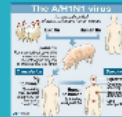


# The Swine Flu Tour

Thecasesolutions.com

## What is H1N1?



- an influenza virus
- originally common throughout pig populations worldwide
- eventually evolved and spread into a combination of avian flu, swine flu, and a strain of human flu (an antigenic drift) = the pandemic of swine flu in humans in 2009

**The Spread of H1N1**

As of 2010, H1N1 has been reported in over 100 countries across all continents. The virus spread rapidly from Mexico to the United States and then to other parts of the world.

Thecasesolutions.com

**Transmission**

- Direct contact
- Airborne
- Contaminated surfaces

Thecasesolutions.com

**The Virus**

H1N1 is a type A influenza virus. It is a single-stranded RNA virus. The virus has a spherical shape and is surrounded by a lipid bilayer envelope. The surface of the envelope is covered with glycoprotein spikes.

Thecasesolutions.com

**Signs and Symptoms**

- Fever
- Cough
- Sore throat
- Runny nose
- Fatigue
- Headache
- Muscle aches

Thecasesolutions.com



## H1N1 - The Pathogen

- Results from different strains of the influenza virus
- Has the ability to mutate into many different forms
- The causative agent is a mutated influenza virus that is found predominantly in pigs
- Mutated and was then able to jump from a pig to a human

**H1N1 Virus**

- People who were alive for the 1918 influenza outbreak have the greatest protection against swine flu
- Deep infection of the lungs as is seen today

Thecasesolutions.com

**H2N2**

- H2N2 recently doesn't transmit well from human to human... yet
- The H2N2 flu strain has eight full gene segments
- Apparently from one to seven of these can come from H1N1

Thecasesolutions.com

## History

The first recorded case of the swine flu was in April of 2009. By June of 2009, over 7 countries were affected with the swine flu, reported to be mostly in people under the age of 65. More than 50% were recorded in Southeast Asia.

Why do you think the swine flu was so prevalent in Southeast Asia?

**Transmission**

- Direct contact
- Airborne
- Contaminated surfaces

Thecasesolutions.com

## Questions?

**References**

1. World Health Organization. (2009). H1N1v influenza A virus pandemic (swine flu). Retrieved from <http://www.who.int/mediacentre/factsheets/fs274/en/>

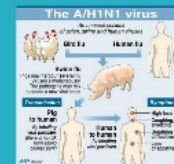
2. Centers for Disease Control and Prevention. (2009). Swine flu (H1N1v). Retrieved from <http://www.cdc.gov/swineflu/>

3. Thecasesolutions.com. (2009). The Swine Flu Tour. Retrieved from <http://www.thecasesolutions.com/>

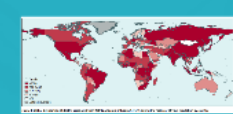
# The Swine Flu Tour

Thecasesolutions.com

## What is H1N1?



- an influenza virus
- originally common throughout pig population worldwide
- eventually evolved and spread into a combination of avian flu, swine flu, and a strain of human flu (antigenic drift) = the pandemic of swine flu in humans in 2009



The first case  
June 06  
caused

## H1N1: The meaning

- "H" stands for hemagglutinin
- "N" stands for neuraminidase
- 16 types of "H" proteins and 9 types of "N" proteins
- 144 total versions of the influenza virus...H1N1 is just one

**Thecasesolutions.com**

N1

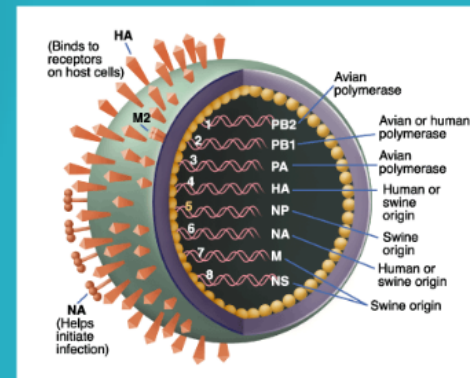
## Symptoms Include:

- Fever
- Cough
- Sore Throat
- Body Aches
- Headache
- Chills
- Fatigue
- Diarrhea
- Vomiting

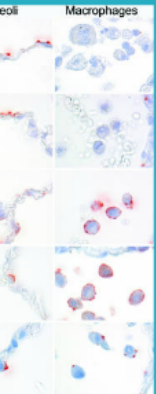
[Thecasesolutions.com](http://Thecasesolutions.com)

# The Virus

- roughly spherical
- single-stranded RNA virus
- enveloped = membrane of lipids taken from host cell
- glycoproteins (proteins linked to sugars) stick out of lipid membrane
  - HA-hemagglutinin
  - NA-neuraminidase
    - determine subtype of H1N1 virus
  - bind to host cell receptor proteins, letting the virus infect the cell
- These proteins are the targets of antiviral vaccinations



Thecasesolutions.com



and low pathogenic (LSP) viruses, bronchiolitis, and

## The Spread of H1N1

- virus enters through mucous membranes (eyes, nose, mouth)
- spreads via close contact, direct touch, indirect touch
- respiratory droplets carry the virus into the air
  - if droplets get into mucous membranes, the person will become infected
  - virus proteins target pneumocytes in respiratory tract
- HIGHLY contagious

**Thecasesolutions.com**

## 1918 Virus

- People who were alive for the 1918 influenza outbreak have the greatest protection against swine flu
- Deep infection of the lungs as is seen today

**[Thecasesolutions.com](http://Thecasesolutions.com)**

- H
- hu
- Th
- seg

T

## H5N1

- H5N1 currently doesn't transmit well from human to human...yet
- The H5N1 flu strain has eight full gene segments
  - Anywhere from one to seven of these can come from H1N1

**[Thecasesolutions.com](http://Thecasesolutions.com)**



# Management and Treatment

## Thecasesolutions.com

Traditional Ways:  
Vaccinations, Fluids, Rest

There are three areas where prevention needs to take place; pigs, humans, and spread.

New Methods of Treatment:  
Vaccinations, Fluids, Rest and if severe enough, hospitalized

Side Note: Vaccinations change every year based off of flu strand and the vaccination is different depending on area.