

Good Home Treatment of Influenza



A practical guide to home care of mild to severely ill patients that relies on a simple common sense approach

By Grattan Woodson, MD, FACP
Author of The Bird Flu Preparedness Planner and the Bird Flu Manual

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Suggested reference:

Grattan Woodson, MD, FACP

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Grattan Woodson, MD, FACP

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Grattan Woodson, MD, FACP

2801 North Decatur Rd., Suite 375

Decatur, GA USA 30033

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The Great Bird Flu Pandemic

It is in the nature of all influenza pandemics to cause widespread illness and death. As during seasonal flu, the vast majority of those sick with pandemic flu will be treated at home by their family members and friends. This guide was written for people taking care of mild to severely ill influenza patients in their home who have no formal medical training.

A pandemic will last between 12 to 18-months and over that time about half the people on earth will become sick. Most will be mild to moderately ill, but some will be very sick. This guide will help you take care of these people at home using simple methods and does not rely on prescription drugs, medical equipment, or medical training.

At times during a severe pandemic, hospitals could become full of sick and dying patients, running out of space for new patients. Access to doctors may become limited. Medical supplies and drugs could be in short supply. If these things happen, people like you with no prior formal medical training may find yourself caring for terribly ill loved ones and friends who under normal circumstances would be treated by the doctor in the hospital. Home care, while not up to the standards of hospital care, can still be very effective. The simple methods found in this guide are those that have the power to keep patients from dying from the common preventable causes of death from influenza such as dehydration.



What is “good home care” for flu?

Good home care is nine parts common sense and one part simple medical practice. Taking care of someone with flu will be a familiar task for those who have nursed family members back to health in the past as it relies on simple common treatments and techniques.

The Flu Treatment Kit

Providing good care to family members and friends sick with influenza is a task that will be easier with a good supply of select over-the-counter medications, some medical equipment, and a few items from the grocery or hardware store. These items form the basis of the Flu Treatment Kit (FTK).

The Flu Treatment Kit items for one person

Grocery store items

- Table salt: 1 lb (for making Oral Rehydration Solution, gargle and nasal wash)
- Table sugar: 10 lbs (for making Oral Rehydration Solution)
- Baking soda: 6 oz (for making Oral Rehydration Solution and nasal wash)
- Household bleach, unscented 2 gal (for purifying water and cleaning contaminated items)

- Caffeine containing tea, bags or dry loose: 1 lb (for treatment of respiratory symptoms)
- Two 8 oz plastic baby bottles with rubber nipples¹ (for administering Oral Rehydration Solution to severely ill)
- Two 16 oz plastic squeeze bottles with swivel nozzle s(for administering Oral Rehydration Solution to the ill)
- Two Kitchen measuring cups with 500 cc (two cup) capacity (for measuring lots of things)
- One set of kitchen measuring spoons 1/8 tsp up to 1 tbsp (for making oral solutions and dosing)
- Fifty Soda Straws (for administering fluids easier)
- One composition-style notebook (for keeping a medical record on the patient)
- Teakettle² (for steam therapy)

FTK Items found at the drug store

- Petroleum jelly 4oz³ (for lubrication of tubes, suppositories, and skin treatment and protection)
- Cocoa butter, pure 2 oz⁴ (for making suppositories and skin treatment and protection)
- An accurate bathroom scale (for weighing)
- Two Electronic thermometers⁵ (to measure temperature)
- Automatic blood pressure monitor (to measure blood pressure)
- Humidifier (for increasing the relative humidity of the air breathed by the patient)
- Pill cutter (to make it easier to reduce the dose of medications if desired)
- 1 box of Latex gloves # 100, (to help reduce contamination and spread of the virus and bacteria)

Non-Prescription drugs

- Ibuprofen 200mg (Motrin®) # 100 tablets (for treatment of flu symptoms)
- Diphenhydramine (Benadryl®) 25mg capsules # 100 (for treatment of flu symptoms)

- Robitussin DM Cough Syrup® or its generic equivalent (12 oz) (for treatment of cough)
- Acetaminophen 500mg (Tylenol®) # 100 tablets (for treatment of flu symptoms)
- Loperamide 2mg # 100 tables (for diarrhea and abdominal cramps)
- Meclizine 25mg # 100 tablets (for nausea and vomiting)

FTK Items found at the hardware store

- N-95 masks #20 (2boxes) (to reduce diseases spread to and from the patient)
- 50 gallon sturdy plastic garbage container with top (used to store clean water for drinking)

Abbreviations: lb = pound, oz = ounce, gal = gallon, # = number, cc = cubic centimeters, tsp = teaspoon, tbsp = tablespoon, mg = milligrams, hrs = hours

Useful home care medical procedures



Home caregivers will be better able to evaluate and treat their patients by learning a few simple medical procedures. This includes taking the patient's vital signs: pulse, blood pressure, temperature, weight, and respiratory rate. Blood pressure is easily measured using an automated blood pressure monitor. Follow the instructions that come with the device to learn how to use it. The pulse is provided on the blood pressure monitor readout. It can be measured directly by feeling the pulse at the wrist and counting how many beats pass in 15 seconds and multiplying by 4. Temperature is measured directly with a digital thermometer. The patient's weight is measured on a scale in the standard manner and is best taken with the patient lightly dressed without shoes and around the same each time each day. Watching for and counting the breaths taken over a 15 second period and multiplying the count by 4 provides the patient's respiratory rate. "Practice makes perfect" applies to learning and perfecting these skills.

How flu is passed person-to-person

Don't worry about contacting the flu because it will contact you. Almost everyone is vulnerable to a new flu strain. There is nothing unusual about this; influenza pandemics are a regularly occurring event with one happening on average 3 times each century. Humankind is well prepared to suffer these pandemics and bounce back as we have many times in the past. Pandemic influenza is so infectious; it is quite natural for the majority of the population to contract the virus before it is brought under control by our body's immune systems. About half the people who contract the virus will have typical flu symptoms, and the other half will have very few, if any, symptoms. So, while everyone is susceptible to a new strain, for reasons that we do not understand at present, only half the people exposed get sick.

Another reason pandemic flu is passed so easily from person to person is that people infected with the virus are symptom-free for a day or two after they begin spreading the virus. Once symptoms begin, adults shed virus for about five days, but children and those with impaired immune systems can do so for up to two weeks.

The most common way to catch the flu is breathing air containing the virus. Coughing or sneezing is how the virus gets into the air. Flu also can be passed when someone touches someone or something that has living virus on it. In this case, the illness usually gains access to the body from the hand by mouth, entering through the gut. Under warm and humid conditions, the influenza virus can remain infectious on surfaces like counter tops or doorknobs for a couple of days. During the winter, it can remain infectious in cold fresh water for up to a month. If you can avoid being around people sick with flu you may delay getting ill. However, if you are needed to provide care for a sick family member or friend with the virus, this strategy is not practical. Ultimately, most people are likely to be exposed to the virus. It's just a matter of time.

