

Birdflu Pandemic Planning, Preparedness and Response

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Introduction

The flu is a contagious respiratory illness caused by influenza type A or type B viruses. It can cause mild to severe illness and at times can be fatal. The best way to prevent this illness is by getting a flu vaccination (flu shot) each fall. Each year in the United States:

1. About 5% to 20% of the population gets the flu
2. More than 200,000 people are hospitalized with flu complications
3. About 36,000 people die from flu complications

Flu viruses spread in respiratory droplets caused by talking, coughing and sneezing that directly contact the nose, mouth or eyes. Large droplets can only travel a limited range (about 6 feet). The flu viruses usually spread from person-to-person, though sometimes people become infected by touching something with a flu virus on it and then touching their eyes, mouth or nose. Humans can infect others 1 day before symptoms develop and up to 5 days after becoming sick. That means that the flu can be passed on to someone else before you know you are sick, as well as while you are sick.

Avian Flu

Avian influenza, otherwise known as birdflu, is an infection caused by avian (bird) influenza (flu) viruses. These influenza viruses occur naturally among birds. Wild birds worldwide carry the viruses in their intestines, but usually do not get sick from them. "Avian influenza virus" refers to influenza A viruses found chiefly in birds, but infections with these viruses can occur in humans. The risk from avian influenza is generally low to most people, because the viruses do not usually infect humans.

Human H5N1 influenza infection was first recognized in 1997 when this virus infected 18 people in Hong Kong, causing 6 deaths. According to WHO, confirmed cases of birdflu in humans have been reported in the following countries:

1. Azerbaijan
2. Cambodia
3. China
4. Djibouti
5. Egypt

6. Indonesia
7. Iraq
8. Lao People's Democratic Republic
9. Nigeria
10. Thailand
11. Turkey
12. Viet Nam

Genetic studies confirm that the influenza A virus H5N1 mutates rapidly. Should it adapt to allow easy human-to-human transmission, a pandemic could ensue. The reported symptoms of avian influenza in humans have ranged from typical influenza-like symptoms (e.g. fever, cough, sore throat, and muscle aches) to eye infections (conjunctivitis), acute respiratory distress, viral pneumonia and other severe, life-threatening complications.

Most cases of avian influenza infection in humans have resulted from contact with infected poultry (e.g., domesticated chicken, ducks, and turkeys) or surfaces contaminated with secretion /excretions from infected birds. The spread of avian influenza viruses from one ill person to another has been reported very rarely, and has been limited, inefficient and unsustainable. The World Health Organization (WHO) has registered 278 cases of birdflu in humans and 168 deaths. Highly pathogenic H5N1 is one of the few avian influenza viruses to have crossed the species barrier to infect humans and it is the most deadly of those that have crossed the barrier. H5N1 currently has a 50% mortality rate, which is higher than any other flu. Because birdflu viruses do not commonly infect humans, there is little or no immune protection against them in the human population.

Epidemic vs. Pandemic

An epidemic is a disease outbreak in which some or many people in a community or region become infected with the same disease. A pandemic is an epidemic that spreads throughout the world. Birdflu will spread much more rapidly than previous pandemics due to the jet age and global supply systems. Our greatest fear is that a mutation could occur allowing the transmission of birdflu from human to human with relative ease causing a pandemic.

Planning

People do not plan to fail, they fail to plan. In order for Birdflu pandemic planning to be successful it needs to be done at all of the following levels:

1. International
2. Federal
3. State
4. County
5. City
6. Business and
7. Home

Birdflu pandemic planning is important at all of the above levels but it is critical for entities that are part of the infrastructure such as utilities, medical services and telecommunications. According to OSHA in case of a birdflu pandemic employers will play an important role in preventing the spread of the virus and ensure business continuity. Employers in both public and private sector should anticipate employee absence, service interruptions, supply chain limitations, etc.

Internationally the planning and coordination for a birdflu pandemic has not been a priority. According to a Johns Hopkins study of 45 national plans (19 developed and 26 developing) representing 66% of the world's population 33% have no way to even distribute medical treatment in case of a pandemic.

