

Becoming Self-Sufficient

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INTRODUCTION

This is a pandemic planning guide for families. It contains a disturbing account of how an influenza pandemic could impact your family’s lifestyle, and it provides guidance for preventing a flu virus from infecting your loved ones. In addition, it addresses the requirements for living in relative comfort while the rest of society struggles to cope with supply chain failures, public service disruptions, food shortages, unemployment, civil disturbances, illness, suffering, and death on a global scale.

Over the past four years, *Becoming Self-Sufficient* has grown from a few disorganized notes into a motivational discussion of family survival. Although the early versions recommended that each family become self-sufficient for at least six months, this revision recommends at least one full year, and it strongly encourages preparation for a second year. This change is due to a fuller understanding of the magnitude of the economic disruptions that will result from an H5N1 pandemic. Please bear in mind, however, that *Becoming Self-Sufficient* is not meant to be equally applicable to every family’s domestic circumstances, and it does not address the challenges of survival in a post-pandemic society. Moreover, it does not address the especially dark scenarios that could unfold when H5N1 finally meets up with the new A/H1N1. H5N1 could gain transmissibility; A/H1N1 could gain lethality; or both could occur.

THE EMERGING H5N1 PANDEMIC

There are 144 known strains of avian influenza. H5N1 is merely one of them. From an historic perspective, the global flu pandemic rate has been three per century (there were 10 flu pandemics in the last 300 years), so it has never been a matter of *if* the next pandemic will occur, merely a matter of *when*. Do bear in mind that this particular strain of flu, H5N1, is not like the new A/H1N1 or the seasonal flu that affects us during the winter months. H5N1 is much deadlier, both to birds and to humans. As of this date, June 26, 2009, the mortality rate in humans is over 60%. The H5N1 virus has killed birds in at least 68 countries, including Canada, and it has killed people in at least 13 countries. It has also evolved into several sub-strains, or clades, each of which has infected and killed people. In 5 countries, H5N1 has become so entrenched in the populations of wild birds and mammals that it can never be eliminated.

Unfortunately, no vaccine can be developed until the genetic material of H5N1 evolves, mutates, or reassorts into a clade that can be transmitted readily from human to human. Even then, after a vaccine is successfully produced (a process that takes about six months from start to finish), it will not be immediately available to the general public. 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, military personnel, 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 for a year or more. To complicate matters, *Tamiflu* (Oseltamivir), the drug that is prescribed for patients with severe flu, is difficult to obtain and is not effective unless it is administered within 48 hours of the onset of symptoms. So, get your *Tamiflu* as soon as possible.

When H5N1 does eventually evolve into a clade that is transmitted easily from person to person, it is expected to lose some of its lethality, but it will still be far deadlier than any flu the world has ever experienced. Many epidemiologists estimate that 50% of the global population will become sick with the flu and that 10% of the flu patients will die. This would result in 300 million deaths worldwide. In the United States alone, that would be approximately 15 million deaths. Even if only 33% of Americans become ill and only 1% of the patients die, that would still be a loss of 1 million people. Although nobody can predict when the H5N1 virus will finally give rise to a severe pandemic, the World Health Organization has stated that it is just a matter of time. This is because migrating birds spread the virus to domesticated birds, and because there are millions of people all around the world (including the U.S.A.) who live in close proximity to domesticated birds. These factors create a recipe for disaster, since it gives the virus unlimited opportunities to perform the genetic evolution, mutations, and/or reassortments that are necessary for effective human to human transmission.

In addition to the risk from infected birds, there is a growing concern over H5N1's potential to infect a variety of mammals—not just humans. There are confirmed cases of dogs and cats, both feral and domesticated, that have died of H5N1. The reports about cats is especially disturbing because cats have never had flu before. So, if it is true that the virus is capable of spreading to a variety of mammals, this could indicate that the much-feared genetic changes are already taking place and that effective human to human transmission is now inevitable. You should also bear in mind that thousands of people have died from flu-like illnesses, but were never tested for H5N1, and there are cases that were confirmed *post mortem*, but did not test positive initially. So, it is impossible to know just how far this virus has already spread.

The infection and death rates from the 1918 “Spanish Flu” suggest that over the course of a severe pandemic lasting several months, at least 33% of the global population will eventually become ill with the flu. Therefore, we should expect that a pandemic would make at least 33% of the world's labor force too sick to work for at least two weeks per person. In addition to any days that are lost to illness, the global labor force could certainly suffer from an indefinite period of voluntary absenteeism, as healthy people begin to practice “social distancing” in an attempt to avoid contact with people who may be infected. There could also be a substantial number of otherwise healthy workers who must remain at home for weeks or months to care for sick family members; and, if schools and day-care centers are obliged to close their doors, a lot of working parents will have no choice but to remain at home with their children.

Beyond these temporary labor problems, substantial as they may be, it is likely that at least 100 million workers around the world will die from the next pandemic, including thousands of people who hold jobs that support your family's lifestyle, both directly

and indirectly. The net result of this massive labor force reduction will be long-term disruptions in the production and distribution of food, medicine, utilities, and public services. Therefore, in anticipation of these disruptions, you need to prepare your family with the resources and knowledge for coping as comfortably as possible for as long as necessary. How long is necessary? In order to survive a disaster of this magnitude, it would be prudent to become self-sufficient for at least one full year.

Influenza pandemics typically occur in two or three global waves, stretched out over a year or more. 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—and that is just for the first wave. 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 many more people will become sick. Unfortunately, it is the social interaction between the waves that is largely responsible for generating subsequent waves. You see, as flu cases diminish, people let down their guard and begin to return to their old routines, even though the flu is still present in their communities. This unguarded behavior is what tends to cause the next wave. In addition, the virus may continue to evolve, mutate, and/or reassort, 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-fire 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 be compelled to isolate your family for over a year. While you may not find it absolutely necessary to completely withdraw from society for such a long time, you will surely have to contend 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 months. Mainstream predictions, however, predict that there will be varying degrees of global economic disruption lasting many months, which will only become worse as time goes by. These lengthy disruptions will be followed by a recession or depression lasting over a year.

Although it seems improbable that many towns in the United States will have to cope with a total and simultaneous collapse in the distribution of food, medicine, utilities, and public services for more than a few months 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 independence and absolute self-sufficiency within your own home for the minimum duration of a global pandemic, which is estimated to be at least twelve months. That level of preparation would reduce the impact of the disruptions and would provide a great measure of comfort for your entire family.

THE THREAT FROM THE A/H1N1 PANDEMIC

Although this document was originally written for the purpose of addressing an H5N1 pandemic, much of the information it contains will apply to the A/H1N1 pandemic as well. However, depending upon the case fatality rate of A/H1N1, the global supply chains might not break and the power grids might not fail. That would make a huge difference in how this new pandemic affects your lifestyle, but A/H1N1 is still evolving, and it is sure to increase in lethality, so it is much too soon to declare that you do not need to prepare for complete self-sufficiency for the A/H1N1 pandemic.

