

# Lesson Plan

## Subsidized H.I.V. Treatments: Diamonds in the Rough? Examining Health Care and AIDS Management in Africa

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**Grades:** 6-12

**Subjects:** Geography, Global History, Health, Social Studies

**Overview of Lesson Plan:** In this lesson, students examine and compare the AIDS management policies of several countries, using the Botswana case as a starting point.

**Suggested Time Allowance:** 1 hour

### Objectives:

Students will:

1. Reflect on the number of AIDS-related deaths on the African continent.
2. Investigate the relationship between a country's economy and its management of epidemics such as AIDS by reading and discussing "Free AIDS Care Brings Hope to Botswana."
3. Analyze the motivations for the private sector to support public healthcare.
4. Assess both positive and negative effects of increased healthcare options for countries suffering from AIDS crises.

### Resources / Materials:

-copies of "Orphaned by AIDS" map from the United Nations  
(<http://www.nytimes.com/library/world/africa/index-dead-zones.html>) (one per student)  
-student journals  
-pens/pencils  
-classroom blackboard  
-copies of "Free AIDS Care Brings Hope to Botswana" (one per student) ([Scroll down on this page to view the article](#))  
-resource materials with latest demographic information on countries' economies, healthcare systems, and AIDS statistics (periodicals, computers with Internet access, and reference books)

### Activities / Procedures:

1. **WARM-UP/DO-NOW:** Each student receives a copy of the "Orphaned by AIDS" map found on The New York Times on the Web (<http://www.nytimes.com/library/world/africa/index-dead-zones.html>). (Alternately,

write some of the statistics offered by UNAIDS and the related article to be read in class on the board. Example: 28,000 children under the age of 15 had lost either mother or both parents to AIDS in Botswana by 1997. Today, 36% of adults in that country are believed to carry the virus.) After looking at the statistics, students respond to the following questions in their journals (written on the board prior to class): "Imagine that one-third of the students in your school have lost their parents or guardians. How do you think life in your community would change as a result? Whose responsibility is it, ultimately, to care for such a large number of children and teenagers left without parents?" Students then share their responses and reflect on the statistics provided regarding the number of children orphaned in Africa by AIDS.

2. As a class, read and discuss the article "Free AIDS Care Brings Hope to Botswana," focusing on the following questions:

- a. What is the main industry in Botswana?
- b. How many people employed by this industry are H.I.V.-positive?
- c. How have the numbers of AIDS-related deaths changed since 1995?
- d. What measures is the industry taking to reduce the number of AIDS-related deaths in Botswana?
- e. What measures does the government expect to take to reduce the number of AIDS-related deaths countrywide? When do they plan to implement these measures?
- f. Why, according to the article, is it possible to create such a plan in Botswana and not in some other African countries?
- g. Explain the phrase "an effort to save its most precious industry and its people."
- h. How has increased access to AIDS drugs changed the attitudes of healthcare workers, people who are H.I.V.-positive, and those not yet tested for H.I.V. in Botswana?
- i. What is the gross national product per capita in Botswana, and how does it compare to the GNPs of other sub-Saharan African countries?
- j. What is "Debswana," and what role does it play in Botswana's economy?
- k. How does South Africa differ from Botswana in terms of population and rate of H.I.V. infection?
- l. According to the author, how do the presidents of South Africa and Botswana differ in their treatment of the AIDS crisis?
- m. Why was it difficult for Debswana to create a specific AIDS drugs policy for its employees? Which family members will most likely be excluded from this health care coverage, according to the article?
- n. How much will this treatment program cost Debswana? How does this compare to its annual revenues?
- o. What are some possible negative effects of increased access to AIDS treatment?
- p. Why might the treatment be difficult to implement?
- q. How will the overall perception of workers with H.I.V. change after the new policy is in place, according to the article?

