Increasing HIV Testing Awareness

Promoting HIV testing to all individuals and educating them about the disease

Tag Words: HIV, retrovirus, immune system, transmission

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Summary (HSG)

HIV is a retrovirus that proliferates rapidly in the human body. Recent studies have shown a way to decrease the spread of HIV so it does not lead to AIDS. AIDS is an advanced form of HIV at which point the human immune system is almost entirely diminished, allowing common infections to cause death. Most people don’t know about testing facilities if they feel that they may be at risk of being HIV positive. People who are sexually active have higher chances of getting infected and should know about these resources to prevent spread to other potential partners. One major factor that prevents people from getting tested is privacy. College students and other young sexually active individuals do like to share their sexual activity with strangers. Some function under the illusions that their parents will find out, even though the whole process is strictly confidential. Others are fearful of losing their jobs if their employers find out about their status. In fact many employers illegally request an HIV test in the hiring process, which may play a key role in this prevalent misconception. The biggest issue, however, is that common knowledge about this disease is very poor. While some think that HIV can be transmitted via kissing, other think that using condoms will protect them from the disease. Many also believe that there is a cure, and that if they do get infected, medication is available to protect them.

Our main goal therefore, is to educate people about HIV, testing, risks, procedures, and treatments involved. We began by marketing our event via Facebook group that targeted younger college students that are likely to be sexually active. This group advertised a free testing day at a popular, accessible, and well-known clinic in down town New Brunswick. We provided all the information needed to allow someone, who felt they needed to get tested, the preparedness to be able to actually go get tested that day. We went that day to the clinic and interview the doctors that administer and monitor the testing process. We posted this interview on YouTube for additional information for people wary of getting tested. We had planned to interview students we found that got tested due to our Facebook event; however this breaches Federal Policy on patient/doctor confidentiality.

Video Link
HIV interview Eric B Chandler Health Clinic: http://www.youtube.com/watch?v=2FhxBeXncJg
The Issue: Human Immunodeficiency Virus (HIV)

Introduction (HSG)
Human immunodeficiency virus (HIV) is a type of virus which, if untreated, leads to acquired immunodeficiency syndrome (AIDS). The immune system starts to fail in this condition, leading to very dangerous opportunistic infections. Infection can be mediated via transfer of blood, semen, vaginal fluid, pre-ejaculate, or breast milk. The four main ways to HIV is conceived is by unsafe sex, breast milk, contaminated needles and during birth when the mother is HIV positive. Blood product screening during the blood donation process is very effective in eliminated transmission through blood transfusions or contaminated blood products in the developed world.

HIV infects the microphages, helper T cells, which play a vital role in the mammalian immune system. The infection leads to low levels of immune system cells via three mechanisms: first it kills the infected cells directly, then it increases the rate of the infected cells, and lastly it kills the infected T cells, called apoptosis. HIV spreads very fast, but the sooner it is treated the better the prognosis for the patient and lower the chance of transmission to his/her partner. When T cell numbers decline below a safe threshold level, immunity is lost, and the body becomes increasingly more susceptible to opportunistic infections. Screening for blood products has highly reduced transmission during blood transfusions in developed world. However 3rd world countries do not screen as often and therefore transmission rates are higher there.

HIV infection in humans is considered to be a pandemic by the World Health Organization (WHO). However complacency about the disease amid other political issue today has caused resurgence in transmission in many areas of the world.
One of the most dangerous aspects of HIV is that most HIV positive people will not be symptomatic until the advanced stages of the disease. Lack of symptoms allows infected individuals to continue spreading the virus without knowing they have it because they never think of getting tested. People who are not treated will eventually develop the advanced form of the disease called AIDS. These people will not survive common infections or malignancies due to the failure of their immune system.

However there is a large increase in life expectancy of patients that receive anti-retroviral treatment. The chances of dying without the anti-retroviral therapy is very high (person dies within a year). However even after the HIV has progressed to AIDS, the survival rate is very high with the therapy (estimated to be more then 5 years as of 2005).

