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Should the Population Be Screened for HIV?

Flora Ichiou Huang

Biology and Geo-Science Department
Stuyvesant High School
New York, New York

and

Diane Marie M. St. George

Faculty Chair, Master's Programs in Public Health
School of Health and Human Services
Walden University

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Lesson Plan

TITLE: Should the Population Be Screened for HIV?

SUBJECT AREA: Social studies, biology, health

OBJECTIVES: At the end of this module, students will be able to:

- Define screening in the context of public health
- List and explain the criteria used to determine whether a screening program would be helpful for given health events
- Recognize the many concerns and competing interests that must be addressed when considering the implementation of new screening programs or the continuation of existing ones

TIME FRAME: Two to three class periods (one for screening lecture, one for group case studies and an optional third class period for review of assessment exercise)

PREREQUISITE KNOWLEDGE: None

MATERIALS NEEDED:

- For Case Study 2: Bureau of Citizenship and Immigration Services. U.S. Department of Justice Web site. HIV Infections: Inadmissibility and Waiver Policies Fact Sheet resource page. July 10, 1998. Available at: <http://uscis.gov/graphics/publicaffairs/factsheets/hivfs.htm>. Accessed December 17, 2003.
- For Case Study 3: UNAIDS Epidemic Update (*current year*). Table titled Regional HIV/AIDS Statistics and Features, End of (*Year*). Available at: www.unaids.org. Click on link to UNAIDS Epidemic Update.

PROCEDURE: This module provides activities that teach about the criteria for population screening for disease, using the human immunodeficiency virus (HIV) as an example. The teacher is asked to review the introductory material and use it as the background for a lecture on population screening or provide it as a handout to students if they wish. Students should divide into four groups and work on a case study. After completion of their group work, students should reassemble as a class and report on their case studies and what they have learned about the issues related to screening. As an assessment strategy, students may work either alone or in groups on a non-HIV case study.

ASSESSMENT: As an assessment, teachers may wish to give a group homework assignment and then have the groups report on their deliberations in a third class period (approximately one week later) or prepare a written essay or both.

Students should work in groups to consider whether specific countries should institute mandatory nationwide screening for HIV. The teacher should assign groups to one of the following countries:

- Botswana
- United States of America
- Australia
- Bangladesh

LINKS TO STANDARDS:

Social Studies

- Social studies programs should include experiences that provide for the study of culture and cultural diversity.
- Social studies programs should include experiences that provide for the study of people, places and environments.
- Social studies programs should include experiences that provide for the study of individual development and identity.
- Social studies programs should include experiences that provide for the study of interactions among individuals, groups and institutions.
- Social studies programs should include experiences that provide for the study of global connections and interdependence.

Science

- Students should develop understanding of:
 - Personal choice concerning fitness and health involves multiple factors. Personal goals, peer and social pressures, ethnic and religious beliefs, and understanding of biological consequences can all influence decisions about health practices.

From the National Academy Press Web site, Science Education Standards resource page. Available at: <http://www.nap.edu/readingroom/books/nses/html/6e.html>

Health

- Students will comprehend concepts related to health promotion and disease prevention.

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- World Health Organization Web site. Countries resource page. Available at: www.who.int/country/en/

Introductory Material for Teacher

Screening is the process by which a disease is detected early, i.e., before symptoms are evident. Screening is also used among individuals who may have certain risk factors for a particular disease. There are several screening programs that may be familiar to students because they are required by many states across the United States. For instance, according to results from an analysis of the 50 states and Washington, D.C., the 2000 School Health Policies and Programs Study found that 20% of states required school districts or schools to screen students for tuberculosis (TB) and 24% of them required screening for weight problems.

There are three types of screening programs:

1. Mass screening (population-based screening) programs are those that screen large proportions of the population for a given disease. Blood pressure screening is an example. Blood pressure screening as an early test of heart disease is conducted at most physician office visits, at health fairs, in preemployment physicals, etc.
2. Multiphasic screening programs are those in which multiple screening tests are administered together to large groups of people. Preschool enrollment screening is an example of multiphasic screening, in which children get all types of tests, such as hearing, vision and tuberculosis.
3. Selective screening (targeted screening) is screening for disease among only those who are considered to be at high risk. For instance, prostate cancer screening is offered to older men because they are at higher risk.

Detection of a disease earlier than it would usually have been diagnosed—i.e., before the individual begins experiencing symptoms—can be helpful in improving the outcome. Hence the existence of appropriate population screening programs is one of the many attributes of an effective public health system. Epidemiologists are involved in screening programs in two very important ways. They are responsible for (1) conducting the research that justifies the creation of a screening program and (2) evaluating existing screening programs to determine if they are meeting their goals and objectives.

At first glance, early detection of disease through screening would seem to be ideal and desirable for all diseases. However, screening is in fact only appropriate for certain health conditions and certain situations. In the late 1960s, the World Health Organization (WHO) proposed a set of guiding principles for screening. WHO, a division of the United Nations, is the premier agency responsible for global health. These criteria have been revisited many times, clarified and expanded. The following is a list of the many factors that should be considered when determining, for any given disease, whether screening programs should be initiated and, if already in existence, whether they should be maintained, revised or eliminated.

