

Center for Infectious Diseases

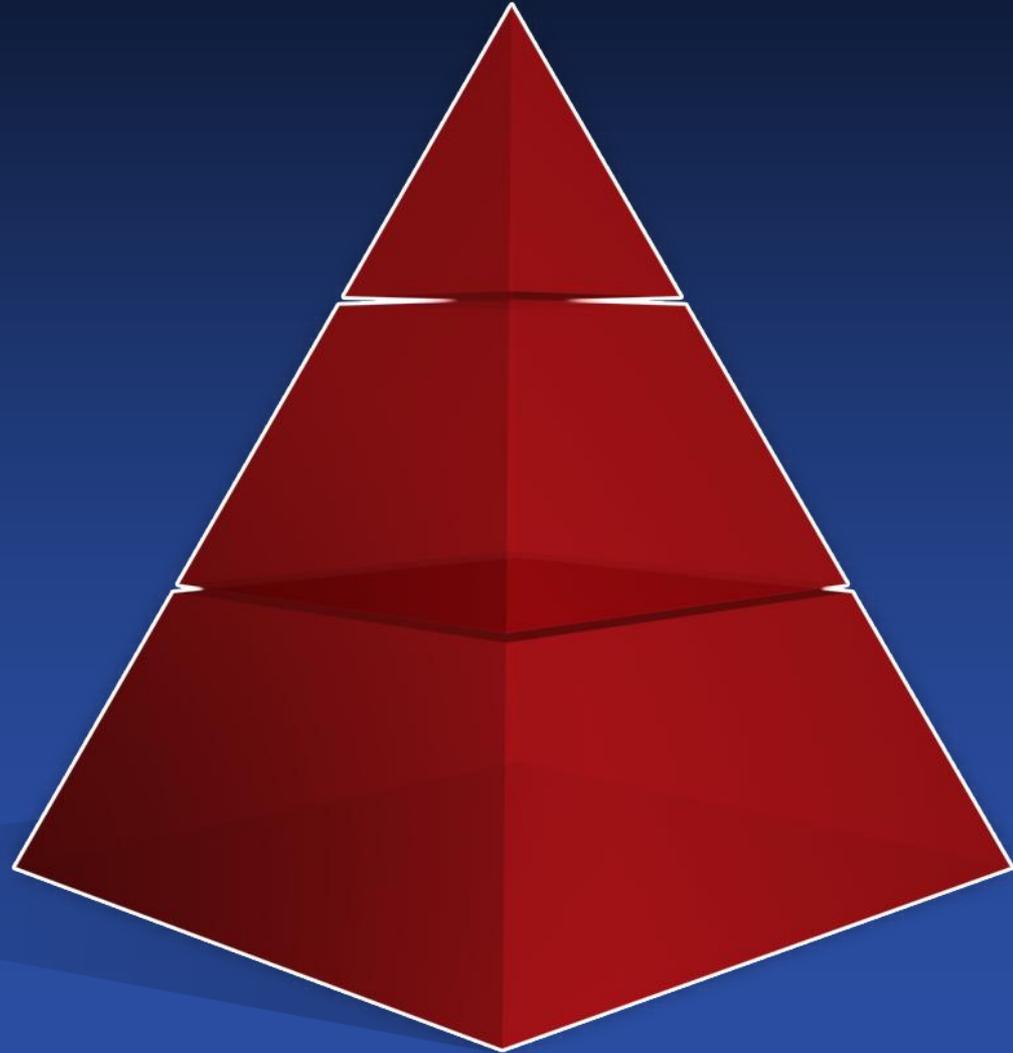
So what do we do to combat emerging and re-emerging infectious diseases?

Let's look at three recent examples:

- » Whooping Cough
- » Measles
- » Influenza

Building Blocks of Communicable Disease Control

- Prevention
- Detection
 - Surveillance
 - ✓ Health care providers
 - ✓ Laboratories
 - Laboratory testing
 - ✓ New strains
 - ✓ Outbreaks
- Epidemiologic analysis
- Response
- Policy development
- Evaluation and quality improvement



Whooping Cough



Early Warning of the 2010 Epidemic via Sentinel Providers

In early April 2010, CDPH was notified by the Children's Hospital of Central California of an increase in pertussis cases similar to that seen in early 2005, the last peak year for pertussis



Immediate Response Measures

- CDPH queried local health departments and hospitals about pertussis cases - many reported increases in cases; CDC alerted
- Mitigation efforts began immediately; the primary goal was to prevent infant deaths
- Unlike prior epidemic years, Tdap was available as a control measure, however, barriers to use were identified so CDPH made additional Tdap recommendations
- Intensive efforts to educate providers and public
 - Early diagnosis and treatment
 - Treatment recommendations for infants with severe disease
 - Immunization, especially cocooning



