

Interview with Epidemiologist Tom Jefferson

'A Whole Industry Is Waiting For A Pandemic'

The world has been gripped with fears of swine flu in recent weeks. In an interview with SPIEGEL, epidemiologist Tom Jefferson speaks about dangerous fear-mongering, misguided, money-driven research and why we should all be washing our hands a lot more often.

SPIEGEL: Mr. Jefferson, the world is living in fear of swine flu. And some predict that, by next winter, one-third of the world's population might be infected. Are you personally worried? Are you and your family taking any precautions?

Tom Jefferson: I wash my hands very often -- and it's not all because of swine flu. That's probably the most effective precaution there is against all respiratory viruses, and the majority of gastrointestinal viruses and germs as well.

SPIEGEL: Do you consider the swine flu to be particularly worrisome?

Jefferson : It's true that influenza viruses are unpredictable, so it does call for a certain degree of caution. But one of the extraordinary features of this influenza -- and the whole influenza saga -- is that there are some people who make predictions year after year, and they get worse and worse. None of them so far have come about, and these people are still there making these predictions. For example, what happened with the bird flu, which was supposed to kill us all? Nothing. But that doesn't stop these people from always making their predictions. Sometimes you get the feeling that there is a whole industry almost waiting for a pandemic to occur.

SPIEGEL: Who do you mean? The World Health Organization (WHO)?

Jefferson: The WHO and public health officials, virologists and the pharmaceutical companies. They've built this machine around the impending pandemic. And there's a lot of money involved, and influence, and careers, and entire institutions! And all it took was one of these influenza viruses to mutate to start the machine grinding.

SPIEGEL: On your Italian homepage, there is a "pandemic countdown" that expires on April 1. Don't you think the situation calls for just a bit more seriousness?

Jefferson: I'm just using it ironically to expose the false certainty that we are fed. Will one-third of the world's population get swine flu? Nobody can say for sure right now. For now, at least, I don't really see any fundamental difference, no difference in the definition between this and a normal flu epidemic. Swine flu could have even stayed unnoticed if it had been caused by some unknown virus rather than an influenza virus.

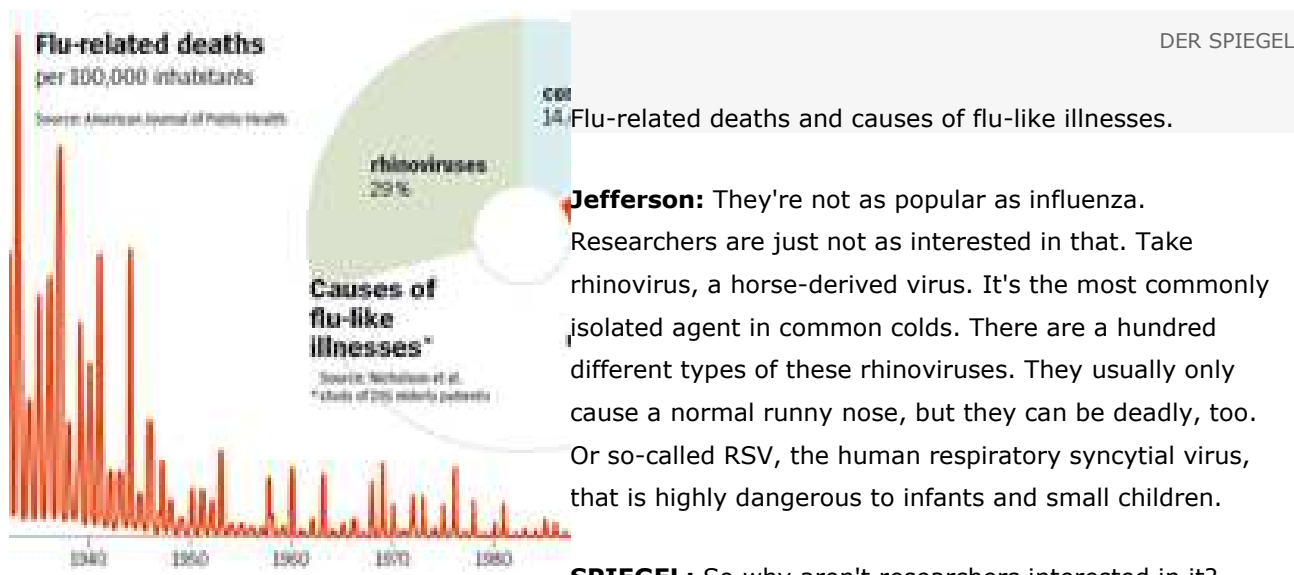
SPIEGEL: Do you think the WHO declared a pandemic prematurely?