A/H1N1 is a novel virus that appears to have originated in swine. It spreads quite rapidly, even under conditions that are not traditionally believed to be conducive to easy transmission. Although the global spread of the new A/H1N1 virus has resulted in the recent official declaration of a pandemic by the World Health Organization, A/H1N1 still lacks the lethality of H5N1. Some have even characterized this new influenza as “mild”. Nevertheless, A/H1N1 appears to be much worse than the so-called “seasonal” flu that affects us each winter.

According to twenty years’ worth of “cause of death” reporting data from the National Center for Health Statistics of the Centers for Disease Control and Prevention, influenza is the official cause of death for an average of 1,263 people in the United States each year. Indeed, the CDC’s most recent official tally of death by influenza indicates that only 849 people died of influenza in 2006. These very low numbers would seem to contradict the often cited figure of “36,000 flu-related deaths per year” in the United States, which appears on the CDC’s own web site. If the United States did actually have 36,000 flu-related deaths per year during its traditional flu season, we would see 200 deaths per day for six months, and that would be newsworthy. Therefore, do not be fooled into complacency by comparing the reported death totals from A/H1N1 against the common misconception that seasonal flu kills 36,000 Americans each year.

So far, most of the infected individuals are recovering without professional medical care, but this new virus has proven to be capable of killing healthy adults, even in developed countries where modern medical care is available. At the present rate of progression, it appears that A/H1N1 will kill hundreds of thousands of Americans over a span of at least one year.

In a departure from early observations, this A/H1N1 pandemic has been characterized as “moderate” by the World Health Organization. As such, it is expected to infect approximately 33% of the global population, resulting in a .5% case fatality rate. For the United States, that would mean 100,000,000 people would become ill at some point during the pandemic, resulting in 500,000 deaths. For the sake of comparison, the 1918 “Spanish Flu” pandemic had a case fatality rate of approximately 2% to 2.5%. Of course, the estimated case fatality rate of approximately .5% does not take into account what will occur when A/H1N1 finally meets up with H5N1. As suggested earlier, H5N1 could gain transmissibility, or A/H1N1 could gain lethality, or both. Indeed, we could eventually be faced with multiple pandemic flu strains, each with its own unique transmissibility and case fatality rate. With one pandemic already in progress and another on the way, you need to prepare for the very worst.

FOOD FOR TWELVE MONTHS

Before you question the need to amass a twelve month supply of food, ask yourself how long your family can survive on the food you have right now. Then ask yourself which food items in your kitchen you can easily do without and which items you would really like to have on a regular basis. For example, if you could not purchase milk or bread for a week or two, how would that affect your family? What if you could not purchase milk or bread for several months? What if the prospect of going to a grocery store was too risky to even consider? Food shortages should be anticipated, but even if there were plenty of groceries on the store shelves, during a pandemic you would want to avoid close contact with others, so going to a grocery store might pose an unacceptable health risk, both to you and to the rest of your family.

Consider this: you could physically distance yourself from others and dress appropriately, wearing an N-100 respirator and nitrile gloves while shopping, yet you could unknowingly bring the flu virus home from the store. It could be on your groceries. That is because many of the items in your grocery bags were handled by other people before you touched them, and in a severe pandemic at least 33% of those people will eventually get the flu. Since an infected person can spread the flu a day or two before symptoms appear, how would you know if sick shopper or asymptomatic (but infected) clerk coughed or sneezed on one your grocery items just before you arrived? Simply put, you can not know, and since the flu virus can easily survive on the exterior of a package for 48 hours or more, you would be compelled to sanitize or quarantine your groceries before bringing them into your home. Clearly, shopping will be an activity to avoid until you have been vaccinated, or until the pandemic has passed, so you need to get busy right now and begin stocking up. Here is a practical way of going about it:

- ◆ Set a caloric goal for your household that is based upon the basal metabolic rate and anticipated energy expenditure of each person. For example, an active family of four, with a combined weight of 570 pounds, will need about 2,920,000 calories for twelve months. This figure assumes that each person will burn 14 calories per day per pound of body weight. To merely maintain any given weight, however, a sedentary person will only need about 11 calories per day per pound of body weight. So, a sedentary family of four that has a combined weight of 570 pounds would only require 2,288,000 calories for twelve months. [For comparison, the United Nations and the World Health Organization have based their emergency food rations on an average requirement of 2,100 calories per person per day.]
- ◆ Develop and maintain a food storage shopping list or inventory sheet that will help you focus on buying products that contribute to your nutritional goals.
- ◆ Be sure that you can provide each person with 25 to 30 grams of fiber and 50 to 70 grams of protein per day. Try not to worry too much about fats and carbohydrates. If you are careful about the calories you consume, they will all get burned up anyway. Instead, try to stock up on foods you will actually eat.
- ◆ Establish a deadline for purchasing your emergency food and stick with it by buying at least an extra week's worth of groceries every time you shop.
- ◆ Stock up heavily on foods that are part of your normal diet, but which require no refrigeration and are easy to prepare without the aid of modern appliances.
- ◆ Check the expiration date of each item before you put it into your shopping cart, so

- you do not buy food that will be out of code in less than 7 or 8 months.
- ◆ For canned goods, select sizes that your family will eat in one meal. In the event of a power failure during mild weather, you will not be able to preserve leftovers.
 - ◆ For maximum shelf life, store your food in a cool, dark place and rotate your stock.
 - ◆ Protect your food from insects and rodents.
 - ◆ When you are no longer able to shop normally, consume the perishable items in your refrigerator first, followed by the items in your freezer. Only when these two sources are depleted should you consume your emergency food.

As you begin to purchase food for your twelve month emergency supply, you need to be aware of how much it costs to buy 8,000 calories of food (one day of meals for an active family of four). If you are not conscientiously acquiring high calorie items, you may be surprised at just how expensive it can be to stock up. On the other hand, it can be really cheap. For example, at Sam's Club, you can still purchase a 9 pound box of Quaker brand oatmeal for about \$6.88. Each box contains 100 servings and each serving provides 150 calories. That works out to about 7¢ per 150 calorie serving. By contrast, a 15 ounce can of green beans contains only 70 calories. So, if you can still purchase green beans for 50¢ per can, it will cost you \$1.07 for 150 calories' worth. Therefore, to purchase 8,000 calories' worth of these two products, the oatmeal will cost less than \$4, but the green beans will cost over \$57. Of course, nobody wants to live entirely on oatmeal or green beans, but if the budget for your emergency food supply is limited, you will want to calculate the cost per day of your food choices.

You might be interested to know that there are quite a few food items that can supply a family with 8,000 calories for a very low cost. When purchased in large quantities, white rice, pasta, lentils, sugar, peanut butter, whole wheat flour, ramen, popcorn, and tortilla chips can each supply 8,000 calories for less than \$3. In the range of \$4 to \$5 for 8,000 calories, you can also buy corn meal, brownie mix, canola oil, split peas, brown sugar, peanuts, and oatmeal. When viewed from this perspective, a family of four could easily acquire a one month supply of fairly basic emergency food for about \$100, so a twelve month supply should not be out of reach. Now, if your emergency supply budget can go as high as \$10 per day for a family of four, you can also include such desirable foods as Bisquick, saltine crackers, graham crackers, walnuts, red beans, chocolate, Doritos, muffin mixes, pancake mix, strawberry jam, pinto beans, vanilla wafers, Oreos, mayonnaise, honey, Nestle's Quik, and powdered milk. These approximate daily costs are based upon actual purchase prices from Sam's Club, Wal-Mart, Dominick's, Jewel, and Walgreen's in northern Illinois during January of 2009.

