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August 2000 [1]

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DATE: 5/31/2000
FOR IMMEDIATE RELEASE

CONTACT: Sally Redpath, Dept. of Employment & Training (802/828-4394)

"Workplace and Employment Issues Focus of Conference"

The Vermont HIV/AIDS Care Consortium, together with a number of other Vermont organizations, is sponsoring an innovative conference on employment issues for People Living with HIV/AIDS in Vermont. "Breaking Down Barriers to Work: HIV/AIDS and Employment" will take place on Friday, August 25th at the Capitol Plaza Conference Center in Montpelier, Vermont.

The conference will feature Sandra Thurman, the director of the National Office on AIDS Policy. Thurman will also be featured at a reception in Burlington the night before the conference, August 24th at the Radisson Hotel. The reception, from 5-7pm, is free and open to the public.

The day-long conference itself will allow employment counselors, case managers, advocates, consumers and employers to address work and workplace issues while attending interactive workshops and listening to several presenters.

"This gives Vermont an opportunity to really move ahead and to feel good about the work we've done. It gives us a chance to make a serious commitment to doing more around employment issues for people living with HIV," said Greg Voorheis, chairperson of the conference planning committee and special assistant to the Commissioner at the Department of Employment and Training. "Having Sandra Thurman as our keynoter underscores the importance of this conference," he added.

The conference will address a range of issues for people living with HIV who are grappling with returning to work after being on disability or who are engaging with the workplace in new ways. Workshops will address benefits issues, accommodations and confidentiality, vocational counseling, medical information and employer support resources. There will also be a consumer panel with speakers representing a variety of experiences with HIV and working.

The conference is geared towards vocational counselors, case managers, advocates and employment specialists, health care providers and consumers. Besides the Coalition and Vermont HIV/AIDS Care Consortium, other sponsors include State of Vermont Division of Vocational Rehabilitation, Department of Employment and Training, Department of Health AIDS Program, the Vermont AIDS Education and Training Center, the University Affiliated Programs of UVM and the Fletcher Allen Health Choices. Senator James Jeffords will host the conference.

More information will be arriving later in the summer, but save the date and spread the word. For more information, please contact Sally Redpath at the Department of Employment and Training (802/828-4394) or by e-mail (sredpath@pop.det.state.vt.us).

-end-



Sean_Donohue@labor.senate.gov (Sean Donohue)

05/26/2000 02:55:10 PM

Record Type: Record

To: Cheryl S. Bauerle/OPD/EOP

cc: Kevin_Veller@jeffords.senate.gov (Kevin Veller) , gvoorheis@pop.det.state.vt.us

Subject: Hotel Reservations for Sandy and Michael

Cheryl:

Here's is the note I received from Greg along with his email address. You can reach him at 802-355-8069 to work out the arrangements for Sandy's and Michael's visit in August. Thanks for your help and let me know if we can do anything.

Greg:

Are rooms at the Radisson likely to be so tight that I should reserve now? I like the notion of the exec. suite for \$89 bucks!

Sean

Forward Header

Subject: Hotel Reservations for Sandy and Michael

Author: Greg Voorheis <gvoorheis@pop.det.state.vt.us> at Internet

Date: 5/26/2000 11:36 AM

Sean....I've made hotel reservations for Sandy Thurman and Michael Iskowitz for the night of August 24th at the Radisson Hotel in Burlington. Their rooms each cost \$89 a night(gov't rate) . I got a good deal on two executive level rooms at that rate. I put both on my credit card and noted that they will pay when they arrive.OK? Each will have a kingsize bed and each is non-smoking.Hopefully they will overlook the lake. Should I call Michael with this info or will you let them know?When will they arrive? I'll pick them up at the airport.....or is there a better way?Is the roundtable at 3 still a good idea? Have a good weekend, Sean....Greg.

FACSIMILE TRANSMITTAL SHEET

TO: Jeff Trammell FROM: Cheryl for
COMPANY: DATE: Sandy Thorman
FAX NUMBER: 944-1960 TOTAL NO. OF PAGES INCLUDING COVER:
PHONE NUMBER:
RE:

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Please see attached.

FACSIMILE TRANSMITTAL SHEET

TO: Winnie Stachelberg FROM: Cheryl for
COMPANY: DATE: Sandy Thorman
FAX NUMBER: 347-5323 TOTAL NO. OF PAGES INCLUDING COVER:
PHONE NUMBER:
RE:

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Please see attached.

MEMORANDUM

To: Charles Burson
From: Sandy Thurman 
Date: July 28, 2000
Re: **Addressing HIV/AIDS at the Democratic National Convention**

What follows is a quick overview of why we believe that AIDS should be addressed at the Democratic National Convention, and whom we believe could best maximize this opportunity.

- **VP Gore has led the global battle against AIDS.** On July 19, 1999, VP Gore stood with Archbishop Tutu and a young woman from Uganda who had been orphaned by AIDS to launch the Administration's LIFE Initiative (Leadership and Investment in Fighting an Epidemic). As a result of this effort, the Administration secured an increase of \$100 million in FY2000 for the global battle against AIDS and was able to double USG prevention and care efforts in Africa. On January 10, 2000, VP Gore addressed the UN Security Council in their first ever meeting on AIDS as a global security crisis. At that time, VP Gore announced that the Administration would seek an additional \$100 million in FY2001 for our LIFE initiative. That night, Governor Bush called the VP's desire to address the greatest public health challenge since the bubonic plague "pandering".
- **As a result of VP Gore's leadership, fighting the global AIDS pandemic now enjoys broad bipartisan support.** While the Congress had done little to address the global AIDS pandemic, the Administration's leadership has now galvanized concrete and increasingly serious action. Currently, although the appropriations bills are still pending, it is certain that the Administration will be able to secure its FY2001 global AIDS request. Further, if the Administration decides to push for additional funding given the heightened interest coming out of the International AIDS Conference in South Africa and the growing surplus – it is likely that the Congress would endorse such a move. Yesterday, the Congress unanimously passed the "Global AIDS Relief Act of 2000" which authorizes spending at nearly double our current levels. It is noteworthy that Senator Helms pushed this bill. The Congress has also recently passed the Ryan White CARE Act Reauthorization, the premier domestic AIDS care and support program currently funded at \$1.7 billion (a nearly 500% funding increase during the Clinton-Gore years).
- **Fighting the global AIDS pandemic – including continued efforts here at home – is an important priority for key base constituencies and the public at large.** The global battle against AIDS, particularly in Africa, is a top priority for the African American leadership, the Congressional Black Caucus, and African Americans generally. In addition, for the gay and AIDS communities, the recent focus on the global crisis has breathed new life into the outstanding domestic AIDS challenges – which had unfortunately fallen from the front pages as a result of a little good news and a lot of fatigue. Even those most concerned about our work here at home are grateful for a renewed sense of urgency around AIDS. While we do not have recent numbers, a poll done last February by Peter Hart showed that 75% of voters believed that the AIDS pandemic in Africa will effect us here at home – and nearly two to one supported increased government funding (83% of African American voters).
- **Beginning in 1988, each Democratic Convention has heard from two people living with AIDS. Beginning in 1992, both Republican National Conventions have also heard from a person living with AIDS.**

- **While this year's Republican Convention will not hear from a person living with AIDS, the Republicans have scheduled an AIDS speaker during prime time on Tuesday, August 1st.** The AIDS speaker at the Republican National Convention is Mrs. Pat Funderburk Ware, the president and CEO of a new organization called the Preserving Family Well Being Foundation. According to the RNC press release, she is scheduled to "address Governor Bush's call for soldiers in the army of compassion and how they help in the fight against AIDS". She will speak at 9:00pm immediately following former Senator Dole. Mrs. Ware, an African American, was the director of the Office of Adolescent Pregnancy at HHS during the Bush Administration. More recently, she served as director of education for the Americans for Sound AIDS Policy, a right wing AIDS organization. A few months ago, she appeared with Rep. Coburn (R-OK) and the Family Research Council calling for warning labels on condoms.
- **The Democrats have an opportunity to put forward an AIDS program that could energize base constituencies as well as move the public at large.**

We think that an optimal program would be to hear from Mary Fisher, partnered with one of the other advocates described below.

- **Mary Fisher** is a mother, artist, person living with AIDS, and prominent Republican. She spoke at both the 1992 and 1996 Republican Conventions. As her illness has progressed, so has her disillusionment with the Republican Party. Following her two recent trips to Africa – she has become an eloquent speaker not only about AIDS in America – but about the acres and acres of children orphaned by AIDS in Africa. She is the kind of crossover voter we need to attract and she is someone almost everyone can relate to. A broad spectrum of Americans still remember her 1992 speech at the Republican Convention – recently named by People magazine as one of the top speeches of the Millennium. Even activists in the gay community, women's community, African American community, and AIDS community like and respect Mary very much. Putting Mary in a line up of "real people" would be a big hit.
- **Sean Sasser** is a 29 year old, African American, gay member of the Presidential Advisory Council on HIV/AIDS who tested HIV+ in college. He and his partner, Pedro Zamora educated young people about AIDS as stars of the MTV show the Real World. Sean worked for the Human Rights Campaign and now works for the Gay Lesbian Alliance Against Defamation.
- **Jesse Milan** is an African American gay man living with HIV, and former chair of the National Episcopal AIDS Coalition and director of the Philadelphia AIDS Office. He is a lawyer and currently serves as director of the National Prevention Information Network.
- **Denise Stokes** is a 30 year old, African American former member of the Presidential Advisory Council on HIV/AIDS who became HIV+ when she was a teenager. For more than a decade, she has been an AIDS educator and outreach worker in Atlanta, Georgia.
- **Cornelius Baker** is the executive director of the Whitman Walker AIDS Clinic in Washington, DC. He is an African American, gay person living with AIDS and was formerly the executive director of the National Association of People with AIDS. He is also a recovering Republican.
- **Ron Dellums** is currently Chair of the Presidential Advisory Council on HIV/AIDS and a member of the Board of Directors of AIDS Action. He is an impassioned speaker about the global AIDS pandemic and obviously very connected to a variety of constituencies.

FACSIMILE TRANSMITTAL SHEET

TO: Robb Cagorno
COMPANY:

FROM: Michael Iskowitz
DATE:

FAX NUMBER: 226-0938
PHONE NUMBER:

TOTAL NO. OF PAGES INCLUDING COVER:

RE:

☐ URGENT ☐ FOR REVIEW ☐ PLEASE COMMENT ☐ PLEASE REPLY ☐ PLEASE RECYCLE

NOTES/COMMENTS:

Please see attached.

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Pharmaceutical Executive

April 1, 2000

SECTION: No. 4, Vol. 20; Pg. 122 ; 0279-6570

IAC-ACC-NO: 61409564

LENGTH: 176 words

HEADLINE: Four Pharma Companies to Donate Vaccines.

AUTHOR-ABSTRACT:

THIS IS THE FULL TEXT: COPYRIGHT 2000 Advanstar Communications, Inc. Subscription: \$ 59.00 per year. Published monthly.

BODY:

In response to a White House request, four major pharmaceutical companies are donating vaccines to combat malaria, hepatitis B, polio, and other diseases in Africa, Asia, the Caribbean, and other troubled regions. The **donations**, valued at more than \$ 150 million, were announced after President Clinton met with executives from pharmaceutical and biotechnology companies, international organizations, and members of the public health community. Merck is donating 10 million doses of Recombivax-HB, a vaccine to prevent hepatitis B for five years. The **donation** is valued at \$ 100 million. American Home Products is donating 10 million doses of Haemophilus influenza type-B conjugate vaccine to UNICEF.

Officials for the organization said it should help more than 3 million children. SmithKline Beecham is expanding its malaria vaccine program and will begin clinical trials in Gambia for an adolescent malaria vaccine this fall. Aventis is donating 50 million doses of a **polio vaccine** to eliminate the disease in five war-torn African countries.

