Communicable Disease Section:
Investigation, Surveillance, & Prevention

Communicable Disease Section
San Bernardino Department of Public Health
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Epidemiologist
Objectives

• Name 2 things to do if you encounter a suspect measles case
• Name 1 intervention to prevent pertussis in Riverside & San Bernardino counties
• Ebola**
• Describe the seasonality of West Nile virus (WNV) infections
Title 17, section 2500 California Code of Regulations (CCR)

• Requires physicians and laboratories to report:
  – >85 communicable diseases
  – Any occurrence of unusual disease
  – Any outbreak

• Non-communicable conditions
  – Animal bites (also for rabies exposure)
  – Disorders characterized by lapses of consciousness
  – Alzheimer’s disease and other dementia

• Specifies reporting timelines
• Allows for the local Health Officer to add any conditions for local reporting
Confidential Morbidity Reports (CMRs)

There are 4 different CMRs:

- Tuberculosis
- Lapses of consciousness, Alzheimer's disease
- All other communicable diseases
- Animal patients

Available on our website
What happens when you report?

- **Investigation**: interview cases, clinicians
  - Risk factors, exposures
  - Cases, contacts in sensitive occupations/settings (e.g. food handlers, day care workers)

- **Education**
  - Information to case, contacts, public to control spread of disease in community
  - Health alerts, advisories to clinical community

- **Disease control**
  - Treatment, prophylaxis recommendations
  - Provide recommendations to infection control practitioners to help prevent spread of disease in healthcare & other settings

- **Surveillance**
  - Notify state, national public health officials, as necessary
  - Report morbidity to CDPH→CDC
  - Analyze & publish surveillance data
YOU Are Our Eyes and Ears

An important part of surveillance is being alerted to any unusual diseases or occurrences in humans and animals:

- Unusual disease
- Increased incidence
- Off-season illnesses
- Change in severity of illness
Measles Outbreak: San Bernardino County

Age Distribution of Confirmed Measles Cases, 3/24/15

- San Bernardino
- California
## Measles Outbreak: San Bernardino County

**Updated 3/24/15**

<table>
<thead>
<tr>
<th>Category</th>
<th>San Bernardino</th>
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<th>California</th>
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<tr>
<td></td>
<td>#</td>
<td>%</td>
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<td>%</td>
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<tr>
<td>Total cases</td>
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<td>100</td>
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<td>92.3</td>
<td>77</td>
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<td>1 or more doses of MMR</td>
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<td>20</td>
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<tr>
<td>Unvaccinated</td>
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<td>57</td>
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<tr>
<td>Hospitalized</td>
<td>3</td>
<td>23.1</td>
<td>20</td>
<td>15.0</td>
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Measles Outbreak: San Bernardino County

**Documented Vaccination Status: San Bernardino (n=12)**

- 50% vaccinated
- 50% unvaccinated

**Documented Vaccination Status: California (n=77)**

- 26% vaccinated
- 74% unvaccinated
Measles: San Bernardino County

• Notification: **Measles is notifiable immediately by phone (including suspect cases)**
  – Communicable Disease Section (CDS): **1.800.722.4794**
  – If after hours, fax info to CDS at **909.387.6377** and call the next business day
  – For advice or guidance after hours, follow instructions to reach the Public Health Duty Officer
Measles Disease

Clinically compatible cases of measles:

- **Rash**: maculopapular & descending, lasting ≥3 days
  - rash will always have some head/facial involvement*, and **DESCEND**, even in modified disease
    - if rash starts on trunk or there is no facial involvement, it is **not** likely measles
  - Measles rashes may be on palms and soles but not as prominent as on face and chest
  - Itchy rash? May be itchy from day 4-7, but not itchy immediately

- **3 “C’s”**: Cough, coryza (runny nose), and/or conjunctivitis

- **Fever**, usually high ≥101F
  - There must be some fever, even subjective fever
  - Appears **prior** to rash onset

- **Koplik spots**: not all patients have them

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*The only people who have measles rashes that do not start on the head or neck are adults who received killed measles vaccine during 1963-1967 and develop what is called “atypical” measles*
Measles: Atypical Clinical Presentation

