

An Influenza Pandemic Summit Is Called by Alarmed WHO

by Colin Lowry

The current influenza vaccine shortage shows just how unprepared the United States and the world is in dealing with a global flu pandemic. The looming threat of a new and very lethal avian influenza—that has already infected 44 people in Asia—mutating into a form that can spread easily from person to person, prompted the World Health Organization (WHO) to call an unprecedented influenza summit meeting of health officials and vaccine companies, announced on Oct. 30, to take place in Geneva, Switzerland on Nov. 11. Just a month earlier, the Pan-American Health Organization (PAHO), a major part of the WHO, warned publicly that ongoing flu virus mutations observed in South America and Asia were a marker for the imminent threat of a global “killer pandemic” such as struck the world three times in the 20th Century (see box, **Figure 1**).

Klaus Stohr, head of the division of WHO which deals with influenza, spoke to the American Society of Microbiology meeting in early November, explaining why we are closer to the beginning of a new deadly flu pandemic than at any time since the dreaded 1918 “Spanish” Flu epidemic killed at least 50 million people worldwide. Stohr said, “If we continue as we are now, there will be no vaccine available, let alone antivirals, when the next pandemic starts. We have a window of opportunity now to prepare ourselves.”

The current flu vaccine production capacity worldwide is only 300 million doses per year, but WHO experts say that *several billion* vaccine doses would be needed to control a new avian-derived flu pandemic. The WHO influenza summit meeting is supposed to address the scientific and monetary problems that are preventing more vaccines from being produced.

Many institutions besides the WHO are sounding the

alarm. At an Oct. 28 press conference (RIA-Novosti news agency), Dmitri Lvov, director of the Ivanovsky Virology Institute and Academician of the Russian Academy of Medical Sciences, warned, “Up to one billion people could die around the whole world in six months. We are half a step away from a worldwide pandemic catastrophe.” He called for contingency arrangements to care for people, including 300,000 more hospital beds in Russia.

On Oct. 23, Dr. John Clemens, the director of the International Vaccine Institute based in Seoul, South Korea, said, “We are talking about a killer influenza that would kill, probably, tens of millions of people. We’re not talking about if, we’re talking about when.”

Dr. Clemens attacked the paucity of vaccine manufacturers: “The current shortage of vaccine in the United States can be attributed to reliance on too few producers. Globally, in terms of vaccine development and production that could respond quickly to a killer influenza pandemic, we’re inadequately prepared.” Referring to the vaccine-makers’ eye on the bottom-line, Clemens said, “Maybe it’s a bit risky for a society to rely purely on free-market economics to guarantee a stable, reliable supply of vaccine.”

What Is the New Avian Flu?

In 1997, Hong Kong experienced a limited outbreak of a type of influenza virus found in chickens and waterfowl, that was able to pass directly from these birds to people, causing severe disease and six deaths.

Influenza viruses are characterized by the types of two antigens found on their surface, hemagglutinin (H) and

Neuraminidase (N). The 1997 Hong Kong virus was of type H5N1, and was the first recorded incident of an avian virus passing directly to humans, without first recombining with another flu virus in a mammal that would be more likely to infect humans.

This particular 1997 influenza had a mortality of 30% in people, which is much higher than a typical human flu strain that usually has a mortality rate of only a few percent. One reason for the increased mortality with a new avian flu is that the human population has very little immunity to it.

Hong Kong was able to contain the epidemic by a mass slaughter of all the poultry in the province, combined with quarantine measures. This avian flu virus was not easily spread from person to person, which probably prevented its spread outside of

Hong Kong. Since there was no vaccine available to protect against this avian flu outbreak, it served as the first warning that the world was in danger of a new global pandemic.

Starting in January of this year in Thailand and Vietnam, a new, more virulent avian flu began to infect people who were in direct contact with chickens and ducks. To date, there have been 44 cases, and an alarming 32 deaths, or nearly 75% mortality. The virus was isolated, and it is a new variant of the H5N1 first seen in Hong Kong in 1997, but with increased lethality.

Then in October, Thai health officials announced the first probable case of person-to-person transmission of this new and deadly H5N1 influenza virus, prompting quick action from the WHO to isolate and examine it, in preparation for

Three Flu Pandemics Hit in 20th Century

1918-1919 “Spanish” Flu:

Worldwide, 20-30 millions died—more than were killed in World War I. In the United States, over 500,000 died.