LANGUAGE: ENGLISH

IAC-CREATE-DATE: April 10, 2000

LOAD-DATE: April 15, 2000

FOCUS™

Search: General News; Polio Vaccine , donation

To narrow this search, please enter a word or phrase:

FOCUS

Example: House of Representatives

85-2005

*Polio
late
net
Africa
100 million doses
late '96
Aventis, SKB, Lederle
Chiron
early doses*

Veizer \$8 Angola

199 last year

Foundation

gals - 50 million

total

*UN Foundation
\$28.5 million
since '98
total
\$50 million
total
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\$28.5 million
since '98
total
\$50 million
total
\$25 million
total*

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June 02, 2000, Friday

LENGTH: 71 words

HEADLINE: Japan Gives UNICEF 28.6 M. Dhrs for Polio Eradication

DATELINE: New York, June 1

BODY:

The U.N. Children's Fund, or UNICEF, said Thursday it has newly received a 28.6-million-dollar **donation** from the Japanese government to help eradicate polio disease.

The **donation** will be used mainly for the supply of **polio vaccine** in six countries--Bangladesh, Ethiopia, Ghana, India, Nigeria and Sudan.

UNICEF, along with the World Health Organization and others, has been making efforts to eradicate polio by 2005.

LANGUAGE: ENGLISH

LOAD-DATE: June 02, 2000

FOCUSTM

Search: General News; Polio Vaccine , donation

To narrow this search, please enter a word or phrase:

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Example: **House of Representatives**

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View Related Topics

June 29, 2000, Thursday

SECTION: PREPARED TESTIMONY

LENGTH: 13428 words

HEADLINE: PREPARED TESTIMONY OF DR. DAVID L. HEYMANN EXECUTIVE DIRECTOR
FOR COMMUNICABLE DISEASES WORLD HEALTH ORGANIZATION

BEFORE THE HOUSE COMMITTEE ON INTERNATIONAL RELATIONS

SUBJECT - "THE URGENCY OF A MASSIVE EFFORT AGAINST INFECTIOUS DISEASES"

BODY:

(NOTE: Figures not transmittable)

1. THE PROBLEM

"Infectious diseases are the leading killer of young people in developing countries."

SYNOPSIS Infectious diseases are now the world's biggest killer of children and young adults. They account for more than 13 million deaths a year - one in two deaths in developing countries. Over the next hour alone, 1 500 people will die from an infectious disease - over half of them children under five. Of the rest, most will be working-age adults - many of them breadwinners and parents.

But infectious diseases are not just a developing country problem. Unless checked, they threaten the industrialized countries as well. Old scourges such as tuberculosis and diphtheria have occurred in explosive epidemics in Europe and other industrialized countries. In our global economy, the \$1.7 billion in lost tourism resulting from a 1994 plague outbreak in India not only affected hotels in New Delhi, but also travel agents in New Jersey. Even today, no country is safe from the threat of infectious diseases.

A. Six diseases cause 90% of infectious disease deaths

A physician's reference book lists many infectious diseases, yet just six -- tuberculosis, malaria, diarrhoeal diseases, pneumonia, measles and more recently HIV/AIDS - account for almost 90% of infectious disease deaths.

Every three seconds a young child dies - in most cases from an infectious disease. In some countries, one in five children dies before turning five. Every day 3 000 people die from malaria - three out of four of them children. Every year 1.5 million people die from tuberculosis and another eight million are newly infected.

But the most staggering number is "one," as behind each and every death lies an unexpected human tragedy. Because these diseases affect mainly young children and adult breadwinners, their impact on families can be catastrophic. Children may lose one or both parents to an infectious disease. The AIDS epidemic alone has left over eleven million children orphaned.

Tuberculosis (TB)

Tuberculosis, a disease once thought to be under control, has returned with a vengeance to kill 1.5 million people a year - and .5 million more in combination with HIV/AIDS. Nearly two billion people - one-third of the world's population - have latent TB infection. Together they constitute a huge potential reservoir for the disease. TB is one of the biggest infectious killers of adolescents and adults. It is also a leading cause of death among women.

To make matters worse, infection with HIV weakens the immune system and can activate latent TB infection. It is also believed to multiply the risk of initial infection with TB. About one-third of all AIDS deaths today are caused by TB.

Malaria

Malaria kills over one million people a year - most of them young children. Most malaria deaths occur in sub-Saharan Africa, where malaria accounts for one in five of all childhood deaths. Women are especially vulnerable during pregnancy. They are more likely to die from the disease, suffer miscarriages or give birth to premature, low-weight babies.

An estimated 300 to 400 million people are infected by this mosquito-borne parasite globally each year. Malaria can rapidly overwhelm a young child causing high fever, convulsions and breathing difficulties. With the onset of cerebral malaria - an acute form of the disease - the child lapses into a coma and may die within 24 hours.

Pneumonia Acute respiratory infections (ARIs) are responsible for 3.5 million deaths each year. Pneumonia, the deadliest ARI, kills more children than any other infectious disease. Most of these deaths (99%) occur in developing countries. Yet in industrialized countries childhood deaths from pneumonia are rare.

Pneumonia often affects children with low birth weight or those whose immune systems are weakened by malnutrition or other diseases. Without treatment, pneumonia kills quickly. The influenza virus is another cause of lung infection that can lead to pneumonia. There is very little information available on the number of influenza deaths in developing countries. However, in the United States alone, the disease kills 10 000-40 000 people in an average influenza season.

Leading Infectious Killers

HIV/AIDS At the end of 1999, an estimated 33.6 million individuals were living with HIV worldwide. There is still no cure on the horizon. Worst affected is sub-Saharan Africa. In some countries, up to one in four of the adult population are now living with HIV/AIDS. In Zimbabwe, 20%-50% of pregnant women in some areas are infected with HIV and risk infecting their newborn children. An increasing number of maternal deaths are now due to infections contracted by HIV-positive women during delivery. In many countries, life expectancy and child survival rates have plummeted. In Botswana life expectancy at birth has fallen from 70 to around 50 years.

Diarrhea Diarrhoeal diseases claim nearly two million lives a year among children under five. They are so widespread in developing countries that parents often fail to recognize the danger signs. Children die simply because their bodies are undernourished through lack of food and then are weakened through rapid loss of fluids.

Diarrhoeal diseases impose a heavy burden on developing countries - accounting for 1.5 billion bouts of illness a year in children under five. The burden is highest in deprived areas where there is poor sanitation, inadequate hygiene and unsafe drinking water. In certain developing countries, epidemics of diarrhoeal diseases such as cholera and dysentery strike down adults and children alike. Other major diarrhoeal diseases include typhoid fever and rotavirus which is the main cause of severe dehydrating diarrhea among children.

Measles

Measles is the most contagious disease known to man. It is a major childhood killer in developing countries - accounting for about 900 000 deaths a year. The measles virus may ultimately be responsible for more child deaths than any other single microbe - due to complications from pneumonia, diarrhea and malnutrition.

15,000 new HIV infections every day

B. Impact on sustainable development

The high death toll from infectious diseases is only part of the story. Many infectious diseases cause sudden repeated bouts of debilitating illness throughout the year - keeping children away from school and preventing adults from working or caring for their children. Serious illness is one of the major reasons why poor people remain poor. It is a major cause of underdevelopment in many countries today. The interrelationships between health and development are so intertwined, that it is impossible to address one without the other. Poverty breeds infections; infections breed poverty.

The road out of this vicious cycle begins with efforts that contribute to a person's ability to meet basic needs. Health is a minimum requirement for development. People cannot contribute to the economic progress of their families and communities when they are rendered helpless or die from infectious diseases. By fighting infectious diseases, major obstacles to development are removed.

In the past two decades, the AIDS epidemic has made this interdependence obvious. One example is the relationship between AIDS and education. Prevention strategies are much more difficult where basic literacy skills are absent. At the same time, efforts to increase literacy have become an uphill struggle in many countries where the workforce has been devastated by HIV. In the United Republic of Tanzania, the investments in education required to yield expected standards have been increased substantially because HIV/AIDS is affecting an increasing number of teachers.

Additionally, 20% fewer children attend school because parents are ill or dying as a result of HIV/AIDS.

In the past 25 years, we have witnessed significant progress in sustainable development. On average, life expectancy has increased by nine years. Since 1975, child death rates in developing countries have been cut nearly in half. But this progress must be tempered with the sobering reality that one out of two people in developing countries will still die from an infectious disease and by the fact that HIV/AIDS is changing their national demography.

Poverty and underdevelopment cannot be made to disappear by magic. To make progress, concrete and measurable contributions must be made in a coordinated way to remove the obstacles that prevent people from reaching their full human, economic and social potential.

Projected changes in life expectancy in selected African countries with high HIV prevalence

C. Economic impact

The economic burden of malaria alone has taken a staggering bite out of Africa's economy. Africa's GDP would be up to \$100 billion greater this year if malaria had been eliminated years ago, according to new research by Harvard economist Jeffery Sachs, the London School of Hygiene and Tropical Medicine, and WHO. This extra \$100 billion would be, by comparison, nearly five times greater than all development aid provided to Africa last year.

Malaria is hurting the living standards of Africans today and is also preventing the improvement of living standards for future generations. In addition to the cost of lost working days, the cost of treatment for repeated bouts of malaria can also be a huge burden for the poorest families. In Nigeria, it has been estimated that subsistence farmers spend as much as 13% of total household expenditure on malaria treatment.

Tuberculosis also inflicts an unnecessary handicap on the economic development of low-income countries. Because of these and other costs, tuberculosis may cost the Thai economy up to \$7 billion by the year 2015. In India, the estimated loss of economic output due to TB deaths reaches nearly \$400 million every year.

TB takes its toll primarily among people in their most productive wage-earning years, frequently sending once self-sufficient families into destitution. First, cash income is lost when the wage earner is too ill to work. In Zambia, for example, an average of five dependants are supported in the household by the main income earner, making the loss of these wages an often insurmountable hardship for the entire family.

Next, capital is lost when a family sells animals, land and investments to pay for healers, medicines and hospital bills, where low-cost health care is not available from NGOs or government health services. It is common in developing countries for the direct costs of seeking diagnosis and undergoing treatment from private practitioners to surpass the average annual income of a family. Because of these costs, a patient may not be able to afford to complete treatment.

On a larger scale, the output of factories and corporations suffers when their employees miss months of work. Often, benefits must be paid and new employees must be trained. TB also causes disruption in the workplace when contagious employees transmit the infection to their co-workers. One study has shown that 68 percent of all health professionals in Thai hospitals are infected with the TB bacilli.

Companies in the United States are also affected. In a shipyard in Maine, a labourer infected 417 coworkers with TB bacteria. On an American airline, a flight attendant infected two other members of the cabin crew. And in Phoenix, Arizona, 125 firefighters who voluntarily tested for TB tested positive, representing a dramatic increase over previous years.

D. Impact of globalization

In the Middle Ages deadly plagues were shipped from one continent to another - carried by flea-infested rats on board ships. Today they travel by plane - carried by airline passengers from one corner of the earth to another. And all in a matter of hours.

As the number of international airline passengers has soared from two million a year in 1950 to over 1.4 billion today, the world has been slow to recognize the implications for public health.

Deadly airborne diseases such as pneumonic plague, influenza and TB can easily spread in crowded airport lounges, on a jumbo jet or by passengers after their return home. And infectious diseases can also be carried across borders by their animal or insect hosts. Disease does not respect national boundaries.

In the United States in 1977, over 70% of the passengers on board an airliner grounded for several hours were infected with influenza by a fellow passenger. In 1994, a person with active TB is believed to have infected six fellow passengers on a flight from Chicago to Honolulu.

Published reports show that the majority of multi drug-resistant typhoid cases in the United States originated in six developing countries. In 1978 and again in 1992, poliovirus was imported into Canada by people travelling from western Europe. Eleven people were affected by polio paralysis in the first outbreak - all of them people who had refused immunization. Also in Canada, health care authorities traced two outbreaks of MRSA to a small village in North India.

Economic cost of infectious diseases

While outbreaks of drug-resistant tuberculosis in western Europe have been shown to originate in countries further east, drug resistance is not merely an issue of immigration. Drug-resistant tuberculosis in eastern Europe is due primarily to lack of implementation of an effective TB control strategy, DOTS (Directly Observed Treatment, Short-course), lack of political will by some governments, and little enforcement of effective guidelines within health care institutions.

In 1996, travelers returning to the United States and Switzerland developed yellow fever. They had not been vaccinated against the disease. This was repeated a few years later when a German photographer returned to Germany and died from a disease shown to be yellow fever.

