20th International Conference on HIV TREATMENT AND PREVENTION ADHERENCE

Implementation Determinants of HIV Testing and PrEP in Community Pharmacies in Philadelphia, PA

Cedric H. Bien-Gund, MD, MSCE,[1] Anna Sweeney, MS,[1] Brandon Ptak, MD,[1] Michelle Jeon, PharmD,[2] David Koren, PharmD,[3] Javontae Williams, MPH,[4] Kathleen A Brady, MD,[4] Jose Bauermeister, PhD,[1] Sarah Wood, MD, MSHP[5]

[1]University of Pennsylvania, Philadelphia, USA
[2]Philadelphia College of Pharmacy, Philadelphia, USA
[3]Temple University College of Pharmacy, Philadelphia, USA
[4]Philadelphia Department of Health, Philadelphia, USA
[5]Mount Sinai Hospital, New York, NY USA

Continuum 2025 • June 10-12, 2025 • San Juan

Punch line

- Barriers to implementing pharmacy-based HIV prevention services:
  - Legislative barriers
  - Concerns about reimbursement
  - High existing workload in pharmacies
- Facilitators include:
  - Culture shift in supporting new pharmacy services since COVID-19
  - Pharmacy HIV champions and supportive leadership
  - Multi-sectoral partnerships (pharmacy, academic, public health partners)
- Potential solutions and mitigating strategies:
  - Leverage CPAs and local standing orders in states with restrictive legislation
  - Clear blueprints and protocols

Background

Pharmacies can increase access to HIV prevention services, such as testing and PrEP

- **Non-stigmatized**, trusted and established resources in communities
- Pharmacies often have **longer working hours**
- **Already provide services** like vaccinations, naloxone, contraception
- **Experience** supporting medication adherence and persistence
- Pharmacists may see patients **1.5 to 10 times more frequently** than primary care providers

However, widespread implementation of pharmacy-based HIV services has been low in the US

- **Only 13 states** have statewide standing orders or protocols that allow pharmacists to start PrEP independently
- **Almost all states** permit use of collaborative practice agreements (CPAs), an agreement between pharmacists and primary care providers, to provide pharmacy-based care

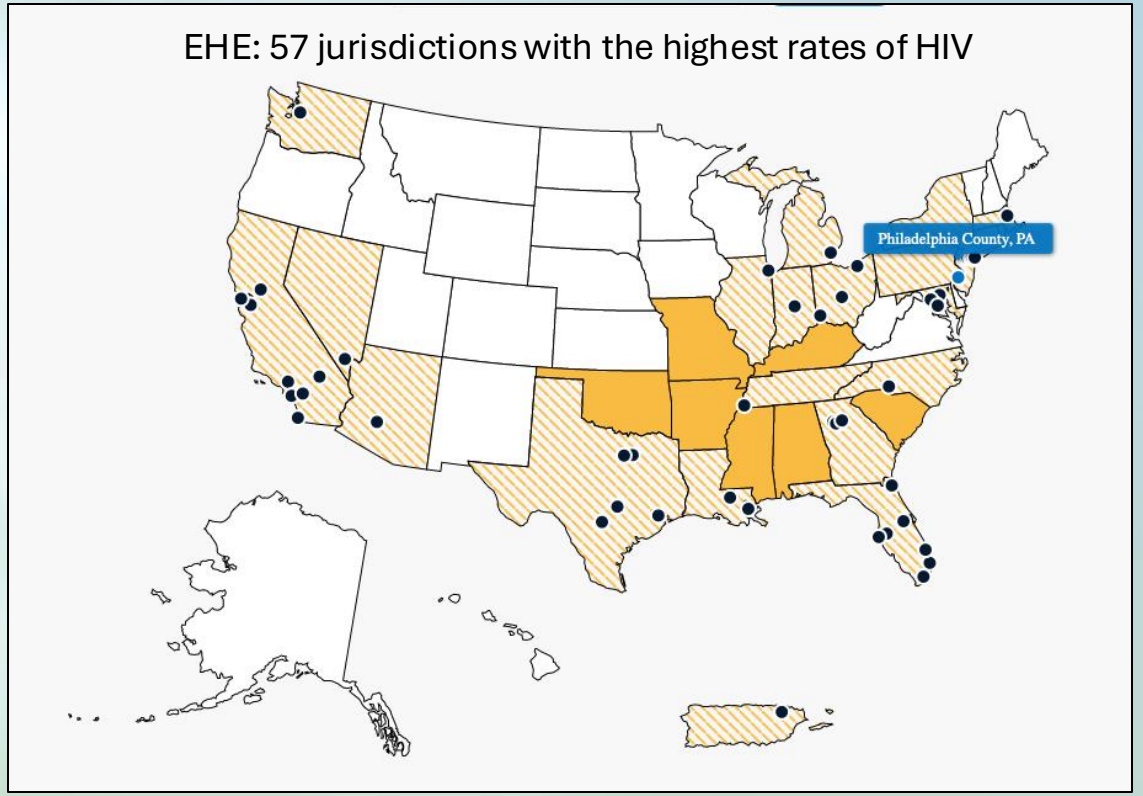
Tsukuyi et al, Can Pharm J, 2018; Pharmacists' Authority to Initiate PrEP and PEP and Engage in Collaborative Practice Agreements, NASTAD. Last updated August 19, 2024
https://nastad.org/resources/pharmacists-authority-engage-collaborative-practice-agreements-and-initiate-prep-pep-and

