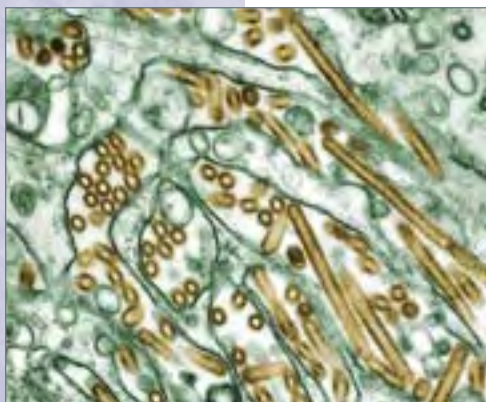




**Pandemic Preparedness:
A Guide for Healthcare Facilities**

With the current outbreaks of avian influenza in humans that began in Southeast Asia in 2003, worldwide concern about the possibility of an influenza pandemic continues to grow. Although the feared mutation of the avian H5N1 virus to a strain that can be passed easily from human to human has not yet occurred, health organizations around the globe are stressing the need to prepare for a possible pandemic, which many in the scientific and medical community feel is inevitable.

Kimberly-Clark has developed this guide to provide an overview of some of the elements your facility should consider as part of your pandemic plan. Now is the time to institute strict infection control practices which will contribute to reducing healthcare-associated infections. By establishing these practices as routine, the transition to higher precautions utilized during a pandemic will be effortless. The World Health Organization (WHO) has released Interim Infection Control Guidelines¹ which we have highlighted throughout this document for your convenience. Because of the increased need for personal protective equipment (PPE) during a pandemic, we have also developed an interactive PPE Demand Analysis calculator tool to assist your facility in determining how much PPE you may want to consider stockpiling. Your Kimberly-Clark Sales Representative will be able to lead you through the tool based on the specific needs of your facility.



*Colorized transmission electron micrograph of avian influenza A (H5N1) viruses (seen in gold).
© CDC/Cynthia Goldsmith*

¹ Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Health Care Facilities, p.34, World Health Organization, Amended April 24, 2006

Current Pandemic Status Worldwide

When a new influenza virus capable of causing severe disease passes easily among humans, an influenza pandemic can occur. Since there is no immunity to the newly emerging virus in the human population, it can lead to an epidemic on a global scale.

With the continuing spread of the avian influenza A (H5N1) virus in poultry and wild birds, as well as the increasing number of human infections, **there is a growing concern that this virus will mutate into a strain that can cause an avian influenza pandemic in humans².**

The fear that avian flu may become a deadly pandemic has been strengthened by research that suggests the Influenza Pandemic of 1918, which was responsible for an estimated 50 million deaths globally, was caused by an avian-human hybrid virus (H1N1).

No one can accurately predict when a pandemic might occur or what its precise impact might be, but the potential for widespread human infection, severe illness, and death cannot be dismissed.

One thing is certain: **Preparation can mitigate the direct health, social and economic effects of a pandemic.**

Three influenza pandemics occurred in the 20th century:

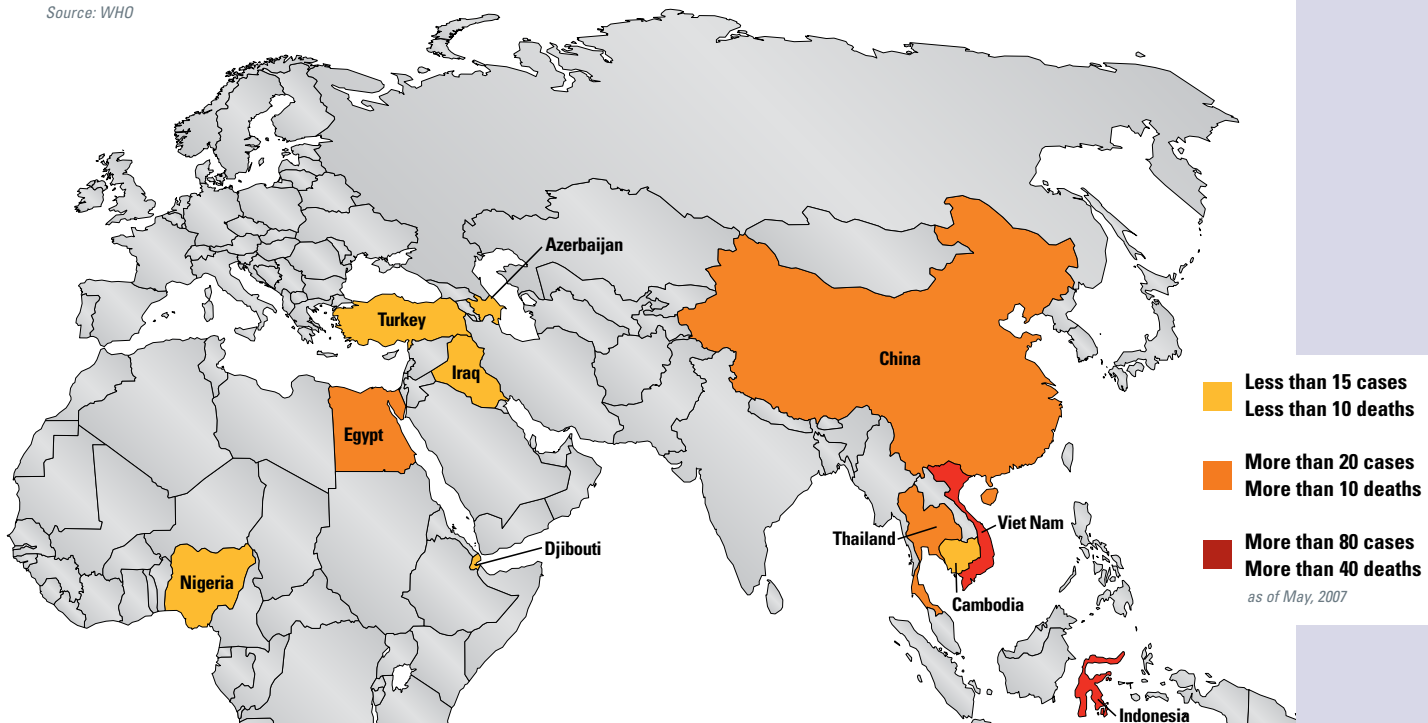
“Spanish flu” in 1918,
“Asian flu” in 1957, and
“Hong Kong flu” in 1968.

