The recent hubbub created by the XDR-TB (that’s eXtensively Drug-Resistant tuberculosis) trial lawyer from Atlanta and his odyssey of evasiveness has catapulted public health measures back onto the front page of American newspapers.

But, as usual, the American media is missing the point, focusing on the individual’s plight instead of the gaping holes in public health measures and protocols – and the vulnerabilities encountered when trying to enforce any kind of public health measure.

“The bottom line is: We will have another influenza pandemic. We are long overdue for one.”

While the American mainstream media is focused on Brittny Spears’ underwear or Paris Hilton’s reduced jail sentence, the world’s press allows itself to focus on avian flu events and flare-ups across the world. Astonishingly, you can learn more about avian flu from Al-Jazeera than from your average American daily newspaper.

For example, did you know that in August of last year, there was a regional outbreak of H5N1 in Indonesia severe enough to force the World Health Organization (WHO) to put a “Tamiflu blanket” of preventative dosages on some 2,000 villagers? This was done to stop a potential pandemic dead in its tracks with apparent success. Or that in Egypt, the severity of the H5N1 outbreak in humans in early 2007 was based on your location along the Nile Delta? The further north you were, the more likely you would die from H5N1.

This brings us back to the issue of avian influenza and pandemic planning. Dr. Mike Osterholm, one of the world’s leading experts on the impact of infectious disease upon society, is worried about what he calls “pandemic fatigue.” This is where the American press and public become focused on a particular topic and, if the predicted outcome does not immediately occur, frustration develops.

We saw this in our profession during Y2K preparations. Even HHS Secretary Michael Leavitt speaks about Y2K in derogatory terms. Of all people, Leavitt should watch his tongue. Y2K was a non-event because of all the hard work IT professionals performed across the globe, and we should stop apologizing for it! Y2K was a perfect example of the dramatic success that can occur when an issue is clearly defined, project management takes shape, and the issue is properly funded.

But I digress. In order for you to better understand what we face, let’s start with a quick primer on flu.

Influenza is a virus that has plagued civilization since historians have kept notes. Hippocrates himself wrote of a plague around 412 BC that
appears to have been an influenza epidemic or pandemic. This is what killed Pericles and forced the downfall of Athens. Influenza has definitely been tracked since the 1500s. Influenza is an RNA virus, meaning when it duplicates, it does so with many “mistakes” or mutations. There is no DNA “quality control.” Simply put, it makes bad faxes of itself. These mutations are precisely what makes the virus so hard to contain.

There are three types of influenza: Influenza A, which can infect birds and mammals; Influenza B, which infects humans only; and a third type, Influenza C, which is rarely spoken of and is frequently misdiagnosed as the common cold. All Influenza A is avian in origin. Thus, all Influenza A had its start as “Bird Flu,” even if it circulates among people. And it is only Influenza A that can cause pandemics, so we will focus only on Influenza A in our discussion.

Influenza has two “spikes” on its surface. One, called hemagglutinin, cleaves or parts the cell wall in the human respiratory system, thereby allowing the virus to enter a host cell. The scale might be a tennis ball (virus) to a doctor’s examination room (cell.)

Once inside, the spherical virus dissolves its protective protein and lipid outercoat and allows eight strands of ribonucleic acid to release and begin to multiply. Tens of thousands of such new viruses are formed via these replications, with their subsequent mutations.

When these tens of thousands of new viruses are ready to go, the other spike – neuraminidase – re-opens the cell wall, and the new army of viruses begins striking at other cells in the respiratory tract. (Tamiflu, by the way, is a neuraminidase inhibitor.)

There are sixteen known types of hemagglutinin and nine known types of neuraminidase.

Pandemics occur when a novel strain of influenza spontaneously appears, which has acquired the ability to be transmitted easily from person to person and for which there is no native immunity among humans. Over the past 300 years, there have been ten identifiable influenza pandemics. Pandemics plague the planet three times a century, on average. Pandemics in the 1500s, 1800s and 1918’s H1N1 were especially lethal. And we have not had a pandemic of any consequence since 1968’s H3N2, although 1977’s H1N1 “Russian Flu” was a pandemic for people 25 and under, because that strain had not hit since the early 1940s.

Today, H1N1 and H3N2 strains still circulate around the planet. The strains are no longer pandemic, because there is much immunity. But not too much immunity: Several of the child deaths attributable to seasonal influenza in the US this season (there have been around 200) are typed directly to H1N1. So the virus that killed between 50 and 100 million people globally in 1918 still kills today.

Now a new strain of influenza A threatens to “go pandemic.” The strain, type H5N1, is causing the most concern because it has acquired many of the same traits of the 1918 virus. For example, the 1918 virus was an avian influenza that went directly to humans from birds, bypassing the traditional wildfowl-poultry-pig-human chain. H5N1 is infecting people directly from both wildfowl and from poultry.

