A Decade Later: Comparing Knowledge of Testing and Assessing HIV Awareness of University of Wyoming Students

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A Decade Later: Comparing Knowledge of Testing and Assessing HIV Awareness of University of Wyoming Students

By Anna Bertani
Microbiology
Mentored by Rachel Watson
Presented on December 9th, 2016
Acknowledgments:

Thank you so much to Rachel Watson for so much help, love, and support in every step of this project. I think you loved this project as much as I did, and that helped me so much throughout this process. Thank you to Chris North for allowing me to come and administer my surveys in the General Biology labs. Thank you to Amy Saville for helping me distribute my surveys in the General Microbiology labs. Thank you to the University of Wyoming Honors program for making the honors project a requirement, as I truly loved doing every part of it (even sorting through my mountain of surveys time and time again). Thank you to my parents, for supporting me and encouraging me in everything that I do. And most of all, thank you to the students who completed my surveys, as you truly made this project possible.
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Abstract

In 2006, the Centers for Disease Control recommended that all patients aged 13-64 be tested for HIV, regardless of lifestyle risks. This recommendation was implemented because in 2006, it was shown that risk based screening was insufficient and does not successfully identify all HIV cases. Early detection is beneficial both with respect to improving treatment outcomes in HIV patients and decreasing transmission to previously uninfected individuals. This recommendation still holds true in 2016. In 2007, Kristine Young (a University of Wyoming Honors student) administered a survey that sought to assess University of Wyoming student knowledge regarding the previously mentioned CDC recommendation. Furthermore, this survey attempted to identify issues that kept students from following the recommendation. Data were collected using a survey that was given to students regarding HIV testing and their observations concerning HIV awareness on campus. This study seeks to reevaluate University of Wyoming student awareness regarding this CDC recommendation and issues that may keep University of Wyoming students from following the recommendation by re-administering the same survey that was used in 2007. The results from this study will then be compared to the results obtained in the 2007 study. In order to make the most accurate comparison, we valued similarity in every aspect of the study, and therefore attempted to survey a similar student population. In 2007, around 50% of students were aware of the CDC recommendation but 68% of these students had still not been tested. In 2016, approximately 37% of students were aware of the recommendation and of this percentage, 60% of students still remained untested.
However, most students had learned about HIV/AIDS before coming to college. So, while over the past decade, awareness of the 2006 CDC recommendation in students on the UW campus appears to have gone down, we could not attribute lack of general knowledge to this decrease.
**Introduction:**

In 2015 alone, 1.1 million people died of AIDS-related diseases (WHO, 2016) and since the beginning of the epidemic, 35 million (WHO, 2016). Currently, most disease transmission occurs heterosexually, particularly in women (The Henry J. Kaiser Family Foundation, 11/2016). Despite this, HIV, even with its widespread prevalence, is viewed as a disease afflicting marginalized groups. HIV/AIDS is surrounded by many stereotypes and stigmas, the most prevalent being that it is a gay man’s disease or that of an intravenous drug addict. It is also often associated with sex workers. The stigma that surrounds HIV also works at a global level. Sub-Saharan Africa has the most serious HIV epidemic in the world (AVERT, 10/2016). Because of this, many people think of HIV as a disease that only affects Africans. This leads to the stigma that HIV is a “third world country” epidemic and not something first world country citizens should be concerned of contracting or dealing with. Due to these associations, the disease seems even more removed from the norm of our society then when the epidemic first began. By confining the disease to specific groups of people or individuals, we have allowed individuals to believe that HIV/AIDS belongs to “someone else” (Stine, 2008). However, in reality, this is a disease that can affect anybody, not just the previously mentioned minority groups. HIV/AIDS, no matter what stigma we assign it, is truthfully confined to no one.

This stigma affects many other aspects of HIV and ultimately allows it to still persist in society today. Many people, who avoid being tested due to the suffocating
stigma, are infected with HIV but remain unaware of this fact. Of the 1.2 million people in the United States who are infected with HIV, nearly 1 in 8 are unaware they are infected (CDC Fact Sheet, No Date).

It is obvious that the effects of the stigma surrounding HIV/AIDS extends beyond those who are affected by the disease. Its consequences affect so much more on a much larger scale. Fear and discrimination are the main reasons why people are hesitant to get tested, reveal HIV status, and seek out antiretroviral drugs (AVERT, 11/2016). One study stated that individuals who felt high levels of stigma were four times more likely to receive poor access to care, resulting in patient death (AIDS related) and ultimately the expansion of HIV infection (AVERT, 11/2016). An unwillingness, which is often based in fear, to test results in patients being diagnosed later in infection, which ultimately decreases the effectiveness of antiviral treatment. This also results in a poor prognosis for the patient and allows HIV to be passed on to other individuals. While stigma is a major barrier to effective HIV/AIDS responses stigma reduction efforts remain at a low priority (Mahajan et al, 2008). The sooner the world addresses and ultimately eliminates this stigma, the sooner we can begin to directly and aggressively continue combating this disease.

The Center for Disease Control is working to increase preventative methods throughout the world. In 2001, the CDC proposed a recommendation that stated that HIV testing be offered to patients in high HIV-prevalence health care settings. In low prevalence settings, targeted HIV screening on a risk assessment basis seemed more feasible (CDC, 2001). Two years later, in 2003, the CDC introduced the initiative Advancing HIV Prevention: New Strategies for a Changing Epidemic. The
two main strategies included in this initiative are 1) To make HIV testing a routine part of medical care on the same voluntary basis as other diagnostic and screening tests and 2) To reduce perinatal transmission of HIV further by universal testing of all pregnant women (CDC, 2003). Finally, in 2006, the CDC released a new recommendation regarding HIV testing titled *Revised Recommendations for HIV Testing of Adults, Adolescents, and Pregnant Women in Health-Care Settings*. This recommendation advises that all adults and adolescents aged 13-64 should be tested for HIV, regardless of lifestyle risk factors (CDC, 9/2006). Patients should be screened as part of their routine health-care regimen regardless of risk based assessments. Those who are at high risk for the disease should at least be screened annually. Low risk individuals should be screened appropriately following the results of their primary screening.