Although a carefully stocked refrigerator can easily store 100,000 calories' worth of food, you should probably not include any refrigerated items as part of your emergency food supply. Unless you can quickly replace the items you consume, your stocking levels will always be unreliable, varying from day to day. Instead, you should merely consider your cold storage foods as "bonus" items. On the other hand, you may wish to start thinking about how you can maintain a certain stocking level of high-value foods that can remain frozen for several months, like butter, meat, and nuts. Of course, without a reliable generator and a good supply of fuel, your cold storage foods are at risk of spoiling during a prolonged power failure, but the longer you can get by on the food in your refrigerator and freezer, the longer your emergency food supply will last.

HOUSEHOLD SUPPLIES FOR TWELVE MONTHS

Imagine that 33% of the truck drivers and sales clerks in your town are too sick to work. This will result in fewer deliveries of commodities and long lines of people waiting for stores to open. Eventually, a mob scene will unfold at any store that has any merchandise to sell. In a severe pandemic, that is what most people could face for an indefinite period of time. With this vision in mind, can you think of any non-grocery items that your family relies upon every day or every week or every month that they can not do without? Toilet paper and toothpaste should come to mind, as should vitamins, medications, and feminine hygiene products. In fact, the list of commodities that your family needs is probably quite extensive; but, just like estimating your grocery needs, the problem with buying household supplies is the unpredictable impact of the pandemic on product availability. Even if you are willing to go shopping, and even if you are willing to sanitize or quarantine the items you buy, you really do not know how the pandemic will affect the production or distribution of the things you need.

Since you can not know in advance which commodities will be in short supply, or for how long they may be missing from the stores after the pandemic has passed, you should stock up on as many commodities as possible as soon as possible. Fortunately, most of these items are not perishable, and many are compact, so you may wish to consider storing a two-year supply of every household commodity that your family will want to have during, and after, a pandemic. These suggestions should help get you started:

- ◆ Take an inventory of the non-grocery commodity items in your kitchen, bathroom, laundry room, and garage. Determine how much of each item your family needs per month or per year. Based upon your estimated consumption rates, establish a stocking level of essential and desirable household supplies. Be sure it is adequate to see your family through at least one full year of economic disruptions.
- ◆ Acquire both over-the-counter and prescription medications for as many common medical conditions as possible, even if you are perfectly healthy right now.
- ◆ Buy personal protection equipment, such as respirators, nitrile gloves, sanitation supplies, and any items that will help you protect yourself or care for a flu patient.
- ◆ Assume that you will not leave your home to go shopping for at least one year.
- ◆ Even if you choose to shop, assume that a pandemic will make everything scarce.
- ◆ Hospitals are not prepared to care for the vast numbers of people who will become sick, so you must accept the fact that it will be completely up to you to provide medical care in your home for every family member who becomes sick or injured.
- ◆ Assume that you will not have access to a medical care facility for over one year.
- ◆ Assume that someone in your household will become very sick with the flu.
- ◆ If you have family members that are in the 18 to 40 year-old range, you really need to learn about the so-called “cytokine storm”.

[A cytokine storm is an especially lethal medical phenomenon. In brief, if the immune system of a healthy, young adult over-reacts to a strong flu virus and sends too many cytokine cells into the lungs, it will lead to rapid inflammation of the lungs and death by suffocation. The cytokine storm was the leading cause of death during the 1918 Spanish Flu pandemic and is presently the leading cause of death for victims of the H5N1 virus. On page 22 of this document you will find a link for further reading.]

DISRUPTION OF UTILITIES AND PUBLIC SERVICES

What would you do if you had plenty of food and household supplies but, after a couple of months of coping with a pandemic, your town lost its electric service? Could you run your sump pump and keep your basement dry? Could you power up your furnace and heat your home? Could you even make coffee? Now, imagine that shortly after the electricity goes out, your community is unable to provide clean water to your home. Since any given utility is dependent upon the services of one or more other utilities, if your town lost its electricity it would eventually lose its public water supply, too. This is because municipal water filtration systems and distribution pumps need electricity, and their back-up generators will eventually run out of fuel. So, if your town lost both electricity and water, how would they process raw sewage? Even if your home had an alternate source of water, such as a well or a stream, would you still be able to use your toilets if the local sanitary district could not accept your sewage? And what about garbage pick-up or natural gas? At what point would these services stop?

Over a period of time, disruptions in supply chains and staffing could make it impossible for utility companies and public services to operate normally. While your community may be fortunate enough to experience only sporadic disruptions, it may very well have to endure a complete shutdown of one or more utilities or services for an extended period of time. So, if you are not prepared for the prospect of public service and utility disruptions, you could be faced with serious challenges to your 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. Although it may seem unimaginable right now, this sort of hardship is in your future—or the future of your children. Therefore,, unless you are prepared to be completely self-sufficient for water, heat, light, sanitation, and personal safety—all at the same time for a least a year—your home could become quite unlivable and your family will suffer.

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 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, the despair of some will eventually give rise to localized 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 far-fetched, you should remind yourself of just how quickly the situation in New Orleans eroded into anarchy. Are you prepared for that kind of nightmare to become a reality in your town? Ready or not, here are some more unpleasant thoughts to help you focus on the need to become self-sufficient:

- ◆ Expect disruptions of electricity, natural gas, water, waste disposal, and sewage treatment. Some disruptions will occur simultaneously and last for many months.
- ◆ If your community can not haul away your garbage, you will have to store it at home indefinitely, 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 will be understaffed and overwhelmed. Do not count on them to help you in any way.
- ◆ If your community lacks adequate staffing for law enforcement, you may wish to arm every member of your family and establish an armed neighborhood watch.
- ◆ Before social conditions really deteriorate in your town, cover all of your first floor windows with security bars or plywood and post quarantine signs on your doors and walls. Buy the supplies now. If things begin to turn ugly (New Orleans style), establish a 24-hour armed watch and sleep in shifts.