The ideal screening program would meet the following criteria:

1. The disease is a serious condition that causes a significant burden on the population. For instance, most types of cancer would meet this criterion and ankle sprains would not.
2. The disease has a high prevalence in the population; that is, a large portion of the population is affected. Rare disorders should not be considered because screening programs would have to test large numbers of individuals in order to find one case of disease.
3. The natural history of the disease is understood. **Natural history** refers to the course of the disease both with and without treatment. For instance, Lyme disease meets this criterion. We know how it is transmitted, how long it takes for the bacteria to cause symptoms in the body, what happens if treatment is given and what happens if it is not.
4. The disease has a recognizable **preclinical** or **asymptomatic stage**, a stage during which the individual is diseased but is not showing symptoms. For instance, breast cancer meets this criterion because there may be many years between the time the cancer begins to develop, the time the lump appears and the time the disease starts to cause visible symptoms, advances and spreads. The asymptomatic stage is the period that begins when the lump can be recognized as cancerous on X-ray film and biopsy and that ends when the person feels the lump.
5. An appropriate screening test is available. Of course, screening cannot be done if no test is available. However, this criterion also suggests that one must consider factors such as the test's simplicity, time commitment, safety, acceptability and validity.
 - a. Simplicity. Is the test relatively easy to perform, or does it require advanced expertise?
 - b. Time. How long does it take to be tested, and how long does it take for the test to be processed?
 - c. Safety. Being tested should not itself pose a grave health risk, such as the risk associated with a screening test that requires invasive surgery.
 - d. Acceptability to the population. The test must be tolerable to the population, e.g., noninvasive.
 - e. Validity. Can the test accurately discriminate between people with and without the disease? There are many ways of assessing the validity of a screening test. Suffice it to say that it is possible to measure the accuracy of screening tests by using measures known as sensitivity, specificity, positive predictive value and negative predictive value. **Sensitivity** is the probability of testing positive given that one has the disease. **Specificity** is the probability of testing negative given that one does not have the disease. **Positive predictive value** is the probability of actually having the disease given that one tests positive. **Negative predictive value** is the probability of actually being disease free given that one tests negative.

6. The treatment that could be provided at an early stage would result in a more favorable outcome for the individual than if the treatment were administered after symptoms appear. For instance, the common cold would not meet this criterion, whereas many other diseases such as cervical cancer or heart disease would.
7. The program must be cost-effective. This is sometimes a very difficult criterion to assess and may be met in certain societies and not met in others. Here, one must consider not only the costs of the testing itself but also the costs of the individual's time, the social and psychologic burden that may accompany the test results, the cost of follow-up tests and treatment, and the like. These costs must be weighed against the costs of not testing, which may include the value of the loss of life or disability from late diagnosis; the emotional, financial and other burdens placed on the loved ones of the person with the disease; and the costs to society of disease, such as medical care costs and the threat of disease transmission in the case of infectious diseases. These are but a few examples of the many costs that must be considered.
8. The resources needed for treatment must be available. This criterion is another one that is society-specific. Treatment resources include health care providers, inpatient or outpatient facilities, and medications, to name a few. If these resources are not readily available or accessible to the population, it may not be appropriate or ethical to screen individuals, that is, to tell them early on that they are diseased, which affects their lives in innumerable ways, and then tell them that there is nothing that can be done. Some may argue that in such cases asymptomatic individuals should not be screened and they should just continue living as though they were disease free until the symptoms present themselves.
9. Finally, screening programs should be implemented only when they will be ongoing, not just offered one time only.

It should be clear from this long list that the decision about whether to screen for a given disease depends not only on the nature of the disease itself but also on many other factors, such as attributes of the test and population characteristics. There are many diseases and health conditions that will meet some, but not all, criteria, and there may also be some conditions that will meet none of the criteria. What is most notable, though, is that very few diseases will meet all criteria. Thus the decision about which screening programs to support will often depend on societal priorities about where to allocate scarce health resources.

Acquired immunodeficiency syndrome (AIDS) is an excellent example of a disease for which screening is a possibility, but for many reasons, there is great debate about screening for HIV, the virus that causes AIDS. Screening for HIV has been based primarily on the detection of antibodies in the blood, but more recently tests for saliva and urine that detect antibodies have also become available.

Students will consider selected AIDS screening programs and will grapple with the many issues that should be addressed when deciding on whether and how AIDS screening should be undertaken. For many of the case study questions, there are no right or wrong answers. Students are expected to think through the critical issues and decide for themselves what the appropriate courses of action should be.

Case Study 1:

Preventing Perinatal Transmission of HIV (Student Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child.

Since 1992 the incidence of pediatric AIDS cases (not just HIV-positive cases) in the United States has dropped significantly from more than 800 reported cases in 1992 to 175 reported cases in 2001 (see CDC, Pediatric AIDS Surveillance resource page, available at www.cdc.gov/hiv/graphics/pediatri.htm). Of these 175 infants, 86% contracted the virus from their mother, 1% contracted the virus through blood or blood products, and the method of acquisition in the last 13% was unknown. The significant drop in these cases was, at least in part, a result of the use of antiviral drugs given to pregnant HIV-positive women to deter the virus from reproducing in the women's bodies. If the viral count stays low within a woman, she will have a smaller chance of passing it on to her unborn fetus. Pregnant women who are HIV positive are also advised to have cesarean births and not to breast-feed in order to reduce the chances of passing on the virus during birth or through breast milk, respectively. These preventive measures have been credited with significantly reducing HIV transmission from mother to child, which has resulted in the significant decrease in pediatric AIDS cases.

However, these measures could be taken only if pregnant women were aware of their HIV status, and testing for HIV is not something that many pregnant women think about. Although 175 reported cases in 2001 represent a significant drop from more than 800 cases in 1992, the numbers could drop even further if more women who were pregnant were tested for HIV early in their pregnancy and took the protective measures for their unborn fetus mentioned previously. The Centers for Disease Control and Prevention (CDC) estimates that each year there are between 280 and 370 cases of HIV transmission from the mother to the child (see CDC, Revised recommendations for HIV screening of pregnant women, available at www.cdc.gov/mmwr/PDF/RR/RR5019.pdf). These numbers could be further reduced.

