

Winning the Fight Against Disease: A new Global Strategy
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Thank you so much for the kind introduction and especially to Professor Ilona Kickbusch for the kind invitation, which I jumped at immediately. The idea of being together with this year's Fulbright scholars was too exciting to pass up. I'm really thrilled to be here to add one more voice to the many welcoming you to the United States and to tell you how much we value not only your being here but also what we hope you will carry home also: friendship and friends for us around the world. This is one of the greatest programs of the United States and I just wanted to add my small word to honor it. I think it's the finest tradition of this country and of a very great man, Senator William Fulbright, who was for me a kind of political icon when I was first gaining some political knowledge as a high school and university student. It was a time when the United States was enmeshed in the Vietnam War and Senator Fulbright was a voice for peace and reason and someone that we admired extraordinarily for speaking out for human dignity and for a global society.

I'm thrilled that this conference is talking about saving lives and fighting disease since I think it's the most important mission for us in the world. Our backdrop now is a time when many innocent people are dying and when we have a very grave international crisis as well. If you as Fulbright scholars coming from all over the world feel puzzled and uneasy and unsure of being in Washington, I can only tell you that I do too. I don't think any of us can know the true nature of what is happening. The US government has claimed that we're fighting a war against weapons of mass destruction and that this was the only way to address that challenge; that may turn out to be the case, though evidence has not yet been shown. It's also possible that we're fighting a war for very, very bad reasons indeed. And that's what most of the world believes on the evidence that's been seen so far. We don't know. What we do know is that we're in the middle of quite cataclysmic events. I wanted to be here because this is an opportunity to remind us that we have a world together – a world of scholarship that for me is one of the greatest hopes for our world. With the outstanding minds in this room and leadership from all over the intellectual world maybe in the next few days you can forge some reasons for optimism in a very stark and troubled moment.

Last fall I wrote an article – not realizing just how imminent all of this was – called “Weapons of Mass Salvation,” which was my way as an economist of saying that even if the claim of an imminent danger of weapons of mass destruction is true, you could never solve the world's problems using only military might. We should be spending at least as much time – both in the President's speeches and in the efforts of our government – mobilizing what I termed the “Weapons of Mass Salvation,” by which I meant the drugs, immunizations, and health interventions that could keep millions of people alive even as we are fighting this war. We are putting incredible time and effort and finance and certainly blood into this war. Regardless of whether it turns out to be justified or unjustified, I don't find any excuse for not putting anything within orders of magnitude in a similar effort to save lives using our known and peaceful

technologies that could change the lives of millions around the world, which would certainly be in our interest as well. As I'm about to explain to you, I learned this in a quantitative way, which for an economist means dollars and cents.

I was asked three years ago by the wonderful outgoing Director-General of the World Health Organization, Dr. Bro Harlem Brundtland, to address what she knew to be the profoundly unmet challenges of global public health, but to address them from an angle in which I had some comparative advantage. She explained that the public health community knows a lot about what has been done: it can treat people, it understands immunization programs, and if the resources are there it is able to design ways to get schistosomiasis, diarrheal disease and tuberculosis under control. But it's not capable of mobilizing the resources. So she asked me as an economist that works with finance ministers all over the world whether it would be possible to bring together the worlds of finance and the worlds of public health, to have a systematic view of this issue not only from the public health point of view but also from the economic point of view. The result is the work of the Commission on Macroeconomics and Health. I was not only honored to chair it, but also I believed that she was right in two profound senses. One was her hunch, and it's been my hunch as a practicing development economist, that disease is not only tragedy in human lives, disease is disaster for economic development. The second is that one of the major reasons why many of the poorest countries in the world, particularly but not exclusively in sub-Saharan Africa, are stuck in poverty is that the disease barrier is so great that it is blocking many different normal avenues of economic advance. I had seen in my work that any time I stepped into an endemic malarious region in the world, I was also stepping into a region of poverty. It was almost impossible to see a malarious region that was developing. I understood why, and we're seeing a frightening narrow glimpse of it right now through SARS. I'll make a digression and then I'll come back to this Commission.

