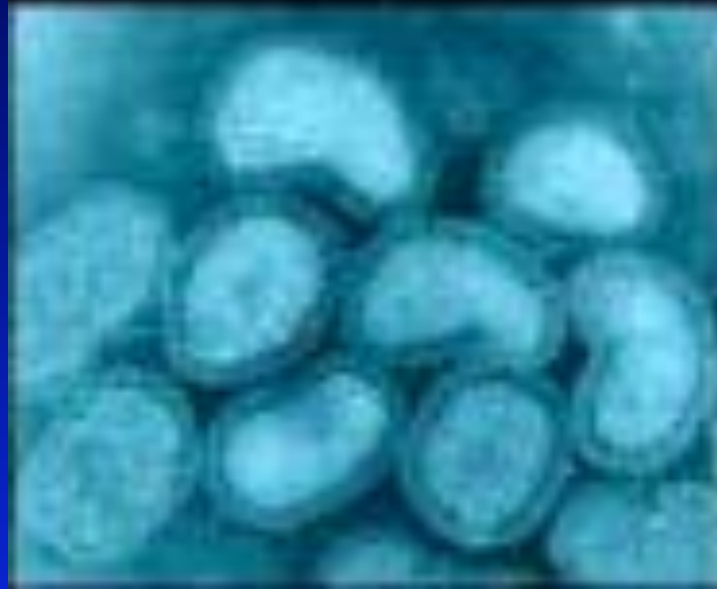


Overview of Pandemic Flu: Continuing to Improve Business and Community Preparedness

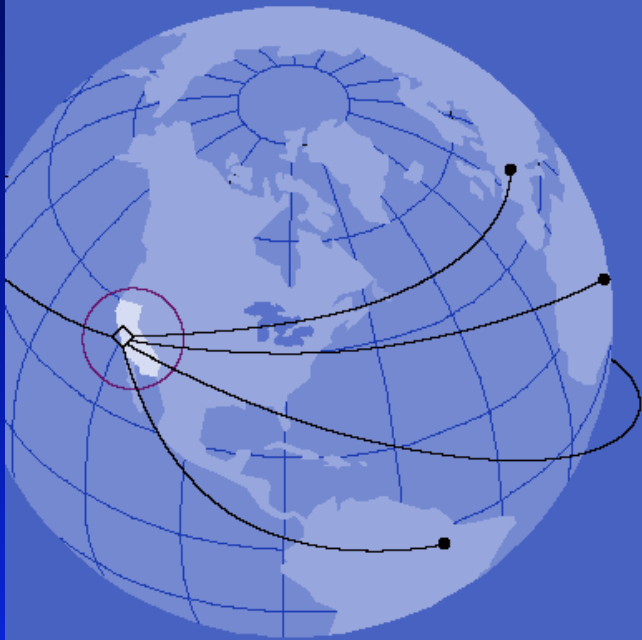


Scott Morrow, MD, MPH
San Mateo County Health Officer
July 30, 2009



**Summit on
Pandemic Influenza:**

**Building
Community
Resilience**



Thursday, May 18, 2006

Friday, May 19, 2006

**San Mateo County Expo Center
San Mateo, CA**

- Refresher on Pandemic flu
- What happened to us this spring
- What to expect this Fall

- **5/18-19, 2006**
- **6/29, 2006**
- **5/4, 2007**



Caveats

- First of all, no one can predict the future
- We can and should learn from history
- Planning effort should focus on the worst case, not the best case
- We need to be more prepared
- At the moment, your risk of contracting pandemic flu is fairly high-there is currently a pandemic
- While we are clearly in a response phase, we should also continue planning