In the United Kingdom, 1 000 new cases of malaria are imported each year from malaria-endemic countries. There have also been reports of a surprising number of malaria deaths in northern countries following unrecognized infection through a blood transfusion or a once-off mosquito bite near an international airport. Brussels, Geneva and Oslo have all had recent cases of airport malaria.

Malaria deaths are not uncommon among travelers who develop unexpected fever after returning to their home country. In northern countries where the disease is rarely seen, doctors may fail to diagnose malaria in time. And in countries where mosquitoes that can carry malaria exist, such as the U.S., the risk of locally transmitted malaria is real.

Infectious diseases can cross borders in other ways too. In 1985, the aggressive tiger mosquito - normally found in Asia - slipped unnoticed into the United States inside a shipment of water-logged used tires from Asia. Within two years the mosquitoes - capable of transmitting yellow fever, dengue and other diseases had established themselves in 17 States.

In Sub-Saharan Africa, HIV was spread among migrant workers, who later carried the disease back to their homes, and by lorry drivers, who bought sex at truck stops on their way across the continent. Tourism, international travel and migration are all helping to spread disease. The number of refugees and displaced people has increased nine-fold over the past two decades. In 1996, as many as 50 million people worldwide had been uprooted from their homes - 1% of the world's population. Refugees and displaced persons living in overcrowded, unsanitary conditions are at risk of outbreaks of cholera and other waterborne diseases.

Frequent Flyers Most Popular Air Routes Between Countries, 1997

In 1991 in Peru, a ship carrying contaminated water from Asia in its ballast tanks sparked off a cholera epidemic that spread rapidly throughout South and Central America. About 11 000 people died.

The International Health Regulations require governments to report all cases of three diseases - cholera, plague and yellow fever. The aim is to provide a rapid international alert system for diseases of international public health importance. The system is designed to steer a course between maximum protection against these diseases and minimum interference with world traffic and trade. But many countries fail to report outbreaks - deterred by the threat of potential economic losses. And the rules are difficult to enforce. Today these regulations are being revised and broadened to provide an early warning about outbreaks of any deadly diseases.

An outbreak anywhere in the world must now be treated as a threat to virtually all countries - especially those that serve as major hubs for international travel. Without an active global disease surveillance system in place to provide an early warning of outbreaks, the export of infectious diseases could become a growth industry.

E. Implications for global security

In January of this year, the UN Security convened an unprecedented session devoted exclusively to the threat HIV/AIDS is posing to Africa. The same month, the U.S. National Intelligence Council released a report concerning the potential national security threat infectious diseases pose to the United States. The report found that the United States faces the following security risks (to quote): Infectious diseases are likely to continue to account for more military admissions than battlefield injuries. U.S. military personnel deployed at NATO and U.S. bases overseas, will be at low-to moderate risk. At the highest risk will be U.S. military forces deployed in support of humanitarian and peacekeeping operations in developing countries

- The infectious disease burden will weaken the military capabilities of some countries - as well as international peacekeeping efforts - as their armies and recruitment pools experience HIV infection rates ranging from 10 to 60 percent. The cost will be highest among officers and the more modernized militaries in Sub-Saharan Africa and increasingly among FSU states and possibly some rogue states.

Spread of Meningococcal Meningitis by pilgrims returning from the Haj, 1987

Infectious diseases are likely to slow socioeconomic development in the hardest-hit developing and former communist countries and regions. This will challenge democratic development and transitions and possibly contribute to humanitarian emergencies and civil conflicts. Infectious disease-related embargoes and restrictions on travel and immigration will cause frictions among and between developed and developing countries. The probability of a bioterrorist attack against U.S. civilian and military personnel overseas or in the United States also is likely to grow as more states and groups develop a biological warfare capability. Although there is no evidence that the recent West Nile virus outbreak in New York City was caused by foreign state or nonstate actors, the scare and several earlier instances of suspected bioterrorism showed the confusion and fear they can sow regardless of whether or not they are validated.

2. THE SOLUTION "We now have the means to stop infectious diseases with affordable and highly effective solutions."

SYNOPSIS Most of the 13 million deaths each year from infectious diseases can be prevented. Effective tools have been developed to fight each of the infectious diseases which take the greatest toll on human

lives. The cheapest of these interventions can be bought for less than one U.S. nickel. The most expensive of these lifesavers costs a little more than the price of a few bottles of aspirin. In every case, low-cost health delivery strategies have developed to provide these interventions in the poorest parts of the world.

Science undermines any excuses for complacency toward infectious diseases. Public health advances in the past decade mean that health professionals cannot stand by while tuberculosis, malaria, AIDS, diarrhoeal diseases, pneumonia and measles kill over 13 million people each year.

Known interventions and delivery systems of existing drugs, vaccines and commodities have been extensively tested and proven to be successful in helping communities in poorer countries to control each of these diseases. It is now technically and operationally possible to halve mortality from six of the world's predominant causes of illness. These efforts can succeed if life-saving medicines and vaccines and other commodities can be accessed by low income people, at an affordable price.

A. Effective, low-cost interventions are available

DOTS

Millions of TB deaths could be averted through the use of DOTS (Directly Observed Treatment, Short-course) - an inexpensive strategy for the detection and treatment of TB. This highly-effective health care package involves detection of TB cases through low-cost sputum smear tests, followed by 6-8 months of treatment with a combination of inexpensive drugs. A key component is regular ongoing support to the patient. This includes observation to ensure that patients follow the treatment correctly and follow-up sputum tests to determine whether it has been successful. The strategy can detect and cure disease in up to 95% of infectious patients, even in the poorest countries.

Significant Breakthroughs in our Lifetime

Impregnated bednets One in four child deaths from malaria could be prevented if children at risk slept under bednets at night to avoid mosquito bites. Bednets dipped in an insecticide cost about \$4 each and \$0.50 to \$1 a year for a supply of insecticide to re-treat the net. Dip-it-yourself kits are now available for re-treating the nets at home. The cost of a net and one year's supply of insecticide is less than one hour's parking in New York, Paris or Tokyo.

Prevention strategies for HIV/AIDS While expensive antiretroviral drug therapy for HIV/AIDS is still way beyond the means of most developing countries, well-targeted, low-cost HIV prevention and care strategies can have a major impact on the spread of HIV. Millions of new infections could be prevented through low-cost interventions including: use of essential drugs to treat other sexually transmitted infections (which amplify the risk of subsequent infection with HIV) HIV testing and counseling (which can lead to safer sex) access to cheap condoms and, where necessary, safe drug injecting equipment counseling and support for HIV-positive mothers along with antiretroviral drugs and counseling on safe alternatives to breastfeeding promotion of safe injection practices sex education at school and beyond.

Integrated Management of Childhood Illnesses (IMCI) This low-cost strategy can dramatically reduce the 70% of deaths from pneumonia, diarrhea, malaria, measles, malnutrition and other infectious diseases such as meningitis. Seriously ill children are often suffering from more than one condition at the same time -

making exact diagnosis difficult. For these children combined therapy can be life-saving. Treatment may include oral rehydration salts to treat diarrhea, low-cost antibiotics to treat pneumonia, antimalarial drugs, and vitamin and mineral supplements. Another key focus is prevention through promoting immunization, breastfeeding and better feeding practices. Millions of lives could be saved every year through the IMCI approach. Correct management of pneumonia and diarrhoeal diseases alone could prevent up to three million deaths a year.

Effective Interventions at Low Cost

Childhood vaccinations More widespread use of low-cost vaccines could prevent 1.6 million deaths a year among children under the age of five. Yet today, one in five children are still not fully immunized with the whole package of six basic childhood vaccines: diphtheria, whooping cough, tetanus, polio, measles and BCG.

B: Controllable in any country

Wherever a low-cost strategy is available to prevent or treat infectious diseases, individual countries even low-income countries - can make dramatic progress in getting them under control. But few countries have succeeded without strong political commitment at the highest level, a health care system or coordinated use of NGOs and private practitioners that can deliver services to the entire population, and public demand for action.

In Viet Nam, a four-year onslaught on malaria between 1992 and 1996 succeeded in reducing malaria deaths by over 90% and malaria cases by 40%. A decade earlier the situation was dire. An economic recession had greatly damaged health services, **donations** of insecticide had been stopped, resistance to antimalarial drugs was rising fast and migrant workers were carrying malaria into areas where it had once been eliminated. In 1991 alone, there were 144 epidemics of malaria in Viet Nam.

Through government commitment, increased funding, and the widespread use of locally produced low-cost tools, health workers have today succeeded in turning the situation around. Locally produced high-quality drugs are now being used to treat cases of severe and multidrug-resistant malaria. Throughout Viet Nam, about 12 million people are protected by house spraying and insecticide-impregnated bednets. In areas where malaria is endemic, insecticide impregnation is provided as a public service - free of charge. The success of the program has attracted international funding - allowing the government to give greater attention to the control of other diseases such as dengue.

In West Africa, a small low-income country - Guinea - has shown what can be done to control TB through government commitment to use the DOTS treatment strategy. Within four years of launching its TB control program, the case detection rate had doubled and almost 80% of patients were being cured. The number of patients who failed to complete the treatment was halved as home visits were used to motivate patients to complete the course.

Free treatment reduces malaria deaths in Viet Nam

With three out of four people living in rural areas, the TB program operates through primary health care clinics. It has grown from small beginnings, steadily increasing its reach every year. Today every prefecture is covered. Guinea has also established a network of laboratories for diagnosis and research. When the TB program was launched in 1990 there were only 15 laboratories. Today there are 67.

In Mexico the success of efforts to reduce child deaths from diarrhoeal diseases has served as a model for

other national programs. Strong political commitment and leadership were key factors in achieving a 60% reduction in death rates within a decade. Even more impressive, the dramatic reduction in death rates was achieved in the face of a nationwide epidemic of cholera during 1990-92. The strategy involved efforts to ensure correct home case management and the availability and use of oral rehydration solutions at home and in health centers.

Meanwhile in Senegal, a rapid broad-based response to the HIV/AIDS epidemic has succeeded in holding the spread of HIV at much lower levels than in many other African countries. The government acted swiftly - putting sex education on the timetable in primary and secondary schools, providing treatment for sexually transmitted infections, and actively promoting the use of condoms.

The results so far have been impressive. As HIV infection rates have risen steadily in other urban centers, the rate in the capital city, Dakar, has stayed below 2%. Over 60% of men and 40% of women aged 15- 24 are now reported to be routinely using condoms with casual partners. And, as a result of active condom promotion in Senegal, the condom distribution rate has soared - from 800 000 a year in 1987 to over seven million by 1998.

C. Controllable globally

There is a tendency for some to be fatalistic about our ability to fight infectious diseases in developing countries. But there are plenty of reasons to be optimistic. Efforts to prevent and control diseases in the poorest communities have, and will continue to succeed. These initiatives have been among the most practical and achievable ways of alleviating poverty and furthering social and economic development.

ORT reduces diarrhoeal deaths among children in Mexico

Throughout history only one infectious disease - smallpox - has ever been eradicated. Today efforts are being stepped up to ensure that worldwide polio eradication is completed and certified by the year 2005. Prospects are good. Over the past decade the number of reported cases fell from 35 000 cases to about 5 000. The disease has been eliminated throughout the Americas and transmission now appears to have been halted in the European Region and the Western Pacific Region, including China.

Guinea-worm disease is also on the way toward eradication. Over the past decade the number of cases has been reduced by 90%. The strategy used involves health education, case containment and provision of safe drinking water. Guinea-worm disease is now restricted to 14 countries in Africa.

Efforts are also under way to control or eliminate a range of other diseases. Neonatal tetanus has been eliminated in over 100 countries but the disease continues to kill almost 300,000 newborn babies every year, and tetanus kills about 40 000 mothers as well. The disease could be eliminated through immunizing women with tetanus toxoid during pregnancy and ensuring they have access to a safe delivery. But in 1997, only 64% of pregnant women were immunized and, of the almost 50 countries where the disease is still a public health problem, only 17 had national plans to eliminate the disease.

Almost ten million people have been cured of leprosy over the past 15 years in an effort to eliminate the disease by the year 2000. Today virtually every registered patient is receiving multi-drug therapy. The number of countries where the disease is a public health problem has been reduced from 122 in 1985 to only 28. But leprosy remains a problem in 16 countries which together account for over 90% of all cases.