Study Objective

To assess implementation barriers and facilitators (determinants) of pharmacy-based HIV testing and PrEP initiation

Setting: Philadelphia, Pennsylvania

- Pop: 1.5 million, Metro area 6.2 million
- An Ending the HIV Epidemic (EHE) priority jurisdiction
- Metro area with the highest rate of STIs in the US in 2023
- 20,000 living with HIV
- In Pennsylvania: CPAs are allowed, but there is no statewide PrEP standing order or protocol



https://www.innerbody.com/std-testing/std-statistics, Ahead.hiv.gov, accessed November 20, 2024

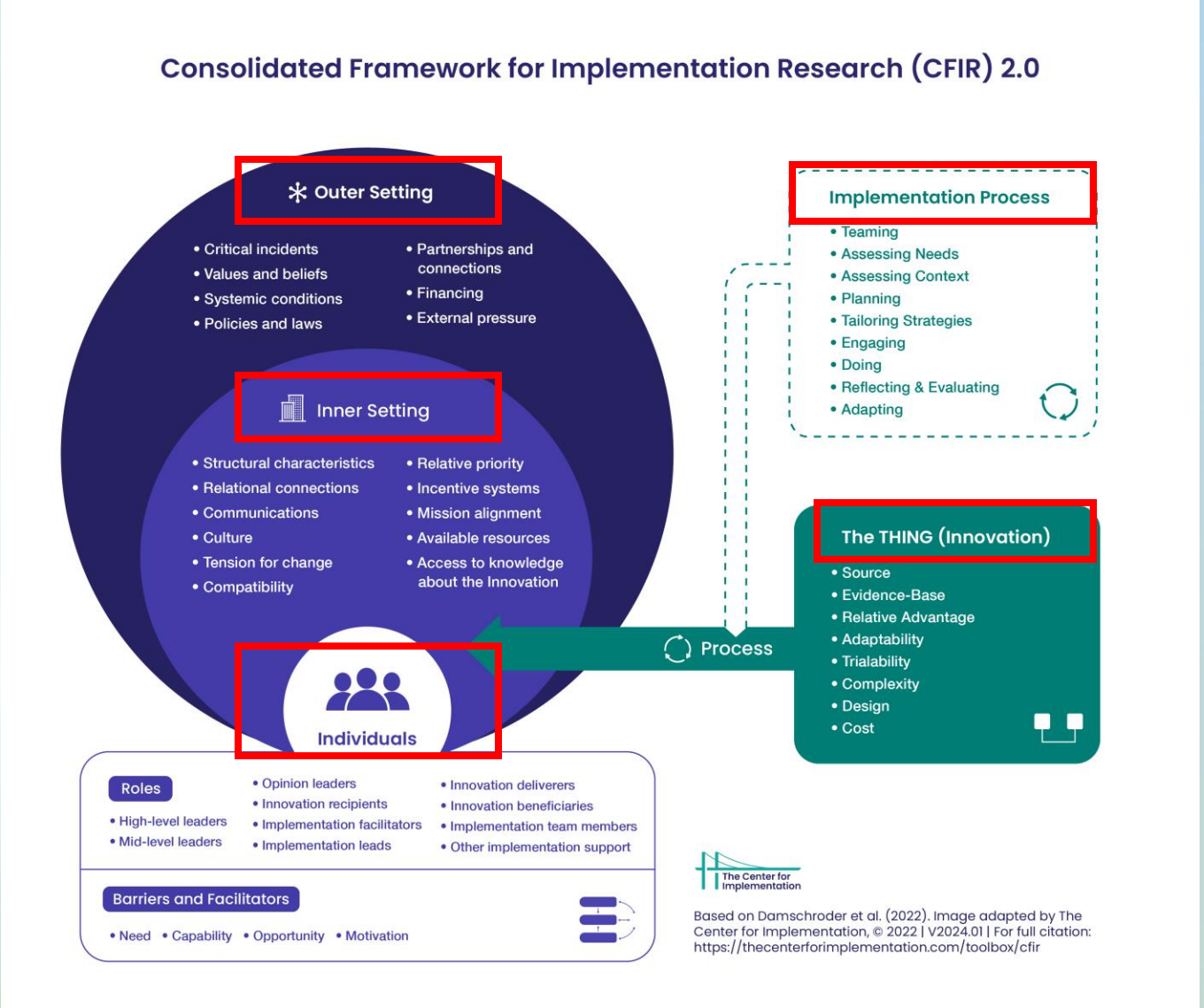
Methods

Consolidated Framework for Implementation Research (CFIR):

- A framework for understanding and analyzing contextual implementation determinants
- *Most health service interventions are not designed IN or FOR* the setting it will be used

5 Domains:

- The Innovation: HIV testing and PrEP in pharmacies (*Pharm-PrEP*)
- Outer Setting
- Inner Setting
- Individuals
- Implementation Process



CFIR 2.0. Adapted from Damschroder, L. J., Reardon, C. M., Widerquist, M. A. O., et al. (2022). https://thecenterforimplementation.com/toolbox/cfir

Methods

Mixed Methods: Exploratory, sequential study design

QUALITATIVE data

Purposively sampled:

- Pharmacists and pharmacy staff
- Public health and other implementing partners
- Interview guides based on CFIR