Discussion Questions

1. Which of the screening criteria are met for this HIV screening program? Which are not met? When considering these questions, think about the criteria as they relate only to the screening of pregnant women.
2. What could be done to get more pregnant women tested for HIV? Why would this be a very difficult task?
3. Some states have adopted policies for pregnant women to get HIV counseling and to get tested for the virus. Currently there are three methods that have been adopted by different states (see CDC, HIV testing among pregnant women—United States and Canada, 1998–2001, available at www.cdc.gov/mmwr/PDF/wk/mm5145.pdf). One method is called the opt-in approach, in which pregnant women receive HIV counseling when seeking prenatal care and voluntarily choose to get tested. Another method is the opt-out approach, in which pregnant women also receive HIV counseling when seeking prenatal care and get tested for HIV, but they have the choice to opt out of getting tested. Finally, some states have a mandatory newborn testing policy, in which all newborns are tested for HIV no more than 48 hours after their birth.

Which method do you believe to be the most effective? Which method do you believe to be the least effective? Do the opt-in and opt-out policies reach out to all pregnant women?

4. A study of certain U.S. states and Canadian provinces conducted by the Centers for Disease Control and Prevention found that states that have the opt-in policy have the lowest proportion of pregnant women being tested (see CDC, HIV testing among pregnant women—United States and Canada, 1998–2001, available at www.cdc.gov/mmwr/PDF/wk/mm5145.pdf). States with either an opt-out or a mandatory testing policy had higher proportions of women getting tested. See Table 1, which gives a more detailed description of the data that were collected.

Why would an opt-out policy be more effective? How would a mandatory newborn testing policy encourage women to get tested when they are carrying the child?

Table 1. *Percentage of Pregnant Women Who Get Tested, by State of Residence, 1998–1999*

State	Testing Approach	% of Pregnant Women Getting HIV Tests
Tennessee	Opt-out	85
New York	Mandatory newborn testing	83
Connecticut	Mandatory newborn testing	81
Maryland	Opt-in	69
Georgia	Opt-in	66
Minnesota	Opt-in	62
California	Opt-in	39
Oregon	Opt-in	25

Source: CDC. Revised recommendations for HIV screening of pregnant women. *Morbidity and Mortality Weekly Report* [serial online]. 2001;50(RR-19):59–86.

5. Because of the results shown in Table 1, the CDC recommends that states that have an opt-in policy and a low percentage of pregnant women who get tested for HIV should reevaluate their current policy. However, there may be many reasons why states would not want to adopt an opt-out policy, and there would be many reasons why citizens would not want an opt-out policy.

Consider some of the reasons why states would not want to adopt this policy. Consider some reasons why citizens would not be in favor of this policy.

6. What if a policy were developed that required all pregnant women to get tested for HIV (i.e., they would not have the choice of opting out)? Although this would increase the percentage of women getting tested for HIV, there are many questions that must be considered.

Prepare a statement to discuss whether it should be mandatory for all pregnant women, with no opt-out choice, to get tested for HIV. Include all of the factors that would influence your decision, such as benefits and costs, ethics and civil rights, whether the policy is feasible or enforceable, and other factors that you may think of. Also, assess all of the criteria that are considered to justify screening a particular population for a particular health outcome. If you feel such a policy is justified, state your reasons, which would require you to include the criteria for adopting a screening policy. Consider whether a law mandating such a policy would even pass. If you do not believe that there should be a mandatory testing policy for all pregnant women, what type of policy would you recommend? State your reasons for adopting this policy.

Case Study 1: Preventing Perinatal Transmission of HIV (Teacher's Annotated Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child.

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However, these measures could be taken only if pregnant women were aware of their HIV status, and testing for HIV is not something that many pregnant women think about. Although 175 reported cases in 2001 represent a significant drop from more than 800 cases in 1992, the numbers could drop even further if more women who were pregnant were tested for HIV early in their pregnancy and took the protective measures for their unborn fetus mentioned previously. The Centers for Disease Control and Prevention (CDC) estimates that each year there are between 280 and 370 cases of HIV transmission from the mother to the child (see CDC, Revised recommendations for HIV screening of pregnant women, available at www.cdc.gov/mmwr/PDF/RR/RR5019.pdf). These numbers could be further reduced.

Discussion Questions

1. Which of the screening criteria are met for this HIV screening program? Which are not met? When considering these questions, think about the criteria as they relate only to the screening of pregnant women.

Many of the criteria are met. HIV infection is a serious disease that affects a significant portion of the population. The diagnostic test is also valid and reliable, and there is treatment available that can prevent perinatal transmission of HIV.

2. What could be done to get more pregnant women tested for HIV? Why would this be a very difficult task?

Acceptable answers would include: (1) Health care providers and other social service professionals who work with pregnant women can encourage their patients or clients to receive HIV counseling and testing. (2) Tests for HIV could become a routine part of prenatal screening.

Convincing women to receive HIV counseling will be very difficult because a social stigma may be associated with HIV. Some women may be afraid of telling the father of the child or other loved ones that they are getting tested for HIV. One could not readily make HIV a routine part of prenatal screening without addressing the matter of informed consent.

3. Some states have adopted policies for pregnant women to get HIV counseling and to get tested for the virus. Currently there are three methods that have been adopted by different states (see CDC, HIV testing among pregnant women—United States and Canada, 1998–2001, available at www.cdc.gov/mmwr/PDF/wk/mm5145.pdf). One method is called the opt-in approach, in which pregnant women receive HIV counseling when seeking prenatal care and voluntarily choose to get tested. Another method is the opt-out approach, in which pregnant women also receive HIV counseling when seeking prenatal care and get tested for HIV, but they have the choice to opt out of getting tested. Finally, some states have a mandatory newborn testing policy, in which all newborns are tested for HIV no more than 48 hours after their birth.