Federally, the 2005 National Strategy for Pandemic Influenza has been developed to deal with a pandemic in the US. The plan has designated the Department of Human Health Services (HHS) as the lead in federal pandemic preparedness with the ultimate goal of:

1. Limiting the domestic spread of a pandemic and mitigating disease, suffering, and death
2. Sustaining the infrastructure and mitigating the impact on the economy and the functioning of society

Pandemic planning levels vary from state to state and within the state from county to county as well as on a city basis. In the authors opinion the most critical plan is the one made on the local level (County, business and home) because disasters happen locally not federally. Issues to address in the plan include:

1. Sick leave policy
2. Policies and procedures for employees that become sick at work or come to work sick
3. Cross training
4. Communication
5. Supplies
6. Standard Operating Procedures (SOP)
7. Employee distancing
8. Incident Command System
9. Travel restrictions
10. Personal protective equipment

HHS has been distributing funds (100 million) to States and Counties for pandemic planning and preparedness purposes depending on the State and County population with the top 3 states being California (10m), Texas (5m) and New York (5m). To access state specific pandemic flu planning refer to the www.pandemicflu.gov web site and click on the state of interest. The US government has also been aiding priority governments in pandemic planning.

Assumptions

HHS has developed the following planning assumptions to standardize a starting point:

1. Susceptibility to the pandemic influenza virus will be universal.
2. Efficient and sustained person-to-person transmission signals an imminent pandemic.
3. The clinical disease attack rate will likely be 30% or higher in the overall population during the pandemic. Illness rates will be highest among school-aged children (about 40%) and decline with age. Among working adults, an average of 20% will become ill during a community outbreak.
4. Some persons will become infected but not develop clinically significant symptoms. Asymptomatic or minimally symptomatic individuals can transmit infection and develop immunity to subsequent infection.
5. Of those who become ill with influenza, 50% will seek outpatient medical care.
6. The number of hospitalizations and deaths will depend on the virulence of the pandemic virus. Estimates differ about 10-fold between more and less severe scenarios.

7. Risk groups for severe and fatal infection cannot be predicted with certainty but are likely to include infants, the elderly, pregnant women, and persons with chronic medical conditions.
8. Rates of absenteeism will depend on the severity of the pandemic.
9. In a severe pandemic, absenteeism attributable to illness, the need to care for ill family members, and fear of infection may reach 40% during the peak weeks of a community outbreak, with lower rates of absenteeism during the weeks before and after the peak.
10. Certain public health measures (closing schools, quarantining household contacts of infected individuals, “snow days”) are likely to increase rates of absenteeism.
11. The typical incubation period (interval between infection and onset of symptoms) for influenza is approximately 2 days.
12. Persons who become ill may shed virus and can transmit infection for up to one day before the onset of illness. Viral shedding and the risk of transmission will be greatest during the first 2 days of illness. Children usually shed the greatest amount of virus and therefore are likely to post the greatest risk for transmission.
13. On average, infected persons will transmit infection to approximately two other people.
14. In an affected community, a pandemic outbreak will last about 6 to 8 weeks.
15. Multiple waves (periods during which community outbreaks occur across the country) of illness could occur with each wave lasting 2-3 months. Historically, the largest waves have occurred in the fall and winter, but the seasonality of a pandemic cannot be predicted with certainty.

Training

Training is divided into 3 categories:

1. Cross training
2. Pandemic training
3. Drills

Cross training for critical operations allows other employees to take over in case an employee is sick or does not report to work.

Pandemic training is done prior to the outbreak to orient, prepare and focus employees on what to and not to do during a pandemic. For example cough into your elbow not your hand.

Drills test the procedures, equipment and training to determine if they are adequate or if further resources are needed. Drills should be as realistic as possible and become more complex with each iteration. Drills should be critiqued to identify what worked and what did not.

OSHA

The Occupational Safety and Health Administration (OSHA) has developed a guidance manual for employers to prepare for an influenza pandemic. OSHA Publication 3327 can be downloaded as a PDF document. OSHA has designated the following exposure risk levels:

1. Very high exposure risk occupations are those with high potential exposure to high concentrations of known or suspected sources of pandemic influenza during specific medical or laboratory procedures.
2. High exposure risk occupations are those with high potential for exposure to known or suspected sources of pandemic influenza virus.
3. Medium exposure risk occupations include jobs that require frequent, close contact (within 6 feet) exposures to known or suspected sources of pandemic influenza virus such as coworkers, the general public, outpatients, school children or other such individuals or groups.
4. Lower exposure risk (caution) occupations are those that do not require contact with people known to be infected with the pandemic virus, nor frequent close contact (within 6 feet) with

the public. Even at lower risk levels, however, employers should be cautious and develop preparedness plans to minimize employee infections.

