Evaluation of the impact of a student pharmacist-run HIV testing initiative on the implementation of a youth friendly pharmacy concept: Final Report

Introduction

Most recent data indicate that Philadelphia has a current HIV prevalence of 1.3% of the population. Despite the heavy volume of intravenous drug use within Philadelphia, the rate of new diagnoses among people who inject drugs (PWID) is actually declining (current data suggests less than six percent) likely due to syringe exchange programs, whereas HIV diagnoses among adolescents aged 15 to 24 is climbing (26.9% of new diagnoses).[1] The stigma around HIV, sexual orientation, and gender identity complicates discussion about sexual health between youth and providers. Furthermore, adolescents in general are less likely to utilize health care services than other ages groups, and those already living with HIV are more likely to be socioeconomically disadvantaged.[2] Previous literature has identified pharmacies and pharmacy personnel as valuable sexual and reproductive health resources for adolescents with most pharmacies already meeting some youth-friendly criteria.[3,4] However, it has also been found that increased access to reproductive services such as the provision of contraception does not increase utilization of these services.[5] This underscores the need to identify strategies that can be employed by pharmacies to increase use of contraception and point-of-care testing by adolescents.

The Youth-Friendly Pharmacy (YFP) model strives to accomplish this goal and is currently being implemented in Washington State where pharmacists are able to prescribe contraception. YFPs value the confidentiality of the adolescent and take into account sensitive information that they may not want to discuss with their parents such as reproductive health.[6] Other desired characteristics of YFPs include flexible services available without an appointment, locations easily accessible by public transportation, and a welcoming, youth-focused environment.[4,7]

Objectives

The objectives of this project are to:

1.) Increase adolescents' access to free, confidential HIV testing
2.) Determine factors that influence adolescents' participation in rapid HIV testing events
3.) Evaluate adolescents' existing knowledge regarding HIV prevention, transmission, and treatment
4.) Obtain adolescents' perceptions regarding pharmacists' approachability and the concept of providing YFP services.

Methods

Investigators attended a series of HIV training programs by the Philadelphia Department of Public Health in August and October 2019. This training provided foundational knowledge of HIV prevention, transmission, and treatment, as well as the importance of linkage to care. The University of the Sciences Clinical Laboratory Improvements Act (CLIA) certificate of waiver was updated to include HIV testing. A referral system was developed with the Adolescent Initiative

at the Children's Hospital of Philadelphia, Immunodeficiency Center with Einstein Healthcare Network, and the Dorothy Mann Center HIV Program of Drexel University at St. Christopher's Hospital for Children. This referral system included direct communication with support staff at the medical centers, transportation via rideshare, and medical services for confirmatory testing and treatment as well as pre-exposure prophylaxis (PrEP). Areas with a high HIV prevalence were identified and partnerships were formed with local businesses in these areas to conduct a needs assessment and the HIV testing events.

Needs Assessment Survey

A 33-question Needs Assessment Survey was administered to adolescents in West and North Philadelphia neighborhoods to determine the factors that would increase adolescents' participation in rapid HIV testing events and evaluate their HIV knowledge. The survey was completed via an iPad or participants' smart phones using Qualtrics. Investigators partnered with a local ice cream shop in West Philadelphia and a local pizza shop in North Philadelphia to provide incentives for survey completion.

Community HIV Testing Events

During Phase 1, HIV testing events were scheduled to occur at local businesses frequented by adolescents, based on the results of the Needs Assessment Survey, in Spring 2020. During Phase 2, HIV testing events will occur within select community pharmacies in Fall 2020. Investigators purchased INSTI HIV-1/HIV-2 antibody tests (bioLytical® Laboratories) and OraQuick® ADVANCE (OraSure Technologies, Inc.) rapid HIV-1/HIV-2 antibody tests. Adolescents were given the option to receive HIV testing and complete a survey (Testing/PrEP Survey), or to just complete the Testing/PrEP survey to receive the incentive from the local business. While the test was processed, the researchers provided information regarding risk behaviors. If a test result was non-reactive, participants would be educated on prevention services and PrEP. If a test result was reactive, investigators would link participants to care by contacting the participant's preferred medical center to schedule an appointment for confirmatory testing and arranging for transportation via rideshare. Advertising for these events was done via Instagram through the project account: @pyt_phillyyouthtesting. Investigators did not originally budget for paid advertising to promote their posts on this platform.

