Myth #1

It was a *mild pandemic of little consequence*
The World in H1N1 Numbers

- First pandemic H1N1 case confirmed: April 15, 2009
- Estimated number of U.S. cases: ~60 million
- Estimated number of U.S. deaths: ~12,500
- Number of countries reporting cases: 190 (all)
Influenza Activity, October 31, 2009

A Weekly Influenza Surveillance Report Prepared by the Influenza Division
Weekly Influenza Activity Estimates Reported by State and Territorial Epidemiologists*

Week Ending October 31, 2009- Week 43

*This map indicates geographic spread and does not measure the severity of influenza activity.
2009 H1N1 season lasted longer than previous seasons
Estimated Number of H1N1 Deaths
September 2009 – April 2010

Meltzer M, CDC, unpublished data
More pediatric deaths from flu reported in 2009-2010 season than in previous seasons
Myth #2

*In preparing for a more severe pandemic, we were unprepared for the 2009 H1N1 pandemic*
Many Pre-pandemic Planning Assumptions Were Not Experienced

<table>
<thead>
<tr>
<th>Planning Assumptions</th>
<th>H1N1 Pandemic</th>
</tr>
</thead>
<tbody>
<tr>
<td>Case mortality ratio</td>
<td>2%</td>
</tr>
<tr>
<td></td>
<td>0.02%</td>
</tr>
<tr>
<td>Detection</td>
<td>Outside United States</td>
</tr>
<tr>
<td></td>
<td>San Diego County</td>
</tr>
<tr>
<td>Population susceptibility</td>
<td>Universal susceptibility to pandemic virus</td>
</tr>
<tr>
<td></td>
<td>Substantial immunity in the elderly</td>
</tr>
<tr>
<td>Decision making</td>
<td>Time to characterize severity/virulence</td>
</tr>
<tr>
<td></td>
<td>Decisions based on limited information</td>
</tr>
</tbody>
</table>

Flexibility allowed for an effective response
Myth #3

*Because we have the H1N1 experience, no further preparations are needed*
Why H1N1 Still Matters

- **Stephen C Redd, MD**
  - Myths and Misconceptions of the 2009 H1N1 Pandemic

- **Michael W Shaw, PhD**
  - H1N1 Laboratory Science Informing the Practice

- **Daniel B Jernigan, MD, MPH**
  - Epidemiology and Surveillance: Old and New Approaches for Pandemic Response

- **Julie Morita, MD**
  - Chicago Response to the H1N1 Pandemic: Strategy and Partnerships at the City Level

- **Vincent T Covello, PhD**
  - H1N1 Risk and Crisis Communication: Successes and Challenges
Michael W Shaw, PhD
Associate Director for Laboratory Science
Influenza Division
National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention
Overview

- Detection of the virus
- Development of the vaccine
- Monitoring the pandemic virus
Detection of Novel Swine Influenza

- **First case**
  - 10 year old boy
  - Identified on April 15, 2009 as part of a CDC-sponsored clinical trial

- **Second case**
  - 9 year old girl
  - Identified on April 17, 2009, as part of CDC border flu surveillance

- **Next cases**
  - Genetic match with cases in Mexico and Texas
  - Mexico cases appeared to have more severe disease
Virus of the Year: The Novel H1N1 Influenza

“Scientists characterized the new virus and distributed tests to detect it at record speed, sharing findings nearly in real time.”

– Science Volume 326 18 December 2009–
Behind the Doors of the Influenza Laboratories
Phylogenetic analyses determine virus is derived from swine influenza

Pandemic Planning and Preparedness
Before April 2009: Laboratory Diagnostics

- Develop new diagnostic tests
- Conduct antiviral susceptibility testing
- Implement proficiency testing
- Improve access to viruses and reagents
- Improve virologic surveillance
- Increase laboratory training
- Improve surge capacity
- Develop policy and regulatory preparedness
- Provide guidance for clinicians
Overview

- Detection of the virus
- Development of the vaccine
- Monitoring the pandemic virus
Selection of a candidate vaccine virus