- **Atypical disease**
  - Usually describes recipients of killed virus vaccine (KMV) from 1963-1967
  - Now also describes 2-dose MMR confirmed measles cases:
    - Rash still **DESCENDS** and has head/facial involvement
    - May have altered rash duration
    - May not have all three “C’s”: cough/conjunctivitis/coryza
    - May not have a fever ≥101°F

- **Consider measles, regardless of age or vaccination status**
  - Patients who have **fever AND a rash**
  - Ask about exposure history, including travel
  - Ask about recent MMR vaccination
    - ~5% of children exhibit vaccine reaction with rash & fever 6-12 days after vaccination
Measles Summary

- When is someone with measles considered infectious?
  - 4 days prior to 4 days after rash onset

- What do you do if you have a suspect measles case?
  1. Remember clinical diagnosis (fever & rash)
  2. Isolate (mask, room) & Notify DPH
  3. Get History
  4. Collect Specimens

- What are the recommended specimens to collect for measles testing?
  - Serum, red-top tube 7-10ml
  - Viral throat or NP swab
  - Urine, 50-100ml
Pertussis (Whooping Cough)

- **Etiology:** *Bordatella pertussis* (bacteria)
- **Symptoms:** cold-like symptoms, cough that progresses to become paroxysmal and last up to 2 mo, sometimes post-tussive vomiting
- **Incubation period:** 6-20 days (9-10 days avg)
- **Infectious period:** 21 days after sx onset, or 5 days after start of appropriate antibiotics
- **Airborne transmission via respiratory droplets**
- **Public Health Significance:**
  - Can be lethal in children <6mo
    - ~50% of infants <1yo are hospitalized
  - Pregnant women
  - Contacts to children <6mo
Pertussis in San Bernardino County

- We had a 550% increase in cases from 2013-2014, a result of the epidemic in CA

*CA for 2014 is preliminary & U.S. data for 2013-2014 were not available at the time this report was published.
Pertussis by Age

Age Distribution of Pertussis Cases by Count & Incidence, County of San Bernardino, 2011-2013 (n=220)

*Incidence rates in age groups where totals are less than 5 are not considered reliable.*
Pertussis: Vaccination Status

- Importance of vaccinating contacts of the newborn: siblings, parents, caregivers
  - How often is a pregnant mom supposed to be vaccinated for pertussis?
    - Every pregnancy
  - When, ideally, during pregnancy?
    - Third trimester
    - BONUS: why?
      - Passive immunity from mother to infant helps protect infant until they are old enough to be vaccinated at 6-8 weeks of age
- Missed opportunities? 25% of those not vaccinated because of delay in starting series or between doses
Pertussis Strategies Moving Forward

1. Vaccinate pregnant women, every pregnancy during the third trimester
2. Immunize infants promptly
   - can be as early as 6 weeks, especially if mother did not receive Tdap during pregnancy
3. Vaccinate household contacts & caregivers of infants
4. Vaccinate healthcare workers, especially those who work with infants or pregnant women
5. Consider pertussis diagnosis
   - Regardless of age
   - In recently vaccinated people
   - Young infants
6. Test for pertussis (no serology)
   - NP swab or aspirate
   - PCR or culture
7. Treat with antibiotics before obtaining test results
8. Consider providing antibiotic prophylaxis to people with direct contact with respiratory secretions from the case

CDPH Pertussis web page: http://www.cdph.ca.gov/HealthInfo/discond/Pages/Pertussis.aspx
Influenza 2014-2015

- Predominant strain: Influenza A, H3
  - 3 deaths in people aged 0-64, 11 ICU admissions
  - Influenza illnesses detected slightly earlier this season than the last 2 seasons
Overview of Rabies in the San Bernardino County

