

## The Prime Directive of Public Health

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Many thanks for this award and asking me to speak today.

Before I start, however, have you seen today's *New York Times*? It reports that a pandemic infectious disease will start to spread around the world next week. Absolutely reliable scientific studies show that it will soon be killing at least 1.4 million globally every year – 2700 per week. Although affecting every age group, about two-thirds of the deaths will be 15-60 years old, the most productive members of all societies. Not only that, but available vaccines will not work and the disease will be very difficult to treat with existing drugs. A good proportion of the disease, in fact, will essentially be impossible to treat because of drug resistance.

In addition, one billion people will become infected but not show signs of disease. Although difficult to detect with current methods, these latent cases, will provide an immense reservoir of potential active disease. If these people's immune systems were to become stressed, for example through malnutrition, HIV, or environmental risk factors such as smoking and air pollution, their latent infections will convert to active ones.

Will global attention shift away from the H1N1 virus (Swine Flu), which has killed 74 people in a month, to address this immensely larger menace? Will people be afraid to travel on airplanes and the subway? Will schools close and the streets be filled with people wearing masks? Will the media have hourly reports of new cases and deaths?

The short answer is no. No one will take notice.

But then, have you seen the *Washington Post* today? It reports that next week a wave of toxic materials is expected to be released around the world. This Toxic Tsunami will contain dozens of poisonous organic chemicals known to be mutagens, immune system suppressants, inflammation agents, central nervous system depressants, cilia toxins, endocrine disrupters, or neurotoxins. It will have several organic chemicals firmly established as human carcinogens and inorganic chemicals known to cause asphyxiation, stillbirth, infant death, heart disease, and severe acute and chronic lung disease.

It will be the result of an uncontrolled energy technology that releases this toxic soup in 100s of thousands of communities worldwide every day – about half of the people in the world. Unless stopped, it will expose families to toxic levels much higher than those of

people living on top of toxic waste dumps, working in most heavy industries, or residing in the dirtiest cities. These toxic levels will be tens or hundreds of times the levels set by international and national organizations to protect health

The best scientific evidence in the international biomedical literature indicates that this wave of toxins will soon trigger an epidemic of respiratory illness that kills faster than SARS – initiation to death in 2 days in some cases. So fast, that trying to apply medical care will be hopeless. At least two thousand children a day will soon be dying as a result.

Published estimates are also that millions women will eventually have their breath taken from them as their lung function is slowly eaten away by exposure to the toxins. Thus, at tragically young ages they will become unable to breathe normally or do common tasks. Alarming, once a woman is affected, there is no known medical therapy to reverse the process. More than 1000 per day will soon start to die prematurely because their lungs give out.

In response, will there be a massive international effort backed by emergency funds from rich countries to be coordinated by WHO, the CDC, and other responsible agencies?

No, nothing will be done.

Of course there were no such articles today although what I describe is completely factual, even understated, except in one important respect – it describes not what might happen but rather of what we believe already occurs because of tuberculosis in the first case and poor combustion of household fuels in poor households of developing countries in the second. These impacts will not just start next week, but happened this week and last week and the week before.

TB is an ancient scourge that is greatly suppressed in rich populations, but still kills millions of the poorest and most disenfranchised among us, even in developed countries. In addition to the 2700 per day dying of non-HIV TB, it is also the chief outcome of HIV infection in adults – killing millions more in this way.

Indoor air pollution from burning simple biomass fuels such as wood and cow dung in poor countries affects about half the world's population with large, but largely unrecognized health impacts on poor populations.

These are just two examples of health hazards that significantly impact hundreds of millions of poor people in developing countries – impact enough to measurably affect life expectancy. Malaria, HIV, malnutrition, and various simple kinds of water and air pollution are a few other examples. Why, however, do such large but mundane health hazards not garner much attention in the media and among many policy makers in spite of their scale?

Partly of course it is because ancient mundane, even if large, risks are not scary -- we know pretty much what their future course will be – unlike with H1N1 virus, there is little chance of being surprised.

Perhaps you know of the “Spielberg Effect? If Steven Spielberg had been a public health analyst and taken a careful look at the statistics in 1975, he might have titled his first big movie “Propeller”, thus assuring failure at the box office. The movie “Jaws”, however, drew people in by the 100s of millions and now Spielberg is a billionaire. Boats may kill more people, but sharks are feared. Sharks, and other exotic risks, therefore generally get more attention than they deserve.

Also, unfortunately, the relative neglect of the big health risks is partly because the people most affected are the most disenfranchised in the world -- politically, economically, educationally, and socially --- poor rural women and children in developing countries in the case of poor household fuels. They have little direct voice.

The fact is that policy and the media are driven by dread and uncertainty and retarded by familiarity and stability. They also respond to threats close to home among the people that they directly serve.

As public health professionals, however, you have a higher calling, which was well described by someone who could be called the father of our field

Born in 1493 in what is now Switzerland, Paracelsus was a contemporary of Leonardo da Vinci, Copernicus, Christopher Columbus, and Martin Luther. A time of great changes. Some of you may know of him as the father of toxicology through the quotation:

**“The dose makes the poison.”**

He might, however, also be considered the father of modern health science in general for he was the first to praise **“reason and experiment”** as the true sources of knowledge:

**“The patients are your textbook, the sickbed is your study.”**

For us tonight, however, it is the following statement that is most relevant. Indeed, so relevant that I might call it the **Prime Directive of Public Health**

**“Privilege and lineage pale to nothingness, only distress has meaning.”**

Social class, ethnicity, income, nationality, and even genetics should not influence who we help – only distress.

It is our job in public health to keep the eye on this ball and not let perception about what is scary today or the diseases of the rich keep us from focusing on our main mission. This is true in global health but also for the health of New Jersey.

Clearly we need good surveillance systems to watch for a new pandemic flu and in other ways be vigilant about new hazards, but let's not forget the 10 million kids who die each year. As well as the millions of adults who die prematurely of the mundane diseases that still affect humanity.

Let me end by discussing climate change. You might well ask why a health scientist has worked on climate change for the last 20 years?

[Pope and 3 Cardinals joke]

Although there are potentially serious health implications both of climate change and society's response to it, the full entry of climate change onto the world stage does come with a silver lining. It makes it easier now to argue for global public health efforts because we need no longer to rely primarily on just humanitarian arguments. It is clear to everyone who pays attention that we breathe a common atmosphere, live next to a common ocean, contaminate a common environment, share a common ecological heritage, and so on. The explosive rise of international communication, trade, migration, and transportation – globalization in all its aspects – affects us all as well.

It is clear therefore that we all also share a common and interconnected fate and thus share a common responsibility for the health of all. Only in this way can we move toward a sustainable planet.

In other words, we do indeed live in a Global Village.

Congratulations to the School of Public Health class of 2009 and welcome as professionals to the Global Village

Thank you.