Testing/PrEP Survey

A 44-question Testing/PrEP Survey was administered to adolescents during the HIV testing events. The purpose of this survey was to identify high-risk behaviors of participants and interest in PrEP to tailor counseling to the individual's needs. Additionally, the survey collected information regarding the participant's previous HIV testing history, and perceptions about pharmacists' approachability and their likelihood to utilize pharmacy services for sexual and reproductive health needs in the future. The Testing/PrEP Survey also contained the same knowledge questions regarding HIV prevention, transmission, and treatment as the previously administered Needs Assessment Survey.

Youth Friendly Pharmacy Survey

A 39-question survey was created to be administered to pharmacists at the selected youth-friendly pharmacy pilot stores during Phase 2 of the project in Fall 2020. This survey will be used to determine the current level of youth-friendliness of the pharmacy and the pharmacists' confidence in providing YFP services and will elicit any perceived barriers with providing YFP services.

Implementation of Pharmacy Services

A CLIA waiver was obtained for Sunray Pharmacies to cover testing within the community pharmacy. Investigators initially set up HIV testing on select days when both JJ and EH as well as additional student aids were available, and services were advertised via social media. Candy incentives were available to be offered to participants following testing. Finally, due to a lack of turnout of adolescents and increased interest of adults who were being tested for hepatitis C offered within the community pharmacy, services were expanded to adult patients.

Results

Needs Assessment Survey

The Needs Assessment Survey was administered to a total of 55 adolescents. The mean age of respondents was 16 years, and the majority were black (67.3%), heterosexual (72.7%), and female (69.1%). Approximately half of participants had reported being sexually active either currently or previously and 70% of those that had been sexually active reported engaging in unprotected sex. No participants reported intravenous drug use. Participants answered an average of 4.48 ±1.51 (out of 5) knowledge questions correctly. Table 1 includes results from the knowledge-based questions of both the Needs Assessment Survey and Testing/PrEP Survey.

Community HIV Testing Events

Three community-based HIV testing events were scheduled for Spring 2020 at a pizza shop, public library, and recreation center across the city of Philadelphia. Investigators were only able to conduct one testing event at the pizza shop as the other two events were canceled due to the coronavirus disease (COVID-19) pandemic. During the pizza shop event, outreach staff from the Immunodeficiency Center with Einstein Healthcare Network joined investigators JJ and EH as well as two student pharmacist volunteers from the Philadelphia College of Pharmacy University of the Sciences. The two student volunteers and outreach staff engaged with 59 participants at this event. Three adolescents and one parent opted to be tested. All participants opted to be tested using the INSTI HIV-1/HIV-2 rapid antibody test (bioLytical® Laboratories).[8] All results of the tests performed were non-reactive.

The paid advertisement was displayed on Instagram 113,605 times, reached 28,576 people, and resulted in 373 promotion clicks and 411 profile visits. A breakdown of audience characteristics, provided by Instagram, can be found below.

Testing/PrEP Survey

The Testing/PrEP Survey was administered to 51 participants at the pizza shop event; six respondents indicated that they had previously taken the Needs Assessment Survey. The majority of participants were black (54.9%), female (60.8%), and heterosexual (62.7%) with a mean age of 16 years. Majority of respondents (68.6%) had never been sexually active. Of those currently or previously sexually active, nearly half had previously engaged in unprotected sex. Investigators also found that 56.9% of respondents had never been tested for HIV. The most common barrier to receiving testing was not knowing where to get a test.

