2014 Immunization Update

Communicable Disease Overview

Barbara Cole, RN, PHN, MSN
Director, Disease Control
Objectives

• Identify at least 3 diseases that must be reported immediately to public health.
• Describe time frames and medication for PEP for measles of non-immune contacts.
• Identify at least 2 aerosol transmissible diseases and appropriate precautions to prevent transmission.
Public Health Alerts

*Influenza

*Pertussis

*Measles
Severe Influenza Cases (0-64) 13/14 Influenza Season

- Predominant strain 2009 H1N1
- Current Statistics

<table>
<thead>
<tr>
<th>Riverside (as of February 13)</th>
<th>Number of Cases</th>
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<tbody>
<tr>
<td>0-18 years</td>
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<tr>
<td>19-44 years</td>
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<tr>
<td>45-64 years</td>
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<table>
<thead>
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<table>
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<th>San Bernardino (as of February 15)</th>
<th>Number of Cases</th>
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<tr>
<td>0-64 years</td>
<td>27</td>
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<tr>
<td><strong>San Bernardino</strong></td>
<td><strong>Number of Deaths</strong></td>
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<tr>
<td>29-64 years</td>
<td>19</td>
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**Influenza Season 2013/2014 – Riverside County, California**

**Influenza Surveillance Weekly Update**

**Week ending February 08, 2014**

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**During week 6, 9.7% of visits to Riverside County emergency departments were related to influenza-like illnesses. Compared to historical data, this is within normal limits.**

**During week 6, 7.5% of visits to physician sentinel sites were related to influenza-like illnesses. Compared to historical data, this is within normal limits.**

**Deaths due to Pneumonia and Influenza:** During week 6, 12.1% of deaths were due, in part, to pneumonia or influenza. Compared to historical data, this is above normal limits.

**School Absenteeism:** During week 6, 10.3% of students at sentinel school sites were absent due to illness. Compared to historical data, this is within normal limits.

**State Influenza Activity:** During week 5*, overall influenza activity was "widespread" in California. Based on available data from 80 out of an average of 134 enrolled sentinel providers, the percentage of visits for ILI in week 5 (4.6%) was above the epidemic threshold (4.2%). Fifty-six influenza-associated deaths in adults less than 65 years of age were reported during Week 5. Four influenza outbreaks were reported, no novel influenza cases have been detected in California to date.

**National Influenza Activity:** During week 5*, influenza activity remained high in the United States. The proportion of outpatient visits for influenza-like illness (ILI) was 3.2%, above the national baseline of 2.0%. All 10 regions reported ILI above region-specific baseline levels. Seven states experienced high ILI activity, 12 states experienced moderate ILI activity, 14 states and New York experienced low ILI activity, 17 states experienced minimal ILI activity and the District of Columbia had insufficient data. The geographic spread of influenza in 29 states was reported as widespread.

19 states reported regional influenza activity; the District of Columbia and one state reported local influenza activity. Guam, Puerto Rico and one state reported sporadic influenza activity, and the U.S. Virgin Islands reported no influenza activity. During week 5, 8.6% of all deaths reported through the 122-Cities Mortality Reporting System were due to P&I. This percentage was above the epidemic threshold of 7.3% for week 5. Three influenza-associated pediatric deaths were reported.

* Data reporting delayed one week.

**Additional Resources**

- Riverside County Influenza Information: [http://www.rivcophd.org/SanMateo/Influenza.html](http://www.rivcophd.org/SanMateo/Influenza.html)
- State of California Influenza Information: [http://www.cdph.ca.gov/Health/ID/Influenza/Facilities.jsp](http://www.cdph.ca.gov/Health/ID/Influenza/Facilities.jsp)
- United States Influenza Information: [http://www.cdc.gov/ncidod/diseases/Flu/weekly.htm](http://www.cdc.gov/ncidod/diseases/Flu/weekly.htm)

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**Epidemiology and Program Evaluation**