Global efforts to control measles are being hampered by continuing low immunization coverage rates in some countries. In Africa, fewer than two in three children today are immunized against measles. And in

ten countries fewer than half of all children are protected. Mass vaccination campaigns are now being carried out in the highest-risk areas in some regions - especially densely populated deprived urban areas. In the Americas, where the disease is targeted for elimination by the year 2000, over 90% of children are now immunized against measles.

Number of countries using DOTS

Efforts are also under way to eliminate lymphatic filariasis as a global public health problem. The elimination initiative has been made possible by greatly improved diagnostic techniques and dramatic advances in treatment methods - both for controlling the spread of the disease and for alleviating the suffering involved. In addition, partnerships with pharmaceutical manufacturers SmithKline Beecham and Merck are ensuring that drugs are available wherever they are needed.

In Latin America, countries have made a political commitment to eliminate Chagas disease. The first initiative was launched in 1991 by Argentina, Brazil, Bolivia, Chile, Paraguay and Uruguay. So far Uruguay has been successful. The strategy used involves screening blood **donations** and vector control. More recently, the Andean and Central American group of countries have launched similar elimination efforts. One of the key tools being used is a low-cost colorless latex-based insecticide paint developed within this region.

Onchocerciasis (river blindness) has been virtually eliminated in 11 countries in West Africa through a 20-year Programme initially involving vector spraying and now providing once-yearly community-based treatment with the drug ivermectin - supplied free by the manufacturer Merck. In 1994, with partners including the World Bank, the African Programme for Onchocerciasis Control was established to ensure that the disease is eliminated in the remaining 19 African countries where it is a serious health problem.

D. Multisectoral efforts make the difference The key determinants of health - as well as the solutions - often lie outside the direct control of the health sector. They are rooted in areas such as sanitation and water supply, environmental and climate change, education, agriculture, trade, tourism, transport, industrial development and housing.

The link between environmental quality and health, for example, is critical. Over 10% of all preventable ill-health today is due to poor environmental quality - conditions such as bad housing, overcrowding, indoor air pollution, poor sanitation and unsafe water.

Sex education reduces HIV prevalence in Uganda

The critical need for collaboration between health and other sectors has been highlighted most recently by efforts to prevent HIV/AIDS. A few governments have attempted to reduce individual vulnerability to HIV/AIDS through a cross-sectoral approach. The aim is to influence infrastructure development plans, laws, education, labor policies and the exercise of human rights, for example, in an effort to create an environment that makes it easier for people to avoid HIV/AIDS. This can involve providing incentives to enable girls to finish secondary education, boosting job and educational opportunities for women to break the cycle of economic and sexual dependency, and ending the criminalization of marginalized groups such as sex workers and injecting drug users. It can also involve carrying out impact assessments for development projects to foresee ways in which schemes could fuel the epidemic - through accelerating the pace of urbanization, for example, or splitting up families through creating the need for a migrant labor force.

In Thailand, where prostitution remains illegal, the government's pragmatic approach to slowing down the

epidemic has brought a significant decline in infections - especially among the young. The multisectoral approach included work with brothel owners to urge 100% condom use in brothels, the launch of mass media campaigns to encourage respect for women and discourage men from visiting sex workers, improved educational and vocational opportunities for women to keep them out of the sex industry and improved access to care, as well as economic and social support for people living with HIV/AIDS.

E. Public/private partnerships also make the difference

In addition to the need for increased collaboration between the different public sectors which impact on health, there is a need to build partnerships with the private sector. WHO's efforts to control diseases are a collaborative effort by global partnerships. WHO has forged strategic alliances with governments, ministries of health in developing countries, international development banks, foundations, the private sector, civil society, non-governmental and international organizations and other UN agencies. The guiding principles of WHO are: "We can't do it alone, so we work in partnership with others."

- "We can't do it all at once so we set priorities. Priority setting helps focus the world's attention, resources and actions on innovative and cost-effective public health action with specific goals and measurable results." WHO is the health conscience of the world.

Global efforts to eradicate polio, for example, have demonstrated what can be achieved through private sector collaboration. Rotary International, a private sector service organization, has raised \$500 million to fund vast quantities of vaccine for mass immunization campaigns and to help equip a refrigerated cold chain for vaccine transport. Rotary has used its global network of over 28 000 clubs in 155 countries to enlist volunteers to carry out social mobilization campaigns, provide organizational skills for immunization campaigns, and administer **polio vaccine** drops to children.

The recent launch of the New Medicines for Malaria Venture - a joint initiative by the public and private sectors to develop new antimalarial drugs - is an example of efforts to harness greater public and private sector collaboration in developing new products for use in developing countries. Another example is the **donation** of drugs by industry free-of-charge to help eliminate infectious diseases with a high disease burden in developing countries. These include **donations** of drugs by pharmaceutical manufacturers. SmithKline Beecham and Merck for the treatment of lymphatic filariasis, Merck for the treatment of river blindness, Novartis for leprosy and Pfizer for trachoma. In addition vaccine manufacturers have occasionally donated vaccines during outbreaks of disease, such as meningitis, for polio eradication, and for vaccine trials in developing countries.

STOP TB, based at WHO, is a partnership of countries with serious TB problems, UN and other international organizations, bilateral donors, scientific and public health institutions and NGOs. The STOP TB Initiative is mounting a political and social movement against TB throughout the world by promoting the use of cost-effective Directly Observed Treatment, Short-course (DOTS). Despite the DOTS policy, there are obstacles to countries adopting its use. These include lack of political will and commitment to support TB control programs, inadequate financing and human resources, poor organization of and management capacity for programs, and interrupted supplies of high- quality anti-TB drugs.

Roll Back Malaria is one of WHO's best examples of how global partnerships help control infectious diseases. Through a global coalition involving UNDP, UNICEF, WHO and the World Bank, Roll Back Malaria is helping health systems deliver cost-effective interventions including: better health care, insecticide-treated bednets and improved environmental management. At the same time Roll Back Malaria is harnessing the support of both the public and private sector in developing new malaria drugs and vaccines. The Roll Back Malaria partnership is working in all countries where malaria is a health problem,

and focusing its greatest efforts in Africa where most malaria deaths occur.

Partners in the Global Alliance for the Elimination of Leprosy

3. URGENCY

"We may only have a decade or two to make optimal use of the medicines presently available"

Synopsis Slowly, but surely, medicines once effective in curing infectious illnesses are becoming ineffective due to anti-microbial resistance.

Anti-microbial resistance erodes the strength of once lifesaving prescriptions, eventually leaving them with the negligible effect of placebos.

Antimicrobial resistance develops when medicines are not widely accessible for the poorest segments of society, and when they are not wisely prescribed throughout the world. We must undertake a massive effort to make better use of these powerful medicines, before our window of opportunity to do so closes and we move even further toward a post-antibiotic age.

We are wise not to delay in controlling infectious diseases. Over thirty new diseases have emerged within just the past twenty years, and no one knows what other unforeseen microbial threats await us in the future. All the more reason to defeat our microbial foes now before the battlegrounds are potentially redrawn later.

Smallpox provides a very striking example. If smallpox had not been eradicated in a few remaining countries in 1977, the world might still be paying a heavy price today. Unforeseen was the imminent emergence of HIV/AIDS. Immunization with the smallpox vaccine - made from a live weakened cowpox virus similar to the smallpox virus - is now known to be fatal for people whose immune system is impaired by HIV. Just a few years delay and global eradication of smallpox might have become impossible without the discovery of a new vaccine.

Had smallpox not been eradicated - at a cost then totaling \$300 million - it would be among the top six infectious killers in the world today. Without past concerted efforts to fight the disease, smallpox could still be causing over a million deaths a year and costing governments billions of dollars in health costs.

Emerging, re-emerging infectious diseases 1996 to 2000A. The increasing threat of antimicrobial resistance

As early as half a century ago - just a few years after penicillin was put on the market - scientists began noticing the emergence of a penicillin-resistant strain of *Staphylococcus aureus*, a common bacterium among the human body's normal bacterial flora. Resistant strains of gonorrhea, dysentery-causing shigella (a major cause of premature death in developing countries) and salmonella rapidly followed in the wake of staphylococcus 20 to 25 years later.

From that first case of resistant staphylococcus, the problem of antimicrobial resistance has snowballed into a serious public health concern with economic, social and political implications that are global in scope and cross all environmental and ethnic boundaries. Penicillin was once 100 percent successful for curing gonorrhea. Now it is virtually useless against gonorrhea in South East Asia and other parts of the world. Streptomycin was once the most effective drug we had to cure TB. Now, it is no longer effective in many European countries. Chloroquine and sulfadoxine-pyrimethamine could once stop malaria in

Thailand.

Now they cannot. Mefloquine was once one of our best backup weapons against malaria. Now it can no longer cure most malaria cases in Thailand. Lamivudine -- only recently developed to treat hepatitis B -- has quickly become ineffective in 30 percent of patients treated. In the United States, a variety of medicines used to treat patients in hospitals - such as vancomycin - are less effective, leading to thousands of deaths each year. In India, chloramphenicol once saved people from typhoid. Now these drugs are largely ineffective in protecting people from this life-threatening disease. Cotrimoxazole once controlled outbreaks of shigella dysentery. Today, nearly all shigella are non-responsive to this drug.

The Discovery and Loss of Penicillin in treating Staphylococcus

In many cases, these drugs have become ineffective in some countries only within a span of 10 years or less. Although most drugs are still active in other parts of the world, the lengthening shadow of resistance means that many of them may not be for long. In the case of tuberculosis, the emergence of aureus multi drug-resistant bacteria means that medications that once cost as little as US\$ 20 must now be replaced with drugs a hundred times more expensive. Other diseases are likewise becoming increasingly impervious as currently effective drugs continue to be underused by patients who do not complete courses, and misused through indiscriminate and over-prescribing.

Fortunately, we still have other effective medicines to cure most of these and other infectious diseases. However, our options are increasingly limited. Rifampicin, isoniazid and ethambutol are - so far -- 95 percent effective in curing tuberculosis.

- Combinations of anti-malarials are -- so far -- 95 percent effective in curing malaria in most parts of the world. Five days of antibiotics are -- so far -- 90 percent effective in treating pneumonia. Ciprofloxacin is -- so far -- still very effective in curing most cases of gonorrhea.

But we could lose these medicines as well if the world does not take urgent measures to turn back the threat of infectious diseases.

B. How resistance develops and spreads

The causes of anti-microbial resistance are paradoxical. It can be caused by the under-use of medicines. It can also be caused by the over-use of medicines.

The under-use of medicines is particularly a problem in developing countries. For example, where patients are unable to afford the full course of medication, or where some medicines are sporadically unavailable, patients often take insufficient dosages that kill off the weakest microbes in the body, but provide the more resistant microbes an opportunity to survive and multiply.

But resistance also emerges for the opposite reason: from the overuse of antibiotics. Especially in wealthy countries, patients often demand anti-microbials for every minor illness, and health services are often prone to over-prescribe them. Similarly, overuse of anti-microbials in food production in wealthy countries is also contributing to increased drug resistance.

Cost of Treating Multidrug-resistant TB Microbiology

Researchers soon discovered that microbes develop resistance to antimicrobials through a process known as natural selection. When a microbial population is exposed to an antibiotic, more susceptible organisms

will succumb, leaving behind only those resistant to the antimicrobials that can then be transmitted to others. These organisms can also pass on their resistance genes to their offspring by replication, or to other related bacteria through "conjugation" whereby plasmids carrying the genes "jump" from one organism to another. This process is a natural, unstoppable phenomenon exacerbated by the abuse, overuse and misuse of antimicrobials in the treatment of human illness and in animal husbandry, aquaculture and agriculture.

The Poverty Paradigm: Drug Access and Resistance

More than any other issue, poverty and inadequate access to drugs continue to be a major force in the development of resistance. In many developing nations drugs are freely available - but only to those who can afford them. This means that many patients are forced to resort to poor quality, counterfeit, or truncated treatment courses that invariably lead to more rapid selection of resistant organisms.

A patient infected with a resistant strain may endure prolonged illness (often resulting in death) and hospital stays which in turn result in lost wages, lost productivity, family hardship and infectiousness with resistant strains.