COOKING WITHOUT YOUR KITCHEN

If you have no public utilities, and no way to prepare hot meals without the aid of modern appliances, you may have to survive on cold, ready-to-eat foods. Initially, that may not prove to be much of a problem, but unless you have invested heavily in ready-to-eat foods, you will eventually run out of things you can serve without cooking. For economic reasons, emergency food supplies are often built around large quantities of low-cost grains and legumes that can tolerate long-term storage. These are items such as beans, oatmeal, pasta, lentils, split peas, wheat, and rice—all of which must be boiled. You may eventually discover that over half of your emergency food calories are locked up in dry foods that require cooking. This cooking requirement is really not much of a problem because with a sturdy camp stove and a good supply of fuel, you can avail yourself of your dry foods and prepare hot meals every day. Fortunately, camp stove cooking is cheap and easy, so there is no reason to rely on cold food, even in a prolonged emergency. Here are some tips for cooking without modern appliances:

- ◆ Acquire at least one camp stove that burns Coleman liquid fuel, and buy a second stove that burns propane. Propane camp stoves are safe for indoor cooking, but they cost more to operate than liquid fuel stoves. Save the propane stove for use when the weather is bad or when outdoor cooking might draw unwanted attention.
- ◆ Some camp stoves are dual-fuel capable, which means they can burn both Coleman liquid fuel and regular unleaded gasoline. These stoves are inexpensive, so you might think about buying two or three, and saving one for use as a back-up.
- ◆ Measure the rate at which your stoves consume fuel, then acquire a twelve month supply for each. Plan for an average of 20 minutes of cooking time per meal. This rate of consumption will allow you to boil large kettles of grains or legumes.
- ◆ If you can not find Coleman liquid fuel, you can still store cooking fuel for several months: fill up some 5 gallon gas cans. A 10,000 BTU camp stove operating for a full hour each day will only use about ½ gallon of fuel per week.
- ◆ Although the Coleman liquid fuel is highly refined and has chemical stabilizers for long-term storage, you still need to rotate your stock to keep it fresh.
- ◆ If you become sick, your family members will have to cook for you, so while conditions are still normal, be sure to have everyone become familiar with the stoves. Show them how to setup, light, cook, clean, re-fuel, and store each stove.
- ◆ Have at least two manual can openers for all those canned goods.

WATER

For the purpose of emergency planning, the water you use on a daily basis should be categorized by the quality and quantity you actually require. For example, water for oral hygiene or drinking requires the highest quality, but the lowest quantity; water for cleaning your body or your clothes requires the lowest quality, but the highest quantity; and water for cooking falls somewhere in-between. The differences among these three applications are important to understand, because if your community can not pump clean water into your home, you will have to get it for yourself; however, only a small percentage of your water has to be good enough to drink. For example, you certainly do not need to flush toilets or wash clothes with drinking water, yet all of the water that is piped into your home is clean enough to drink. So, under normal circumstances, you actually do flush toilets and wash clothes with drinking water.

Naturally, the prospect of being without tap water is pretty horrifying for Americans. We expect to have unlimited quantities of clean water every day. Unfortunately, even minimum hydration rations for one person for one month (15 gallons) can take up a lot of space, so the advanced storage of a 12 month supply of drinking water for everyone in a family of four (730 gallons), may not be possible for everyone. With a bit of planning and a good supply of containers you can safely postpone storage of your drinking water rations until several days after a pandemic has been declared, but you will eventually need an alternate source of water for cooking and cleaning. As you investigate alternate water sources, consider the steps that will be necessary to make the water safe enough for its intended use. For example, it does not matter how dirty the water is if you only need it for flushing a toilet. Any old water will do the job. By contrast, every drop of water that you collect for drinking, oral hygiene, or medical care must be pure. To make it pure it must be processed in three distinct steps:

1. Prefilter the water with a paper coffee filter or several layers of cloth to remove as much silt as possible. This will extend the service life of your filter cartridges.
2. Add a chemical treatment to the water to kill as many organisms as possible. No filter can remove viruses, but they are easily killed with a small amount of *sodium hypochlorite*, which is ordinary laundry bleach (unscented Clorox or Purex).
3. Filter the water down to 0.2 microns to remove organisms such as *cryptosporidium* and *giardia lamblia*, which can not be killed with small amounts of bleach.

Any water that you collect from a roof, lake, sump pit, or shallow well must go through this three step process before going into your mouth or before cleaning a cut, abrasion, or open sore. Here are some more ways to address your water needs:

- ◆ Plan for at least $\frac{1}{2}$ gallon of water per person per day for basic hydration. If you want to cook grains and legumes, increase that to one full gallon per person per day. With an additional two or three gallons per person per day, you can be clean.
- ◆ As soon as a pandemic is declared, fill as many storage containers as possible with municipal tap water. Municipal tap water has already been filtered and purified, but just to be sure that your tap water will remain completely free of biological hazards for a full year, add 4 drops ($\frac{1}{8}$ teaspoon) of unscented chlorine bleach per gallon. You may find an additional 40 or 50 gallons of clean drinking water in

- your water heater and a few more gallons if you drain down your water pipes.
- ◆ Save your disposable soft drink and water bottles for future storage of drinking water. Allow them to dry and then store them in new trash bags. When the pandemic is announced, sanitize these bottles and caps by immersing them in a solution of 1 tablespoon of chlorine bleach per gallon of water for two minutes. Then, fill them with water from your tap. Add 4 drops of unscented chlorine bleach per gallon as a preservative and this water will be safe to drink for at least one year.
 - ◆ Save your plastic milk jugs, too, but do not plan to store drinking water in them. Due to the milk protein residues, you can never really get them clean enough. Instead, use them to store water for washing or flushing only. Because of the protein residues, you will need to add 8 drops ($\frac{1}{4}$ teaspoon) of unscented bleach per gallon of tap water. Milk jugs will biodegrade, so keep them out of the sunlight.
 - ◆ Water that you collect from any alternate source for washing your body or clothes should be treated with 8 drops of bleach per gallon, however, this water should still be considered potentially hazardous, even with the addition of bleach. The large volume that you require for washing makes filtration impractical, so you must not allow this water to come into contact with your face or any broken skin (remember *cryptosporidium* and *giardia lamblia*). If you need to wash your face or any broken skin, boil this water first, or use drinking water instead.
 - ◆ All cooking water that you collect from alternate sources should be filtered and purified. If it reaches a full boil during cooking, you will not have to add bleach. If you do not have a proper water filter, you can remove most of the sediments from collected water by pouring it through a few coffee filters or layers of cloth.
 - ◆ Yes, you can boil water from just about any source and make it safe for drinking in a single step, but this process uses an awful lot of fuel.
 - ◆ Consider the purchase of a high quality, portable, water filtration device, such as the Katadyn Gravidyn, for treating the water you collect. Be sure that the device you purchase is easy to use by everyone and will meet the needs of your entire household for at least one full year. (The Gravidyn produces one gallon of 0.2 micron filtered water per hour, has no moving parts, requires no power, does not have to be attended, is good for 10,000 gallons, and costs about \$160 at REI.)
 - ◆ If you do not have enough water for properly washing pots and pans, wipe your dishes with a paper towel, then sanitize them by soaking them in bleach water for two minutes. 1 tablespoon of bleach per gallon is adequate for kitchen use.
 - ◆ If your domestic water supply is interrupted, and you do not have a good alternate source, you can conserve water by using disposable cups, plates, and utensils.
 - ◆ If you have a well and a generator, you should be able to draw water at a rate of 4 or 5 gallons per minute. If you allow for a few minutes of fuel consumption each time you warm up the engine, you should be able to draw 50 gallons of water for every $\frac{1}{4}$ gallon of gasoline your generator consumes. With a fuel supply of only 15 gallons, you could operate a 5,000 watt generator long enough to pump 50 gallons of water per day, every day, for 2 full months. 90 gallons of gas would last a year.
 - ◆ An inexpensive alternative to a private well is a manual water pump for a shallow well. Although these “jerk-water” pumps can only draw from about 25 feet down, they are fairly cheap to purchase from such outfits as Northern Tools. Of course, you may need someone to help you install it and, since this type of well is not very deep, you must filter and purify the water. Apart from that, you do need shallow groundwater in your region, so this solution is not for everyone.