3. Divide students into four groups. Assign each group one of the following countries: Botswana, South Africa, Kenya, and the country where you live. (You may wish to use the Botswana case study as an example together as a class and choose another country, as most information required for this activity is provided in the article.) Using all available resources, have students create an "AIDS Management Profile" of each country using the following categories and criteria (written on the board or handouts for easier reference):

- population
- percentage of population currently infected with H.I.V. (or WHO/UNAIDS estimate)
- number of AIDS-related deaths in the past decade
- main industry or source of income
- gross national product (GNP) per capita
- official government position on AIDS
- type of healthcare system in country
- amount spent on healthcare by government (per capita, if available)
- efforts made by government to promote AIDS awareness/ prevent spread of disease
- efforts made by private sector to promote AIDS awareness/ prevent spread of disease

Group members should divide criteria and compile information and statistics to create the AIDS management profiles for their assigned countries. At end of the profile, each group must write a final analysis of the country's measures to eliminate the spread of the virus. Students may wish to focus on the connection between the private and public sectors, the relationship between economic and healthcare conditions, and social and cultural factors.

**4. WRAP-UP/HOMEWORK:** Students should complete their country profiles and analyses. In a future class, groups should present profiles and compare, in an open discussion, their assigned countries' overall management of the AIDS epidemic. They should examine the differences in the policies and programs of each government, explore the possibility of adopting or transferring such programs to their own case countries, and analyze the relationships among economy, government, and culture in conjunction with AIDS.

### **Further Questions For Discussion:**

- How do the African countries researched and read about in class differ from your own country in terms of AIDS and H.I.V. statistics? Why?
- Based on your research, is there a connection between a country's economy and its ability to fight the AIDS epidemic?
- Whose responsibility should it be to help Africa control its AIDS crisis? Should other continents become more involved? Should the pharmaceutical industry play a greater role?

### **Evaluation / Assessment:**

Students will be evaluated based on their written journal entries, participation in class discussions, individual research and group AIDS management profiles.

### **Vocabulary:**

scrabbling, lifeblood, shuddering, ravaged, chronic, regimen, negotiating, upgrading, poring, soaring, bustles, immeasurably, marveling, bountiful, venture, per capita, annihilation, polygamy, fiscal, revert, rigorous, strains, paralyze, inaction, carats, unearthed, exhaustive, prevalence, shunned, crockery, assessed, anonymity, dispel, stigma, pandemic

### **Extension Activities:**

1. Research the pharmaceutical companies who sell AIDS drugs and write an investigative report. (You might further extend this by videotaping a television news

investigative report using the written report as a guide.) What measures have these firms taken to provide affordable treatment to impoverished countries?

2. Trace, through New York Times articles and other resources, the history of the quest to find a cure for AIDS. What are some recent developments? Is finding a cure still a top priority now that the H.I.V.-infected are living longer? Create a "headline timeline" supporting your responses. [Issue in Depth: The AIDS Epidemic (<http://www.nytimes.com/library/national/science/aids/aids-index.html>) provides related New York Times articles dating as far back as 1981.]

3. Write a letter to the diamond mining company DeBeers requesting further information on their corporate healthcare policy in Botswana. You may wish to ask what measures they intend to take in other countries with AIDS crises where DeBeers diamonds are mined.

4. Create a public service campaign to promote preventive and safety measures against H.I.V. and AIDS. Target your ad to at-risk populations, some who may be returning to dangerous health and lifestyle practices now that AIDS is no longer seen as a fatal threat. You might also create a campaign entitled: "H.I.V. and AIDS: Facts and Fictions."

### **Interdisciplinary Connections:**

**African History-** Interview different generations of Africans who remember the very first reports of AIDS in the 1980's. How did the media first address the disease? What were their first impressions, thoughts, and feelings about AIDS and H.I.V.? How do they feel attitudes have changed?

**Economics-** Create a chart illustrating the percentage of a budget an employer spends on healthcare per year. You may wish to ask your school administrator how much your school system or district spends on health insurance for its employees, or you could also ask an insured family member what his or her company spends. Then, analyze your findings. How do these numbers compare to health care dollars spent in other countries?

**Fine Arts-** Recording artists and musicians have often mobilized around a political cause through song. Organize a mock concert to promote awareness of the AIDS crisis in Africa around the world, and write the lyrics to a theme song the artists involved could perform in collaboration.

**Science-** Diagram the process by which H.I.V. and AIDS affect the immune system. How do anti retro-viral drug cocktails work to sustain the lives of humans with H.I.V.?

