



HIV Prevention on HBCU Campuses

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Abstract

Howard University College of Medicine, with funding from Gilead Sciences, launched the Historically Black Colleges and Universities Human Immunodeficiency Virus (HBCU-HIV) Prevention Project (H2P) to address HIV prevention on the campuses of HBCUs. CDC reports indicate that Sexually Transmitted Illness (STI) cases in the United States have reached record Levels. And while chlamydia, syphilis, and gonorrhea can be cured with antibiotics, if left undiagnosed or untreated, these diseases have the potential to severely impact public health. Studies have also found that HBCU students are knowledgeable about HIV transmission. However, despite this knowledge, they engage in high risk behaviors that belie those findings. Furthermore, given that campus health providers tend to be generalists and not HIV specialists, they constitute a population that should benefit from an intervention designed to inform them about the risks and benefits of HIV prevention, counseling, management.

The specific aims of the project were to increase awareness among students and student health services providers about the importance of HIV prevention, testing and counseling as well as the use of the biomedical HIV prevention tool Pre-Exposure Prophylaxis (PrEP) as a preventive strategy in the fight to protect individuals who are HIV negative.

H2P targeted a total of 237 health care providers over the one year course of the project from academic institutions, health departments, hospitals and Federally Qualified Health Centers (FQHC) participated. The majority of clinicians who participated in the HIV-focused one hour Continuing medical Education (CME)-approved trainings via webinar were African American/Black (90%) followed by Caucasian/White (7%); Hispanic/Latino (2%) and Asian Pacific Islander (1%) participated in the trainings. Across the board (100%) participants exhibited a better understanding of the webinar subject matter after the training than they did prior to the training. And, 80% surveyed stated that they strongly agreed that they could use the information and skills they gained from the webinar in their professional practice.

A total of 868 students from three universities gave consent to participate in this study. However, only 134 completed the follow-up survey. As expected, the majority of survey respondents were African American/Black (65%). The data show that the student intervention had the greatest effect on condom use; the use of drugs or alcohol prior to sexual intercourse; beliefs about the efficacy of HIV drugs when used consistently; awareness of PrEP; and willingness to take PrEP.

The baseline data reveal that at least half (50%) of the students surveyed at each institution doubted the efficacy of consistent use of HIV medications. However, at follow-up there was a statistically significant change with roughly two thirds (66%) agreeing that consistent use of the medications could yield positive outcomes. With respect to risk behavior, the most significant change from baseline to follow-up was the change in condom use. For all the institutions at follow-up, there was a statistically significant increase in the proportion of students reporting that they had used a condom during the last sexual intercourse. Two of the institutions also reported a statistically significant decline in the proportion of students using drugs or alcohol prior to last sexually intercourse. At follow up there was also a statistically significant increase in the proportion of students who were tested for HIV.

Introduction

The HBCU-HIV Prevention Project (H2P) addressed HIV prevention on the campuses of historically black colleges and universities (HBCUs). The specific aims of the project were to increase awareness among students and student health services providers about the importance of HIV testing and counseling and of the use of the biomedical HIV prevention tool PrEP (Pre-Exposure Prophylaxis) as a preventive strategy in the fight to protect individuals who are HIV negative [1-4].

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Table 1: H2P Provider Training Participants' Professional/ Disciplinary Background.

Profession/ Discipline	Total Unduplicated Number Trained
Physicians (MD)	57
Registered Nurses (RN)	40
Nurse Practitioners (NP)	38
Physician Assistants	31
Mental/Behavioral Health Specialists	19
Social Workers	17
Pharmacists	12
Others- case managers, certified nursing assistants, Certified medical assistant	12
Student Health Service Providers (6 Certified Registered NP; 3 MDs; 1 RN and 1 CNA)	11
Total	237

The project was prompted by the fact that African Americans are the racial/ethnic group most affected by HIV in the United States with almost half (44%) of all new HIV infections occurring among African Americans who only represent 12 % of the US population. In fact, at year-end 2014, the highest rate (551.5) and the largest percentage (42%) were those for blacks/African Americans [4]. The epidemic impacts African American youth in particular. Roughly a third (39%) of all infections among African American gay and bisexual men, are among males aged 13 to 24 [5].