- Elicited potential solutions and mitigating strategies

Analysis

- Rapid deductive approach
- Interviews coded based on deductive CFIR constructs

QUANTITATIVE data

Online survey

Pharmacists and pharmacy trainees across variety of practice settings

- Survey items adapted from
  - CFIR
  - Proctor implementation outcomes on acceptability, feasibility, appropriateness

Analysis

- Descriptive statistics
- Calculated mean scores

Mixed methods analysis

- Identify key themes and corresponding survey measures
- Highlight solutions
- Assign valences for implementation determinants:

Green – Facilitator
Black – Facilitator or barrier
Red – Barrier

Results: Participant and pharmacy characteristics

QUALITATIVE

In-depth interviews (N=15)
12 Pharmacists, representing • Independent, community pharmacies • Retail pharmacies • Supermarket pharmacies • Clinic/hospital-associated pharmacies • 2 pharmacy residents
2 Public health partners
1 Pharmacy technician

QUANTITATIVE

Online Survey (N = 59)	N (%)
Age (median, IQR)	26 (23-32)
Female	42 (71%)
Race/Ethnicity	
Black, non-Latine	3 (5%)
Asian, non-Latine	16 (27%)
White, non-Latine	28 (47%)
Hispanic/Latine, any race	6 (10%)
Role	
Pharmacist Chain and standalone pharmacy Hospital and clinic-based pharmacy Specialty pharmacy Independent pharmacy	25 (42%) 6 (10%) 11 (19%) 2 (3%) 6 (10%)
Pharmacy Student	21 (36%)
Pharmacy Technician	12 (20%)