Malaria is obviously tragically costly, but if you try to just add up the costs of malaria cases, including the tragic deaths, the cost, though large, seems not quite large enough to have the big effect on poverty that malaria has in different parts of the world. I tried to understand that as a development economist, and realized that a disease like malaria doesn't just kill people, which is disaster enough, but it isolates places in the world by cutting them off from trade and investment. It's not a great business, for example, to set up a tourist resort in the middle of a malaria zone. It's not a favorite target for foreign investment. It's not easy to have inward and outward migration, even of college students, from a malaria zone. You spend all your life building up acquired immunity in your community; if you go away for a year you've lost that lifetime of acquired immunity. Many of my students that go back to Africa suffer life-threatening bouts of malaria after they return because it takes time to build up immunity again. Currently, we're seeing the effects of disease in a very startling way with the sudden emergence of SARS. This is the "Severe Acute Respiratory Syndrome," still not precisely identified, which has taken some dozens of lives and is a clear example for us of how an epidemic disease has effects that are so much greater than the disease burden measured by number of deaths. Already the news is saying that Hong Kong could lose up to 1% of GNP this year due to the epidemic because business is being cancelled, investment is being cancelled, and flights are being cancelled. Asian airlines are going bankrupt all over the continent because nobody's flying right now. A conference in Beijing that I was scheduled to speak at on June 2nd was just cancelled and that's just an example of how the disease is translating into economic loss. SARS has only claimed about 60 lives, yet

malaria takes about 3 million a year, so one can begin to see what malaria could mean in shaping wealth and poverty over centuries.

Let me return to the Commission on Macroeconomics and Health. Dr. Brundtland asked me to have a look at these issues together with a group of doctors, public health specialists, and finance specialists. And we did basically three things in a two-year analysis that I am very proud of, which involved hundreds of scholars from around the world and several working groups, conferences and meetings all over the world. First, we investigated the relationship between disease and development. How much should we care about disease other than the obvious need to care about human suffering? Is it true that disease is not only a pernicious taker of happiness and life, but it's also a destroyer of economic possibilities? Second, if that's the case, how do we prioritize doing something about it, especially in the low-income countries? Finally, and where I come in to an extent, how do you pay for it?

We found, first of all, that disease matters a lot. Poor people know it, they routinely answer in opinion surveys: "The most important thing in my life is staying healthy." For poor people, even if a bout of disease doesn't kill, it can destroy a family and a livelihood. Of course, this is true in a rich country too, but in a developing country there's no protection for people living at the edge of survival. We found quantitatively that the differences in life expectancy (it is forty years in many countries in eastern and southern Africa now, fifty years in some low-income countries in Asia, sixty years in middle-income countries, 78 years in rich countries right now on average) represent not only profound differences in human well-being, but are also highly predictive of economic development in the future. Places with high infant mortality and low life expectancy do not achieve economic growth the way countries with better health conditions do. Some countries are particularly unlucky because their ecology lends itself to disease. Africa doesn't have malaria because it hasn't cared or it hasn't tried to control it; Africa has endemic malaria because its ecology has made it unquestionably the epicenter of malaria throughout human history. Malaria requires a high ambient temperature for the life cycle of the parasite to be completed within the mosquito vector, and it requires really nasty species of the anopheles mosquito which transmits the disease. All anopheles are fairly nasty, but Africa's anopheles, the anopheles gambiae complex, are particularly nasty. They love to bite people. India's anopheles like to bite cattle, and the cattle don't care and the people get spared the transmission. In Africa, however, it's from person to person to person, and it means that the burden of malaria is intrinsically orders of magnitude higher than in other parts of the world on a purely mathematical basis. This has had devastating effects on African long-term economic development, well before AIDS added yet another astounding burden to the continent.