1957-1958 “Asian” Flu:

This pandemic affected between 10% and 35% of the world’s population, with at least 100,000 deaths.

1968-1969 “Hong Kong” Flu:

In the world as a whole, this pandemic killed an estimated 700,000 people. In the United States, at least 34,000 deaths were attributable to it.

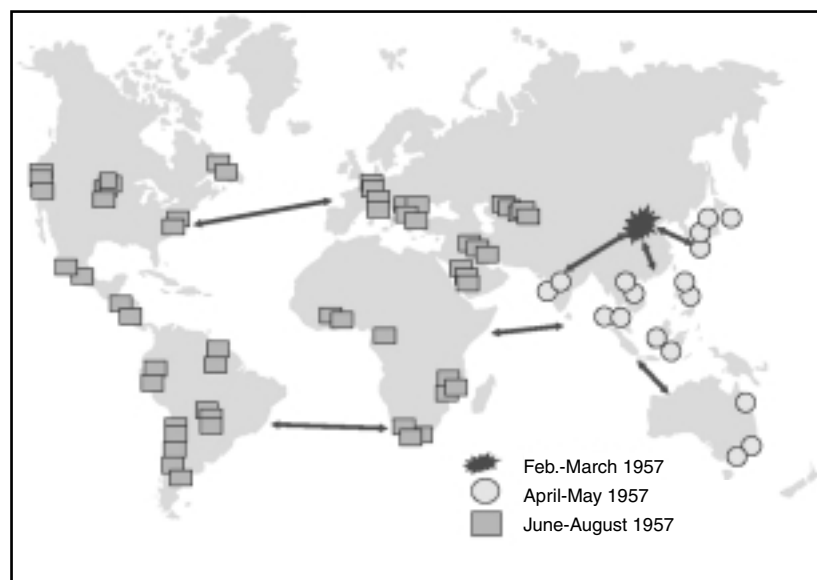
PAHO Warns of New Strain

The Pan-American Health Organization (PAHO) called for an action plan to deal with a potential “new influenza strain” on Sept. 25, 2004 at its meeting of hemispheric health ministers, who came to Washington, D.C. for PAHO’s 44th Directing Council. A report was presented to the group, saying that the “sudden and marked change in Influenza virus A should be considered one of the greatest public health concerns” in the Americas. The report warned of “novel, distinct sub-types, in a process known as antigenic shift.” Thus, the danger comes from the prospect of an abrupt, new virus strain, to which populations have no resistance, and for which no existing vaccine may provide protection.

The report said, “Recent episodes of animal strains causing disease in humans support experts’ views that a new pandemic is inevitable. . . . Epidemiological studies project that another

FIGURE 1

Spread of H2N2 Influenza ‘Asian Flu’ in 1957



Source: WHO Global Influenza Programme.