Refresher

- www.smhealth.org/swineflu



Goals of pandemic response

- Decrease Illness and Death
- Minimize social disruption

Key elements of response

- Surveillance
- Vaccination
- Community Mitigation
- Communication

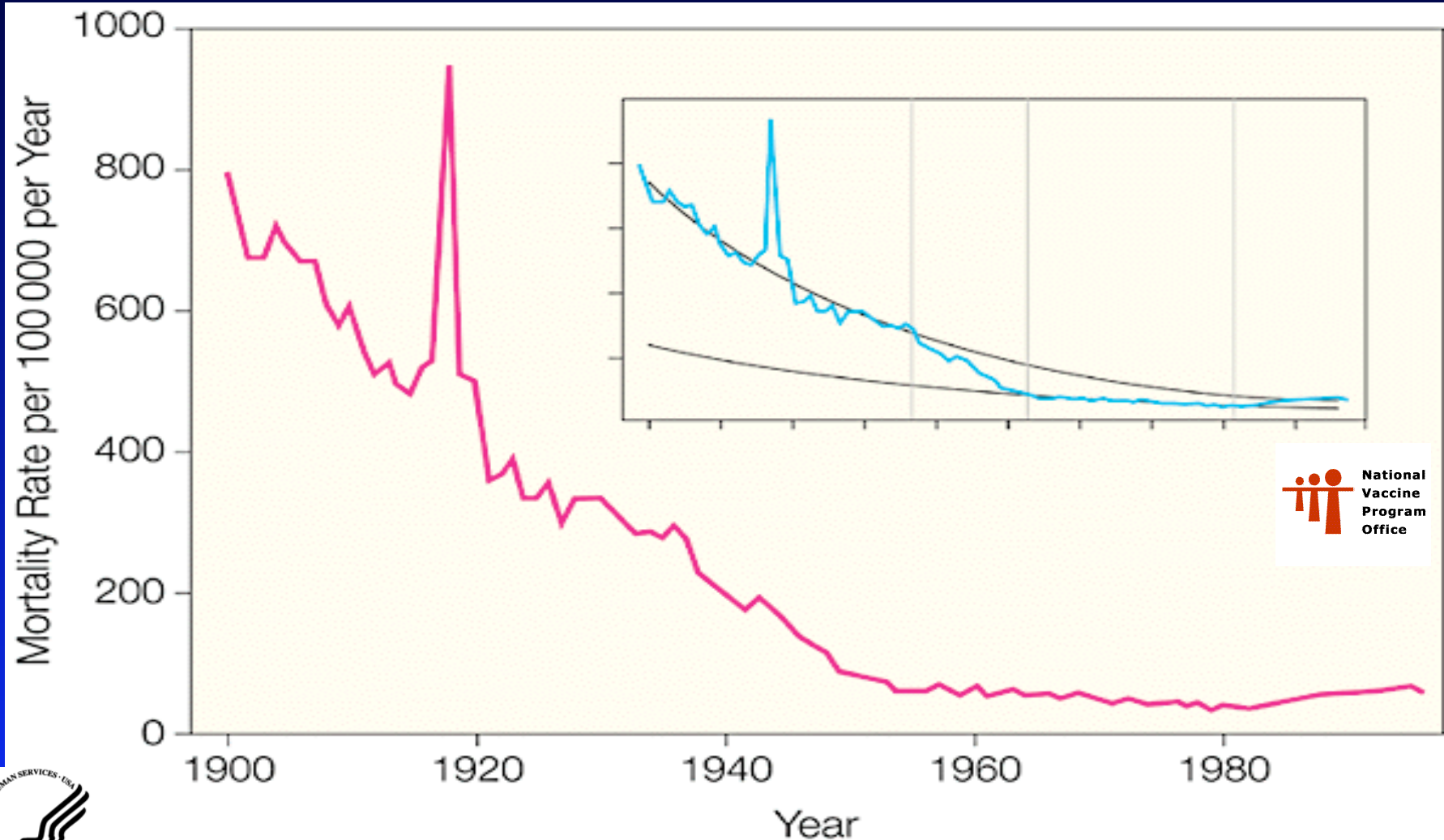


Important Distinctions

- Seasonal Influenza
 - H1N1 (A/Brisbane/59/2007)
 - H3N2 (A/Brisbane/10/2007)
 - B/Brisbane/60/2008
- Avian Influenza
 - H5N1
- Pandemic Influenza
 - H1N1 (Swine flu)



Infectious Disease Mortality, United States--20th Century



 National
Vaccine
Program
Office

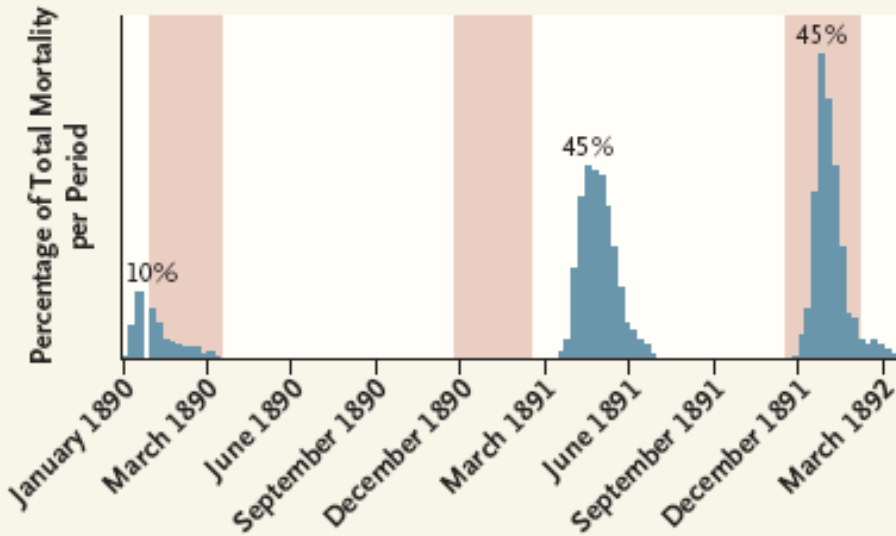


Armstrong, et al. *JAMA* 1999;281:61-66.