There are many objectives for this recommendation. These objectives include a general increase in HIV screening (including in pregnant women), promoting early detection of HIV infection, to identify undiagnosed patients and link them to the appropriate health-care services, and to reduce perinatal transmission in the U.S. (CDC 9/2006.) Overall, the basis of this recommendation is to establish HIV testing on the same level as any other treatable condition screening. This recommendation sought to make HIV testing part of a normal health care regimen.

If this CDC recommendation is followed correctly, HIV testing can become a normal routine and integral part of medical practices. Ultimately, this would lead to early detection and most importantly to the prevention of the spread of the virus.
If HIV positive patients can be proactively diagnosed, then they can receive treatment that much sooner. This would decrease the progression of the disease while simultaneously reducing the spread of the disease to healthy individuals. By incorporating HIV testing into routine health-care visits, the spread of infection and the progression of the disease can be better controlled.

The 2006 CDC recommendations seek to reduce the stigma by framing HIV testing as a routine procedure everyone should partake in, regardless of risk factors. More patients accept HIV testing when it is offered to everyone, without being based off of a risk assessment (Fincher-Mergi, 2002) The true assessment of the impact of the new recommendation is to determine if there is an increase in the number of people who perceive themselves as low risk.

The 2006 CDC recommendation is now a decade old. New cases of HIV showed an increase in the years immediately following the recommendation, which was speculated to be caused by increased testing, indicating the recommendation began to have the desired effect (The Casper Star Tribune, 11/2008) Almost on the contrary, according to the CDC, new HIV cases declined 19% from 2005 to 2014. This suggests that perhaps the goal of the recommendation that essentially describes prevention as the best medicine, is also working. (CDC, 12/2016)

However, it seems necessary to assess if the recommendation, which has not changed over the past 10 years. The United States STILL experiences 50,000 new cases of HIV a year, which seems to indicate that there are certain factors that are keeping individuals from being tested. One of this factors, stigma, is still alive and well, even a decade later. Many people, even 30 years after the discovery of the
disease, still feel shame when they are diagnosed with HIV (The White House, 07/2015). Also, immense social stigma not only blames those who are HIV positive but also those who are actively seeking to be responsible and seek treatment (The White House, 07/2015). Another issue that warrants reassessment is general HIV awareness. A 2012, a Kaiser Family Foundation survey found that 1 in 3 Americans still believed that HIV could be transmitted by sharing a drinking glass with a person infected by HIV (Kaiser Family Foundation, 07/2012). Clearly, the 2006 recommendation has made steps to decrease the spread of HIV. However, it is also alarmingly clear that other facts are blocking the total success of this recommendation, ultimately allowing HIV/AIDS to perpetuate in the United states.

Many of these factors, most of which are stigma related, are extremely prevalent in the Southern United States. Today, the Southern states account for about 44% of all people living with HIV in the United States even though these states only make up 37% of the United States population (CDC, 05/2016). Cultural factors play a huge role. Homophobia and a general discomfort surrounding discussing sexuality are more widespread in the South, leading to a greater amount of stigma in this region. These ideas ultimately stem from a high prevalence of religion based beliefs, which tend to advocate for an abstinence only education. Ultimately, these cultural barriers contribute to a lack of sexual health information, which people need to protect them from any sexually transmitted disease (CDC, 05/2016).

In Wyoming, state law does not require sexuality education. Teaching about contraceptives is not required. Instead, educational programs, if they do exist, stress abstinence as the best form of “birth control”. (Sex etc, No Date) These stipulations
are similar to those found in the South and could therefore lead to similar outcomes, specifically stigma and an overall lack of awareness. While the U.S., even just the state of Wyoming, is too vast a sample to assess for this project, the University of Wyoming campus is small enough to survey student awareness and action regarding this recommendation.

It seems logical to assume that many Wyoming residents still harbor stigma and lack of awareness regarding HIV. After all, there is a horrendous misconception in Wyoming: that Wyoming does not have AIDS (WPR, 3/2006). This is due to the fact that Wyoming has a low population with little diversity. This is actually not true, in terms of new cases of HIV per capita, Wyoming ranks evenly with the rest of the nation, in 2006 (WPR, 3/2006) and 2016 (CDC, 11/2016).

Due to the idea that there is no HIV/AIDS in Wyoming, the stigma surrounding the disease is much more intense in this state. Even if people are at risk, they tend to avoid being tested. If they choose to get tested, many individuals travel to another state or town, in an attempt to keep their testing on the down low (WPR, 12/2006). In 2012, around half of the states HIV patients still traveled outside of the state for care. These vast distances between provider and patient further complicate this disease. (AETCNCRC, 10/2012). This suggests that more people are avoiding testing due to overall accessibility and time commitment. These issues perpetuate the stigma and the idea that those infected with HIV/AIDS should hide from society. If the 2006 recommendation makes the desired impact, it will hopefully have removed some of the stigma in 2016 UW students.
The University of Wyoming contains around 12,000 students, making it likely for a student to run into someone they know when getting tested. Since many of the students at the University are from Wyoming, it is likely they still reinforce HIV/AIDS stigma. Is the CDC recommendation strong enough to overcome this stigma ten years later? If so, it is important to analyze the student population in an attempt to determine if anyone has heard about the CDC recommendation. If they have heard about it, have they been tested? If not, what is keeping them from getting tested, especially if they know about the recommendation? Has knowledge of the 2006 recommendation, testing, and factors that prevent individuals from being tested changed in the past decade? Was it a positive or negative change? Could it be attributed to an increase or lack of general HIV education in students prior to college? The goals of this project are two fold: 1) to compare the level of awareness about the 2006 CDC recommendation among students on campus now and the factors that keep students from getting tested for HIV now to the students who partook in this study in 2007 2). To assess general HIV knowledge in college students.

