

# Swine-Origin Influenza A (H1N1)

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# Agenda

- ◆ Background and info on the Swine Flu (H1N1)
- ◆ CDC guidelines and recommendations
- ◆ International Response
- ◆ National Response
- ◆ Idaho Response
- ◆ Ada County Response
- ◆ Dispatch protocols
- ◆ Local Considerations



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# Interim Recommendations and Guidance

Centers for Disease  
Control and Prevention





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- ◆ World Health Organization raised the worldwide pandemic alert level to Phase 5 on April 29, 2009. A Phase 5 alert is a “strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short.”



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- ◆ CDC's Division of the Strategic National Stockpile (SNS) continues to send antiviral drugs, personal protective equipment, and respiratory protection devices to all 50 states and U.S. territories to help them respond to the outbreak.
- ◆ 25% of SNS has been released.



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- ◆ Like all influenza viruses, swine flu viruses change constantly. Pigs can be infected by avian influenza and human influenza viruses as well as swine influenza viruses. When influenza viruses from different species infect pigs, the viruses can reassort (i.e. swap genes) and new viruses that are a mix of swine, human and/or avian influenza viruses can emerge leading us to the most recently discovered H1N1 virus.



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# Background

- ◆ Emergency medical services play a vital role in responding to requests for assistance, triaging patients, and providing emergency treatment to influenza patients
- ◆ Patient care is often provided in uncontrolled environments and confined spaces



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# Interim Recommendations

- ◆ Coordination among public safety answering points (PSAPs), healthcare facilities, and the public health system is important for coordinated response to swine-origin influenza.
- ◆ Each 9-1-1 system should seek the involvement of their EMS medical director to provide appropriate medical oversight.



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# Swine-origin Influenza Virus

- ◆ S-OIV infection can cause a wide range of symptoms including fever, headache, upper respiratory tract symptoms (cough, sore throat, rhinorrhea), fatigue, vomiting, or diarrhea.



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- ◆ Data on the spectrum of illness is not yet available for this new variant of swine-origin influenza A(H1N1), complications should be similar to seasonal influenza:
  - exacerbation of underlying chronic medical conditions
  - upper respiratory tract disease (sinusitis, otitis media, croup)
  - lower respiratory tract disease (pneumonia, bronchiolitis, status asthmaticus),
  - cardiac (myocarditis, pericarditis),



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- musculoskeletal (myositis, rhabdomyolysis)
- neurologic (acute and post-infectious encephalopathy, encephalitis, febrile seizures, status epilepticus)
- toxic shock syndrome
- secondary bacterial pneumonia with or without sepsis.



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# Infectious Period

- ◆ Persons with swine-origin influenza A (H1N1) virus infection should be considered potentially infectious from one day before to 7 days following illness onset.
- ◆ Incubation period is most likely 1-4 days.
- ◆ Persons who continue to be ill longer than 7 days should be considered contagious until symptoms resolve.



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- ◆ Non-hospitalized ill persons with confirmed or suspected cases are recommended to stay at home in voluntary isolation for at least the first 7 days after consulting with their health care provider about special care they might need if they are pregnant or have other significant health conditions.



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# Transmission

- ◆ Influenza viruses are spread from person to person primarily through large-particle respiratory droplet transmission. Transmission via large-particle droplets requires close contact between source and recipient persons because droplets do not remain suspended in the air and generally travel only a short distance (<1 meter) through the air.
- ◆ Contact with respiratory-droplet contaminated surfaces is another possible source of transmission.