EMERGENCY POWER

Unless you have solar panels, you probably rely entirely upon your local power company for your home's electric service. In turn, your power company probably relies upon other power companies on a regional power grid to assist when they have generation or transmission problems. So, what will happen to your family if there is illness and absenteeism among the power plant operators and line technicians who contribute to the regional flow of electricity? What if the distribution system has broken down and repair parts are not available? Your town will probably experience a blackout. Due to the relative fragility of our continental electricity distribution grid, a power failure during a pandemic is actually quite likely, and it is one of the pandemic consequences that all of the experts predict. It may be a short-lived event that only lasts for a few weeks but it may result in a blackout last for several months. Regardless of the duration, if you can prepare for a blackout that lasts at least one full season, and if the season for which you prepare is *winter*, you should be able to ride it out just fine. Here are some measures you can take for living without electricity:

- ◆ Keep your basement dry with a battery-operated, back-up sump pump. An alternative would be a portable, 12 volt, transfer pump that can run off a car battery.
- ◆ Keep your water pipes from bursting by warming them with a catalytic propane heater. During a winter power outage, consider draining your pipes.
- ◆ Keep yourself warm during the day with multiple layers of winter clothing.
- ◆ For maximum warmth at night, pitch a tent indoors and drape a couple of blankets over the top. Then, simply add bedding and well-dressed people.
- ◆ If you still have natural gas service, you can heat part of your home with your kitchen oven. Just be sure that the space you heat is not air-tight. As a measure of safety, place a carbon monoxide detector in any room that you intend to heat.
- ◆ Conserve your heat by closing off any room that you do not need to occupy.
- ◆ Kerosene lamps, which can provide ten or twelve candlepower of illumination, are cheap to buy and cheap to operate. Have two for every room. Store enough fuel and replacement wicks for several months of nightly use. One gallon of kerosene is enough to fuel a 12 candlepower lantern for 100 hours.
- ◆ Candles can supplement your kerosene lamps, but unless they have stable bases and glass chimneys, they should only be considered as a back-up to a back-up.
- ◆ Propane heaters, lamps, and stoves can be used safely indoors, but they consume oxygen and release a small quantity of carbon monoxide, so they should not be used in air-tight spaces. Coleman liquid fuel lamps and stoves are far more economical to operate than their propane counterparts, but they emit relatively large quantities of carbon monoxide, so they must never be used indoors.
- ◆ A 5,000 watt generator will burn one gallon of gasoline per hour, so fuel storage for more than a few days of continuous use is not practical. Apart from that, you should bear in mind that the noise from a generator is rather conspicuous and will alert desperate people to the fact that you still have resources.
- ◆ Do not leave your generator unattended. If you must leave it for a moment, chain it to something solid to prevent theft. Better still, bolt it to the floor of your garage or basement and furnish it with a metal pipe exhaust system.
- ◆ Purchase a couple of siphons, so you can use the gasoline in your automobiles to fuel your generator. [Check for factory-installed anti-siphoning devices.]

PERSONAL PROTECTION EQUIPMENT

H5N1 does not yet possess the characteristics necessary for sustained transmission from human to human, but when it does you will be able to catch this virus as easily as you catch a cold—and it will happen in the exact same manner. Like a cold, it will enter your body through your mouth, your nose, or your eyes; yet, just like a cold, there are ways to avoid it. You have probably heard this before, but the most common means of getting the flu or a cold is hand-to-face. That is, from your own hand to your own face. If you come into contact with something that is contaminated and if you then touch your nose, your mouth, or your eyes, you can introduce that very contaminant directly into your body. You may pick it up from “who-knows-where” and it may go straight from your hand to your face and make you sick. That is why frequent hand washing is so important. Of course, there will be times when hand washing is not enough. Sometimes you will need personal protection equipment, such as disposable gloves and particulate filtering respirators.

If you ever have to leave your home for anything, do wear disposable gloves. In fact, you really should put on a pair of disposable gloves before you come into contact with any object that has the remotest possibility of being contaminated. This includes such everyday things as shopping carts, doorknobs, gas pumps, mail, money, groceries, newspapers, pets, and people—in fact, any object that you have not personally quarantined or sanitized. In addition to keeping it off your hands, you will need to prevent the accidental inhalation of the virus. Since viruses can be transmitted from person to person through the aerosol cocktail of saliva and mucus that people eject with coughs and sneezes, it is essential that you filter out any contaminated airborne droplets before they get into your lungs. For that, you need a particulate filtering respirator.

A particulate filtering respirator is simply a passive air filter that you wear over your nose and mouth. The most common one is the disposable N-95, which is available for about 50¢. Although this class of respirator is widely recommended by agencies such as the CDC, the WHO, and the Red Cross, it is not capable of providing adequate protection against the flu. The reasons are as follows: most N-95 disposable respirators have a “one size fits all” design, so the perimeter fit is often quite poor; the cheapest N-95 respirators lack an exhalation valve, so the perimeter fit can be disturbed by heavy breathing; the filter degrades from the water vapor we exhale; and, the designation of “95” means that only 95% of the particles that are 0.3 microns or larger will actually be filtered out. That allows 5% of the potentially infected particles to pass through the filter and enter your mouth or nose. Given these flaws, you should not rely upon N-95s for protection. Instead, you need N-100 disposable and P-100 reusable respirators. Use the disposable N-100s for limited service when the transmission risk is low, and use the P-100 reusables for extended service in close quarters.

Although nothing short of a space suit that can give you 100% protection against the flu, respirators and gloves will protect you in most situations. However, if you must care for someone who has the flu, you will also need a face shield or goggles to protect your eyes from contact with any particles that are ejected by coughs and sneezes. For additional protection, you may wish to consider investing in disposable “haz-mat” clothing, such as slip-on shoe covers and hooded Tyvek jump-suits.

THE ABSOLUTE NECESSITY OF THOROUGH PREPARATION

According to the 2005 United States Census, approximately 12.5% of the American population is impoverished. That works out to roughly 37,500,000 people who live in households with annual incomes of less than \$20,000 for a family of four. At this income level, these people are unable to meet all of their own needs for food, shelter, clothing, and medicine; therefore, many of them rely upon government assistance programs and private charities in order to survive. Millions of these poor families live in run-down buildings in bad neighborhoods. They live there because that is all they can afford. As you might expect, the poor who are gainfully employed tend to perform menial labor in low-paying industries, such as lodging, agriculture, food service, janitorial, entertainment, and transportation. Just think of all the people in this country who work in thankless, dead-end jobs as busboys, dish washers, fry cooks, custodians, chamber maids, ticket takers, ushers, car washers, gardeners, field hands, parking lot attendants, et cetera. These people do not have the disposable income for even the most rudimentary of pandemic preparations. They live from paycheck to paycheck, buying only what they can for daily subsistence. They could not possibly “shelter in place” for more than a week or two, because they simply do not have the resources. These people will be among the earliest and hardest hit.