Hypotheses: If the 2006 CDC recommendation has begun to achieve, than there will be an increased awareness in 2016.

Methods and Materials:

Institutional Review Board Proposal
Research conducted by students that involves the use of human subjects must be reviewed and approved by the Institutional Review Board (IRB) prior to the initiation of the research. If the research involves interaction with human subjects in any way, or if a researcher obtains identifiable private information about a subject, including survey procedures, a research proposal must be reviewed by the IRB (UW, 2016). For the original 2007 experiment, a proposal was submitted to the IRB. Also, a sample research instrument was included with the proposal for review as well (Refer to Appendix A for a copy of the original proposal). The original project was approved as an exempt survey by the IRB on April 6, 2007. For the current (2016) study, an exemption form was completed and submitted along with an updated sample research instrument (see Appendix B for copy of exemption form). This project was approved as an exempt survey by the IRB on October 26th, 2016.

Survey instrument:

Kristine Young developed the survey used in this experiment in 2007. The survey was developed using The Survey Research Handbook by Pamela L. Alreck and Robert B. Settle. This book was used to write appropriate and representative questions. A majority of the 2016 study was derived from these reused questions. However, three additional questions addressing general HIV awareness were added in this study in 2016. The Alreck and Settle book was used to shape and write these questions as well.

The questions in the survey were designed so that everyone would be able to understand the questions. Word choice and grammar were considered so that the least sophisticated of respondents would understand (Alreck, 2004). These
questions were also designed to be unambiguous so that respondents could answer effectively and honestly. Questions were also written to be direct and concise while remaining easy to answer.

The overall goal of these survey questions was to lead to the least amount of bias in responses. Due to the sensitivity of the topic, it was speculated that some students might have a difficult time answering honestly, in fear of what their responses might suggest. Respondents often feel pressure to answer in a “favorable” way instead of responding with the truth. In order to avoid personal bias, a technique known as projection was used. Projection is done by referring to ideas in the abstract or by referring to the same thing, but for another person (Alreck, 2005). In this survey, this technique was employed by repeating the same question, once as a personal reflection and the second as a speculation on others.

The survey was written in an attempt to avoid instrumental bias as much as possible. As mentioned before, respondents are likely to bias their responses based on the nature of the topic, so writing a survey that avoided leading questions and allowed respondents to answer questions based on their thoughts alone was paramount to the success of this study. Wording was heavily influenced so that questions remained clear and all answers remained equal in neutral. Overall, the goal was to make all response “right” and “acceptable” so that respondents did not feel pressure to answer in a certain way.

Other elements of the instrument, including length and difficulty of questions were considered as well. The survey was written so that students would not be too tired or bored with the survey by the end. We sought unbiased answers for each and
every question, so keeping the survey short and concise was important. A mix of “easy” and “hard” questions were incorporated into this survey in order to prevent students from having a harder time answering more in depth questions.

In addition, questions assessing general HIV knowledge were added to the original survey. These questions were not a part of the original survey. The Survey Research Handbook was also used to correctly write these questions to avoid bias.

The survey handbook also had guidelines for writing a cover letter. The function of the cover letter is to explain the project and win the cooperation of the recipient (Alreck, 2004). The cover letter was also written so that the least sophisticated of respondents would understand. The goal of the letter was to capture the reader’s attention within the first few seconds of reading. It is within these first few seconds that respondents will choose to accept or reject the task (Alreck, 2004). This was done by immediately pointing out the purpose of the study. The style of the letter was personal while remaining professional. (Refer to Appendix C for copy of the survey instruments).

*Survey Method*

In the original experiment, surveys were given to students in their spring 2007 classes during the month of April. Classes included: Honors program classes, general and medical microbiology labs, various molecular biology classes, and students attending the WyoAIDS Walk. Surveys in this study (2016) were given to the University of Wyoming students in their Fall 2016 classes during the months of November and December. Students were surveyed in the following classes:

- general
microbiology labs and general biology labs. These classes were chosen in order to mimic the sample surveyed in the original study. However, an event such as the WyoAIDS Walk could not be mimicked in this study, as it occurs in the spring semester. Because of this, and other factors, the sample size was significantly smaller (162 students) than the 2007 study (321 students). Students were surveyed based on their willingness to fill out the survey, as it was completely voluntary. Responses were anonymous, as described in the cover letter, which was included with each survey. A Microsoft Excel Spreadsheet was used for data entry.

Results:

*Who knows about the CDC recommendation?*

Respondents were asked the question "Are you aware that the Centers for Disease Control recommends that all patients between the ages of 13 and 64, in all health-care settings, should be tested for HIV?"
Figure 1

When observing Figure 1, if the “Maybe” answers are included with the “Yes” answers the distribution of those who know about the recommendation in comparison to those who don’t is about 50:50.

These results are nearly exactly similar to the results obtained in 2007.

