guideline: A joint consensus practice guideline from the National Association of Boards of Pharmacy and the National Community Pharmacists Association. DOI: 10.52713/PhARM-OUD.

Action Items

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Implementation and Research
Center for Healthy Communities

Pharmacist Support for People with OUD

University of Pittsburgh | Health Sciences School of Pharmacy

Stock and Dispense

- Maintain adequate stock of BUP formulations and strengths
- Keep at least one OTC naloxone nasal spray on the retail shelf
- Sell non-Rx syringes to customers who request them without interrogating

Engage Patients & Prescribers

- Offer naloxone with education to patients at risk for opioid-related harm
- Use non-stigmatizing terminology
- Treat BUP fills with appropriate urgency
- Contact prescribers directly with clinical questions rather than refusing to dispense

Apply Current Evidence

- Recognize high-dose maintenance, long-term continuation, and telehealth prescribing are not "red flags"
- Review and adhere to PhARM-OUD Guideline from NABP/NCPA
- Refer patients to appropriate resources, including harm reduction organizations

Advocate & Educate

- Document and report wholesaler threshold problems
- Pursue relevant continuing education
- Engage with your board of pharmacy and state professional associations