The 1918 pandemic killed an estimated 50 million people worldwide and is considered one of the deadliest disease events in human history.

By contrast, the 1957 pandemic caused an estimated 1-2 million deaths, and the 1968 pandemic was responsible for 700,000 deaths.³

Approximate Number of Confirmed Human Cases of Avian Influenza A/(H5N1)

Source: WHO



² <http://www.pandemicflu.gov/general/index.html>

³ <http://www.pandemicflu.gov/general/whatis.html>

Current Phase of Pandemic Alert

According to WHO, the world is presently in Phase 3: a new influenza virus subtype is defined as causing disease in humans, but not yet spreading efficiently and sustainably among humans.

Phases of a Pandemic

Inter-pandemic phase	Low risk of human cases	1
New virus in animals; no human cases	Higher risk of human cases	2
Pandemic alert	No or very limited human-to-human transmission	3
New virus causes human cases	Evidence of increased human-to-human transmission	4
	Evidence of significant human-to-human transmission	5
Pandemic	Efficient and sustained human-to-human transmission	6

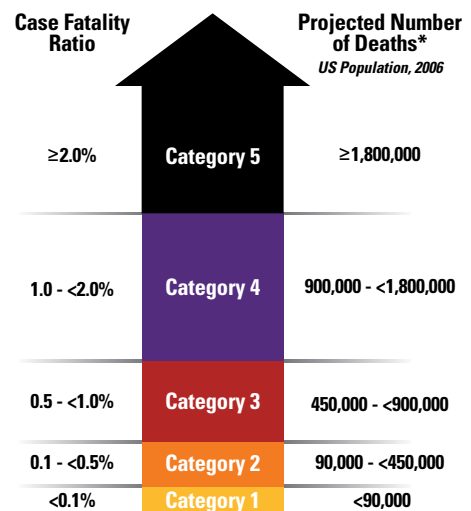
Source: WHO

as of May, 2007

Experts at WHO and elsewhere believe that the world is now closer to another influenza pandemic than at any time since 1968, when the last of the previous century's three pandemics occurred. WHO uses a series of six phases of pandemic alert as a system for informing the world of the seriousness of the threat and of the need to launch progressively more intense preparedness activities.⁴

The CDC Pandemic Severity Index

The Centers for Disease Control and Prevention (CDC) has introduced a Pandemic Severity Index, which uses case fatality ratios to categorize the severity of a pandemic. The index is designed to help estimate the impact of a pandemic on the U.S. population and to allow more effective recommendations to be made on the use of mitigation interventions.



*Assumes 30% illness rate and unmitigated pandemic without interventions

Source: CDC Community Strategy for Pandemic Influenza Mitigation

To learn more about the Pandemic Severity Index and mitigation strategies associated with the various index levels, go to: <http://www.pandemicflu.gov/plan/community/commitigation.html>.

⁴ http://www.who.int/csr/disease/avian_influenza/phase/en/index.html.

Your Facility's Role in Community Pandemic Planning

It is important for your facility to work closely with community leaders in planning for a possible pandemic, so that everyone clearly understands their roles. Healthcare facilities play a critical role in moderating the impact of a pandemic.