According to OSHA in the event of a birdflu outbreak, workers who will be involved in disease control and eradication activities should consult their healthcare provider about the advisability of taking antiviral medications for influenza. CDC has recommended that workers receive an influenza antiviral drug daily for the entire time they are in direct contact with infected poultry or contaminated surfaces. In the absence of sensitivity testing, oseltamavir is the antiviral drug currently of choice because the likelihood that the virus will be resistant to it is less than with amantadine or rimantadine.

According to CDC workers involved in avian influenza disease control and eradication activities should also get the current season's human influenza vaccine. Human influenza vaccine will not prevent infection with low pathogenic or highly pathogenic avian influenza A viruses, but this precautionary measure could reduce the possibility of dual infection with avian and human influenza viruses. Although dual infection is unlikely, it is plausible that such a situation might cause new and different viral strains to be created; such new strains might be transmissible among people and lead to more widespread infections. Although this CDC recommendation is only for workers involved in disease control and eradication activities, other poultry workers should consider getting the current season's influenza vaccine for the same reason.

Vaccine

The most effective vaccine is one that is manufactured after the virus has completed its mutation. According to HHS once the virus strain has been identified it will take 6-9 months for the vaccine to be manufactured. It will take about 3-5 years to manufacture enough vaccine for all the US population. The US government has stockpiled flu vaccine as part of the Strategic National Stockpile but the potency is dropping. The stockpile is allocated to states according to the size of their population. The stockpile is not enough to cover all healthcare workers and first responders.

Outbreak

Outbreaks of flu pandemics usually occur three times a century. Last century they occurred in 1918 (one third of world population infected and 100 million died), 1957 (Asian) and 1968 (Hong Kong). The H1N1 virus that caused the 1918 pandemic appears to be avian in origin, but the host source of the 1918 virus has never been identified. Furthermore, no major disease outbreaks among birds were documented immediately before the 1918 pandemic. They suggest that an avian influenza strain could have been hidden in an obscure ecological niche, and the pandemic strain arose by the genetic adaptation of that avian virus to a new human host.

Experts estimate that in case of a birdflu pandemic 2 billion would be infected with 180-360 million dead. WHO uses 6 phases to rate the current level of pandemic threat with the current level being at 3.

Outbreaks of flu pandemics usually occur when the following three conditions are met:

1. A new influenza virus that is highly pathogenic to humans
2. The virus is unique so that humans do not have a pre existing immunity
3. The virus must be easily transmitted from human to human

The HN51 has met the first 2 conditions at this time.

Embargo

Based on concerns about Highly Pathogenic Avian Influenza (HPAI) H5N1 virus and its potential to cause illness in humans, the Center for Disease Control (CDC) and the U.S. Department of Agriculture (USDA) have taken steps to prevent importation of birds and unprocessed bird products from countries with the virus in domestic poultry.

Treatment

According to the HHS pandemic influenza plan appropriate use of antiviral drugs during an influenza pandemic may reduce morbidity and mortality and diminish the overwhelming demands that will be placed on the healthcare system. Antivirals might also be used during the Pandemic Alert Period in limited attempts to contain small disease clusters and potentially slow the spread of novel influenza viruses. A huge and uncoordinated demand for antivirals early in a pandemic could rapidly deplete national and local supplies. Preparedness planning for optimal use of antiviral stocks is therefore essential.

HHS is stockpiling antivirals and is allocating them to states based on population. 20 million courses were purchased in 2006 (a course is the supply needed to treat one person). With anticipated FY2007 funding, HHS plans to order an additional 24 million courses, which will likely be delivered in 2008.

If Tamiflu is taken daily during the time of exposure, the antiviral drug is 60% effective in preventing seasonal flu. The drug also has the ability to reduce the severity of seasonal flu if taken within 48 hours of onset of symptoms. However, no evidence exists that Tamiflu is beneficial for treating H5N1 according to physicians treating recent patients with the Birdflu.

Limitations

Antivirals will not be the only thing in short supply. Most likely medicine shortages will occur during a pandemic because 80% of raw materials for pharmaceuticals come from outside the US. If the international supply chains are affected most of the US drug supply will also be disrupted.