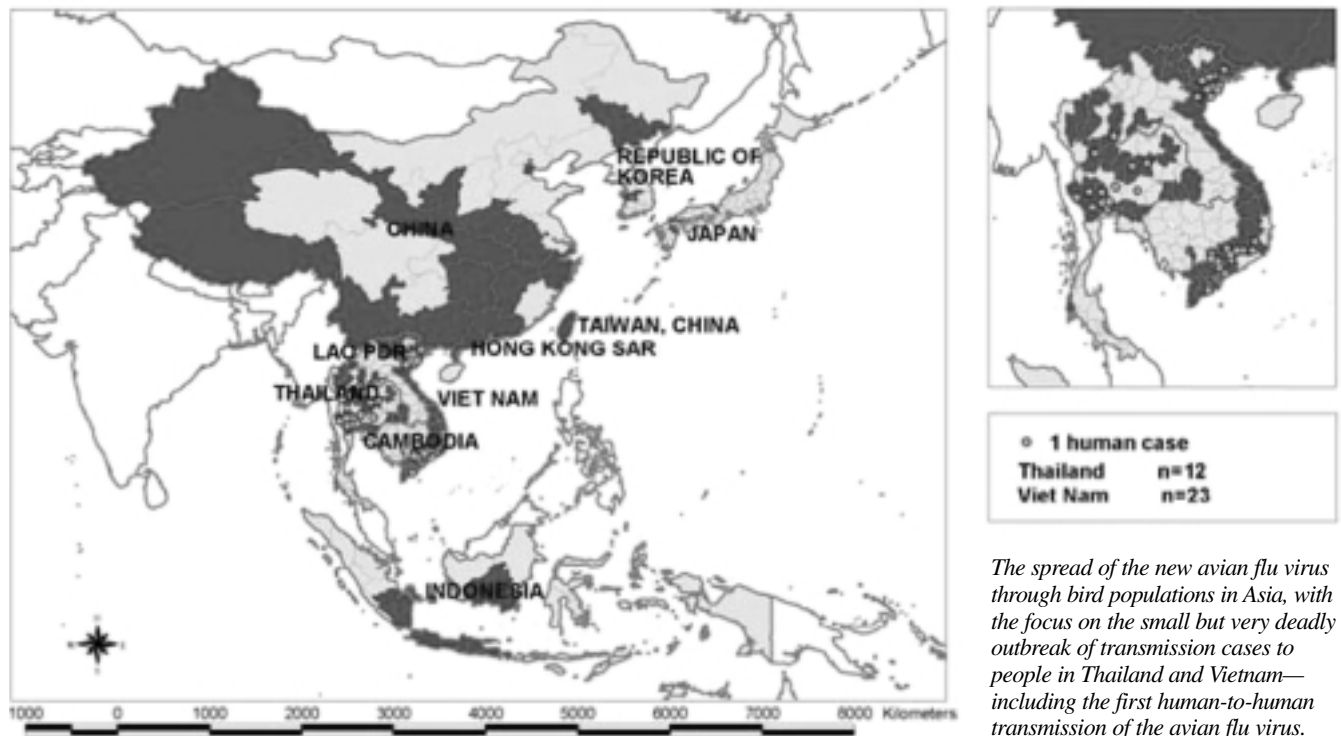
pandemic is most likely to result in . . . 280,000 to 650,000 deaths in less than two years—in industrialized countries alone.”

PAHO, founded in 1902, is the world’s oldest public health organization. It serves as the regional office for WHO in the Americas.

Only eight nations in the Americas give flu vaccinations to the elderly: Canada, U.S.A., Mexico, Cuba, Brazil, Uruguay, and Chile.

—Marcia Merry Baker

FIGURE 2

H5N1 Influenza in Poultry and in Humans, March 2004

The spread of the new avian flu virus through bird populations in Asia, with the focus on the small but very deadly outbreak of transmission cases to people in Thailand and Viet Nam—including the first human-to-human transmission of the avian flu virus.

making a prototype vaccine.

This new virus, if confirmed, appears to be exactly what the experts have been worried about since 1997—a new strain of avian flu, that has recombined genetically so it can spread from person to person. This particular virus has a mortality rate over 70% so far, although the number of cases is still very small, and extrapolating from this small sample may be unreliable. Even if it is only half that rate of mortality, it would be much deadlier than the 1918 Spanish Flu virus, and would have the potential to kill tens of millions of people if the world is caught in a situation as unprepared as we are now.

Many questions are unanswered concerning how this particular H5N1 flu virus evolved the ability to infect people. A new study of the virus in China has shown that it may be very difficult to contain, since it is now virtually endemic in wild ducks and geese in southern China. The research study took viral samples from ducks from 1999-2002, isolating twenty-one H5N1 viruses from apparently healthy ducks. The ducks themselves showed no signs of disease, which makes tracking disease-carrying animals even more difficult. However, many of these 21 virus strains, when introduced into chickens, caused severe and often lethal disease.

The most startling finding of the study, was that H5N1 virus has gained progressively greater infectivity in mammals, and caused more severe disease with increasing mortality in

mice over the three-year period. It is unclear how the avian virus gained the ability to infect mammals, but one theory is that infected ducks may have been kept in close quarters with pigs, and some recombination may have occurred in the virus.

The main problem facing Asia immediately is that it will be very difficult, if not impossible, to eliminate the natural reservoir of this particular H5N1 virus in the wild ducks and geese, making this area a potential epicenter of a new pandemic (see **Figure 2**).