Wearing latex gloves and an N-95 face mask when caring for the ill and changing your clothes, mask, gloves, and shoes when you leave a sick person's area is a way to protect parts of the house where healthy people live. In truth, pandemic influenza is so infectious anyone taking care of sick



folks in their homes will be exposed repeatedly to the virus no matter what measures they take. Activities like helping the patient to the bathroom, changing bed linen, and washing soiled clothes, or simply breathing the air in the vicinity of the sick leads to exposure. Since most people will have one or more sick family members or friends to care for during the pandemic, it is unlikely to avoid being exposed.

Coughing and hand washing etiquette

Two simple but effective suggestions for reducing spread of the virus includes covering your nose and mouth with a tissue or handkerchief when coughing or blowing your nose and washing your hands after having any contact with a sick person. Coughing or sneezing into your hands is not recommended because then you are liable to spread the virus to anything you touch with them. Instead, if a handkerchief is unavailable, cough or sneeze into the inside of your elbow or the sleeve of your upper arm. Use soap, water, and a face cloth to wash your hands or you can use the new waterless alcohol gel.



The virtue of cleanliness

To help reduce the presence of virus within the home, keep sick people clean and dry. The sick rooms, bed clothing and bathrooms need to be maintained in good condition. Ventilation of these areas is important, and if possible, natural light will improve the atmosphere. Soiled garments and bedclothes need to be washed and dried, a task likely to be challenging if there is an interruption of electrical and water service. It will be important to wash these soiled items in hot water using soap and chlorine bleach if possible. Drying these items in the sun takes advantage of the powerful antiseptic effect of ultraviolet light. A good clothesline will be an essential item to have on hand.

Hard surfaces should be wiped clean using soap and water, and then sprayed with 1:10 bleach to water solution and wiped down a second time. Allow the bleach solution to stand on the surface for 30 seconds before removing it to help ensure that all the contagion is eliminated. This technique will effectively remove all trace of infectious viral particles and bacteria from surfaces that come into contact with body fluids, vomit, and excrement.

Signs and Symptoms of Bird Flu

Is it a bad cold or bird flu?

There are several ways to tell the difference between the flu and less severe illnesses. First of all, unless there are other cases of flu around the area, your illness is probably not flu. Colds, bronchitis, sinusitis, ear infections, and sore throat can lay you low but are less severe. Flu is a really severe illness compared with these more common conditions. So, the severity of illness is an important clue that the patient indeed has the flu. Healthy people sick with pandemic flu will be so ill and weak they will have a hard time getting up out of bed without help.

The flu usually begins in the nose with sneezing and a runny nose. A sore throat, fever, and muscle aches and pains will follow. Over the next day or two, the virus will move into the lung causing cough, more fever, headache, and general weakness. If the virus gains access to the body through the gut, nausea, vomiting, abdominal cramping, and diarrhea are likely.

Principal symptoms of influenza

Fever



Everyone with flu will have a fever, which is one of the ways our bodies fight infections. Virus and bacteria don't grow as well when our body temperatures are higher than normal, and our body's immune system is more active when we have a fever. So, some fever is good for fighting infections. On the other hand, too much can cause damage and accelerate dehydration. The "best" temperature for balancing the benefits vs. the deficits is between 100.5°F and 101°F taken orally. If taken rectally, increase the range by ½ degree

Cough

Almost every patient with influenza develops a cough. A wet cough is one that produces phlegm or mucus while a dry one does not. Coughing serves several useful purposes. The most important is to help clear the breathing passageways of collections of mucus or other debris that accumulate under conditions of health and



disease. In this case, cough is helpful. On the other hand, when the cough is not due to mucus but instead caused by irritation on the delicate tissue lining the breathing passageways, then coughing can cause damage serving no useful purpose. The vigorous and intense contraction of the back, abdominal, and rib muscles occurring repeatedly during coughing can bruise or tear them. This leads to pain when taking a breath or when these areas are pressed with the fingers. Since an excessive dry cough can be harmful, it is the one we want to suppress. On the other hand, our goal is to encourage a wet cough to help the body rid itself of mucus and debris.

In patients with infections of the ears, nose, throat, or sinuses, cough can occur when mucus from these irritated tissues finds its way down into the bronchial passageways. Cough from this cause is best treated with an antihistamine and decongestant rather than a cough suppressant.⁶

The dry cough is the one we want to suppress, and the wet cough is the one we want to encourage.

Shortness of breath

When a person is *short of breath*, he is having a hard time getting a satisfying breath. He feels like he is not getting enough air. Sometimes this symptom is due an asthma attack or when the air passages go into a spasm of tightening. When this happens, the patient wheezes when they inhale and exhale breath. The higher the pitch of the wheeze, the more constricted the breathing tubes.

With some other causes of shortness of breath, the breathing passages are wide open, and the problem is deep in the lung being due to a buildup of fluid or pus. These are serious complications of flu. So, shortness of breath developing in a patient with flu should be evaluated by a doctor or at a hospital as soon as possible.

Pneumonia usually causes the patient to have a wet cough with lots of mucus. The mucus can be clear or colored, and can be thick or thin. Since those who develop pneumonia during the pandemic are at high risk of dying, if at all possible, they need professional medical treatment.

Nausea, vomiting, and diarrhea

Vomiting and diarrhea occur when the virus affects the stomach or intestine. These flu signs cause the patient to become dehydrated quickly especially in the presence of fever. When the intestine is infected and food is eaten, it can't be digested and this leads to a worsening of the diarrhea and stomach cramps.

Signs or symptoms of serious complications of Bird Flu		
Symptom or Sign	Likely Assessment	Remedy
Shortness of breath	Pneumonia	Push fluids, seek medical help
Cyanosis (skin turns blue) ⁷	The lung is unable to bring oxygen to the blood. This is a very bad sign and is often associated with a rapid death.	Keep the patient as comfortable as possible, seek medical help
Bleeding from mouth, coughing up blood, passing red blood per rectum. Severe bruising.	A severe blood clotting disorder is present and is a very bad sign. Death is likely.	Keep the patient as comfortable as possible, seek medical help

Supportive treatment of influenza

Keeping good records

It will be useful to keep well-organized notes on the patients you are caring for at home. Having a standard approach is a good way to be sure that you have not overlooked anything of importance. Each day, write down the patient's vital signs. Include their temperature, pulse rate, breathing rate, blood pressure, and weight if they can stand. Repeat the vital signs three times daily in routine patients and more often in very sick patients. You can get a clear picture of how the patient is doing from these simple measurements. An important part of the daily record is to measure the patient's fluid intake and output. To do this, you will need to keep track of the fluid they are taking in as well as passing out. Have patients save all their urine by urinating in a chamber pot or urinal instead of the toilet. Measure the urine output using a large measuring cup. The amount of fluid we take in each day is always more than the amount passed out because of

insensible losses. Insensible losses include fluid lost through the skin as perspiration, water vapor in the breath, and fluid in the stool. If the patient is not drinking enough fluid their output of urine will fall off, and the urine will become darker and concentrated. If this happens, encourage them to drink more fluids.