**County of Riverside Department of Public Health**

[http://www.rivcophd.org](http://www.rivcophd.org)

(951) 358-5567
Pertussis

News Release

CALIFORNIA DEPARTMENT OF PUBLIC HEALTH

CONTACT: Riverside County
          Dept. of Public Health
          Barbara Cole
          Jose Arballo Jr.
          Cell: 951-906-9001
          Cell: 951-712-3705

First Confirmed Whooping Cough Death
Since 2010

SACRAMENTO — Pertussis, better known as whooping cough, has claimed the life of a Riverside County infant less than six months of age, the California Department of Public Health (CDPH) announced today. It's the first confirmed death from the disease since 2010.
Figure 1. Number and incidence of reported pertussis cases by year of onset -- California, 1947-2013*

*Includes cases reported to CDPH as of 2/4/2014
Pertussis: Rates
Riverside County 1996-2012
Pertussis: Rates
San Bernardino County 2002-2012

Incidence Rates for Pertussis in the County of San Bernardino, California, and the United States, 2002-2012

*CA & U.S. data for 2012 were not available at the time this report was published.
Pertussis: Rates by Age
Riverside County 2009-2012

Figure 2.2: Pertussis Incidence Rates by Age, Riverside County 2009-2012
Pertussis: Rates by Age
San Bernardino County 2010, 2012
Measles (Rubeola)

• Activity in Orange & LA Counties.
• School aged child in Riverside County has positive measles PCR.
• Important for schools to be able to quickly identify susceptible individuals.
• Important for health care providers to identify and isolate potential measles cases.
• Must confirm that health care workers have immunity to measles.
Measles (Rubeola)

• Management of contacts
  – IG: given within 6 days - infants < 12 months
  – Vaccine: given within 72 hours ≥ 12 months

• Quarantine of non-immune contacts – Day 7-21.
Disease Reporting Requirements
California Code of Regulations (CCR)  
Title 17, Section 2500  

• 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
Disease Reporting Requirements

Riverside County

County of Riverside
Department of Public Health

DISEASES TO BE REPORTED IMMEDIATELY BY TELEPHONE

ANTHELMINT, human or animal
INFLUENZA, novel strains (Human)
BOTULISM, infant, Foodborne, Wheat
BRUCELLOSIS, human
CHOLERA *
CIGUATERA FISH POISONING
CLOSTRIDIUM DIFFICILE
DIPHTHERIA *
DOMESTIC ACID POISONING (Amnesic shellfish poisoning)
ESCHERICHIA COLI, drug resistant producing (STEC) including E. coli O157 *
HANTAVIRUS INFECTION
HEMOLYTIC UREMIC SYNDROME
MEASLES, Rubella *
MENINGOCOCAL INFECTION
PARALYTIC SHELLFISH POISONING
PSITTACOSIS, Human or Animal *
RABIES, Human or Animal *
SCABIES, human
SEVERE ACUTE RESPIRATORY SYNDROME (SARS)
SHOCK TOXIN (Clostridium botulinum) *
TULAREMIA, human
VIRAL HEMORRHAGIC FEVERS, human or animal (e.g., Crimean-Congo, Ebola, Lassa and Marburg Viruses)
YELLOW FEVER
ZIKA VIRUS

NOTE: REPORT ANY UNUSUAL DISEASE OUTBREAKS OF ANY DISEASE, including Foodborne and any diseases not listed in Section 3. Specify if Hospital/ER/other community setting. Two or more cases from separate households.* an outbreak.