Pertussis Mitigation

- Promote the use of Tdap - particularly in those who have contact with infants
 - Free vaccine for birth hospitals with postpartum Tdap policies
 - Work with payers re: Tdap reimbursement
 - CDPH expanded Tdap recommendations
 - New 7-12 grade requirement – AB 354
- Clinician education
 - CDPH Tdap recommendations
 - Pertussis signs and symptoms
 - Treatment recommendations for infants with severe pertussis
 - Accelerated DTaP schedule for infants
- Public education
 - Vaccination/cocooning
 - Pertussis signs and symptoms
 - Keep ill people away from infants



Public Education - Messaging

父母：



保護您自己和子女
遠離百日咳！

為什麼百日咳很嚴重：

百日咳（也稱為 pertussis）是一種傳染病，很容易在人群之間傳播。它對嬰兒是一種嚴重疾病，會使他們劇烈咳嗽而無法呼吸。每一年都有數百個嬰兒因為百日咳住院，有些不幸死亡。

Is it just a cough?

Or is it whooping cough?



Signs of whooping cough (pertussis)

Children & Adults: coughing attacks that can make it hard to breathe and may be followed by vomiting or a whooping sound.

Infants less than six months of age: may stop breathing, gag or gasp for air rather than cough and may vomit after coughing.

There is usually no fever with whooping cough and people with whooping cough usually seem fine in between attacks. See your doctor if someone in your family might have whooping cough.

Whooping cough is easily spread and can cause serious illness—especially in infants who are too young to be fully vaccinated. Ask your doctor about getting a pertussis shot for you and your family.



LA TOS FERINA está aumentando en California Protege a tu bebé



¿Necesitas más Tdap? Si tus bebés se contagiaron de algún familiar o amigo, estás protegiendo a

tu familia. Tu doctor por la vacuna Tdap es importante para dar embarazada

una inyección de Tdap.

Antes de la vacuna Tdap, asegúrate de que tu bebé esté al día con tu recién nacido.

Si estás embarazada o planeas embarazarte, habla con tu doctor sobre la vacuna Tdap.

¡Protege a tu familia!

¡Protege a tu familia! Si estás embarazada o planeas embarazarte, habla con tu doctor sobre la vacuna Tdap. Las primeras dosis de Tdap son las más importantes. ¡Protege a tu familia!



La historia de Dylan

Antes de que Dylan naciera, estaba enferma y tenía una tos fuerte. Tosí tanto que las contracciones se me adelantaron. Dylan nació hermoso y sano. Pero mi tos continuaba y se me hacía difícil mantener despierto a Dylan cuando lo amamantaba—la única señal de tos ferina que tuve—.

Dos semanas después, mi hijo Dylan murió por la tos ferina que contraí de mí. El tenía 17 días de nacido. Es posible prevenir que bebés como Dylan se contagien con la tos ferina. Ahora animo a los padres a que vacunen a sus hijos y a los adultos a que obtengan una dosis de refuerzo de la vacuna contra la tos ferina, Tdap. No quiero que ninguna familia sufra lo que la mía sufrió.

Más historias personales en www.shotbyshot.org



California Department of Public Health
Center for Infectious Diseases
Division of Communicable Disease Control
Immunization Branch

www.getimmunizedca.org IMM-887 WC 5/(11/10)

ferina!

Protect yourself. Protect your family. Get Immunized!

www.getimmunizedca.org



California Department of Public Health, Immunization Branch
如有問題？

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Provider Education



Pertussis is Peaking. Take Action!



The California Department of Public Health Presents:
**Addressing an Epidemic:
 Clinicians' Role in
 Preventing Pertussis** September 2, 2010
 12:30pm to 1:30pm

Think
pertussis

Consider the diagnosis of pertussis in your patients and their close contacts
Young infants: The diagnosis of pertussis is often delayed or missed because of a deceptively mild onset of runny nose. There usually is no fever. Cough may be undetectable or mild. Illness may present as apnea, hypoxia or seizures. After a few days, mild illness may suddenly transform into respiratory distress. A white blood cell count of >20,000 cells/mm³ with >50% lymphocytes is a strong indication of pertussis.

Adolescents and adults: Most cases are not diagnosed. A misdiagnosis of bronchitis or asthma is common. The patient may report of episodes of a choking sensation or of sweating. Leukocytosis/lymphocytosis is not likely to occur in this population.

Delays in recognition of pertussis may contribute to adverse clinical outcomes
 Obtain nasal aspirate (preferred specimen) or nasopharyngeal swab for PCR and/or culture promptly.