Identification of dehydration

When patients have a fever, vomiting, and/or diarrhea, they lose much more water from the body than is commonly appreciated. Symptoms of dehydration include weakness, dizziness, headache, confusion, and fainting. Signs of dehydration include dryness of the mouth, decreased saliva, lack of or very small urine volume that is dark and highly concentrated, sunken eyes, loss of skin elasticity, low blood pressure, especially upon sitting up or rising from the sitting to the standing position, and fast pulse rate, especially when moving from the lying to sitting or standing positions.

Preventing or treating dehydration in people with flu will save more lives than any other intervention during the influenza pandemic.

Treatment of dehydration

The Oral Rehydration Solution (ORS) is an excellent treatment for all causes of dehydration. It is just what the thirsty body needs to restore the lost fluid. The water, salt, and sugar in the formula team up to speed the patient's recovery. The quantity of sugar in the ORS can be varied depending on patient preference. It can be increased up to 4 tbsp or reduced to 2 tbsp if desired by the patient. For some people, the ORS will taste too salty. In this case, increase the water content to 1.5 or even 2 quarts leaving the remainder of the formula unchanged.

The Adult ORS formula for dehydration

1-quart clean water

1 level tsp table salt

3 tbsp table sugar

If you detect or suspect that dehydration is developing, administer the ORS by mouth. If the patient is too ill to drink, someone must sit with them and administer the fluids using a teaspoon or the baby bottle to get one spoonful or dribble from the bottle down the patient's throat until she is strong enough to drink alone. Don't stop until the patient has been able to keep down at least a quart of fluids, which may take several hours. You will know you are making headway with fluid therapy when the patient becomes more alert and begins urinating, an indication that their fluid deficit is partially restored. While these are good signs, more remains to be done. With sick patients like these, you need to "push the fluids" so don't let your guard down. If they are too weak to use a glass and straw or squeeze bottle, try an 8 oz. baby bottle, which may be easier to handle. Your patient will be very tired. Let them sleep for a couple of hours and then get them to drink more fluids. Be insistent; it is really important.

You can drink the ORS plain or add fruit flavorings or natural herbs like tea, vanilla, cloves, cinnamon, or mint. A number of excellent powdered fruit drink products are available at the grocery store that can be mixed with the ORS. Once the patient is well hydrated and eating, there is no further need for the ORS. Even if the patient is not eating but can drink and remains well hydrated, you can switch them to one of the other fluids listed for use with the clear liquid diet such as juice, bouillon, or tea.

Treatment of common flu symptoms



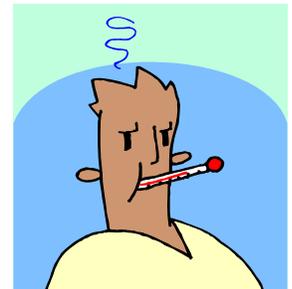
Caring for a flu patient is something everyone is capable of doing. The basic goals are to keep the patient clean, dry, warm, and well hydrated. Patients need a soft place to lie down, be comforted, told that they are going to be OK, and reassured that you will be there for them. The most important medical treatment is to make sure they have plenty of fluids. Dehydration must be prevented because it can quickly lead to death or contribute to stroke or heart attack. Keeping the patient hydrated is the best treatment for the flu and the one that is most likely to save lives. The same treatment advice applies to other viral and bacterial illnesses that might be confused with influenza. So, don't worry so much about whether or not you have

made the correct diagnosis or not. The treatment will be about the same anyway.

Treatment of adults with fever

The first consideration when treating a patient with fever is fluid therapy. It is very difficult to bring a fever down in a patient low on fluids. Both ibuprofen and acetaminophen are good ways to lower fever and help the patient feel better. The therapeutic dose of ibuprofen for adults is 2 to 4 tablets (400mg to 800mg) every four to six

hours as needed.⁸ For acetaminophen, the dose is two 500mg tablets up to four times daily as needed. Try one or the other at the dose recommended. Wait 45 minutes. If the response is insufficient, add a full dose of the other drug. In adults, acetaminophen and ibuprofen can be used in full doses at the same time, because they are in



different drug classes and have different drug side effects. Combination treatment with both has an additive effect of benefit without increasing risk. Do not exceed these doses for either drug. This is the maximum for both. Acetaminophen is a very safe drug as long as you do not exceed the daily dose limit for it.

Many cold and flu preparations sold in drug stores include acetaminophen or ibuprofen along with antihistamines and or decongestants. These are fine to use for flu. Just remember to include the dose of acetaminophen and ibuprofen found in these drugs in your daily limit calculation to avoid exceeding it for any of the drugs listed.

A high fever (103°F) is hard on the patient, but most folks can tolerate it well. A fever above 104°F is the upper safe limit for most people and anything above 105°F is a temperature emergency. Fevers this high can cause seizures and above this point brain damage can develop if prolonged. This must be avoided. The mainstays of therapy are keeping the patient well-hydrated, tepid water sponge baths, acetaminophen, ibuprofen, and dressing the patient lightly.

If the fever resists these techniques, sponge bathe the patient with cool water and fan the patient to increase the cooling effect of evaporation from the skin. As a last resort, if you have access to either ice or snow, make cold packs and place them under each arm, on the right and left sides of the

groin, and around the neck. These cold packs cool the blood passing under them helping to reduce the patient's temperature.

Treatment of chills and body aches and pains

Chills cause shivering and are often associated with body aches and later fever. Treat chills by keeping the patient warm; give them an extra blanket or a hot water bottle. Body aches respond to acetaminophen, and ibuprofen used separately or together.

Treatment for respiratory conditions and headache

Gargling with a hot salt and soda water solution is a good treatment for sore throat. To make this treatment, add 1 tsp of salt and ¼ tsp of baking soda to a cup of hot but not scalding water. Ibuprofen and acetaminophen used in full doses either individually or together if needed have good pain relieving effects.