- **Challenge**: Identification of a strain representative of circulating viruses that grow in eggs
- **Partnerships**: WHO and FDA for strain selection; NYMC for generation of high-yield reassortant strain distributed to manufacturers
- **Methodology**: Same approach as used for seasonal influenza vaccines
Development of a candidate vaccine

- Vaccine candidate strain: A/California/7/2009 virus
- On May 23, 2009, CDC began sending the vaccine candidate strain to vaccine manufacturers for mass production of vaccine
Overview

- Detection of the virus
- Development of the vaccine
- Monitoring the pandemic virus

Tracking the H1N1 virus
Monitoring changes in the H1N1 genetic makeup
Tracking the 2009 H1N1 Virus

- PCR test for identification of the H1N1 virus in respiratory specimens

- For research purposes
- Emergency use authorization
  April 28, 2009
- FDA-approved test for use in diagnostic laboratories
Tracking the 2009 H1N1 Virus, cont.

- 2,125 PCR kits to 432 laboratories in 142 countries
- 291 WHO HI test kits to 203 laboratories in 99 countries

PCR, Polymerase chain reaction
HI, Hemagglutination inhibition
Monitoring Changes in the Virus Genetic Makeup

- Genetic properties previously associated with changes in
  - Transmissibility
  - Virulence
- Antiviral susceptibility
- Match with the vaccine strain
  - Changes in surface antigens
Virus Changes Being Monitored Now

- Amino acid changes at the apex of hemagglutinin are associated with reactivity to neutralizing antibodies.
- Changes in cell receptor-binding pocket determining tissue tropism and ease of transmission.
Monitoring the 2009 H1N1 Virus
What is the Latest Information?

- **Genetic changes**
  - No sustained transmission of genetic changes previously associated with increased transmissibility or virulence
  - Changes associated with increased virulence in avian viruses have not had the same effect in the H1N1 pandemic strain

- **Antiviral resistance**
  - 99% of viruses tested are susceptible to oseltamivir

- **Vaccine match**
  - Good match between the circulating virus strains and the vaccine virus strain
Lessons Learned

- Basic laboratory science is the cornerstone for developing applications that can be rapidly deployed in an emergency
- Preparedness pays off and must be continued
- Partnership is critical
  - Local to national to global
  - Laboratory, public health, healthcare, policy, other
H1N1: What Next?

- Changes in the virus are expected as it adapts to the human host
- Changes in the virus are expected as the human population establishes herd immunity
- Any change in the frequency of antiviral resistance must be monitored to inform treatment recommendations
Epidemiology and Surveillance: Old and New Approaches for Pandemic Response

Daniel B Jernigan, MD, MPH
CAPT, USPHS
Deputy Director, Influenza Division
National Center for Immunization and Respiratory Diseases
Centers for Disease Control and Prevention
Overview

- Characteristics of the H1N1 pandemic in the United States
- New surveillance systems and methods for evaluation of the H1N1 pandemic
Multiple Efforts for Rapid Characterization of the H1N1 Pandemic

- **Early field investigations**
  - Case-contact field investigations and community surveys defined:
    - Transmission – e.g., household and secondary attack rates
    - Clinical severity – e.g., spectrum of illness and affected risk groups

- **Enhanced surveillance**
  - Existing systems were ramped up
  - New systems were initiated
Tracking the Pandemic
Different Surveillance Systems Monitor Disease in Different Settings

- Deaths
- Hospitalizations
- Clinics and Emergency Department visits
Visits for Influenza-Like Illness (ILI) Surpassed Prior Seasons, Notably Among Younger Age Groups

Data are from the CDC Influenza-Like Illness Network (ILI-Net)
A Really Novel Surveillance System...