Related New York Times Article " Free AIDS Care Brings Hope to Botswana", By RACHEL L. SWARNS, May 8, 2001  
[http://www.nytimes.com/learning/general/featured\\_articles/010509wednesday.html](http://www.nytimes.com/learning/general/featured_articles/010509wednesday.html)

References:

Additional Related Articles:

Issue in Depth: The Dead Zones

(<http://www.nytimes.com/library/world/africa/index-dead-zones.html>) explores,

through New York Times articles and multimedia resources, the H.I.V./AIDS epidemic in Africa.

#### Issue in Depth: The AIDS Epidemic

(<http://www.nytimes.com/library/national/science/aids/aids-index.html>) provides related New York Times articles dating as far back as 1981, a wide variety of Web resources and forums, and more.

#### Other Information on the Web

AIDS & Africa (<http://www.aidsandafrica.com/>) focuses on the impact of AIDS on the African continent and Includes statistics, articles, a photo gallery, and news.

Joint United Nations Programme on HIV/AIDS, or UNAIDS (<http://www.unaids.org>), leads, strengthens, and supports an expanded response aimed at preventing the transmission of H.I.V., providing care and support, reducing the vulnerability of individuals and communities to H.I.V./AIDS, and alleviating the impact of the epidemic.

The CDC, or Centers for Disease Control and Prevention (<http://www.cdc.gov>), provides news and statistics about various diseases.

AIDS Education Global Information System, or AEGIS (<http://www.aegis.com>), is the world's largest H.I.V./AIDS knowledge base.

#### Journal of American Medical Association's H.I.V./AIDS Information Center

(<http://www.ama-assn.org/special/HIV/HIVhome.htm>) provides the most up-to-date information about AIDS and H.I.V. research.

The World Health Organization (<http://www.who.int>) aims to help all peoples attain the highest possible level of health.

#### Academic Content Standards:

This lesson plan may be used to address the academic standards listed below.

These standards are drawn from Content Knowledge: A Compendium of Standards and Benchmarks for K-12 Education: 2nd Edition and have been provided courtesy of the Mid-continent Research for Education and Learning in Aurora, Colorado.

#### Grades 6-8

World History Standard 46- Understands long-term changes and recurring patterns in world history. Benchmark: Understands major changes in world population from paleolithic times to the present (e.g., why these changes occurred, the effects of major disease pandemics)

#### Connect to State Standard

Geography Standard 15- Understands how physical systems affect human systems. Benchmark: Knows the ways in which human systems develop in response to conditions in the physical environment; Knows how the physical environment affects life in different regions; Understands relationships between population density and environmental quality; Knows the effects of natural hazards on human systems in different regions of the United States and the world

#### Connect to State Standard

Health Standard 1- Knows the availability and effective use of health services, products, and information. Benchmarks: Knows the costs and validity of common

health products, services, and information; Knows how to locate and use community health information, products, and services that provide valid health information; Knows community health consumer organizations and the advocacy services they provide; Knows situations that require professional health services  
Health Standard 2- Knows environmental and external factors that affect individual and community health. Benchmark: Knows cultural beliefs, socioeconomic considerations, and other environmental factors within a community that influence the health of its members

Health Standard 8- Knows essential concepts about the prevention and control of disease. Benchmark: Understands how lifestyle, pathogens, family history, and other risk factors are related to the cause or prevention of disease and other health problems

Grades 9-12

World History Standard 44- Understands the search for community, stability, and peace in an interdependent world. Benchmarks: Understands major reasons for the great disparities between industrialized and developing nations; Understands how trends in science have influenced society; Understands influences on population growth, and efforts to control such growth in modern society; Understands the effectiveness of United Nations programs

Connect to State Standard

Geography Standard 15- Understands how physical systems affect human systems. Benchmarks: Knows changes in the physical environment that have reduced the capacity of the environment to support human activity; Knows factors that affect people's attitudes, perceptions, and responses toward natural hazards

Connect to State Standard

Health Standard 1- Knows the availability and effective use of health services, products, and information. Benchmark: Knows factors that influence personal selection of health care resources, products, and services

Health 2- Knows environmental and external factors that affect individual and community health. Benchmarks: Understands how the environment influences the health of the community; Understands how the prevention and control of health problems are influenced by research and medical advances; Understands how cultural diversity enriches and challenges health behaviors