Which method do you believe to be the most effective? Which method do you believe to be the least effective? Do the opt-in and opt-out policies reach out to all pregnant women?

The issue with both the opt-in and opt-out policies is that they reach out only to women who are getting prenatal care. Neither policy would apply to women who did not seek or do not have access to prenatal care.

4. A study of certain U.S. states and Canadian provinces conducted by the Centers for Disease Control and Prevention found that states that have the opt-in policy have the lowest proportion of pregnant women being tested (see CDC, HIV testing among pregnant women—United States and Canada, 1998–2001, available at www.cdc.gov/mmwr/PDF/wk/mm5145.pdf). States with either an opt-out or a mandatory testing policy had higher proportions of women getting tested. See Table 1, which gives a more detailed description of the data that were collected.

Why would an opt-out policy be more effective? How would a mandatory newborn testing policy encourage women to get tested when they are carrying the child?

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Source: CDC. Revised recommendations for HIV screening of pregnant women. *Morbidity and Mortality Weekly Report* [serial online]. 2001;50(RR-19):59–86.

An opt-out policy is more effective because it makes it easier for pregnant women to get tested for HIV than not to get tested, but it still gives them the choice of opting out if they do not want to get tested. Choosing not to get tested usually requires paperwork, which is something most people do not like to do. An opt-in policy, on the other hand, requires pregnant women to volunteer to get tested, and getting tested for HIV is not something that many pregnant women would volunteer to do.

As for mandatory testing of newborns, there is no definite explanation for why this encourages women to be tested before delivery. It could be that women may feel that

if the child does test positive for HIV, they will have been partially at fault for their baby's infection because they could have taken measures earlier. The mandatory newborn test therefore may prompt the mother to get tested during pregnancy in order to avoid this feeling of guilt. Another possible explanation is that women living in New York and Connecticut are just more likely to get tested for HIV, which may act as a confounder. There may be many other possible and reasonable explanations.

5. Because of the results shown in Table 1, the CDC recommends that states that have an opt-in policy and a low percentage of pregnant women who get tested for HIV should reevaluate their current policy. However, there may be many reasons why states would not want to adopt an opt-out policy, and there would be many reasons why citizens would not want an opt-out policy.

Consider some of the reasons why states would not want to adopt this policy. Consider some reasons why citizens would not be in favor of this policy.

Those who favor an opt-out policy would argue that the opt-out policy will prompt more pregnant women to get tested for HIV, which will encourage them to seek treatment early and reduce the number of cases of perinatal transmission of HIV.

Those opposed to the policy would argue that the policy is coercive, even though it gives women the choice of opting out. As mentioned before, a stigma is associated with HIV, so pressuring women to be tested may cause psychologic discomfort. HIV policies tend to be very controversial because the major means of transmission are sexual intercourse and drug use.

6. What if a policy were developed that required all pregnant women to get tested for HIV (i.e., they would not have the choice of opting out)? Although this would increase the percentage of women getting tested for HIV, there are many questions that must be considered.

Prepare a statement to discuss whether it should be mandatory for all pregnant women, with no opt-out choice, to get tested for HIV. Include all of the factors that would influence your decision, such as benefits and costs, ethics and civil rights, whether the policy is feasible or enforceable, and other factors that you may think of. Also, assess all of the criteria that are considered to justify screening a particular population for a particular health outcome. If you feel such a policy is justified, state your reasons, which would require you to include the criteria for adopting a screening policy. Consider whether a law mandating such a policy would even pass. If you do not believe that there should be a mandatory testing policy for all pregnant women, what type of policy would you recommend? State your reasons for adopting this policy.

Good arguments can be made both for and against the establishment of a mandatory screening policy. The decision and plan that your students prepare for this assignment will be based on the same factors that policymakers use to develop or change existing policy. Examples include the financial resources available through the public and private sector, the public health benefit of implementing a policy such as this and the money saved in national health care expenditure from implementing such a policy.

Another factor to consider would be whether such a policy would be enforced, and students must think carefully about this factor. For example, would health care providers be willing to comply with such a policy? If they are unwilling, could they be made to comply? The CDC recommended universal screening of children for lead poisoning because it was found to be more cost-effective than selective screening and would benefit children at all levels of family income. However, the American Academy of Pediatrics (AAP) was unwilling to follow the recommendation, because many members perceived childhood lead poisoning to be an inner-city, minority problem, even though it was found between 1988 and 1991 that 8.9% of white children living above the poverty level had elevated levels of lead. The AAP, therefore, did not see the need to screen for lead poisoning among middle-class, suburban children, so it recommended a selective screening approach instead (Needleman, 1998). If pediatricians were unwilling to screen for lead poisoning in children, one can imagine how unwilling some gynecologists and obstetricians would be to screen every patient for such a controversial medical condition as HIV. Furthermore, how would a policy like this apply to women who do not seek prenatal care?

How would patients, particularly pregnant women, feel about being made to take an HIV test? Some patients might even be appalled at the suggestion because they might not see themselves as being at risk for the infection. What are the ethical issues involved in having a policy such as this? Those who would be against this policy may argue that such a policy could be very coercive. Those who favor it would argue that the screening test is no different from many of the other medical exams that women in prenatal care are currently receiving. They would further argue that a mandatory HIV test may actually remove the stigma of getting an HIV test because everyone now would be required to get one. Finally, given the moral and political climate of the United States, how likely would a policy such as this be approved and put into effect?

Case Study 2: Screening for HIV Among Persons Entering the United States (Student Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child.