Misdiagnosis and Resistance Misdiagnosis is just another symptom of weak public health systems in industrialized and developing nations. Overworked and under-informed physicians and healthcare workers are ill-equipped to deal with the large number of patients coming through clinic and office doors. Increased pressure inevitably leads to "defensive" and unnecessary prescribing as a means of forestalling potential complications. A dearth of proper diagnostic facilities and laboratories in poorer nations means physicians and healthcare workers are forced to engage in the kind of symptom-based guesswork that often leads to misdiagnosis and the increased likelihood of prescribing the wrong medication. In many developing countries poverty and a lack of information forces patients to purchase single doses of drugs taken only until the patient feels better. Health workers may also be responsible. In a study undertaken in Viet Nam in 1997, researchers discovered that more than 70% of patients were prescribed inadequate amounts of antimicrobials for serious infections, while another 25% were given unnecessary antibiotics. In China, researchers found that 63% of antimicrobials selected to treat proven bacterial infections were simply the wrong choice, while in Bangladesh 50% of drugs dispensed in one hospital unit were inappropriate. The same is true in North America where it is estimated that physicians in both Canada and the United States over-prescribe antibiotics by 50%.

Anti-Malarial Drug Resistance

Counterfeit Drugs

Counterfeit drugs are also a problem that directly contributes to antimicrobial resistance. A US\$ 21 billion industry- which comprises an estimated 5% of all antibiotics sold worldwide, bogus drugs claim the lives of victims whose health, families and livelihood could have been spared with proper medication and the necessary government controls.

Resistance flourishes wherever antibiotics are abused, misused and dispensed at levels lower than treatment guidelines dictate. This means that instead of curing the infection, medications kill only nonresistant organisms - leaving their tougher counterparts to replicate and spread resistance genes.

Between 1992 and 1994, as many as 51% of counterfeiting cases uncovered by WHO (70% of which were discovered in developing countries) revealed that forged drugs carried no active ingredient whatsoever. Among the counterfeits, yet another 17% contained the wrong ingredient, while an additional 11% contained weaker than recommended concentrations of active medication. Indeed, some of these, so-called

"medications" contained poisons capable of causing severe disability or death. Overall, only 4% of counterfeits contained the same quantity and quality of medication as their authentic counterparts.

Today, no one knows to what extent drug counterfeiting has spread. What is clear, however, is that in the wake of globalization and the increasing power of organized crime, the problem of counterfeiting grows ever more acute.

Dubious Pay-offs and High-priced Prescriptions

Owing to fears of resistance, many health workers are avoiding narrow- spectrum drugs that treat specific complaints in favor of broader- spectrum antibiotics that have wider applications. In countries where health care providers earn only subsistence wages, unethical pharmaceutical companies sometimes pay a commission for recommending more expensive broader spectrum medications when cheaper narrow-spectrum alternatives would suffice. The end result is a smaller, more highly-priced pool of antimicrobials combating a larger number of infectious diseases. This troubling development accelerates the natural process of resistance, and results in only a small percentage of the world's population benefiting from new research.

Advertising for Resistance At the other end of the spectrum, patient demand for antimicrobials sometimes the result of TV, internet, magazine or newspaper advertising - also spurs the development of resistance. In a 1997 study undertaken in Europe, physicians cited patient pressure as the number one reason why they prescribed the wrong antibiotics. In the United States, 95% of physicians surveyed had seen an average of seven patients in the previous six months who had requested specific drugs as a result of advertising. Of physicians questioned, 70% admitted that patient pressure forced them to prescribe drugs they might otherwise have avoided. In a 1995 study undertaken in Peru, two-thirds of those health workers surveyed claimed that their primary source of information came from medical journals. Researchers concluded otherwise, and wrote that advertising appeared to be a key information source. The authors went on to say that this factor "tended to promote irrational drug use."

Lack of Education

Even in industrialized nations, antimicrobial resistance is often given only cursory coverage in medical schools or is confined to specialist training. In developing nations, an acute shortage of qualified health care workers means that patients must rely on their own judgement, or that of underqualified doctors, paramedics and other health care workers.

Many drug dispensers are likewise under-educated and under-informed. In a study of 40 randomly selected healthcare facilities in Ghana, only 8% of drug dispensers had received formal training. At most clinics surveyed, trained dispensers were notable only by their absence. These factors are particularly significant when one considers that in many countries the majority of patients purchase antimicrobials and other drugs without visiting a health worker first. Another study found that drug retailers in seven sub-Saharan African nations often advised consumers to purchase non-essential drugs without adequate explanation - and without any suggestion that individuals consult a health worker prior to their purchase. This combination of poverty and ignorance is the perfect spawning ground for antimicrobial resistance.

Resistance and Hospitals

Most health workers are trained in the hospital setting. Unfortunately, when it comes to prescribing practices, teaching hospitals sometimes unwittingly promote the type of irrational dispensing that contributes to drug resistance. In an analysis of 10 studies undertaken at teaching hospitals worldwide,

researchers determined that between 40% and 91% of antibiotics prescribed were inappropriate. The survey also revealed that health care workers often disregarded basic hygiene practices - such as hand-washing and/or changing gloves - before and after patient visits. Inadequately cleaned equipment is also a major determinant in the spread of infectious disease. In one study, researchers surveying health clinics in United Republic of Tanzania discovered that some 40% of presumed sterile reusable needles and syringes were contaminated with bacteria. Inadequate training, monitoring and education on basic hygiene has serious implications, not only for the hospital population itself, but also for the community at large.

Resistance in Animals, Humans Quinolone-resistant

Antimicrobial Resistance and Food

Another source of resistance lies in our food supply and is related to infectious agents that live in what we eat and drink. Since the discovery of the growth-promoting and disease-fighting capabilities of antibiotics, farmers, fish-farmers and livestock producers have used antimicrobials in animal husbandry, aquaculture and horticulture. Currently, only half of all antibiotics produced are slated for human consumption. The other 50% are used to treat sick animals, as growth promoters in livestock, and to rid cultivated foodstuffs of various destructive organisms. This ongoing and often low-level dosing for growth and prophylaxis inevitably results in the development of resistance in bacteria in or near livestock, and also heightens fears of new resistant strains "jumping" between species. Vancomycin-resistant *Enterococcus faecium* (VRE) is one particularly ominous example of a resistant bacterium appearing in animals that may have "jumped" into more vulnerable segments of the human population.

The emergence of VRE in food can be traced to the widespread use of avoparcin (the animal equivalent of the human antibiotic vancomycin) in livestock. Moreover, with livestock production increasing in developing countries, reliance on antimicrobials is likewise expanding often without guidelines in those nations where antibiotics are sold without prescription. With the trends toward globalization and the relaxing of trade barriers, inadequate standards and enforcement in one nation means all others are vulnerable.

Often bacteria that are harmless to livestock are fatal to humans. This is true of a number of outbreaks that have taken the medical community by surprise. One example occurred in Denmark in 1998, when strains of multi drug-resistant *Salmonella typhimurium* struck 25 people, killing two. Cultures confirmed that the organisms were resistant to seven different antibiotics. Epidemiologists eventually traced the microorganism to pork and to the pig herd where it originated. In 1998, 5,000 people in the United States learned about antimicrobial resistance when they fell ill with multi drug-resistant campylobacteriosis caused by contaminated chicken. The same drugs that eventually failed them had also been used in the poultry that turned up on their plates.

C. The world's biggest killers plan their escape

Tuberculosis Tuberculosis is becoming increasingly resistant to anti- TB drugs. Researchers assess the approximate number of multi drug- resistant TB cases at between 1% and 2% of current global tuberculosis figures. But in some parts of the world, the rates of MDR TB are much higher.

China

MDR TB Prevalence Percent of MDR(Henan and Zhejiang), India (Tamil Nadu), Iran, Mozambique and Russia (Tomsk) each reported high levels of MDR TB of over 3% in new cases. Israel, Italy, Mexico (Baja California, Oaxaca and Sinaloa) reported MDR TB in over 6% of both new and previously treated cases

combined.

In Estonia, the percentage of MDR TB strains -- those resistant to the two most powerful anti-TB drugs -isoniazid and rifampicin -- has increased from 13.5% in 1997 to 18.1% one year later. When drug resistance is permitted to flourish in developing countries, the consequences are inevitably felt by wealthy countries. Resistance to at least one drug has increased by 50% in both Denmark and Germany since 1996, and it has doubled in New Zealand. In all three countries, foreign-born TB patients are nearly twice as likely as native-born patients to be harboring a drug resistant strain.

In 1991, New York City experienced an outbreak of MDR TB that eventually claimed 500 lives. Recently, an MDR TB outbreak in Russia has killed many more. North America and Europe may have the billions of dollars required to contain this emergency. The worst affected countries in Asia, Africa and Latin America do not.

Malaria Resistance to chloroquine - the former treatment of choice - is now widespread in 80% of the 92 countries where malaria continues to be a major killer, while resistance to newer second and third-line drugs continues to grow. Unfortunately, many of these new drugs are not only expensive and have serious side effects, but most will be eventually rendered ineffective by the malaria organism's complex epidemiology and facility for rapid mutation. Mefloquine resistance emerged in South-East Asia almost as soon as the drug became a treatment option.

The challenge is to use already existing antimalarials more effectively to better control the disease. This means improving access to appropriate drugs and providing combinations of medications at lower cost. Increasing surveillance to guide the proper use of drugs, and more attention to alternative prevention strategies such as insecticide-treated bednets is also vital.

Declining Response to Antimalarial Drugs

AIDS and STIs A small but growing number of patients are showing primary resistance to zidovudine (AZT) - as opposed to "secondary" resistance where viruses grow increasingly insensitive to antivirals over the course of the patient's illness. This is also true for protease inhibitors that became available a mere 10 years ago. A growing body of evidence indicates that when HIV develops resistance to one protease inhibitor it quickly becomes insensitive to the entire family of drugs, thus outwitting antiretrovirals that took years to develop at huge cost.

Gonorrhea and other sexually transmitted infections (STIs) are important co-factors in the transmission and spread of HIV. This is because HIV bonds to white blood cells collecting at inflamed sites around the urinogenital tract. Studies show that those co-infected with gonorrhea and H/V shed HIV at nine times the rate of individuals affected with HIV alone.

Of the STIs - including chancroid and chlamydial infection - gonorrhea is the most resilient with a resistance rate that continues to outstrip new treatment strategies. Gonorrhea resistance first showed up in GIs during the Viet Nam war and is now entrenched around the globe with MDR strains appearing in 60% of those infected each year. In most of South-East Asia, resistance to penicillin has been reported in nearly all strains at a rate of 98% overall. Newer, more expensive drugs - notably ciprofloxacin - are likewise showing an increasing failure rate. Owing to resistance, chronic gonorrhea has become a driving force in the HIV epidemic.

Pneumonia In lab samples as many as 70% of chest infections are resistant to one of the first-line antimicrobials. Formerly, first-line medications were both effective and affordable. With the onset of

resistance however, newer treatments are proving too costly to the vast majority of the poor living in developing nations. This alarming situation is due, in part, to widespread confusion over the difference between viral and bacterial respiratory infections. Both forms present the same clinical symptoms that can often only be distinguished by laboratory tests - expensive and therefore unavailable in many parts of the world. While bacterial infections can kill, treating viral illness with antibiotics is not only ineffective but contributes to the development of resistance. This is particularly true when it comes to treating children. Recent studies undertaken by WHO indicate that for every 100 respiratory infections, only 20% require antibiotic treatment. This means that 80% of patients are treated with unnecessary medications thereby leading drugs directly into the conditions for drug resistance to emerge.

Spread of HIV in Asia 1982-1557

Diarrhoeal Diseases

Multi drug-resistance is also occurring in microbes that cause diarrhoeal diseases. One such agent, the bacterium *Shigella dysenteriae*, is a highly virulent microbe that is resistant to almost every available drug. The results of this growing crisis were illustrated most notably in the wake of the 1994 civil war in Rwanda when the bacterium spread through vulnerable refugee populations already traumatized by war and loss. Left untreated, death can follow within days of infection. Ten years ago a shigella epidemic could easily be controlled with co-trimoxazole - a drug cheaply available in generic form. Today, nearly all shigella are non-responsive to the drug, while resistance to ciprofloxacin - the only viable medication left - appears to be just around the corner.