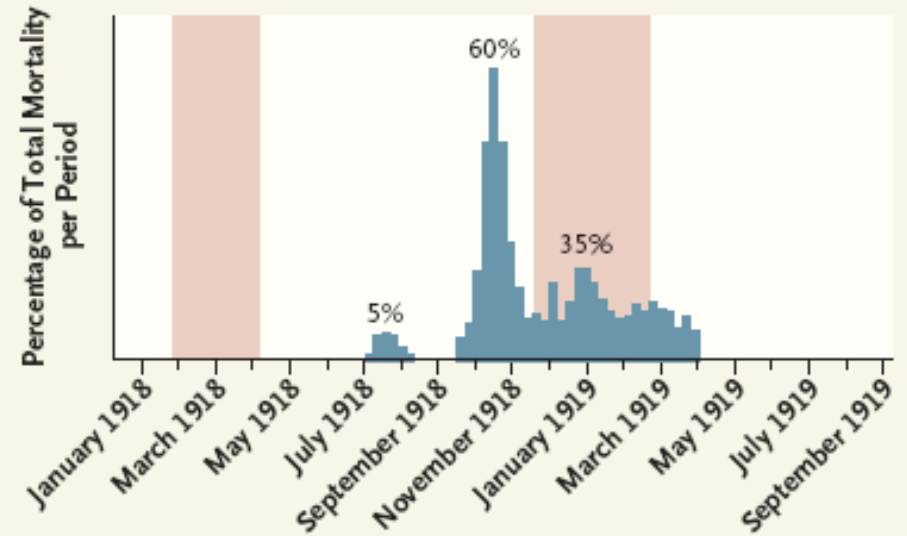


Mortality Distribution and Timing of Waves of Previous Pandemics

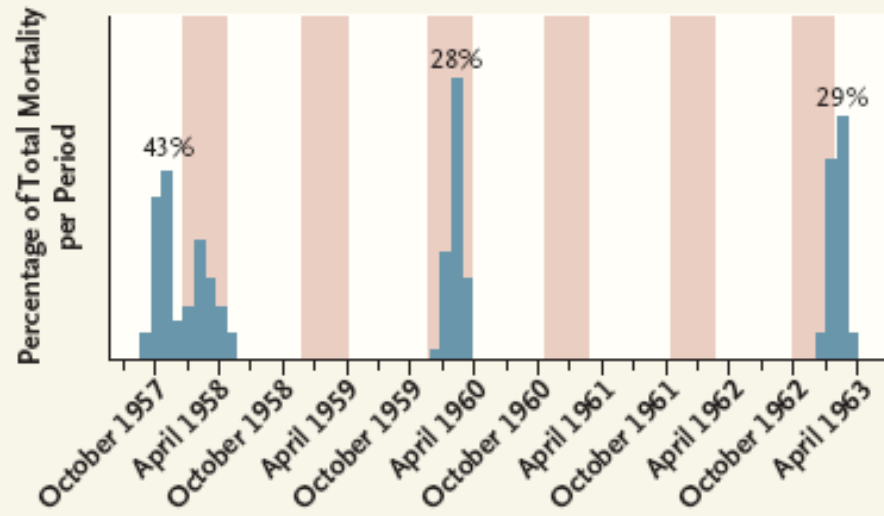
A 1889–1892, London



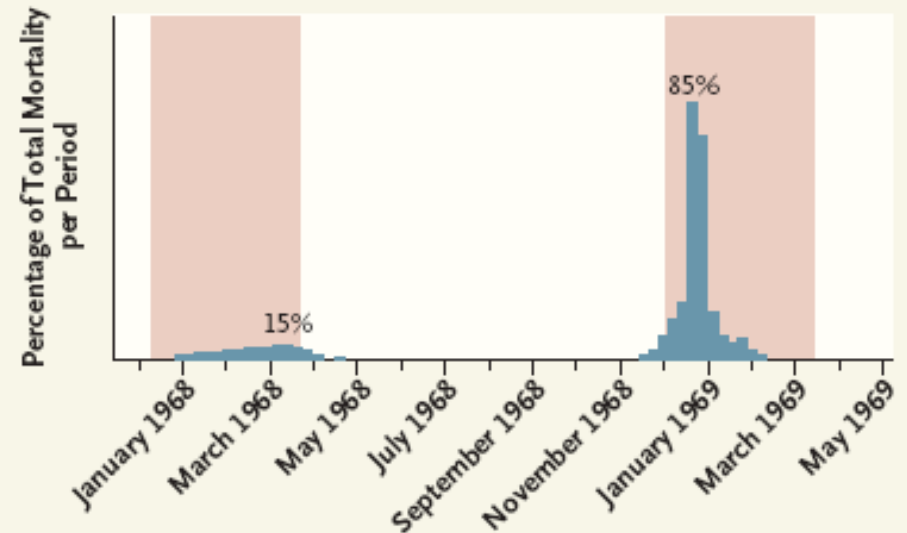
B 1918–1919, Copenhagen



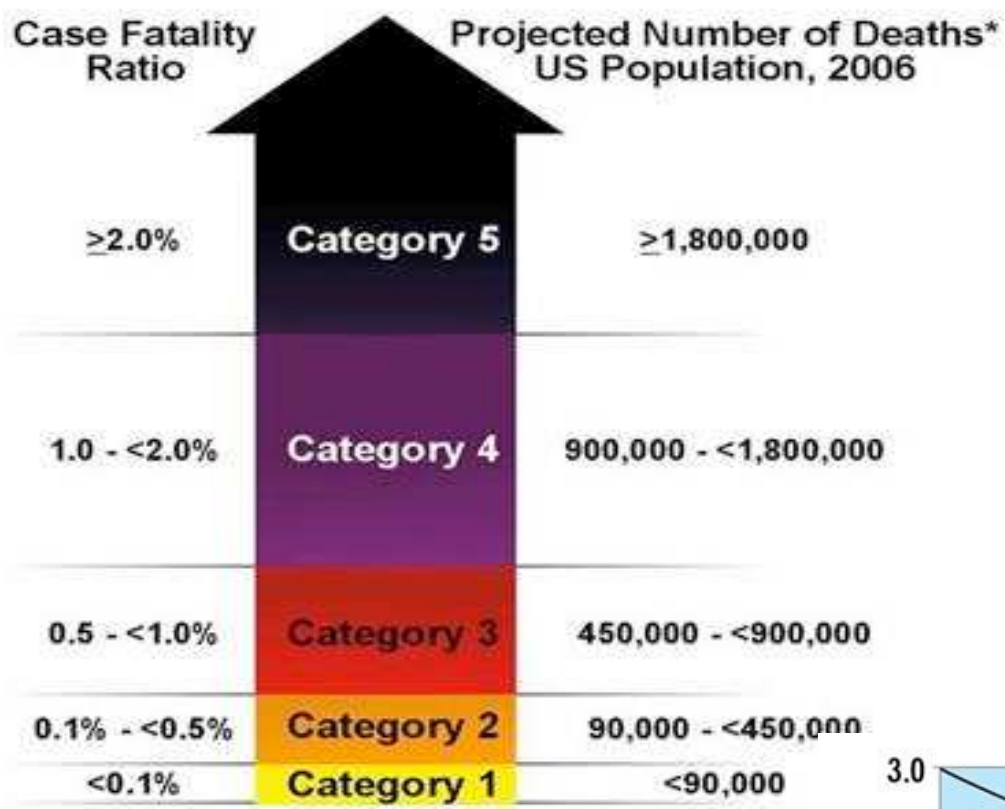
C 1957–1963, United States



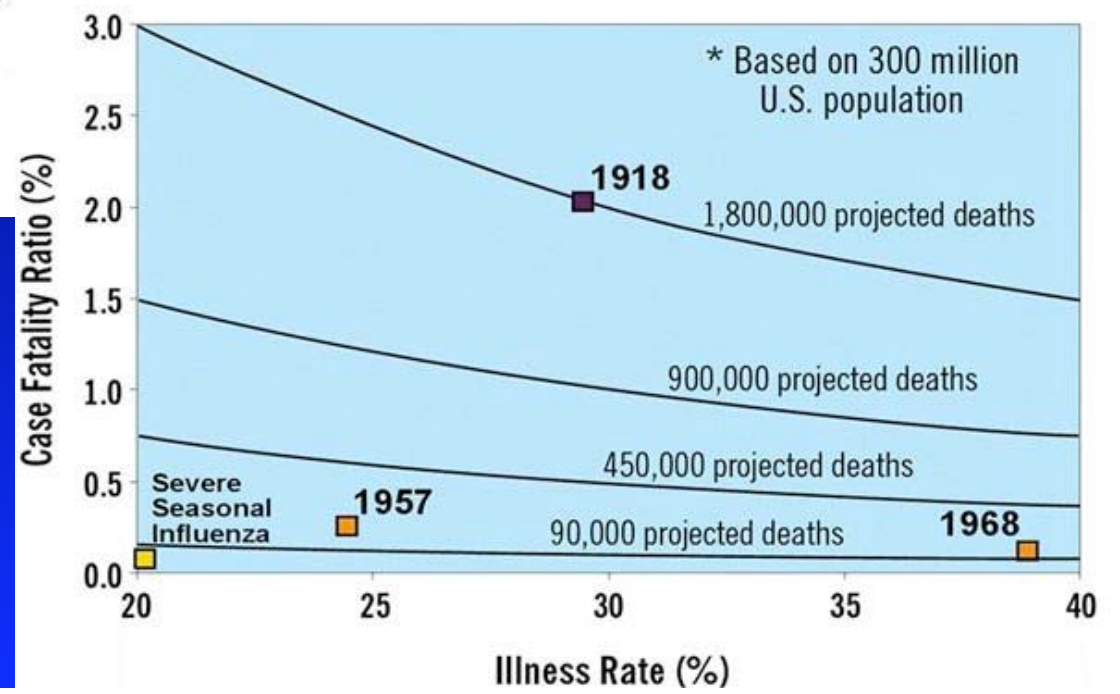
D 1968–1970, England and Wales



Pandemic Severity Index



*Assumes 30% illness rate and unmitigated pandemic without interventions



Pandemic Influenza Estimates for California

CDC Estimates of Percent of Population Affected by the Next Pandemic*	Number Affected in California (Pop. 36,363,502)**
15% to 35% of pop. will become ill with flu	5.4 – 12.7 Million
8% to 19% of pop. will require out-patient visits	2.9 – 6.9 Million
1% to 2% of pop. will require hospitalization	363 – 727 Thousand
0.2% to 0.5% of pop. will die of flu-related causes	72 – 181 Thousand

*Estimates from FluAid 2.0, CDC www2.cdc.gov/od/fluaid/default.htm

**California Department of Finance Pop. Projections for 2003



Prepare for an Earthquake (with a BIG twist)

- Similarities
 - Will occur
 - Timing unknown
 - Magnitude unknown
- The BIG twist
 - No “outside”
 - Supply chain remarkably disrupted
 - Effects are much longer
 - Other people are seen as a threat (communicable)



Concept of Operations

- Health Department activities will be phased
- They will be based on a locally defined color-coded scheme
- You can use a similar scheme



Phase	Agency/Organization	Action
Green - little or no human transmission		
	All Agencies and Organizations (Local government, Businesses, Schools, Hospitals)	<ul style="list-style-type: none"> • Preparation phase represented by: • Review and update existing plans and procedures • Ensure essential services are identified • Ensure essential supplies necessary to provide essential services are available (stockpile) • Identify how essential services will be delivered with when there are shortages of key personnel and essential supplies
Yellow - limited to moderate human transmission		
	All Agencies	<ul style="list-style-type: none"> • Cooperate with PHD instructions • Implement phase yellow actions as needed to continue essential operations • Prepare to perform essential services only • Increase use of telecommuting and social distancing strategies • Deploy PPE (masks) to assigned personnel • Ensure staff understand self-protection strategies
Red - extensive human transmission		
	All Agencies	<ul style="list-style-type: none"> • Perform essential services only • Follow PHD guidance • Maximize telecommuting option • Deploy PPE to assigned personnel • Respond to NETVACs or RSS as requested • Ensure staff understand self-protection strategies
Black- uncontrolled and uncontrollable human transmission	Essential government service only. People are self-sufficient. Austere medical care only.	
	All Agencies	<ul style="list-style-type: none"> • Perform essential services, if possible • Follow PHD guidance • Maximize telecommuting option • Ensure staff understand self-protection strategies