Jefferson: Don't you think there's something noteworthy about the fact that the WHO has changed its definition of pandemic? The old definition was a new virus, which went around quickly, for which you didn't have immunity, and which created a high morbidity and mortality rate. Now the last two have been dropped, and that's how swine flu has been categorized as a pandemic.

SPIEGEL: But, year after year, 10,000-30,000 people in Germany alone die from influenza. In the Western world, influenza is the most deadly infectious disease there is.

Jefferson: Hold on! These figures are nothing more than estimates. More than anything, you have to distinguish between an influenza-like illness and a genuine flu, the real influenza. Both of them have the same symptoms: a sudden high fever, a sore throat, coughing, rheumatic pain in the back and legs, possible bronchitis and pneumonia. But real flues, real influenzas are only caused by influenza viruses, while there are more than 200 different viruses that cause influenza-like illness. When it comes to figures related to so-called flu deaths, you always get other causes of death caused by other viruses mixed in. Now, in the case of elderly people who die of pneumonia, nobody would do a postmortem to figure out if it was really an influenza virus that killed them. Approximately 7 percent of influenza-like illness cases are caused by influenza viruses. It's a very small percentage. What I know is that real influenza is systematically overestimated.

SPIEGEL: And what about the 200 other kinds of viruses?



14. Flu-related deaths and causes of flu-like illnesses.

Jefferson: They're not as popular as influenza. Researchers are just not as interested in that. Take rhinovirus, a horse-derived virus. It's the most commonly isolated agent in common colds. There are a hundred different types of these rhinoviruses. They usually only cause a normal runny nose, but they can be deadly, too. Or so-called RSV, the human respiratory syncytial virus, that is highly dangerous to infants and small children.

SPIEGEL: So why aren't researchers interested in it?

Jefferson: It's easy: They can't make money with it. With rhinoviruses, RSV and the majority of the other viruses, it's hard to make a lot of money or a career out of it. Against influenza, though, there are vaccines, and there are drugs you can sell. And that's where the big money from the pharmaceuticals industry is. It makes sure that research on influenza is published in the good journals. And that's why you have more attention being paid there, and the entire research field becomes interesting for ambitious scientists.

SPIEGEL: But is there any scientific reason to be interested in influenza viruses?

Jefferson: The strict focus on influenza is not only misguided; it's also dangerous. Do you remember something called SARS? That was a truly dangerous epidemic. It was like a meteor: It came and it went quickly, and it killed a lot of people. SARS took us by surprise because it was caused by a completely unknown coronavirus. Where did it come from? Where did it go? Or is it still here? We still don't know. There are lots of other strange things like that coming out. Every year, a new agent is identified. For example, there's something called bocavirus, which can cause bronchitis and pneumonia in small children. And there's something called metapneumovirus, which studies say is responsible for more than 5 percent of all flu-related illnesses. So, we should keep our eyes open in all directions!

SPIEGEL: But the great pandemic of 1918/1919 was caused by an influenza virus, and it killed up to 50 million people around the world. Or do scientists contest that?

Jefferson : It's very well possible that it was, but there are many aspects about the 1918/1919 pandemic that still puzzle us. It was only 12 years ago that we learned that the H1N1 virus caused it. But there was also a lot of bacterial activity going on at the time. And it's particularly unclear why the mortality rate for the flu dropped so dramatically after World War II. Today, you only get a fraction of what was standard before the war. When it comes to the later pandemics, such as the "Asian flu" of 1957 or the "Hong Kong flu" of 1968/69, you can barely detect them as exceptional figures when it comes to death statistics as a whole.

Contradictions between Scientific Findings and Practice

SPIEGEL: So why should we even speak of pandemics at all?

Jefferson: That's something you should ask the World Health Organization!

SPIEGEL: In your opinion, what do you think it takes to make a virus like the swine flu a global threat?

Jefferson: Unfortunately, we can only say that we don't know. I suspect that the whole issue is much more complex than we are even able to imagine it today. Given all the viruses that produce flu-like symptoms, perhaps Robert Koch's postulate that one particular pathogen causes one particular disease doesn't go far enough. Why, for example, do we not get influenza in the summertime? In the end, the pathogen is there all year long! Already in the 19th century, the German chemist and hygienist Max von Pettenkofer had developed a theory about how the pathogen's contact with the environment can alter the disease. I think that research in this direction would be worthwhile. Perhaps it would allow us to understand the pandemic of 1918/1919 better or to be able to assess the dangers of swine flu.

