

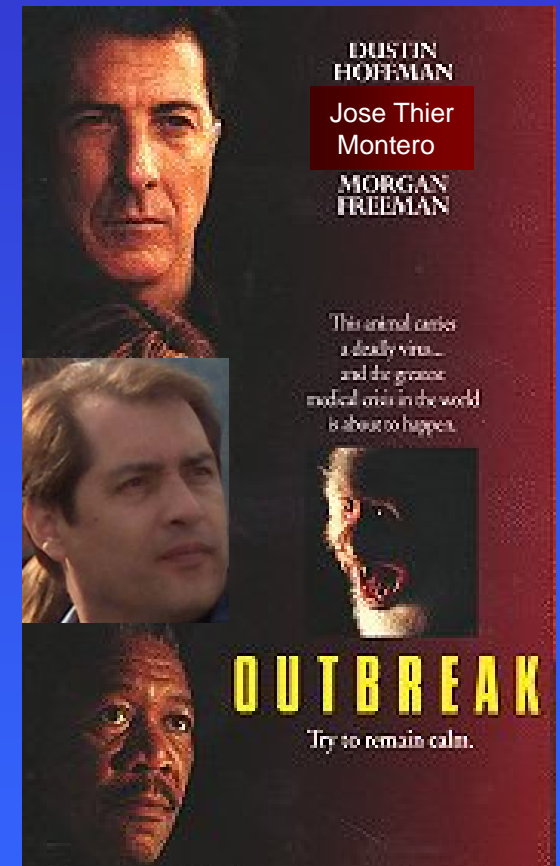
Novel Influenza H1N1: Update for the Education System.

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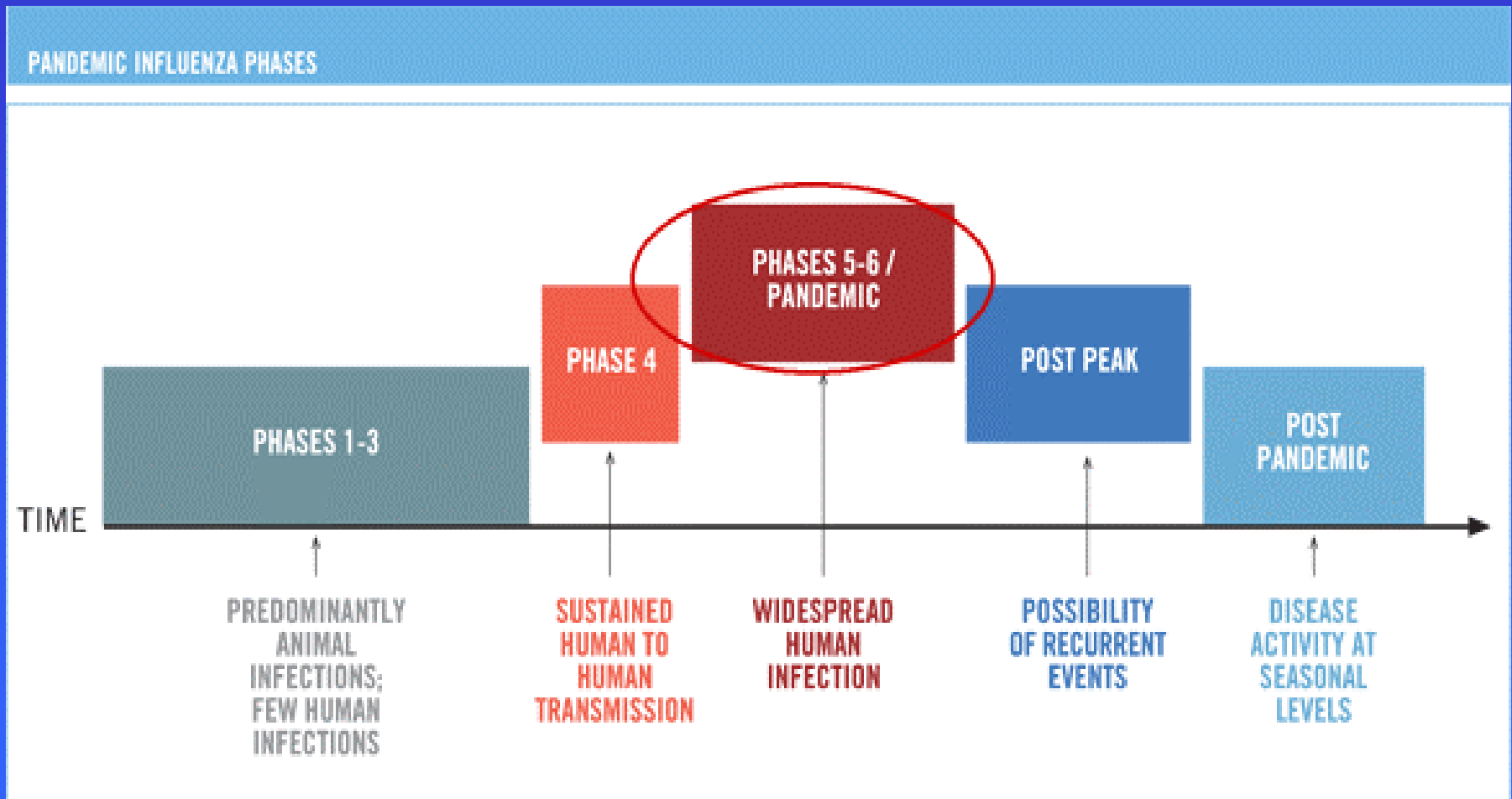