The website, www.pandemicflu.gov, created by the U.S. Department of Health and Human Services (HHS), is your best resource for up-to-date information on pandemic planning. It contains information on how your facility can impact patient outcomes with infection control procedures and the importance of surveillance and reporting of possible avian influenza cases. Prompt identification and isolation of patients, healthcare workers, or visitors who may be infected with avian influenza (AI) is critical to minimize the risk of healthcare-associated transmission and to enable an efficient public health response. The public health surveillance system will be critical in initiating rapid deployment of resources to contain the spread of the virus.

The www.pandemicflu.gov website also provides information on how to establish contact with state officials to determine what resources you can expect from state and national stockpiles, including anti-viral drugs and vaccines. Because of the requirements for vaccine formulation and production lead-time, availability of a vaccine will be delayed for several months following the outbreak of a pandemic. It is also likely that inadequate global production capacity will restrict global access to the vaccine, at least during the first phase of the pandemic.⁵ **Your facility will need to have plans in place to address ethical questions about the allocation of an inadequate supply and an efficient plan for quickly distributing drugs and vaccines to those most in need.**



5 Global Pandemic Influenza Action Plan to Increase Vaccine Supply, pp. vi-viii, World Health Organization, 2006.

Avian Flu – Human Transmission

The majority of human cases of avian flu to date have been due to contact with infected birds or bird droppings. Although there have been some cases of human-to-human transmission, there's no evidence yet of sustained transmission; that is, the second person has not infected others.⁶

Preventing Pandemic Spread in Your Facility

Assuming the worst—that the H5N1 virus has mutated into a strain that is easily transmissible among humans—it could spread very rapidly. Like the seasonal human influenza, modes of transmission may include inhalation of droplets created by coughing, sneezing, or speaking, or by coming in contact with droplets from surfaces and then touching your mouth, nose, or eyes. There is also some evidence that an avian-human hybrid virus could be spread via airborne transmission of droplet nuclei. Scientists are continuing research in this area to better understand the modes of transmission and more effectively prevent its spread.

According to WHO Interim Infection Control Guidelines:

- Confine all patients with confirmed or suspected cases of the pandemic virus as quickly as possible in a private, negative pressure, airborne isolation room to prevent the spread of the disease.
- Limit patient movement. If transport is necessary, mask the patient. All staff involved in the transport should be in full personal protective equipment.
- Clean areas contacted by the patient with 70% alcohol or disinfectant with virucidal capability.



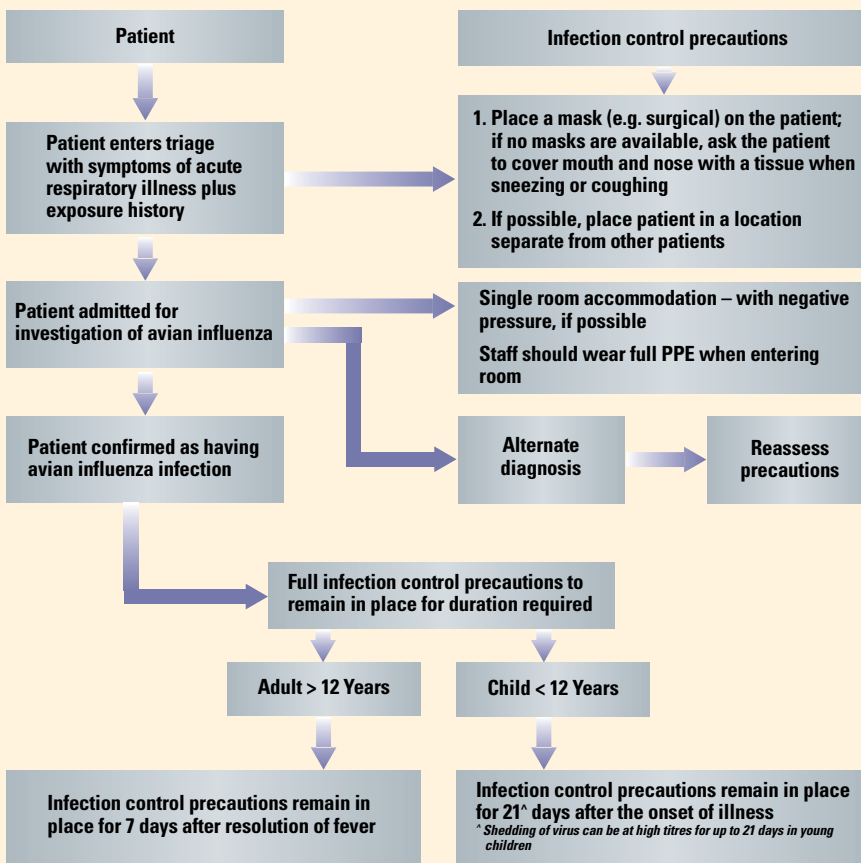
*A microbiologist inoculates a hen's egg with a specimen containing an H5N1 avian influenza virus to investigate the pathogenicity and transmissibility of newly emerging H5N1 viruses.
© CDC/ Taronna Maines*

6 <http://www.pandemicflu.gov/general/index.html>

It is critical that anti-viral drugs be administered promptly after onset of symptoms, usually within 48 hours. There are four anti-viral drugs that have been shown to be effective against H5N1. However, the virus has already developed a resistance to amantadine and rimantadine, and some resistance to oseltamivir (Tamiflu) has been identified. No resistance to anamavir (Relenza) has been detected as yet, but the drug is much more difficult to administer.⁷



When to initiate infection control precautions



Source: WHO's Influenza A (H5N1) : WHO Interim Infection Control Guidelines for Health Care Facilities, page 8. Please refer to www.who.int/csr/disease/avian_influenza/guidelines for more detailed recommendations.