What should also be noted in this connection, is the threat posed by increasingly globalized, cartel-dominated agriculture practices. A select few companies controlling seedstocks, food processing, and world trade, are setting the terms for farming, in which many fewer varieties of plants and livestock are grown, under increasingly one-crop, or mega-factory-farm situations. The obvious result is that any new or resurgent animal and botanical pathogens can cause large-scale losses in the food supply. But equally important is the fact that in the event a microbe successfully mutates and transmits through a certain livestock strain, if that animal pool is a prevalent, single-strain type, the disease threat to humans could be vastly magnified.

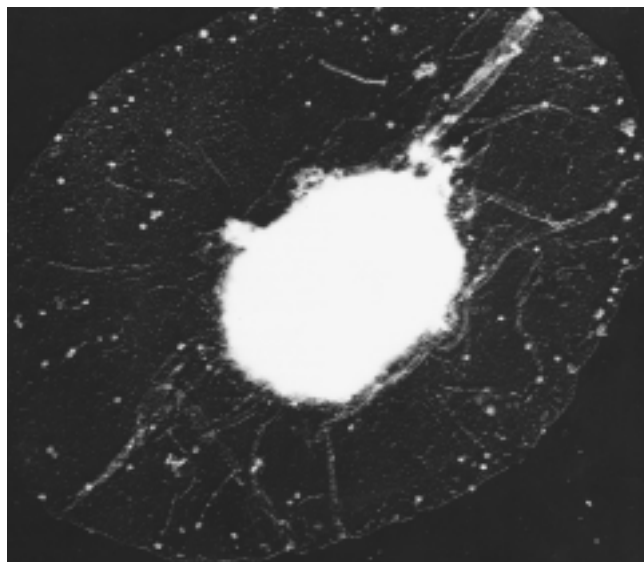
This point has been stressed by Lyndon LaRouche, whose political action committee (www.larouchepac.org) intervened to make the Bush/Cheney flu vaccine fiasco a cutting issue in the U.S. Presidential elections. LaRouche explained on a Nov. 1

radio interview, “In other words, what has happened, is that with the way we have changed our breeding habits on food supply, we have created a potential among chickens and pigs, and whatnot, to infect other species which interact with the farm [stock] . . . and so forth, and we have tended to synthesize new kinds of infectious agents, which can attack human beings.

“Now this is a global problem, and it comes from our bad agricultural policy. We used to have a policy of diversification, a variety of species in food supply, so that if one went bad, you always had another one, or several others, you were relying upon. Our tendency to go toward monoculture has been disastrous.”

Global Public Health Response

The best way to deal with the imminent threat of a new influenza pandemic, is to rebuild public health infrastructure quickly. Klaus Stohr of the WHO outlined the broad approach that should be undertaken by national governments working together with the WHO. The ability to do accurate and quick surveillance of a flu outbreak is very critical. Any delay in identify-



The current flu vaccine production method—injecting flu virus (white particles) into chicken-egg blood cells like this one—may not work for vaccination against an avian flu pandemic in humans, because the H5N1 virus is so deadly to chickens.

FIGURE 3

World's Current Vaccine Production Capacities



Source: WHO Global Influenza Programme.

WHO influenza program chief Klaus Stohr emphasized that the global capacity for vaccine production is an order of magnitude too low to meet a serious flu pandemic; and the same is true for other vaccines. Most current production is European, and 50% of that is exported from Europe.

ing new cases, and identifying the type of influenza virus present, will delay vaccine development, as well as jeopardizing classic containment strategies.

There are many technical problems that relate to producing an effective vaccine against a given influenza type. It takes roughly six months to produce a vaccine; but in the case of the current H5N1 virus isolated from Thailand, this virus is so deadly to chickens, that the standard method of growing viral cultures in chicken eggs fails. So, another experimental method of growing virus in cell cultures must be perfected quickly. So far, only two vaccine companies, Aventis Pasteur and Chiron, have even started work on a vaccine against avian flu, and Chiron's production facilities have suffered the now well-known problems with repeated contamination.

There are only 16 major vaccine companies left in the world, with the majority of that capacity in Europe and North America. The lack of vaccine production capacity worldwide is so severe, that governments must treat this as a national security concern if they are serious about stopping the next, perhaps immediately imminent, pandemic.

