Emergency Preparedness Manual

This manual contains several articles that I have gathered together pertaining to personal preparedness for NBC (nuclear, biological, chemical) warfare, natural disasters, man-made events and avian flu pandemic. Since there are many more ideas included here than in the previous version, I have broken down them in loosely associated topics. You might have to hunt a little for what you are interested in since I've given up on making a strict table of contents for this manual.

Introduction

The primary focus of this manual is individual and family preparedness for the inevitable avian flu pandemic striking the US. Neither the United States government nor private business is adequately prepared for this event. In fact, both the Department of Homeland Security and FEMA have released public statements to this effect, warning us that each family will have to take care of itself.

If economic disruptions last for more than a year, as the Congressional Budget Office predicts, many of the items that you want to have every day could become quite scarce and very expensive, even after the pandemic has passed. It is not possible to predict disruptions of public utilities, except to say that when the pandemic does occur, utility disruptions will follow; however, the actual extent of the disruptions could be highly variable.

The pandemic might only cause minor inconveniences, such as the temporary rationing of gasoline, or it might cause a complete collapse of the global economy. Your emergency utility planning has to make some fundamental assumptions, the following **minimum** assumptions should be made and basic preparation steps be taken:

- The pandemic will last for a cumulative period of one year. It will come in three distinct waves, each lasting two months. Possibly 33% or higher of the population will get the flu and probably 20% to 50% or higher, of the infected population may die from it. Absenteeism in the work place will be 50% or higher.
- Each wave will disrupt gasoline production, the power grid, public water supplies, garbage collection and sewage treatment. The pandemic will disrupt natural gas service for six straight months. Many homes and businesses still have pilot lights in their ovens, furnaces, and water heaters; therefore, utility workers must go to every address that is served by a particular local pipeline in order to verify that the gas valve has been turned off at the meter prior to restoring the flow of gas. Some disruptions will occur simultaneously and last for weeks.
- Any one of us may not survive a major pandemic; it is likely that one in forty won't. If you haven't already made preparations and arrangements, now is a good time. If needed, buy more life insurance now since it takes time to get a policy. If nothing happens, you can always cancel it later.
- Get a Pneumovax vaccination. The reason for this is that many experts predict that the most likely time for a pandemic to begin is during the regular flu season.
- The majority of people in your community will be unprepared. For this reason, you should formulate a response when desperate people come to your door in search of food, water, and sundries.
- Keep your car's gas tank as full as possible, you will not be able to buy gas if there are no drivers for the fuel trucks or power for the pumps. Be sure to have cash on hand for making small purchases.
- Anticipate that some civil disturbances will occur in every town. These disturbances could spill into your neighborhood, so you may wish to arm each member of your family. Under normal circumstances, the mere presence of a firearm is enough to dissuade all but the most desperate of criminals. Cover all of your first floor windows with security bars or plywood and post quarantine signs on your doors and walls. Buy the hardware now. If things begin to turn ugly, consider placing an armed guard on the roof and sleeping in shifts.
- Expect disruptions of waste hauling and sewage processing. If your community cannot haul away your garbage, you will have to store it in-definitely, so plan ahead to sort it out and burn what you can. Think about reusing as many items as possible, such as metal cans and plastic bags. If your community cannot process sewage, and your toilets become useless, you will have to dig a latrine and build a privacy screen. Alternately, you could invest in a couple of self-contained camping toilets, which could be used indoors.
- Influenza will affect people in every profession, so you should assume that the police department, the fire department, and the local ambulance service would be understaffed and overwhelmed. Do not count on them to respond to your needs.

Ten Things To Know About Pandemic Influenza

1. Pandemic influenza is different from avian influenza.

Avian influenza refers to a large group of different influenza viruses that primarily affect birds. On rare occasions, these bird viruses can infect other species, including pigs and humans. The vast majority of avian influenza viruses do not infect humans. An influenza pandemic happens when a new subtype emerges that has not previously circulated in humans. For this reason, avian H5N1 is a strain with pandemic potential, since it might ultimately adapt into a strain that is contagious among humans. Once this adaptation occurs, it will no longer be a bird virus--it will be a human influenza virus. Influenza pandemics are caused by new influenza viruses that have adapted to humans.

2. Influenza pandemics are recurring events.

An influenza pandemic is a rare but recurrent event. Three pandemics occurred in the previous century: “Spanish influenza” in 1918, “Asian influenza” in 1957, and “Hong Kong influenza” in 1968. The 1918 pandemic killed an estimated 40–50 million people worldwide. That pandemic, which was exceptional, is considered one of the deadliest disease events in human history. Subsequent pandemics were much milder, with an estimated 2 million deaths in 1957 and 1 million deaths in 1968. A pandemic occurs when a new influenza virus emerges and starts spreading as easily as normal influenza – by coughing and sneezing. Because the virus is new, the human immune system will have no pre-existing immunity. This makes it likely that people who contract pandemic influenza will experience more serious disease than that caused by normal influenza.