The bacteria that cause cholera and typhoid are also revealing the ease with which they acquire resistance. In treating people with cholera, fluid replacement is paramount, but antibiotics (especially tetracycline) play an important public health role in limiting the spread of epidemics. *Salmonella typhi* - like shigella, is adept at accumulating cassettes of resistance genes, producing strains that withstand first-line, secondline and now, third-line drugs. Up until 1972, chloramphenicol was the treatment of choice for typhoid fever throughout much of the Indian subcontinent. By 1992 two-thirds of reported cases were chloramphenicol-resistant, thereby necessitating treatment with expensive quinolones that are themselves losing effectiveness. Without proper treatment, typhoid is a serious and frequently relapsing disease that kills up to 10% of those infected.

D. Myth of an endless supply of new drugs

It is easy to live under the illusion that science is continually supplying us with an endless array of antimicrobials; that the pharmaceutical industry is frequently making new drug discoveries to replace those drugs that become ineffective in fighting the major infectious diseases. In reality, this is not the case. While new versions of older drugs continue to be developed, no new classes of antibacterials have been discovered in the past 30 years to fight the major infectious diseases in humans. On average, research and development of anti-infective drugs takes 15 to 20 years. And the reality is, there are no new replacements ready to roll off the research pipeline.

Twenty years ago physicians in industrialized nations believed that infectious disease were a scourge of the past. With industrialization came improved sanitation, housing and nutrition, as well as the revolutionary development of disease-fighting antimicrobials. Populations living in those nations were not only enjoying an unprecedented decrease in mortality and morbidity, but a corresponding increase in life expectancy.

In the developing world - where poverty and ongoing civil disturbance offset often modest health care gains - people could nevertheless look forward to a time when an increased quality of life might one day

lead to a relatively disease-free future. The tools were there.

The Lengthy Drug Research Pipeline

Confident in this pharmacopoeia, major drug manufacturers turned away from intensive antibacterial research, and concentrated their energies on seeking cures for heart disease, Alzheimer's and other chronic diseases - thus effectively closing the door on further research into new drugs designed to combat infections. Indeed, since the early 1980s, significant breakthroughs have been largely confined to the development of antiviral agents targeting the ever-widening HIV epidemic.

While there is renewed interest from some companies in developing new vaccines and medicines to cure infectious diseases, research and development funding continues to be woefully inadequate. A very small percentage of all global health research and development funding is currently devoted to finding new drugs or vaccines to stop AIDS, acute respiratory infections (ARI), diarrhoeal diseases, malaria and TB. The pharmaceutical industry reports that it costs them a minimum of US\$ 500 million just to develop and bring one drug to market. Combined funding for research and development into ARI, diarrhoeal diseases, malaria and TB last year was under that amount.

Health research world-wide

4. Action

"We need a massive effort to use existing tools more widely and wisely."

SYNOPSIS After concluding the last millennium with a flurry of scientific discoveries and medical advances, world leaders have the option to begin the new millennium by extending these medical riches to historically unreached populations. After spending hundreds of billions to stop a millenium bug that lasted but a second, world leaders can also afford to begin conquering those microbes that have routinely killed millions, generation after generation.

It is time to go to scale with the knowledge we have about controlling major diseases of poverty. This would be a millenium gift of inestimable value to the world's poorest people - at a time when strong leadership and a profound, and lasting, transformation are sorely needed. The immediate benefits resulting from a massive effort against diseases of poverty would be the most lasting and historic millenium gift world leaders could conceivably hope to present to humanity.

Infectious diseases are no longer seen exclusively as a health issue. They concern finance ministers and the IMF as they discuss modalities for debt relief. They concern the UN Security Council as it discusses HIV/AIDS in Africa. They are a key component of a human security as the basis of foreign policy in a growing number of states. They concern leaders of G8 countries who - when they meet this July 21-23 in Okinawa -- will consider calling for a powerful health initiative as a contribution to reducing world poverty.

There is now opportunity to make a significant leap towards reducing poverty and ill-health. Deaths and disability caused by highest burden diseases in low-income countries could be reduced by as much as 50% before the year 2010.

A Massive Effort Against Diseases of Poverty

What is required is an over-arching, highly focused, and intensive initiative to reduce illness and early

mortality experienced by poor people, concentrating initially on a small group of conditions (tuberculosis, malaria, HIV/AIDS and other treatable or preventable infectious diseases) that disproportionately affect the poor in large numbers. Such an initiative would enable poor people to invest more time and energy in education, child care, production and/or earning. It would also result in their having increased security, and contribute to their peace of mind. Health systems will be improved in ways that will contribute to addressing the health needs of poor and vulnerable populations more systematically.

A. Opportunity for a massive effort against illnesses of poverty

The window of opportunity is there for a focused and intense effort to reduce the impact of illness on poor people - perhaps linked to debt relief. Without a massive effort, countries with diseased workforces will continue to lose a sizable share of their potential GNP. Without a massive effort on the big infectious killers, nearly 100 million people will die from the targeted diseases while the world awaits the arrival of vaccines which could take 10 to 20 years or more to emerge from the research pipeline. Without a massive effort, the effective medicines we have now to cure the world's most devastating diseases will be eroded and rendered ineffective with increasing drug resistance. If we do not act now, we will have lost the window of opportunity to reduce major disease burdens while these medicines were still highly effective.

This massive effort would require funds for the purchase of medicines and consumables necessary to tackle the principle diseases of poverty. These would be routed through health care delivery systems -- including those of governments, the private sector and NGOs - that demonstrate that their over-riding priorities are to deliver effective health services to those who need them, and to maximize the resulting benefits. In this way, incentive is provided for expanding the effectiveness of existing health systems and stimulating the emergence of new health care services.

International organizations, such as WHO, UNICEF, international foundations and others, have a key role to play. Their work with national governments, non-governmental organizations and private entities establishes effective mechanisms for channeling resources and stimulating concerted action - at global and local levels - to yield measurable health benefits for poor people. International organizations have assessed the additional cost of effective implementation - approximately US\$ 15 billion over five years - and the potential impact that would result:

It is Possible to Dramatically Reduce Deaths Due to High Burden Diseases This Decade

Bednets

With \$1.5 billion for insecticide-treated nets, every African child could be protected from malaria by the year 2005. Potential: 600,000 child deaths prevented per year. Anti-Malarials With \$4 billion, a blister packet of effective antimalarial drugs could be quickly available to 100 million children in malaria endemic areas by the year 2005. Potential: 25% reduction in mortality due to malaria. Anti-TB Drugs With \$1 billion for anti-TB drugs provided to NGOs and governments using the DOTS strategy, 70% of all new TB cases could be provided with effective treatment by the year 2005. Potential: 50% reduction in deaths due to TB. Treatment for Sexually Transmitted Infections With \$1 billion for antibiotics, an additional 70 million STI cases could be treated. Potential: Up to 30% reduction in HIV transmission in high risk countries. Oral Rehydration Therapy and Antibiotics for Pneumonia With \$1 billion for antibiotics, oral rehydration salts and training materials, access to IMCI care for diarrhoeal diseases and acute respiratory illness could be increased 10-fold. Potential: 50% reduction in mortality due to diarrhoeal disease and ARI. Measles Vaccines With \$2.9 billion, measles vaccination coverage could be increased to 95% in low income countries. Potential: 579,000 child deaths averted per year.

- Obstetric Treatment With \$3.2 billion invested in equipment, drugs, supplies, and training materials for skilled birth attendants, safe deliveries could be extended to 80% of women in low income countries. Potential: 75% reduction in maternal mortality by 2015.

These interventions need to be made available through a range of public, private and voluntary channels, through health and other sectors.

The recent attention given to debt relief provides an opportunity to focus the attention of governments in Highly Indebted Poor Countries on the potential gains from increasing expenditures on health and education. Many countries will be starting to prepare Poverty Reduction Strategy Papers as part of the requirements for World Bank and IMF financial support. Ensuring that health has a prominent place as a poverty reduction strategy, and as an indicator of progress, is essential. There are increasing opportunities for collaboration with the private sector on the development and production of international public goods such as drugs and vaccines. Several promising models exist. Work is being done (as part of the soon-to-report Commission for Macro-economics and Health, called into being by WHO Director-General Gro Harlem Brundtland) to explore new mechanisms for improving incentives.

ACTION

"We need a massive effort to use existing tools more widely and wisely."

B. A massive effort to provide proper treatment

In peoples who enjoy wide access to antimicrobials and wise dispensing in approved treatment strategies health can be improved and the evolution of resistance contained. Without wiser and wider use, effective antimicrobials now taken for granted, will be rendered increasingly impotent against a burgeoning population of resistant microbes.

The beneficial effects of wise and wide use have been clearly demonstrated. In some regions of China anti-TB drugs are widely available to all patients diagnosed with TB. At the same time, these drugs are provided wisely through the WHO-recommended DOTS strategy - an effective case-management system that helps ensure that patients take quality anti-TB drugs in the right dosage for the appropriate length of time. A recent study has shown that TB resistance in those areas of China implementing DOTS, is one-third lower than in regions that have not followed DOTS. The Stop TB Initiative - an alliance of concerned governments, non-governmental organizations, international organizations, and financial institutions - is mobilizing resources and promoting DOTS expansion worldwide.

Roll Back Malaria is another "wisely and widely" initiative, based on the principle that antimalarials must be made widely available in order to prevent the 1.1 million deaths the infection causes every year while, at the same time, promoting rational use of quality antimalarials. Currently, Roll Back Malaria is developing surveillance strategies designed to detect increased drug resistance to further enable countries to respond wisely to the threat of resistance before it reaches a critical level.

We need not stand by helplessly watching antimicrobial resistance increase and drug effectiveness decrease. When an infection is addressed in a comprehensive and timely manner, resistance rarely becomes a public health problem. The most effective strategy against antimicrobial resistance is to get the job done right the first time - to unequivocally destroy microbes - thereby defeating resistance before it starts.

C. Wider availability of lifesaving medicines and supplies

Make Essential Drugs Available to Poor People In 1977 WHO developed the Model List of Essential Drugs to encourage rational drug use. The intent is to provide a blueprint on essential drugs required for national governments to treat specific complaints. Over the years, this document has been revised regularly and now serves as a guide for more than 120 countries. Essential drug policies - when adopted by countries in conjunction with educational programs, effective follow-up, development of national standard treatment guidelines and mechanisms to ensure the supply of high-quality drugs - significantly increase wider availability of quality drugs as well as encourage their wiser use.

Analysis has shown that individuals living in nations that have adopted essential drug policies enjoy greater drug access yet resort to significantly fewer injections and antimicrobial prescriptions when confronted with possible infections. A retrospective survey of prescribing practices in Ethiopia determined that health care providers who relied on the essential drugs list discouraged the unnecessary dispensing of nonessential drugs. To further bolster national efforts, WHO has recently released an Internet guide to assist Member States in accessing reliable information on pharmaceutical products.

Build Alliances and Partnerships to Increase Access to Antimicrobials Inadequate access to essential antimicrobials results in inappropriate treatment which in turn hastens the development of resistance. Successful attempts to increase access to existing antimicrobials in a coordinated manner are dependant on creative private and public sector collaboration. Implementation can only be assured through alliances that involve governments, international organizations and non-governmental organizations (NGOs) and the private sector.

For example, WHO has recently partnered the Eli Lilly Company, several generic manufacturers and Medecins sans Frontieres to form a Green Light Committee aimed at reviewing research proposals designed to evaluate the most cost-effective treatment of multi drug-resistant TB. Applicants will be offered concessionally-priced second-line anti-TB drugs for approved projects. A unique partnership between WHO's Programme for Research and Training in Tropical Diseases (TDR) and Aventis, the company that developed eflornithine, could spell relief for thousands suffering the effects of African Trypanosomiasis, also known as sleeping sickness.

Lifesaving Medicines & Products Should Be Available More WIDELY D. Wiser use of lifesaving medicines and supplies

The World Health Organization and its technical partners have redeveloped low-cost strategies based on clinical best practice in Member States, operational efficiency, scientific breakthroughs, cost-effectiveness and, above all, on what works best. For ARIs, diarrhoeal diseases and malaria in children, WHO has developed the Integrated Management of Childhood Illness (IMCI). For the treatment of TB, WHO recommends use of the DOTS strategy.