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# Treatment

- ◆ Most symptoms can be cured with OTC medication like Acetaminophen, Ibuprofen, and Naproxen
- ◆ The swine-origin influenza A (H1N1) virus is sensitive to the antiviral medications Tamiflu and Relenza
- ◆ It is resistant to Amantadine and Rimantadine



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- ◆ Healthcare providers may prescribe Tamiflu and Relenza at their discretion.
- ◆ Recommendations for use of antivirals may change as data on antiviral effectiveness, clinical spectrum of illness, adverse events from antiviral use, and antiviral susceptibility data become available



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- ◆ Antiviral chemoprophylaxis may be considered for health care providers
  - Pre-exposure: should be given during the potential exposure period and continued for 10 days after the last known exposure
  - Post-exposure: should be given for 10 days after the last known exposure. If exposure occurred more than 7 days earlier, prophylaxis is not necessary



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# Interim Guidance on Treatment

- ◆ <http://www.cdc.gov/swineflu/recommendations.htm>



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## Confirmed Case Influenza A (H1N1) virus (S-OIV)

- ◆ A confirmed case of S-OIV infection is defined as a person with an acute febrile respiratory illness with laboratory confirmed infection at CDC by one or more of the following tests:
  - Real-time RT-PCR ( real-time polymerase chain reaction)
  - Viral culture



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## Probable Case Influenza A (H1N1) virus (S-OIV)

- ◆ A probable case of S-OIV infection is defined as a person with an acute febrile illness who is positive for influenza A, but negative for H1 and H3 by influenza RT-PCR



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## Suspected Case Influenza A (H1N1) virus (S-OIV)

- ◆ A suspected case of S-OIV infection is defined as a person with acute febrile respiratory illness with onset
  - Within 7 days of close contact with a person who is a confirmed case of S-OIV infection
  - Within 7 days of travel to a community where there are one or more confirmed cases
  - Resides in a community where there are confirmed cases



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# International Response/ Best Practices

- ◆ Education to staff
- ◆ Issue N95s/Fit test
- ◆ Review & update plans (PPE)
- ◆ Quarantine/isolation issues/pay
- ◆ Inventory of equipment/supplies
- ◆ Pre-screening patients/staff
- ◆ EMS/Fire/PD response alterations
- ◆ Medical protocol changes (procedures, T/R)
- ◆ Public Health Hotlines (321-2222)



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# National Response

- ◆ Offering Guidance and Education
- ◆ CDC Recommendations
- ◆ Card 36 EMD protocol
- ◆ Strategic National Stockpile



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# Idaho Response

- ◆ Activated State EOC
- ◆ Reviewed & Implemented Plans
- ◆ Public Health - Monitoring
- ◆ No Disaster Declaration (at this time)
- ◆ Receipt of SNS



# Ada County Response

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- ◆ Education on Swine Flu
- ◆ Infection Control Review
- ◆ N95 Fit Testing
- ◆ Hand sanitizer/PPE
- ◆ Inventory of equipment and supplies
- ◆ Coordination with local emergency response, public health, and medical facilities
- ◆ WebEOC



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# Recommendations for 9-1-1 Public Safety Answering Points

- ◆ It is important for the PSAPs to question callers to ascertain if there is anyone at the incident location who is possibly afflicted by the S-OIV, to communicate the possible risk to EMS personnel prior to arrival, and to assign the appropriate EMS resources.



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# Pandemic Flu and Protocol 36

- ◆ Protocol 36 will most likely be initiated when there are actual confirmed cases in this area.
- ◆ This has the potential to alter emergency responses



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## Protocol 36 – Pandemic flu

- ◆ This Protocol determines whether patients initially presenting with the chief complaints of Breathing Problems, Chest Pain, Headache, or Sick Person, is a likely flu patient or a non-infected patient.
- ◆ Different reduced responses (or referrals to PanFlu hot-lines, and even quarantining) can be initiated based on these codes.



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- ◆ Three suffixes, based on local public safety needs (increased call load and/or reduced EMS response personnel availability), allow for a three-step decreasing level of EMS response deployment.



# Protocol 36

## Adair County Paramedics 36 PANDEMIC FLU (OFFICIALLY ANNOUNCED)

### KEY QUESTIONS

1. Is s/he **completely alert** (responding appropriately)?
2. **(Difficulty breathing)** Describe to me what her/his breathing is like.
  - a. **(INEFFECTIVE)** Did s/he have any flu symptoms prior to this?
 