In response to HIV, the body produces antibodies. These antibodies are special proteins that fight infection. There are several ways the antibody can be tested including blood, saliva and urine. If these antibodies are detected, then that person has been infected with the HIV virus. There could be exception to this rule like babies born to HIV infected mothers retain their mother's antibodies for up to 18 months, which means they may test positive on an HIV antibody test, even if they are actually HIV negative. Normally babies who are born to HIV positive mothers receive a PCR test after birth confirming/disconfirming their HIV status. Some people who have taken part in HIV vaccine trials may have HIV antibodies even if they are not infected with the virus.

**Impact on world (RS)**

HIV spread among U.S residents started in the late 1970s but it was first reported in 1981. HIV was first identified in 1983. In the case of United States, HIV has been stabilized
from increases in the appearance of new AIDS cases. However, the epidemic continues to rage worldwide specially in the developing countries and Africa. According to the NIAID, in December 1997 an anticipated 30.6 million people were living with HIV internationally in 1997 and it was predicted to reach up to 40 million people by the 2000. More than 75% of the adult infections were the result of heterosexual contact. From years 1981 to 2006, AIDS has killed more than 25 million people. It has infected 0.6% of the world’s population. Just in 2005, AIDS infected about 2.4-3.3 million people in which 570,000 were kids. One third of these deaths due to AIDS in Africa, the main reason behind this statistic are their poor economic growth and high poverty rate. 90 million people are currently infected by HIV in Africa, resulting in about 18 million orphans. To reduce both the mortality and the morbidity of HIV infections, antiretroviral treatments are used but the routine access is not available in all the countries. In U.S over 600,000 reported cases of AIDS have been recorded since 1981 and it is believed that 900,000 Americans may be infected with HIV. Even though the time differs from each individual, the scientists estimated that almost half of the population living with HIV will get infected by AIDS within 10 years. In minority population HIV is increasing very fast in women and injection drug users.

<table>
<thead>
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<th>Statistical facts on HIV (HG)</th>
<th>Year 2008</th>
<th>Estimate (million)</th>
<th>Range (million)</th>
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<tr>
<td>People living with HIV/AIDS</td>
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<td>31.1-35.8</td>
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<td>Adults living with HIV/AIDS</td>
<td>31.3</td>
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<td>29.2-33.7</td>
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<td>Women living with HIV/AIDS</td>
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<td>Children living with HIV/AIDS</td>
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<td>1.2-2.9</td>
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<td>People newly infected with HIV</td>
<td>2.7</td>
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<td>2.4-3.0</td>
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<td>Children newly infected with HIV</td>
<td>0.43</td>
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<td>0.24-0.61</td>
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<td>1.7-2.4</td>
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<td>Child AIDS deaths</td>
<td>0.28</td>
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HIV among college students (RS)
According to the American College Health Association, 1 in 500 college students are infected with HIV. There are several factors which make the spread of HIV faster in college students relative to the surrounding population. Some of these include peer pressure, lack of maturity, alcohol and, drug use. One of the main reasons is unprotected sex with many different partners while they are under the influence of alcohol or drugs. Not paying too much attention to using
safer sex techniques and failing to use condoms correctly can lead to possible HIV infection or other sexually transmitted diseases. STDs can raise the chances of getting HIV/AIDS also due to open sores. The greatest percentage of STD spread is among young individuals. Studies have shown that there are more men educated about HIV than women are. Most males educated about HIV/AIDS are reported to use protection and be engaged in less sexual intercourse. Research shows that 75-85% of homosexual students do not feel the risk of them having a possibility of HIV infection. The studies have also shown that half the population with HIV infection is people under the age of 25. The biggest cause of this spread is sexual transmittance of the disease. Drug-users are at high risk for HIV infection. HIV is not passed through social contact. Kissing an infected person is also not a known risk.

For students who are sexually active, the best way to prevent the infection is the use of latex condoms. It is proven that when condoms are properly used in a sexual intercourse, the risk of getting infected by HIV might be lowered by 70% to 99%. Even though the use of condoms is very safe, most college students do not practice consistent use of condoms. Studies have found that majority of college students are sexually active, but only about 40% of those use protection. Another study has shown that only 25% of the students always used condoms during their sexual intercourse. Researchers found that 16% of the females and 25% of the males always used condoms. 36% heterosexual college students studied did not use a condom during their initial sexual involvement with partners in the previous years.