Recent CDC reports indicate that Sexually Transmitted Illness (STI) cases in the United States have reached record levels. More than two million cases of chlamydia, gonorrhea, and syphilis were reported in the United States in 2016, the highest number ever reported [1]. And while chlamydia, syphilis, and gonorrhea can be cured with antibiotics, if left undiagnosed or untreated, these diseases have the potential to severely impact public health. Adverse impact includes perpetuating the spread of STIs, causing infertility, increased HIV transmission, and contributing to chronic pain. Moreover, co-infection of STIs in persons who are HIV positive has been associated with decreased CD4 cell counts and increased HIV viral load [6,7], which can lead to poor health outcomes for people living with HIV and a greater risk of transmitting HIV to a negative partner. Furthermore, not treating STIs can result in possible increased risk of the development of bacterial resistance [8]. Thus, maintaining and strengthening core STI prevention, screening, and treatment systems is essential to mounting an effective national response.

Studies have found that HBCU students are knowledgeable about HIV transmission. However, despite this knowledge, they engage in high risk behaviors that belie those findings [9-11]. For example, one study found that a third of HBCU students surveyed reported not using a condom during their last sexual encounter [3]. Testing behavior is also an issue for HBCU students. Reasons that the students avoid testing include being scared to know, preferring not to know, and lack of discussion about HIV. However, strategies that were successful in motivating students to be tested include group testing, increasing basic knowledge, and showing the reality of HIV [12]. In addition, some students distrust that when testing is performed by campus health services the results will remain confidential [13]. The subset of the African American population that is most at risk for HIV infection, young MSMs, are largely unaware of the availability and efficacy of the biomedical intervention, pre-exposure prophylaxis (PrEP) [14].

Additionally, the literature reports that many providers,

particularly generalists as opposed to HIV specialists, are unaware of PrEP, unsure about its efficacy and/or hesitant to prescribe PrEP to at-risk individuals [15]. Given that campus health providers tend to be generalists and not HIV specialists, they constitute a population that should benefit from an intervention designed to inform them about the risks and benefits of PrEP and how to conduct effective discussions with at-risk patients.

Methodology & Implementation Strategies

The project was implemented on the campuses of three HBCUs-Howard in Washington, DC, Morgan State in Baltimore, MD and Savannah State University in Savannah, GA. These campuses were selected because of the high HIV prevalence rates either, within or adjacent to the counties in which they are located [16].

The project provided webinar training for providers on strategies to strengthen their clinical skills in the areas of HIV and other STD testing, counseling approaches and antiretroviral treatment including (PrEP), to prevent infection. Training aimed at viral suppression in improving quality of life for students living with HIV and expanding knowledge and skills aimed at reducing HIV transmission through diagnosis, management and treatment in a culturally competent milieu was also provided. The project also conducted a social marketing campaign for students using text messages to raise their awareness of the HIV threat and how to reduce their personal risk of infection. The content of these messages was crafted by a group of seasoned HIV experts and other health educators with expertise in the development of culturally competent HIV messaging for African Americans. This group of experts has worked with members of the H2P team on various initiatives including curriculum development for the National Minority AIDS Education and Training Center (NMAETC), the AIDS Education and Training Center National Multicultural Center (AETC-NMC), and the AIDS Education & Training Center- Capitol Region Telehealth Center (AETC- CRTC) projects, respectively. Students were exposed to the messages over a six-month period. The messages addressed PrEP, safe sexual practices; negotiating safe sex; what to do in the case of an unprotected sexual encounter; and the importance of HIV testing and counseling, medication adherence. Text messages were disseminated weekly.

Evaluation methods

The evaluation assessed whether H2P achieved its stated goals of:

1. Raising awareness of HIV and other STD testing, diagnosis, treatment including (PrEP), counseling, and management services among health services providers of campus health;

Table 2: Knowledge outcomes for h2p campus health service providers.