Approach to an Outbreak/Emergency Investigation

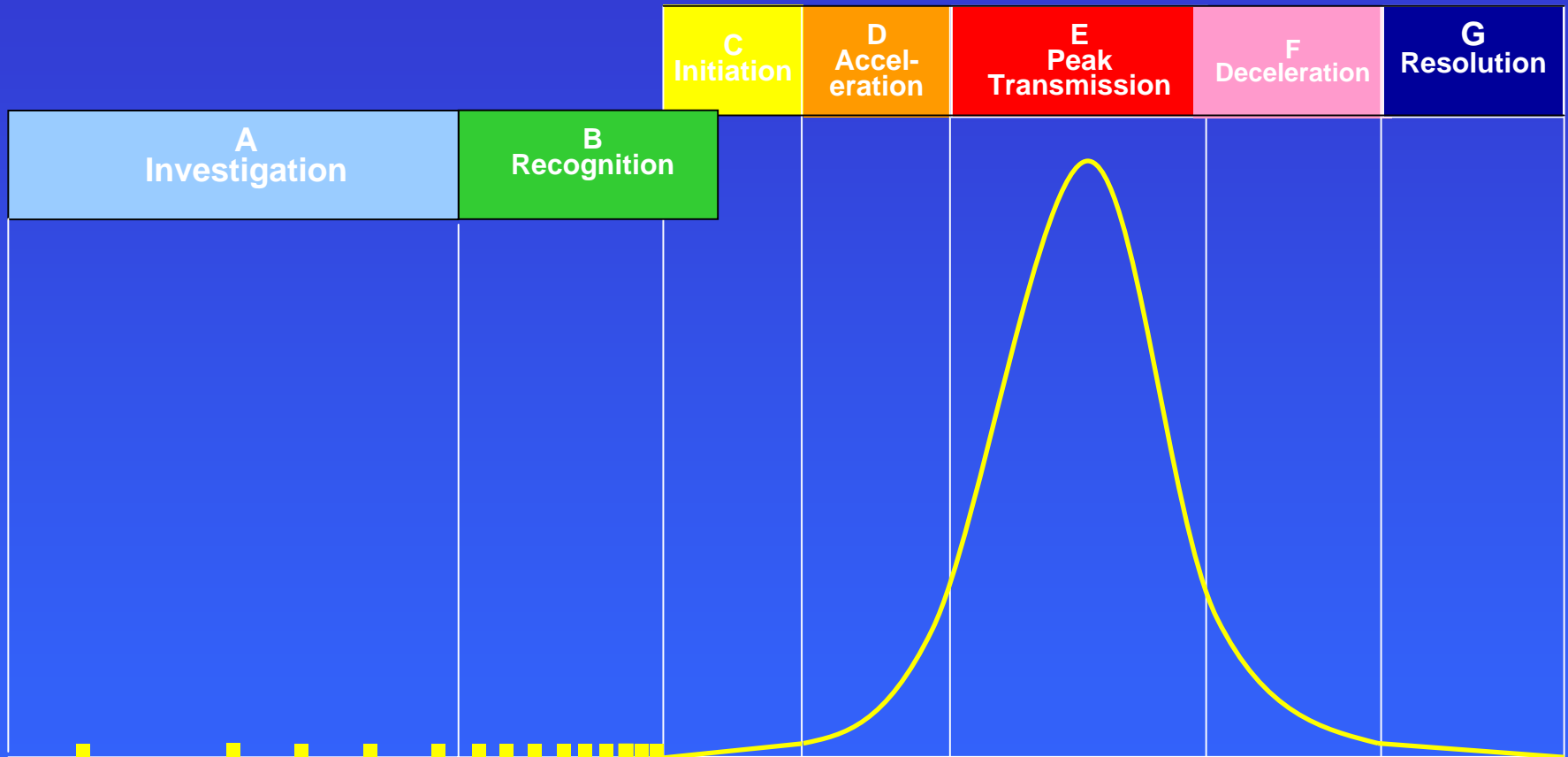
- Determine existence of outbreak
 - Establish definitions
 - Confirm cases
 - Find additional cases
 - Compare with background rate
- Epidemiologic studies
 - Line listing to generate hypotheses
 - Basic demographic and disease-relevant information
 - Epidemic curve
 - Risk factor assessment
 - Case control and cohort studies
- Implement control measures
- Inform