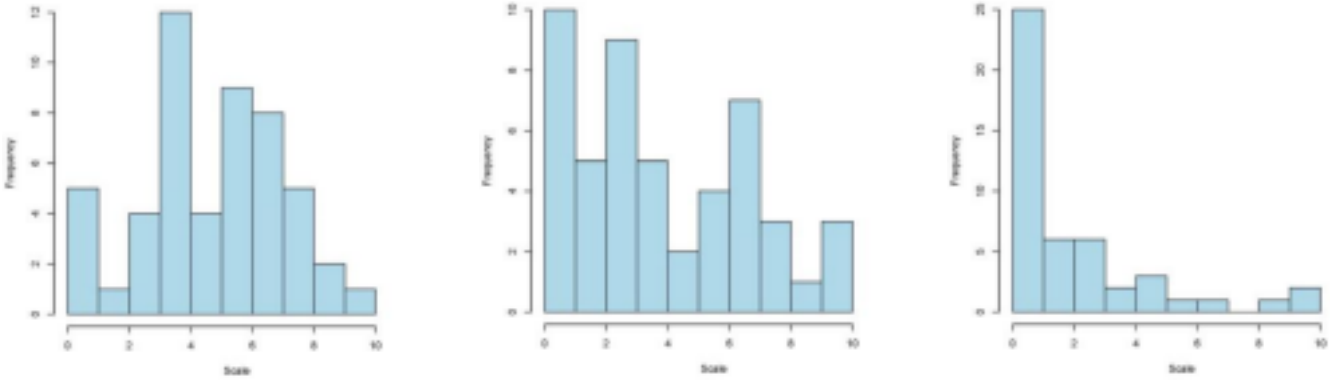
Participants answered an average of 2.55 ±0.78 (out of 5) knowledge questions correctly. Subjects that had previously received an HIV test felt more confident about their knowledge of HIV transmission than those who never received a test (p=0.009), however, there was no difference in their performance on the corresponding knowledge questions of the survey. Most participants perceived pharmacists to be approachable and accessible and would be likely to receive services such as obtaining contraception, vaccines, and screenings for sexually transmitted infections at the pharmacy. Female participants would be more likely to seek any general advice from their pharmacist (p=0.014) and ask a pharmacist question about medications (p=0.022) compared to male peers. Those who previously received an HIV test indicated higher levels of comfort with pharmacists' approachability (0.037) and accessibility (0.023) compared to peers who never received HIV testing.

Table 1. Adolescents' HIV Knowledge

Questions	Correct Responses n (%) (n=100) *
HIV can be transmitted in the following bodily fluids (select all that apply): Correct responses: blood, breast milk, semen, vaginal secretions	7 (7%)
Can HIV be transmitted by oral sex? Y	91 (91%)
Can HIV be spread from an infected person to someone else, even if the level of the HIV in the person's body cannot be detected by laboratory tests? N	20 (20%)
Can HIV-positive individuals that are treated for the virus expect to live as long as HIV negative individuals? Y	68 (68%)
Can medicines be taken to prevent being infected with HIV? Y	77 (77%)

* Responses from participants indicating that they had taken a survey with PYT prior to this survey were excluded from this data due to repetition of identical knowledge questions.

Figure 1. "On a Scale of 1-10, how confident are you about your knowledge of…"



HIV transmission? Living with HIV? PrEP?