Who is being tested?

Amongst the group of students who are more aware of the recommendation, a higher percentage have been tested.
Figure 2:

Students were also asked “Have you been tested for HIV?” Out of the 37 people that had been tested, approximately 65% of them knew about the recommendation. Of the 125 students that hadn't been tested approximately 29% were aware of the recommendation but still were not tested.

In 2007, of the 65 students that who were tested, 66% knew about the recommendation. Of the 256 who were not tested, 36% knew about the recommendation but remained untested.

What factors are keeping students from being tested?

It seems that even though people are aware of the recommendation, they still avoid getting tested for HIV. Students were asked what reasons, from a possible list, have kept them from being tested.
The most prevalent response was other. When students responded other, students were asked to describe the response they had in mind. The most common reasons when students responded other included: no risky behavior, not being overly sexually active or sexually active at all, and participants feeling no reason to. The other top two answers were Time commitment and Accessibility.

In 2007, the most popular answers were “No risky behavior”, Time commitment and Accessibility. These results were consistent with this study’s findings. The following question was a projection question. Students were asked what reasons were keeping other students from being tested themselves.
Figure 4:

If Figure 4 is compared to Figure 3 where the students chose reasons for themselves, it can be noted that the answers are much more distributed. The top reason for others not being tested is “Social Stigma/Alienation”. The next two are “Fear of Disclosing Sexual Activity” and “Other” and “Time commitment” are about the same prevalence.

In 2007, the most popular responses were ‘Fear of Results”, “No Risky Behavior” and “Social Stigma”. These results are slightly similar to the results found in this study.

General HIV Knowledge (questions unique to the 2016 study)

Students were asked if they had heard about HIV prior to coming to the University of Wyoming. They were also asked if they strongly agreed, agreed, were
undecided, or disagreed with the statement that students should learn about HIV before attending college.

Figure 5:

Approximately 94% of students had heard of HIV before attending college. Of this percentage, 68% strongly agreed that students should hear about HIV before college.

Almost all students were aware of HIV before coming to college. Most students agreed on some level that students should be knowledgeable about HIV before attending college. No students disagreed with the statement that students should know about HIV before coming to college.

**HIV Education:**

Students were also asked that if they had heard of HIV prior to attending UW. Then, they were asked what the source of their information was. A variety of choices
were offered as options to respond to this question and students could pick all choices that applied.

![General HIV knowledge sources](image)

**Figure 6:**

The most common source of general HIV knowledge before students came to high school was Teachers. The next two most prevalent were Healthcare professionals and Family.

Overall, there were a variety of responses to this question. Most students had heard of HIV from more than one source listed as well. Popular responses for other included health class and TV.
Students were asked two questions regarding awareness on campus. First, students were asked if they felt that HIV/AIDS awareness should be increased on the UW campus. Fifty seven percent of students felt that awareness needed to be increased. This is significantly lower than the 95% of students that said the same thing in 2007. Students were also asked whether they thought there was a need for a campus organization dedicated to HIV/AIDS awareness. 27% of students felt that a group was necessary. This is lower than the 38% found in the 2007 study. In 2007, the students were asked if they were aware of the campus organization called SEXperts, a group that organizes HIV testing at the Wellness center and counseling following the test. Their responses were analyzed. As this group has since been defunded, student’s responses were not analyzed in this study.

Discussion:

Firstly, it is important to note that the sample size of this study, which was 162, was significantly smaller than the 2007 study sample size, which was 321. This number is large enough to draw conclusions within this study alone. However, conclusions drawn from comparing the 2016 study to the 2007 study aren’t as easy to make. But, the samples were composed of similar individuals, which ultimately allowed conclusions to be made.

Who knows about the CDC recommendation?

When analyzing Figure 1, if the maybe and yes responses were considered together, about half of the students surveyed were aware of the recommendation
while the other half were not. This was surprising because the recommendation was made when most of the respondents were very young. The lack of increased awareness could be a sign for concern; alternatively, it could merely be due to the dated nature of the CDC recommendation and the fact that no new recommendation has been made. In 2007, the same 50:50 ratio was seen, indicating that awareness on the UW campus has not increased. This is slightly concerning; because one would hope that awareness would go up over the years, due to the destigmatizing goals of the recommendation itself. The goal of the recommendation was to make HIV a “universal” disease, which would logically allow one to assume raise awareness in everyone.

*Who is being tested?*

The next goal of the project was to determine if the CDC recommendation has the same impact now (2016) as it did in 2007. As a majority of students who were tested knew about the recommendation, it seems logical to assume that the 2006 recommendation encouraged individuals to incorporate routine testing into their health-care regimen. However, the recommendation is not having as large of an impact as it needs to, as 29% of students who were not tested knew about the recommendation but still chose not to be tested.

In the 2007 study 66% of the 65 students who had been tested knew about the recommendation. This is lower than the results found in this study. This indicates that this recommendation is having an even stronger impact on those who are tested today. The previous study showed that of the 256 individuals who were
not tested, 36% of them were aware of the recommendation. This number is higher than the results found in this study. This also shows that the 2006 recommendation is continuing to have an impact, in fact, it is having a stronger impact, today than it did in 2007. However, people who knew about the recommendation still remained unscreened. This indicates that other aspects of the testing process or their lifestyle are influencing their decision. Therefore, another goal of the project was to find out what these factors are.

What factors are keeping students from being tested?