H1N1 Influenza Epidemic Status Worldwide



Pandemic Influenza Intervals



The Pandemic Severity Index (PSI)

Table 1. Pandemic Severity Index by Epidemiological Characteristics

Characteristics	Pandemic Severity Index (PSI)				
	Category 1	Category 2	Category 3	Category 4	Category 5
Case Fatality Ratio (percentage)	<0.1	0.1-<0.5	0.5-<1.0	1.0-<2.0	≥2.0
Excess Death Rate (per 100,000)	<30	30-<150	150-<300	300-<600	≥600
Illness Rate (percentage of the population)	20-40	20-40	20-40	20-40	20-40
Potential Number of Deaths (based on 2006 U.S. population)	<90,000	90,000-<450,000	450,000-<900,000	900,000-<1.8 million	≥1.8 million
20 th Century U.S.Experience	Seasonal Influenza (illness rate 5-20%)	1957,1968	None	None	1918 Pandemic

Please remember JT's Motto:

- What I said yesterday may not be true today,
- What I say today, may not be true tomorrow,
- What I will say tomorrow...
- Who are we kidding? Not even God knows what I'll say tomorrow!

Influenza Virus

- **Spread**
 - Aerosolized droplets from coughing or sneezing up to a 6 foot radius
 - Hand to face contact (nose, eyes, or mouth) after touching infected areas
 - Virus infectious only up to 2-3 hrs on surfaces
- **Incubation period**
 - 1 to 7 days (avg H1N1 3-4 days)
- **Symptom duration**
 - 3 to 7 days but up to 14 days (avg H1N1 3-5 days)
- **Contagious**
 - 1 day before symptoms to 10 days after symptoms
 - peak period while febrile



Influenza Like Illness

- Must-have symptoms
 - Fever plus sore throat or
 - Fever plus cough
- Other symptoms
 - Headache
 - Muscle & joint aches
 - Nausea, vomiting, or diarrhea
 - Fatigue
 - Pneumonia
 - Shortness of breath

H1N1 Influenza

- Novel (new) flu virus in humans
- High attack rate particularly among young
- Generally mild disease in healthy people
- Most hospitalizations & deaths in high risk groups
- More cases than typical at this point
- Differs from seasonal flu
- Caused pandemic (e.g. worldwide spread)