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. People who are not laid off, but are 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 were 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 homes 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 agencies, and every level of government.

Whether or not they are actually sick with the flu, it is likely that several million poor people will be flat broke and starving within a week, so they are sure to pursue every resource possible to obtain free food. They are going to show up at medical facilities, police stations, government offices, churches, and schools in search of assistance. When they discover that nobody is able 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-income housing will be hell on Earth.

Although it might seem reasonable to believe that people at higher income levels will fare substantially better than the poor, that is not necessarily going to be the case. In fact, this same panic-despair scenario will eventually unfold in every neighborhood in the country, no matter what the socioeconomic status: if you are laid off you will re-

ceive no income, but if you go to work you are likely to become sick. As the pandemic progresses and the economy worsens, almost every industry will begin layoffs, and most 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 real issue here. The real issue is simply the risk associated with exposure to people who are sick. That is all. So, unless you already possess absolutely everything you need to be completely self-sufficient within your own home for quite a long period of time, it will not be possible to “shelter in place” effectively.

As I mentioned earlier, it is probably safe to assume that most of the middle and upper income families can get by for a couple of weeks with the supply of food, toiletries, and medicine they have in their cupboards, but a two week supply is not going to be enough. Sooner or later, most of the families in this country will be exposed to the flu simply because they are not capable of enduring an extended period of isolation. At some point, their failure to prepare will drive them from their homes. It is only a matter of time. Remember: if you can not shelter in place successfully for the duration of the pandemic, you will eventually be compelled to leave your home to get something from the outside world. If you have to get something from the outside world, you are sure to expose yourself to people who are sick. If you expose yourself to people who are sick, your chances of survival are no better than those of an unemployed busboy.

THE ABSOLUTE NECESSITY OF AN EMERGENCY UTILITY PLAN

It is not possible to predict disruptions of public utilities, except to say that when the pandemic does arrive, utility disruptions will follow; however, the extent of the disruptions could be quite variable. The pandemic might only cause minor inconveniences, such as temporary rationing of food and fuel, or it might cause a complete collapse of the global economy. No matter how uncertain the future, an emergency utility plan has to make some fundamental assumptions about the sorts of things that will be disrupted and the length of time they will remain unavailable to you. For the sake of your emergency utility plan, the following *minimum* assumptions should be made:

- ◆ 33% of the population will get the flu and 5% of the flu patients will die.
- ◆ Absenteeism in the work place will eventually reach 50%.
- ◆ The pandemic will last for a cumulative period of one year.
- ◆ There will be three distinct waves, each lasting two months.
- ◆ Each wave will disrupt gasoline production and distribution for two months.
- ◆ Each wave will disrupt the power grid for two months.
- ◆ Each wave will disrupt the public water supply for two months.
- ◆ Each wave will disrupt garbage collection and recycling for two months.
- ◆ Each wave will disrupt sewage treatment for two months.
- ◆ The pandemic will disrupt natural gas service for six straight months.

[The problem with natural gas is that 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.]

THE NEXT TWELVE MONTHS

After you have acquired everything you could possibly need to achieve complete and total independence and self-sufficiency within your own home for at least twelve months, you should really start thinking about the next twelve months—and beyond that. If the economic disruptions really do 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. This is partly because our country's supply chains tend to operate on "just in time" inventory delivery systems. In addition, nearly every supply chain in the United States either distributes foreign products or relies upon some foreign-made equipment to remain operational. To make matters worse, a lot of our goods come from countries in Asia and South America where the standards of living are much lower than ours and where the population densities are much higher. Compared to the U.S. and other affluent countries, the high population densities of the poorer nations, in combination with their lower sanitation and health care standards, will surely result in substantially higher rates of illness, absenteeism, and mortality. Consequently, we should expect product shortages and inflated prices for many months after the pandemic has passed.

Apart from disruptions, shortages, and inflation, the discussions on the preceding pages have made little mention of how to cope with any personal financial crisis that a pandemic might bring to your household. Informed speculation on such an issue really has to be case-specific, so it has been avoided. After all, people in some career fields, such as law enforcement and health care, are sure to remain in high demand indefinitely, while others may find themselves with fewer work hours or with no work at all. Certainly, when people start practicing social distancing there will be a sharp reduction in revenue for such huge industries as travel, entertainment, and food service.

Indeed, the Congressional Budget Office predicts that a severe pandemic will bring about layoffs and bankruptcies for just about any non-essential business that happens to draw people into close contact with one another. They also predict that thousands of households will emerge from the next pandemic with lower incomes or no income at all. You see, in addition to the risk of layoffs or loss of employment, the possibility exists that the primary bread winner in your household will not survive the flu. That is all the more reason to stock up on as much as you can as soon as you can. Do it while the goods you need are still available and affordable. Do it while you still have time to plan for your family's survival.

Ultimately, there is just one indisputable, scientific prediction that you need to remember: it is not a matter of *if* the next pandemic will occur; it is simply a matter of *when*. So, whether or not you have already begun to prepare, you would be doing your family a great service if you were to read the cautionary statements that have been provided for you on pages 20 and 21. After that, visit some of the recommended sites that are listed on page 22. Discover for yourself what the economists, epidemiologists, and government officials are saying about the impact that the pandemic will have on civilization. If only half of their predictions come true, the emerging pandemic will bring about an unpleasant "end-of-the-world-as-we-know-it" event that will not only threaten your life for several months, but will have lingering effects for years to come.

ADDITIONAL CONSIDERATIONS FOR THE SKEPTIC IN YOU

Many government agencies have expressed concerns over the investment that is required for adequate pandemic preparation. They do not believe they can afford to help everyone prepare. Likewise, there are individuals who have expressed that they, personally, can not afford to prepare either. In fact, some folks simply view pandemic planning as a big outlay of cash without any tangible benefits. If you count yourself among them, you need to understand that becoming self-sufficient for a year or two is a lot like buying insurance, except that this insurance policy will refund all of your premiums. Unlike ordinary insurance, which gives you absolutely nothing back unless you have a claim (and then merely replaces what you already had), this insurance provides you with a large stock of brand-new goods that you will actually possess and use. Besides, if you do not need it for H5N1, you will eventually need it for another flu strain, or for a natural disaster, or for some very bad event that is man-made. The world is not getting any safer, so you can not afford *not* to buy this insurance.