3. The world may be on the brink of another pandemic.

Health experts have been monitoring a new and extremely severe influenza virus – the H5N1 strain – for almost eight years. The H5N1 strain first infected humans in Hong Kong in 1997, causing 18 cases, including six deaths. Since mid-2003, this virus has caused the largest and most severe outbreaks in poultry on record. In December 2003, infections in people exposed to sick birds were identified. Since then, over 100 human cases have been laboratory confirmed in four Asian countries (Cambodia, Indonesia, Thailand, and Viet Nam), and more than half of these people have died. Most cases have occurred in previously healthy children and young adults. Fortunately, the virus does not jump easily from birds to humans or spread readily and sustainably among humans. Should H5N1 evolve to a form as contagious as normal influenza, a pandemic could begin.

4. All countries will be affected.

Once a fully contagious virus emerges, its global spread is considered inevitable. Countries might, through measures such as border closures and travel restrictions, delay arrival of the virus, but cannot stop it. The pandemics of the previous century encircled the globe in 6 to 9 months, even when most international travel was by ship. Given the speed and volume of international air travel today, the virus could spread more rapidly, possibly reaching all continents in less than 3 months.

5. Widespread illness will occur.

Because most people will have no immunity to the pandemic virus, infection and illness rates are expected to be higher than during seasonal epidemics of normal influenza. Current projections for the next pandemic estimate that a substantial percentage of the world’s population will require some form of medical care. Few countries have the staff, facilities, equipment, and hospital beds needed to cope with large numbers of people who suddenly fall ill.

6. Medical supplies will be inadequate.

Supplies of vaccines and antiviral drugs – the two most important medical interventions for reducing illness and deaths during a pandemic – will be inadequate in all countries at the start of a pandemic and for many months thereafter. Inadequate supplies of vaccines are of particular concern, as vaccines are considered the first line of defense for protecting populations. On present trends, many developing countries will have no access to vaccines throughout the duration of a pandemic.

7. Large numbers of deaths will occur.

Historically, the number of deaths during a pandemic has varied greatly. Death rates are largely determined by four factors: the number of people who become infected, the virulence of the virus, the underlying characteristics and vulnerability of affected populations, and the effectiveness of preventive measures. Accurate predictions of mortality cannot be made before the pandemic virus emerges and begins to spread. All estimates of the number of deaths are purely speculative. WHO has used a relatively conservative estimate – from 2 million to 7.4 million deaths – because it provides a useful and plausible planning target. This estimate is based on the comparatively mild 1957 pandemic. Estimates based on a more virulent virus, closer to the one seen in 1918, have been made and are much higher. However, the 1918 pandemic was considered exceptional.

8. Economic and social disruption will be great.

High rates of illness and worker absenteeism are expected, and these will contribute to social and economic disruption. Past pandemics have spread globally in two and sometimes three waves. Not all parts of the world or of a single country are expected to be severely affected at the same time. Social and economic disruptions could be temporary, but may be amplified in today's closely interrelated and interdependent systems of trade and commerce. Social disruption may be greatest when rates of absenteeism impair essential services, such as power, transportation, and communications.

9. Every country must be prepared.

WHO has issued a series of recommended strategic actions for responding to the influenza pandemic threat. The actions are designed to provide different layers of defense that reflect the complexity of the evolving situation. Recommended actions are different for the present phase of pandemic alert, the emergence of a pandemic virus, and the declaration of a pandemic and its subsequent international spread.

10. WHO will alert the world when the pandemic threat increases.

WHO works closely with ministries of health and various public health organizations to support countries' surveillance of circulating influenza strains. A sensitive surveillance system that can detect emerging influenza strains is essential for the rapid detection of a pandemic virus. Six distinct phases have been defined to facilitate pandemic preparedness planning, with roles defined for governments, industry, and WHO.

Pandemic Scenario

When the pandemic finally does arrive in the U.S., and people begin to practice social distancing, the lowest-paying industries with the highest public exposure will be shut down, and most of their employees will be laid off. Anyone who is not laid off, and who is still interacting with the general public, will almost certainly be exposed to the flu and they, in turn, will bring the virus home to their families. Ironically, the ones who are laid off will fare no better. They, too, will eventually be exposed to the flu and will bring it home to their families, because at some point in time they will have to leave their apartments in search of food, toiletries, and medicine. When they do, they will encounter infected people on the street, in public transportation, and in the stores. In very short order, these people are going to cause an enormous problem for the health care system, law enforcement, and every level of government.