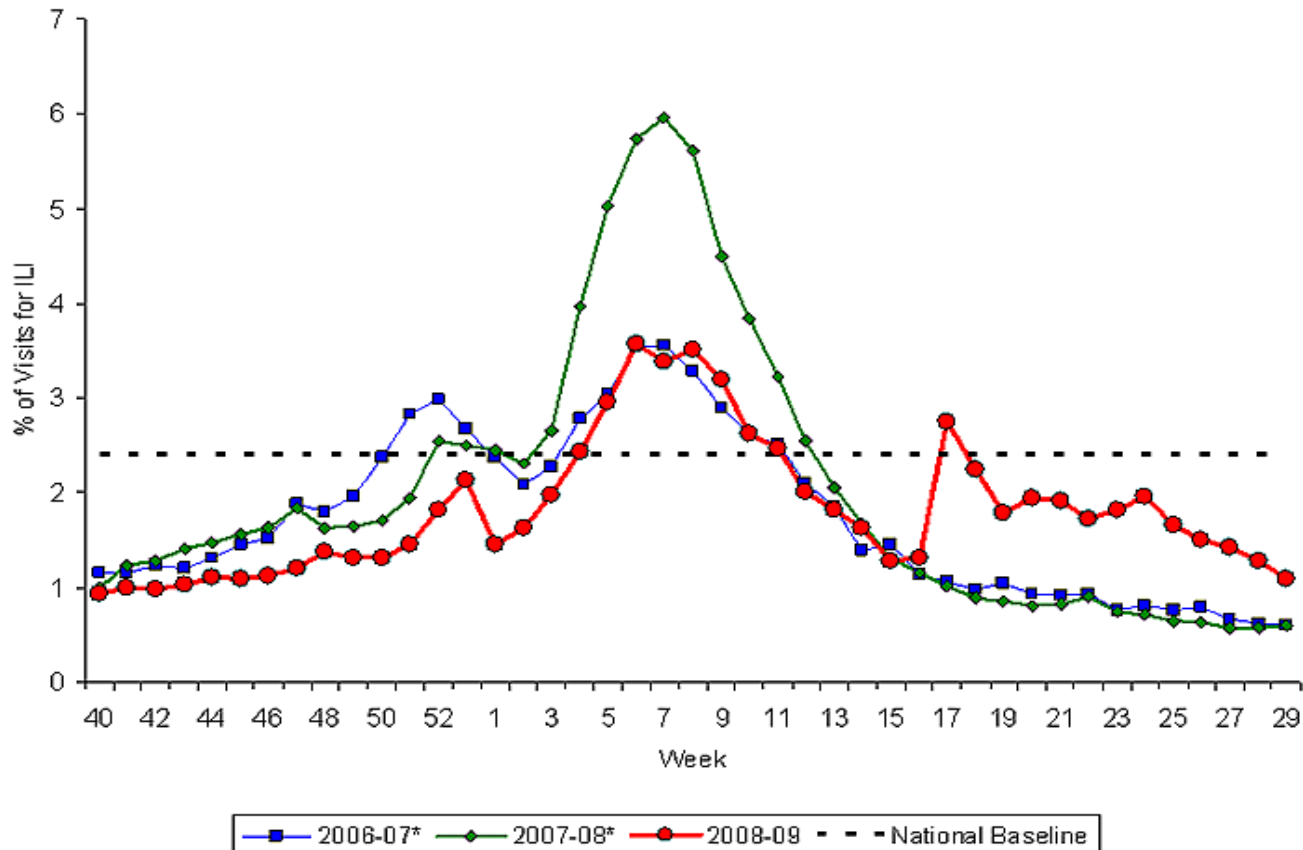
Case Counts

- Case counting is an important tool early on in a pandemic
- After reaching a critical level, individualized counting is not a Public health need.
- Influenza surveillance is done by aggregating the results of several systems
 - Asymptomatic populations
 - Mild, really mild symptoms in some.
 - Wide spectrum of symptoms
- Changing surveillance criteria

Outpatient Visits

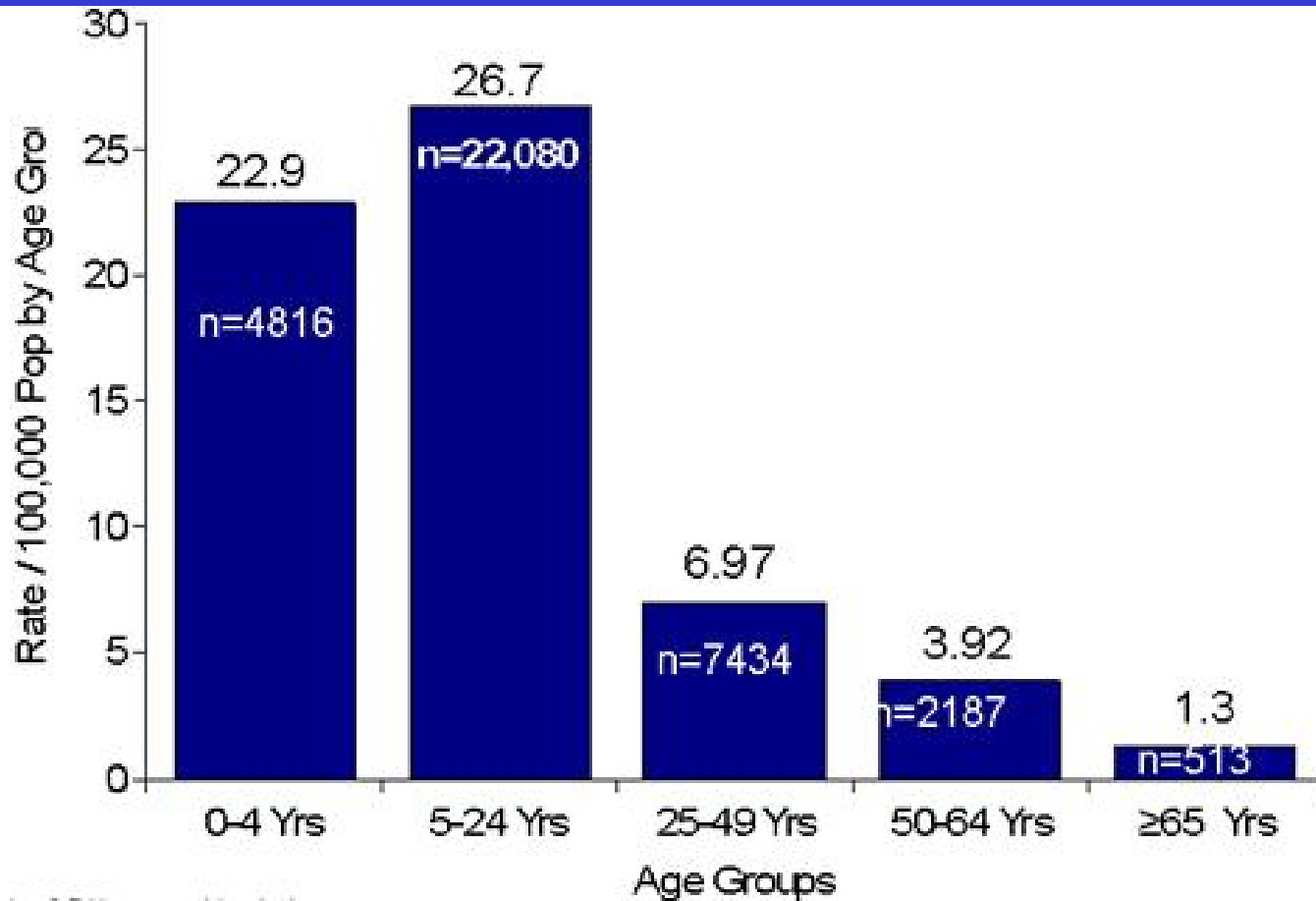
Percentage of Visits for Influenza-like Illness (ILI) (Posted