The United States Bureau of Citizenship and Immigration Services (BCIS), formerly known as the Immigration and Naturalization Services (INS), has a policy allowing visa applications to be denied to persons with HIV infection or other communicable diseases that may pose a public health threat. Carefully read the fact sheet included with this assignment (this fact sheet is available on the Bureau of Citizenship and Immigration Services Web site at <http://www.immigration.gov/graphics/publicaffairs/factsheets/hivfs.htm>) and discuss with your classmates and teacher the implications of a policy such as this. Below are some questions for class discussion.

Discussion Questions

1. Which of the screening criteria are met for this HIV screening program? Which are not met?
2. Is this policy justifiable? Is it appropriate for prospective visitors or residents to be denied entry to the United States based on HIV infection? Why or why not? What do you think was the motivation behind this policy?

3. Is this policy enforceable? How can the BCIS enforce this policy? Who would do the testing? When? Where? Are the testing sites going to be supervised by U.S. staff? Can they be? How would that work? If not supervised by U.S. personnel, how would the BCIS ensure consistent quality of test results?
4. Is this policy currently being enforced? If so, how? If not, can you think of some reasons why not?
5. Can this policy be used to deny admission to those who may be considered a threat for other reasons? If so, what might those other reasons be?
6. Would other countries be justified in denying entrance to U.S. citizens based on HIV disease status? What if U.S. citizens do not need a visa to enter those other countries? Should the BCIS require tests before allowing travel for U.S. citizens? How about requiring HIV testing before issuing passports?

7. What are the ethical issues involved in having a policy such as this?
8. What is your group's recommendation? Should the United States (a) keep this program as is, (b) keep this program with some revisions or (c) disband this program? Please provide the rationale for your recommendation.

Case Study 2: Screening for HIV Among Persons Entering the United States (Teacher's Annotated Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child.

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Discussion Questions

1. Which of the screening criteria are met for this HIV screening program? Which are not met?
This program would clearly meet the criterion of severity. HIV is a fatal disease associated with extreme discomfort in the latter stages. The criterion of high prevalence is tricky. The prevalence of HIV varies from one country to the next. Some visitors will be coming from areas with high prevalence, and others may be coming from areas with low prevalence. The prevalence of HIV in the United States, although still uncomfortably high, is low compared with that in some other nations. The natural history of then disease is well understood. We know what will happen if it is left untreated, and we also know that even with our best available treatments there is no cure. AIDS clearly has an asymptomatic stage in which the individual is HIV positive but does not yet have AIDS. There are screening tests available for HIV. Enzyme-linked immunosorbent assay (ELISA) and Western blot are both valid tests and are relatively noninvasive and low risk. Early treatment of persons who are HIV positive can prolong life and

increase quality of life. Again, however, there is no cure. The criterion of cost is very complicated. Groups may consider several direct and indirect costs. In this particular case study, they may also wish to consider costs associated with the global response to the United States taking this stance, costs in terms of liberty and civil rights, for instance. The criterion of the availability of treatment resources is another complicated one. Some of the visitors will be from countries where treatment options are limited. Treatment availability for U.S. citizens within the United States also varies widely. The availability of treatment for visitors to this country may also be considered limited. Again, students may have varying ideas of how to interpret this criterion in this case study.

2. Is this policy justifiable? Is it appropriate for prospective visitors or residents to be denied entry to the United States based on HIV infection? Why or why not? What do you think was the motivation behind this policy?

Good arguments can be mounted on both sides here. Students are encouraged to think through the justification for such a policy. Some of them may recognize that such a policy can readily be used to deny entry to persons who may actually be considered unwanted for other reasons. In this post-9/11 era, the issue of terrorists and homeland security may arise. On the other hand, not implementing a policy such as this may result in an increase in the prevalence of HIV infection in this country. This leads to an increase in health care expenditure for treating individuals who are HIV positive.

3. Is this policy enforceable? How can the BCIS enforce this policy? Who would do the testing? When? Where? Are the testing sites going to be supervised by U.S. staff? Can they be? How would that work? If not supervised by U.S. personnel, how would the BCIS ensure consistent quality of test results?

Again, good arguments can be made on both sides. This is another opportunity for students to think through the ramifications of such a policy. Once they begin discussing these issues, one would hope that they begin to recognize how problematic enforcement will be. Then the following question may arise: If it is difficult or impossible to enforce a policy like this, should there even be one? On the other hand, if this policy is not implemented the number of HIV cases in this country may increase. This leads to a rise in health care expenditure and increases the potential of contracting HIV infection in individuals who are not infected.

4. Is this policy currently being enforced? If so, how? If not, can you think of some reasons why not?

This requires students to do some research. They may wish to go to the BCIS Web site to determine if this information is available.

5. Can this policy be used to deny admission to those who may be considered a threat for other reasons? If so, what might those other reasons be?

This may tie in with Question 3. However, if this issue has not yet arisen, students should be thinking about how this policy can potentially be manipulated.

6. Would other countries be justified in denying entrance to U.S. citizens based on HIV disease status? What if U.S. citizens do not need a visa to enter those other countries? Should the BCIS require tests before allowing travel for U.S. citizens? How about requiring HIV testing before issuing passports?

This is another issue of personal opinion. This question asks students to consider reciprocity. Is it acceptable for the United States to restrict visitors if U.S. citizens are permitted unrestricted travel elsewhere? Students should begin to recognize that a public health concern such as screening may have ramifications at many levels, including international relations.

7. What are the ethical issues involved in having a policy such as this?

Students may suggest dilemmas such as civil rights versus public protection, application of screening criteria to visitors when the criteria are based on U.S. situations (e.g., identifying persons as HIV positive and then sending them home to a country with limited treatment options) or manipulation of the policy to achieve other objectives.