Topic	Pre-Test Correct Response	Post-Test Correct Response
<i>Guidelines on Incorporating HIV Prevention into Medical Care</i>	Question 1. 42%	Question 1. 57%
	Question 2. 50%	Question 2. 64%
	Question 3. 42%	Question 3. 64%
	Question 4. 57 %	Question 4. 78%
<i>Preventing HIV Transmission</i>	Question 1 .50%	Question 1. 71%
	Question 2. 64%	Question 2. 78%
	Question 3. 42%	Question 3. 78%
<i>Strategies to Reduce HIV Infection among HBCU College Students</i>	Question 1. 53%	Question 1. 73%
	Question 2. 46%	Question 2. 66%
	Question 3. 60%	Question 3. 86%
<i>Biomedical Prevention: Pre-Exposure Prophylaxis (PrEP) Guidelines</i>	Question 1. 41%	Question 1. 66%
	Question 2. 58%	Question 2. 75%
	Question 3. 50%	Question 3. 66%
<i>The Intersection of Partner Violence and HIV on College Campuses</i>	Question 1. 53%	Question 1. 76%
	Question 2. 69%	Question 2. 84%
	Question 3. 53%	Question 3. 76%
	Question 4. 69%	Question 4. 84%
<i>Cultural Competency: Clinical Strategies for Addressing HIV and other STIs Among Students at HBCUs</i>	Question 1. 58%	Question 1. 66%
	Question 2. 66%	Question 2. 75%
	Question 3. 41%	Question 3. 66%
<i>Care for patients with Chronic HCV/HIV Co-Infections</i>	Question 1. 53%	Question 1. 76%
	Question 2. 46%	Question 2. 61%
	Question 3. 61%	Question 3. 76%
	Question 4. 69%	Question 4. 84%
<i>Improving HIV Care in Women and Minority Populations</i>	Question 1. 50%	Question 1. 75%
	Question 2. 41%	Question 2. 66%
	Question 3. 66%	Question 3. 83%
<i>Biomedical Prevention: Non-Occupational Post-Exposure Prophylaxis (nPep)</i>	Question 1. 66%	Question 1. 80%
	Question 2. 46%	Question 2. 73%
	Question 3. 40%	Question 3. 66%
<i>Integration of Mental Health and Substance Abuse in HIV Prevention</i>	Question 1. 53%	Question 1. 69%
	Question 2. 61%	Question 2. 76%
	Question 3. 46%	Question 3. 69%
<i>Tuberculosis in the Normal and Compromised Hosts</i>	Question 1. 57%	Question 1. 71%
	Question 2. 64%	Question 2. 78%
	Question 3. 42%	Question 3. 57%
	Question 4. 64%	Question 4. 78%

2. Raising awareness of students about HIV and other STD prevention strategies including PrEP; and

3. Reducing HIV risk behavior among sexually active students.

Student health services providers at each of the participating campuses were surveyed to assess knowledge, attitudes and practices in relation to HIV care and treatment. The evaluation also included pre- and post-tests and 30 and 60 day follow up for each webinar to measure knowledge gain and application in the practice setting. The evaluator enlisted the assistance of the on-campus Student Health Center at each participating campus to conduct baseline and follow-up surveys of students' HIV risk behavior using questions modified from the CDC YRBSS questionnaire [17].

Findings and Discussions

Provider Intervention

The original intent was to target two (2) providers at each participating HBCU. However, the HBCUs informed the H2P team that many students seek medical care off campus and recommended that the intervention target on-campus as well as off-campus providers so that at the conclusion of the project overall provider capacity relative to HIV prevention and PrEP would be impacted. In addition, when student health services at other HBCUs heard of the project they petitioned Howard to permit their providers to participate in at least the provider intervention. Similar requests for inclusion were made by hospitals and a safety net provider that serve the HBCU student population targeted by the present project.