July 31, 2009, 1:30 PM ET, for Week Ending July 25, 2009)



*There was no week 53 during the 2006-07 and 2007-08 seasons, therefore the week 53 data point for those seasons is an average of weeks 52 and 1.

H1N1 Age Distribution



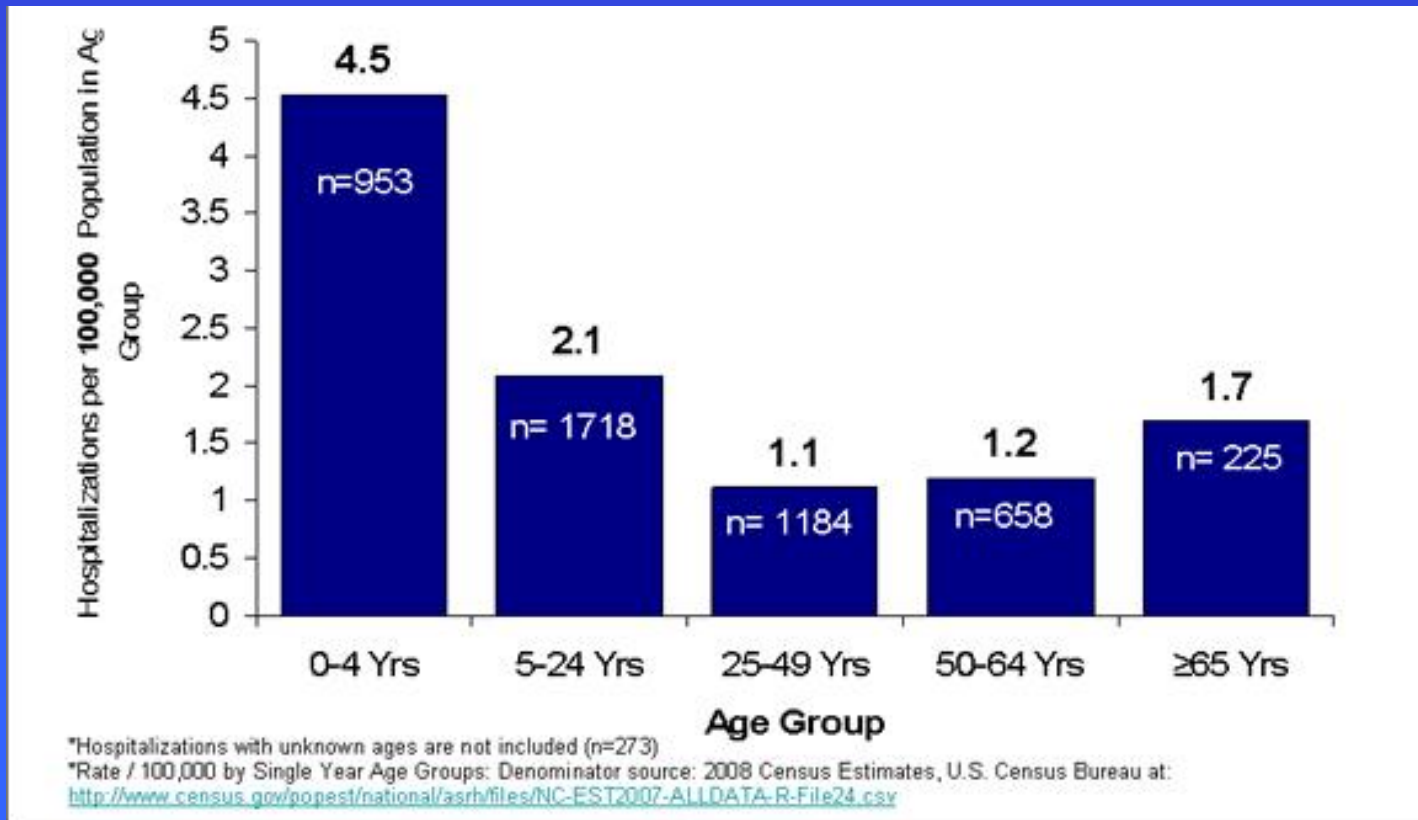
*Excludes 6,741 cases with missing ages.