Nasal, sinus and ear congestion and pain respond to hot packs placed on the face and by inhaling steamy air. Use of a salt and soda saline solution to wash the sinuses helps remove mucus and inflammatory chemicals that build up in the area and is very useful. The solution is made by adding ¼ level teaspoon of table salt plus ¼ level teaspoon of baking soda to 1-cup of clean water. Instill the solution into the nose with an ear bulb syringe or by other means and gently blow your nose. Repeat this process until the nasal passage is clear. Nasal washing can be repeated as often as needed. Antihistamines and decongestants are also useful for treatment of this condition. The salt and soda saline solution makes an excellent non-burning eye wash too. It is a great way to provide a comforting bath to sore runny eyes and lids.

Inhaling steamy air is a time-honored therapy for chest, sinus, ear and throat infections. The easiest way to create steam is by heating water in a teakettle or a pot. Once the water is boiling, drape a towel over your head and bend over near but not too close to the steam. Inhale the steamy air through the nose and mouth getting it deep into the lungs.

From the therapeutic standpoint, we want to encourage patients with a wet cough to clear the mucus from their lungs. The health of the patient is unaffected if the phlegm brought up with a wet cough is swallowed or deposited in a handkerchief. Hydrating the patient with the ORS, feeding

them a hot or cold caffeine-containing beverage like tea, coffee, or cola, or eating chocolate encourages a wet cough.

Reasons and remedies for common flu patient signs and symptoms I		
Symptom or Sign	Likely Assessment	Remedy
Low urine output	Dehydration	Give the patient ORS
High pulse rate > 90)	Dehydration or fever	Give the patient ORS
Shaking chills and shivers	The virus is swarming in the blood stream.	Keep the patient warm
Nausea/Vomiting	The virus is affecting stomach or indirectly the brain.	Give sips of clear liquid diet. Use the ORS. Use meclizine 25mg every 4 hours as needed.
Diarrhea	The virus is affecting intestine.	Push ORS fluids, clear liquid diet
Severe stomach cramps	The virus is affecting the intestine. Expect nausea, vomiting and diarrhea soon.	Switch to clear liquid diet. Use diphenhydramine and/or loperamide for cramps.
Bloody diarrhea but no bleeding from any other site.	The virus has infected the intestinal lining.	Push ORS fluids and use the clear liquid diet. Give loperamide and/or diphenhydramine for cramps.

The cough reflex is effectively suppressed with dextromethorphan, the drug found in many OTC cough products with the “DM” notation on their label. If the patient has a wet cough and is coughing a lot, you still should suppress it to prevent the cough from damaging the chest wall or lung structures. Too much coughing, even when bringing up phlegm, can cause damage and should be lessened. Inhaling warm humidified air helps patients with infections of the nose, sinus, ears, throat, bronchial pathways, and lungs especially during winter when the air is dry. Caffeinated tea and coffee and chocolate contain an herb with well known medicinal effects on the lungs. The herb help keep the breathing tubes open, increase heart rate and blood flow, and encourage urination. The effect is to move more fluid through the lungs thinning the mucus and making it easier to cough up. The herb is also effective for relieving headache, lifting a depressed mood and for enhancing awareness.

Reasons and remedies for common flu patient signs and symptoms II

Symptom or Sign	Likely Assessment	Remedy
Headache	Due to fever or coughing. Also can be directly or indirectly due to the viral infection.	Ibuprofen and/or acetaminophen. Lower temperature if fever present. Use icepack on neck.
Fever	Due to the virus stimulating the bodies immune system to release chemicals that fight the infection	Ibuprofen, acetaminophen, push fluids, keep warm or cool, consider tepid water baths if > 102 F. OK if <101 as this may help kill virus.
Sore throat	Direct viral infection of the posterior throat tissue. Caused by inflammation of tissue breakdown in the area.	Gargle with hot salt water; drink hot tea or hot water, ibuprofen and or acetaminophen.
Cough	Viral infection and irritation of the tissue lining the breathing tubes and/or the lung tissue.	Push the ORS fluids, drink hot tea for effect on breathing tubes, use a dextromethorphan (DM) containing cough syrup to suppress cough if needed.
Facial pain	Sinus congestion or infection	Use salt and soda nasal solution frequently, hot packs or cold packs on face help, diphenhydramine 25-50mg four times daily as an antihistamine and ibuprofen and/or Tylenol for pain. Push fluids including tea.
Runny nose	Virus infecting nose	Use salt and soda nasal solution frequently, diphenhydramine 25-50 mg four times daily to reduce runny nose.

Chest pain during flu is often due to the effect of coughing on the muscles, ribs, and cartilages that surround and support the lungs. An indication of this cause is when pressing on the chest wall, upper flanks, or upper abdomen brings out the pain. Treatment is to suppress the cough as explained above, allowing these injured tissues to heal. Pain can be controlled using a full dose acetaminophen and/or ibuprofen every six hours. Muscle spasm can play a role in this pain, and when it does, consider applying an icepack, heating pad, or hot water bottle to the chest wall. Chest pain can be excruciatingly painful and difficult to control.



Headache with influenza can come from several sources. Coughing shakes the head back and forth and can strain the neck muscles causing headache. Chemicals released by the viral infected cells and the immune system can trigger headaches. Bacterial sinusitis complicating flu causes facial pain and headache. Treat headaches using ibuprofen with or without acetaminophen. If neck stiffness or soreness is present, apply an ice pack heating pad, or hot water bottle to the back of the neck or head.

Treatment of nausea, vomiting, diarrhea, and abdominal pain

The first step in treatment for these four symptoms is to place the patient on a clear liquid diet using the ORS. It will not provoke vomiting or diarrhea as easily as other fluids or foods do, but it can still cause these reactions in severely affected people. Nausea is responsive to meclizine 25 to 50 mg every 4 to 6 hours as needed for this symptom. Diarrhea and abdominal cramping can be treated with diphenhydramine 25 to 50mg every 4 to 6 hours and/or loperamide 2 to 4mg every 4 to 6 hours. Since diphenhydramine and meclizine are both antihistamines, their side effects are additive. If you have already given the patient one of these drugs and want to try the other, wait four hours before doing so to allow the first drug to clear the system.

Patients with an intestinal presentation of flu often will experience abdominal cramping, gas, and diarrhea. In some patients, the diarrhea can be bloody. Diarrhea often causes irritation around the anus. Treat this by *gently cleaning* the area using a moistened tissue, soft cloth, or baby wipe. Apply a small amount of petroleum jelly or cocoa butter on and around the

anus to protect and heal the tissue. Repeat this process after each loose stool. Abdominal cramps respond to the anticholinergic effects of diphenhydramine 12.5 to 25 mg every four to six hours.