Health 8- Knows essential concepts about the prevention and control of disease. Benchmarks: Understands how the immune system functions to prevent or combat disease; Understands the importance of prenatal and perinatal care to both the mother and the child; Understands the social, economic, and political effects of disease on individuals, families, and communities

The New York Times Learning Network Lesson Plan

Developed in Partnership with The Bank Street College of Education in New York City

<http://www.nytimes.com/learning>

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## **Free AIDS Care Brings Hope to Botswana**

By RACHEL L. SWARNS

WANENG, Botswana - The work horn wails while the sun sleeps and the rumbling buses carry the miners to the pit. In this vast, sandy canyon that is Africa's richest

diamond mine, the diggers are scrabbling for the precious stones that are the lifeblood of Botswana's thriving economy.

Here, where the blasting drills and clawing forklifts leave the earth shuddering, one of every three employees is H.I.V.-positive. Since 1995, the number of AIDS-related deaths has tripled at Debswana, the diamond mining giant and this nation's largest private employer.

Yet today, in this corner of this AIDS-ravaged continent, infected miners are planning on living, not dying.

In coming months, most of Botswana's H.I.V.-positive men and women will gain access to the life-sustaining drug cocktails that, for many sufferers in the West, have transformed AIDS from a killer into a chronic illness. This month, Debswana became the first company here to cover 90 percent of the cost of treating its infected employees, even for those who go to private doctors.

In September, the government - the first in sub-Saharan Africa to commit to providing AIDS treatment for all its needy - expects to begin offering free triple-therapy treatment in public hospitals in Gaborone, its capital of 110,000, and in Francistown, its second largest city with about 45,000 people. Patients will be required to produce their national identity cards to receive such care.

And so, while poorer African nations can only dream of buying or managing the complicated drug regimen, this diamond-rich nation is negotiating with drug companies, upgrading its health care system, poring through the medical literature and moving forward in an effort to save its most precious industry and its people.

The news has sent hopes soaring in this country, where 36 percent of the adults are believed to carry the AIDS virus. In the gleaming hospital here in Jwaneng, which is run by Debswana, the number of people requesting H.I.V. tests has surged by 30 percent as people have learned that a positive result means likely treatment, not certain death, doctors say.

"Two years ago, if you asked employees to get tested, they would say, 'What for? Why should I know if I'm dying if there's no cure?' " said Tsetsele Fantan, the director of Debswana's H.I.V. program, in a recent interview in Gaborone.

"Now, we have an answer," Mrs. Fantan said. "People check their blood pressure and there's no cure, but you manage it. People check for diabetes and there's no cure, but you manage it. It will become like those diseases."

Dr. David Marumo agrees. He treats most of Jwaneng's AIDS patients and has watched most of them die. As many as 80 percent of his patients are H.I.V.-positive, he says. But these days, when he bustles through the hospital wards, listening to coughs and studying X-rays, his heart is immeasurably lighter.

"We used to say there is nothing we can do, but we are going from hopeless to hopeful," Dr. Marumo said one recent morning, marveling at the wonder of it.

"If you are H.I.V.-positive now, it doesn't mean you are dying," he said. "If you want to go to school, you should go to school. If you want to buy a car, you should buy a

car. Most people now are planning."

All this is possible because Botswana's bountiful diamonds have made it rich enough to buy the medicines at prices that have fallen sharply as drug companies have slashed prices in recent months. The gross national product per capita here - about \$3,600 - is seven times higher than the average for sub-Saharan Africa, World Bank statistics show.

Debswana, a joint venture between the government and the mining giant De Beers, recovered 24 million carats from its mines last year, and diamond sales accounted for more than 40 percent of government revenues. In 1999, the last year in which such statistics are available, the company reported \$1.8 billion in revenue.

Unlike neighboring South Africa, which has a population of about 44 million, Botswana has only 1.5 million people. The United Nations estimates that 50,000 people are ready for treatment here, compared with 400,000 in South Africa. Dr. Banu Khan, the national AIDS coordinator in Botswana, says the government expects to pay about \$600 per person for a year's treatment.

Just as important is the sheer determination of government leaders and corporate executives to help those who are ill.