Rate / 100,000 by Single Year Age Groups: Denominator source: 2008 Census Estimates, U.S. Census Bureau at:

<http://www.census.gov/popest/national/asrh/files/NC-EST2007-ALLDATA-R-File24.csv>

Hospitalization Rates

Hospitalization rate by age per 100,000 population



Main High Risk Groups for H1N1 Hospitalizations & Death

- Respiratory illnesses (e.g. Asthma, COPD)
- Cardiovascular Disease
- Diabetes
- Pregnancy
- Immunocompromised individuals

What to Expect

- Presently it is expected that the current pandemic will affect 30% population over six month period with <1% mortality rate
- Most cases will be mild:
 - People will be sick at home for a week
 - High risk groups more likely to be hospitalized or die
- Vaccines available for
 - Seasonal influenza (now)
 - H1N1 (in late fall)

- **Recommendations**

- A combination of interventions based on:

- Epidemiologic conditions
 - Expected impact
 - Feasibility
 - Acceptability

- Interventions determined through collaborative decision making involving education and public health agencies, parents, and the community



Goals & Strategies

- Prevent people from becoming ill
 - Vaccination
 - Hand washing
- Prevent spread between people
 - Hand washing
 - Cover nose/mouth with arm/tissue: not with your hand
 - Stay home when you are ill until fever-free for 24 hrs
- Treat people who are ill
 - Mild disease: stay home, rest, fluids, acetaminophen
 - Call physician if ill or have chronic medical condition
 - No aspirin for <18 yr olds