Diet and Exercise with Influenza

Since flu commonly takes away the appetite, most patients won't be hungry. Eating is not as important as drinking fluids because the patient will be breaking down muscle and fat for energy. The *clear liquid diet* is best for patients sick with flu who are not particularly hungry, but it is mandatory for patients with diarrhea due to influenza. If a flu patient wants to eat, feed them as long as they don't have diarrhea. In most cases, patients with diarrhea can tolerate a clear liquid diet without making matters worse. The small intestine can absorb water, minerals, and sugars well even when infected.

If the patient has not been sick long or had a mild non-diarrheal presentation of the flu, you can start with step 2 of the clear liquid diet and quickly move up the steps as tolerated by the patient. At any time during re-feeding, should the patient suffer abdominal problems, especially pain or diarrhea, drop back a step or two on the clear liquid diet. Rest in that step for a while before trying the next step again. This strategy will work well for almost every patient.

The clear liquid diet

- Step 1: Oral Rehydration Solution (ORS), water, fruit juice, Jell-O, Gatorade®, Popsicles, PowerAde®, ginger ale, cola, tea, and bouillon.
- Step 2: To step 1 add white toast (no butter or oils), white rice, cream of wheat, soda crackers, and potatoes without the skin.
- Step 3: To Step 2 add canned fruit and chicken noodle soup.
- Step 4: To Step 3 add a source of protein like canned meat, fish or egg.
- Step 5: To Step 4 add milk and other dairy products, vegetable oils, butter, raw fruits and vegetables and high-fiber whole grain products.

Once the patient is eating a normal diet without any stomach problems, it is important to increase the intake of high quality protein, especially eggs,

meat, fish, or poultry. This nutrition is needed to rebuild the muscle and organ tissue, which were broken down for energy during the illness. Carbohydrates and fats are also important as an energy source for the recovering body and to help replace lost fat stores broken down for energy during the infection.

Exercise during and after recovery

Even moderate influenza causes a breakdown of muscle tissue and physical weakness. If a patient was critically ill with the flu, even more muscle, organ tissue, and fat was broken down by the body for support. Acute influenza symptoms can be expected to last at least five days but usually seven to 10 days. Most people need another week or two of rest for recovery. A return to limited normal activities is usually possible at this time, but full recovery will not be complete for a month, or even two, after the infection. Of course, no exercise of any type is possible or desirable during the acute phase of the illness. During the recovery period, passive stretching and massage helps a weakened patient recover. These activities help bring the dormant joints, tendons, and muscles back to life and work out the soreness that builds up in these tissues. Gentle passive range of motion (ROM) exercise is accomplished by *slowly and repeatedly* moving all the joints of the limbs, including fingers and toes, through their entire normal range of movement. Each finger and toe, ankles, knees, hips, wrists, elbows, shoulders, and the neck should be bent, rotated, and extended slowly and repeatedly. Gentle massage is also comforting to the patient's sore muscles and helps in their recovery.

Patients who have been at bed rest for a long time will have trouble with balance and weakness. If they have not been eating, they will not have enough energy to resume normal activity. A prerequisite for getting up is to get the patient past step 3 of the clear liquid diet before even trying to encourage the patient to walk again.

When the time comes to help a patient return to normal, take it easy. Try sitting the patient upright in bed first. If this goes well, the patient can next try sitting on the side of the bed with his feet on the floor. Dizziness and weakness are the two problems that most people have trouble overcoming. Take it slowly. Dizziness usually goes away after a while in the new position, so be patient. The next step is to get the patient up and sitting in a

chair. Standing with limited assisted walking comes next. At first, have the patient walk with assistance around the room or in the halls.

Home Care of Children with Flu

Many differences exist between the way a child and an adult respond to this disease. Many, but not all, of the drugs used for adults are also used for children, but the dose is different. Dehydration and rehydration are critical in both, except that children can become dehydrated much more quickly than adults. While many of the recommendations and advice for treatment of adults can be applied to kids, some are inappropriate. A wise parent will ask their children's pediatrician for flu management suggestions for use during the pandemic before it begins. Your pediatrician knows your child's health better than anyone, and the advice and counsel of your doctor take precedence over any suggestions presented here.



Signs and symptoms of flu in children

One of the biggest challenges for parents will be trying to tell whether their sick child has a cold or bird flu. If bird flu is not in your community, it is very unlikely that your child will be the first case. It is common for the first signs of flu to be a runny nose followed by irritability or crankiness. A sore throat and fever often follow. When the virus moves down into the lung, a dry cough begins. Infants with influenza can suddenly become very sick rapidly or simply “not look right”. They may seem unresponsive, dull eyed, and distant. One difference between a cold and flu is in the speed with which the flu strikes a child compared with a slow-moving cold. Also, flu is much more severe than a cold. If the child is running around as usual and eating normally, he probably doesn't have flu or is in the very early stages of the illness.

These symptoms are not specific for flu so when they develop, keep calm and treat them in the same way you would manage any cold--with fluids, acetaminophen, and rest. If flu is in your community and the disease course is more or less following the above pattern, flu becomes more likely but is still unproven. The feature that makes flu so different from routine

childhood infectious diseases is the *severity of the illness*. Kids with pandemic bird flu will be very sick very fast. Its quick onset and the severity of the illness are what clearly distinguished flu from a cold.

Signs and symptoms of influenza in children		
Fever	Sore throat	Loss of appetite
Cough	Runny nose	Headache
Dizziness	Weakness	Irritability
Muscle aches	Nausea	Vomiting
Chills	Ear pain	Fatigue
Diarrhea	Crying for no reason	

How to keep children with flu comfortable.

- A child with flu should get lots of rest, which will help her body fight the virus, and keep her more comfortable.
- Use the ORS to provide her with plenty of fluids. Being well hydrated is the easiest way to make nasal mucous thinner, relieve stuffy noses, and soothe sore throats.
- Use a cool mist humidifier in your child's bedroom to reduce coughing, which often gets worse at night.
- Use a nasal aspirator (a syringe that sucks mucus from the nostrils) or ear bulb syringe along with the salt & soda nose spray to relieve stuffy noses in smaller children and infants.
- Older toddlers can be taught to blow their noses.
- For smaller children, raise the head of the crib (with a book or pillow under the mattress) to ease congestion and coughing
- Use acetaminophen for fever, aches, or pains.
- Use a DM (Dextromethorphan) containing cough syrup for cough⁹

Dehydration in children

Dehydration presents in children in the same manner as in adults, only more quickly because children have less body water. This means they can become dangerously low on fluids very quickly especially if diarrhea or vomiting accompanies the fever.