Another disconcerting parallel: In 1918, half of the 675,000 deaths in the US were young, healthy adults. Today, ninety percent (90%) of the fatal human H5N1 cases are people under 40.

There have been just over 300 reported cases of H5N1 in humans since 2003. However, the Case Fatality Rate (CFR) of H5N1 is increasing. The CFR has doubled, from roughly 30% to over 60% in just two years, while the number of
documented cases has tripled in the same period of time. This means that if a case is reported to the WHO, its outcome is twice as likely to become fatal as it was in 2005. By contrast, in 1918, the H1N1 Case Fatality Rate was 2%.

The bottom line is: We will have another influenza pandemic. And we are, in the estimation of every public health professional and medical scientist worth quoting, long overdue for one. No one knows when the next pandemic will occur, where it will begin, what strain of flu it will be, or how lethal it will be. We do know that pandemics come in waves and can take 12 to 36 months to pass. We also know that even a minor pandemic can drop Gross Domestic Product by 1.4%.

So what can we expect the next time a moderate to severe influenza pandemic hits?

The American healthcare system cannot handle the “surge” of critically-ill patients that a pandemic would create. One trip to the emergency room during a normal flu season is reinforcement of that fact.

Absenteeism will reach up to 40% of the work force, crippling entire industries and impacting commerce substantially. Entire industries will be crippled. The Congressional Budget office, the World Bank, the International Monetary Fund and the British government have all released economic projections that say a severe pandemic of any significant lethality will devastate the global economy and risk putting the planet into a severe recession, if not outright depression. Also, with economic calamity comes an increase in the crime rate. Think of what will happen if 40% of the uniformed police force cannot show up for work. Remember, there will be no mutual aid. Every police force will be on its own.

The global Just-In-Time economy is clearly not built to withstand a pandemic. Goods and services will certainly be disrupted. Remember, grocery chains operate on JIT philosophy. So does Wal-Mart, Target, and other discount retailers. And so does IT.

There will be no vaccine for the pandemic strain until four to six months after the outbreak, although some pre-pandemic vaccine might afford lifesaving protection.

In the face of this potential (and long overdue) calamity, America must prepare – every sector, every home, every community.

For government IT, that means drawing up two contingency plans: First, IT must prepare to support what I call “retail government” no matter what. These are those social service agencies that are always on the front lines during an economic crisis. Now add a health emergency. Think of an anthrax or biological weapons attack on top of a hurricane in every community in America.

Second is determining how you will maintain your service levels in the face of despair, illness and death of your own staff. The chief countermeasure here is cross-training your people, making sure people’s individual tasks are broken down and reassignable in the event of a pandemic. That does NOT mean training someone to “cover Doris’s work.” That means breaking down Doris’s tasks and cross-training several people to cover the individual tasks.

“How will you maintain your service levels in the face of despair, illness and death of your own staff?”

Determine how to move data centers to extended “lights out” remote operations. Define what will be accomplished by “work at home” plans. Unless you are a truly digital legislature, you will find work at home plans to be fine in the short term but almost impossible to administer during a pandemic “wave” lasting eight weeks or longer. When decision-makers start preaching “telecommuting,” remind them of what additional bandwidth it will take to implement – and remind them that the Internet is a resource that, ultimately, takes people to maintain, meaning it, too, may become undependable.
This also means holding meetings with ALL of your upstream and downstream suppliers and finding out how prepared they are for a pandemic. Ask them to share their plans with you in detail. If they are unwilling to share, find alternate suppliers. Pull out your old Y2K supply chain plans and transfer them to your pandemic notebook.

Finally, consider stashing a supply of “Non-Pharmaceutical Interventions” such as NIOSH-compliant N95 masks and respirators, antiviral hand sanitizer and disposable gloves. Teach proper hygiene and how to sanitize contact surfaces. This will produce results on par with the best antivirals. Consider staggering work shifts to reduce the proximity of people who work with each other.

Do not make these decisions in a vacuum. Every continuity of government and disaster recovery plan must be reworked to include pandemics. Make sure your decision-makers are not making light of the issue themselves.

An influenza pandemic will be like 400 Katrinas occurring simultaneously all over the nation. There will be no mutual aid and precious little inventory. Jails, prisons, and health care facilities will be at great risk. The economy will suffer and the more lethal the virus, the greater the suffering. If government fails to inform, prepare and protect its citizens to the extent possible, then government will continue its slide toward irrelevance in the minds of the American people.

And that is a far greater tragedy than the pandemic itself, with far greater consequences. ☹️

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He is currently working on a book about the history of influenza and the need for pandemic preparedness, which he hopes to have published before it is needed. He can be reached at scott.mcpherson@myfloridahouse.gov.