

# Preparing Workplaces for an Influenza Pandemic

Andrew Levinson  
Directorate of Standards and Guidance  
Occupational Safety and Health Administration



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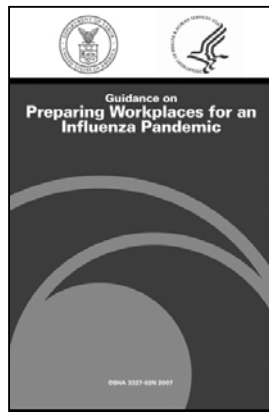
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- Joint DOL/HHS document
- Released: February 6, 2007
- Available at:
  - [PandemicFlu.gov](http://PandemicFlu.gov)
  - [OSHA.gov](http://OSHA.gov)



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**Seasonal Influenza**

- Regular periodic outbreaks of respiratory illness.
- Vaccine prepared in advance.

**Pandemic Influenza**

- A new strain of virus emerges, to which people have limited immunity, and spreads easily.
- A worldwide outbreak of illness.
- A vaccine will not be available for some time.
- Pandemic can vary in severity from mild to very severe.

**Avian Influenza (“Bird Flu”)**

- A virus of wild birds and domestic poultry, usually of little threat to humans.
- Many forms of avian influenza of varying severity (LPAI vs. HPAI).
- The current strain of HPAI (H5N1) is very virulent and has shown a limited ability to infect humans.

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**The Link Between Avian and Pandemic Influenza**

Scientists and government officials are concerned that the current strain of highly pathogenic avian influenza virus (H5N1) will combine with a normal seasonal human influenza virus to create a new strain of human influenza virus with the potential to cause a pandemic.

We won't know if the next pandemic will be mild or severe until the new strain emerges.

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**What Kind of Flu?**

	Infection Rate	Mortality	Population Affected	Control Measures
Seasonal	~10% (5-20%)	~0.1% (~36,000/yr in US)	Elderly, infants	Vaccine; anti-virals
Avian <small>Total to 7/11/07</small>	Minimal 318 cases	~ 50-90% 192 deaths	Poultry workers	Poultry culling; isolation
Pandemic (1918)	10-75% average ~30%	~2.5% 50-100 million worldwide	Young adults	Quarantine
SARS <small>11/02 - 7/03</small>	? 8096 cases	~10 % 774 deaths	EMT; HCW	Quarantine; travel restrictions

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### Pandemic Factoid

- Pandemics are inevitable:
  - Not IF but WHEN.
- There will be little warning once the pandemic influenza strain emerges.
- Outbreaks will occur simultaneously in many areas.
- The world is overdue. - “The pandemic clock is ticking loudly. Unfortunately, we don’t know what time it is.” - Dr. Edgar Marcuse (CDC-ACIP)

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### The Pandemic Map



Urban Areas Affected First -National Spread Within 1-2 Months

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### Pandemic: The US Impact

- 50% or more ill people will seek medical care
- # of hospitalizations / deaths depends on virulence (capacity to cause severe illness) of the pandemic virus

	Moderate (1957-like)	Severe (1918-like)
Illness	90 million (30%)	90 million (30%)
Outpatient medical care	45 million (50%)	45 million (50%)
Hospitalization	865,000	9, 900,000
ICU care	128,750	1,485,000
Mechanical ventilation	64,875	745,500
Deaths	209,000	1,903,000

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### How a Severe Pandemic Could Affect Workplaces

- Absenteeism – up to 40% of employees affected
  - Sick/dead employees
  - Caring for sick family members
  - Child care
  - Afraid to come to work
- Changes in Patterns of Commerce
  - Increased demand for some goods/services
  - Decreased demand for other goods/services
  - Home delivery, drive-through windows, expanded hours
- Interrupted Supply/Delivery Chain

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### Who Should Plan for a Pandemic

- All business and organizations should begin planning for a pandemic now.
- Lack of continuity planning can result in a cascade of failure as employers attempt to address the challenges of a pandemic when it occurs.
- Critical infrastructure / key resource industries have a special responsibility to plan for a pandemic.