Yes \_\_\_\_\_

No \_\_\_\_\_
3. Is s/he **changing color**?
  - a. **(Yes)** Describe the color change.
4. Does s/he have a **fever** (hot to touch in room temperature)?
5. Is s/he **coughing**? \* per Rule 2
6. Does s/he have a **sore throat**?
7. Does s/he have **body aches**?
8. Does s/he have a **runny or stuffy nose**?
9. Does s/he have **diarrhea or vomiting**?
10. Is s/he having **chills or sweats**?
11. Does s/he have a **headache**?
  - a. **(Yes & no other flu symptoms)** Was there a sudden onset of severe pain?
 

Yes \_\_\_\_\_

No flu symptoms in KQ 4–11 \_\_\_\_\_

### POST-DISPATCH INSTRUCTIONS

- a. **(If regular dispatch)** I'm sending the **paramedics** (ambulance) to help you now. **Stay on the line** and I'll tell you **exactly** what to do next.
- b. **(If reduced/limited dispatch)** I'm **arranging care** for you now. An ambulance (or Care Van) will come to check you **when they are available**. This might take (several hours).
- c. **(If quarantine and no dispatch)** Because of the extent of the flu epidemic, an **ambulance cannot be sent** to you. I will **connect** you to a **flu care specialist** who will advise you on what to do.
- d. **(Patient medication requested and Alert)** Remind her/him to do what her/his **doctor has instructed** for these situations.
- e. **(≥ 1 + DELTA)** If there is a **defibrillator (AED)** available, **send** someone to get it **now** in case we need it later.

DLS \* Link to X-1 unless:

INEFFECTIVE BREATHING and Not alert ABC-1

LEVELS	#	DETERMINANT DESCRIPTORS	A B C	CODES	LEVEL 1 (A)	LEVEL 2 (B)	LEVEL 3 (C)
<b>D</b>	1	INEFFECTIVE BREATHING with flu symptoms		36-D-1			
	2	Not alert with flu symptoms		36-D-2			
	3	DIFFICULTY SPEAKING BETWEEN BREATHS with flu symptoms		36-D-3			
	4	CHANGING COLOR with flu symptoms		36-D-4			
<b>C</b>	1	Chest pain ≥ 35 with single flu symptom		36-C-1			
	2	Abnormal breathing with single flu symptom		36-C-2			
<b>A</b>	1	Chest pain ≥ 35 with multiple flu symptoms		36-A-1			
	2	Chest pain < 35 with single flu symptom		36-A-2			
	3	Abnormal breathing with multiple flu symptoms		36-A-3			
<b>Ω</b>	1	Flu symptoms <b>only</b> (cough, fever, chills or sweats, sore throat, diarrhea, body aches, headache, etc.)		36-Ω-1			
	2	Chest pain < 35 with multiple flu symptoms		36-Ω-2			



# Protocol 36

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Protected by U.S. Patents 5,857,966; 5,989,187; 6,004,266; 6,010,451; 6,053,864; 6,076,065; 6,078,894; 6,106,459; 6,607,481; 7,428,301