In the United States, the Bush Administration and Congressional Republican leadership squelched a bill ten months ago—when another flu vaccine shortage had been forecast by Government Accountability Office and Congressional Budget Office reports—which was aimed to expand vaccine production. The Pfizer, Wyeth, King, and Monarch pharmaceutical companies all had pulled out of making flu vaccine since 1999. Sen. Evan Bayh (D-Ind.) and Rep. Rahm Emanuel

(D-III.) introduced the Flu Prevention Act of 2004 in January, to stop the disappearance of vaccine manufacture in the United States and create new makers, with a small intervention of Federal funds. The legislation, based on proposals from medical experts, would have created a Federal buy-back program for unused vaccine, like a price-support for farmers. It would have regulated an area of vaccine production which is vital to public health, but which involves six months' production, is unpredictable in sales, and inexpensive in price. And it would have set aside funds to help get new producers into the market. The discarded legislation was re-introduced in early October, aimed now at next year's season. The urgent need for the United States to play a much larger role in global vaccine production, is clear from **Figure 3**.

We do have antiviral drugs that can be used to treat flu patients, but these drugs, as Stohr emphasized on Oct. 30, are in very short supply. At present, there are four main antiviral drugs for the flu, made by only two companies, Roche and

GlaxoSmithKline. There is only a small stockpile of 120,000 doses of amantadine and rimantadine; about 4 million doses of Tamiflu; and even fewer of Relenza. These drugs should be rapidly produced to build up a large stockpile for treating flu patients, which treatment would save thousands of lives.

It is useful to consider the speed of spread of some recent historical flu pandemics. The 1957 Asian Flu, of type H2N2, started in China in February of 1957. By April, it had spread through most of Asia and Australia, and by August, it had become established on six continents, killing 70,000 in the United States alone. This pandemic spread around the world in six months.

Today, with increased air travel relative to 50 years ago, a new pandemic may spread globally in just a few weeks if public health surveillance fails to detect and contain it quickly. The United States already lacks the hospital surge capacity to deal with a mere typical flu season, let alone a new deadly pandemic of avian flu.

Not adequately preparing for this new threat could cost millions of lives.

What State Authorities Face To Get Vaccine

Senators Susan Collins (R-Me.) and Jack Reed (D-R.I.) sent a letter Oct. 26 to Health and Human Services Secretary Tommy Thompson, again prodding the smug Bush Administration that "It is essential that use of the remaining influenza vaccine be optimized to achieve greatest effectiveness." They demanded a Centers for Disease Control and Prevention (CDC) "clearinghouse" vaccine-tracking website, since state health authorities are "facing state-wide vaccine shortages and have no ability to allocate supply to comply with the new recommendations of the CDC."

On Oct. 27, CDC did indeed take that one step toward directed allocation. The website is for restricted use by state and county health officials, and gives them a schedule through the end of December on which they can expect the remaining 20+ million Aventis Pasteur vaccine shots to arrive, as well as "voluntary" information on where to find, and how to try to reallocate, remaining standing supplies from the 30+ million from Aventis Pasteur and Medimmune FluMist already shipped.

An extensive survey put online by the Gannett newspaper chain as of Oct. 28 shows how little capability the state health authorities have to cope with the crisis. The chart compares the state's health authorities' vaccine supplies so far, against their over-65 population. The nation's 35 million seniors are *only one* of the influenza risk groups defined by the CDC—in total, these risk groups surpass 100 million people—though seniors are most threatened

with fatal complications from flu.

In most cases, the state health departments' supply at the end of October represented about half the total supply of all public health agencies, which also include county health departments, public hospitals and nursing homes, etc. But these supplies are dwarfed by the elderly population; and many of the state supplies are specifically funded, ordered, and earmarked for young children. The huge shortfall has led Massachusetts, for example, to take "healthy seniors 65-75 years of age" out of its priority vaccination population.

The table is taken from the survey as of end-October:

State	Over 65	State Vaccine Supply
Arizona	714,000	115,000
California	3.8 million	506,000
Los Angeles County	700,000	31,000
Colorado	441,000	54,000
Connecticut	471,000	None (77,000 expected)
Florida	2.9 million	None (150,000 expected)
Illinois	1.5 million	None (150,000 expected)
Indiana	763,000	18,000
Iowa	434,000	22,000
Louisiana	524,000	25,000
Maryland	625,000	50,000
Massachusetts	857,000	134,000
New York	2.5 million	450,000
Pennsylvania	1.9 million	54,000
Texas	2.2 million	250,000
New Mexico	225,000	None