Signs and symptoms of dehydration in children	
Sunken eyes	Decreased urination or dry diapers
Sunken skull “soft spot” fontanel in infants	Tearless crying
Dry mouth or sticky mucus membranes	Lethargy, reduced movement, fussiness
Irritability but may be “too tired to cry”	

Signs and symptoms of dehydration in children

Early in dehydration, a child may be cranky and irritable. Later lethargy or lifelessness may develop. A lethargic child is difficult to awaken. They have very little energy and are “rag doll weak”. Sunken eyes, dry nose or mouth and decreased or absent urination are very worrisome signs that indicate the development of dehydration. The heart rate is fast when the child is feverish, but it is also fast when the child is dehydrated. A dehydrated child may have a glassy-eyed stare and have difficulty focusing or concentrating. This is never normal and should be considered a sign of the child is very ill and probably needs fluids. Failure to effectively treat dehydration will make it nearly impossible to bring a fever down to a safe level. If dehydration continues unchecked, eventually the child will go into shock and die.

Treatment of flu symptoms in children

Prevention of dehydration

Since several common flu symptoms and signs cause dehydration, you should assume that it will develop unless you take steps to prevent it. This is the best strategy. As soon as the child becomes ill, begin fluid therapy and keep pushing the fluids as long as she has a fever, diarrhea, or is not eating.

Correction of dehydration in children

Fluid treatment is indicated for dehydration whether from flu or another cause. If nothing comes of the symptoms, fluid therapy is harmless. The principles of rehydration used in adults are the same as for children but the

ORS formula is a little different. Be persistent in your efforts to get as much fluid in the child as you can.

Children's ORS formula for dehydration

1.5-quarts clean water

1 level tsp table salt

4 tbsp table sugar

Treatment of cough



Almost every child with bird flu will cough. Cough has a useful purpose, to help rid the lung of mucus and phlegm. A dry cough is usually due to an irritated breathing passage. In this case, cough makes things worse not better. If persistent, the coughing can bruise the voice box and breathing tubes in the lung. These bruises cause pain when breathing. In the case of a dry cough due to flu, use of a cough syrup containing dextromethorphan (DM) is helpful. This drug can cause hallucinations if given for more than several days or in high doses. Keeping the child hydrated is very important for treatment of cough. Another useful technique is humidified air. Using a room humidifier is useful if available.

If mucus comes up with the cough, this is known as a wet cough. We want to encourage a wet cough to help the child clear the mucus from the lung but too much coughing can damage the lung and chest and stomach muscles. So in some cases, use of a little cough suppressing cough syrup is useful for an aggressive wet cough.

Treatment of runny nose

The best treatment for runny nose is use of a *salt & soda saline solution* made of $\frac{1}{4}$ tsp of salt and $\frac{1}{4}$ tsp of baking soda added to a cup of clean water. The best approach is to spray the solution into the nose as a mist. Alternatively, an ear bulb syringe works well for this purpose. The salt & soda solution will help remove mucus and irritants that clog the nasal passage and will help these tissues heal. Use of good nose blowing technique by the child is important to successful nasal solution use. Teach

children to wash their hands after they blow their nose or cough into a handkerchief.

Antihistamines are an effective treatment for runny nose. Diphenhydramine, the generic name for Benadryl®, is an antihistamine recognized as safe and effective in children. Commercial children's Benadryl is widely available as an oral tablet that melts in the child's mouth. This product is easy to use and a good treatment for runny nose. Oral diphenhydramine has few side effects including its tendency to sedate. This side effect actually can be an advantage if the child needs help in sleeping. Sometimes people have an atypical hyperactive response to antihistamines, and if this is the case, they should be avoided, especially in children.

Treatment of fever in children



Children can mount impressive fevers quite suddenly. It is common for fever to go up and down during the day and night. Aches and pains parallel the fever. Fevers can have a daily pattern, and it is common for a child's temperature to reach 104 F during a severe infection. A goal of therapy is to lower the fever to between 100.5°F and 101°F, where the body's immune system is most effective at eliminating the infection. If the temperature rises above 105°F, seizures or even brain injury are possible. So, it is important to aggressively manage the child's fever before it becomes extreme.

How to take your child's temperature accurately¹⁰

To measure your child's fever accurately use:

- A rectal or tympanic (ear) thermometer for children less than 3 years old
- A digital (not glass) oral thermometer for children over 3 years old
- Avoid using an ear thermometer until your baby is at least 3 months old. It may not be accurate, because young infants have such narrow ear canals.

Temperature readings are different from different parts of the body (rectum, ear, mouth). Your child has a fever if her temperature is above:

- Rectal 100.4°F (38.0° C)
- Oral 99.5° F (37.5° C)
- Axillary (underarm) 98.6° F (37.0° C)
- Tympanic (ear) 100.0° F (37.8° C)

Restoring fluid losses due to fever or other causes is always the first step in treatment of fever. Failure to restore the child's fluid volume will make it nearly impossible to lower the temperature. Acetaminophen reduces temperature and helps with aches and pains. Be sure to use it in full children's doses rather than partial doses. Use the weight and age-based dose guidelines provided with the children's acetaminophen product. A tepid water sponge bath is a useful method in lowering a fever. Never give a child or an adult an alcohol sponge bath, which can be toxic. In rare instances, using all the methods above fails to lower the temperature to below 101 F. In this case, lower the temperature of the water you use for the sponge bath or fan the child to speed the evaporation of fluid from the body. An additional measure, if absolutely necessary, is to place ice or snow packs in plastic zip lock-type bags wrapped in kitchen towels under both arms, around the neck, and between the legs on the groin. High volumes of blood are cooled with this technique as it passes by these areas. This method is difficult for the child, but it is a fast way to lower core body temperature in an emergency.

Keeping your child comfortable with a fever.

- If the child is shivering, keep her warm until the shivering stops.
- If the child is not shivering, you can remove her warm clothes and encourage her to drink plenty of fluids.
- Keep your child rested, quiet, and comfortable in a cool room.
- Place a cool washcloth on your child's forehead or sponge her with tepid water. Stop if your child starts to shiver.
- Never use rubbing alcohol to cool your child's skin—the vapors are toxic and can be absorbed through the skin.

- Acetaminophen in children's doses is a safe and effective way to lower the fever in kids. It takes from 30 to 60 minutes to begin working.
- Monitor your child's temperature, appearance, and behavior periodically—keeping an eye out for signs of a more serious illness—until she seems to be back to normal.

Treatment of nausea, vomiting, and diarrhea in children

The most important treatment for nausea, vomiting, cramping, and diarrhea is to stop feeding the child and place them on a clear liquid diet. Start with the Oral Rehydration Solution plain or with a little powered fruit-flavored drink mix for taste. Give the child small amounts of the ORS solution in sips from the baby bottle. This will help prevent dehydration and is not likely to make cramping worse. Meclizine 25mg given every 4 to 6 hours can help reduce nausea in children age 12 years and older. It is not US FDA approved for use in younger children.