Delays in treatment before or after hospitalization may increase the risk of fatal illness

Young infants: Because pertussis may progress rapidly in young infants we suggest that you treat suspected and confirmed cases promptly with azithromycin, monitor them very closely, and consider hospitalization in a facility that has direct access to intensive care (especially if the infant is <3 months of age). Almost all fatal cases have extreme leukocytosis with lymphocytosis, pneumonia, and pulmonary hypertension.

Report pertussis—Prompt reporting supports prevention and control efforts
 Report suspected and confirmed cases of pertussis promptly to your local public health department to assist in preventing additional cases.

Prevent pertussis—Assess pertussis immunization status, and use every patient encounter to vaccinate

- All close contacts to infants and all health care workers should be immunized against pertussis with Tdap or DTaP vaccine, as age appropriate.
- Vaccinate for pertussis at the earliest opportunity, especially during hospitalization for giving birth and at clinic visits for wound management, checkups or acute care.

Test
for pertussis

Treat
for pertussis

Reduce Transmission



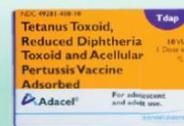
Tdap or DTaP

Pertussis is widespread—are your patients protected?

Tdap: Tetanus toxoid, Reduced Diphtheria toxoid, Acellular Pertussis vaccine

7 Years of Age or Older

ADACEL™ (sanofi pasteur)



Boostrix® (GlaxoSmithKline)



DTaP: Diphtheria and Tetanus toxoid, Acellular Pertussis vaccine

6 Weeks to <7 Years Old

DTaP only

DAPTACEL® (sanofi pasteur)



Infanrix® (GlaxoSmithKline)



TRIPEDIA® (sanofi pasteur)



Combination: DTaP + Polio ± Others

Pediarix® (GlaxoSmithKline)



Pentacel® (sanofi pasteur)
Ages 6 weeks up to 5 years



Kinrix® (GlaxoSmithKline)
Ages 4 years through 6 years



Use Tdap or DTaP to stop pertussis. For more info, visit EZIZ.org

2010 California Pertussis Summary

- **9,158** confirmed cases of pertussis and 10 infant deaths were reported for 2010
- This was the most reported cases in 63 years when 9,394 cases were reported in 1947



2011 California Pertussis Cases to Date*

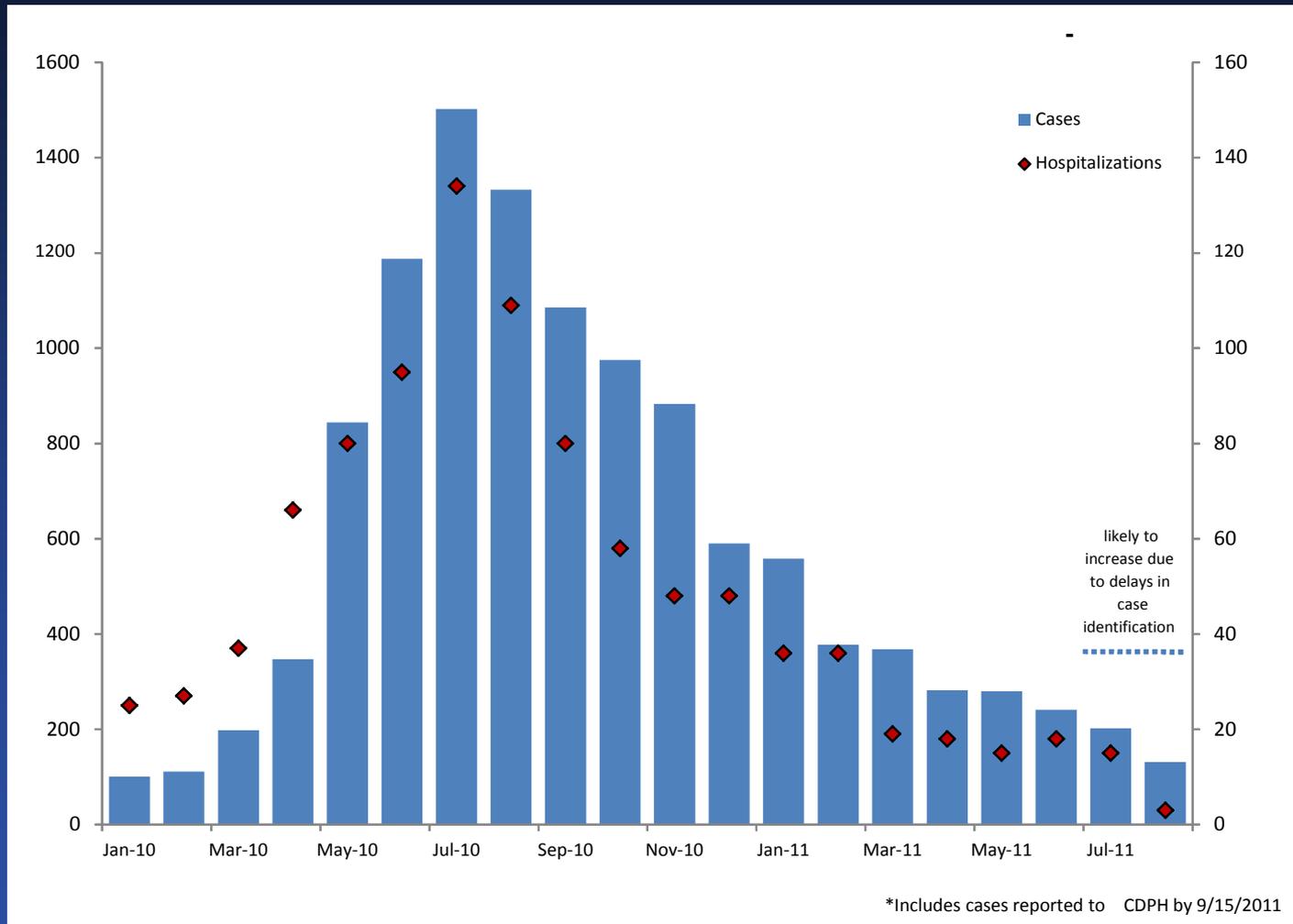
- 2,182 cases have been reported
- 136 (9%) cases have been hospitalized (of 71% with complete data)
- No deaths reported