The next step was to address the other goal of this experiment. If people are aware of the recommendation, but still choose to forgo HIV testing, what is keeping them from being tested? The most prevalent response in Figure 3 was the “Other”. When students responded with this option, they were asked to provide a reason that wasn’t found on the list. The most popular responses for this option included “no risky behavior” and “felt no reason to.” In Wyoming, people do not think AIDS exists in their state due to its small population (WPR 3/2006). Therefore, individuals believe they are “immune” from contracting HIV and do not need to worry about being tested for it. This lack of need could also be perpetuated by the belief that HIV is a disease of Africa, not the United States. In addition, local healthcare providers in rural areas still do not believe HIV deserves any really attention. This also perpetuates the belief that there is no reason to get tested, especially if my doctor isn’t recommending it (AETCNCRC, 10/2012). The other top two responses were Time commitment and Accessibility. In the 2007 study, the
most popular response was No risky behavior. This agrees with the results from this study. The following two most popular were the same as the results from this survey. This corresponds to a 2006 WPR special centered on HIV testing. Most people in Wyoming do not get tested because testing was not easily accessible (WPR, 12/2006). It is interesting to think that students, now and then believed this. UW student health offers HIV testing to students, so while this does not benefit all of Wyoming, it is certainly easily accessible for students. It is also interesting to see that students still believe this because statewide HIV accessibility has improved. In 2010, a shift in funding allowed HIV testing to be integrated into many local family clinics. This allowed for a shift in the standard of care seen in Wyoming. (Wyoming Tribune Eagle, 04/2010). Travel time to testing facilities is something that is also often considered when deciding to be tested. In 2007, the “Other” category ranked in the top five reasons for not being tested. The most common explanation was that they had just never thought about it. This also corresponds with results found in this study.

The next question addressed the same issue, only this time as a projection. Students were asked to speculate what factors kept other students from being tested. When comparing Figure 4 to Figure 3, it can be noted that the responses are much more diverse. The top reason for others not being tested was Social stigma/alienation. Rounding out the top three were Fear of disclosing sexual activity and Time commitment. In 2007, the top three responses were Fear of results, No previous risky behavior, and Social stigma. In both studies, the answers seen in Figure 4 and Figure 3 are very different from one another. The reasons for the
question addressed in Figure 4, in both studies, have a more negative connotation. It seems students are very able to assume their fellow peers, along with the rest of the country, are not as responsible as they are. In a 2012 POZ article, Hoffman states that “Many people tell themselves that no matter what gender, sexual orientation, age or skin color makes someone more likely to contract HIV, it’s ultimately the promiscuous, deviant and derelict who get it.” (POZ, 02/2012). The reasons for students not getting tested themselves were much more optimistic, indicating that they view themselves in a more positive light. They are unable to consider themselves as promiscuous, but have no issue believing that their peers are capable of deviant behavior. Despite this apparent perception, which was present in 2007 and has carried on to today, the CDC recommendation still suggests that all students be tested, regardless of their perception of their risk. The second goal of this study has been accomplished by these two questions, but now it is time to address the third goal: assessing general HIV awareness in UW students.

*General HIV knowledge*

In Figure 5, respondents were asked “Had you ever heard of HIV/AIDS before attending the University of Wyoming?” 94% of students surveyed had heard of the virus/disease before coming to college. This number indicates that HIV education is beginning before college. However, only 22% of responses report learning about the STI in schools (from teachers). This could be attributed to the 2006 recommendation. In Figure 5, students were also asked to assess the statement “Students should learn about HIV/AIDS before attending college.” Of the 152
students (94%) who had heard of HIV before attending UW, 89% agreed on some level that students should learn about HIV before coming to college. This shows that students today think that awareness is important, especially before coming to college, where one is exposed to a variety of “new” experiences.

**HIV education**

Finally, in Figure 6, students were asked “If you had heard of HIV/AIDS before attending the University of Wyoming, how did you hear about it?” The top three most popular responses included Teachers, Healthcare professionals, and Family. However, the responses overall were fairly widespread. This indicates that students are being exposed to HIV knowledge in a variety of ways, which could be responsible for the large percentage of students who were possessed general HIV knowledge before coming to school.

**Awareness**

Finally, students were asked a series of questions regarding HIV awareness on campus. The first addressed the students desire for increased HIV/AIDS awareness on campus. In this study, 57% of students felt that awareness should be increased on campus. These data are supported by the question that asked students to estimate the number of students they thought had HIV or AIDS on campus. The numbers provided ranged from 0-5000 with the most common response being 100. These results were similar to the 2007 study. With the variety of responses provided, it is apparent that students really have no clue how to validly estimate the
number of cases on campus. A few students also responded, “I don’t know”, further supporting this claim. This supports the idea, which was reflected in the surveys responses, that HIV/AIDS awareness should increase at the University of Wyoming.

Students were also asked if there was a need for a campus organization dedicated to HIV/AIDS awareness; 27% of students believed this was necessary, which is lower than the 38% in the 2007 survey. This makes sense, because the desire for increased awareness has decreased in this study when compared to 2007 results.

**Conclusion:**

Based on the results of this survey, just as in 2007 increased awareness of HIV/AIDS is warranted. Even though the support has decreased over the past decade, students still back this need. The CDC recommendation of 2006 has gained more exposure during the past decade, but its impacts have still left something to be desired, specifically in low risk individuals. This trend was seen in 2007 and is still seen today. If progress can continue to be made, perhaps testing will continue to increase and ultimately slow the spread of the disease, because still today, prevention is the best medicine.