AMPDS@v12, NAE-std, 090427

<p><b>➔ Pandemic Flu Level Suffixes</b></p> <p>Locally announced Pandemic Flu level designations may affect your agency's <b>response assignment</b>. These suffixes allow for <b>locally</b> designated, potentially <b>different levels</b> of pandemic patient <b>triage</b>:</p> <p><b>A</b> = Level 1 (low)  <b>B</b> = Level 2 (moderate)  <b>C</b> = Level 3 (high)</p>	<p><b>CHANGING COLOR</b></p> <p>Changing colors of <b>clinical significance</b> include:</p> <ul style="list-style-type: none"> <li>• Ashen/Gray</li> <li>• Blue/Cyanotic/Purple</li> <li>• Mottled</li> </ul> <p>(Pale, pink, and red are not colors of clinical significance in the dispatch environment and will not, alone, change the dispatch priority. Callers failing to initially identify a listed color should not be coached by asking unlisted clarifiers such as "Well, is s/he gray?")</p>	<p><b>asked again.</b> More than one flu symptom creates a <b>higher likelihood</b> that the Chief Complaint is actually the flu.</p> <p>3. If <b>initial information</b> identifies the Chief Complaint as <b>Breathing Problems</b> (6), <b>Chest Pain</b> (10), <b>Headache</b> (18), or <b>Sick Person</b> (26), and other flu symptoms are <b>not identified</b>, return to the <b>original Chief Complaint</b> and <b>complete the call</b>.</p> <p>4. If the patient <b>had a fever</b> but took aspirin, acetaminophen (Tylenol), or ibuprofen (Motrin), <b>and the fever is now gone</b>, "yes". answer the fever Key Question as <b>"yes"</b>.</p>
<p><b>INEFFECTIVE BREATHING</b></p> <p>The following, when <b>volunteered</b> at any point during Case Entry (code as <b>ECHO</b> on 2, 6, 9, 11, 15, 31):</p> <ul style="list-style-type: none"> <li>• "Barely breathing"</li> <li>• "Can't breathe at all"</li> <li>• "Fighting for air"</li> <li>• "Gasping for air" (<b>AGONAL BREATHING</b>)</li> <li>• "Just a little" (<b>AGONAL BREATHING</b>)</li> <li>• "Making funny noises" (<b>AGONAL BREATHING</b>)</li> <li>• "Not breathing"</li> <li>• "Turning blue or purple"</li> </ul>	<p><b>Epidemic</b></p> <p>A <b>sudden</b> outbreak of a disease or an <b>unusually large number</b> of disease cases in a <b>single community or relatively small area</b>. Disease may spread from person to person and/or through the exposure of many persons to a single source, such as a water supply.</p> <p><b>Pandemic</b></p> <p>An epidemic that becomes <b>widespread</b>, affecting an <b>entire region, continent, or the world</b>.</p> <p><b>Rules</b></p> <ol style="list-style-type: none"> <li>1. Once a pandemic is officially announced, <b>use Protocol 36</b> for the medical Chief Complaints of <b>breathing problems, chest pain, headache, and sickness</b>. Do not go to Protocols 6, 10, 18, or 26 <b>unless</b> Protocol 36 directs you there.</li> <li>2. Once <b>two flu symptoms</b> in Key Questions 4–11 have been identified, choose the appropriate <b>Determinant Code</b>, <b>skipping the rest of the questions</b>. If <b>positive flu symptoms</b> were <b>mentioned in Case Entry</b>, these Key Questions <b>do not have to be</b></li> </ol>	<p><b>Axioms</b></p> <ol style="list-style-type: none"> <li>1. It is predicted that a pandemic will cause an <b>increase</b> in the number of <b>severe breathing problems</b> reported (more 6-D-1 cases) <b>unless Protocol 36 triage is implemented</b>.</li> <li>2. When contracted from a <b>bird</b>, avian influenza A (H5N1) has a <b>60% mortality rate</b>.</li> <li>3. <b>Human-to-human</b> transmission of the avian influenza virus is currently <b>very rare</b>.</li> </ol> <p><b>Flu Symptoms</b> (may be updated as more is known about specific symptoms at the time of an outbreak)</p>
<p><b>DIFFICULTY SPEAKING BETWEEN BREATHS</b></p> <p>Can also be described as:</p> <ul style="list-style-type: none"> <li>• Unable to <b>complete a full sentence</b> without taking a breath</li> <li>• Only able to <b>speak a few words</b> without taking a breath</li> <li>• Breathing attempts that <b>severely hinder</b> crying in infants and small children</li> </ul>		<p>Common symptoms of the current Pandemic Flu illness based on the latest information from government health agencies:</p> <ul style="list-style-type: none"> <li>• Body aches</li> <li>• Chest pain</li> <li>• Chills or sweats</li> <li>• Cough</li> <li>• Diarrhea</li> <li>• Difficulty breathing</li> <li>• Fever (&gt;100° F/38° C)</li> <li>• Headache</li> <li>• Runny/stuffy nose</li> <li>• Sore throat</li> <li>• Vomiting</li> </ul>



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If NO S-OIV reported cases in the geographic area

- ◆ EMS personnel should stay more than six feet away from patients and bystanders with symptoms and exercise appropriate routine respiratory droplet precautions while assessing all patients for suspected cases of S-OIV.