Whether they are actually sick with the flu or not, it is likely that several million poor people will be flat broke and starving within a week, so they are sure to try every resource possible to get free food. They are going to show up at medical facilities, police stations, government offices, and schools in search of assistance. When they discover that the government is unable to help them, panic will set in and there will be civil disturbances and property crimes (remember New Orleans?). Some of these people will merely go from door to door begging for handouts, but others will try to steal what they need from wherever they can. To make matters worse, within a couple of weeks, millions of these people will have full-blown cases of the flu, and there will be no safe means of handling the sick and the dying, or their corpses. Surely, any location with low-rent apartment buildings will be hell on Earth. Although it might seem reasonable to believe that people at higher income levels will fare much better than the poor, which is not necessarily going to be the case. In fact, this same scenario will eventually unfold in every neighborhood in the country, no matter what the socioeconomic status: if you are laid off you will receive no income, but if you go to work you are likely to become sick. Surely, as the pandemic progresses and the economy worsens, almost every industry will begin layoffs and people will eventually find themselves short of money for their necessities. However, whether or not you have the money or the credit to buy food, toiletries, and medicine is not the issue here.

The issue is simply the risk associated with exposure to people who are sick. Since global flu vaccine production capability is only about 500 million courses per year, the first several million will undoubtedly be distributed exclusively to political leaders, security forces, and civilians who hold mission-critical jobs in such fields as medicine, law enforcement, and public utilities. Therefore, you might not be able to vaccinate your family until after the pandemic has passed. To complicate matters, Tamiflu, the drug that is given to patients with severe flu viruses, is limited in supply and is most effective when is administered within 48 hours of the onset of symptoms. Although in a typical flu patient the very worst symptoms may come and go within a matter of a few days, it could take many weeks for the flu to make its way through an entire community. Flu pandemics typically occur in two or three global waves, stretched out over a year or more. Consequently, people who did not become sick from the first wave would still be at risk of getting the flu during any subsequent waves. It is important to note that a pandemic wave does not have a clearly defined beginning or end. A wave is merely a period of time during which a whole lot of people become sick, more or less simultaneously. Between waves, however, many people will still be recovering, and more people will become sick. Unfortunately, it is the human interaction between the waves that is largely responsible for generating subsequent waves. As flu cases diminish, people will let down their guard and begin to return to their old routines, even though the flu is still pre-sent in their communities.

This unguarded behavior is what tends to cause the next wave. In addition, the virus may continue to mutate, possibly acquiring the ability to reinfect and kill people who had previously survived it. Since there will be no time period during the pandemic in which it will be completely safe to expose yourself to others, the only sure way to prevent infection will be to isolate your family in your home and wait it out; and, since each wave could easily last two or three months in any given community, with a month-long recovery period after each wave, you might feel compelled to isolate your family for one full year. While you may not find it absolutely necessary to completely withdraw from society for such a long time, you may have to cope with several months of economic disruptions during the pandemic and several more months of disruption afterward. Even conservative pandemic predictions assume that most communities will experience limited availability of commodities and services for at least a couple of weeks. Mainstream predictions, however, assume that there will be varying degrees of nation-wide economic disruption lasting several months which will only become worse as time goes by. These disruptions will be followed by a lingering global recession lasting over a year. Although it is improbable that any town in the United States would have to cope with a total and simultaneous collapse in the distribution of food, medicine, utilities, and public services for more than a few weeks at a time, it is highly likely that every community will have to adjust to sporadic and repeated disruptions over a period of several months. Some disruptions may be intermittent, but some may linger for quite a while. However, since you can not know in advance which goods or services will be unavailable in your town, or for how long you might have to get by without them, it would be prudent to prepare for complete and total independence and self-sufficiency within your own home for the minimum six-month duration of a global pandemic. Over a period of time, disruptions in supply chains and staffing could make it impossible for utility companies and public services to operate normally.

If you are not prepared for the possibility of disruptions, you could be faced with serious challenges to your present lifestyle. However, rather than speculate about which utilities and services might fail in your community, or in which order they might be disrupted, you should simply anticipate that at some point in time you will lose each and every one of them. Apart from the pressing need to keep your family warm, clean, and well fed, you should also think about how to keep them safe. You need to understand that there will be many millions of unprepared people in thousands of cities and towns all over the country who will suffer from absolute despair at the prospect of starving or freezing to death. Predictably, their despair will eventually give rise to localized store looting. Before long, the looters will undoubtedly seek out affluent neighborhoods, as some of these people see no alternative but to break into homes in search of food and shelter. If this scenario seems a bit far-fetched, perhaps you should remind yourself of just how quickly the situation in New Orleans eroded into anarchy.

The interdependent nature of modern society increases the risk that a systematic failure could occur. This can happen if one or two fundamental economic resources failed resulting in a domino effect precipitating the collapse of other key but dependent commercial and industrial segments of the economy. In other words, a failure of one critical system leads to the failure of another and so on until the entire system collapses. Taken together, these factors could result in the temporary disruption in the delivery of basic supplies and services we all now take for granted. The resulting chaos might be accompanied by a period of civil unrest especially within large urban centers. Once the pandemic begins there will be no help from any outside source. This is one of the primary warnings to local governments by the US Department of Homeland Security in a report on pandemic planning and preparedness released in May 2006. The reason for this is that modern modes of human transportation will bring the pandemic viral strain to every region of the developed and undeveloped world at about the same time. Unlike hurricane or earthquake relief efforts, there will be no unaffected states or countries available to send help. In a major pandemic the medical systems of every country will be rapidly stretched to the breaking point, unable to treat even a fraction of their own citizens seriously ill with the virus. There will be no antiviral or vaccines available to most people. Even cold medications, regular antibiotics, and routine medical supplies like syringes and gloves could become scarce.