The H2P team acceded to these requests and as a result, 12 CME-accredited webinars were held with average attendance of 20 providers per webinar for a total of 237 providers over the course of the project. Providers who attended the webinars came from: University Health Services- Alabama State; Albany State; Bowie State; Coppin; Howard; Morgan State; Morris Brown College; Savannah State; and University of Maryland Eastern Shore; Local Health Departments – Baltimore City; Maryland Department of Health and Mental Hygiene; Prince George's County, MD; Hospitals- Howard University, George Washington University; United Medical Center; Washington Hospital Center; and four (4) sites of Unity Health Care, a DC-area safety net provider.

The majority of clinicians who participated in the trainings were African American female physicians. Based on ethnicity, demographic breakdown indicates African American/Black - 90%; Caucasian - 7%; Hispanic/Latino 2%, and Asian - 1% participated in the trainings. Based on gender, 95% of the participants were females with 5% as males. No one reported being a transgender person. The professions/disciplines represented by webinar are displayed in (Table 1).

Each webinar covered a different HIV prevention topic and featured a pre and post test to assess immediate knowledge gained among participants. The results of these tests are noted below [18].

The data in (Table 2) indicate that across the board (100%) participants exhibited a better understanding of the webinar subject matter post training than they did prior to the training. Additionally, at each webinar at least 4 out of 5 participants (80%) surveyed stated that they strongly agreed that they could use the information and skills they gained from the webinar in their professional practice. When the data are disaggregated and an analysis of just the data from student health services providers is conducted, a similar pattern to

that of the entire sample is observed as shown in (Table 3) below.

Surveillance data: 30 and 60-day post webinar training respectively revealed the following:

Non-Student Health Provider Findings: 30-Day Post Webinar Training

- Two thirds (66%) of participants reported that they can apply the information learned in the trainings in their practice/service setting
- Roughly three fourths (73%) reported that they had used specific strategies or best practices learned from the webinar on a daily or almost daily basis in their practice/care setting; a quarter (26%) reported that they had incorporated the strategies regularly (once a week). Only 1% reported that they had not used the strategies or best practices during the period.
- Almost two thirds (60%) of the participants “strongly agreed” and 40 percent “agreed” that participating in the training series had adequately prepared them to discuss PrEP with their patients
- Two thirds (66%) reported that they had used clinical strategies or best practices acquired through the webinars to improve their overall clinical skills and the quality of care they provided in their practice/care setting during the reporting period.

Non-Student Health Provider Findings: 60-Day Post Webinar Training

- The majority (86%) of participants reported that they continue to apply the information learned in the trainings in their practice/service setting.
- The majority (86%) reported that on almost a daily basis they used skills and knowledge gained from the webinars and 13% stated they used what they learned on a weekly basis. Only 1% said they use what they learned once a month.
- Four out of five (80%) respondents “strongly agreed” that participating in the training series had adequately prepared them to discuss PrEP with their patients while 20% “agreed” that the training adequately prepared them to discuss PrEP. It is noteworthy that these results indicate that 60 days post-training an increasing proportion of participants strongly agreed that their preparation was adequate compared to the proportion at 30 days which was 60%.
- Almost all (93%) training participants reported that they had used the clinical strategies or best practices presented in their webinars. This finding is a 50% increase over the proportion of participants who were using the strategies and best practices 30 days post training.

On Campus Student Health Provider Findings: 30-Day Post Webinar Training

- Almost two thirds (63%) of student health services providers who were trained reported that they apply the information learned in the trainings in their practice/service setting.
- However, in contrast to the off –campus providers (73%) only 19% of on-campus providers reported using what they

Table 3: Knowledge outcomes for h2p (on campus student only) health service providers.