The problem is that many countries are still not using these strategies - or not deploying them widely enough to make a difference. For example, Integrated Management of Childhood Illnesses, a strategy with the potential to save millions of children's lives every year, has only been adopted in 57 countries so far and, to date, the strategy has not been implemented throughout any one country. Expansion of IMCI and other effective strategies is often slowed due to weaknesses in a country's health system, such as the lack of available medical supplies or difficulties in retaining qualified - but extremely overburdened - medical staff.

The DOTS strategy for TB is highly cost-effective. It can detect the disease and cure up to 95% of TB patients - even in the poorest countries - and is effective in preventing the spread of drug-resistant forms of the disease. But it is still a strategy waiting to be used. In 1999, only half of WHO's Member States have

adopted DOTS so far. And of those that have, one in three have not yet made the treatment available countrywide.

A 1993 cost-effectiveness study based on data from Nigeria showed that routine delivery of yellow fever vaccine would be seven times as effective in reducing the number of cases and deaths as fighting epidemics with emergency mass immunization. Yet out of 45 countries at risk for yellow fever, less than one-third use yellow fever vaccine in routine immunization programs.

Adherence to WHO policies: Using lifesaving tools more WISELY

Conclusion In the last century, medical advances have led to an unprecedented increase in longevity and quality of life for those fortunate enough to enjoy access to drugs and vaccines. Yet infectious diseases remain the main cause of mortality for the world's most vulnerable populations.

The reasons for these deaths - and for the emergence of drug resistance - are the same. We are not using our medicines widely. Nor are we using our medicines wisely. The challenge is to get the right lifesaving medicines and supplies to every patient throughout the world, each and every time. The World Health Organization is concerned that, unless we make wider and wiser use of the effective medicines we have now globally, they will not work for us later.

Two futures are equally conceivable as we enter the 21 st century. Infectious diseases can continue to burden human development, new diseases can emerge and drug resistance can reverse the scientific progress of the past century. Or, we can make a massive effort to provide the medical advances of the past decade to all people, dramatically cutting the impact of infectious diseases, and preventing potential health, economic and security problems of tomorrow.

Unlike our ancestors of a thousand years ago, we know both the causes and the solutions for most of the infectious diseases that threaten us. How will history refer to us if we fail to control infectious diseases at the beginning of the new millennium?

END

LANGUAGE: ENGLISH

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April 1, 2000

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BODY:

In response to a White House request, four major pharmaceutical companies are donating vaccines to combat malaria, hepatitis B, polio, and other diseases in Africa, Asia, the Caribbean, and other troubled regions. The **donations**, valued at more than \$ 150 million, were announced after President Clinton met with executives from pharmaceutical and biotechnology companies, international organizations, and members of the public health community. Merck is donating 10 million doses of Recombivax-HB, a vaccine to prevent hepatitis B for five years. The **donation** is valued at \$ 100 million. American Home Products is donating 10 million doses of Haemophilus influenza type-B conjugate vaccine to UNICEF.

Officials for the organization said it should help more than 3 million children. SmithKline Beecham is expanding its malaria vaccine program and will begin clinical trials in Gambia for an adolescent malaria vaccine this fall. Aventis is donating 50 million doses of a **polio vaccine** to eliminate the disease in five war-torn African countries.

LANGUAGE: ENGLISH

IAC-CREATE-DATE: April 10, 2000

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WHO and UNICEF Donation to accelerate the eradication of polio by end of 2000 (08/12/1999)

En français (sans les liens de WHI ; si non encore disponible, sera disponible sous peu)

Press Release WHO/75
7 December 1999

BILL AND MELINDA GATES AND TED TURNER DONATE US\$78 MILLION TO ACCELERATE THE CAMPAIGN TO ERADICATE POLIO BY END OF 2000

Gifts will help launch the World Health Organization, Rotary International and the United Nations Children's Fund campaign to raise US\$400 million to officially certify the world as polio-free.

The World Health Organization, Rotary International and the United Nations Children's Fund today announced that the Bill & Melinda Gates Foundation will provide US \$50 million along with US \$28 million from R. E. (Ted) Turner's United Nations Foundation in a unique partnership to support the accelerated efforts to eradicate polio by end of the year 2000. 3

These grants will help vaccinate millions of children during mass immunization campaigns that are the backbone of the effort to end the dreaded disease. The Gates/Turner donations will primarily be used to strengthen the vaccine delivery infrastructure and to track the remaining pockets of the disease.

The two philanthropists encouraged the private and public sectors to match these gifts to ensure the next step of delivering the actual polio vaccine to children in developing nations is realized. Just last week, WHO, Rotary, and UNICEF called on governments to provide rapidly an extra US \$50 million for the polio vaccine that will be administered during additional immunization campaigns in 2000 to meet the end of year target.

"Melinda and I are committed to a world without polio and are proud to be a part of this global effort. By working together we can make existing vaccines available to all the world's children." said Mr Gates. "The people of this world can and should do this together."

Ted Turner stated "The United Nations Foundation is delighted to work with the Bill & Melinda Gates Foundation in supporting the polio eradication initiative. We will partner closely with WHO, Rotary International, UNICEF, and UN Secretary-General Kofi Annan, who has established Days of Tranquillity to vaccinate children in countries in conflict. Our combined efforts will deliver a polio free world to the new millennium in which children are never again crippled by this terrible disease." The United Nations Foundation was established in 1997 to administer the philanthropic gift of Mr. R.E. (Ted) Turner to the United Nations.

"We are on track to eradicate polio," said WHO Director-General Dr Gro Harlem Brundtland. "One of the biggest challenges we now face is raising the necessary funds to finish the job on time. With this kind of contribution, a polio-free world is within reach and one of the world's largest health

initiatives can be brought to a successful conclusion. I would like to thank Bill and Melinda Gates as well as Ted Turner's United Nations Foundation for these gifts."

Polio is a disease that mainly affects children under three years of age and causes lifelong paralysis of the limbs. There is no cure but a few drops of vaccine will protect a child for life.

With these gifts, the remaining funds needed to finish the job total US \$400 million through to 2005 - the target for officially certifying the world as polio-free. Immunization and surveillance activities will need to continue at least until that date.

"We heartily applaud these generous gifts from Bill and Melinda Gates and Ted Turner," said Rotary International President Carlo Ravizza. "As our dream of a polio-free world is on the verge of becoming a reality, this contribution serves as a shining example of how we must all pull together to reach the summit." Between 1988 when the initiative was launched and 2005, Rotary International will have donated US \$500 million to the eradication initiative .

The Gates gift, combined with the UN Foundation gift and disbursed by WHO and UNICEF, will help fund the cost of polio National Immunization Days and building infrastructure for immunization and disease surveillance in some of the world's poorest countries. These include the ten high priorities for the global initiative: Afghanistan, Angola, Democratic Republic of the Congo, Somalia and Sudan - all affected by conflict; and Bangladesh, Ethiopia, India, Nigeria and Pakistan - which are poliovirus reservoirs with intense transmission.

The Polio Eradication Initiative was launched in 1988 when the World Health Assembly resolved to eradicate polio by the end of the year 2000. In ten years, the number of cases has fallen from an estimated 350,000 to approximately 6,000 reported cases in 1998. Other key partners in the coalition are technical agencies (U.S. Centers for Disease Control and Prevention); development banks (World Bank); donor governments (Australia, Belgium, Canada, Denmark, Finland, Italy, Japan, UK and USA), and corporate partners.

For further information, journalists can contact Dr Harry Hull, Global Polio Eradication Initiative, WHO, Geneva. Telephone (+41 22) 791 4406. Fax (+41 22) 791 4858. Email: hullh@who.ch

All WHO Press Releases, Fact Sheets and Features as well as other information on this subject can be obtained on Internet on the WHO home page <http://www.who.ch/>

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December 7, 1999

What's your diagnosis?

Bill & Melinda Gates donate \$50m to polio eradication

From WHO

Two generous gifts will help launch a global campaign by the World Health Organisation, Rotary International and the UN Children's Fund, to raise \$400 million to officially certify the world as polio-free.

The three organisations announced on Tuesday that the Bill & Melinda Gates Foundation will provide \$50 million, along with \$28 million from Ted Turner's UN Foundation, in a unique partnership to support the accelerated efforts to eradicate polio by end of the year 2000.

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countries in conflict.

Contact:

Marjolein Harvey
(editorial)

Rodney Russell
(marketing)

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Source: *WHO*

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ROTARY INTERNATIONAL POLIO ERADICATION

A GIFT TO MANKIND

Rotary International is working hard to eradicate polio throughout the world by the year 2005 as a gift to all mankind on the 100th year anniversary of the founding of Rotary.

In 1985, Rotary, a world-wide service club, began fund raising for polio eradication. Initially, public health officials had doubted Rotary's could accomplish such a difficult feat. In 1988, the 166-nation World Health Assembly endorsed Rotary's dream of wiping out polio. In cooperation with the World Health Organization (WHO), UNICEF and health organizations of many national governments, millions of children have now been immunized.

Through the Rotary Foundation's Polio Plus program, over \$400 million has been raised to date, the largest single contribution ever from the private sector for a public health program. More importantly, Rotary has mobilized its 1.2 million members around the world to help carry out mass immunizations.

Because Rotarians are free of government ties, they have played key roles in cross-border immunization efforts, such as Colombia-Venezuela and Ecuador-Peru. They delivered vaccine in combat zones during Central American conflicts in El Salvador and Nicaragua, and in Afghanistan and Bosnia. In Bulgaria and Romania, Rotary volunteers persuaded minority ethnic groups to participate in national immunization days despite their distrust of government programs.

Rotary also has urged governments and donor agencies to increase their commitment to polio eradication. This year, the U.S. government agreed to spend \$72 million on the campaign.

Today, after wiping out polio in the Americas and many other countries, Rotarians are increasingly involved in setting up effective surveillance systems so health official, can be sure polio has been eradicated.

Donations for Polio Plus can be made through the Rotary Club of Culver City, or directly to **Rotary Foundation headquarters, 1560 Sherman Avenue, Evanston IL 60201.**

Culver City International Service

Culver City Rotary Home Page



Polio: Death of a Disease

The Series

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Rotary clubs pump millions into effort to wipe out polio

Second of five parts

By Huntly Collins
Inquirer Staff Writer
February 22, 1999



Herb Pigman, chairman of the polio eradication advocacy task force of Rotary International, was in Washington, D.C. where he appeared before a Senate Appropriations Subcommittee hearing on global polio eradication. (Peter Tobia/Inquirer)

On a gray day last June, a dozen men in suits gathered around a hotel conference table in Indianapolis to talk war.

They had flown in the night before from all corners of the world - India, Nigeria, Japan, South Africa, Brazil, England, Switzerland, other parts of the United States.

Still ruffled and jet-lagged, they hovered over maps, statistics and charts, plotting "the final campaign" against a common enemy - polio.

"I say the virus is evil," said William T. Sergeant, an imposing man who sat at the head of the table.

"The scientists say it's just doing its own thing. But I say it's evil because it picks on the most defenseless people - little ones under the age of 3."

Sergeant and the others were not military men, but members of a club for businesspeople, Rotary International.

In 1985, the volunteer organization took on polio eradication as its global cause. Now, if Sergeant's war goes as planned, polio virus will be defeated - everywhere and forever - by

the end of next year.

Since the all-out assault on polio began, reported cases of polio have plummeted from 35,251 worldwide in 1988 to 5,186 in 1997 - an amazing feat, scientists say, especially given how it has been achieved.

While the World Health Organization and the U.S. Centers for Disease Control and Prevention (CDC) have played instrumental roles, Rotary International, with

1.2 million members worldwide, has raised more than \$240 million to buy polio vaccine for poor countries, turned out hundreds of thousands of volunteers to squirt polio vaccine into children's mouths, and kept the vision of a polio-free world on the public-health agenda.

Although the bulk of polio-eradication costs are paid for by the governments in polio-endemic countries and donor nations such as the United States, Britain, Japan and Denmark, Rotary's money and manpower are crucial.



GRAPHIC

Major donors

"I can say, without any hesitation, that without Rotary, we would not be close to eradicating polio today," said Harry Hull, a pediatrician and director of the global polio-eradication program at WHO headquarters in Geneva.

Rotary, which includes men and women, has 23,000 clubs in 158 countries, even in such remote outposts as Mongolia and Antarctica.