Pharmacies in Philadelphia

HIV testing

- **3 pharmacies provided HIV testing**
- All testing supported by EHE funding, all in community pharmacies
- Used rapid 3rd generation test

HIV PrEP

- **No pharmacies provided PrEP or PEP services**

Major legislative barriers, but can be surmounted

- In Pennsylvania, pharmacists not allowed to independently prescribe PrEP
- Restrictive state laws governing pharmacists' scope of practice

QUAL

"**In other jurisdictions, there could be a standing order,** and so anyone that pharmacist identified as being eligible for PrEP, they would be able to initiate that person on PrEP and maybe get the labs et cetera....
[But] if things don't change from a regulatory standpoint, **I think it might end up being like having the pharmacies work with [a] telePrEP program**"

- Public health implementing partner

Solutions and strategies proposed:

1. Collaborative practice agreements (CPA)
   - Permitted in almost all states, but need to be patient-specific in Pennsylvania (need a provider interaction, e.g., telehealth)
2. Creation of local standing order
   - Used by public health agencies in Pittsburgh for STI treatment and prevention

Reimbursement and cost concerns

- Skepticism about adequate reimbursement
- Pharmacists can enroll as providers and bill Medicaid for services, but pharmacists surveyed had not enrolled in training

QUAL

"It's all about the reimbursement. So, I think that's definitely something that we need… is funding or some structure in which our businesses would be able to provide the service and also not lose money from it."

- Community Pharmacist manager

QUANT

Online survey measure (1 = Strongly Disagree, 5 = Strongly Agree)	Survey measure mean (standard deviation)
I believe I would be reimbursed for time spent performing HIV testing.	2.92 (1.19)
I believe I would be reimbursed for time spent counseling for PrEP.	2.90 (1.24)

Solutions and strategies proposed:

1. Develop guidance for pharmacists to obtain provider status
2. Leverage 340B partnerships between pharmacies and clinical partners

Supportive pharmacy culture

- COVID-19 pandemic expanded perceptions of the role of pharmacists
- Pharmacy leadership supportive of new initiatives, providing care to priority populations
- Theme consistent across independent, specialty, and supermarket-based pharmacies

QUAL

"Pharmacies have been more involved in providing services since COVID… **COVID helped normalize pharmacies offering additional services**, like vaccines."

- Community Pharmacist

"Having pharmacy owners that are the actual proprietor and **the service provider having them be a champ for HIV services and HIV testing, a lot of them would like to do more**."

- Public health HIV prevention coordinator

QUANT

Online survey measure (1 = Strongly Disagree, 5 = Strongly Agree)	Survey measure mean (standard deviation)
Leadership at my organization is receptive to **new ideas to improve access to care.**	4.08 (0.90)
My organization provides adequate training to provide services for **sexual and gender minority populations** (e.g., LGBTQ+ populations).	3.31 (0.63)
My organization provides adequate training to provide services for **racial and ethnic minority groups.**	3.73 (0.45)

Adapting HIV prevention services to pharmacies

- Concerns about workload, especially drop-in appointments
- Confidence counseling on adherence, side effects, persistence on PrEP
- Less confident initiating medications

QUAL

”I'm afraid to give a test… **I'm really busy…** they want me to fill out a 5-page form [for each tester]! I can't do that… **I barely have time to give a flu shot.”**

- Community Pharmacist

“I just want to emphasize that if the pharmacist is the one initiating the treatment, they’re not used to doing that. **We’re trained to follow orders like the military,** and if anything happens, it’s the doctor’s fault… the **mindset might have to be changed a little bit**.”