President Thabo Mbeki of South Africa - which United Nations experts say has the largest number of H.I.V.-positive people in the world - has repeatedly questioned the safety of AIDS drugs and the causes of AIDS. In his state of the nation address this year, he devoted only two sentences to the epidemic that is ravaging his nation.

President Festus Mogae of Botswana, however, devoted about half of his national address to the disease. He has personally led the crusade to save his people from what he describes as the "threat of annihilation." But even in a country as rich in natural resources and as willing as this one, painful decisions have been made.

At Debswana, for instance, executives wrestled for months over whether to cover the dependents of employees. And when the company decided to cover the costs of AIDS drugs for one spouse per worker - and no children at all - employees gasped.

How can the company let children die, some workers asked angrily.

And how could such a policy be adopted in a society where polygamy is acceptable, asked Topo Autlwetse, a senior official with the Botswana Mining Workers Union. "What about the miners with more than one wife?" he asked.

Company officials, who have allocated \$5 million to cover the cost of the program this fiscal year, say they will stand firm on the one-spouse rule. Husbands will have to choose which wife will have access to the medicines. But officials may reopen the debate on children.

They acknowledge that there are other potential pitfalls ahead.

Some counselors fear that increasing numbers of employees, who no longer fear dying from AIDS, will give up condoms and revert to riskier sexual behavior. Doctors



worry that patients who cannot comply with the rigorous regimen of daily pills will contribute to the spread of drug-resistant strains of the virus.

"We spent sleepless nights with these issues," Mrs. Fantan said.. "There was a lot of tension, a lot of anger. But we felt we could paralyze ourselves into inaction if we were to wait to have all the t's crossed and the i's dotted. And we had to ask ourselves, 'Will we exist as a nation if we do nothing?' "

Officials at Debswana, which employs about 6,000 workers, said they decided that they had to act. Their bulldozers were still biting into the walls of the pits. Their machines were still grinding rock and sorting through rubble. The number of carats unearthed company-wide was still increasing. But their employees were falling sick, one by one.

When workers agreed to take H.I.V. tests in 1999, the company discovered that more than a third of workers between the ages of 24 and 40 were infected with the AIDS virus, company officials say.

An exhaustive examination of death certificates and sick-leave reports over the last five years painted a frightening portrait for the future.

In 1995, seven employees died of AIDS-related illnesses, a figure that represented less than a third of the deaths in service companywide, the company says. Last year, the number jumped to 25, which represented about 60 percent of deaths companywide. Between 1995 and 1999, the number of sick days taken by employees at the Jwaneng mine alone surged to 9,384 from 2,032.

Despite its prevalence, the disease is considered so shameful that some workers say they are afraid to take part in the company's plan; they fear that their colleagues will find out and that the whispers will spread.

Typically, miners who are believed to be infected are shunned. They sit alone in the buses that carry workers to the pit. They eat alone in the company kitchens because their colleagues are afraid to share utensils and crockery with them.

Under Debswana's plan, employees must first be tested and assessed by doctors selected by the company before they are permitted to begin treatment. "I have been hopeful all along, but there's no privacy now," said one miner who is H.I.V.-positive and spoke on condition of anonymity. "There's no secrecy."

Company officials say they hope to dispel such concerns in briefings in coming weeks. In time, they believe, the stigma will fade and growing numbers of employees will come forward to be tested.

Of the treatment plans, Dr. Khan said, "It will bring more people in for testing; it destigmatizes the whole pandemic."

Priscilla Masiapetlo, the 34-year-old wife of a miner, is H.I.V.-positive and has struggled for months to pay for AIDS drugs. Some months, when her money ran out, she had to go without. With Debswana's plan, she says, she has the security of knowing she will have an uninterrupted supply of the life-sustaining medicines.

Ray Contho, 36, a Debswana hospital orderly who is H.I.V.-positive, said he, too, breathed a sigh of relief. His health insurance benefits were about to run out, he said, and he had no idea where he would come up with the money to cover his AIDS treatment until Debswana announced its program.

"I was very worried," Mr. Contho said . "This money I use, it was going to run out. I was thinking, `What will be next?' Now, I've started having hope. Maybe somewhere along the line they will find a cure. Meanwhile, I can keep living."

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