On Arrival at Camp
Cabin has **25** Campers

One Week Later
Cabin has **11** Campers
Hospitalization Rates Were Higher among Those Under 65 Years Compared with Prior Seasons

* Pan H1N1 is for data from Sep 1, 2009 to Jan 21, 2010
Number of Influenza-Associated Laboratory–Confirmed Pediatric Deaths

4 – 5 times more than prior seasons

Since H1N1
344 Pediatric deaths

2007-08
88 Pediatric deaths

2008-09
69 Pediatric deaths

Deaths

Week of Death
Overview

- Characteristics of the H1N1 pandemic in the United States
- New surveillance systems and methods for evaluation of the H1N1 pandemic
New Surveillance Activities for Monitoring the Pandemic

- School and college dismissal and illness monitoring
- Emergency department and intensive care surveillance
- BRFSS influenza illness and vaccine monitoring
- Laboratory-confirmed novel influenza case reports
- Population-based hospitalization surveillance

BRFSS, Behavioral Risk Factor Surveillance System
New Epidemiologic Methods

- Estimates for excess deaths
- Aberration algorithm for outbreaks using core-based statistical areas
- New framework for assessing severity and impact of emerging influenza viruses
- Pyramid model for estimating flu disease burden; collaboration of modelers and researchers

Armstrong, CID, in press
Burkom and Kniss, unpublished
Finelli, unpublished CDC data
Reed, EID 2009
Characteristics of 2009 H1N1 Influenza Pandemic in the United States
April 15, 2009–April 10, 2010

**Cases**
- 61,000,000 (43M – 89M)

**Hospitalizations**
- 274,000 (195K – 403K)

**Deaths**
- 12,470 (8.9K – 19.3K)

Age groups
- 0-4
- 5-24
- 25-49
- 50-64
- ≥65

Approximate rate per 100,000 population
Epidemiology and Surveillance in Action

- **Existing surveillance base allowed for rapid surge**
  - Prior years of flu surveillance provided baseline which was easily ramped up
  - Multiple surveillance systems were monitoring for any changes in character of pandemic or in the virus

- **Rapid translation of data for decision making**
  - Early case-contact and community investigations defined risk groups and directed vaccine policies
  - Ongoing assessment of severity tailored prevention and control activities and recommendations
Chicago Response to the H1N1 Pandemic: Strategy and Partnerships at the City Level

Julie Morita, MD
Deputy Commissioner
Chicago Department of Public Health

Summary of the H1N1 Pandemic in Chicago

- Chicago population: 2.8 million
- First pandemic H1N1 cases confirmed: April 28, 2009
- Hospitalizations: 955
- Deaths: 30
- H1N1 vaccine doses available: 1,293,000
- H1N1 vaccine doses distributed: 1,119,900 (86.6%)
Partners in Response

- State
  - State and County Health Departments

- Federal
  - CDC

- Local
  - Mayor
  - Legislators
  - Public Safety

- Workplaces

- Schools

- Healthcare Providers

- Public

CDPH, Chicago Department of Public Health
Pictured here are Mayor Richard M Daley and Chicago Public Schools CEO, Ron Huberman
Initial City Response

- **Surveillance**
- **Non-pharmaceutical community mitigation guidances**
  - School/daycare
  - Workplace
  - Social gatherings
- **Communication**
  - General public
  - Healthcare community
- **Vaccination planning**
Hospitalizations Associated with the H1N1 Pandemic
Chicago, April 28, 2009 – May 15, 2010

Vaccination planning begins
Chicago’s Vaccination Plan

- Distribute vaccine to healthcare facilities
  - For healthcare personnel
  - For patients

- Conduct large-scale mass vaccination clinics
  - For those without healthcare providers
  - For those whose healthcare providers did not order vaccine
Vaccine Distribution Planning

1. Engagement of healthcare providers
2. Preregistration site opened: August 5, 2009
3. Registration site opened: September 5, 2009

Timeline:
- June 2009: Engagement of healthcare providers
- August 5, 2009: Preregistration site opened
- September 5, 2009: Registration site opened
- September 30, 2009: First orders submitted

Data from: June 2009, 50
Guiding Principles for Vaccine Distribution

- Distribute to facilities based on patient population (prioritize ACIP target groups)
- Distribute entire allocation when available
- Distribute in small shipments broadly
- Do not stockpile for public health mass vaccination clinics
- Expand distribution to retail pharmacies and community vaccinators when recommendations expand beyond target groups