Concept of Operations

- Triggers not assigned yet, too many possible variables before event occurs
- Will be based on local conditions
- Color coded condition will be communicated to community partners
- Major goal of the Health Officer-keep us from going from red to black



The 2 C's: main concepts for Response

- **Containment/Mitigation**
 - Pharmacologic
 - Non-pharmacologic
- **Continuity of Operations**
 - Shortages of human resources
 - Shortages of essential supplies



Response

- **Containment/Mitigation**
 - **Mass Vaccination/Mass Prophylaxis**
 - **Surveillance/Lab**
 - **Institutional Control**
 - **Medical Surge Capacity**
 - **Personal Protective Equipment**
 - **Implementing Public Health Measures**
 - **Public Education/Communication**

Decisions will have to be made in an atmosphere of considerable scientific
Uncertainty and fragile public confidence



Mass Vaccination



Mass Prophylaxis



Surveillance/Lab



Daily Situational Awareness Tool: March 22, 2006

Overall Alert Level: LOW

ED Census: Alert Level = 465
 Green <500
 Yellow 500-600
 Red >600

First Watch: Alert Level = 1 Alert
 Green No Alerts
 Yellow Alerts not pursued
 Red Pursued Alerts

RODS: Alert Level =
unpromoted sale counts of antidiarrheal, cough/cold, thermometers
 Green ≤ 1 Standard deviations above previous week's average
 Yellow 1-2 days > 1 Std. Dev.
 Red >2 days > 1 Std. Dev.

NDP Syndromic Surveillance: Alert Level =
 Green No Alerts
 Yellow Alerts not pursued
 Red Pursued Alerts or High Alert

School Absenteeism: Alert Level = N/A
 Green 0-10% Absent
 Yellow >10-15% Absent
 Red > 15% Absent

Unexplained Deaths: Alert Level = 3
 Green 0-3 deaths
 Yellow 4-5 deaths
 Red 6+ deaths

SFO Surveillance: Alert Level =
 Green No alerts
 Yellow Alerts not pursued
 Red Public health intervention required

Other: 1. Varicella outbreak being followed in a SMC middle school

Alert Levels:
LOW
MEDIUM
HIGH

Health Officer receives DSAT daily to alert to any unusual activity in the community