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### Critical Infrastructure & Key Resources

85% of nation's critical infrastructure is in the hands of the private sector, the business community plays a vital role in ensuring national pandemic preparedness and response.

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|--|---|
| <b>Critical Infrastructure</b>   | <b>Key Resources</b>  |
| <ul style="list-style-type: none"><li>• Food &amp; Agriculture</li><li>• Public Health and Healthcare</li><li>• Banking &amp; Finance</li><li>• Chemical &amp; Hazardous Materials</li><li>• Defense Industrial Base</li><li>• Water</li><li>• Energy</li><li>• Emergency Services</li><li>• Information Technology</li><li>• Telecommunications</li><li>• Postal &amp; Shipping</li><li>• Transportation</li><li>• National Monuments &amp; Icons</li></ul> | <ul style="list-style-type: none"><li>• Government Facilities</li><li>• Dams</li><li>• Commercial Facilities</li><li>• Nuclear Power Plants</li></ul> |

Additional guidance for CI/KR business is available at:  
<http://www.pandemicflu.gov/plan/pdf/CIKRpandemicInfluenzaGuide.pdf>

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### How Can Influenza Spread Between People?



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### How Influenza Can Spread Between People

- Contact of infectious materials with nose, mouth, and eyes.
- Thought to be primarily spread by relatively large droplets traveling less than 6 feet (droplet transmission).
- Touching contaminated objects can also be a factor (fomite transmission).
- Influenza may also be spread through very small particles traveling across longer distances (aerosol transmission).
- The importance of each route is uncertain and may vary based upon the characteristics of the influenza strain.

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### How Influenza Can Spread Between People

#### Normal seasonal influenza:

- Aerosol infectious for at least 24 hours
  - Indoors, low humidity
- 5 minutes on hands
- 24 – 48 hrs; non-porous surfaces
- People are reservoirs:
  - Incubation period: 2-4 days
  - Contagious at least 24 hrs before symptoms
  - Children transmit virus > 7 days
  - Immuno-compromised may transmit for weeks

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**Classifying Employee Exposure to Pandemic Influenza at Work**

- **Very high exposure risk**  
 Exposure to high concentrations of known or suspected sources of pandemic influenza during specific medical or laboratory procedures.
- **High exposure risk**  
 High potential for exposure to known or suspected sources of pandemic influenza virus.
- **Medium exposure risk**  
 Requires frequent, close contact (within 6 feet) exposure to others.
- **Lower exposure risk (caution)**  
 No frequent close contact (within 6 feet) with others.

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**Very High Exposure Risk:**

- HCW performing aerosol-generating procedures on known or suspected pandemic patients.
- HCW/lab staff collecting or handling specimens from known or suspected pandemic patients.



**High Exposure Risk:**

- HCW and support staff exposed to known or suspected pandemic patients.
- Medical transport of known or suspected pandemic patients in enclosed vehicles.
- Performing autopsies on known or suspected pandemic patient(s).

**Medium Exposure Risk:**

- Employees with high-frequency close contact with the general population (e.g., schools, high-volume retail).

**Lower Exposure Risk (Caution):**

- Employees who have minimal close contact with the general public and other coworkers (e.g., office workers).

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**Critical Infrastructure / Key Resource**

Employers of CI/KR employees may consider upgrading protective measures for these employees beyond what would be suggested by their exposure risk due to the necessity of these services and/or the difficulty in replacing such personnel.

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### How to Protect Employees

- Develop a disaster/business continuity plan.
- Promote social distancing.
- Encourage good hygiene practices.
- Develop a sick leave policy that encourages sick employees to stay at home.
- Use the Hierarchy of Controls:
  - Work Practice and Engineering Controls
  - Administrative Controls
  - Personal Protective Equipment

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### Developing a Disaster Plan

- The most difficult step is the first one.
- Organize and identify a central team of people or focal point to serve as a communication source so that your employees and customers can have accurate information during the crisis.
- Work with community planners to integrate your pandemic plan into local and state planning, particularly if your operations are part of the Nation's critical infrastructure or key resources.
- Work with your employees and their union(s) to address leave, pay, transportation, travel, childcare, absence and other human resource issues.
- Plan for downsizing services but also anticipate any scenario which may require a surge in your services.
- Prepare and plan for operations with a reduced workforce.