We hope that this study helps to communicate the need to bring back funding for the campus run group, the SEXperts. Other directions include notifying Student Health Services and the Wellness Center of the results of this study, in hope that they can assess themselves and the progress they have made in the past decade.
In the past decade, the 2006 HIV recommendation has had several positive impacts on HIV testing awareness, as seen by the results of this study. Hopefully, a future student will continue developing this project even further or use this information to positively affect HIV/AIDS awareness, to decrease stigma, and to possibly combat HIV/AIDS on a global scale.
References


Vice President for Research. (2006) Institutional Review Board for Projects


Appendix A

To: Institutional Review Board
    Roger Wilmot, Chair

From: Kristine Young

Date: March 14, 2007

Re: Research proposal

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Project Title
HIV testing awareness on the University of Wyoming campus and the factors that keep students from getting tested

Project timeline
The data will be collected during this spring semester of 2007. The data will then be analyzed and described in the form of both an oral presentation and a written document. The oral presentation will be made at the Undergraduate Research Days on April 28th, 2007. The written document will be submitted to the University of Wyoming Honors Program before May 4, 2007.

Purpose
The purpose of this study is to determine University of Wyoming student awareness about the recent Centers for Disease Control recommendation that all patients between the ages of 13 and 64 in all health care settings be tested for HIV. This study will further try to identify issues that may keep University of Wyoming Students from following this recommendation.
Description of sample
Subjects will include any University of Wyoming students who will agree to voluntarily participate. The only restriction on the subject group will be student status at the University of Wyoming. Thus the group will include individuals of various ages, genders, classes, etc... Surveys will be administered to students in the General and Medical Microbiology labs and the Honors Program classes with the possibility of more class additions if more information is needed. The number of subjects expected to be involved will be between 200 and 500. There will be no incentive for subject participation.

Procedure
A survey will be developed using, as a guideline, *The Survey Research Handbook* by Pamela L. Alreck and Robert B. Settle. The survey will be administered by the principal investigator during students’ classes with the instructor’s permission. Surveys will be passed out to all students, giving each the chance to choose to answer the survey. The survey will be in paper format and respondents will answer less than a dozen clear questions. A cover letter will be included explaining the project and informing respondents about the approximate time investment (no more than a few minutes), confidentiality and how the data will be used. It will make clear that the purpose of the survey is simply to determine campus awareness and need for education. Surveys will be passed in all at once so that anonymity of volunteers will be preserved.

Identification of Subjects
Anonymity of the subjects will be preserved. Only basic demographic information will be collected such as age, gender, class, etc. There is no reason for the principal investigator to have any information that would be considered sensitive.

Benefits
The information resulting from this study may be of value to the University of Wyoming, as it will serve as an indicator of student awareness. Such information might be useful to those interested in developing a campus awareness program.

Risks
Only minimal risk to participants is expected.

Instrumentation
A rough draft of the instrument follows.

A letter from the faculty supervisor also follows.
Sample Survey

1) Please circle one:
   Gender _______                     Class Standing
   Male         Female
   FR          SO         JR         SR        GRAD
   Age _______

2) Are you aware that the Centers for Disease Control recommends that all patients between the ages of 13 and 64, in all health care settings, be tested for HIV?
   Yes          No

3) Have you ever been tested for HIV?
   Yes          No

4) Whether or not you have been tested, were you nervous to be tested due to factors other than the results of your HIV test?
   Yes          No

5) If you answered “Yes” to the previous question, please provide some reasons for your feelings of nervousness.

6) If you have not been tested, but would consider your behavior to be risky, did the fear of outside influences keep you from being tested?
   Yes          No

7) If you answered “Yes” to the previous question, if these factors could be removed would you get an HIV test?
   Yes          No

8) Do you feel that HIV/AIDS awareness should be increased on campus?
   Yes          No

9) Do you feel there is a need for a campus organization dedicated to HIV/AIDS awareness?
   Yes          No
Appendix B

University of Wyoming IRB Exemption Request

Institutional Review Board
Room 308, Old Main
1000 East University Avenue, Dept. 3355
Laramie, WY 82071

Phone: 307-766-5320
Fax: 307-766-2608
email: irb@uwyo.edu
(Electronic submission via email is encouraged.)

** Please be aware that if it is determined your research is not exempt, you will be asked to complete the full IRB form**

1. Responsible Project Investigator, Co-Investigators, & Faculty Supervisor

Responsible Project Investigator:

Name: Anna Bertani  Title: Undergraduate
Department: Department of Agriculture (Microbiology)
Office Address:
Phone number: (815)-715-6617  Fax number (if applicable):
Email address: abertani@uwyo.edu

Co-Investigators (add more boxes if necessary):

Name:  Title:
Department:
Office Address:
Phone number:  Fax number (if applicable):
Email address:

Faculty Supervisor (if PI is a student):

Name: Rachel Watson  Title: Academic Professional
Department: Department of Agriculture (Microbiology)
Office Address: Agriculture C 5030
Phone number: (307)-760-2942  Fax number (if applicable):
Email address: rwatson@uwyo.edu
2. Title of Study:

A Decade Later: Comparing Knowledge of Testing and Assessing HIV Awareness of University of Wyoming Students

3. Anticipated Project Duration:

The data will be collected during the fall semester of 2016. The data will then be analyzed and described not only in a poster presentation but also in a written document. The written document will be submitted to the University of Wyoming Honors Program before December 9th, 2016.