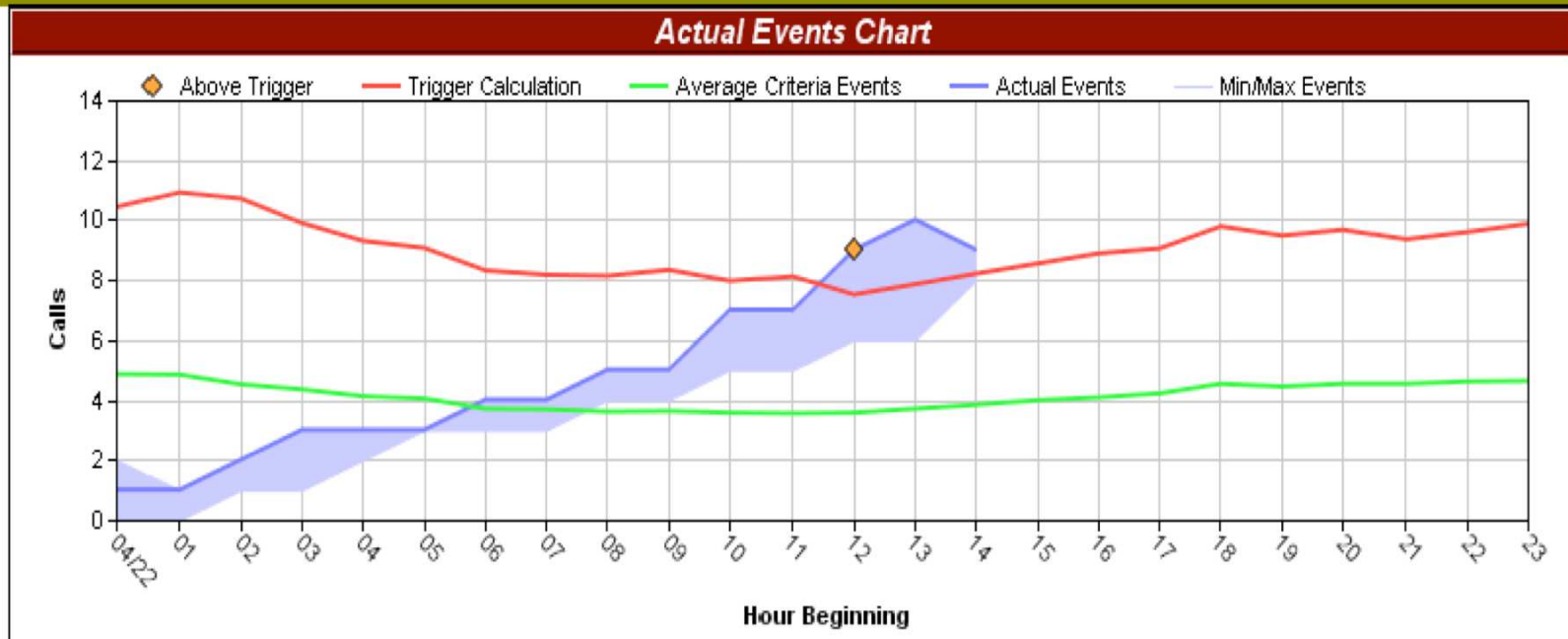


San Mateo Breathing Problems (Count, STA, CUSUM) GraphIt Summary



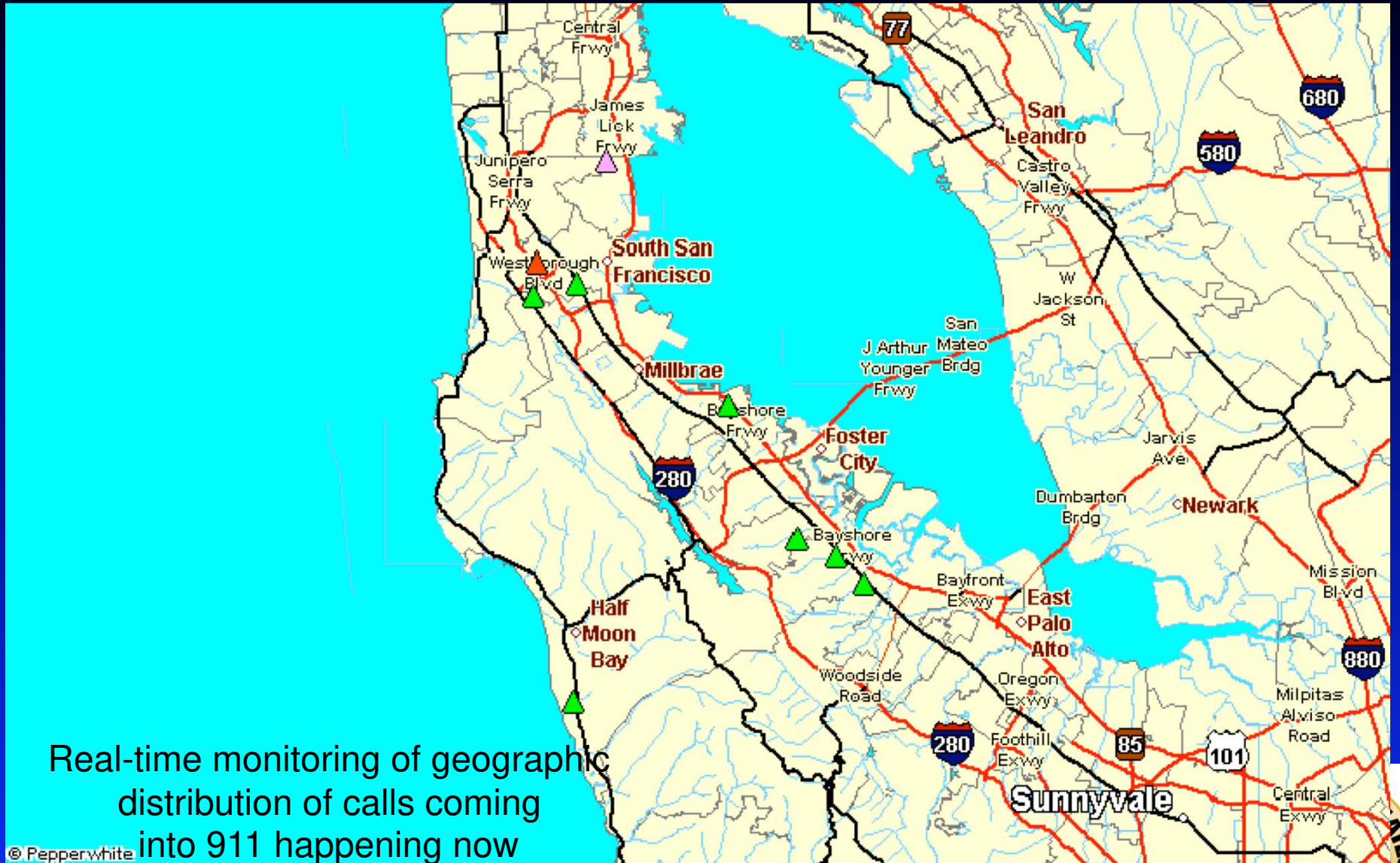
Graphs represent in queue, active or completed calls between the hours of 4/22/2006 2:12:51 AM and 4/22/2006 2:12:51 PM

Line Chart:



Real-time monitoring of types of calls coming into 911 happening now

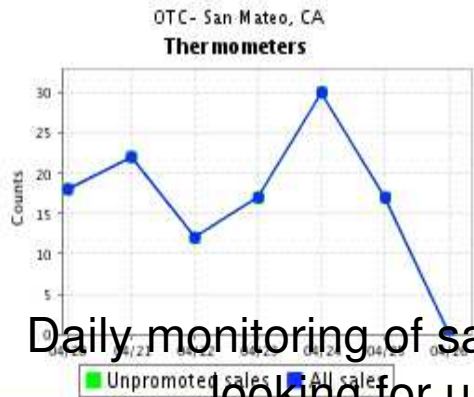
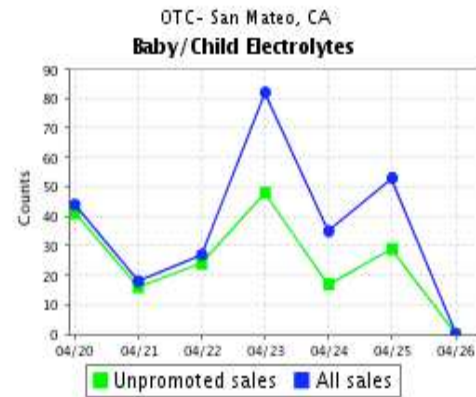
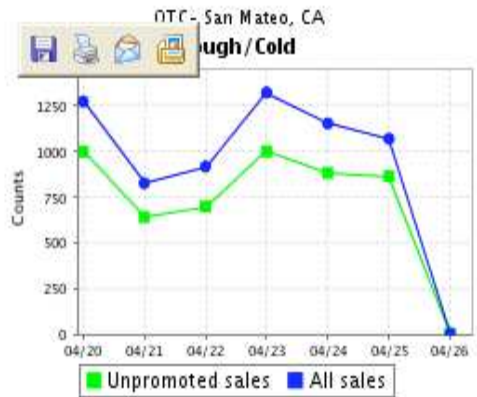
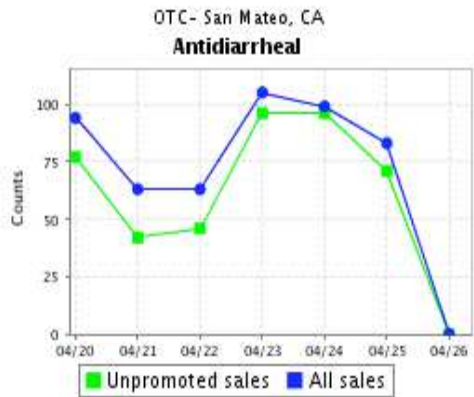




© Pepperwhite



San Mateo, CA 91.3% (21/23) Stores Reported for Sales Date 4/25/2006 as of 4/26/2006 3PM



Daily monitoring of sales through pharmacies
looking for unusual patterns

Data Type: OTC Jurisdiction: CA County: San Mateo Normalize: Set as Default

Institutional Control Medical Surge Capacity



Surge Capacity

- **Beds**
 - Emergency regulations, increase in beds in existing facilities, alternative facilities, tents, home care
- **Personnel**
 - ESAR-VIP; Medical Reserve Corps; citizens volunteers; scope of practice changes
- **Equipment**
 - SNS; HRSA grant





Implementing Public Health Measures



Public Health Measures

Measures would vary as pandemic develops

- Reduce risk that cases transmit to others
 - Isolation of ill persons-home or hospital confinement
- Reduce risk that contacts transmit to others
 - Quarantine of exposed persons-home or hospital
- Reduce person-to-person transmission by providing barriers (masks) or through hygiene and disinfection (handwashing, etc)
- Contact tracing



Public Health Measures

Measures would vary as pandemic develops

- Reduce the risk that the uninfected are exposed by increasing social distance
 - Cancellation/closure of events/activities likely (school, childcare, public gatherings, or specific businesses)
 - Travel restrictions
 - Protective sequestration



Public Education/ Communication



Public Education/ Communication

- Public Health information campaigns and risk communication are a key component of non-medical control measures



Personal Protective Equipment





Masks can be an effective measure









Self-Protective Measures for Employees

- Single best precaution against the spread of the flu:
- Handwashing, frequent
- Avoid touching your eyes, nose, and mouth
- Wear simple surgical masks
- If sick, don't go to work or school
- “Social Distancing”



Preparedness=Self-Sufficiency



The Role of the Health Department

- Coordinate (not provide) medical support services
- Coordinate distribution of vaccine/anti-virals
- Surveillance
- Coordinate public messaging
- Apply legal restrictions on the movement of people when necessary
- Lab support
- Assist key partners in planning