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- ◆ Assess all patients for acute febrile respiratory illness (fever plus one or more of the following: nasal congestions/rhinorrhea, sore throat, or cough)
  - If no acute febrile respiratory illness, proceed with normal EMS care.
  - If symptoms of acute respiratory illness, then assess for travel to geographic areas with confirmed cases within the last 7 days or contact with someone who has travelled to these areas.



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- ◆ If travel exposure, don appropriate PPE for suspected case of S-OIV
- ◆ If no travel exposure, place a standard surgical mask on the patient and use appropriate PPE for cases of acute febrile respiratory illness without suspicion of S-OIV.



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## CDC confirmed cases of swine-origin influenza in geographic area

- ◆ If PSAP advises potential for acute febrile respiratory illness symptoms on scene, EMS personnel should don PPE prior to entering the scene.
- ◆ If PSAP has not identified individuals with symptoms of acute febrile respiratory illness on scene, EMS personnel should stay 6 feet away from the patient and bystanders with symptoms and exercise appropriate droplet precautions.



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- ◆ Assess all patients for symptoms of acute febrile respiratory illness (fever plus one of the following: nasal congestions, rhinorrhea, sore throat or cough)
  - If no symptoms present, provide routine EMS care.
  - If symptoms are present, don appropriate PPE if not already on.



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# Personal Protective Equipment

- ◆ When treating patients with a suspected case of swine-origin influenza, the following PPE should be worn:
  - Fit-tested disposable N95 respirator
  - Eye protection
  - Disposable gloves
  - Gown



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# Personal Protective Equipment

- ◆ When treating a patient that is not a suspected case of swine-origin influenza but has symptoms of acute febrile respiratory illness:
  - Place a standard surgical mask on the patient if tolerated.
  - If not tolerated, EMS personnel should don a standard surgical mask



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- ◆ If suspected or confirmed case of swine-origin influenza, all EMS personnel engaged in aerosol generating activities (intubation, nebulizer treatments, or cardiopulmonary resuscitation) should wear a fit tested disposable N95 respirator, gloves, eye protection, and a gown.



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# Infection Control

- ◆ Routine cleaning with soap and water to remove soil and organic matter, followed by the proper use of disinfectants, are the basic components of effective environmental management of influenza.



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# Infection Control

- ◆ Clean and disinfect daily with vehicle check out and after each patient transport:
  - All non-patient care areas of the vehicles
  - Frequently touched surfaces in patient care compartments including gurneys, railings, medical equipment control panels, flooring, walls, ceilings, work surfaces, door handles, radios, keyboard, and cell phones



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- ◆ After the patient has been removed from the vehicle and prior to cleaning, the air within the vehicle may be exhausted by opening the doors and windows while the ventilation system is running.
- ◆ This should be done outdoors and away from pedestrian traffic.



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# Swine-origin Influenza Etiquette

- ◆ Sneeze into your shirt rather than your hand or elbow.
- ◆ Avoid shaking hands, hugging or other social physical contact.
- ◆ Remove gloves prior to operating the vehicle or using the MDT.
- ◆ Do not take unnecessary equipment into a call and keep all equipment at least 6 feet from the patient.