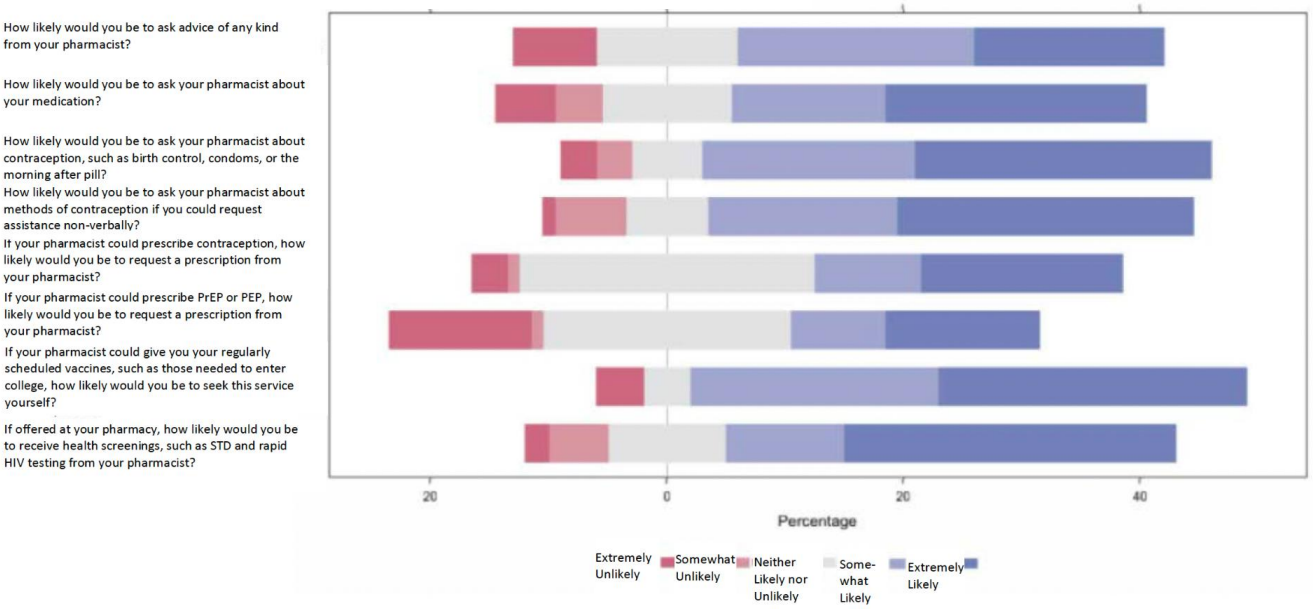
Table 2. Knowledge Confidence Levels

Question: On a scale of 1-10, how confident are you about your knowledge of:	Mean Confidence Rating	Standard Deviation
HIV transmission?	5.18	2.29
Living with HIV?	4.31	2.82
PrEP?	2.21	2.65

Table 3. Adolescents' Perceptions of Pharmacists

Question	Median response	Interquartile range
On a scale of 1-5, how approachable (or friendly) do you think pharmacists are?	3	(2-5)
On a scale of 1-5, how accessible (or available) do you think pharmacists are?	4	(2.5-5)

Figure 2. Likeliness to Utilize Pharmacist-Provided Services



Implementation of Pharmacy Services

In total, 47 rapid HIV tests were conducted within the community pharmacy. The majority of tests (n=44) were non-reactive. Of the two indeterminate results, neither participant wished to retest. The participant with the reactive test result was immediately linked to care at the partner clinic for follow-up care and was provided with transportation for these services. Testing was completely anonymous and demographics of participants who received testing were not collected.

Test Results	**n**
Total	47
Non-reactive	44
Indeterminate	2
Reactive	1

Project Expenses

Item	**Requested/ Budgeted**	**Actual Cost/ Spent**	**Comments**
Folding Table	84.88	52.65	
Folding Chairs (Set of 4)	72.99	69.83	

Orasure Test	2000	250	Investigators decided to purchase more INSTI tests than OraSure due to quick processing time (60 sec vs 20 min)
Orasure Control Solution	75	25	
INSTI Test	0	1299	
INSTI Control Solution	0	76.99	
Biohazard Bin	50	25.93	
Needs Assessment Survey Incentive	250	111.52	
Testing Incentive	1000	190	
Transportation to medical care for HIV positive individuals (Uber)	150	0	No participants have screened reactive
Lock box	0	24.81	Storage for screening forms with patient information
Instagram Marketing	0	274.04	Investigators did not originally budget for social media marketing

Challenges Faced

Several community HIV testing events were planned for late Spring 2020; however, these were canceled due to the COVID-19 pandemic. HIV testing was then resumed within the pharmacy once it was safe enough for both investigators and participants to do so, rather than conducting further community events given the time constraints of our funding period.

The investigators had also distributed surveys to evaluate the youth-friendliness of pharmacies selected to participate in the piloting of youth-friendly pharmacy services in Philadelphia via the Youth Friendly Pharmacy Survey. This process was also delayed by both COVID-19 and the looting/burning of several stores chosen to participate during the Philadelphia protests, both of which likely contributed to the poor response rate of this survey (n=1).

Discussion

To our knowledge this is the first report of the implementation of a community outreach initiative targeting adolescents for rapid HIV testing. Despite its shortcomings during the funding period, there is an opportunity for this model to be successful. This project was interrupted by the COVID-19 pandemic which interrupted medical services in all healthcare settings. Additionally, efforts in certain parts of the city were hindered due to unfavorable outcomes in a previous attempt to offer HIV testing to high school students in the northeast section of the city by a city council member.

A limitation to the external validity of the current results for the Testing/PrEP Survey identified by investigators is that this event took place on the school district's report card day which grants early dismissal to all students. Students remaining at the school are likely to be those involved in extracurricular activities and therefore, would be less likely to participate in risky behaviors. [9]

The most commonly reported barrier to HIV testing was not knowing where to be tested, as identified by responses of the Testing/PrEP Survey. This finding challenges the verbal discussions held between participants of the pizza shop event with the two student pharmacist volunteers and outreach staff. Participants reported that HIV testing is offered within their high school annually. Conversely, during the planning of this initiative, investigators were informed by local adolescent HIV clinics that HIV testing within a certain distance of schools within the School District of Philadelphia was prohibited. Overall, this statement and the results from the survey suggest that adolescents are in need of more accessible, and well-advertised HIV testing services within their communities.

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