7 <http://www.pandemicflu.gov/faq/antivirals/1100.html>

"If effective vaccines and anti-viral medications do not exist or are not available in adequate quantities during a pandemic situation, respirators and medical masks could help prevent or slow influenza transmission."⁸

- Institute of Medicine

The Importance of Hand Hygiene

Hand hygiene is perhaps the most critical element in preventing the transfer of microorganisms to the environment or to other people. According to WHO Guidelines, "Hands should be washed with soap, either plain or antimicrobial, and water when visibly soiled or contaminated with proteinaceous material. The use of an alcohol-based hand rub for routine hand antisepsis is recommended in the healthcare setting for all other clinical situations. Perform hand hygiene after touching blood, body fluids, secretions, excretions, and contaminated items, whether or not gloves are worn. Perform hand hygiene immediately after gloves are removed, between patient contacts, and when otherwise indicated to avoid transfer of microorganisms to other patients or environments."⁹ (One should note that there is a difference of opinion amongst authorities as to the effectiveness of alcohol-based hand sanitizers against viruses.)



Personal Protective Equipment (PPE) Availability

In the event of a pandemic, the availability and appropriate use of PPE is critical in protecting hospital staff, other patients, and visitors. Even with the use of anti-viral medications, N95 respirators, gowns and gloves are the first line of defense against the spread of a virus.

The SARS outbreak illustrated the critical importance of basic infection control precautions in healthcare facilities. Transmission of SARS in healthcare facilities was frequently associated with noncompliance with standard precautions.¹⁰



Photo Courtesy of:
University Health Network, Toronto, Canada

Healthcare providers should practice Standard, Airborne, Droplet, and Contact Precautions until CDC or WHO directs otherwise. **Disposable PPE should be used whenever possible, because viruses can remain infectious on garments for long periods of time.**

⁸ Reusability of Facemasks During an Influenza Pandemic: Facing the Flu, Report Brief, Institute of Medicine of the National Academies, April 2006.

⁹ Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Health Care Facilities, p.34, World Health Organization, Amended April 24, 2006.

¹⁰ Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Health Care Facilities, p.5, World Health Organization, Amended April 24, 2006.

Barrier Precautions for Persons Providing Care for Patients With Acute Febrile Respiratory Illness/Suspected or Confirmed Avian Influenza Infection

Barrier Precautions	Application of barrier precautions depending on type of patient contact			
	Close contact (<1 meter) with patients with acute febrile respiratory illness who have no known avian influenza risk factors [†]	Entry to avian influenza isolation room/area, but no anticipated patient contact	Close contact (<1 meter) with avian influenza-infected patient in or out of isolation room/area	Performance of aerosol-generating procedure on avian influenza patient ^{a,b}
Hand hygiene ^c	Yes	Yes	Yes	Yes
Gloves	Not routinely ^d	Risk assessment ^c	Yes	Yes
Apron	Not routinely	Risk assessment ^c	Not routinely ^e	Not routinely ^f
Gown	Not routinely	Risk assessment	Yes ^f	Yes ^f
Hair cover	Not routinely	Not routinely	Not routinely	Optional
Surgical mask (on HCW)	Yes	Not routinely	Not routinely	Not routinely
Particulate respirator	Not routinely	Yes ^g	Yes ^g	Yes ^h
Eye protection	Risk assessment	Risk assessment ⁱ	Yes	Yes
Surgical mask (on patient)	Not routinely ^j	No	Not routinely ^j	No

[†] Bird exposure in regions with avian influenza infections in animals or exposure to avian influenza-infected patients