DISEASES OR SUSPECTED DISEASES TO BE REPORTED WITHIN ONE DAY OF IDENTIFICATION

AMIBEASIS *
BABESIOSIS *
CAMPYLOBACTERiosis *
CHICKEN POX (Only Hospitalizations and Deaths)
DIVERTICULITIS *
ENCEPHALITIS * Specify Etiology, Viral, Bacterial, Parasitic
FOODBorne DISEASE
STAPHYLOCOCCUS AUREUS Invasive Disease (in cases < 15 years of age)
HEPATITIS A, acute infection *
LISTERIOSIS *
MALARIA *
MENINGITIS, Specify Etiology, Viral, Bacterial, Parasitic
PNEUMOCYSTIS (Pneumocystis jirovecii)
POLIOVIRUS INFECTION
PTIRACIDS
RELAPSING FEVER
SARCOIDOSIS
SHELLFISH POISONING *
STAPHYLOCOCCUS AUREUS Infection (Severe cases in previously healthy people resulting in death or admission to ICU)
SYFILIS *
TRICHERNOSIS *
TYPHOID FEVER, Cases and Carriers *
UVEITIS *
WEST NILE VIRUS (WNV) infection, acute *
YERSSEROSIS

DISEASES TO BE REPORTED WITHIN SEVEN CALENDAR DAYS

ACQUIRED IMMUNE DEFICIENCY SYNDROME (AIDS) * (Note: Information above Human Immunodeficiency Virus (HIV) Reporting) *
ANAPLASMOSEITIES/INFLUENZA *
BRUCELLOSIS, animal (except dogs)
CHANIDROSE
CLAMYDIA TRACHOMATIS Infection *
COCCIDIODOMATOSIS *
CREUTZFELDT-JAKOB DISEASE (CJD) and other Transmissible Spongiform Encephalopathies (TSE)
CYCLOSPORA
CYSTICEROSIS OR TAENIASIS
GIARDIASIS *
HUMAN IMMUNODEFICIENCY VIRUS (HIV) *
INFLUENZA (Deaths in laboratory-confirmed cases of Influenza A in the past 6 months, Influenza B in the past 12 months)
LEPTOSPIROSIS *
LYME DISEASE *
MAMMALIAN LEPTOSPIROSIS *
MAMMALIAN LUPUS Erythematosus *
MUNCHaufEN Lymphoma (Lymphosarcoma) *
PULMONARY LUPUS Erythematosus *
RICKETTSIAL DISEASES (non-typhus, Spotted Fever, including Typhus and Typhus-like illness)
ROCKY MOUNTAIN SPOTTED FEVER *
RUBEOLA (German Measles)
RUBELLA (German Measles)
TETANUS *
TULAREMIA, animal

REPORTABLE NON-COMMUNICABLE DISEASES AND CONDITIONS

ALZHEIMER'S DISEASE AND RELATED CONDITIONS *
ANIMAL BITE (SEE REVERSE)
ARDS *
ASTHMA *
CARCINOMA *
CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) *
CEREBROSPINAL FLUID (CSF) DISEASE *
COPPER-PIGMENTED SKIN DISEASE *
INFANTילCroHN'S DISEASE *
MALIGNANT NEOPLASM *
MENINGOMYELOMENINGITIS *
MUSCULAR DYSTROPHY *
NEUROFIBROMATOSIS *
OBESITY *
OTHER MYASTHENIA *
PARKINSON'S DISEASE *
PERIODONTAL DISEASE *
POLIO *
PULMONARY HTN *
PULMONARY EMBOLUS *
PULMONARY HYPERTENSION *
SCLERODERMA *
SLE *
STARCH DISEASE *
SUDDEN INFANT DEATH SYNDROME *
TUBERCULOSIS *
TUBERCULOMA *
TUBERCULOMENINGITIS *
TUMOR *
URINARY INCONTINENCE *
VENTRICAL SEPTAL DEFECT *
VENTRICAL TUMOR *
VITILIGO *
WOLLENMANN'S DISEASE *
XEROSIS *
ZOLLINGER-ELLISON SYNDROME *
ZONDERFeld's Disease *

DISORDERS CHARACTERIZED BY LAFSES OF CONSCIOUSNESS (SEE REVERSE)

PESTICIDE EXPOSURE (SEE REVERSE)