8. What is your group's recommendation? Should the United States (a) keep this program as is, (b) keep this program with some revision or (c) disband this program? Please provide the rationale for your recommendation.

Again, good arguments can be made for several alternatives. The important concern here is the ability to use sound evidence in justifying the group's position.

Case Study 3: Screening for HIV Across the Globe (Student Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child.

Although it was identified as a syndrome more 20 years ago, and effective preventive measures are known, AIDS is still prevalent in epidemic proportions and is a leading cause of death in many countries across the world. According to the World Health Organization (WHO) Joint United Nations Programme on HIV/AIDS (UNAIDS), 42 million people worldwide were living with HIV/AIDS at the end of 2002 (see UNAIDS, Epidemic Update, 2002, available at www.unaids.org).

Assume that UNAIDS has identified the goal of eliminating worldwide HIV infection and AIDS deaths within the next generation. The people of UNAIDS have done some preliminary thinking and decided the best way to do that is to mandate a global screening program. They have contacted you, a team of epidemiologists, and asked you design to the program. Your team thinks that there are many issues to consider, and you express this concern to UNAIDS. Their response is that a screening program is definitely needed, and your team must find one that will work.

Your teacher will provide you with a one-page handout with critical information. In making your decision, please work through the following questions:

Questions

1. Which of the screening criteria are met for this HIV screening program (global screening)? Which are not met?

2. How would you design the program? Should it be a mass screening program of everybody, everywhere? Should it be a targeted program? If so, whom should it target and why? Should it be part of a multiphasic screening program? If yes, then what other tests should be conducted with the HIV test? Could your proposed program be a combination thereof? What are the pros and cons of each type of program?
3. Who should pay for your proposed program? WHO? Governments? Persons being screened? Some combination thereof? Note that there is wide variation in financial capacity from country to country and that there is variation in income within countries.
4. Can you think of how the various regions would react to the new screening mandate? Which countries would support it? Which countries would not? Why? Are countries likely to refuse the United Nations mandate? What might be the consequences for those who refuse? What are the consequences for the entire global effort when one or more countries refuse to follow the guidelines?
5. What is your group's recommendation? (a) Should you tell UNAIDS that the screening can and should be done? (b) Should you tell UNAIDS that the screening is possible, but the program may look very different from what they might have envisioned? (c) Should you tell UNAIDS that this screening is not a good idea? Please provide the rationale for your recommendation.

Case Study 3:

Screening for HIV Across the Globe (Teacher's Annotated Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child.

Although it was identified as a syndrome more 20 years ago, and effective preventive measures are known, AIDS is still prevalent in epidemic proportions and is a leading cause of death in many countries across the world. According to the World Health Organization (WHO) Joint United Nations Programme on HIV/AIDS (UNAIDS), 42 million people worldwide were living with HIV/AIDS at the end of 2002 (see UNAIDS, Epidemic Update, 2002, available at www.unaids.org).

Assume that UNAIDS has identified the goal of eliminating worldwide HIV infection and AIDS deaths within the next generation. The people of UNAIDS have done some preliminary thinking and decided the best way to do that is to mandate a global screening program. They have contacted you, a team of epidemiologists, and asked you to design the program. Your team thinks that there are many issues to consider, and you express this concern to UNAIDS. Their response is that a screening program is definitely needed, and your team must find one that will work.

Your teacher will provide you with a one-page handout with critical information. In making your decision, please work through the following questions:

Questions

1. Which of the screening criteria are met for this HIV screening program (global screening)? Which are not met?

This program would definitely meet the criterion of severity. HIV is a fatal disease associated with extreme discomfort in the latter stages. The criterion of high prevalence is complex because the prevalence of HIV varies widely from one country to the next. The groups will need to determine how this criterion should be interpreted in this particular case study. The group may decide that a global HIV prevalence

estimate is needed. The natural history of the disease is well understood. We know what will happen if it is left untreated, and we also know that even with our best available treatments there is no cure. AIDS clearly has an asymptomatic stage in which the individual is HIV positive but does not yet have AIDS. There are screening tests available for HIV. Enzyme-linked immunosorbent assay (ELISA) and Western blot are both valid tests and are relatively noninvasive and low risk. However, the availability of testing facilities varies widely across the world. Early treatment of persons who are HIV positive can prolong life and increase quality of life, but only if those persons have access to treatment. There is, however, no cure. The criterion of cost is complex as well. Groups may consider several direct and indirect costs. Moreover, the costs will differ widely from one nation to the next and even within nations. The criterion of the availability of treatment resources would depend on which country is considered. For some countries, this criterion may be met (at least in part), but in other countries and in some subpopulations, it will not. If UNAIDS is considering this project, one would need to ensure that it is ongoing and not a one-time-only effort.

2. How would you design the program? Should it be a mass screening program of everybody, everywhere? Should it be a targeted program? If so, whom should it target and why? Should it be part of a multiphasic screening program? If yes, then what other tests should be conducted with the HIV test? Could your proposed program be a combination thereof? What are the pros and cons of each type of program?

This question asks for creativity from the groups. They may come up with several good ideas for how such a screening program will be implemented. However, responses should demonstrate that students recognize that the screening program must be population specific and must consider the individual situations of the countries.

3. Who should pay for your proposed program? WHO? Governments? Persons being screened? Some combination thereof? Note that there is wide variation in financial capacity from country to country and that there is variation in income within countries.

Good arguments can be mounted for a variety of options. This question is meant to encourage students to think about program costs. They should recognize that a program that is not funded (or inadequately funded) will have no chance of meeting its goals.