History
• Rabies detected in CA since 1836, mainly in skunks & dogs
• 1909: outbreak in LA dogs that spread statewide
• 1926-1949: 375 rabid animals, County of San Bernardino
• 1947: First ordinance requiring canine rabies vaccination in County of San Bernardino
  • 1948—last rabid dog identified
• 1961: First positive bat in County of San Bernardino
  2009: 5
  2010: 7
  2011: 12
  2012: 10
  2013: 14
• 1993: last rabid cat reported
• 2001: last rabid fox reported
• 2013: first documented rabid skunk
• No human rabies ever reported in County of SB
Rabies Exposure Evaluation

Factors for consideration:

➢ Circumstances of bite/exposure
  • Provoked or non-provoked?
  • Type of animal
  • Vaccination status

➢ Non-bite transmission
  • Transplants
  • Spelunkers
  • Lab workers
Electronic Reporting via CalREDIE: Provider Portal

- Allow providers to report directly to SBDPH via CalREDIE
- Brief training
- Meaningful Use requirements
- If interested, contact Communicable Disease Section, 1.800.722.4794
# Resource for School Staff

## Quick Reference for Exclusion of Students & Staff

Please report ALL cases of **Unusual disease and Outbreaks** to San Bernardino Department of Public Health: 1.800.722.4794 or http://www.sbcounty.gov/pubhlth/

*Developed by SBCSS Health Services in cooperation with San Bernardino County Department of Public Health Communicable Disease Section*

<table>
<thead>
<tr>
<th>Disease</th>
<th>Transmission</th>
<th>Report</th>
<th>Exclusion</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chickenpox/Shingles/Varicella</td>
<td>Direct contact, Indirect contact, Airborne, Droplet</td>
<td>Yes--outbreaks &amp; hospitalizations</td>
<td>Yes, until vesicles dry</td>
</tr>
<tr>
<td>Conjunctivitis</td>
<td>Direct contact</td>
<td>Outbreak only</td>
<td>Yes, until 24h after treatment or released by MD</td>
</tr>
<tr>
<td>Diarrhea/Vomiting</td>
<td>Fecal-oral</td>
<td>Outbreak only</td>
<td>Yes, until recovered</td>
</tr>
<tr>
<td>Fifth Disease</td>
<td>Direct contact</td>
<td>Outbreak only</td>
<td>Yes, if fever present</td>
</tr>
<tr>
<td>Hand, Foot, and Mouth</td>
<td>Fecal-oral, Direct contact</td>
<td>Outbreak only</td>
<td>Yes, during acute illness</td>
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<tr>
<td>Head lice</td>
<td>Direct contact</td>
<td>Outbreak only</td>
<td>Yes, until treated and no nits</td>
</tr>
<tr>
<td>Impetigo</td>
<td>Direct contact</td>
<td>Outbreak only</td>
<td>Yes, until lesions healed or covered or 24h after treatment</td>
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<tr>
<td>Influenza</td>
<td>Droplet, Direct contact, Indirect contact</td>
<td>Hospitalized cases, Outbreaks</td>
<td>Yes, until recovered</td>
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<tr>
<td>Measles/Rubeola</td>
<td>Droplet, Direct contact</td>
<td>Yes</td>
<td>Yes, 4 days past onset of rash</td>
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<tr>
<td>Meningitis</td>
<td>Direct contact, Droplet</td>
<td>Yes</td>
<td>Yes, until released by MD</td>
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<tr>
<td>Mononucleosis</td>
<td>Direct contact</td>
<td>Outbreak only</td>
<td>Yes, until no longer acutely ill</td>
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</table>
I think I have a case of... Should I report...?

MERS-CoV

Measles

Ebola

Pertussis

Mumps

• What specimens do we collect? Where do we send them?
• Do we worry about office/school exposures?
• How long is the person infectious? Off-work/school orders?

We are your resource!

Call us: SBDPH Communicable Disease Section

1.800.722.4794
Summary: SBDPH Communicable Disease Section

- Investigation: individual cases & outbreaks
- Surveillance:
  - Passive for all diseases except TB contacts
  - Active for identifying TB contacts (potential cases), outbreak investigation
- Prevention:
  - Case-patient education re: disease transmission & vaccination,
  - TB screening for contacts to active TB case

http://www.sbccounty.gov/pubhlth/
1.800.722.4794

Public Health Duty Officer available after hours
Questions?