- a. Aerosol-generating procedures create aerosols of different sizes (large and small-particle aerosols) (Annex 4). Examples of aerosol-generating procedures include: endotracheal intubation; aerosolized or nebulized medication administration; diagnostic sputum induction; bronchoscopy; airway suctioning; tracheostomy care; chest physiotherapy; nasopharyngeal aspiration; positive pressure ventilation via face mask (e.g. BiPAP, CPAP); high frequency oscillatory ventilation; postmortem excision of lung tissue.
- b. Wherever possible, aerosol-generating procedures should be performed in negative pressure rooms, side rooms or other single-patient areas with minimal staff present (Annex 4). PPE should cover the torso, arms, and hands as well as the eyes, nose and mouth.
- c. Standard precautions are the minimum level of precautions indicated for all patients at all times.
- d. Gloves should be worn in accordance with standard precautions. If glove demand is likely to exceed supply, glove use should always be prioritized for contact with blood and body fluids (ambidextrous nonsterile gloves), and contact with sterile sites (sterile gloves).
- e. Gloves and gown or apron should be worn during cleaning procedures.
- f. If splashing with blood or other body fluids is anticipated and gowns that are not fluid-resistant are used, a waterproof apron should be worn over the gown.
- g. If particulate respirator is not available, use tightly fitting surgical mask.
- h. If particulate respirator is not available, use tightly fitting surgical mask and face shield.
- i. Use eye protection if close contact (<1 meter) with patient is possible.
- j. Provide surgical mask for patient (if tolerated), when patient is outside the isolation room/area.

Source: WHO Interim Infection Control Guidelines for Healthcare Facilities

The Importance of Single-Use N95 Respirators

According to a study of N95 respirators and standard medical face masks conducted by the Institute of Medicine of the National Academies (IOM) and commissioned by HHS, "A properly fitted N95 respirator is...the least expensive and the most widely available respirator for protecting healthcare workers and the public against airborne infection." The study also stated, "**Properly fitted respirators provide better protection against airborne transmission of infection than do medical masks.**" As to the question of whether disposable N95 respirators can be safely reused, the study concluded, "...without manufacturing modifications, disposable N95 respirators cannot be effectively cleaned or disinfected and should therefore be discarded after each use."¹¹

Guidance on the use of respirators and face masks continues to be updated. For the most current recommendations, please refer to the CDC's website: www.cdc.gov.

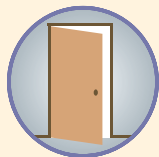
Employees should be trained in the proper use and care of a respirator. The fit and seal of a respirator is critical for effective function. In the event of an outbreak, WHO recommends that when resources permit, fit testing should be performed prior to the first use, and a user seal check should be performed each time the respirator is worn. It is also important to train employees to don and remove PPE in the proper order to avoid inadvertent self-contamination. **Kimberly-Clark offers staff training on the proper use of respirators and also provides hospitals with a guide to establishing a complete respiratory protection program.**

Waste Disposal

All waste from a room/area containing patient(s) with influenza A (H5N1) should be treated as clinical (infectious) waste and should be disposed of in suitable containers or bags.

When Preparing to Leave a Patient Room, Follow These PPE Removal Guidelines:

WHO PPE Removal Sequence¹²



Leave room

1



Remove cap and face shield

2



Remove gown

3



Remove gloves

4



Wash hands/use alcohol-based hand rub[†]

5



Remove respirator (do not touch front)

6



Wash hands/use alcohol-based hand rub[†]

7



¹¹ *Reusability of Facemasks During an Influenza Pandemic: Facing the Flu*, Report Brief, Institute of Medicine of the National Academies, April 2006.

¹² *Avian Influenza, Including Influenza A (H5N1)*, in *Humans: WHO Interim Infection Control Guideline for Health Care Facilities*, p.10, World Health Organization, Amended April 24, 2006

[†] There is a difference of opinion amongst authorities as to the effectiveness of alcohol-based hand sanitizers against viruses

Respiratory Hygiene/Cough Etiquette in Healthcare Settings

The concepts of respiratory hygiene and cough etiquette involve using source control measures to prevent patients with respiratory infections from transmitting their infections to others. To prevent the transmission of respiratory infections in healthcare settings, including seasonal influenza, the CDC recommends implementing the following infection control measures:¹³

Post Visual Alerts at the entrance to outpatient facilities instructing patients and persons who accompany them to inform healthcare personnel of symptoms of a respiratory infection when they first register for care and to practice **Respiratory Hygiene/Cough Etiquette**:

- Cover their nose/mouth with a tissue when coughing or sneezing
- When coughing, use a mask, if it can be tolerated
- Use disposable tissues and discard them in a waste receptacle after use
- Wash hands with soap and water, alcohol-based hand rub[‡], or antiseptic hand wash after having contact with respiratory secretions (i.e. soiled tissues)

Provide Respiratory Etiquette Materials for Patients and Visitors:

- Tissues and no-touch receptacles for used tissue disposal
- Dispensers of alcohol-based hand rub[‡]; where sinks are available, provide soap and disposable towels

Offer Masks to Persons Who Are Coughing, either procedure masks with earloops or surgical masks with ties.

Separate Persons with Respiratory Symptoms. When space and chair availability permit, use social distancing. Encourage persons with respiratory symptoms to sit at least three feet away from others in common waiting areas.

Advise Healthcare Personnel to Observe Droplet Precautions. Wear a surgical or procedure mask for close contact when examining a person with respiratory symptoms, particularly if fever is present.