Topic	Pre-Test Correct Response	Post-Test Correct Response
<i>Guidelines on Incorporating HIV Prevention into Medical Care</i>	Question 1. 20%	Question 1. 40%
* (#of Student service providers=5)	Question 2. 40%	Question 2. 60%
	Question 3. 20%	Question 3. 40%
	Question 4. 60%	Question 4. 80%
<i>Preventing HIV Transmission</i>	Question 1. 60%	Question 1. 80%
(#of Student service providers=5)	Question 2. 40%	Question 2. 60%
	Question 3. 40%	Question 3. 60%
<i>Strategies to Reduce HIV Infection among HBCU College Students</i>	Question 1. 60%	Question 1. 80%
(#of Student service providers=5)	Question 2. 40%	Question 2. 60%
	Question 3. 60%	Question 3. 80%
<i>Biomedical Prevention: Pre-Exposure Prophylaxis (PrEP) Guidelines</i>	Question 1. 42%	Question 1. 71%
(#of Student service providers=7)	Question 2. 57%	Question 2. 85%
	Question 3. 57%	Question 3. 71%
<i>The Intersection of Partner Violence and HIV on College Campuses</i>	Question 1. 57%	Question 1. 71%
(#of Student service providers=7)	Question 2. 71%	Question 2. 85%
	Question 3. 57%	Question 3. 71%
	Question 4. 42%	Question 4. 57%
<i>Cultural Competency: Clinical Strategies for Addressing HIV and other STIs Among Students at HBCUs</i>	Question 1. 50%	Question 1. 75%
(#of Student service providers=8)	Question 2. 62%	Question 2. 75%
	Question 3. 37%	Question 3. 50%
<i>Care for patients with Chronic HCV/HIV Co-Infections</i>	Question 1. 57%	Question 1. 71%
(#of Student service providers=7)	Question 2. 42%	Question 2. 85%
	Question 3. 42%	Question 3. 71%
	Question 4. 71%	Question 4. 85%
<i>Improving HIV Care in Women and Minority Populations</i>	Question 1. 50%	Question 1. 62%
(#of Student service providers=8)	Question 2. 37%	Question 2. 75%
	Question 3. 62%	Question 3. 75%
<i>Biomedical Prevention: Non-Occupational Post-Exposure Prophylaxis (nPep)</i>	Question 1. 60%	Question 1. 80%
(#of Student service providers=5)	Question 2. 40%	Question 2. 60%
	Question 3. 20%	Question 3. 80%
<i>Integration of Mental Health and Substance Abuse in HIV Prevention</i>	Question 1. 60%	Question 1. 80%
(#of Student service providers=7)	Question 2. 40%	Question 2. 60%
	Question 3. 40%	Question 3. 60%
<i>Tuberculosis in Normal and Compromised Hosts</i>	Question 1. 50%	Question 1. 66%
(#of Student service providers=6)	Question 2. 33%	Question 2. 50%
	Question 3. 50%	Question 3. 66%
	Question 4. 66%	Question 4. 83%
<i>Guidelines on Incorporating HIV Prevention into Medical Care</i>	Question 1. 20%	Question 1. 40%
* (#of Student service providers=5)	Question 2. 40%	Question 2. 60%
	Question 3. 20%	Question 3. 40%
	Question 4. 60%	Question 4. 80%
<i>Preventing HIV Transmission</i>	Question 1. 60%	Question 1. 80%
(#of Student service providers=5)	Question 2. 40%	Question 2. 60%
	Question 3. 40%	Question 3. 60%
<i>Strategies to Reduce HIV Infection among HBCU College Students</i>	Question 1. 60%	Question 1. 80%
(#of Student service providers=5)	Question 2. 40%	Question 2. 60%