It is true that patients becoming ill at the very beginning of the first pandemic wave will probably get a hospital bed and medical attention. However, in the event we are confronted with a severe pandemic, it won't be long before all available medical resources are exhausted and the doors to the hospital closed to all new patients. Ironically, some of the features of our modern world economy that provide us with our high standard of living are the same ones that place us at such high risk for collapse during pandemic influenza. Part of our vulnerability stems from the intensely interdependent nature of our economy's infrastructure and the pervasive use of "just in time" inventory methods. Other reasons include the highly specialized nature and productivity of today's work force. If a significant number of workers in the advanced economies are unable to work due to illness or death, this will be severely disruptive to the economic and industrial life of every affected nation.

Workforce Impact

An area of major concern in a pandemic is the almost immediate reduction in the work force. Estimates range from 25% to 40% in all professions. People will stay away from their jobs because they or a family member have flu symptoms, fear of contracting the virus and contaminating their families, a reduction in or failure of public transportation, fear of social unrest due to reduction of law enforcement personnel or to provide childcare because schools have closed. Needless to say, economic and social disruption will be great. In a recent survey in New York City, 52% of health care workers indicated that they would be unwilling to work during a SARS outbreak. Similar numbers might be expected to be unwilling to work during an influenza pandemic. The major concern was personal safety and the safety of family members.

Hospitals And Health Services

Hospitals will be hard hit during a pandemic— not only from the volume of patients, but from staffing shortages, shortages of equipment, supplies and food, and from loss of revenue from various sources. In the United States there are 105,000 mechanical ventilators, 75,000 to 80,000 of which are in use at any given time for everyday medical care. In an influenza pandemic, the United States may need as many as several hundred thousand additional ventilators. Nonessential medical services and surgery may be cancelled. Medical testing for non-influenza conditions may cease. There is no surge capacity in most hospitals so other facilities, from gymnasiums to warehouses to hotels to sports stadiums, would have to be quickly refitted and provided with staffing—but, there would be no excess health-care workers from other regions to come to the rescue—no available hospital beds. Based on county projections, as many as 57,000 additional hospital beds may be needed in King County.

Long Term Care Facilities

Long Term Care Facilities may be especially hard hit due to staffing shortages. Doctors would be in short supply. The condition of non-ambulatory residents could become unstable very quickly without the caregivers who care for them and administer their medications throughout the day. These facilities will also be at high risk for looting because of the medications kept on premises, resident's valuables, the easily accessible food supply and the lack of security. Another problem would be the potential for employees and relatives of residents to introduce the virus while working or visiting loved ones. Strict quarantine protocols would have to be enacted to prevent contamination of the premises and its residents.

Mortality Considerations

Cold storage plants or refrigerated trucks will have to be used as temporary morgues until proper burials or cremation can be provided. Historically, the number of deaths during a pandemic has varied greatly. Death rates are largely determined by four factors: the number of people who become infected, the virulence of the virus, the underlying characteristics and vulnerability of affected populations, and the effectiveness of treatment and preventive measures. Accurate predictions of mortality cannot be made before the pandemic virus emerges and begins to spread.

Education

Formal education at all levels will be interrupted should we experience a pandemic, even if it is only of the moderate variety. This prediction is based upon the DHHS PIP that calls for the practice of *social distancing* as a means to prevent spread of bird flu within the population. Practically speaking, what this public health policy calls for is a closure of all schools and colleges during the pandemic waves. Distancing, to be effective, must be instituted early in each pandemic wave and extended for a week or two after each wave ends. During an 18-month pandemic characterized by 3 waves, the distancing policy will be in effect from between 6 and 9 months. Obviously this policy will disrupt the continuity of education leading to the loss of at least 1 but possibly 2 full semesters of course instruction.

Quarantine

Governments will not hesitate to impose quarantines, including requiring people who may have had exposure to the virus to stay within their homes, denying entry rights to planes, buses, trucks and ships from other areas or countries where the disease is spreading, forcibly isolating people showing suspicious symptoms, closing schools, shutting down public transportation, banning concerts, parades & sporting events, and making businesses liable for enforcing emergency restrictions on their staffs. The public will accept these restrictions as long as the initial panic lasts, but when the strains on the health care system and the economy become too painful, and new infections don't seem to be appearing, people will begin to resist, possibly violently, the government control over their lives. The administration has already announced that the US government will do nothing in response to a bird-flu pandemic by way of providing any help to cities, states, and hospitals. Michael Leavitt, Secretary of Health and Human Services, has been saying this for months. Here is one such statement:

"Any community that fails to prepare [for a pandemic] with the expectation that the federal government will throw them a lifeline is tragically wrong….Every community will have to take care of its own." ("U.S. Health Chief Says Flu Pandemic Would Be Dramatic," Associated Press, Jan. 13, 2006).