# Reference Websites

## AdaCountyParamedics

- ◆ **CDC:**
  - Main Swine Flu Web Link: <http://www.cdc.gov/swineflu/>
  - Case Counts: <http://www.cdc.gov/swineflu/investigation.htm>
- ◆ Guidance and Recommendations: <http://www.cdc.gov/swineflu/recommendations>
- ◆ Influenza General Resources <http://www.cdc.gov/flu/pandemic/>
- ◆ Influenza OPLAN <http://www.cdc.gov/flu/pandemic/cdcplan.htm>
- ◆ Info Phone Line: 1-800-CDC-INFO (1-800-232-4636)
- ◆ Key Facts: [www.cdc.gov/swineflu/key\\_facts.htm](http://www.cdc.gov/swineflu/key_facts.htm)
- ◆ Seasonal Flu Overview <http://www.cdc.gov/flu/weekly/>
- ◆
- ◆ **DHHS**
- ◆ Public Health Emergency Declaration: [http://www.hhs.gov/secretary/phe\\_swh1n1.html](http://www.hhs.gov/secretary/phe_swh1n1.html)
- ◆
- ◆ **DHHS/Pandemic Flu.Gov**
- ◆ <http://www.pandemicflu.gov/index.html>
- ◆ Federal and world response stages: <http://www.pandemicflu.gov/plan/federal/fedresponsestages.html>
- ◆ Use of Pneumococcal Vaccine <http://www.pandemicflu.gov/vaccine/pneumococcal.html>
- ◆ State-by-State Pandemic Planning and status: <http://www.pandemicflu.gov/plan/states/index.html#stateplans>



# Reference Websites

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- ◆ **DHS:**
- ◆ **DHS/FEMA:**
- ◆ FEMA Assistance for Pan Flu: [http://www.fema.gov/government/grant/pa/9523\\_17.shtm](http://www.fema.gov/government/grant/pa/9523_17.shtm)
- ◆
- ◆ **Google Maps Swine Flu Tracking**
- ◆ **Tool:** <http://maps.google.com/maps/ms?ie=UTF8&hl=en&t=p&msa=0&msid=106484775090296685271.0004681a37b713f6b5950&ll=32.639375,-110.390625&spn=15.738151,25.488281&z=5>
- ◆
- ◆ **Mexican Department of Health:**
- ◆ <http://portal.salud.gob.mx/>
- ◆
- ◆ **Office of Personnel Management (HR and US Govt personnel Issues):**
- ◆ [www.opm.gov/pandemic/](http://www.opm.gov/pandemic/)
- ◆ [www.opm.gov/oca/compmemo/2008/2008-09.asp](http://www.opm.gov/oca/compmemo/2008/2008-09.asp)
- ◆ Advice to Federal Employees and Agencies on Preventing the Spread of the Current Flu and Maintaining Readiness to Use HR Flexibilities if Necessary
- ◆ <http://www.chcoc.gov/Transmittals/TransmittalDetails.aspx?TransmittalId=2227>



# Reference Websites

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- ◆ ***Pan American Health Organization:***
- ◆ Main Site: <http://new.paho.org/hq/index.php?lang=en>
- ◆ Flu  
Page: [http://new.paho.org/hq/index.php?option=com\\_content&task=blogcategory&id=805&Itemid=569](http://new.paho.org/hq/index.php?option=com_content&task=blogcategory&id=805&Itemid=569)
- ◆
- ◆ ***World Health Organization:***
- ◆ Confirmed H1N1 case count: [http://www.who.int/csr/disease/avian\\_influenza/country/en/](http://www.who.int/csr/disease/avian_influenza/country/en/)
- ◆ Pandemic Alert  
System/Levels: [http://www.who.int/csr/disease/avian\\_influenza/phase/en/index.html](http://www.who.int/csr/disease/avian_influenza/phase/en/index.html)
- ◆ Swine Flu Page: <http://www.who.int/csr/disease/swineflu/en/index.html>



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# Time to Act

- ◆ A Phase 5 alert is a “strong signal that a pandemic is imminent and that the time to finalize the organization, communication, and implementation of the planned mitigation measures is short.”
  - Source CDC



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# Considerations

- ◆ Emergency Response Protocols for Pandemic
  - Level A
  - Level B
  - Level C
- ◆ Boise Airport
- ◆ Staffing Issues (Sick, Isolation)
- ◆ Inventory Management



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# Thank you for coming

- ◆ Next Steps
- ◆ Be safe and stay healthy