SPIEGEL: Humans have better defenses today than they did in 1918, and it probably won't be long before we have a swine flu vaccine. Last week, Germany's federal government announced that it wanted to buy enough for 30 percent of the population. How much do you think that will protect us?

Jefferson: When it comes to pandemic vaccination, as we say in English, the proof is in the pudding. The proof is in using it. We'll see. It does generate an antibody response, but will it really guard against the disease?

SPIEGEL: Are you pessimistic about that?

Jefferson: No, I'm just saying I think we're about to find out (*laughter*). Let's have this conversation again in about a year's time, shall we?

SPIEGEL: For a number of years, as part of the [Cochrane Collaboration](#), you have been systematically evaluating all the studies on immunization against seasonal influenza. How good does it work?

Jefferson: Not particularly good. An influenza vaccine is not working for the majority of influenza-like illnesses because it is only designed to combat influenza viruses. For that reason, the vaccine changes nothing when it comes to the heightened mortality rate during the winter months. And, even in the best of cases, the vaccine only works against influenza viruses to a limited degree. Among other things, there is always the danger that the flu virus in circulation will have changed by the time that the vaccine product is finished with the result that, in the worst case, the vaccine will be totally ineffectual. In the best of cases, the few decent studies that exist show that the vaccine mainly works with healthy young adults. With children and the elderly, it only helps a little, if at all.

SPIEGEL: But aren't those the exact groups that influenza immunization is recommended for?

Jefferson: Indeed. That's one of the contradictions between scientific findings and practice, between evidence and policy.

SPIEGEL: So, what's behind this contradiction?

Jefferson: Of course, that has something to do with the influence of the pharmaceutical industry. But it also has to do with the fact that the importance of influenza is completely overestimated. It has to do with research funds, power, influence and scientific reputations!

SPIEGEL: So, at the moment is it reasonable to keep vaccinating against seasonal influenza?

Jefferson: I can't see any reason for it, but I'm not a decision maker.

SPIEGEL: And what about Tamiflu and Relenza, two of the anti-flu medications that are being deployed against swine flu? How well do they really work?

Jefferson : If taken at the right time, on average, Tamiflu reduces the duration of a real influenza by one day. One study also found that it diminishes the risk of pneumonia.

SPIEGEL: Could these medications lower mortality rates associated with the flu?

Jefferson : That's possible, but it has yet to be scientifically proven.

SPIEGEL: And what about side effects?

Jefferson: Tamiflu can cause nausea. And there are things that point toward psychiatric side effects. There are reports coming out of Japan that young people who have taken Tamiflu have had acute psychotic reactions similar to those found in schizophrenics.

SPIEGEL: So, is it sensible to use such medications at all?

Jefferson : When it comes to severe disease, yes. But under no circumstances should Tamiflu be handed out to whole schools, as is currently sometimes being done. With that being the case, it doesn't surprise me at all that we're already hearing reports about resistant strains of swine flu.

SPIEGEL: In Germany, the government is supposed to stockpile flu medications for 20 percent of the population. Do you see that as being sensible?

Jefferson: Well, at least there are much cheaper ways to accomplish a lot more. For example, school children should be taught to wash their hands regularly -- preferably after every class! And every airport should install a couple hundred wash basins. Whoever gets off a plane and doesn't wash their hands should be stopped by the border police. You could tell for example by putting an invisible, neutral dye in the water. And wearing masks can be sensible, as well.

SPIEGEL: Has it really been shown that these measures work?

Jefferson : There are several good studies on this that were done during the SARS epidemic. They are so-called case-control studies that examined individuals that had had close contact with the SARS virus. They compared the characteristics of those who had been infected with the virus through this contact with those of people who had not been infected. These studies resulted in very clear results.

SPIEGEL: You sound pretty impressed.

Jefferson: I am. What's great about these measures is not only that they are inexpensive, but also that they can help against more than just influenza viruses. This method can fight against the 200 pathogens that bring about flu symptoms as well as against gastrointestinal viruses and completely unknown germs. One study done in Pakistan has shown that hand washing can even save children's lives. Someone should get a Nobel Prize for that!

SPIEGEL: Mr. Jefferson, we thank you for this interview.

Interview conducted by Johann Grolle and Veronika Hackenbroch.

URL:

- <http://www.spiegel.de/international/world/0,1518,637119,00.htm>

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