Every state, community, hospital and citizen should assume that there would be no help from the federal government in response to what may be the worst disease pandemic in human history.

Police And Fire Services

A reduction in these critical first responders would have an important influence on public safety and the consequences resulting from routine emergency conditions. The police forces stationed around hospitals controlling access to these facilities will also receive a high exposure to airborne and direct contact influenza virus. These conditions are likely to lead to an above average rate of infection in this critical group of public servants, with attendant higher rates of absenteeism and death than other groups of public sector workers during the pandemic waves. As law enforcement departments become understaffed, lack of effective policing could result in lawlessness or in some cases a collapse in civil order.

Electric Power Grid

A severe influenza pandemic could lead to a catastrophic and prolonged failure of the electrical power grid in the US. Most power production in the US is coal fired, and these units depend upon regular delivery of coal by rail. Power industry guidelines call for generating plants to keep a 25-day coal stockpile onsite to ensure uninterrupted power production in the event of a coal supply disruption. These coal stockpile guidelines are voluntary. Nuclear and hydroelectric electrical generating facilities are not dependent on frequent supplies of fuel, and could remain online as long as there were a sufficient number of plant personnel available to operate the plants safely. The delivery of coal by rail would seen to be one of the weakest links in the health of the US electric power grid. The illness or absence of 30% to 40% of these key workers at any point from the mine to the power plant could bring deliveries to a halt. These workers are highly trained, some require state or federal licensure to perform their duties, and none are easily replaced. With very little reserve coal on hand, this could result in the rapid shutting down of the affected plants. If enough US plants connected to the fragile power grid were affected in this way, brownouts or blackouts in large regions of the US would result.

Distillates, Natural And LP Gas

Gasoline, diesel fuel, and fuel oil are refined from crude oil. These products reach the consumer by flowing through a national pipeline system. Natural gas and LP gas are also transported by pipeline. The pipelines are pressurized using large electric pumps located along the path of the line. Some pumping stations have backup diesel fuel operated generators to support the flow through the line during short-term power outages but the quantity of fuel on hand to operate these systems is limited. Absenteeism or illness of personnel that operate the refineries or the pipelines could result in their dysfunction and an interruption in the flow of fuels. A failure of the electrical power grid would prevent the pipeline companies from moving their products to the marketplace. The local natural gas utility operator may also be adversely affected by illness and absenteeism of their workforce that could affect public safety or the ability to make emergency repairs to the intercity pipeline. No gas utility company can assume the liability of operating an unsafe system. The prospect of proving service to customers in areas where their employees are unable to travel safely to monitor or repair their systems may compelled them to voluntarily interrupt service.

Water, Power And Gas Utilities

These three utilities all require a minimum number of staff to keep them operational. If the technical staff are reduced below that minimum they will fail and the utility will not be available to homes and businesses. If the water supply is interrupted we will dependent on water we have stored for emergencies, the collection of rain water or bottled water distributed by emergency personnel. If water service is interrupted, even briefly, the pressure in the pipes may drop allowing contaminated ground water to enter the pipes through small leaks. Tap water will then need to be purified for drinking (boiling or chemical additives) until pressure is restored and the contamination flushed out.

If the heat source in a home is interrupted in winter (the power grid on the west coast is extremely fragile) pipes may freeze and the water supply may be lost. The ability to cook and keep food refrigerated or frozen may be lost. Loss of lighting may make homes and establishments more vulnerable to looting and other crimes. The loss of water or power could be especially devastating to hospitals or long term care facilities. Most water utilities use electric power to pressurize their systems meaning that a failure of the electric power grid will lead to a shutdown of water service. Illness among the water utility staff could also play a role in water service reliability or safety during the pandemic. While many water utilities have backup diesel generators, they typically have only a week or two supply of fuel. There may be periods of rolling electrical brownouts and blackouts, where water service becomes available only intermittently. Therefore, if electricity service becomes unreliable, loss of water service will follow shortly.

Food Production And Security

Shortages would emerge everywhere. At the first sign of a pandemic, there would be a run on indispensable items such as food water and medications. Supermarket shelves would be emptied in days if not hours. With complex distribution systems hampered by staffing shortages and possible quarantines it may be days or weeks before shelves are restocked to even a minimum level. Food processing and distribution is also vulnerable to the illness of manufacturing workers, the electrical grid, truckers and loading dock personnel. Disruption in diesel fuel supplies could also affect transcontinental food shipments by truck. Absenteeism among railroad personal would have an impact on transportation of US imports and exports of agricultural products. Food production, processing, and delivery will continue in an uninterrupted fashion until the pandemic actually affects a critical number of inputs resulting in the system becoming dysfunctional. A sign that this has occurred will be when the food industry is no longer able to move food efficiently from the farm to the table. Food shortages typically translate into very high prices for what supply is available.