¹³ <http://www.cdc.gov/flu/professionals/infectioncontrol/resphgiene.htm>

[‡] There is a difference of opinion amongst authorities as to the effectiveness of alcohol-based hand sanitizers against viruses

Nearly half of local public health workers who responded to a survey in three Maryland counties last year said they probably would not come to work during an influenza pandemic. **An estimated 66% of respondents thought they would be at risk if they worked during a pandemic.**

To improve the situation, researchers recommended measures such as training workers in their specific roles in pandemic response, providing risk-communication training, and providing personal protective equipment.¹⁶

Who Should use Personal Protective Equipment?

- All healthcare professionals who provide direct patient care (e.g. doctors, nurses, radiographers, physiotherapists)
- All support staff, including medical aides and cleaning staff
- All laboratory professionals handling specimens from a patient being investigated for influenza A (H5N1)
- All central service professionals handling equipment that requires decontamination and has come from a patient with influenza A (H5N1)
- Family members or visitors



Prioritizing the Use of PPE When Supplies Are Limited

According to WHO Guidelines, “Provision of necessary PPE supplies should be an institutional priority.”¹⁴ Reuse of disposable PPE should be avoided as the potential for contamination may increase. However, if a sufficient supply of PPE is not available, your facility “may consider reuse of some disposable items only as an urgent, temporary solution and only if the item has not been obviously soiled or damaged (e.g. creased or torn).”¹⁵

Keeping Healthcare Workers on the Job During a Pandemic

During a pandemic, healthcare organizations will likely be short-staffed due to increased demand and health personnel illnesses or absenteeism. Depending on the nature of the influenza virus, healthcare professionals may face disproportionate health risks in caring for sick individuals. Healthcare facilities have a responsibility to protect healthcare workers to the greatest extent possible and should have priority in receiving available PPE. Pandemic planning should include the rationing of non-essential services and training for expansion of normal responsibilities.

^{14,15} *Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Health Care Facilities*, p.22, World Health Organization, Amended April 24, 2006.

¹⁶ Balicer RD, Omer SB, Barnett SB, et al. *Local Public Health Workers’ Perceptions Toward Responding to an Influenza Pandemic*, BMC Pub Health, April 18, 2006.

The CDC recommends that healthcare facilities consider stockpiling enough consumable and durable supplies for the duration of a pandemic wave, estimated to be between six and eight weeks. A pandemic could occur in multiple waves as it did in the 1918 “Spanish Flu” which occurred in three waves. In the event of an outbreak, worldwide demand for medical products will most likely escalate and global supply will be stressed. Due to the global “just-in-time” inventory system that many hospitals employ, stockpiling these items now and increasing par levels is the best method of insuring that your facility will have the necessary resources in the event of a large scale patient surge.

It will be critical to limit nosocomial spread of the virus to protect health-care workers, prevent the hospital from being a disease amplifier and protect non-flu patients from infection. During a pandemic, health systems will be overwhelmed and will most likely be understaffed. Employing strict infection control precautions will help prevent the pandemic from spreading in the facility. **The following is a list of some of the medical supplies that the CDC recommends hospitals consider stockpiling:**

Consumable Resources:

- Hand Hygiene Supplies (antimicrobial soap and alcohol-based, waterless hand hygiene products)
- Disposable N95 Respirators, Surgical and Procedure Masks
- Face Shields (disposable or reusable)
- Gowns
- Gloves
- Facial Tissue
- Central Line Kits
- Morgue Packs
- Surface Disinfectants

Durable Resources:

- Ventilators
- Respiratory Care Equipment
- Beds
- IV Pumps



According to WHO Guidelines, “Provision of necessary PPE supplies should be an institutional priority.”¹⁷

17 Avian Influenza, Including Influenza A (H5N1), in Humans: WHO Interim Infection Control Guideline for Health Care Facilities, p.14, World Health Organization, Amended April 24, 2006

HHS Pandemic Planning Assumptions

Moderate Scenario (1968-like)

90 million sick
45 million needing medical care
865,000 hospitalizations
129,000 needing ICU
65,000 ventilators
209,000 deaths

Severe Scenario (1918-like)

90 million sick
45 million needing medical care
9.9 million hospitalizations
1.5 million needing ICU
743,000 ventilators
1.9 million deaths¹⁸

Estimating Impact on Hospital Surge Capacity

HHS has developed planning assumptions based on a mild to moderate pandemic like the 1968 pandemic, or a more severe pandemic like 1918. Based on initial estimates, even a mild pandemic would overwhelm many hospitals that already operate close to capacity. Using these assumptions, the CDC has released FluSurge 2.0, a spreadsheet-based model which helps facilities and public health officials estimate the surge in demand for hospital-based services during a potential influenza pandemic. FluSurge estimates the number of hospitalizations and deaths and compares the number of persons requiring ICU care and ventilator support with existing hospital capacity information. The calculations are based on a number of variables and assumptions that can be altered by the user.