NEW APPROVED Greetings - State Dept. of Health

Gary Varvel
THE MINNHAMPTON STATE
©2009 CREATOR AND



Long distance Wave



Elbow Bump



Sanitary Gloves



The Bow

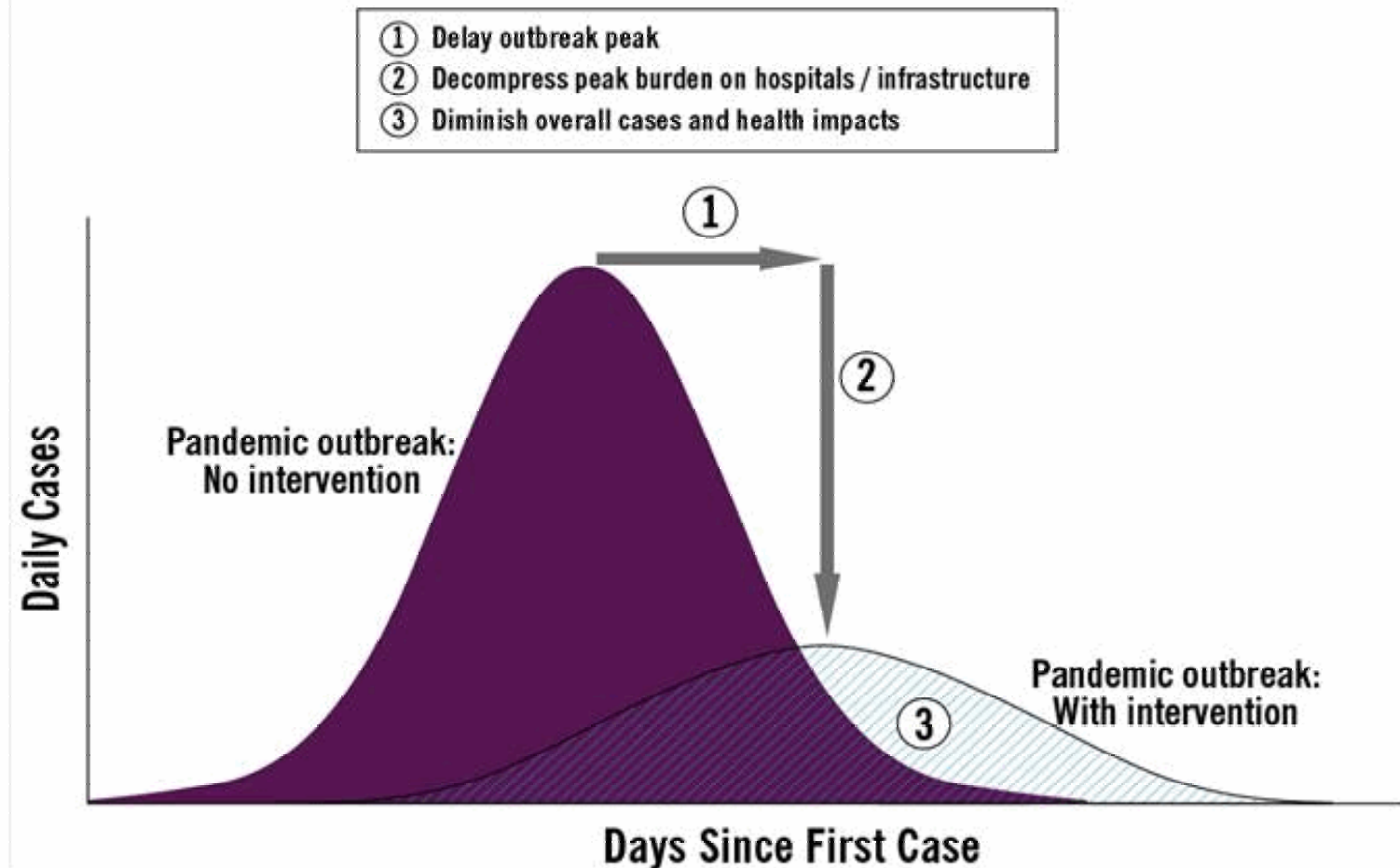


The Bump

garyvarvel.com

Goal of Prevention

Figure 1. Goals of Community Mitigation



- **Recommended Interventions:**

- Respiratory Etiquette

- Cover nose and mouth to cough or sneeze
- Discard tissue after use

- Hand Hygiene

- Students and staff should be encouraged to wash hands often – especially after coughing or sneezing
- Time should be provided for students to wash hands
 - Before eating
 - After using the restroom
 - As otherwise needed
- Alcohol-based hand cleaners are also effective



- **Recommended Interventions (Continued)**

- Exclusion

- Individuals with ILI should remain home for at least 24 hours after they are free of fever or feverishness without the use of fever-reducing medications
 - Can shed virus for more than 24 hours after fever goes away
 - 3 to 5 day exclusion period required in most cases
 - Stay home until the end of this period
 - Avoid contact with others
 - Upon returning to school continue to follow
 - Hand hygiene
 - Respiratory etiquette
 - Exclusion is recommended regardless of antiviral use

- **Recommended Interventions (Continued)**

- Routine Cleaning

- Viruses may spread when persons touch respiratory droplets on hard surfaces and objects then touch their mouth, nose, or eyes
 - Not necessary to disinfect beyond routine cleaning
 - Regularly clean areas and items likely to have frequent hand contact
 - Clean when visibly soiled
 - Use detergent-based cleaners or EPA-registered disinfectants.