4. Purpose of Research Project:

In LAY LANGUAGE, summarize the objectives and significance of the research: The purpose of this research is to compare the responses of University of Wyoming students assessed in a survey regarding Center for Disease Control recommendations for HIV testing that was administered in 2007 and compare it to the knowledge evaluated by the same survey now (2016). The survey being used in this study was prepared in 2007 by Kristine Young as a part of her honors thesis. The University of Wyoming Institutional Review Board approved Young’s study in 2007. In addition, questions will be added to the survey in order to assess general HIV disease knowledge. This study will try to compare issues that may keep University of Wyoming Students from following these recommendations now to the issues that prevented this in 2007. Also, this study will try and compare knowledge of CDC recommendations and HIV awareness now to the awareness in 2007, and determine if a significant decrease of awareness is seen on campus, especially due to the defunding of the HIV/AIDS awareness group SEXperts.

5. Description of Potential Participants:
A. Are all Participants 18 or older? __X__ Yes    _____No

B. Are any special classes involved (pregnant woman, prisoners, children, or cognitively impaired individuals)? _____ Yes  _X___No

6. Procedure:

Description of participants' activities:
Participants will complete a survey that assesses general knowledge regarding HIV and testing procedures.

7. Confidentiality Procedures:

A. Explain whether or not participants will be identified by name, appearance, or nature of data: Participants will not be identified by name, appearance, or nature of the data. Only basic demographic information will be collected. The PI or project director shall maintain, in a designated location, the research summary and signed consent form related to the research for at least 3 years after completion of the research. We forgo a signed consent form, because that would be the only link between the participant and their responses.

B. Will the data you collect be anonymous or confidential (check the one that applies)? Note: research is only anonymous if the researcher does not know the identity of the participants and there are no identifiers linking the participant to the research.

Anonymous__X__               Confidential _____

8. Risks to Participants:

A. Describe the risks to participants: The only risk to the participant is breach of confidentiality, however since no personal identifiers will be collected, this risk is minimal. Only minimal risk to participants is expected.
B. Is information that is obtained recorded in such a manner that human subjects can be identified and any disclosure of the human subjects’ responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects’ financial standing, employability, or reputation? ___ Yes ___X___No

9. Description of procedure to obtain informed consent or other information to be provided to participant:

<table>
<thead>
<tr>
<th>A. How and when will the participants be approached to obtain consent?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Surveys will be available to any University of Wyoming students who will agree to voluntarily participate. The group will include various ages, genders, classes, etc. Surveys will be administered to students in the General and Medical Microbiology labs and honors classes, with the possibility of more class additions if needed. In order to get a broader group of participants and responses, surveys will also be available to students in the Student Union. If possible to obtain free condoms from Student Health, condoms will be available as incentive for students who chose to participate in the survey.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>B. Who will be responsible for obtaining consent (check the box that applies)?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Project Director <em><strong>X</strong></em></td>
</tr>
<tr>
<td>Member of Project team _____ (list name or position)</td>
</tr>
<tr>
<td>Other _____ (Please explain, and include name, affiliation, and title)</td>
</tr>
</tbody>
</table>

10. Please attach ALL survey instruments, interview questions, consent forms, etc.
Dear Respondent:

By completing the following survey, I give my informed consent. This survey is being used to assess the awareness on campus of a CDC recommendation about HIV testing and to better understand the factors that might keep students from getting tested for HIV. This survey is also being used to evaluate general knowledge of HIV and AIDS. This survey is being used as the research instrument for a Senior Honors Project. You have been asked to complete this survey because we are interested in responses from students at the University of Wyoming. The results of this research will be used as a guide for the campus community to better HIV programs at UW.

The questionnaire has been designed so that you can complete it quickly and easily. It will take just a few minutes of class time. Please mark next to the answer that you have chosen for each question. You may return your survey to the manila envelope when you are finished.

This survey is completely voluntary and anonymous. No individual student will be identified. If you choose to complete this survey, you must be of 18 years of age or older. Should you choose to complete this survey your answers will be combined with those of other students and used in analysis to help determine what the level of HIV awareness is on campus and why students may not be getting tested for HIV. If you choose to be surveyed, please answer as honestly and completely as possible as we do appreciate your candid opinion.

Once again, you are not obligated to fill out this survey but it will be greatly appreciated if you do. Thank you for your time.
Sample Survey

1) Please circle one:
   Gender: ____________
   Class Standing
   FR    SO    JR    SR    GRAD    Other

   Age ________

   Do you consider yourself to be part of a minority group? Yes    No

2) Are you aware that the Centers for Disease Control recommends that all patients between the ages of 13 and 64, in all health care settings, be tested for HIV?
   ____Yes
   ____Maybe
   ____No

3) Have you ever been tested for HIV?
   ____Yes
   ____No

4) If you have not been tested, which of the following are reasons that may have kept you from being tested? Select all that apply.
   ____Confidentiality breach
   ____Accessibility
   ____Time commitment
   ____Social stigma/ alienation
   ____Family problems
   ____Loss of relationship
   ____Fear of the testing process
   ____Personal or religious beliefs
   ____Fear of disclosing sexual activity
   ____Other, please specify ________________________________

5) What is the most important factor that keeps others from being tested? With 10 being the least important and 1 being the most, please rank the following factors (1-10) in the order that you feel they are most important in keeping other students at UW from being tested for HIV.
   ____Confidentiality breach
   ____Accessibility
   ____Time commitment
   ____Social stigma/ alienation
   ____Family problems
   ____Loss of relationship
   ____Fear of the testing process
   ____Personal or religious beliefs
   ____Fear of disclosing sexual activity
6) Whether or not you have been tested, were you or would you have been...

...nervous to be tested because of the possible results of your HIV test?

- Very nervous
- Nervous
- A little nervous
- Not at all nervous

...nervous to be tested due to factors other than the results of your HIV test?

- Very nervous
- Nervous
- A little nervous
- Not at all nervous

7) If you have not been tested, but would consider your behavior to be risky...