HIV among Gay and Lesbian Community (RS)
It is found that women have a very low risk of transmitting HIV compare to men. HIV infection is very high among the gay community than any other group of people found in USA and UK. In USA and UK, the percentage of young homosexual men who have been infected with HIV and AIDS is higher than groups like children. Approximately 255,000 homosexuals were infected with HIV in 2007 and approximately 5,400 died. The studies showed that around 48% of all people that were infected with AIDS in USA in 2007 were possibly exposed to HIV through male to male sexual contact. In the UK, 45,947 were infected with HIV had been people having sexual intercourse with the same sex. Out of all the gay people who were infected, 53% of them were under the age of 35, which means mostly young people.

HIV transmission in men is the primary cause in America. In Brazil, gay men were accounted for 40% of all AIDS cases diagnosed among them in years between 2000 and 2005. Some countries like Colombia have the estimate range of 10% to 25% infectious cases. This range is less than most other countries. Many researchers have promoted the awareness of HIV & AIDS. The same kind of awareness is used for STIs as a whole and many young people, including young homosexual men may underestimate their chances of getting exposed to the sexually transmitted diseases. There is also evidence that in certain places, even in well-educated areas, young people do not believe that they are vulnerable to contracting them.

HIV transmission from mother to the child (HG)
HIV transmitted from mother to child when she is pregnant is very common. Mother-to-child transmission (MTCT) occurs during pregnancy, labor delivery or breastfeeding. If the proper treatment isn’t given, 15-30% of babies is born with HIV during delivery and pregnancy 5-20& of babies will get infected by breastfeeding.
Pregnant women who are infected with HIV need to have the treatment as soon as possible so the child won’t have to face getting transmitted with it. Women who are in a higher stage of HIV, require a combination of antiretroviral drugs. This treatment goes on for long time in the women’s life time. This treatment prevents the MTCT. Women who require this treatment will be advised to take it in the beginning of either immediately or after the first trimester. For the baby, this treatment is only require for the first 2 days or few weeks after they are born, to decrease their risk of getting it in future. Some pregnant women, who do not need this treatment, can just take a short course of prescribed drugs to protect their babies from getting HIV.

One of the easiest transfers of HIV is from mother to the baby. It is very frequent that a HIV positive mother passes the HIV to the child through pregnancy, labor and delivery, or breastfeeding. This makes it very important for pregnant mothers to check if they carry the HIV virus. The HIV transfer is very common in Africa. The chances of mother transferring the disease to the child are very high, 90% in Africa. This is because the mothers are not tested and are not educated about the transmittance of the diseases. The transmittance can also be reduced with certain drugs such as AZT. There are drugs that mother can take at various period of her pregnancy to ensure that the child is not infected with the disease. The best way to reduce the spread of HIV diseases especially among babies is by educating mother and requiring all pregnant mothers to get an HIV test done. Counseling and educating mothers is the best way to reduce the problem. The decrease of the spread of the diseases was recorded in places where mothers were educated about the HIV spread to the child and to preventive actions.

Testing facilities (RS)
There are lots of facilities for testing HIV. They are based on same technology as ELISA tests but instead of sending the samples to a lab, they can be analyzed within 20 minutes. Rapid tests are either used with a blood sample or oral fluids. They do not require higher facility or staff. All positive tests should be confirmed with a follow up test which should be done in couple days to couple weeks.

Antigen test (P24 test) (HG)

Substances found in a body or germ which stops the production of antibodies is called antigens. The antigen on HIV that most commonly provokes an antibody reaction is the protein P24. Early in HIV infection, P24 is produced in excess and can be detected in the blood. P24 antigen tests are not usually used for general HIV diagnostic purposes because of their poor sensitivity and they only work before antibodies are produced in the period immediately after HIV infection. They are mostly used as a component of a fourth generation test.
For a testing antibodies and P24 antigen concurrently has the advantage in more accurate HIV detection. It is recommended in certain countries like UK but it is not offered in all the testing sites. The fourth generation test was approved by the FDA in June 2010 in the United States.