ACIP, Advisory Committee on Immunization Practices
Facilities Registered to Receive the H1N1 Vaccine
October 3, 2009 – March 20, 2010

<table>
<thead>
<tr>
<th>Facility</th>
<th>Number</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pediatric providers</td>
<td>467</td>
<td>61.1</td>
</tr>
<tr>
<td>Adult providers</td>
<td>182</td>
<td>23.8</td>
</tr>
<tr>
<td>Long-term care facilities</td>
<td>51</td>
<td>6.7</td>
</tr>
<tr>
<td>Hospitals</td>
<td>37</td>
<td>4.8</td>
</tr>
<tr>
<td>Community vaccinators</td>
<td>9</td>
<td>1.0</td>
</tr>
<tr>
<td>Colleges/universities</td>
<td>8</td>
<td>1.0</td>
</tr>
<tr>
<td>Retail pharmacies</td>
<td>8</td>
<td>1.0</td>
</tr>
<tr>
<td>City of Chicago EMS</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>CDPH warehouse (for CDPH mass vaccination clinics)</td>
<td>1</td>
<td>0.1</td>
</tr>
<tr>
<td>All</td>
<td>764</td>
<td>100</td>
</tr>
</tbody>
</table>
CDPH Mass Vaccination Clinics
City Colleges of Chicago

- Richard J. Daley
- Kennedy King
- Malcolm X
- Olive Harvey

- Truman
- Westside Technical
- Wright
H1N1 Vaccine Distribution Sites in Chicago

- Healthcare facility
- CDPH mass vaccination clinic
Guiding Principles for Mass Vaccination Clinics

- Vaccinate those without healthcare providers or whose healthcare providers do not have vaccine
- Promote clinics for those in ACIP target groups
  - Do not deny service based on residence or target group
- Reserve inactivated vaccine for patients with contraindications to LAIV
Doses Administered by CDPH Mass Vaccination Site
October 24, 2010 – December 19, 2010

<table>
<thead>
<tr>
<th>City colleges</th>
<th>Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wright College</td>
<td>26,641</td>
</tr>
<tr>
<td>Truman College</td>
<td>20,199</td>
</tr>
<tr>
<td>Westside Technical Institute</td>
<td>18,760</td>
</tr>
<tr>
<td>Daley College</td>
<td>16,745</td>
</tr>
<tr>
<td>Olive Harvey College</td>
<td>8,386</td>
</tr>
<tr>
<td>Kennedy King College</td>
<td>5,926</td>
</tr>
<tr>
<td>Malcolm X College (Saturdays only)</td>
<td>2,354</td>
</tr>
</tbody>
</table>

CDPH, Chicago Department of Public Health
Distribution of H1N1 Vaccine by Facility Type
October 3, 2009 – March 20, 2010

Percent of all doses distributed

- Pediatric Providers
- Hospitals
- Retail Pharmacies
- CDPH Mass Vaccination Clinics
- Community Vaccinators
- Adult providers
- Colleges/Universities
- LTCFs
- City of Chicago EMS

LTCF, Long-term care facility
Hospitalizations Associated with the H1N1 Pandemic and H1N1 Vaccine Allocation and Distribution

May 2009 – April 24, 2010
Vaccine Distribution: Successes

- Healthcare facilities played a larger role in vaccine delivery than anticipated
  - Less than 10% of vaccine administered by CDPH mass vaccination clinics
- Pediatric provider enrollment (61%) was higher than other provider types
- Electronic registration was efficient
- Dedicated email and phone line assured high-quality customer service
Vaccine Distribution: Challenges

- Vaccine supply was inadequate when demand was the greatest
- Adult provider engagement was less efficient than pediatric provider engagement
  - Minimal public health infrastructure for adult vaccination activities
  - Public health relationships less established with adult professional organizations (ACOG and ACP) than with pediatric professional organizations (AAP and AAFP)
- Incomplete reporting of doses administered