Economics

WHO predicts that stock markets would close once a pandemic was confirmed. Soaring death rates would puncture the housing bubble and create vast housing oversupply. Apartment owners would slash rates to try to replace deceased tenants. Restaurants, theaters, sports venues, vacation & recreation businesses, air lines and any businesses that depend on serving the public in either large or small groups would probably close or be severely affected. Economic contraction during and after a severe pandemic is likely due to a loss of production and consumption of goods and services. Future productive capacity will be impaired due to the death or incapacitation of a portion of the work force at all skill and professional levels. Demand for medical goods and services will rise to an unprecedented level during the pandemic but due to capacity and supply constraints, will not be met. Demand and spending for consumer durables and discretionary items will plummet.

Communications

Local TV and Radio broadcasts will probably cease if there is a regional power failure in your area as will cable TV. Satellite TV may remain active but you will need an alternative source of power to operate your system to view it if your power is be out. Landline telephone systems have an excellent record of remaining operational even during power failures. However, in the event of a widespread prolonged blackout, they will not be able to continue to function for long. Cell phone towers have a small backup power capability but won't last. If the grid fails, all phone service will eventually fail as well. In the event of a power grid failure, the Internet backbone may be functional in some areas if you could access it. Most service providers will not be operating and few server farms will have power. It is likely then to expect most fiber to be dark and remain so along the Internet until the power grid has become secure once more.

Pandemic Survival Plan

Your first priority should be writing a pandemic survival plan. A good plan is one that includes where your family will live during the pandemic, with whom you will partner, and how you will provide for your family's basic needs. Draft this plan as soon as you accept that risk from an influenza pandemic is real and high. When deciding about how much time, effort, and money to commit to pandemic preparedness, consider that your goal is to survive the duration of the pandemic. To insure this survival requires having an appreciation of how the pandemic could affect your family and way of life. With this appreciation comes a better idea of what needs to be prepared and how you can meet basic challenges such as adequate supplies of food, water, and electrical power. Surviving well during the pandemic doesn't require a permanent or even the best solution, only a solution that is "good enough." Most people will be better off staying in their well-prepared and provisioned home than on the crowded road, in the midst of potential fuel shortages with other pandemic refugees and the criminals seeking to prey on them. If you live in or near a high crime area, you could investigate a safer place to stay during the pandemic in light of certain rising crime rates if police services deteriorate. If relocation is impossible, discuss how you can make your neighborhood safer with family. Some people may wish to locate a pandemic refuge outside the city. Remember, it is unnecessary to implement a long-lasting solution. All you need is a temporary solution that is good enough to get you through the 18-month pandemic period. If you are an urban resident and plan to leave the city for a retreat in the country, do so early in the pandemic. If your city has the misfortune to be one of the first areas affected by the pandemic, be aware that the federal government's plan relies heavily upon the imposition of quarantines to contain the spread of the pandemic. You might find the road out of town blocked if you wait too long.

Pandemic Survival Plan Triggers

Triggers are milestones in the evolution of the pandemic influenza virus that cause you to take certain predetermined actions. Triggers are an important way to help one objectively, logically, and comprehensively initiate certain steps in a PSP at an appropriate time. In times of great stress and risk, you want to be prepared rather than flying by the seat of your pants. Preparing for a severe influenza pandemic is time-consuming and expensive. And you want to avoid implementing your plan if it is unnecessary. The trigger schema presented here is an example of a template for your own tailored plan that will reflect the unique character and priorities suited to your situation. The H5N1 bird flu has acquired all the genetic characteristics it needs to establish pandemic status except one. When and if it will take this last evolutionary step is unknown. As time passes, the risk increases that the pandemic will unfold.

The plan should pinpoint the appropriate time to take certain actions based on the state of the pandemic. If people wait too long to create or implement their plans, the items they need may no longer be available or cost too much. On the other hand, people also should refrain from jumping prematurely and buying supplies that they will not need. Having a pre-determined PSP trigger for each important action specified in the plan provides discipline. If "X" happens, it is time to implement "Y". Following this approach will reduce the tendency for people to be uncertain of when to act. No discussion or decision will be needed when the triggers are clearly defined.

As the virus progresses along its evolutionary path, more and more people will begin to perceive the risk and start their preparations. If you wait too long to prepare, you could get caught without the essential supplies your family needs to survive the pandemic. Using triggers that are tied to the actual behavior of the virus to help guide the execution of your plan is a sensible solution to this problem. In this manual, I refer often to the WHO Influenza Pandemic Phase system as a key barometer of bird flu activity. As described earlier, the WHO has been slow to advance their alert phase. Despite this shortcoming, this alert system remains the best model to follow for gauging the virus's developmental progress. What is needed is a way to determine the de facto or actual WHO Phase we are in now rather than waiting for an official announcement, which may be slow in coming.

The triggers we follow therefore must be governed by events on the ground, specifically the behavior of the virus rather than the declarations of the WHO. A review of information presented in media reports will help you extrapolate meaning and impact. You will be able to interpret the facts yourself rather than relying only on optimistic interpretations and announcements from the news services and government agencies.