**PCR test (HG)**

A PCR test is a Polymerase Chain Reaction test which is used to detect the genetic material of HIV. PCR test is also used to identify HIV in the blood within two or three weeks of infection. This test is also known as a viral load test and HIV NAAT (Nucleic Acid Amplification Testing).

A PCR test can be used for newborn babies to identify if they are HIV positive because babies born to HIV positive mothers retain their mothers’ antibodies for several months. This test is widely used in most developed countries to screen for HIV in blood supplies. However, it is very expensive test to use for HIV in individuals and can be complicated to interpret and administer than a standard antibody test.

**HIV home sampling and HIV home testing (RS)**

It is generally recommended that an HIV test is carried out in a healthcare setting. However, some countries have home sampling and home testing kits available.

Home Testing Kit is used when a person wants to take a sample (usually a blood sample) and send it to a laboratory for testing. They can find out the test result a few days later from the laboratory. If the result is positive, a professional counselor will provide emotional support and referrals. The main advantages of home sampling test are accessibility, quickness, confidentiality and anonymity.

There are some companies in the USA that offers an FDA-approved home sampling kit for HIV. Many home sampling kits are not approved by the FDA are marketed online. There is also a company in the UK that offers home sampling services using oral fluid instead of blood. If a person has a positive test result, they will need a follow up blood-test at a clinic.

**Home testing (HG)**

Home testing is a rapid test that can be done without going to an HIV clinic. This is done with bodily fluids such as blood or saliva. The results can be interpreted easily within a few minutes. If the test is positive, it is recommended that the patient should get tested at the clinic to confirm the results.

The HIV home testing is illegal in many countries and selling of the testing kits is also illegal. Also the HIV testing kit is not 100% accurate so patients are recommended to get the test redone at clinic if there are any doubts about the results. One
problem with the home testing kit is that there is no counseling after the test has been completed. There may be many patients who do not know how to interpret the results.

Questions for Counselor

1. What is HIV testing?
2. What do you look for?
3. How long does it take?
4. Is it safe?
5. How many people do you test in a day?
6. Is it very emotional for the patient?
7. What percentages of the people getting tested are positive?
8. What ethical issues are involved?
9. How do you tell the patient their results?
   a. Electronic?
   b. In person?
10. What is the age limit?
11. How many college students get tested?
12. What is the percentage of false positive results?
13. How do you communicate false positive results to the patient?
14. What alternatives do you offer to positive tested patients?
15. What advice do you give to positively tested patients?
16. What safety protocol do you use to prevent spread of HIV from patients to doctors, nurses, lab technicians?
17. Has HIV transmittance decreased?
18. Are we close to a cure?
19. Are health care workers allowed to be HIV positive?
20. What drugs are used in the treatment of HIV?
21. How expensive are they/ what if someone cannot afford them?

Questions for students

1. Have you ever gotten an HIV test done?
   yes
2. How did you feel about getting tested?
   - I felt a little nervous at first but it is an important test for sexual active people
3. Are you aware of testing clinics?
   - Yes, the testing clinic I went to is Eric B. Chandler health clinic on George street.
4. Would you tell your partner if you were positive?
   - I think it would be an extremely responsible thing to do. However I can see some people fearing rejection from their partner if they share their status.
5. Where did the test take place?
   - It was in the Eric B. Chandler HIV clinic in a private room.
6. Who did your testing?
   - An HIV counselor.
7. Was there any paper work required?
- Yes, personal information form was filled for state records only. Also it requires answers to questions about sexual activity, drug use, use of needles and any isolated instances of bodily fluid contact.

8. What was the test like?
   - It took 10 mins to do the test. She pricked my finger and used a capillary tube to drop the blood onto a test tab. Ten mins later the results were shown.

9. How were you informed about the results?
   - The test tab had a window that had a T symbol and a C symbol. The C symbol represented a control and the T symbol represented test. A bar at the C symbol meant the test was working properly. A bar the T symbol meant that the patient is HIV positive.

10. How do they verify the positive results?
    - If the patient is tested positive they are required to redo the test for conformation and accuracy. If the results come positive again the test is repeated again.