- **Recommended Interventions (continued)**

- Designate isolation room for ill persons

- Move students and staff with ILI symptoms to isolation room immediately until they can be sent home (for day or boarding schools)
- Have them wear surgical masks when near others
- Staff with limited interactions with students and other staff should be designated to care for ill persons

- Appropriate personal protective equipment for school nurses when caring for persons with ILI

- Recommend to call doctor, go to clinic or hospital only if that is what the patients/you normally would do so

- **Recommended Interventions (continued)**

- No current need/recommendation to stop mass gathering events or travel
- Consider allowing high risk students and staff to stay home
 - Talk to health care provider about ways to decrease exposure
 - People who stay home also should decrease exposure in other ways
 - Schools must be prepared for parental concerns
 - School and school board should consider ways to allow people to stay home
 - Schools should plan for continuing education for home-bound students
- Be flexible according to the situation

Influenza-like Illness (ILI) Surveillance in Schools

- Highly recommended and encouraged Voluntary web-based surveillance system
- Currently in development
- Will collect daily counts of the following:
 - Number of students/staff absent
 - Number of students/staff absent with ILI
 - Number of school nurse visits
 - Number of school nurse visits for ILI
- NH DHHS will analyze data to assess ILI activity daily by school, town, region, county, and state



School Closure Monitoring

- CDC and US DOE have established a system to monitor school closures due to influenza illness in a school
- Form is submitted by the closing school
 - Online reporting tool or via fax/email
- Form requests name of school, date of closure, and projected date to re-open
- CDC/US DOE will ensure all reports received are provided to the point of contact in that state to confirm state health and education officials are aware of the closure
 - In NH, the point of contact will be NH DOE

School Nurse Toolbox

- Cover letter to school nurses to explain toolbox contents
- Guidelines for monitoring Influenza-like illness (ILI) in the school setting
- Excel spreadsheet—especially designed for self monitoring of absenteeism by school nurses (includes school census, total absent, total absent for ILI)
- NH DHHS School Guidance—infection control and exclusion recommendations
- NH DHHS fact sheets for Influenza and for Novel Influenza A (H1N1)
- Posters for Hand Hygiene and Cough etiquette
- Copy of Communicable Disease Control Section recommendation letter sent to school nurse if an outbreak is reported
- Parent letter—for school to use to adapt and place on school letterhead
- State of NH Reportable Disease list
 - Toolbox to be distributed to the nurses via DOE listserve and posted to DHHS website



Current Testing Guidelines for H1N1 in NH

- Hospitalized patients with influenza like illness
- Healthcare workers with ILI in direct care patient services after consultation with their healthcare provider
- Selected patients suspected to be part of a cluster of undiagnosed respiratory illness and only in consultation with public health
- Testing ongoing with Sentinel providers
- Mild cases will not / should not be tested: Result of a test does not change clinical or public health recommendations, management or outcome

Current School closure recommendations

- Present level of illness--no recommendation for school closure
 - schools and their communities have a responsibility to balance the risks of illness among students and staff with the benefits of keeping students in school.

Technical Report for State and Local Public Health Officials and School Administrators on CDC Guidance for School (K-12) Responses to Influenza during the 2009-2010 School Year



Increase in Disease Severity

- Selective school dismissal—School comprised of high-risk students
- Reactive dismissals—high levels of absenteeism in students and/or staff and unable to function normally
- Preemptive school dismissals—decrease the spread of the influenza virus or to reduce demand on healthcare system
- Authority is at the board/superintendent level
- Let's work school closure recommendations as a team

Influenza Vaccine Programs

- Seasonal flu vaccination
 - Expected in September
 - Will begin prior to H1N1 vaccination program
 - Usual recommendations for who should get it
- H1N1 flu vaccination
 - Initial supply expected in fall
 - Human trials currently underway
 - Likely two shots, one month apart
 - Given to priority groups first



H1N1 Vaccination

- Current Tier I priority groups identified by CDC
 - Pregnant women
 - Caregivers & household contacts for children under 6 months of age
 - Children 6 months to 24 yrs of age
 - Healthcare workers & first responders
 - Adults 24 to 65 with chronic medical conditions at risk for influenza complications

H1N1 Vaccination (continued)

- School age in priority group
 - Students with high risk conditions are higher priority
- If available, we will provide vaccine for vaccination clinics
 - Time: TBD
 - Location: TBD
 - Target Population: TBD

Information Resources

- HEALTH

- www.dhhs.state.nh

- For General Public Health related Questions, including H1N1:
603-271-4496, 8:30 AM - 4:30 PM regular business days
603 –271 –5300, or 1-800-852-33345 ext 5300 after hours

- Report regular outbreaks @ 603-271-4496

- Federal Resources

- Centers for Disease Control and Prevention (CDC)

- www.cdc.gov

- Flu.gov

- www.flu.gov



THE MORE WE REASSURE THEM, THE MORE THE PUBLIC GET WORRIED. I DON'T KNOW WHY...

PANDEMIC

PAN IC

Waters - Nurse - 1995

Thanks a lot



Division of Public Health Services
NH Department of Health and Human Services