ACOG, American Congress of Obstetricians and Gynecologists
ACP, American College of Physicians
AAP, American Academy of Pediatrics
AAFP, American Academy of Family Physicians
Vaccine Distribution: Potential Solutions

- Improve vaccine manufacturing processes to increase production speed
- Dedicate sustained funding for development of adult immunization program similar to the childhood immunization program
- Improve use of immunization information systems (registries) to improve reporting of doses administered
  - Increase recruitment of healthcare facilities
  - Develop interfaces between electronic health records and registries
Mass Vaccination: Successes

- Nearly 100,000 people vaccinated
  - Minority residents: 80%
  - Adults: 55%

- Public Health Emergency Response Funds essential
  - Contract with a cold chain management company to manage mass vaccination inventory (vaccine and supplies)
  - Overtime for CDPH staff
  - Contract with temporary nursing agency provided vaccinators for CDPH mass vaccination clinics
Mass Vaccination: Challenges

- Paper-based system was used for tracking vaccine receipt and administration
  - Registration data not linked with registry
  - No reminder system for children needing second doses

- Staff mobilization was challenging
  - Union procedures
  - Contract procedures
Mass Vaccination: Proposed Solutions

- Develop web-based mass vaccination registration system to interface with registry
- Establish contracts for services needed during emergencies
- Engage unions to establish efficient processes to mobilize union staff in emergency situations
INFLUENZA
FREQUENTLY COMPLICATED WITH
PNEUMONIA
IS PREVALENT AT THIS TIME THROUGHOUT AMERICA.
THIS THEATRE IS CO-OPERATING WITH THE DEPARTMENT OF HEALTH.
YOU MUST DO THE SAME
IF YOU HAVE A CHILD AND ARE COUGHING AND
SNEEZING. DO NOT ENTER THIS THEATRE.
GO HOME AND GO TO BED UNTIL YOU ARE WELL.

HELP US TO KEEP CHICAGO THE
 HEALTHIEST CITY IN THE WORLD

JOHN DILL ROBERTSON
COMMISSIONER OF HEALTH

Chicago couple with swine flu say ‘I do’
Bride and groom wear face masks and stayed 10 feet away from guests.

HIGHLAND PARK, Ill. — The bride wore white —
and a face mask. Jennie Jackson and Jeremy
Fienstein of Chicago wore surgical masks and latex
and gloves to their wedding last Sunday after finding
out less than 48 hours before that they had swine
flu. The couple decided to go ahead with the
ceremony after doctors assured them guests
wouldn’t be put at serious risk.

To be sure, they also stayed 10 feet away from
guests at all times, even walking around the
gathering instead of down the aisle at a Highland

KILMER ELEMENTARY SCHOOL

Chicago Public Schools chief Ron Huberman, Chicago Public Health Director Terry Mason, left, and Kilmer
Elementary School Principal Miguel Trujillo speak outside Kilmer Elementary School in Chicago Wednesday,
April 29, 2009. Chicago school officials shut down an elementary school Wednesday after one child contracted
a probable case of swine flu, and the Illinois Health Department said other cases are suspected in the state.

(AP Photo/Eric Y. Exc)
Myth #3

*Because we have the H1N1 experience, no further preparations are needed*
Key Areas to Ensure Preparedness for the Next Pandemic

- **Vaccine**
  - Enhancing surveillance – early identification for vaccine strain
  - Improving technology for production
  - Optimizing administration strategies
- Continue planning, training, and exercising
- Track animal influenza viruses with pandemic potential

Source: Meltzer M, CDC, unpublished data Pan H1N1 is for data from Sep 1, 2009 to Jan 21, 2010
Planned 2010-2011 Pandemic Influenza Training and Exercises

- H1N1 Response After-Action Report/Improvement Plan (15 Jul 2010)
- Coordinated Federal Response Table Top Exercise (17 Aug 2010)
- Planning & Decision Making Process Training #1 (31 Aug–1 Sep 2010)
- Planning & Decision Making Process Training #2 (7-8 Dec 2010)
- International Response Table Top Exercise (TBD)
- Functional Exercise (1-4 Mar 2011)
- After-Action Report