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### Developing a Disaster Plan

- Identify business-essential positions and people required to sustain business-necessary functions and operations. Prepare to cross-train or develop ways to function in the absence of these positions.
- Develop policies and practices that distance employees from each other, customers and the general public (such as e-mail, websites and teleconferences).
- Allow employees to work from home or to stagger their work shifts may be important as absenteeism rises.
- Develop a sick leave policy that does not penalize sick employees, thereby encouraging employees to stay home so that they do not infect other employees.
- All employees will have non-occupational risk factors at home and in in community settings that should be reduced to the extent possible.

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### Developing a Disaster Plan

- Stockpile items such as soap, tissue, hand sanitizer, cleaning supplies and recommended personal protective equipment.
- When stockpiling items, be aware of each product's shelf life and storage conditions and incorporate product rotation into your stockpile management program.
- Some employees will also have individual risk factors that should be considered by employers as they plan how the organization will respond to a potential pandemic (e.g., immuno-compromised individuals and pregnant women).
- Assist employees in managing additional stressors related to the pandemic (mental health and substance abuse).

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### The Hierarchy of Controls

- Engineering controls involve making changes to the work environment to reduce work-related hazards.
- Work practice controls are procedures for safe and proper work that are used to reduce the duration, frequency or intensity of exposure to a hazard.
- Administrative controls include controlling employees' exposure by scheduling their work tasks in ways that minimize their exposure levels.
- Personal Protective Equipment (PPE) includes all clothing and other work accessories designed to create a barrier against workplace hazards.

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### Examples of Work Practice and Engineering Controls

- Providing resources and a work environment that promotes personal hygiene (e.g., tissues, no-touch trash cans, hand soap, hand sanitizer, disinfectants and disposable towels) and for employees to clean their work surfaces.
- Encouraging employees to obtain a seasonal influenza vaccine.
- Developing policies to minimize contacts between employees and between employees and clients or customers.
- Installing physical barriers (e.g., clear plastic sneeze guards).
- Installing a drive-through window for customer service.
- In some limited healthcare settings, for aerosol generating procedures, specialized negative pressure ventilation may be indicated.

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**Examples of Administrative Controls**

- Developing policies that encourage ill employees to stay at home without fear of any reprisals.
- The discontinuation of unessential travel to locations with high illness transmission rates.
- Consider practices to minimize face-to-face contact between employees such as e-mail, websites and teleconferences.
- Where possible, encourage flexible work arrangements such as telecommuting or flexible work hours to reduce the number of your employees who must be at work at one time or in one specific location.
- Consider home delivery of goods and services to reduce the number of clients or customers who must visit your workplace.
- Developing emergency communications plans. Maintain a forum for answering employees' concerns. Develop internet-based communications if feasible.

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**Personal Protective Equipment**

- PPE must be:
  - Selected based upon the hazard to the employee;
  - Properly fitted and some must be periodically refitted (e.g., respirators);
  - Conscientiously and properly worn;
  - Regularly maintained and replaced, as necessary;
  - Properly removed and disposed of to avoid contamination of self, others or the environment.
- Examples of personal protective equipment are gloves, goggles, face shields, surgical masks, and respirators.

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**Personal Protective Equipment**

- When selecting PPE, employers should consider factors such as function, fit, ability to be decontaminated, disposal, and cost.
- When a piece of PPE will have to be used repeatedly for a long period of time, a more expensive and durable piece of PPE may be less expensive in the long run than a disposable piece of PPE (e.g., filtering facepiece vs. elastomeric respirators or surgical masks vs. face shields).
- Each employer should select the combination of PPE that protects employees in their particular workplace.
- Wearing PPE may be physically burdensome to employees, particularly when the use of PPE is not common practice for the work task.