Trigger: WHO Phase 4

- Begin bird flu education of all potential members of your Group.
- Determine how you will meet your alternative energy needs and what items you require to do so
- Begin purchase of all devices for your family's alternative energy needs.
- Determine what foods to stockpile. Begin your food stockpile.
- Evaluate potential water sources. Devise a plan for collecting, purifying, and filtering water for home consumption.
- Purchase and install all the items necessary for your alternative water supply plan, but do not fill them with water yet. Review your plan and look for weaknesses. If possible, try to locate supplies you overlooked or augment supplies or items you need.
- Begin saving cash. Try and put away enough free cash to support your family's needs for 3 months.
- Purchase all the items listed in the manual for the Flu Treatment Kit. Discuss getting a 3-month supply of essential medications with your doctor. Monitor the behavior of the bird flu virus and look for signs of localized human-to-human spread that signifies Phase 5 has begun.
- If you plan on storing vegetables in a root cellar, dig one now while you can still rent a backhoe and buy lumber at the hardware store.

Trigger: WHO Phase 5

- Complete food stockpile ASAP. Panic buying may cause some demand shortages during Phase 5, but no true supply shortages will occur until about one month after Phase 6 actually begins.
- Begin formal meetings on pandemic preparedness with the members of your family.
- Obtain needed supplemental supplies for provision of advanced home care.
- Begin your home garden. Consider obtaining or building a temporary greenhouse or cold frame. Obtain enough tools, non-hybrid seeds, fertilizer, lime, and insecticides needed for your garden to last for 2 years without need for re-supply.
- Complete your purchase of any weapons and ammunition you plan to have on hand for home and group defense. Sales of these items are likely to become restricted after the declaration of Phase 6.
- Obtain more gasoline and LP gas for your stockpile, if needed. Consider purchasing more Spartan Energy Plan generating and storage devices (PV panels and deep cycle storage batteries) now because they will be unavailable once Phase 6 is declared. Demand will be enormous and supply will be limited by lack of adequate production facilities.
- Review your plan and look for weaknesses. If possible, try to locate supplies you overlooked or augment supplies

Trigger: WHO Phase 6

- If the case fatality rate is < 2%, then a mild pandemic is developing.
- If the case fatality rate is >2% but less than 5% then a moderate pandemic is developing.
- If the case fatality rate is > 5% a severe pandemic is developing.
- In the event of a severe pandemic, all adults should take an emergency leave of absence from work and focus entirely on pandemic preparedness from this point forward. If the case fatality rate is less than 5% or the rate is unclear, some adults should take leave while others continue employment until the pandemic declares itself.
- College students should drop their courses and return home to help the family and group with preparations.
- Complete all preparations.
- Carefully monitor reports on the pandemic's progress but disregard misinformation and misguided attempts at reassurance that will only cause the unprepared to remain so. Opinions will vary widely, and so will advice. Stick to the case fatality rate of those sick with the disease. That is the information of importance. Nothing else matters. If the rate is 5% or higher, a severe pandemic has begun with the most dire consequences likely. The affects of a moderate pandemic will still be dreadful and cause significant economic and social displacement but not nearly as bad as we can expect from a severe event.
- Hold your ground and don't panic. Keep your group together and be hopeful because you are prepared. Don't leave your prepared refuge. Your chances of survival are much better hunkered down where you are than as a refugee. Avoid becoming a refugee at all costs.
- Monitor the Internet sites like Fluwickie.com for updates. They will be providing raw unfiltered data that will require interpretation but will actually be more reliable than some official media.
- Fill your water containers.
- Review your plan and look for weaknesses. If possible, try to locate supplies you overlooked or augment supplies or items you need.

Trigger: Pandemic Human Bird Flu Reaches Your Country

- Any adults who have not already done so should take an emergency leave of absence from their work to focus on completing all pandemic preparedness tasks.
- Rumors are always the currency of crisis. Almost all rumors will be false. Disregard them. The quality of the information available will progressively deteriorate from this point forward. The best way to debunk a rumor is to discuss it openly, letting the light of reason burn through and destroy it.
- The group leadership must strive always to keep everyone together. There will be great pressure on some members of the group to leave and go somewhere else that "might be safer." That scenario is improbable and traveling will certainly be hazardous. Try to keep the group together.
- Implement full self-containment procedures now, even though you have access to water and electrical service and police protection.

Trigger: Pandemic Flu Reaches Your Community Or Members Of Your Group

- This is an expected event that you have prepared for. Nothing has changed. Your group is ready to take care of itself.
- Early in the pandemic, hospitals and doctor's offices should be functional. Seek conventional treatment. Since the U.S. Government predicts that 8 in 9 flu patients will be treated at home, you are prepared to provide this service.
- Begin home schooling your children if you have not already done so since the social distancing policy will be implemented soon closing the schools.
- Follow your plan. Continue the AM leadership meeting and the PM community meetings. Encourage open discussion and information exchange. Information quality and reliability will be poor even from authoritative sources reported in the media. Discuss rumors , but don't let them hold sway. Debunk them, as they will be baseless for the most part.