There will not be enough:

1. Hospital beds
2. Ventilators
3. Surgical gloves and masks
4. IV bags and antibiotics
5. Trained staff

To increase the above resources we would need to spend about a million per hospital, which would amount to a 5 billion investment. Otherwise you will have to ration care leading to moral dilemmas. In the absence of adequate hospital beds, alternative medical facilities will have to be developed to take care of those that are too sick or unable to take care of themselves. Federal plans call for healthcare professionals to volunteer to staff these facilities. The fallacy of this plan is where will they come from?

Most patients with bird flu have required ventilators within 48 hours of hospitalization. However, of the 100,000 ventilators in the US 80,000 are in use daily. In case of a birdflu pandemic over 750,000 ventilators are estimated to be needed. In addition to ventilators Technical staff will be needed to run these machines. Shortage of trained staff will also be a factor for 2 reasons: Staff will choose to stay at home to take care of their own family or for fear of being

exposed to the flu. Recent polls have determined that 50% of healthcare workers are unwilling to report to work in case of a pandemic.

For those who do choose to report the risk of infection will be high due to lack of PPE (not enough have been stockpiled due to just in time delivery policies of most organizations). Also as more and more workers fall ill or cannot get to work, there will be disruptions of basic services such as water, electricity, security, communication, transportation, sanitation, health services, and food.

One of the steps normally taken to reduce the spread of a virus is the closure of schools. The benefit is apparent but the result will most likely be that one parent will not be able to go to work in order to stay home with the child. This will affect the economy in many ways.

Law Enforcement & Security

Once the pandemic hits one of the critical factors in being able to deliver and distribute the necessary resources is security. In wide area disasters where law enforcement is compromised a certain group of people take advantage of the situation for looting (New Orleans, Katrina). Lack of security will affect the infrastructure as well as reduce the number of volunteers willing to provide assistance. Therefore, security planning is a critical component of birdflu pandemic planning for both public and private entities.

Supplies

To prepare for the shortages each facility and each family should prepare for a major disruption of goods and services. A two-week to one-month supply of food and water is recommended. The following selection criteria should be used for the one-month supply:

1. Select food that does not require refrigeration or cooking.
2. Store one gallon of water per person per day as well as electrolyte additives or fluids
3. Toilet paper, garbage bags, and bleach
4. OTC medications such as fever reducers, anti diarrheal, cough and cold medicines
5. Cash in case of bank closures
6. Personal protective equipment (PPE) such as N95 masks and disposable gloves

Employers should realize that in case of a pandemic supplies that they have been promised by a supplier may be intercepted or redirected by the government. During the SARS outbreak the Enviro Safetech 6 month supply of N95 masks was gone within 3 days. Shipments originally scheduled for arrival at our site were delayed by 6 months due to government priority privileges.

PPE

Once a pandemic starts one of the measures that can be taken to minimize exposure to the virus is the use of Personal Protective Equipment (PPE). PPE should be selected based on route of exposure, length of exposure, tasks being performed, etc. The plan should detail what PPE is worn, when, and how. The plan should detail how employees will be trained on PPE as well as proper fitting procedures (example respirator fit test). Standard PPE include respirator and gloves.

PPE must be:

1. Conscientiously and properly worn (thousands of workers and responders to 9/11 ground zero did not, would not and were not forced to wear proper PPE resulting in exposure to a multitude of respiratory hazards);
2. Regularly maintained and replaced, as necessary;

3. Properly removed and disposed of to avoid contamination of self, others or the environment. Employers are required to provide PPE to employees that are exposed and volunteers that will be needed in large numbers will also have to be equipped by those directing the day to day activities of volunteers.

Respiratory Protection

It is important that the differences between surgical masks and respirators be understood. Surgical masks are primarily designed for patient protection and not personal protection. The surgical mask reduces the chance of the wearer exposing others that they are caring for to droplets generated when they cough, sneeze or talk. Surgical masks would be very effective if placed on those that may expose others to the virus. Most surgical masks do not make an adequate seal to prevent contaminated aerosols from being breathed by the wearer. Also surgical masks are not capable of taking out small droplets.

N95 dust masks and air purifying respirators provide protection to the wearer but in most cases do not protect the public from the wearer due to the exhalation valve on air purifying respirators and some dust masks. An APR with a filter on its exhalation valve would be beneficial during a pandemic.