2011/2012
Operations Plan/Exercises/Operational Support
- Final Pandemic Influenza Appendix to CDC Emergency Operations Plan & Preparedness Operations Plan (31 Mar 2011)
Threat from New Avian Influenza Viruses Unchanged

Human cases of avian H5N1 influenza

- **Year**
  - 2003
  - 2004
  - 2005
  - 2006
  - 2007
  - 2008
  - 2009
  - 2010

- **Cases**
  - Nonfatal
  - Fatal

WHO report, August 31, 2010
Lessons Learned

Pandemic had a substantial health impact

Preparedness improved our response

Still more work to prepare
H1N1 Risk and Crisis Communication: Successes and Challenges

Dr. Vincent T Covello
Director
Center for Risk Communication
New York, New York
Presentation Goals

(1) Share key concepts from the risk communication literature
(2) Evaluate CDC’s H1N1 communications against these key concepts
(3) Identify challenges for the future
Risk Communication: Key Concepts

When people are stressed and concerned, they typically:
(1)...want to know that you care before they care what you know
(2)...have difficulty hearing, understanding, and remembering information
(3)...trust most those willing to acknowledge the importance of uncertainty
Risk Communication: Key Concepts

When people are stressed and concerned, they typically:

(1) want to know that you care before they care what you know

(2) have difficulty hearing, understanding, and remembering information

(3) trust most those willing to acknowledge the importance of uncertainty
People Want To Know That You Care Before They Care What You Know

Assessed in first 9–30 seconds

- Listening/Caring/Empathy/Compassion: 50%
- Competence/Expertise: 15–20%
- Honesty/Openness: 15–20%

All Other Factors: 15–20%

People Want To Know That You Care Before They Care What You Know
People Want To Know That You Care Before They Care What You Know: 9/11

“The number of casualties will be more than any of us can bear ultimately.”

“My heart goes out to all of the innocent victims of this horrible and vicious act of terrorism.”

Mayor Giuliani, 9/11
People Want To Know That You Care Before They Care What You Know: CDC’s H1N1 Communications

“First I want to recognize that people are concerned about this situation. We hear from the public and from others about their concern, and we are worried, as well.”

Dr. Richard Besser, CDC Acting Director
H1N1 News Conference, April 24, 2010
People Want To Know That You Care Before They Care What You Know: CDC’s H1N1 Communications

- Extensive use of risk communication “Caring” principles and templates
- “Templates” – Tools derived from the risk communication literature
- Examples:
  - CCO Template (Compassion, Conviction, Optimism)
  - CAP Template (Compassion, Action, Perspective)
Risk Communication: Key Concepts

When people are stressed and concerned, they typically:

(1)...want to know that you care before they care what you know

(2)...have difficulty hearing, understanding, and remembering information

(3)...trust most those willing to acknowledge the importance of uncertainty
People Have Difficulty, Hearing, Understanding, and Remembering Information: CDC’s H1N1 Communications

- Extensive use made of risk communication “KISS” templates

  KISS: Keep It Simple and Short

  (e.g., Bullets, Colors, Information Chunks)

- Examples:
  - “Rule of 3” Template
  - “27/9/3” Template
  - “Primacy/Recency” Template
People Have Difficulty, Hearing, Understanding, and Remembering Information: The Rule of 3 (27/9/3)

- Everything in Threes:
  - Three Key Messages
    - (27 words, 9 seconds, 3 messages)
  - Repeat Messages at Least Three Times
    - (e.g., Triple T Model)
  - Provide Three Supporting Facts or Credible Sources for Each Key Message
Message Map

Key Message 1
9 words on average

Key Message 2
9 words on average

Key Message 3
9 words on average
People Have Difficulty Hearing, Understanding, and Remembering Information: CDC’s H1N1 Communications

- **65 Pandemic Influenza Message Maps**
  Posted on pandemicflu.gov in 2006

- **Message Mapping Topics**
  Preparedness, H5N1 avian influenza, pandemic influenza, antiviral medications, vaccines, human-to-human transmission, pandemic response, etc.