FluSurge Projection of Average Impact on Hospitals

Moderate Scenario (1968-like)	Severe Scenario (1918-like)
19% of non-ICU beds	191% of non-ICU beds
46% of ICU	461% of ICU beds
20% of ventilators	198% of ventilators

Note: Derived using FluSurge 2.0 with national population statistics, 750,000 non-ICU beds, 90,000 ICU beds, 105,000 ventilator, an 8-week duration, a 25% attack rate, and accepting the other default assumptions (1968 based). For a severe pandemic, the assumed number of hospitalizations was changed from 992,000 to 9.9 million to correspond with the HHS planning assumptions.¹⁹

To download FluSurge, you can visit www.pandemicflu.gov/plan/tools.html. Your Kimberly-Clark Sales Representative can also assist you in gathering and inputting this information.

Kimberly-Clark PPE Demand Analysis Tool

Kimberly-Clark has developed a PPE Demand Analysis Tool to assist you in determining how much PPE your facility may want to consider stockpiling for a pandemic. Your Kimberly-Clark Sales Representative will be able to lead you through the tool based on the specific needs of your facility or your preparedness plan requirements. Your Sales Representative can produce a draft recommendation with minimal information supplied from you and then review the outputs, allowing you to verify the information and change any variables or assumptions.

This dynamic analysis tool first begins with outputs from the FluSurge program which estimates hospital admissions. Then the tool estimates outpatient visits utilizing the same planning assumptions. Combined with your current average PPE usage, this creates a baseline of information to estimate PPE usage rates per outpatient visit, per admission, per hospital bed, and per employee. You may base your analysis using any one of these rates or your own rate. Alternatively, you can simply calculate a PPE stockpile based on current usage for a 6-8 week pandemic period.

18,19 Toner, Eric, and Richard Waldhorn, "What Hospitals Should Do to Prepare for an Influenza Pandemic" *Biosecurity and BioTerrorism: Biodefense Strategy, Practice and Science*, Volume 4, Number 4, 2006, page 398.

Sample PPE Demand Analysis Tool Output Based on *Admissions Only*:

This example shows an analysis based on “admissions” criteria only. You may also choose to analyze PPE demand using outpatient visits, hospital beds, employees or user-determined criteria.

Demand criteria to be used	Admissions	
Additional admissions requiring precautions	280	output from FluSurge
Sets of PPE based on admissions assuming average 5 day hospital stay	100	20 sets per day

Estimated potential increase in PPE demand			
PPE ^{††}	QTY Needed	Case Count	Additional Cases Needed
Respirators	28,000	210	133
Standard Face Masks for Patients	1,400	300	5
Eyewear	28,000	50	560
Gowns	28,000	100	280
Gloves	56,000	1,000	56
Headwear	28,000	300	93

^{††}PPE variables and % usage can be changed.

Note: Derived using a sample hospital with 390 beds, in an area with a sample population of 80,000, 8-week duration, 25% attack rate, with 20% of the infected population seeking medical care, and a 5 day average length of hospital stay utilizing 20 sets of PPE per day. (These assumptions can be modified.)

In estimating your PPE needs, you may want to consider factors that would be present during a pandemic such as an increased number of employees and/or volunteers donning PPE, a higher level of infection control precautions observed, and an increased use of respirators.

If you would like to spread your stockpiling purchase over a number of weeks, the tool also allows you to recalculate what your normal weekly orders should be to slowly build your reserve PPE.

Storage:

Based on your facility’s available storage onsite, you may need to consider working with your distributor partner or renting a storage facility that will provide you quick access to your supply when needed. Depending on the particular supplies being stockpiled, your facility will also need to consider a system to rotate the inventory to ensure product is not expired when needed.

Contact your Kimberly-Clark Sales Representative to take advantage of this demand planning tool.

Hospital Preparedness Checklist

Although it is impossible to completely prepare for every scenario which could occur during an influenza pandemic, there are certain elements which should be included in your facility's plan. The checklist below is a good starting point. However, you should also "expect the unexpected" and try to build flexibility into your plan. Your facility will play a critical role in helping minimize the negative impact of an influenza pandemic on your community.

The following checklist²⁰ was extracted from the Healthcare Planning resource documents developed by the HHS. **Please refer to www.pandemicflu.gov for a more detailed planning guide.**

1. Structure for planning and decision making

- An internal, multi-disciplinary planning committee for influenza preparedness has been created.
- A state or local health department person has been identified as a committee liaison.
- A linkage with local or regional emergency preparedness groups has been established.

2. Development of a written pandemic influenza plan

- A written plan has been completed or is in progress that includes the elements listed in #3 below.
- Responsibilities of key personnel related to executing the plan have been described.
- A simulation exercise has been developed to test the effectiveness of the plan.

