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Dr. Robert Chanock
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Building 7, Room 100
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Dear Bob:

There is a very urgent need to find exciting research projects to occupy well trained and sophisticated scientists from the former U.S.S.R. who were involved in biological warfare. As you know, the very best scientists in the former U.S.S.R were funded to work on militaristic projects. It is my understanding from scientists who have returned to Russia that there are almost no resources to support them, and that they must turn to alternative sources to make a living. These well trained scientists are becoming desperate, and any country or group of individuals with even modest resources could readily entice them into biological warfare projects for terrorist or militaristic purposes. It is therefore in the best interest of the United States, and of the free world, to provide funding and research projects to occupy these scientists over the next five (5) years or until Russia can afford to fund scientific research.

I would now like to strongly endorse your suggestion of an area of research for which the scientists trained in biological warfare in Russia would be eminently suited. This is to mount a major research project on virus paleobiology in Russia. The immediate aim of the study would be to detect humans and animals, including pigs and water fowl, that were buried in Arctic regions during the 1918 influenza virus pandemic. As you know the worst pandemic in history was caused by the Spanish influenza pandemic of 1918. This pandemic killed more persons than all of the wars of this century, and serological analysis of elderly people suggests that it was caused by a virus related to H1N1 influenza A viruses. This virus caused extensive primary viral pneumonia, and historical records tell of young American soldiers collapsing on parade at Great Lakes Naval Station, and being placed in hospital tents. Later the same day, they hemorrhaged from the nose so violently that the blood hit the tent, and they died. The only other known influenza viruses to cause such enormous hemorrhaging are the avian influenza viruses of the H5 and H7 subtypes. These viruses have a unique sequence of basic amino acids of the cleavage site of their hemagglutinin which permit the viruses to become systemic. These viruses kill the birds by causing generalized hemorrhaging and encephalitis. An unanswered question is whether the 1918 pandemic strain from humans also contained a similar sequence of basic amino acids.

A number of years ago we initiated a research program in conjunction with the U.S. Naval Hospital in Bethesda, Maryland to examine tissue samples stored in formaldehyde since 1918 using PCR analysis. To emulate long term storage of virus infected tissue in formaldehyde, we used infected mouse lungs and stored them in formaldehyde at high temperatures for up to one year. It was very difficult to obtain RNA from either the human lungs stored in formaldehyde for so many years or from the mouse lung, but we were successful in achieving methods of extracting sufficient RNA. Our mouse lung samples gave positive results for influenza virus sequences, but none of the human tissues gave evidence of influenza virus genetic information. The military records on the 1918 patients were excellent, and we were able to establish that each of the samples we obtained had been collected from patients with protracted illnesses, and had come from subjects who had probably died from secondary bacterial pneumonia.

As the world prepares for the next pandemic of human influenza it is important to try to establish as much information as possible about the 1918 pandemic. It is approximately 28 years since the Hong Kong 1968 pandemic appeared in humans, and 19 years since the Russian influenza strain reemerged in 1977. There is absolutely no doubt that there will be another pandemic of influenza in humans, and all steps possible should be taken to prepare public health authorities for this event. Knowledge of the RNA sequence of the hemagglutinin and the other gene segments of the 1918 virus would help us prepare for this event. It is an optimal time for Russian scientists who were previously engaged in biological warfare to attempt to find human and/or animal tissue from the 1918 period for molecular analysis.

I am willing to assist in the development of a detailed proposal to initiate such studies, and would be prepared to participate in the program and train scientists in the current technologies.

Best regards.

Sincerely,

Robert G. Webster, Ph.D., F.R.S.
Rose Marie Thomas Chair,
Chairman of the Department
of Virology/Molecular Biology
Director, WHO Collaborating Center
for Studies on the Ecology
of Influenza in Animals

RW/brw

cc: Joshua Lederberg