...did the fear of factors other than the results of your HIV test keep you from being tested?

- Definitely
- Probably
- Not sure
- Probably not
- Definitely not

If these factors could be removed would you get an HIV test?

- Definitely
- Probably
- Not sure
- Probably not
- Definitely not

8) Would you be more or less likely to get an HIV test if you could administer your own test in the privacy of your own home?

- More likely
- Neither, more nor less likely
- Less likely

9) How many students do you think have HIV or AIDS on the University of Wyoming campus? Fill in the blank.

_____ students

10) Do you feel that HIV/AIDS awareness should be increased on campus?

- Yes
- Maybe
- No
11) Do you feel there is a need for a campus organization dedicated solely to HIV/AIDS awareness that is accessible to students year round?
   ____ Yes
   ____ Maybe
   ____ No

12) Had you ever heard of HIV/AIDS before attending the University of Wyoming?
   ____ Yes
   ____ Maybe
   ____ No

13) If you had heard of HIV/AIDS before attending the University of Wyoming, how did you hear about it?
   ____ Friends
   ____ Family
   ____ Healthcare professional
   ____ Teacher
   ____ Website
   ____ Book
   ____ Other (please explain)

14) Students should learn about HIV/AIDS before attending college (circle one)
    strongly agree    agree    undecided    disagree    undecided
Appendix C

Dear Respondent:

By completing the following survey, I give my informed consent. This survey is being used to assess the awareness on campus of a CDC recommendation about HIV testing and to better understand the factors that might keep students from getting tested for HIV. This survey is also being used to evaluate general knowledge of HIV and AIDS. This survey is being used as the research instrument for a Senior Honors Project. You have been asked to complete this survey because we are interested in responses from students at the University of Wyoming. The results of this research will be used as a guide for the campus community to better HIV programs at UW.

The questionnaire has been designed so that you can complete it quickly and easily. It will take just a few minutes of class time. Please mark next to the answer that you have chosen for each question. You may return your survey to the manila envelope when you are finished.

This survey is completely voluntary and anonymous. No individual student will be identified. If you choose to complete this survey, you must be of 18 years of age or older. Should you choose to complete this survey your answers will be combined with those of other students and used in analysis to help determine what the level of HIV awareness is on campus and why students may not be getting tested for HIV. If you choose to be surveyed, please answer as honestly and completely as possible as we do appreciate your candid opinion.

Once again, you are not obligated to fill out this survey but it will be greatly appreciated if you do. Thank you for your time.
Sample Survey

1) Please circle one:
   Gender:  
   Class Standing
   FR  SO  JR  SR  GRAD  Other

   Age ________

   Do you consider yourself to be part of a minority group? Yes  No

2) Are you aware that the Centers for Disease Control recommends that all patients between the ages of 13 and 64, in all health care settings, be tested for HIV?
   ______Yes
   ______Maybe
   ______No

3) Have you ever been tested for HIV?
   ______Yes
   ______No

4) If you have not been tested, which of the following are reasons that may have kept you from being tested? Select all that apply.
   ______Confidentiality breach
   ______Accessibility
   ______Time commitment
   ______Social stigma/ alienation
   ______Family problems
   ______Loss of relationship
   ______Fear of the testing process
   ______Personal or religious beliefs
   ______Fear of disclosing sexual activity
   ______Other, please specify ________________________________________________

5) What is the most important factor that keeps others from being tested? With 10 being the least important and 1 being the most, please rank the following factors (1-10) in the order that you feel they are most important in keeping other students at UW from being tested for HIV.
   ______Confidentiality breach
   ______Accessibility
   ______Time commitment
   ______Social stigma/ alienation
   ______Family problems
   ______Loss of relationship
   ______Fear of the testing process
   ______Personal or religious beliefs
   ______Fear of disclosing sexual activity
6) Whether or not you have been tested, were you or would you have been...
...nervous to be tested because of the possible results of your HIV test?
  ____Very nervous
  ____Nervous
  ____A little nervous
  ____Not at all nervous

...nervous to be tested due to factors other than the results of your HIV test?
  ____Very nervous
  ____Nervous
  ____A little nervous
  ____Not at all nervous

7) If you have not been tested, but would consider your behavior to be risky...
...did the fear of factors other than the results of your HIV test keep you from being tested?
  ____Definitely
  ____Probably
  ____Not sure
  ____Probably not
  ____Definitely not

If these factors could be removed would you get an HIV test?
  ____Definitely
  ____Probably
  ____Not sure
  ____Probably not
  ____Definitely not

8) Would you be more or less likely to get an HIV test if you could administer your own test in the privacy of your own home?
  ____More likely
  ____Neither, more nor less likely
  ____Less likely

9) How many students do you think have HIV or AIDS on the University of Wyoming campus? Fill in the blank.
  _______ students

10) Do you feel that HIV/AIDS awareness should be increased on campus?
  ____Yes
  ____Maybe
  ____No
11) Do you feel there is a need for a campus organization dedicated solely to HIV/AIDS awareness that is accessible to students year round?
_____ Yes
_____ Maybe
_____ No

12) Had you ever heard of HIV/AIDS before attending the University of Wyoming?
_____ Yes
_____ Maybe
_____ No

13) If you had heard of HIV/AIDS before attending the University of Wyoming, how did you hear about it?
_____ Friends
_____ Family
_____ Healthcare professional
_____ Teacher
_____ Website
_____ Book
_____ Other (please explain)

14) Students should learn about HIV/AIDS before attending college (circle one)
strongly agree  agree  undecided  disagree  undecided