According to OSHA a pandemic influenza outbreak could last from 6 to 8 weeks and waves of outbreaks may occur over a year or more. While disposable respirators such as dust masks may be more convenient and cheaper on a per unit basis, a reusable respirator may be more economical on a long-term basis and reduce the impact of disruption in supply chains or shortages of respirators. Disposable respirators are designed to be used once and are then to be properly disposed of. Once worn in the presence of an infectious patient, the respirator should be considered potentially contaminated with infectious material, and touching the outside of the device should be avoided to prevent self-inoculation (touching the contaminated respirator and then touching one's eyes, nose, or mouth). It should be noted that respirators will be contaminated on their inner surface by the microorganisms present in the exhaled air and oral secretions of the wearer and therefore should not be shared without proper decontamination.

According to HHS N-95 (or higher) respirators should be worn during medical activities that have a high likelihood of generating infectious respiratory aerosols, for which respirators (not surgical masks) offer the most appropriate protection for health care personnel. Use of N-95 respirators is also prudent for health care personnel during other direct patient care activities (e.g., examination, bathing, feeding) and for support staff who may have direct contact with pandemic influenza patients. If N-95 or other types of respirators are not available, surgical masks provide benefit against large-droplet exposure and should be worn for all health care activities involving patients with confirmed or suspected pandemic influenza. Measures should be employed to minimize the number of personnel required to come in contact with suspected or confirmed pandemic influenza patients.

Another concern is that respirators and dust masks are usually designed for use by adults and will not properly fit children.

The proper implementation of an effective respiratory protection program is dependent on proper selection, fit testing, and training. The success of the program is largely dependent on the assignment of a qualified Respiratory Protection Officer (RPO) as required by OSHA.

Fit Testing

Employees and volunteers wearing N95 masks and respirators should be fit tested to ensure that the mask provides the proper fit factor. Fit testing is usually qualitative or quantitative. Qualitative fit testing (bitrex, banana oil, irritant smoke) is less expensive but more cumbersome. Quantitative fit testing (TSI or CNP) is more expensive but more efficient and accurate. Employers should develop a plan on how to fit test employees prior to the pandemic as well as post pandemic in case a new type of respirator is used due to shortages.

Travel

Your Birdflu plan should include planning for employees who may be in a region that a Birdflu outbreak occurs in as well as employees who have to travel to said region. Issues to consider are training staff and equipping them with PPE and supplies prior to traveling to the outbreak region. According to HHS personnel in regions with Birdflu cases should avoid:

1. All contact with birds, including domestic poultry (such as chickens and ducks) or any wild birds.
2. Touching surfaces contaminated with poultry feces or secretions.
3. Settings where H5N1 virus-infected poultry may be present, such as commercial or backyard poultry farms and live poultry markets.
- 4.

Children should be taught not to touch sick or dead birds. If there has been a verified H5N1 virus infection in birds within the region, make sure that an adult supervises small children when they go outside. If contact with a bird carcass is unavoidable (for example, a cat brings a dead bird into the house):

1. Do not touch the bird with bare hands.
2. Appropriate PPE should be worn to avoid direct contact with skin, mucous membranes, and eyes. Discard or disinfect any PPE used.
3. Immediately clean hands with soap and water.
4. Avoid touching face, rubbing eyes, eating, drinking, or smoking before washing hands with soap and water.

In addition to humans and birds, it is known that pigs, tigers, leopards, ferrets and domestic cats can be infected with H5N1 viruses. All of the cases of H5N1 infection in domestic cats reported to date have been associated with H5N1 outbreaks among domestic poultry or wild birds and are thought to have occurred by the cat eating raw infected birds. There is no evidence to date that cats or dogs can spread H5N1 virus to humans. Keep domestic cats inside the house to avoid exposure to potentially infected birds. Do not feed your cats raw meat or poultry. Avoid all contact with stray cats and keep them outside the house. Inform local veterinary authorities if your cat is sick and has possibly been in contact with birds. Strictly follow normal hygiene rules for pet care to avoid contracting diseases transmitted by pets. When cleaning cat litter boxes, wear gloves and thoroughly wash your hands with soap and water immediately afterward.

If you believe you might have been exposed to ill or dead birds:

1. Monitor your health more closely for 10 days after your possible exposure to birds infected with avian influenza.
2. If you become ill with a fever, cough, sore throat, or have trouble breathing, consult a health-care provider, especially if you think you may have been exposed to birds infected with avian influenza in the past 10 days. Before you visit a health-care setting, tell the provider the

following: 1) your symptoms, 2) where you traveled, and 3) if you have had direct contact with poultry or close contact with a severely ill person. The U.S. embassy or consulate also can provide names and addresses of local physicians.