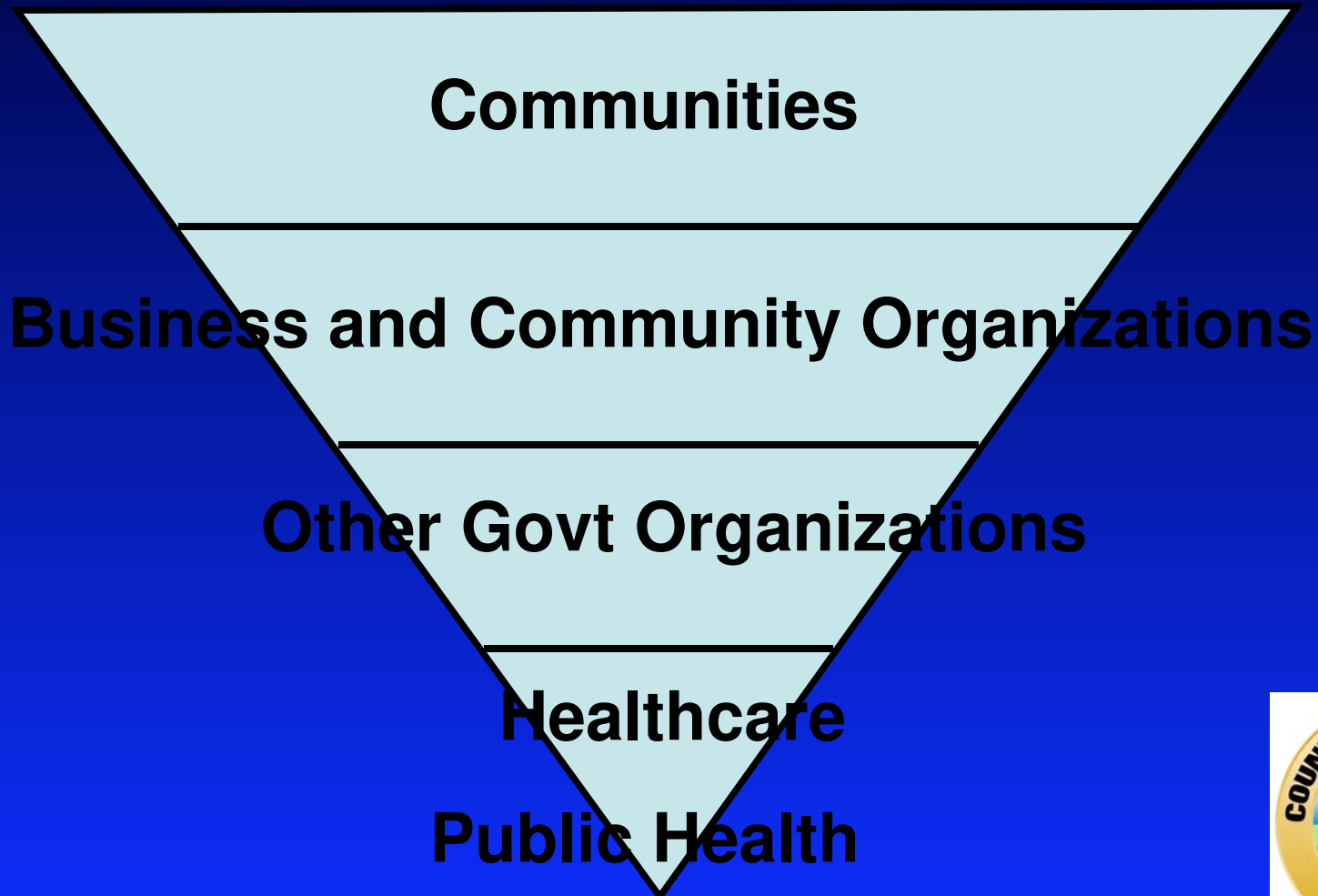
The Role of the Health Department

- Rethink your interactions with the Health Department
 - It is here not to do something “to” you but “for” you
- Unanticipated impacts
- Public Health in California is not centralized



Coordinated Response

All community structures should act as if coordinated system



What is your role?

- Continuity of operations for governments, business, schools, non-profits, churches
- Delivery of essential services such as electricity, water, sewers, food, police, fire, money exchange, among others



What is your role?

- Get your organization prepared
 - Need for contingency plans based on crisis response principles
 - Identify and focus on your essential services
 - Supply chain and distribution disruptions
 - Don't assume any supplier will be reliable
 - Sick leave and absenteeism policies
 - Checklist in Harvard Business Review May 2006



What happened here



HEALTH

Swine flu gains in Bay Area

3 counties report 12 confirmed or probable cases —
1st U.S. death reported; health officials raise alert level

Outbreak at a glance

Confirmed cases: At least 93 in the United States, including 14 in California; 99 in Mexico; 19 in Canada; 13 in New Zealand; 10 in

April 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7	8	9	10	11
12	13	14	15	16	17	18
19	20	21	22 First made aware	23	24 First Alert out to HCPs	25 Continuous tele-conference
26 Continuous tele-conference	27 DOC opened. All schools superintendents met with	28 Local Alert level raised to yellow. BOS updated	29	30 Local emergency declared		



May 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
					1	2
3	4	5	6	7	8	9
10	11	12 Alert back to green	13	14	15 DOC closed	16
17	18	19	20	21	22	23
24 31	25	26	27	28	29	30



June 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
	1	2	3 H1N1 debrief	4	5	6
7	8 Less media coverage, but continues to spread like wildfire	9	10	11	12	13
14	15	16 First confirmed SMC death	17	18	19	20
21	22	23	24	25	26	27
28	29 First case of resistance in world	30				



July 2009

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
			1	2	3	4
5	6	7 More cases of resistance	8	9	10	11
12	13	14	15	16	17	18
19	20 Clinical Trials for vaccine begin	21	22	23	24	25
26	27	28	29	30	31	



Lessons learned

- We've been planning for this for years, and our planning paid off
- You can't predict mother nature
- We've been given a second chance



What to expect this Fall



Community Interventions

(If virus remains the same)

	Population
YES	Mass vaccination (will be confusing)
NO	Mass prophylaxis
YES	Heightened surveillance
YES	Implementation of surge capacity



Community Interventions

(If virus remains the same)

	Individual
YES	Respiratory hygiene—cover your cough
NO	Mandatory mask in public
YES	Recommend for sick persons and health care workers
YES	Voluntary isolation: stay home if sick
	Home
NO	quarantine: all family members stay home if anyone in household sick may go to work/school, if not sick



Social Distancing

(If virus remains the same)

Probable	School closure and reduce out of school contact
Probable	Decrease work place exposure Telecommute and web meetings
NO	Limit public gatherings
NO ?	Limitations on public transit
NO	Isolation and Quarantine





Community Mitigation Social Distancing

Mexico City
Football match
during
cancellation of
mass gatherings



What I need from you

- Get your employees and clients prepared and self-sufficient today
 - Basic education and expectations
 - Expand “earthquake kits” up to 2 weeks to 2 months



What I need from you

- **Single point of contact** (or at least less than 3)
- Many business groups
 - BRMA, BARC, PIBA, BENS, Chambers of Commerce, and many others
- Business (small, medium, and large) have very different needs
- Current contact list: IBM, Genentech, Hyatt, UPS, San Mateo Rotary, San Mateo Pharmacy Assoc., Gap, Union Bank, Sun Micro, Marriott, Franklin Templeton, VISA, United Way, BENS- BRMA



What Can I Do For You

- ?



- www.smhealth.org/swineflu