To stop diarrhea, consider using a small dose of the diphenhydramine. The anticholinergic effect of this drug will calm the intestine. Use a low, age/weight appropriate dose every four to six hours as needed. For children over age 2 years, loperamide 1 to 2 mg every 4 to 6 hours can be used for diarrhea and abdominal cramping

Acetaminophen use in children

Acetaminophen, best known as the brand name product Tylenol®, is an excellent drug for treatment of pain and fever in children from toddlers to teens. It also helps children sleep when given at bedtime. It is very safe with the only issue related to total daily dose, which must not be exceeded to prevent liver injury. In children, the safe dose limit changes with age and weight. The younger a child or the smaller, the lower the safe dose limits. The easiest thing to do is use Johnson and Johnson's brand name Children's Tylenol® or Infant's Concentrated Drops® or the identical generic drugstore brand of these products.

Pandemic Psychology

The psychological stress of loss and trauma

The most serious potential loss a person can experience during the pandemic is the death of a spouse, child, or parent. Next comes loss of a job, wealth, or prestige. These losses are the fuel for a well-understood psychological process, leading most commonly to *depression, anxiety, and posttraumatic stress disorder.*

These losses are among the most significant that anyone can experience, and, unfortunately, all are likely to occur during a severe pandemic. Physical injury or threat of violence as a result of civil disorder or lawlessness--especially in association with the crimes of assault, murder, and rape--also commonly induce these psychological states.



The grieving process

The predictable sequence during grieving is numbness, denial, anger, despondence, depression, and hopefully, resolution through acceptance. In a healthy response to loss, the final phase of the grief process is accompanied by the emergence of a new emotional structure that is deeper and more integrated than prior to the loss. Failure to make a healthy adjustment to loss often leads to the development of unhealthy mental states and even suicide in some cases.

Signs and symptoms caused by loss or trauma

A *sign* in psychiatry is something that you observe in another person. In the psychiatric context, *symptoms* are dysfunctional feelings or thoughts the person has about the self, others, or life in general.

Signs of depression

Withdrawal from other people, both emotionally and physically, is a common sign of depression. People suffering with this condition may appear less well groomed than usual, and their standards of personal hygiene can drop. They look sad and dispirited. Depression can cause

people to be hypersensitive to comments made during routine conversation, appearing as inappropriate behavior such as an angry outburst, crying, or nervousness. Their sleeping patterns can be disrupted, or they may want to sleep more than usual. Their eating patterns may change, and they can gain or lose significant amounts of weight.

Symptoms of depression



Sadness and loss of an interest in things that a person used to enjoy are cardinal feelings with depression. The patient may feel remote from others, isolated, and alone. Guilt is a common theme as is feeling worthless and “good for nothing”. The depressed often carry on an incessant conversation in their minds, criticizing faults and weaknesses. They feel worthless, unloved, and unlovable. They have lost hope for redemption or forgiveness for the things about which they feel guilty. They also may experience *survivor’s guilt*, questioning why they are alive while their loved ones died. Some people may contemplate suicide. They feel unacceptable and unloved.

Signs of anxiety

Nervousness is the hallmark of simple anxiety. The nervous person seems unsettled and uncomfortable in most situations. They may seem restless, agitated, and fidgety, having trouble staying still. A special type of anxiety is a panic attack. One minute everything is fine with a person, while the next brings on uncomfortable behavior. A person undergoing a panic attack has a rapid heart and breathing rate and excessive perspiration.

Symptoms of anxiety

Symptoms of anxiety include feeling nervous and unsettled inside. The person feels that something is not right but is unable to say what is wrong. He may have difficulty sleeping, awaking in the morning more tired and sore than he went to bed. Back and shoulder pain are common as is tension in the neck. Eating can increase or decrease, with weight gain or loss, respectively. Some people suffer chest or abdominal pains that mimic serious medical disorders.



Signs of post-traumatic stress disorder

People with PTSD can become withdrawn but also argumentative with symptoms that overlap those with depression or anxiety. The incidence of alcohol and drug abuse is high in this group. They may present with angry outbursts that become violent. Irrational behavior and aggressive sexual acting-out are other features in patients with PTSD.

Symptoms of post-traumatic stress disorder

In addition to sharing similar elements with both depression and anxiety, the symptoms of PTSD include the distinguishing characteristic of *flashback*, or the reliving of the traumatic event with dream-like clarity. People with PTSD feel alienated and cut off from their family and friends. They feel sullen, have lost hope for a better future, and can become very cynical.

Temporary psychiatric care

During a time of crisis when access to professional psychiatric help is unavailable, a direct approach is preferred. This means to focus your efforts on helping the person cope with the direct consequences of the events rather than trying to delve deeply into their meaning or long-term consequences. The objective is to keep the person functional rather than doing anything that might cause them to breakdown. This simple approach relies upon suppression, denial, and regression to strengthen the minds natural way of healing itself.

Suppression of traumatic memories as an aid to a return to function

A natural way many people manage severe trauma is to suppress painful memories. This measure is very effective in helping people regain their footing and return to a functional level. Suppressing unpleasant memories is a form of active forgetting, as in changing the mental channel whenever painful thoughts arise. This active forgetting prevents people from becoming too absorbed in their misery. Thinking harmful thoughts repeatedly is a habit with bad consequences. This mental first aid technique concentrates on helping the victim suppress the memory of traumatic events. The person is encouraged to devote himself to one or more tasks

that absorb his time and energy. The objective is to forget the events and refrain from dwelling on them.

Denial is the last defense of the ego

Another natural way the mind has to deal with traumatic loss is denial. This mind tool allows us to pretend that everything is fine. Like an actor playing a part, the more we can let ourselves adopt this attitude, the better we feel. Denial is an important and useful technique for humans to weather tough times and keep going forward despite great loss and suffering. Denial, enhanced by the active suppression of traumatic memories or thoughts, is a powerful combined tool for combating mental collapse during an emergency.

Regression is the refuge of the psychiatrically injured

Mental regression among those who have experienced major losses or trauma is likely to be common during and after the pandemic. During regression, a person moves back to a lower level of maturity. It will be important for the family and friends of the regressed person to accept him in this new state and provide as much support as you can rather than demand he return to “normal”. The regressed state is the currently highest maturity level the traumatized person can maintain at the moment. As the person begins to recover, he will naturally regain his equilibrium and begin exhibiting more mature behavior.

The use of unconventional approaches during the emergency

Recommending the use of memory suppression, denial, and tolerance of regressed states are certainly unconventional and are suggested only for use during an emergency when access to mental health professionals is unavailable.