References

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http://www.hiv.com/
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The Service Project: Education and Testing (HG)

HIV is a wide spread disease in United States and many other countries. One of the biggest factors behind this spread is the lack of education and also many people are not aware that they carry the virus. There is no way to make sure every individual gets tested every year, as recommended by the HIV counselor. However by doing this project we made an effort o make individuals aware of the disease and encourage individuals to get tested every year. He main goal behind this project was to decease the spread of HIV by educating people about it and encouraging people to go get HIV tested.

The main goal in this project was to inform people about the free HIV testing and have people get tested, because many individuals are not even aware that they carry this disease. In this project we contacted many clinics that offer HIV testing. There are some clinics that require insurance and payment, but there are also many clinics where the testing is free, so regardless of anyone’s financial obligation they can get tested. The clinic that agreed to work with us is located in New Brunswick.

Eric B. Chandler, the clinic located in New Brunswick offers free HIV testing to all individuals. This test is confidential so no insurance is required. The counselor suggests everyone to take this test at least once a year. The free test offered at Eric B. Chandler is a blood test. This test takes about 15 minutes and if tested positive they will repeat the test to confirm the results. After the individual is tested they are educated about the transmittance of the disease and precautions that
can be taken. If the patient is tested positive they are encouraged to talk to a doctor who is also at this clinic and he helps the individual personally and prescribed drugs and a nutritionist will make a diet plan for the individual.

After looking into detail we believed that this clinic gave one of the best treatments. First thing is to educate people that this kind of service is offered for free and it is recommended that everyone gets tested. We made a facebook event, to bring people to this event and make them aware of the free testing facility. This facebook event was an open event so anyone can attend this and everyone can invite their friends to go gets tested. We also encouraged the free testing by word of mouth. Since this testing site is located in New Brunswick it was great because many people were able to attend this event.

After the event on Friday November 12th, we interviewed the counselor at the clinic who does HIV testing. The interview is posted in the video. The interview was a great way to find more information about the test and still encourage more people to get tested at least once a year regardless of their sexual activities. We also interviewed a individual who got tested at this clinic. The questions and the answers are listed above. This was a great way to find out how our free HIV testing event affected a specific individual. Although we could not record people getting testing, we asked them question about their testing experience. This event educated and encouraged many individuals who were not aware of the free HIV testing and that it can be so quick and easy.

This project was done not only to bring people to get tested on Friday November 12th, but this event was also a way to bring people t the clinic and get educated. This event not only effected the people who went and got tested that day but also the individuals who just heard about this event and were notified that this kind of service is offered to everyone and how beneficial the Free HIV testing can be.

Editorials

Dear Keith Ryzewicz

My name is Hetu Gadhia. I am a Rutgers Student. I have written an article on HIV among homeless people. This is for a class called Ethics in Science that I am taking. For which I have to write an editorial and submit it to a newspaper. I have written this article based on a project I am doing. I understand if this article cannot be published in the newspaper but I would truly appreciate it if you can please respond to this email so I can show my professor the proof of submission.

HIV spread in Homeless people

HIV is a retrovirus that has no cure. This virus is spread in many ways; the most common spread of the virus is by sexual intercourse, direct contact with infected blood or from the mother’s placenta. There are many precautions that can be taken to prevent the spread of the virus. However many people are not educated about the precautions and are not aware of the rapid HIV testing clinics where they can find out whether they are infected with the virus and if
they are, what they can do to prevent the spread. The chances of this occurring are greater in homeless people.

The widespread of HIV has become a big issue these days for people who are not able to or do not have access to an HIV test. The most common way to spread of HIV is by sexual intercourse. Since this is a non-curable disease the chances of the infection spreading is very high, when there is no protection or precautions taken. On a study done it was proven that the chance of homeless people to catch this virus is three times higher. Many reasons behind this are because these individuals are not aware of the free testing that are offered, or cannot afford to use precaution and are not educated about it.

The issue is not that these people do not want to get tested but the problem is that they are not aware of the free clinics where they can be tested. Also many of these individuals do not have transportation to get there, and they do not keep up with the clinic to find out their results. As advised by doctors, that there is no reason to this testing if the individuals are not able to keep up with the testing and if they do not take precautions to prevent the spread of the disease.