Trigger: The First Pandemic Wave Ends

- We can hope that the first pandemic wave will be relatively mild as was seen in the spring of 1918. Waves last 2 or 3 months. Do not fall victim to hopeful comments by many who think the pandemic is over.
- Able adults should return to work at this point if they have a job available. The inter-pandemic wave period will be the lull before the storm.
- Re-supply any depleted stocks of food, water, and alternative energy devices.
- Review your plan and look for weaknesses. Rotate food stocks and stored water. Add new supplies that you realized were needed or desirable during the first wave.
- Maintain and intensify your home gardening activities. Look for opportunities to purchase needed tools, seeds, fertilizer, and lime.
- Family finances could be in a terrible mess at this point especially if there has been widespread involuntary unemployment. Payments and bills may be overdue. If you find yourself in this condition, conserve your remaining savings and cash. Ignore the bill collectors. The U.S. Congress is likely to pass legislation requiring creditors to reschedule debts, which will solve the problem.
- Decide whether to continue home schooling the group's children or return them to regular school. Past timing of pandemic waves supports continued home schooling. Schools are likely to be closed again before long. The effects of the first wave and the knowledge that a second more severe one is on the way are likely to be very distracting for children and teachers, making the task of providing conventional classroom instruction very difficult.
- College students should remain at the refuge because it is unlikely that they will be able to complete a semester, even if their school reopens before the second wave arrives. Home study and helping out in the community and within the group, like providing home schooling for the youngsters, will be a productive activity.

Trigger: The Second Pandemic Wave Begins

- All adults take an emergency leave of absence from work.
- Anyone away from the group's refuge must return ASAP.
- Keep children at home, and college students should stop attending class and begin helping with the group.
- It won't be long before civil society begins to unravel. The hospitals are likely to go first. Food shortages will become apparent.
- The crime rate will rise. If food becomes unavailable, riots will occur.
- Continue your routine--AM leadership meeting, PM community meetings.
- Begin a 24-hour neighborhood safety patrol to help guard against crime.
- Communicate with local police or sheriff contacts for guidance and for information on crime in your area.

Trigger: Closure Of Hospitals, Clinics And Doctor's Offices

- If medical resources become limited as expected, hospitals and doctor's offices will close. Medical professionals participating in your PSG will then be free to return to the neighborhood and activate the medical network. Since reliable hospital care will not be available until after the conclusion of this wave, almost all care will occur at home. Expect the number of sick people in the area around you and within your group to rise.
- Mortuary services will soon be overcome and unable to accept new bodies. Temporary morgues will be established, but burial within the neighborhood of deceased group members is a better way to keep track of them than giving that responsibility to the authorities at this point in the pandemic.

Trigger: Failure Of The Electric Grid, Community Police And Fire Services

- In the event that this occurs, the risk for civil disorder and anarchy will be high. If you have considered this in your PSP and have a neighborhood defense plan, implement it now.
- The group will need to depend upon members of the neighborhood watch for protection usually provided by these community servants. Deterring criminal acts and defending the group from those with violent intent will be important services to the group. Providing emergency fire service and helping group members transport sick and deceased family members will also be required of the watch.
- Monitor police scanners and local media reports for civil unrest. Hunker down and let the events pass by you. Don't become a refugee. Be prepared to defend your refuge. United you stand, divided you fall.

Trigger: End Of The Second Wave

- Able-bodied adults return to work.
- Re-supply essential items. Rotate stock.
- Continue home schooling because there may be a third wave and if it comes, the schools will close again. It may take years for the school system to return to the same level of the ante-pandemic. Seriously think about continuing to home school the children for a while longer.

Trigger: Beginning Of The Third Wave

- If we have a third pandemic wave, its severity will depend on the extent of herd immunity achieved during the first two waves. If immunity is high, this wave will probably be relatively mild, if low it could be quite severe.
- Adults immune from influenza may continue working during the third wave unless they are needed at home for other critical tasks.
- Continue home schooling.
- Hospitals and clinics are likely to be open but very dysfunctional--operating at well over capacity. Acutely ill flu patients, patients who suffered complications of influenza--like stroke and heart attack, and the usual load of patients with non-influenza medical illness who have become critically ill during the many months when technically advanced healthcare and lifesaving medications were unavailable, will occupy all beds.
- College students should not yet return to class because their institutions will inevitably close again. The pandemic experience will provide a much better education than anything they could possibly have learned in school. They will experience history in the making.
- The number of group members becoming ill with bird flu during this wave will be low. Some groups might escape this wave completely. By now, the police and fire service have adjusted to the restrictions imposed upon them by the pandemic and should remain functional during the third wave.
- Home defense against roving gangs may still be needed but hopefully not. The crime rate, especially burglary and robbery, will skyrocket as the unemployment rate will increase and the number of economically destitute people grows--conditions historically associated with high crime rates. So, it might be wise to continue the neighborhood watch, at a lesser degree of readiness, for a year or two longer. Ask your local sheriff or police chief for guidance.