Serious psychiatric problems

Psychosis is a mental condition where the patient has lost contact with reality. They may hear voices, think that they are being persecuted, or become totally mute and motionless. These patients are very seriously ill. Besides being completely dependent upon others for their care and the need for constant attention, in some cases they may become suicidal or even

homicidal. These patients need immediate professional psychiatric care if at all possible. Otherwise, provide them with good food and water, a clean, dry, and warm place to sleep, and as much comfort and caring as you can spare.

Remaining sane during the pandemic

Am I going nuts?

While stress and change will affect everyone during a pandemic, most people will manage to carry on without being at risk of mental collapse. In the population as a whole, during times of great stress, one in ten folks will suffer some type of mental disorder similar to the ones described above. Feeling sad, anxious, and hopeless in response to severe loss and trauma is normal. It does not necessarily mean you are developing one of the psychiatric problems described above. These normal feelings become disorders only when they totally dominate a person and make it hard or impossible for that person to carry out regular activities. These symptoms become disorders only when they distort a person's view of himself and his world in irrational ways. So don't assume you have a problem if you share some of the feelings typically associated with depression, anxiety or PTSD.

Supportive Group discussion

A regular gathering each evening to discuss the day's events, problems, and rumors is a good idea for neighborhoods in the time of pandemic. Meetings such as this can serve several important purposes, among the foremost is a way to establish and increase cohesion of the group, relieve fear and anxiety caused by rumors, and provide mutual support for the problems people experience day-to-day trying to cope with the such a long-lasting emergency.

Staying sane in an insane world

Many people will find it difficult to adjust to the changed circumstances of an emergency lasting a year or two. Life will be different than before, more physically and mentally demanding. Each day, people will spend more time just satisfying the basic needs of their family and friends. While this work is important, it will not be what people are used to, and it will be hard because new skills are needed to carry it out. Much of the work will

be more physically strenuous than people in the developed world are accustomed.

Maintain as normal a life pattern as possible

An important way for families and individuals to ward off negative psychological effects of the pandemic will be to maintain as much normality in their lives as possible. Patterns should follow a normal routine--going to bed in the evening, waking early, eating at meal times, and maintaining standards of home and personal hygiene. Letting these things slip will send you and your family down a degenerative slope and reinforce negative mind states like depression, anxiety, and anger. Maintaining standards of behavior, dress, and conduct is reassuring at a deep level. These standards are familiar and expected, and in return, everyone knows how to behave and react. This removes uncertainty about the immediate situation, helping to reduce stress as well as other negative emotions.

Reading is fundamental

Reading books will be an important pastime for many people, and particularly for all school-age children and adolescents. Throughout history, children have received their educations by reading books. Virtually all subjects except mathematics can be taught in this way.

Gardening for mental and physical health

Many adults already enjoy gardening. The pandemic period is likely to last between 12 and 18 months giving you plenty of time to grow fruits and vegetables. Even after the pandemic, stores will take time to reopen and restock with fresh fruits and vegetables. In most areas, gardeners can substitute store-bought produce with a large variety of fresh fruits and vegetables. Those with a green thumb will have an advantage, but even those with little or no experience can learn by beginning with a few basic books on gardening techniques.¹¹

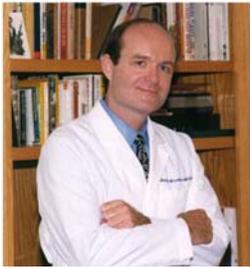
Survival of the fittest

Adults will be responsible for many activities to keep their families fed, housed, clothed, and warm during a severe pandemic period. As discussed, the work will be different than what most people performed before the

pandemic, and some of these tasks, while simple, will require greater effort because of unfamiliarity and the usual inactivity of most people living in advanced societies. Physically fit people will have of the advantage of surviving the challenge of pandemic.

Addendums

About the Author



Grattan Woodson, MD practices internal medicine at the Druid Oaks Health Center in Decatur, GA. He became concerned about avian influenza after learning about the first human cases in Hong Kong in 1997. His interest grew when the disease re-emerged in 2003-04 and he began to study it in earnest. His work led to the conclusion that humankind was about to be visited again by a severe influenza pandemic resembling the 1918 Spanish Influenza. In order to help prepare his patients for this possibility, he began writing on this topic, which ultimately resulted in the publication of two books, *The Bird Flu Preparedness Planner* in November 2005 and *The Bird Flu Manual* in September 2006.

For More Information

This booklet is an edited excerpt from the Bird Flu Manual, published in September 2006 by Booksurge Publisher and available on Amazon.com. For more information about H5N1 bird flu, its treatment, and preparing for the pandemic, visit Dr. Woodson's web site, www.BirdFluManual.com. On the website you will find a variety of pandemic related information you can download for free as well as a listing of other books and items you might find useful for caring for people ill with influenza during a pandemic. To share your views, comments, or suggestions about bird flu or its treatment with Dr. Woodson, please go to www.BirdFluManual.com and select feedback from the main menu. Leave your comment there, and he will get it.

References

¹ The patients will find it much easier to drink fluids from a baby bottle, squeeze bottle, or using a straw during their illness.

² Use a teakettle for making tea and as a device for making steam for treatment of sinus and bronchial disorders.

³ Petroleum jelly will be useful for chapped lips, noses, and bottoms.

⁴ Use cocoa butter to make rectal or vaginal suppositories. It is also an outstanding lip balm and great treatment for chapped or irritated skin of the nose or perianal area.

⁵ Thermometers break so have more than one on hand

⁶ Fever, cough and shortness of breath are the three most common symptoms of Bird Flu in patients' admitted to the hospital with the disease in Southeast Asia from 2003 through July 2005. Adapted from: Avian Influenza A (H5N1) Infection in Humans. N Engl J Med 2005; 353:1374-1385

⁷ During the 1918 pandemic a particularly aggressive presentation of influenza that was most commonly seen in young adults was associated with cyanosis and is described in this excerpt from a physician's letter to a colleague. "After a few hours later you can begin to see the Cyanosis extending from their ears and spreading all over the face, until it is hard to distinguish the colored men from the white. It is only a matter of a few hours then until death comes."

⁸ For the purposes of this book, ibuprofen means aspirin, Advil, Aleve, ibuprofen, or Nuprin since they are all alike. Acetaminophen (Tylenol) is not an aspirin.

⁹ Dextromethorphan HBr is an antitussive (cough suppressant) that inhibits the cough reflex. It acts primarily by depressing the cough center in the brain to reduce the frequency of the intensity of cough. Prolonged use or high doses can cause confusion or hallucinations. DM is not a very strong cough suppressant.

¹⁰ Adapted from a chart found on Johnson and Johnson's Tylenol web site

¹¹ This topic is covered in greater detail on the www.birdflumanual.com website as an

Original Article entitled *Home Gardening During the Pandemic*