*Reported cases as of August 15, 2011



Pertussis cases and hospitalizations by month of onset, 2010-2011*

Cases



Hospitalizations



Measles



Measles in the Prevaccine Era – United States, 1950s

Annually:

- 3-4 million cases
 - ~ 500,000 reported cases
- Severe complications
 - 4,000 encephalitis cases
 - 150,000 respiratory complications (pneumonia)
- 48,000 hospitalizations
- 450 deaths



Measles in California – 2000 to 2011

Year	Cases (n)
2000	19
2001	40
2002	5
2003	5
2004	6
2005	4
2006	6
2007	4
2008	17
2009	9
2010	27
2011	28*

*As of 9/26/2011



Summary – Measles, 2011

- 28 Cases
- 17 with international travel and 6 with epi-links to confirmed cases
- Countries where exposure occurred: France, Philippines, India, England, Italy, Thailand, Malaysia, and China
- Age range: 11 months to 68 years
- MMR vaccination status:
 - 16 cases with 0 doses (including **9 with known PBEs**)
 - 10 cases with unknown/undocumented status
 - 1 case with 1 documented MMR
 - 1 case with 2 documented MMR



Measles Contact Investigations in 2011

- Over 1300 contacts of California measles cases have been investigated
 - These potentially exposed persons were identified from over 53 contact settings including: emergency departments, urgent cares, pre-schools, daycares,
 - At least 14 received immune globulin and 10 received MMR as prophylaxis
- Over 580 contacts of measles cases have been investigated from 24 airline flights
- Total contacts investigated > 1850 for 2011



Number and Percent PBEs Among Children Entering Kindergarten by County, 2010



Influenza Update



Influenza Surveillance

- Sentinel and local public health laboratories submit patient specimens for testing at CDPH
 - ✓ influenza confirmation
 - ✓ identify new strains
 - ✓ monitor match with vaccine
 - ✓ anti-viral resistance testing
- Sentinel health care providers—percentage of outpatients with flu-like illness
- Kaiser—percentage of inpatients with flu-like illness
- Local health departments—respiratory disease outbreaks
- Health care providers confirmed influenza deaths (<65 years of age)

Activities Beyond Surveillance

- Pandemic influenza operational plan
- Investigating outbreaks
- Laboratory testing
- Antivirals
- Public information
- Engaging LHDs
- Working with the healthcare community
- Providing guidance on prevention
- Promoting healthcare worker vaccination
- Supplying flu vaccine for the low income and high-risk

Most Recent State GF Flu Vaccine Doses Purchased

Flu Season	# of State-purchased Flu Vaccine Doses
2010-11 Season	640,000
2011-12 Season	460,000



2011 GF Flu Vaccine Purchase by Type

	Order	Doses Available	Shipped
Fluvirin (vials)	204,140	204,140	8/25, 9/22
FluLaval (vials)	155,000	155,000	8/18
Fluarix (syringes)	20,000	20,000	8/25
Flumist	30,000	30,000	8/25



Questions?