It is apparent that governments and businesses around the world finally understand the risks associated with this pandemic; however, they are not moving very quickly to prepare. There seems to be a lot of organization/communication work going on, but nothing much in the way of stockpiling emergency supplies. Unfortunately, most of the pandemic preparation efforts of governments and businesses are not meant to take care of the general population. Instead, they are meant to preserve the continuity of their own particular institutions. Likewise, your local government may already be fully aware of the potential impact that a pandemic would have on your community, but the welfare of your household will not be very high on their list of priorities. In fact, it is far more likely that your government officials will struggle just to stay alive.

There appears to be a consensus among economists, medical professionals, and government officials that neither the United States government nor private business can ever prepare adequately for this event. Indeed, the Secretary of the Department of Health and Human Services has made public statements to this effect, warning us that each community will have to take care of itself. So, unless you hold a job that contributes directly to the pandemic relief efforts (civil, medical, military, or utility) it would be safe to assume that nobody has stockpiled any food or water or medicine for you. Even if you do hold one the more “mission critical” jobs, and even if your employer can furnish some basic supplies while you are at work, nobody will be taking care of your home or your family. There will simply be too many sick, needy, unprepared people for any large-scale relief effort to be successful. Now, if you are willing to accept this gloomy forecast as an eventuality, you can appreciate how important it is for you to get your family ready to become very self-sufficient for a very long time.

- ◆ While there is still time to prepare, conduct some on-line research and learn for yourself about the various pandemic predictions. Since the case fatality rate is presently over 60%, some epidemiologists and virologists envision that an absolute worst-case scenario will unfold, killing tens of millions of people in the United States alone, followed by a global economic depression that will last for years.
- ◆ You can probably ignore most of the advice that is provided by the government at: www.pandemicflu.gov. Although they do recommend that you have enough food

and water to last you at least two weeks, they also recommend that you prepare for twelve weeks of school closures (see page 19 for a discussion of the CDC school closure plan). If you only have supplies for two weeks, it will not be possible to stay home for twelve weeks. After two weeks has passed, you will have to leave your home for something, and then you will be risking exposure to the virus.

- ◆ Be sure to join at least one of the on-line pandemic flu forums. (Several of the best are listed on page 22.) Although each forum has its own distinct “personality”, they can all provide immediate answers to your pandemic planning questions and they will all share information that is not covered by traditional news sources.
- ◆ Some informed individuals believe that over 1 billion people could die from the next pandemic, yet others believe that only few hundred thousand will die, mostly in developing countries. Regardless of the body count, it is likely that at least 100 million people in the United States will become very, very sick. So, you need to understand the means of flu transmission and the steps you can take to protect yourself and your family. Additionally, you need to know how to care for someone who has the flu. For a very sobering and disturbing discussion on how to care for a flu patient, read the insightful articles at <http://www.birdflumanual.com/>.
- ◆ You should anticipate that absenteeism and social distancing, as well as actual illness, will combine to scare people away from contact with each other for an indefinite period of time. Since there will be no vaccine for several months, this may hold true for virtually every profession on Earth, from janitor to CEO. Certainly, it will apply to the two groups of people we rely upon the most for our food, medicine, and household supplies: the truck drivers and the sales clerks. Realistically, low staffing levels will cause massive problems everywhere on Earth.
- ◆ Keep your car’s gas tank as full as possible at all times. Remember: you will not be able to buy gasoline if there are no drivers for the tank trucks or power for the gas pumps or clerks to staff the gas stations.
- ◆ Be sure to have plenty of cash on hand for making small purchases. ATMs, credit card readers, and banks need electricity, too.
- ◆ Most families can get by for only a week or two before they run out of something they really need, like milk or toilet paper, so you should expect that the vast majority of people in your community will be woefully unprepared to endure even one month of real hardship, let alone a full year. When the stores close down, people will have to beg, borrow, or steal in order to survive. For this reason, you should figure out what you will say or do when desperate friends, neighbors, strangers, and looters come to your home in search of food, water, and sundries.
- ◆ Expect some civil disturbances to occur in every town. These disturbances could spill into your neighborhood, so you may wish to arm each member of your family. For an added measure of security, consider banding together with a few other families to create an armed enclave. Look around your neighborhood to see if there are like-minded individuals with whom you can form an alliance.
- ◆ Under normal circumstances, the mere presence of a firearm is enough to dissuade all but the most desperate of criminals. During a pandemic, however, despair may prevail even among the most rational of citizens. For this possibility, you should be prepared to use a firearm to stop an invasion of your home.
- ◆ Finally, stay informed during the crisis by listening to your battery-powered radio. If social conditions begin to deteriorate around you, take steps to secure your home, but be ready to leave town with only a few hours’ notice.

THE FEDERAL GOVERNMENT'S PLAN FOR YOUR FAMILY

In February of 2007, the Centers for Disease Control and Prevention released a 108 page document called *Interim Pre-pandemic Planning Guidance: Community Strategy for Pandemic Influenza Mitigation in the United States—Early, Targeted, Limited Use of Nonpharmaceutical Interventions*. In this document, the CDC proposes several practical steps which have the potential to reduce the impact of a pandemic on the economy of the U.S.A. One of the CDC's most important recommendations is to close all schools, from kindergarten through college, for a period of twelve weeks. The intent of this action is to implement a social distancing plan that will reduce the rate of flu transmission and thereby prevent the collapse of the electric grid, fuel distribution, food production, public water, commodity supply chains, banking, law enforcement, medical care, the stock market, and society as we know it. In tandem with planned school closings, the CDC has proposed a variety of "social distancing" ideas.

[Social distancing can take many forms, including the modification of social greetings to exclude handshaking, hugging, and kissing. It could also extend to the temporary suspension of any activity that brings large groups of people together, such as sporting events, carnivals, plays, concerts, et cetera.]

Unfortunately, the CDC has failed to suggest how to endure a twelve week period of social distancing and school closures. There seems to be a certain degree of disconnect here, because their recommendation for stocking up on food and water remains at two weeks. So, how do you keep your kids safely at home for twelve weeks if you only have enough food for the first two? Clearly, you need more. Yet, if you go shopping, you might be exposed to the flu. To make matters worse, the CDC plan to close schools for twelve weeks merely addresses mitigation for the first wave of the pandemic. It does not include any recommendations for coping with subsequent waves. Another flaw in the CDC's mitigation plan is the effect it might have on the virus. For example, if the first wave is protracted over a period of ten or twelve weeks, rather than be permitted to run its normal course over a span of only four to eight weeks, the virus will have a much larger window of opportunity for evolving, mutating, and/or reassorting into a form that can reinfect people who had previously survived it. The net effect of this could be the inadvertent generation of a second pandemic-causing virus and the emergence of a second global pandemic, even before the first one has run its course.

Certainly, this new mitigation plan offers us more hope for survival than anything the CDC has offered previously, but it provides no direction for stocking your shelves or staying warm. You have to figure that out by yourself. It does, however, sanction an action that we already knew was necessary: to get your kids home and keep them home. For those of you who are intent on seeing your children survive this emerging pandemic, twelve weeks away from school will not be enough. What you really need is to acquire the resources necessary to keep your entire family completely out of harm's way until all danger has passed. So, start with a year's worth of supplies, increase it to two years when you can, and then evaluate your situation to be sure that you really will be completely self-sufficient for as long as it takes. After all, if the case fatality rate of this pandemic is much more than 5%, the survivors may have to live in rustic, 19th century conditions indefinitely.