3. Do not travel while ill, unless traveling locally for medical care. Limiting contact with others as much as possible can help prevent the spread of an infectious illness.

In keeping with internal medical policy, the U.S. Department of State will be providing oseltamivir at its embassies and consulates for eligible U.S. government employees and their families serving abroad who become ill with pandemic influenza. However, the Department does not and will not have the legal authority to provide non-U.S. Government employees traveling or living abroad with antiviral medications, even in the event of a pandemic. The Department strongly advises private American citizens living abroad to consult with their physicians to determine which medications they need to have on hand should a pandemic occur.

Response

Once the pandemic has begun the plan may need to be adjusted as more is known about the characteristics of the virus, disease transmissibility, clinical manifestation, drug susceptibility, and risks to different age groups and subpopulations. The goal should be to inform those at risk and focus them on not passing on the virus if they have it and measures they can take not to get it. In the workplace policies should be implemented to have employees inform management of the presence of sick employees at work. Social distancing should be emphasized (3-6 feet). Certain social customs should be modified (no hand shakes). Technology should be used to minimize contact with others such as video conferencing and telecommuting.

Another approach that is very effective is to eat well, get plenty of rest and wash your hands before you eat. Although this is a low-tech solution it very well may be the difference between getting exposed and not becoming sick.

Decontamination

One of the administrative controls to reduce exposure and minimize the spread of contamination is proper decontamination of your hands and work surfaces. Most people improperly believe that hand cleaners (i.e. Purell) kill viruses (they only kill bacteria). It is recommended that the proper decontamination procedures be developed and Decon solutions that are effective are selected. Recommend training employees on proper hand washing and decontamination techniques. EPA labels on disinfectants detail proper procedures for preparing and applying EPA registered disinfectants. Another common mistake is the use of a bleach solution (10% bleach) after 24 hours of mixing the bleach with water (water inactivates the bleach after 24 hours).

Question Marks

There are many questions that have not been fully answered from past pandemics (1918) such as why healthy young adults died in large numbers while the elderly were spared for the most part. The majority of deaths due to H5N1 have been of people under the age of 40.

Good News/Bad News

According to NIH the good news is that today “public health is much more advanced, with better prevention knowledge, good influenza surveillance, more trained personnel at all levels, well-established prevention programs featuring annual vaccination with up-to-date influenza and pneumococcal vaccines, and a national and international prevention infrastructure. In addition, two

classes of antiviral drugs are currently available, as well as antibiotics effective against bacteria that cause influenza-associated pneumonia.”

The bad news is that access to medical care and resources will be limited during a pandemic. Hospitals, medical personnel and drug suppliers will be overwhelmed with huge demands for services, medicines and vaccines, a situation that would be much worse in less developed countries and impoverished regions. Also the number of immuno-suppressed people is much higher. There are more daycares and nursing homes today than before. The population density is much greater than when previous pandemics have occurred. Finally, today the threat of bioterrorism is much higher than it was in the past with current state of affairs.

What Should Be Done Now

On the medical front the best hope for the future lies in developing and stockpiling more broadly protective influenza vaccines. On the preparedness side more resources need to be brought to bear on logistical planning, training, public education, drills, staging supplies, increased surveillance, the development of medical countermeasures, an improved understanding of pandemic risks, and an aggressive and broad research agenda.

A better communication system between countries is needed to warn of a pandemic (Communicating that a Tsunami is on its way would have saved thousands of people). Experience has taught us that regardless of resources the response to an emergency is only as good as the Incident Commander (Katrina). If we hope to save lives we need to carefully select an IC that has the experience, authority and expertise to handle the emergency and lead this nation in its war against a pandemic. Next the IC needs an elite group of leaders with authority to cut through the red tape and make things happen without worrying about their political career.

What If

What if the pandemic never happens? The benefit of the planning and preparedness on all levels will not have gone to waste because sooner or later there will be a natural or man-made disaster. During our response to the disaster it is likely that the resources dedicated to birdflu planning and preparedness will be of great assistance.

One Liners

The best approach is to prepare for the worst and hope for the best. Prepare rather than panic. Remember that the pandemic is temporary and all you have to do is survive until it is over or a vaccine is available. However, according to Marcuse “the pandemic clock is ticking we just do not know what time it is”.

Websites

The following web sites provide additional info:

1. Pandemicflu.gov
2. cdc.gov/flu/avian/index.htm
3. Ready.gov
4. OSHA.gov