	Question 3. 60%	Question 3. 80%
<i>Biomedical Prevention: Pre-Exposure Prophylaxis (PrEP) Guidelines</i> (#of Student service providers=7)	Question 1. 42%	Question 1. 71%
	Question 2. 57%	Question 2. 85%
	Question 3. 57%	Question 3. 71%
<i>The Intersection of Partner Violence and HIV on College Campuses</i> (#of Student service providers=7)	Question 1. 57%	Question 1. 71%
	Question 2. 71%	Question 2. 85%
	Question 3. 57%	Question 3. 71%
	Question 4. 42%	Question 4. 57%
<i>Cultural Competency: Clinical Strategies for Addressing HIV and other STIs Among Students at HBCUs</i> (#of Student service providers=8)	Question 1. 50%	Question 1. 75%
	Question 2. 62%	Question 2. 75%
	Question 3. 37%	Question 3. 50%
<i>Care for patients with Chronic HCV/HIV Co-Infections</i> (#of Student service providers=7)	Question 1. 57%	Question 1. 71%
	Question 2. 42%	Question 2. 85%
	Question 3. 42%	Question 3. 71%
	Question 4. 71%	Question 4. 85%
<i>Improving HIV Care in Women and Minority Populations</i> (#of Student service providers=8)	Question 1. 50%	Question 1. 62%
	Question 2. 37%	Question 2. 75%
	Question 3. 62%	Question 3. 75%
<i>Biomedical Prevention: Non-Occupational Post-Exposure Prophylaxis (nPep)</i> (#of Student service providers=5)	Question 1. 60%	Question 1. 80%
	Question 2. 40%	Question 2. 60%
	Question 3. 20%	Question 3. 80%
<i>Integration of Mental Health and Substance Abuse in HIV Prevention</i> (#of Student service providers=7)	Question 1. 60%	Question 1. 80%
	Question 2. 40%	Question 2. 60%
	Question 3. 40%	Question 3. 60%
<i>Tuberculosis in Normal and Compromised Hosts</i> (#of Student service providers=6)	Question 1. 50%	Question 1. 66%
	Question 2. 33%	Question 2. 50%
	Question 3. 50%	Question 3. 66%
	Question 4. 66%	Question 4. 83%

learned in the webinars almost daily. Almost half (45%) of the on-campus providers reported that they used specific strategies or best practices in their practice/care setting once a week versus 26% among off-campus providers. A third (36%) of on campus providers used what they had learnt less frequently -once a month.

- Roughly half (54%) of the on campus providers “strongly agreed” that participating in the training series had adequately prepared them to discuss PrEP with their patients; while 45% “agreed”, and 1% were equivocal.

Around half (54%) reported that in the 30 days post training they had used the clinical strategies or best practices they had learned to improve their overall clinical skills and their ability to provide quality care.

On Campus Student Health Provider Findings: 60-day Post Webinar training

- The majority (81%) of participants reported that they can apply the information learned in the trainings in their practice/service setting.
- At 60 days post training, the proportion of on campus

providers who use what they learned on a daily basis was 54% compared to 86% for off campus providers. A third of on campus providers use the webinar information and skills at least once a week versus 13% for off-campus providers. Whereas only 1% of off- campus providers reported using what they learned once a month 10% of on campus providers reported gave this response.

- Roughly two thirds (63%) of the participants strongly agreed that participating in the training series had adequately prepared them to discuss PrEP with their patients. A third (36%) “agreed” and 1% stated they were “somewhat prepared”.
- Almost three fourths (72%) of on campus providers reported that they had used the clinical strategies or best practices in their practice/care setting. These strategies improved overall clinical skills and their ability to provide quality care.

The responses that on campus providers gave at baseline relative to their awareness of PrEP and the number of persons with HIV that they manage shed some light as to why the proportion of providers who could use what they learned during the H2P webinars was lower among on-campus providers than it is among off-campus providers.

Simply put, most (90%) on-campus providers manage low volumes of patients with HIV - roughly 1 to 20 patients annually - whereas off-campus providers see higher volumes. Additionally, at baseline, only 33% of the on-campus providers had heard of PrEP and only 25% had ever prescribed PrEP. Understandably the majority (90%) of those who had never heard of PrEP expressed the need for more training and technical assistance on this treatment modality.

Student Intervention

From the Student Health Center Directors, the H2P team secured the cooperation of a student liaison at each participating university to distribute flyers marketing the event and encourage students to give their written consent to participate. Only students who gave their informed consent to participate in the project were contacted. Once consent was obtained baseline and follow-up evaluation surveys via Survey Monkey was administered. A total of 868 students (Howard n=463; Morgan State n= 205; and Savannah State n=206) gave consent.