4. Can you think of how the various regions would react to the new screening mandate? Which countries would support it? Which countries would not? Why? Are countries likely to refuse the United Nations mandate? What might be the consequences for those who refuse? What are the consequences for the entire global effort when one or more countries refuse to follow the guidelines?

This question helps students to place this issue in the context of international relations. They may suggest that the countries wishing to support the program are those that have the highest prevalence, or it might be those that have the most resources to devote to this problem. Those groups may not overlap. Students may begin to consider that the United Nations can be refused but that countries that support the mandate and have power may bring their power to bear. The final part of the question prompts students to recognize that infectious diseases can be transmitted across country boundaries and that a global prevention will be less likely to succeed if there is not universal participation. However, students should also recognize that the implementation of universal screening does not mean that the problem will be eradicated. They should be thinking about prevention and treatment as well.

5. What is your group's recommendation? (a) Should you tell UNAIDS that the screening can and should be done? (b) Should you tell UNAIDS that the screening is possible, but the program may look very different from what they might have envisioned? (c) Should you tell UNAIDS that this screening is not a good idea? Please provide the rationale for your recommendation.

There are no absolutes here. However, students should recognize that for many reasons a global mass screening program may not be advisable. Students will undoubtedly come up with compromises, caveats and provisos. That is desirable in this case.

Case Study 4: HIV Screening As a Method of Primary Prevention (Student Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child. Abstinence, limiting the number of sexual partners, proper use of condoms during sexual intercourse, use of sterile needles during blood transfusions, use of sterile needles when injecting drugs, and abstaining from intravenous drug use altogether are some important ways of preventing HIV transmission.

When one takes measures to prevent oneself from getting an illness or disease, this is described as **primary prevention**. When one gets tested for a particular illness so that the illness can be detected early and therefore treated early if present, this is described as **secondary prevention**. Therefore, the health care procedure of screening for a particular disease is often considered a type of secondary prevention. Screening, however, could also be considered a type of primary prevention strategy, and HIV screening could be used as an example of such a strategy. This means the screening procedure could be used to prevent transmission of HIV.

Imagine that a public health agency has proposed a policy requiring all adults and adolescents to be counseled and screened for HIV every year to determine who is HIV positive among the population. This policy would be used to determine those who are HIV positive and those who are not, otherwise called HIV negative. Those who tested positive for HIV not only would receive the proper treatment they need but also would have to disclose their HIV status to their current and former sexual partners and possible future sexual partners.

A policy such as this has never been considered for the United States, probably because it would open countless heated debates for all types of issues that involve ethics and civil rights. The age-old public health debate between coercion of individuals and protection of the public would certainly be an issue should such a policy ever be considered.

Discussion Questions

1. How would a screening policy such as this protect those who test negative from getting HIV infection in the future?

2. Currently, there are state laws that require all HIV-positive cases to be reported to the representative state health departments. Many of these policies were developed as a result of highly publicized cases of HIV-positive persons who were engaging in unprotected sex and were aware of their HIV-positive status, which they did not disclose to their partners. Those who were opposed to this policy of public disclosure stated that a policy making someone's HIV status public might discourage many from getting tested.

Who would be opposed to a policy such as the one being proposed by the public health agency, i.e., who would oppose a policy of mandatory annual testing and disclosure to all former, current and future sexual partners? Who might be most likely to support such a policy?

3. Discuss with your group whether a policy such as this would be justified. Make sure that you have considered the reasons for and against this policy. Also, consider the costs and benefits to society of this policy. You should also discuss whether legislation proposing such a policy is likely to pass, given the current political and societal climate. Prepare a one-page statement, or executive summary, that will discuss whether your group is in favor of this policy and why. The statement should address all of the questions given above, as well as some other questions that your group may have raised during your discussion. If you do or do not decide to support this policy, please give reasons why. Also, if you do not feel this policy is justified, please offer some solutions that will help encourage more people to get tested for HIV.

Case Study 4: HIV Screening As a Method of Primary Prevention (Teacher's Annotated Version)

Human immunodeficiency virus (HIV) is the virus that causes acquired immunodeficiency syndrome (AIDS), a fatal disease. HIV is spread through the exchange of body fluids by sexual intercourse; by exposure to infected blood and blood products, tissues and organs, either directly (person to person) or indirectly by coming in contact with contaminated needles; and by transmission from mother to child. Abstinence, limiting the number of sexual partners, proper use of condoms during sexual intercourse, use of sterile needles during blood transfusions, use of sterile needles when injecting drugs, and abstaining from intravenous drug use altogether are some important ways of preventing HIV transmission.

When one takes measures to prevent oneself from getting an illness or disease, this is described as **primary prevention**. When one gets tested for a particular illness so that the illness can be detected early and therefore treated early if present, this is described as **secondary prevention**. Therefore, the health care procedure of screening for a particular disease is often considered a type of secondary prevention. Screening, however, could also be considered a type of primary prevention strategy, and HIV screening could be used as an example of such a strategy. This means the screening procedure could be used to prevent transmission of HIV.

Imagine that a public health agency has proposed a policy requiring all adults and adolescents to be counseled and screened for HIV every year to determine who is HIV positive among the population. This policy would be used to determine those who are HIV positive and those who are not, otherwise called HIV negative. Those who tested positive for HIV not only would receive the proper treatment they need but also would have to disclose their HIV status to their current and former sexual partners and possible future sexual partners.

A policy such as this has never been considered for the United States, probably because it would open countless heated debates for all types of issues that involve ethics and civil rights. The age-old public health debate between coercion of individuals and protection of the public would certainly be an issue should such a policy ever be considered.

Discussion Questions

1. How would a screening policy such as this protect those who test negative from getting HIV infection in the future?

Once someone tests negative for HIV, he or she should be counseled on how to take the proper measures to stay free of infection.