Having found the evidence of the importance of controlling disease, we turned to the next question: How do you prioritize? Of course, the priorities differ by country, but modern epidemiology has a good set of tools for understanding disease burden—not perfect, but not bad—and one can identify in low-income settings a rather limited set of diseases that account for the vast majority of the gap in health conditions between the poor and the rich. They are overwhelmingly communicable diseases. (This doesn't mean that non-communicable disease – cardiovascular disease, cancers, etc. – are not important. They are important and they are becoming more important in low-income settings; poor people die of all types of diseases at higher age-specific rates than rich people, non-communicable as well as communicable. However, the overall health gap is mostly explained by infectious disease.) Overwhelmingly,

these diseases that separate health levels between rich and poor countries are AIDS, tuberculosis, malaria, and diarrheal disease (still claiming about 2 or 2 and a half million children a year because of unsafe drinking water leading to dehydration, even though simple remedies are available). In addition, acute lower respiratory syndrome, often associated with smoke-filled huts in villages that are using biomass for fuel, probably account for three or four million deaths per year of young children. Three million lives are lost every year to vaccine-preventable diseases even though vaccines are available to control them. For example, one million children in poor countries are dying of measles now, while children in rich countries just don't die of measles! A million children in poor countries dying of measles is just a shocking thing considering the fact that the immunization that costs only a few cents. Micronutrient deficiencies, whether iodine, iron, vitamin A or others, are again not addressed despite the ease with which this could be done. Half a million mothers die in childbirth, virtually all in poor countries, because the mother does not have access to emergency obstetrical care. If there's a complication when she's in labor, there isn't a clinic within twenty miles and she dies when a routine c-section could have saved her life and changed the fate of the family for generations. So these preventable conditions account for the vast majority of the gap.

I don't want to be misunderstood – there are other places where the most important epidemic is cardiovascular disease. However, for the low-income countries it's still this controllable disease burden of infectious diseases that is most important. Every one of those diseases I mentioned has technology for prevention and treatment that works. Not all are perfect: we don't have an AIDS vaccine, we don't have a TB vaccine (certainly not for adults and debatably not for children), and we don't have a malaria vaccine, but we have insecticide-impregnated bed nets, we have various malaria-mosquito-clearing technologies and knowledge, we certainly have drugs so that no child has to die of malaria anywhere in the world if you get the drug to the child before they slip into coma or into cerebral malaria. We know how to clear the parasite and prevent the chronic anemia that kills the child later on. There are ways to address all of these diseases.

So what's going on? Here's where the discussion became very interesting within our Commission. A lot of the people that came from the rich part of the world or from institutions that are governed by the rich countries said, "Well, the poor countries just aren't serious enough about these problems. If they just paid more attention they could solve this. The poor should take care of themselves better." We decided, for a change, to get some evidence. What could be done? How much would it cost? Could it be afforded? Here's where you get some pretty interesting results. I really like what we did, and even though you can't do it with absolute precision, I think we learned something pretty interesting. Led by a group at the London School of Hygiene and Tropical Medicine under Prof. Anne Mills, we took 41 life-saving interventions, both prevention and treatment, and made serious calculations country by country, looking at the disease burden as estimated and looking at estimated unit costs of making the health interventions, whether it's treating people with AIDS or getting bed nets to people who need them. We added up the costs and then compared them with the ability of the country to pay. Here's the stark irony, despite the fact that these were rough estimates. We found that those 41 life-saving interventions would cost about \$40 per person per year in the low-income setting. It may be too low an estimate, actually, but that's what we calculated, \$40 per person. You know, in the United States we're spending about \$4,500 per person per year right now so this is about 1/100 of what we spend on our own health care. But the shocking thing about the poverty in the world is that for the poorest countries it is simply inconceivable to spend \$40 per capita each year. I was sitting with one of your lovely

compatriot Fulbright scholars from Malawi, one of my favorite countries. Malawi is a country of a per capita income of about \$200 per year. The technical estimate is \$190 per capita. Think about what \$40 per capita means: it means 20% of the gross national product. Now, Malawi's entire tax revenue is about 12% of GNP. You could take the entire budget and devote it only to health care, meaning no schools, no roads, no power, no sewage, nothing except health care, and still you could not pay for slightly more than half of the essential life-saving interventions. That's what absolute poverty is in the world. That's how poor the poor are. The poor are too poor to stay alive. That's what absolute poverty means.