Despite a sustained outreach effort on the part of the Student Liaison at each institution, there was considerable attrition in the numbers of students that agreed to complete the follow-up survey. Whereas 868 students completed the baseline only 134 completed the follow-up (Howard n=59; Morgan State n=50; and Savannah State n=25). One possible explanation for the attrition was the timing of the follow-up survey which occurred very close to the period of final exams. Consequent, students may have been too involved with their studies to focus on completing the survey.

Demographics

The average age of the sample was 20. Based on race, the majority of survey respondents were African American 65% followed by Whites 15% Asians 12% and Other including bi and multi-racial 8%. Eleven percent (11%) of the sample identified their ethnicity as Latino/Hispanic. The majority (80%) of respondents had engaged in sexual intercourse at least once and the average age of first sexual intercourse was 15. The average number of sexual partners ever was 3.

Effect of the H2P Intervention on HIV Knowledge and Risk Behavior

The analysis focused on a comparison of sexual risk behavior and knowledge gain relative to HIV prevention at baseline and follow-up (Table 4). presents the key outcomes by institution. The data show that the student intervention had the greatest effect on condom use; the use of drugs or alcohol prior to sexual intercourse; beliefs about the efficacy of HIV drugs when used consistently; awareness of PrEP; and willingness to take PrEP.

The baseline data reveal that at least half (50%) of the students surveyed at each institution doubted the efficacy of consistent use of HIV medications. However, at follow-up there was a statistically significant change with roughly two thirds (66%) agreeing that consistent use of the medications could yield positive outcomes. At baseline roughly, a quarter (25%) had heard of PrEP but this proportion increased to 50% by follow-up. Finally, students at two institutions reported statistically significant increases in the proportion that were willing to take PrEP if it were made available to them.

With respect to risk behavior, the most significant change from baseline to follow-up was the change in condom use. For all

the institutions at follow-up, there was a statistically significant increase in the proportion of students reporting that they had used a condom during the last sexual intercourse. Two of the institutions also reported a statistically significant decline in the proportion of students using drugs or alcohol prior to last sexually intercourse. At follow up there was also a statistically significant increase in the proportion of students who were tested for HIV. However, only one institution (Morgan State) reported a statistically significant increase in the number of students tested for STDs other than HIV.

Conclusions & Recommendations

The H2P project achieved its goals of:

- Raising awareness of HIV and other STD testing, diagnosis, treatment including (PrEP), counseling, and management services among health services providers of campus health;
- Raising awareness of students about HIV and other STD prevention strategies including PrEP; and
- Reducing HIV risk behavior among sexually active students.

The project also enhanced the capacity of off-campus healthcare providers relative to HIV prevention in general and PrEP in general. Given that these providers manage larger volumes of persons with HIV, they were more likely to report that they had used the knowledge and skills they gained by participating in H2P than were on-campus health service providers, who may be considered low volume HIV providers. Off- campus providers were also more likely to prescribe PrEP. On campus providers, however, expressed an interest in receiving more training and technical assistance to enhance their ability to prescribe PrEP appropriately.

H2P had a positive effect on students' knowledge and behavior relative to HIV. Students who were exposed to the H2P HIV prevention text messages reported an increase in condom use and a decline in the use of drugs and/or alcohol prior to sexual intercourse. 'Students' awareness of PrEP as a prevention option and uptake of HIV testing also increased from baseline to follow-up.

The H2P project amply demonstrated that busy providers can be engaged and their clinical skills enhanced through culturally competent webinars that address topics of interest to them professionally. As such, these training opportunities should continue. Additionally, reaching a diverse population of university students, who given their youth and predominantly racial/ethnic minority status are at increased risk for HIV and STDs, can be reached and motivated to change their behaviors through a relatively low cost intervention that centers on texting prevention messages at periodic intervals.

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16. Due to an administrative glitch the pre and post test data for the twelfth webinar were not collected.