The study performed on the homeless people tells us that having free clinics is not enough to prevent the spread of the infection. But more needs to be done and homeless people need to be targeted to get tested and educated about the diseases. For many reasons they are not able to keep up with the results so another way would be to educate every individual after getting them tested. Also if the individuals are not able to find transportation to get to the clinic or have another issues preventing them from getting tested those problems should also be solved to prevent the spread of this disease.

Thank You for your time.
my number is 732-476-4242

Thank You
Hetu Gadhia

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**HIV testing**

Human immunodeficiency virus (HIV) is a human deficiency in an immune system. HIV can spread through several ways. It could infect by transfer of blood, semen, vaginal fluid, pre-ejaculate, or breast milk. The four main ways to HIV is conceived is by unsafe sex, breast milk, contaminated needles and infected mother’s baby at birth. Blood product for screening is very highly eliminated transmission through blood transfusions or contaminated blood products in the developed world. HIV infects the microphages, helper T cells and dendritic cells which are part of the mammalian immune system. The infection leads to DC4’s low levels which have three mechanisms: first it kills the infected cells directly, it increases the rate of the infected cells which are called apoptosis and lastly it kills the infected T cells. HIV spreads so fast and the sooner it can be detected, the better it is making it less dangerous.

In order to treat the HIV virus, it is very important to take a test outside at a clinic or at home. One of the main tests is the antibody test. In antibody test, antibody which is a protein that fights infection is detected by testing the blood, saliva and urine. In most cases, the HIV is detectable in 6-12 weeks of infection unless it’s a very rare case where it takes more time. This test is very accurate when it comes to detecting very particular antibody. There are some rapid HIV tests which includes ELISA test. ELISA tests do not require blood being sent to the
laboratory and tested which takes up more time. This test gives result in 20 minutes and does not need highly qualified technicians. It can be tested with blood sample or oral fluids. A PCR (Polymerase Chain Reaction test) is another way to detect the genetic material of HIV. In blood, this can indentify HIV within 2-3 weeks after infection. The PCR test is usually used on the mothers whose babies are born HIV positive. HIV virus can detect by home sampling. A person usually takes either a blood or saliva sample. The results can be interpreted within minutes. To confirm the test, a patient requires going to a clinic. This test is not legal in all the countries because online purchased kits are not guaranteed to be as accurate as they should be.

Rutu Shah
Rutgers University

HIV/AIDS in the United States has been a sensitive topic that has, over time, moved down the public’s list of major world problems. However Barack Obama’s goals of improving the healthcare system have stirred back the HIV/AIDS topic to the media forefront. The Affordable Healthcare Act has allowed many more people to be insured at a reduced cost with higher coverage. This coverage promotes physicians offering HIV testing for all of their patients at no additional cost. This practice has been applauded by New York’s Department of Health, which reported that HIV/AIDS was the 3rd leading cause of death for people in New York City under the age of 65. Another statistic shows that 1 in 40 individuals are infected in just the city limits. Under the Affordable Health Care system, more people would know about their HIV status. This knowledge and some additional education about HIV would dramatically reduce the rate of transmission in New York City.

However not everyone is pleased with Barack Obama’s approach to HIV testing/treatment policies. Housing works, a non-profit organization that proposes to work on the crisis of AIDS and homelessness in NYC, feels that Obama’s decision on the funding needed for this project is miscalculated. The organization feels that even the modest of community programs would not be able to function efficiently with this supposedly low funding.

Although these concerns seem understandable, I feel they lack perspective. Before this law, as I had mentioned, HIV/AIDS was only given fine print to rear its head in the media. Now it is being actively discussed in congress and state legislatures across the country. With more people getting tested, there will be fewer new cases as more people know about their condition. Before this law, being tested was not connected to a doctor’s visit. Once this law is fully operational, physicians are mandated to provide there testing facilities to all their patients. So what some critics forget about this new Health Care system is that it is bringing back many of the forgotten and festering health care problems that were not in anyone’s political agenda. Enough funding or not, it is still a step in the right direction.