NOTABLE CAUTIONARY STATEMENTS (abridged)

Richard L. Cañas, Director, New Jersey Office of Homeland Security and Preparedness:

You're going to be staying home for one year. There will be no school. There will be no work. All we'll be doing is trying to keep ourselves alive.

Michael Leavitt, Secretary, United States Department of Health and Human Services:

The threat is both real and formidable. We could be battling 5,000 different fronts at the same moment. We could have a period of over a year as we see the waves of the pandemic come and go. The lethal avian flu that is spreading rapidly around the world could soon infect wild birds and domesticated flocks in the United States. No one knows when the virus will pose a threat to people. But, it's just a matter of time. It may be very soon, when wild birds and, possibly, poultry flocks contract the disease. Any community that fails to prepare, with the expectation that the federal government will come to the rescue, will be tragically wrong.

Dr. Michael Osterholm, Director, Center for Infectious Disease Research and Policy (CIDRAP), University of Minnesota:

The same thing's going to happen here in every city, town, and village in this country as well. We're all going to need things at the same time, and there won't be any products. It's not a theory of a worst-case scenario. It is a sure thing. But, it is not something that occurs over a very short period of time and then we go into the recovery phase. A pandemic will literally unfold, like a slow-moving tsunami, over 12 to 18 months. When this situation unfolds, we will shut down global markets overnight. There will not be movement of goods; there will not be movement of people. We can predict now 12 to 18 months of stress of watching loved ones die, of wondering if you are going to have food on the table the next day. Those are all things that are going to mean that we are going to have to plan—unlike any other crisis that we have had in literally the last 80 some years in this country. Beyond research and development, we need a public health approach that includes far more than drafting of general plans, as several countries and states have done. We need a detailed operational blueprint of the best way to get through 12 to 24 months of a pandemic.

Eric Hargan, Deputy Secretary, United States Department of Health and Human Services:

Never before have we been as overdue but under-prepared for a recurring natural disaster as we are now for a pandemic. Some people may think that our preparation is a waste and that we are being alarmist. In reply, I can only say that these people are right—until they're wrong. And the consequences of them being wrong are greater than the consequences of us being wrong.

Dr. Margaret Chan, Director General, The World Health Organization:

The whole world has lived under the imminent threat of an influenza pandemic for more than three years. These years of experience have taught us just how tenacious this H5N1 virus is in birds. Countries have made heroic efforts, yet the virus stays put or comes back again and again. Almost no country with large outbreaks in commercial or backyard flocks has successfully eliminated this virus from its territory. As long as the virus continues to circulate in birds, the threat of a pandemic will persist. Influenza virus is very tricky. It changes every day. The virus, as we are talking now, is mutating at a pace that we cannot keep up with. We also know that this virus has lost none of its virulence. For 2006, the case fatality rate was 70%.

Dr. David Nabarro, Senior System Coordinator for Avian and Human Influenza, Senior Policy Advisor to the Director General of the United Nations:

The reason why we're particularly at risk is our world population is so massively mobile at the moment. How long do we have before the situation is an established pandemic? The modelers are telling us that it may be as few as 21 days from the initial appearance of a virus to it being a full-blown pandemic. That particular part of modeling is, again, hedged with uncertainties. But having that lower end 21-day value is quite useful, because it concentrates the mind a bit. The pandemic will kill when it comes. But more seriously perhaps, it will do massive economic and social damage, because our systems of trade, finance, and governance are interconnected and will not survive the impact of a pandemic on workforces. We need to be able to deal with both the human consequences and the economic, social, and governance consequences if we're going to survive it. And believe me, the pandemic could start tomorrow. By the time the pandemic starts, preparation will be too late. So, you should be doing this now, and that's my message.

Dr. Robert G. Webster, Chairman of Virology, Saint Jude's Children's Research Hospital:

For 40 years I've been saying that we're bound to have another worldwide influenza event. I have to tell you, this one is the closest we've gotten to that. I hope to God it doesn't occur, because this is the worst influenza I've ever seen in terms of its killing capacity in animals. You put it into chickens this afternoon, they'll all be dead tomorrow. There is no question that there will be another influenza pandemic someday. We simply don't know when it will occur or whether it will be caused by the H5N1 avian influenza virus. But, given the number of cases of H5N1 influenza that have occurred in humans to date and the rate of death of more than 50%, it would be prudent to develop robust plans for dealing with such a pandemic. Each household will be dependent on itself for water, for food, and so on. I, personally, believe it will happen and make personal preparations. I might be painting a black picture but we have to think in those terms. H5N1 is the most dangerous, the most highly lethal virus that I have ever encountered.

RECOMMENDED ON-LINE RESOURCES

http://web.mac.com/monotreme1/iWeb/Pandemic%20Influenza%20Information/PFI_Main.html This is the main page for *Pandemic Flu Information*. It contains blogs, links, news, and pandemic planning documents. *Becoming Self-Sufficient* is posted here.

<http://www.birdflumanual.com> This is the site of Dr. Grattan Woodson. It contains essential patient care information.

<http://www.curevents.com/vb/index.php> This is the *CurEvents* forum. This site provides flu news, pandemic planning advice, and on-line discussions with individuals who are preparing for the pandemic.

<http://www.cytokinestorm.com> This site provides an in-depth, scientific discussion of the “cytokine storm”, mentioned above on page 6.

<http://www.flulab.com/index.php?f=1> This site provides H5N1 news reports.

<http://www.flutrackers.com/forum/index.php> This is the *FluTrackers* forum. This site provides flu news, pandemic planning advice, and on-line discussions with individuals who are preparing for the pandemic.

<http://www.newfluwiki2.com> This is the *Flu Wiki* forum. This site provides flu news, pandemic planning advice, and on-line discussions with individuals who are preparing for the pandemic.

<http://www.pandemicflu.gov> This is the official flu information site for the United States Department of Health and Human Service (HHS) and the Centers for Disease Control and Prevention in Atlanta (CDC).

<http://www.pandemicflu.gov/plan/community/mitigation.html> This is the link for the CDC pandemic mitigation plan, mentioned above on page 18.

<http://www.pandemicreferenceguides.com> This site contains an extensive anthology of pandemic planning documents.

<http://www.PFIforum.com> This is the *Pandemic Flu Information* forum, the home site of “Dr Dave”. This site provides flu news, pandemic planning advice, and on-line discussions with individuals who are preparing for the pandemic.

<http://www.planforpandemic.com> This is the *Plan for Pandemic* forum. This site provides flu news, pandemic planning advice, and on-line discussions with individuals who are preparing for the pandemic.

<http://www.recombinomics.com> This is the site of Dr. Henry Niman. It contains scientific tracking of the evolution and global distribution of the H5N1 virus.

http://www.who.int/csr/disease/avian_influenza/en/index.html This is the official site for pandemic flu information from the World Health Organization.