* Essential to include occupation
* Must also be reported by Laboratories
* Viral Hepatitis. All Hepatitis reports must include lab results and the date of onset. Hepatitis A: Include occupation. Hepatitis B: Include EDC. Hepatitis C: Include lab results and date of onset. Chronic Hepatitis C indicates previous anti-HCV test in an asymptomatic person who will still be reported, and should include confirmatory test results and supporting lab.
* Special Requirements for TB:
1. Health care provider is responsible for reporting TB results from out-of-state labs.
2. Laboratories that receive Mycobacterium tuberculosis (e.g., chest x-ray) must follow requirements for submission of a culture to the Public Health Lab and drug susceptibility testing (Copy of requirements available upon request).
3. Active or suspected cases require approval of the Health Officer or designee prior to discharge/transmission from a health care facility.
4. Positive TB skin test reactors listed below must be reported:
a) TB skin test (TST) Converters: An increase of at least 10 mm of induration from <10 mm to ≥20 mm within two years from a documented negative to positive TST.
b) Children 3 years of age or younger with a positive TB skin test (5 mm or greater).

Rev: 01/13
Disease Reporting Requirements
San Bernardino

REPORTABLE COMMUNICABLE DISEASES AND CONDITIONS
CALIFORNIA CODE OF REGULATIONS
Section 2500, 2641.5-2643.20
Reporting to the Local Health Authority

Acquired Immune Deficiency Syndrome (AIDS)
(Activates only see “Human Immunodeficiency Virus”)
Ameliorated+
Anaplasmosis/Ehrlichiosis+
Anthrax, human or animal*
Brucellosis, animal (except infections due to Brucella canis)*
Brucellosis, human*
Campylobacteriosis+
Cholera
Chlamydial trachomatis infections, including lymphogranuloma
Venerium (LGV)
Cholera*
Clostridium Axenic Poisoning*
Coxacealariaiosis
Cryptococcosis
Cysticercosis or Taeniasis
Dengue*
Diphtheria*
Diseases Aged Persons (Ampoxic Acid Poisoning)*
Echoviruses, Purely Enteric Pathogens* (EPE) and Other Transmissible
Epstein-Barr Virus (EBV)
Escherichia coli: Shiga Toxin Producing (STEC) and E.coli 0157*
Foodborne Disease+
Gonorrhea
Genitourinary Infections
Hantaan Virus Disease, hemorrhagic fever and renal syndrome (reported incident of 15 years ago)*
Hepatitis A, hepatitis B, hepatitis C, hepatitis D (HDV) (specific acute case or chronic)
Human Immunodeficiency Virus (HIV) (2641.5-2643) See Note 1
Infecciones, deaths in laboratory confirmed cases for age 0-4 years
Influenza, novel strain (human)
Legionnaires Disease
Legionellosis
Leptospirosis
Lassa Fever *
Lyme Disease *
Malaria *

* Occurrence of Acute Unusual Disease - a new disease or emerging disease or syndrome whose etiology could possibly be caused by a transmissible infectious agent or agent that could enter the environment and it is possible to be transmitted within 15 days, to another person.
* Outlook of Acute Disease - occurrence of cases of a disease above the expected level over a given amount of time, in a geographic area or facility, or in a specific population group, including diseases not listed in Section 2500.

Reporting Requirements for Health Care Providers [17 CCR Section 2500 (h)(3)]:
- Immediately report all diseases to be reported by telephone.
- Report all diseases to be reported in writing to the local health authority.
-Report all deaths in laboratory confirmed cases for age 0-4 years.

Note 1: Guidelines for Reporting: Human Immunodeficiency Virus (HIV) infection is reportable by fax, telephone or mail to the local health authority. Local Health Authorities are responsible for determining the nature of the case and whether it should be reportable.
What Happens When You Report

• Investigation: Interview cases, clinicians
  – Risk factors, exposures
  – Cases, contacts in sensitive occupation/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
Confidential Morbidity Reports (CMRs)
CalREDIE

• The California Reportable Disease Information Exchange (CalREDIE) is a computer application that the California Department of Public Health (CDPH) is implementing for web-based disease reporting and surveillance.