2. Currently, there are state laws that require all HIV-positive cases to be reported to the representative state health departments. Many of these policies were developed as a result of highly publicized cases of HIV-positive persons who were engaging in unprotected sex and were aware of their HIV-positive status, which they did not disclose to their partners. Those who were opposed to this policy of public disclosure stated that a policy making someone's HIV status public might discourage many from getting tested.

Who would be opposed to a policy such as the one being proposed by the public health agency, i.e., who would oppose a policy of mandatory annual testing and disclosure to all former, current and future sexual partners? Who might be most likely to support such a policy?

Civil rights advocates, among others, might be opposed to such a policy, claiming infringements on personal liberties.

3. Discuss with your group whether a policy such as this would be justified. Make sure that you have considered the reasons for and against this policy. Also, consider the costs and benefits to society of this policy. You should also discuss whether legislation proposing such a policy is likely to pass, given the current political and societal climate. Prepare a one-page statement, or executive summary, that will discuss whether your group is in favor of this policy and why. The statement should address all of the questions given above, as well as some other questions that your group may have raised during your discussion. If you do or do not decide to support this policy, please give reasons why. Also, if you do not feel this policy is justified, please offer some solutions that will help encourage more people to get tested for HIV.

Some of the key issues that students would have to discuss would include whether this policy violates any type of ethical boundaries. Civil rights advocates would probably oppose this policy because it forces people to get a test for an illness that they may not want to be tested for. It may also allow for discrimination against people with HIV on whom a "scarlet letter" could be placed. Those who favor the policy, however, will argue that it will help get early treatment for those who are already HIV positive but unaware of their status while helping those who are HIV negative stay that way. The following table lists some reasons to favor or oppose this policy. There may be many more reasons that your students will think of, but these will probably be some common examples.

Arguments For and Against This Policy

Reasons to Favor the Policy

- Reaches out to those who are afraid to get tested for a variety of reasons.
- Encourages those who would have never considered getting tested to actually get tested.
- Reaches out to those who are afraid to be tested because of the stigma associated with HIV for cultural, religious or moral reasons.
- Keeps a database of those who are HIV positive.
- Early detection of HIV helps those who do test positive get the treatment they need.
- Those found to be HIV positive can be taught communication skills to disclose their status to partners they may have or may pass the virus on to.
- Knowledge alone of how to protect oneself and others from getting HIV is not enough.
- Pregnant women who are found to be HIV positive can take the proper measures to prevent transmission of the virus to the child they are carrying.

Reasons to Oppose the Policy

- Seen as very coercive because it forces individuals to get tested for something that they may not want to be tested for.
- HIV is a touchy subject for many because its methods of transmission are mostly through sex and injectable drug use.
- Testing a whole population may be very costly, especially if it identifies only a smaller-than-projected number of HIV-positive cases.
- May allow for more discrimination against those who have HIV/AIDS; fear that this will create a “scarlet letter” for those who have HIV/AIDS.
- Those who are currently HIV negative should already know how to protect themselves from contracting HIV.
- Many question whether this policy is justified in testing every adult for HIV, especially those who are not considered to be at risk.
- May cause an increase in cases of domestic disputes and domestic violence.

Assessment

You will work in groups to consider whether specific countries should institute mandatory nationwide screening for HIV. The teacher will assign you to one of the following countries:

- Botswana
- United States of America
- Australia
- Bangladesh

In preparing your responses, you should consider factors such as:

- Prevalence of HIV/AIDS
- Gross national income (GNI) or gross domestic product (GDP) or both—indicators of a country's economic status
- Proportion of government budget spent on health care
- Per capita expenditure on health care
- Overall mortality rate (proportion of population dying in a given period of time)
- Per capita health personnel
- Religious affiliations
- Political stability, government structure, etc.

Some potential sources of information include:

Joint United Nations Programme on HIV/AIDS AIDS (UNAIDS) Web site, available at www.unaids.org

World Health Organization (WHO) Web site, available at www.who.int/country/en/

You should present the evidence for and against a screening program in your assigned country. A good response would include an evaluation of each of the criteria for an effective screening program. The factors listed above would be helpful in this regard. In addressing the criteria, be sure you have thought through and defined the key terms as they relate to the screening program. What disease is the program trying to detect? What is the asymptomatic or preclinical stage? What screening test is useful for measuring the disease that you have identified? What will be the target population(s) for the screening program? You should also consider the three program types. Which type(s) of screening program may work? Which type(s) probably will not?

Please conclude your paper with recommendations on the implementation of the mandatory nationwide HIV screening policy.

Note to teachers

These four countries were selected because they have different health and economic circumstances and the extent to which they meet the HIV screening criteria will differ.

- *Botswana—developing country with high prevalence*
- *United States of America—developed country with high prevalence relative to other developed nations*
- *Australia—developed country with low prevalence*
- *Bangladesh—developing country with low prevalence*

Groups should present the criteria and the extent to which each one was met for their assigned country. A good response will include a review and evaluation of the various socioeconomic factors and how they might impact the extent to which a given criterion is met. Good responses will also include consideration of the target population—should the screening program be restricted to adults, children, pregnant women, more than one group? The groups should recognize the dilemmas and problems with instituting a screening policy in countries that have limited resources but a clear need for intervention. Bangladesh (low prevalence, resource-limited) would be the least likely candidate for screening, and the United States (higher prevalence, resource-rich) would be the most likely candidate for population screening.

Students should be able to relate this assignment to the vignettes in the class exercises and the discussion that dealt with the issue of global screening. By studying the status of different countries, students will understand why this mandatory screening policy for HIV would be not only unrealistic for many countries but also inappropriate.