- **Message Mapping**
  Ongoing CDC activity based on availability of new science and policy
People Have Difficulty, Hearing, Understanding, and Remembering Information:

Message Mapping References


When people are stressed and concerned, they typically:

(1) ...want to know that you care before they care what you know

(2) ...have difficulty hearing, understanding, and remembering information

(3) ...trust most those willing to acknowledge the importance of uncertainty
People Trust Most Those Willing To Acknowledge the Importance of Uncertainty: CDC’s H1N1 Communications

Extensive use made of risk communication “Uncertainty” principles and templates
People Trust Most Those Willing To Acknowledge the Importance of Uncertainty: CDC’s H1N1 Communications

“I want to acknowledge the importance of uncertainty.
At the early stages of an outbreak, there’s much uncertainty, and probably more than everyone would like.
Our guidelines and advice are likely to be interim and fluid, subject to change as we learn more.”

Dr. Richard Besser, CDC Acting Director
H1N1 Press Conference, April 23, 2009
The opening of the vaccination campaign for H1N1 is “going to be a little bumpy.”

Dr. Thomas Frieden, CDC Director
H1N1 Press Conference, Sept. 25, 2009
People Trust Most Those Willing To Acknowledge the Importance of Uncertainty

Lesson Learned:
“Messages about numbers or estimates need to be bracketed with statements about uncertainty.”

Examples:
- **2010: H1N1 Vaccine Availability** (August and October)
- **2010 BP Oil Spill**
  - April, 2010 – 5,000 barrels/day
  - June, 2010 – 60,000 barrels/day
“Nothing is more important in pandemic risk communication than persuading the public (and the politicians) to think probabilistically.

Public health officials need to insist on their uncertainty.

They need to make uncertainty the message, not the preamble to the message.”

Dr. Peter Sandman
People Trust Most Those Willing To Acknowledge the Importance of Uncertainty: CDC’s Crisis and Emergency Risk Communication (CERC) Training

- Spearheaded by CDC’s Dr. Barbara Reynolds
- CERC Course Materials (e.g., books and videos)
- CERC Online Training
- CERC On-Site Training
- CERC/RiskSmart Certification Training
Three Communication Challenges

- Cultural Diversity
- Message Timeliness, Coordination, and Consistency
- Social Media
Three Communication Challenges

- Cultural Diversity
- Message Timeliness, Coordination, and Consistency
- Social Media
Exhibit 1: Hispanic Risk Communications Model

Risk Perception Model
- Trust
- Voluntariness
- Controllability
- Familiarity
- Fairness
- Benefits
- Catastrophic potential
- Understanding
- Uncertainty
- Delayed effects
- Effects on children
- Effects on future generations
- Victim identity
- Dread
- Media attention
- Accident history
- Reversibility
- Personal stake
- Ethical/moral nature
- Human vs. natural origin

Hispanic Cultural Values Model
- Familismo (Family Oriented)
- Personalismo (Interpersonal)
- Jeraquismo (Hierarchical)
- Presentismo (Present Oriented)
- Espriritismo (Spiritualism)
- Machismo/Marianismo (Traditional Gender Roles)

Hispanic Health Belief Model
- Perceived susceptibility
- Perceived severity
- Perceived benefits
- Perceived barriers
- Perceived cues to action
- Perceived self-efficacy

Implications for Risk Communication
- Messages:
- Messenger:
- Means:
  (distribution channels)
Three Communication Challenges

- Cultural Diversity
- Message Timeliness, Coordination, and Consistency
- Social Media
Three Communication Challenges

- Cultural Diversity
- Message Timeliness, Coordination, and Consistency
- Social Media
“If I had all day to cut a large tree, I would spend most of the day sharpening my axe.”

—Abraham Lincoln

“It takes me an average of two weeks to prepare an impromptu speech.”

—Mark Twain