• Specified diseases and conditions are mandated by State laws and regulations to be reported by healthcare providers and laboratories to the public health authorities.
Electronic Reporting Via CalREDIE

• Allows providers to report directly to SBDPH/RCDOPH via CalREDIE

• Training provided by the local health departments.

• If interested, contact San Bernardino County, Communicable Disease Section at 1 (800) 722-4794 or Riverside County – Disease Control at (951) 358-5107.
Electronic Lab Reporting (ELR)

• California Reportable Disease Information Exchange Electronic Lab Reporting (CalREDIE ELR) allows healthcare/lab facilities to comply with public health reporting requirements for reportable diseases through an automated, secure communication process.

• Submitting facilities extract reportable laboratory result data from their information systems and construct a standard formatted message to send to the state and local public health agencies through CalREDIE.
• Entities sending laboratory results electronically to CalREDIE jurisdictions may satisfy the ELR measure of Meaningful Use.

• [http://hie.cdph.ca.gov/](http://hie.cdph.ca.gov/)
Communicable Diseases by Mode of Transmission
Aerosol Transmissible Diseases

• Tuberculosis: productive cough, fever, unexplained weight loss. Can cause infection in almost any organ of the body (secondary infections).
• Meningococcal Infections: sudden onset of fever, intense headache, nausea/vomiting, stiff neck, may have petechial rash (purplish pinpoint spots).
• Pertussis: initial irritating cough gradually progressing to repeated violent coughing, may be followed by high pitched inspiratory whoop.
• Measles: cough, fever, rash, conjunctivitis, koplik spots
• Influenza
Bloodborne Pathogens

• Hepatitis B: Inflammation of the liver caused by the Hepatitis B virus. Symptoms include; jaundice, dark urine, extreme fatigue, nausea, vomiting and abdominal pain (30% are asymptomatic).

• Hepatitis C: Inflammation of the liver caused by the hepatitis C virus (HCV). Symptoms include; jaundice, dark urine, extreme fatigue, nausea, vomiting & abdominal pain (80% are asymptomatic).
Hepatitis B Rates
Riverside County 2002-2012

Figure 1.10: Incidence of Hepatitis B, Riverside County 2002-2012

- Acute
- Chronic
- HP 2020

Rate per 100,000 population

Year

'02 '04 '06 '08 '10 '12
Hepatitis B (Acute) Incidence Rates
San Bernardino County 2002-2012

Incidence Rates for Hepatitis B (Acute) in the County of San Bernardino, California, and the United States, 2002-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>County of San Bernardino</th>
<th>California*</th>
<th>United States*</th>
<th>Healthy People 2020</th>
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<td>2.8</td>
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<td>2003</td>
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<td>2004</td>
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<td>2005</td>
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<tr>
<td>2009</td>
<td>0.8</td>
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<td>0.8</td>
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<td>2011</td>
<td>0.4</td>
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<tr>
<td>2012</td>
<td>0.6</td>
<td>0.7</td>
<td>-</td>
<td>1.5</td>
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*CA data for 2011 & 2012, U.S. data for 2012 were not available at the time this report was published.
Healthy People 2020 goal is 1.5 cases per 100,000 in people aged 19 years and older.
Chronic Hepatitis C Incidence Rates Riverside County 2000-2012
Hepatitis C (Acute) Incidence Rates
San Bernardino County 2002-2012

Incidence Rates for Hepatitis C (Acute) in the County of San Bernardino, California, and the United States, 2002-2012

<table>
<thead>
<tr>
<th>Year</th>
<th>County of San Bernardino</th>
<th>California*</th>
<th>United States*</th>
<th>Healthy People 2020</th>
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<td>0.2</td>
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*CA data for 2011 & 2012, U.S. data for 2012 were not available at the time this report was published. Healthy People 2020 goal is 0.2 new cases per 100,000.
Enteric Diseases