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### **Surgical Masks**

- FDA-certified surgical masks are a fluid resistant physical barrier used to prevent the transmission of splashes and splatters of body fluids.
- Surgical masks do not seal tightly to the face, do not filter small particles, and do not protect against airborne transmission.
- Uses for surgical masks:
  - Placed on sick people to limit the spread of disease.
  - Worn by healthcare workers to prevent contamination of patients wounds.
  - Worn by employees as a physical barrier to protect against splashes of large droplets of blood or body fluids.

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### **Respirators**

- NIOSH-certified respirators are designed to reduce employee's exposure to small airborne contaminants.
- Both disposable and reusable respirators are available (filtering facepiece, surgical respirator, elastomeric respirator, PAPR).
- Particulate respirator filters (N or R or P & 95 or 99 or 100). Any of the 9 filters (e.g., N95 or P100) is sufficient to filter influenza.
- Dust or "Comfort" masks
- Do not use respirators with exhalation valves during medical procedures.

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### **Steps Every Employer Can Take**

- Encourage sick employees to stay home.
- Encourage good hygiene practices (hand washing, cough/sneeze etiquette).
- Avoid close contact where possible (at least 6 feet).
- Keep work surfaces clean.
- Discourage sharing of phones, desks, computers, etc.
- Minimize crowded situations (e.g. meetings).
- Reduce or eliminate unnecessary social interactions.
- Promote healthy lifestyle (nutrition, exercise, smoking cessation).

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### Steps for Lower Exposure Risk Workplaces

- Follow steps for every employer.
- Communicate with employees about office leave policies, child care policies, telework policies.
- Promote hygiene and social distancing.
- Monitor public health communication about pandemic flu.

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### Steps for Medium Exposure Risk Workplaces

- Follow steps for every employer.
- Avoid close contact where possible.
- Promote hygiene (provide cleaning supplies, hand sanitizer, tissues).
- Expand internet, phone-based, home delivery, drive-through window service.
- Consider installing sneeze guards or other engineering controls, where appropriate.
- Expand communication with employees about workplace policies.
- PPE (surgical masks, respirators, face shields, gloves).

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### Steps for Very High/High Exposure Risk Workplaces

- Follow steps for every employer.
- Isolation rooms for aerosol generating medical procedures.
- Laboratory work in BSL3 facilities.
- Consider installing sneeze guards, where appropriate.
- Promote hygiene (provide cleaning supplies, hand sanitizer, tissues)
- Expand communication with employees about workplace policies.
- Respirators:
  - N95 or better for most situations.
  - SAR/PAPR for aerosol generating medical procedures.
  - Surgical Respirator when both respiratory protection and fluid resistance are needed.
- PPE (gloves, gowns, face shields).

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### Employees Who Live/Work Abroad

- Other geographic regions have different influenza seasons.
- U.S. Department of State will have limited ability to assist Americans living or traveling abroad.
- Travel to/within some countries may not be possible, safe, or medically advisable during a pandemic.
- Restrictions on domestic/international travel may happen unexpectedly and quickly.
- Plan to be self-sufficient if the employee(s) must shelter-in-place (food, water, medical supplies, personal protective equipment).

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### Additional Sources of Information

- Seasonal Influenza

[www.cdc.gov/flu/](http://www.cdc.gov/flu/)

- Avian Influenza

[www.pandemicflu.gov](http://www.pandemicflu.gov) or [www.avianflu.gov](http://www.avianflu.gov)

[www.osha.gov/dsg/guidance/avian-flu.html](http://www.osha.gov/dsg/guidance/avian-flu.html)

- Pandemic Influenza

[www.pandemicflu.gov/](http://www.pandemicflu.gov/)

[www.osha.gov/Publications/OSHA3327pandemic.pdf](http://www.osha.gov/Publications/OSHA3327pandemic.pdf)

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