This made the rich country folk in the group pause. They said, "You know, maybe it isn't just the waste and the corruption and the mismanagement and all that. Maybe it really is poverty." It takes people with Ph.D.'s a long time to come around to this. But they did. And it was a very intellectually honest process. In the end we made a calculation: we asked the IMF, "So how much more are you going to ask them to pay?" And the IMF said, "Okay, we'll ask them to pay 1% of GNP more on health by the year 2007 and 2% GNP more on health by the year 2015." Why only 1% more? Firstly, because the IMF doesn't like to recommend government spending. Secondly, because we said, "We know they have to spend more on education, they have to spend more on rural roads, they have to spend more on agricultural extension, we can't pretend that you can spend the whole budget on health." So we made the assumption that Malawi would spend another 1% of GNP on health, and then we calculated the financial gap. What's 1% more of GNP for Malawi? It's two dollars more per person. Since Malawi currently spends \$6 or \$7 on health per person out of the public budget, an extra \$2 per person doesn't get you to \$40. It's like having no health care system, which is what the dying Malawians are noticing. So another percent of GNP doesn't do it.

So then we said, "You know, maybe that's where the rich countries should pay." After all, these are the terms of engagement in the international goal-setting in the last 30 years, including most recently these Millennium Development Goals. These MDGs are internationally shared goals of poverty and hunger alleviation, improved health, better education, gender equality, access to water and sanitation, and environmental sustainability. When those goals were adopted at the Millennium Assembly by essentially all of world's leadership, the rich countries said, "We will help the poor countries with resources if they have good governance."

So here's the bottom line, ladies and gentlemen. How much was the gap? The gap turned out to be 25 billion dollars per year. Now, when that first came out everyone said, "Whew, that's a lot of money." But actually now that we're into this war you can think about it more clearly. What is 25 billion dollars? Well, the President told us last week that this war is going to be 75 billion for the first six months. The Secretary of the Treasury told us that this wasn't a worry. He's right in that the worries are elsewhere, there are big worries about this war but not particularly about the financing of it. The US can afford this war financially. Why? This is a ten trillion dollar per year national income. There is so much money in this country that people truly don't know what to do with it. They drive cars that are the size of houses and then build roads that are as wide as football fields to accommodate the cars. We don't know what to do with the money to improve the quality of our lives right now. That's how much money we have, and yet we're not sharing it in the ways that we need to share it. So what is 25 billion dollars a year? It is another interesting ratio: the rich world as a whole is the US plus Europe plus Japan plus a few other places and that's a combined 25 trillion dollar annual income, of which the US is about 40%. The \$25

billion needed to finance the health interventions out of a \$25 trillion rich world economy is 1/1000 of the annual income of the rich world. 1/1000! The way I like to think of it is that when you're counting your money, for every \$100 you put aside a dime. That's a thousandth of your income. Out of every \$100 you keep \$99.90 and give 10 cents to help poor people. Do that for the GNP of the rich world and you end up with 25 billion dollars. Now what could that do? That could pay for those 41 essential life-saving interventions, so that 3 million children would not die of malaria and a million children would not die of measles and half a million women would not have to die in childbirth leaving millions of orphaned children. The epidemiologists calculated that those 10 cents out of every \$100 could save eight million lives a year. That's a pretty good return on an amount of spending that we wouldn't even notice in this country.

To me, these are the real stakes of the world right now, though I feel we are in such a deeply perplexing and dangerous period. No matter what this war turns out to be about, there is absolutely no excuse for us to live on a planet where at 10 cents per \$100, millions of lives could be saved every year. It's hard to understand why we kill people, but absolutely unthinkable how we let millions of people die when we stand by without understanding what is in our own interest and moral obligation. We can do it. You're going to hear a lot of experts in this important conference. It's a wonderful lineup of people who really know what they're talking about. We know that there are incredible capabilities in this wonderful world of science and technology, and the wealth that has been created is enough to end absolute poverty in the world so that people don't die because they don't have enough to stay alive. These are the commitments we ought to be making to make the world safe. We will never end the weapons of mass destruction if we don't also mobilize the weapons of mass salvation.

Thanks very much for letting me be with you.