Their ranks include business and professional people - wealthy industrialists and small-town shopkeepers; lawyers and doctors; teachers and preachers. Typically movers and shakers, they have used their political clout to generate support for polio eradication in their own countries.

In Sri Lanka and other countries torn by civil war, leaders from Rotary helped negotiate temporary truces so children could be immunized.

Experts say Rotary's crusade against polio is the largest and most successful public-health initiative ever undertaken by a volunteer group.

Still, some public-health officials question whether Rotary's crusade against one disease is justified, especially when other infectious diseases kill millions of people every year.

Polio kills very few people, but health experts estimate it cripples about 40,000 children a year worldwide, based on the number of reported cases.

By contrast, measles kills more than 700,000 children each year; malaria claims an estimated 2.1 million people, including 1.2 million children; and there are an estimated 3 million new infections a year with the deadly AIDS virus, most in young people in the Third World.

"Polio is a major cause of disability and social ostracism for kids," said Ellyn W. Ogden, polio coordinator at the U.S. Agency for International Development, a partner in the eradication drive. "But when you are looking for major killers in the developing world, polio is hard to justify."

The Rotarians don't quarrel with the numbers, but they point out that there are not yet vaccines for malaria, AIDS, or some other major killers. And in some parts of the world, polio is still the leading cause of childhood disability, leaving children to crawl and beg on city streets and with little hope for education, jobs or marriage.

"These are all *little* people," Sergeant said.

A World War II veteran and former security director at the government's nuclear storage facility at Oak Ridge, Tenn., Sergeant, 79, now works full time in his volunteer job as head of Rotary's international polio committee.

He is Rotary's field general, guiding the troops of the volunteer club to destroy an enemy that most Americans have forgotten.





Rotary's commitment to eradicating polio took root on a sweltering day in 1979 when James L. Bomar, its president at the time, stood in a dusty barrio of Manila as hundreds of poor mothers, babies in tow, crowded around.

Bomar, a former lieutenant governor of Tennessee, was in the Philippines to open a Rotary-backed drive to immunize six million of the nation's children against polio. As he leaned over to give the first drops of vaccine to a baby girl in his arms, he felt a tug on his trousers. At his feet was a young boy with polio who was dragging himself on knee pads made from pieces of tire.

"Thank you," the boy told Bomar as he pointed up at the baby. "My sister."

Back home in America, Bomar told of the paralyzed children he had seen crawling along the ground that day. He was shocked this could be happening a quarter-century after medical science had come up with a polio vaccine.



[T-1 connection](#)

"This is truly a situation where we must use our eyes to see the tragic results of wasted priorities or else we can only use them to cry," Bomar told the 1980 Rotary convention.

[28.8 connection](#)



INTERACTIVE
feature

Timeline:
From
discovery
to
eradication

His words registered. Rotarians had vivid memories of the last polio epidemics in America in the 1940s and '50s - summers when swimming pools were closed, movie theaters were shuttered, and children with polio were placed in iron lungs that looked like metallic coffins.

"They knew this disease," recalled Herbert A. Pigman, who heads Rotary's advocacy program for polio eradication. "They were shocked to learn that it had not been wiped out in other countries."

After the Philippines, Rotary funded polio projects in Haiti, Bolivia, Morocco, Sierra Leone and Gambia.

Then, in 1985, just as the Pan American Health Organization was launching an ambitious polio-immunization campaign in Latin America, Rotary made a bold decision. It pledged to raise \$120 million in private donations - enough to purchase polio vaccine for poor countries around the world for the next five years.

A key supporter of the plan was Albert Sabin, the scientist who had developed the oral polio vaccine. He had encountered Rotary through his friendship with Carlos Canseco, a Mexican doctor who was president of Rotary International in 1985.

Sabin urged the Rotarians to do more than pay for vaccine. He asked them to help put on special one-day mass immunization drives, using their members to give polio vaccine to children in city slums and rural villages. Such mass campaigns, Sabin believed, were the only way the virus could be wiped out.



Rotary's motto is "Service Above Self." Founded in 1905 in Chicago, Rotary took on building the city's first public toilets as one of its early projects.

For most of Rotary's history, individual clubs picked their own service projects. The organization had never adopted a single international cause to which all of its clubs would be asked to raise money - much less a whopping \$120 million.

The leadership took more than a year to map out a global fund-raising strategy

for polio. It set up 44 multinational committees and trained more than 3,700 Rotarians to lead the effort in various parts of the world.

In effect, Rotary picked up - on an international scale - the baton that had been dropped by the March of Dimes, which had shifted its attention to birth defects after polio was conquered in the United States.

The Rotarians brought all their imagination and drive to the new cause, and the donations poured in.

The wife of a Canadian Rotarian wrote a cookbook that brought in \$800,000. Two young people in the Netherlands, members of Rotary's auxiliary organization for youth, built an amphibious cycle and rode it across the English Channel, raising \$210,000. W. Clement Stone, the Chicago insurance magnate and a member of Rotary, contributed \$1 million.

In the Philadelphia area - home to 7,000 Rotarians in 163 clubs - members raised more than \$1 million.

"It hit home," recalled G. Holger "Hogie" Hansen, a Haverford College administrator and member of the Ardmore Club, which raised \$200,000. His father-in-law had polio as a child. "As we went through this process, we were shocked by how much polio had struck all of us."

While there were big donations, including a \$50,000 pledge from a Rotarian in Ardmore, most came from ordinary people attending ordinary events - pancake breakfasts, raffles, hole-in-one contests, flea markets, benefit concerts, walk-athons, 10K runs.

Finally, after just one year of furious fund-raising, it was time to tally the results.

On the morning of May 24, 1988, in a crowded meeting hall at Philadelphia's Civic Center, the results were announced to more than 16,000 cheering Rotarians from around the world who had gathered for their 79th annual convention.

The total, flashed in lights encircling the arena, came to \$219 million - nearly twice what Rotary had been shooting for and one of the largest outpourings of private giving for a single philanthropic cause in U.S. history. Fifteen thousand balloons descended from the ceiling. Fireworks went off. The Strath Haven High School marching band struck up a victory song. Men leaped into the arms of other men.

"There wasn't a dry eye in the hall," recalled Kenneth Erdman, a Montgomery County marketing executive who chaired the convention committee. "People were weeping openly."

By the time late pledges trickled in, the total hit \$240 million - all for a disease that was no longer a threat in America.



It fell to Rotarian O.P. Vaish, a New Delhi lawyer, to sell the Indian government on the idea of a massive immunization drive against polio, which would reach more than 100 million children in a single day.

Nothing like it had ever been tried in India.

Government officials balked, saying it would be impossible in a nation with nearly one billion people, three major religions, and dozens of different languages and dialects.

O.P. Vaish, a New Delhi Rotarian, lobbied Indian officials for a mass immunization drive. They balked, then relented. (Peter Tobia/Inquirer)

"Friday is the day Muslims pray, Tuesday is the day Hindus pray, and Sunday is the day Christians pray," Vaish recalled the officials saying. "The government said, 'No, no. It will not work.'"

Regrouping, Vaish and others lobbied health ministers at the state level. The health minister of Delhi, Dr. Harsh Vardhen, agreed to pilot a polio-immunization day in October 1994.

Bubonic plague broke out in Delhi just weeks before the scheduled day, and pressure mounted to cancel it. But the health minister and the Rotarians went ahead, taking the vaccine even into risky areas. By day's end, 1.2 million Indian children were vaccinated.

With that success, Rotary went back to the national government. "We said, 'Look, Delhi has done it. All the state governments are ready to do it,'" Vaish said. "Within 30 minutes, we had an agreement."

Worldwide, WHO and Rotary persuaded 120 countries where polio lingered to have polio-immunization days.

On these days, Rotarians help round up refrigerators to keep the polio vaccine cold, a challenge in countries with unreliable electricity or none at all. They find enough vehicles - Land Rovers, motorcycles, bicycles, even camels and canoes - to get the vaccine to remote villages. They staff immunization posts for hours.

Last winter, when the Islamic military government in Sudan agreed to temporarily lift the no-fly zone over the rebel-held south so some 400,000 children could be vaccinated, CDC officials placed an emergency call to Sergeant, asking for money to airlift the vaccine.

Within 48 hours, Rotary came up with \$400,000.

"Without Rotary, we'd lose the heart of the program," said Robert A. Keegan, a polio official at the CDC. "What they have done is pretty monumental."

Some health officials, however, question whether a private organization such as Rotary should be playing such a large role in influencing public-health agendas in poor countries.

"Is the industrialized world asking the developing world to do something that is not its top priority?" said Roy Widdus, coordinator of the Children's Vaccine Initiative, a consortium of U.N. groups that aims to get a wide array of vaccines - not just for polio - to poor countries.

Others, however, point out that the decision to target polio for global eradication was made by 166 member nations of WHO's World Health Assembly in 1988, not by Rotary.

With less than two years to go before the end of 2000, WHO's target date for eradicating polio, the Rotarians are eager to finish the job.

"The credibility of Rotary is on the line," said James L. Lacy, a Tennessee candymaker who is the organization's international president.

Rotary invested the original donations in government bonds. Club officials say they have spent \$334 million on polio eradication. Before it is over, they expect to spend nearly \$500 million. By its own count, Rotary money has allowed one billion children to be vaccinated.

Nonetheless, WHO estimates that the program faces a shortfall of more than \$370 million - money that public-health officials say is needed to conduct more national immunization days in Africa and to establish the surveillance systems and laboratories necessary to ensure that polio virus has been wiped out everywhere.

To make up the shortfall, Rotary is pressing donor governments such as the United States and countries in Western Europe to step up their funding.

Philadelphia Rotarians have launched a new fund-raising drive, dubbed "The Philadelphia Challenge," that they hope will catch on among Rotarians worldwide.

For every two dollars that area Rotarians raise to support the organization's humanitarian programs, the Philadelphia club has pledged to donate an additional dollar - up to a total of \$100,000 - earmarked for polio eradication.

The club says the \$100,000 will help pay for a national immunization day in sub-Saharan Africa.

It is in Africa where polio eradication faces the toughest challenge. Efforts to conduct national immunization days in key countries have been frustrated by civil war and unrest.

In Congo, rebels made off with the refrigerators needed to store polio vaccine. In Nigeria, the results of lab tests to detect polio virus in stool samples were delayed for weeks because of downed phone lines.

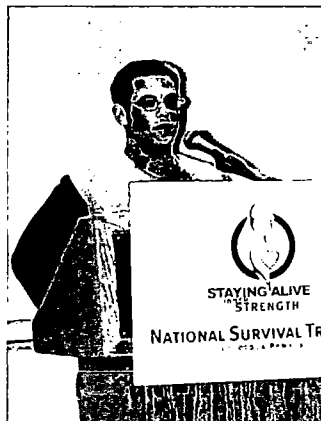
"It's tough to immunize children where everybody's shootin' at each other," Sergeant said. "But we're going to win the war there, too."

Part Three: Summers of fear and those who survived them.

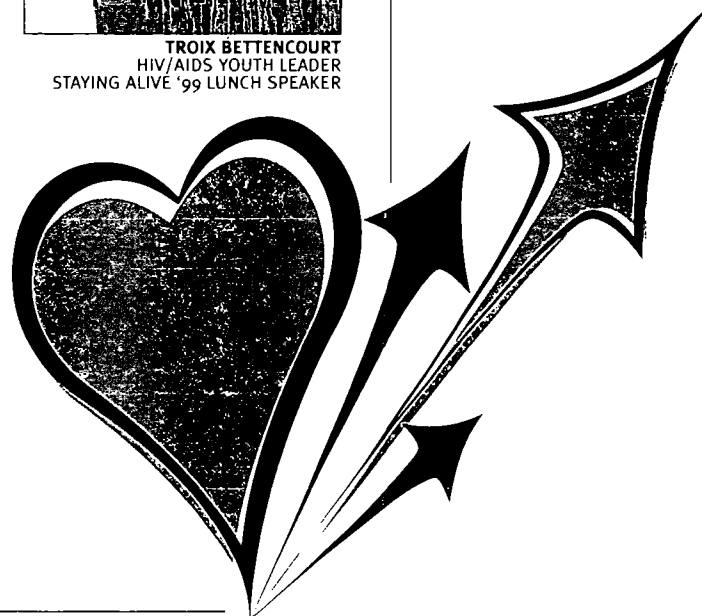
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