- Diarrhea, vomiting, nausea
- E. Coli O157
- Salmonella
- Shigella
- Hepatitis A: 2 weeks for PEP of contacts in SOS
E. Coli O157: Rates
Riverside County 1996-2012

Figure 3.3: E. Coli O157:H7 Incidence Rates, Riverside County 1996-2012

- Riverside
- California *
- HP 2020

Rate per 100,000 population

Year

* Provisional Data
E. Coli O157: Rates
San Bernardino County 2002-2012

Incidence Rates for STEC Cases in the County of San Bernardino, California, and the United States, 2002-2012

- County of San Bernardino: 0.4, 0.9, 0.2, 0.2, 0.4, 0.1, 0.2, 0.3, 0.5, 1.1, 1.4
- California*: 0.8, 0.8, 0.7, 0.5, 0.7, 0.8, 0.7, 0.6, 0.6, __, __
- United States*: 1.3, 0.9, 0.9, 0.9, 1.5, 1.6, 1.8, 1.5, 1.8, 1.9, __

*CA & U.S. data for 2012 were not available at the time this report was published.
Salmonella: Rates
Riverside County 1994-2012
Salmonella: Rates
San Bernardino County 2002-2012

Incidence Rates for Salmonellosis in the County of San Bernardino, California, and the United States, 2002-2012

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*CA & U.S. data for 2012 were not available at the time this report was published.
Salmonella: Rates by Age
Riverside County 2009-2012
Salmonella: Rates by Age
San Bernardino County 2010-2012
Shigella: Rates
Riverside County 1992-2012
Shigella: Rates
San Bernardino 2002-2012

Incidence Rates for Shigellosis in the County of San Bernardino, California, and the United States, 2002-2012

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<thead>
<tr>
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<th>United States*</th>
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*CA & U.S. data for 2012 were not available at the time this report was published.
Shigella: Rates by Age
Riverside County 2009-2012

Figure 3.10: Shigellosis Incidence Rates by Age, Riverside County 2009-2012

- 2009
- 2010
- 2011
- 2012
Shigella: Rates by Age
San Bernardino 2010, 2012

Age Distribution of Shigellosis Cases by Count,
County of San Bernardino, 2010-2012
Hepatitis A: Rates
Riverside County 1990-2012
Hepatitis A: Rates
San Bernardino County 2002-2012

Incidence Rates for Hepatitis A in the County of San Bernardino, California, and the United States, 2002-2012

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<th>United States*</th>
<th>Healthy People 2020</th>
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<tr>
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</table>

*U.S. data for 2012 were not available at the time this report was published.
Healthy People 2020 goal is 0.3 cases per 100,000 population.
Hepatitis A: Rates by Age
San Bernardino County
Summary

• Epidemiological Principles are essential for the Control of Communicable Diseases.
• Process begins with reporting of confirmed as well as suspect cases to public health.
• Mandated reporters include: Health care providers, laboratories and school nurses.
• Disease investigations are conducted to identify the causative agent or agents.
Summary (cont.)

• During disease outbreaks, a case definition is developed based on the reported signs and symptoms, and incubation period.
• A plan of action is developed and implemented.
• Key partners include:
  – Public health laboratory
  – Public health nurses
  – Epidemiologists
  – Disease investigators
  – School nurses
Summary (cont.)

- Effectiveness of the intervention is measured by interruption of disease transmission.
- The goal is to promote health and protect the residents and visitors in our community.
Questions?

• 2012 CD Reports


Contacts

Riverside County
Barbara Cole, RN, PHN, MSN
Director, Disease Control
(951) 358-5107
BCole@rivcocha.org
www.rivcoph.org

San Bernardino County
Lea Morgan, MPH
Communicable Disease Controller
(909) 387-6859
lmorgan@dph.sbcounty.gov
www.sbcounty.gov/dph
Thank you!