3. Elements of an influenza pandemic plan

- A surveillance plan has been developed.
 - Syndromic surveillance has been established in the emergency room.
 - Thresholds for heightened local surveillance for pandemic influenza have been established.
 - A system for internal review of pandemic influenza activity in patients presenting to the emergency department has been created.
 - A system of monitoring for nosocomial transmission of a pandemic has been implemented and tested by monitoring for non-pandemic influenza.
- A communication plan has been developed.
 - Responsibility for external communication has been assigned.
 - Key points of contact outside the facility have been identified.
 - A plan for updating key facility personnel on a daily basis has been established.
 - An education and training plan on pandemic influenza has been developed.
 - A plan is in place for rapidly training non-facility staff brought in to provide patient care.

- A triage and admission plan has been developed.
 - A location for triage of patients with possible pandemic influenza has been identified.
 - An isolation plan for patients with possible pandemic influenza has been developed.
 - A method for tracking the admission and discharge of patients with pandemic influenza has been developed.

- A facility access plan has been developed.
 - Protocols for limiting visitors and closing the facility to new admissions are in place.
 - Hospital Security has had input into procedures for enforcing facility access controls.

- An occupational health plan has been developed.
 - A system for rapidly delivering vaccine or antiviral prophylaxis to healthcare personnel has been developed.
 - A method for prioritizing healthcare personnel for receipt of vaccine or anti-viral prophylaxis based on level of patient contact and personal risk for influenza complications has been established.
 - A system for detecting symptomatic personnel before they report for duty has been developed.
 - A policy for managing healthcare personnel with symptoms of or documented pandemic influenza has been established.

- A vaccine and anti-viral use plan has been developed.
 - Contacts for obtaining influenza vaccine and anti-viral prophylaxis have been identified.
 - A priority list (based on HHS guidance) and estimated number of patients and healthcare personnel who would be targeted for influenza vaccination or anti-viral prophylaxis has been developed.
 - A system for rapidly distributing vaccine and anti-virals to patients has been developed.

- Issues related to surge capacity have been addressed.
 - A plan to address unmet staffing needs in the hospital is in place.
 - The minimum number and categories of personnel needed to care for a group of patients with pandemic influenza has been determined.
 - Strategies to increase bed capacity have been identified.
 - The estimated patient capacity for this facility is _____.

- Anticipated durable and consumable resource needs have been determined.

- A strategy for handling increased numbers of deceased persons has been developed.

What can you do now to prepare?

The prospect of preparing for a pandemic can seem overwhelming, but there are steps you can take now.

- Train hospital staff and enforce adherence to infection control guidelines.
- Institute respiratory etiquette hospital-wide; this will help train your staff and patient community now, while the need is not quite as critical.
- Consider stockpiling essential consumable and durable medical supplies.
- Begin developing elements of the HHS preparedness checklist.
- Research what state resources may be available to you.

What Is Kimberly-Clark Doing to Prepare?

Pandemic preparedness should be a priority for any business or organization. Kimberly-Clark has a corporate task force assigned to manage its own pandemic and business continuity process. Through our own pandemic planning, we continue to work with our raw material suppliers and distributor partners to ensure our response is as efficient and effective as possible.

Kimberly-Clark places tremendous importance on our long-term relationship with customers, and we understand the challenges that reduced supply situations may present for you. We continue to invest in additional capacity to meet current and future increased demand. We also continue to improve our emergency plans to enable us to better respond to sudden surges in demand.

For more information on how Kimberly-Clark can help your facility prepare for an influenza pandemic, visit our website at www.kchealthcare.com/pandemicflu or contact your Kimberly-Clark Sales Representative.



Resources

Education is vital to effective influenza pandemic preparedness. We encourage you to visit the following websites which were used in the preparation of this brochure, for more detailed information and additional resources:

- <http://www.pandemicflu.gov/plan/healthcare/index.html>
- <http://www.hhs.gov/pandemicflu/plan/sup4.html>
- <http://www.cdc.gov/flu/professionals/infectioncontrol/resphygiene.htm>
- http://www.who.int/csr/disease/avian_influenza/en/

www.kchealthcare.com/pandemicflu

At Kimberly-Clark, our mission is to deliver clinical solutions that you can depend on to meet the demands of your fast-paced world. We are committed to designing solutions that protect healthcare workers and patients by reducing the spread of Healthcare-Associated Infections (HAIs) and the development of Surgical Site Infections (SSIs), with products and services including:

**Surgical Gowns
Closed Suction Systems
Facial Protection
Exam Gloves
Protective Apparel
Best Practices
Knowledge Network* Education**



Healthcare-Associated Infection Solutions



Surgical Solutions



Digestive Health



Pain Management



Commitment to Excellence

If, for any reason, our products do not meet your expectations, please let us know your comments or suggestions for improvement. Your input will result in a concerted effort on our part to meet your requirements. Our goal is to provide quality products that completely meet your needs time after time.

For more information, please call your sales representative, or visit our web site at www.kchealthcare.com.

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*Trusted Clinical Solutions**