- Pharmacist and Co-owner, community pharmacy

QUANT

Online Survey measures (1=Strongly disagree, 5=strongly agree)	Survey measure mean agreement score (SD)
My pharmacy has enough staffing to provide **drop-in PrEP visits**.	2.86 (1.19)
My pharmacy has enough staffing to provide **scheduled PrEP visits**.	3.21 (1.20)
I have the time to counsel clients on PrEP during my regular workday.	3.29 (1.14)

Solutions and strategies proposed:

1. Offer HIV services during specific hours or through appointments
2. Clear protocols and blueprint when and how to start PrEP

Results: Acceptability and feasibility

- **High levels of acceptability**

But

- **Lower levels of feasibility**

Measure type	Measure, by participant workplace	Mean agreement score (SD) 1 = completely disagree, 5 = completely agree
Acceptability	I like the idea of Pharmacist-initiated PrEP (Pharm-PrEP).	4.23 (0.82)
	Chain Pharmacy	4.07 (1.00)
	Independent Pharmacy	3.80 (0.92)
	Clinic/Hospital-based Pharmacy	4.43 (0.69)
	Specialty Pharmacy	4.40 (0.55)
Acceptability	I would welcome Pharm-PrEP in my pharmacy.	4.20 (0.81)
	Chain Pharmacy	4.07 (1.00)
	Independent Pharmacy	3.90 (0.88)
	Clinic/Hospital-based Pharmacy	4.37 (0.74)
	Specialty Pharmacy	4.20 (0.45)
Feasibility	Pharm-PrEP seems implementable, that the program can work and function, at the pharmacy I work in.	3.57 (1.22)
	Chain Pharmacy	3.29 (1.20)
	Independent Pharmacy	3.40 (1.58)
	Clinic/Hospital-based Pharmacy	3.81 (1.08)
	Specialty Pharmacy	3.40 (1.34)
Feasibility	Pharm-PrEP seems easy to do in the pharmacy I work in.	3.43 (1.16)
	Chain Pharmacy	3.07 (1.21)
	Independent Pharmacy	3.10 (1.37)
	Clinic/Hospital-based Pharmacy	3.67 (1.04)
	Specialty Pharmacy	3.80 (1.10)

Survey measures adapted from Proctor implementation outcomes for acceptability and feasibility

Summary: Implementation Determinants

#continuum2025

Outer Setting

- Competitive advantage of offering PrEP as additional service
- Legal restrictions on pharmacist-initiated PrEP
- Complexity to obtain reimbursement

Inner Setting: Pharmacies

- Pharm-PrEP fits within organization culture
- Supportive pharmacy culture
- Physical infrastructure to support Pharm-PrEP
- Hesitancy to providing new service
- High work burden

Individuals: Pharmacists

- Possess clinical skills and knowledge, confidence counseling on medications
- Need mindset shift to offer new services
- Lack confidence counseling on HIV testing, initiating new meds

Implementation Process

- Addressing stigma and equity in pharmacy
- Early adopters and champions
- Leverage existing programs and partners (e.g., rapid HIV testing programs)
- Collaborations with implementing partners

Innovation: Pharmacy-based HIV services (Pharm-PrEP)

- Clear and simple protocols
- Adaptability of intervention to pharmacy
- Complexity of intervention

Key:
Green – Facilitator
Black – Facilitator or barrier
Red – Barrier

Determinants organized by CFIR domain

Limitations

- Limited to single metropolitan area
  - State with relatively restrictive laws governing pharmacist authority to prescribe PrEP
  - ~ 37 states do not have broad PrEP prescription laws
- Small sample size, quantitative analysis not designed to assess statistical differences
- Did not interview potential pharmacy clients

Acknowledgements

University of Pennsylvania

- José Bauermeister, MPH, PhD
- Sarah Wood, MD MSHP
- Anna Sweeney, MS
- Brandon Ptak, MD
- Penn CFAR

Philadelphia Department of Health

- Kathleen Brady, MD
- Javontae Williams, MPH

ACME and Albertsons supermarkets

- Desiree Surplus, PharmD
- Krista Hein, PharmD

SunRay Pharmacy / Saint Joseph's University

- Jimmy Luu, PharmD
- Michelle Jeon, PharmD

Temple University

- David Koren, PharmD

Funding sources

- Penn CFAR EHE supplement funding (P30 AI 045008)
- NIMH (K23MH131568-01)

Contact:
Cedric.bien-gund@pennmedicine.upenn.edu