
SAN BENITO COUNTY
Public Health Services
831-637-5367

COMMUNICABLE DISEASE MANUAL

Annex to:
San Benito County Public Health Services
All Hazards Plan

October 2016

Revisions:

Date of Revision	Revised by

ACKNOWLEDGEMENTS

San Benito County Public Health Services (SBC PHS) gratefully acknowledges the Centers for Disease Control for awarding SBC PHS the “PHEP Supplemental Funding for Ebola and Other Infectious Diseases” grant used to fund development of this Communicable Disease Manual.

SBC PHS acknowledges the collaborative effort between its emergency preparedness and communicable disease staff for development of this Communicable Disease Manual. This includes contributions, reviews, edits by SBC PHS subject matter experts: Communicable Disease staff, Nurse Administrator, Health Officer.

SBC PHS wishes to acknowledge the following counties’ communicable disease manuals as references and examples: San Mateo County, Monterey County, Los Angeles County. We especially thank Monterey County Communicable Disease/Epidemiology staff for taking the time to answer our many questions.

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Chapter 1 Introduction

The purpose of this Communicable Disease (CD) Manual is to provide guidance and instruction to San Benito County Public Health Services CD staff for responding to a local communicable disease incident as well as ongoing surveillance. It is also designed to be a reference for our healthcare partners such as Hazel Hawkins Memorial Hospital (HHMH), HHMH laboratory and local healthcare providers for infectious disease information from a public health perspective. The CD Manual will, therefore, also serve as an educational tool to assist us in working collaboratively with our partners on prevention, control, and reporting of infectious disease in our community.

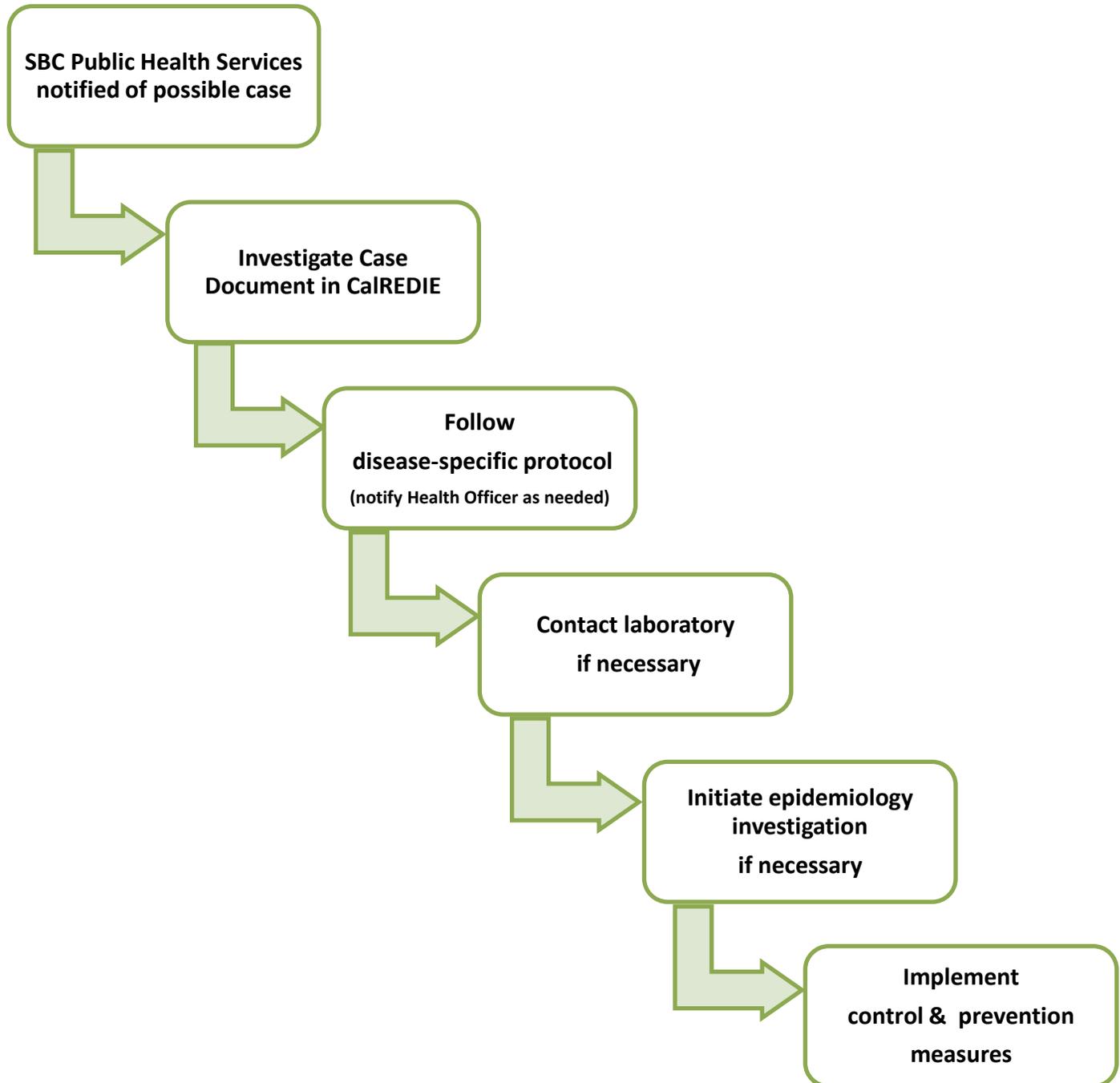
The CD Manual provides us with an updated resource that addresses local public health response to emerging infectious diseases, such as Ebola and others, as well as carrying out investigations for infectious disease incidents.

This CD Manual is designed to be user-friendly and provides step-by-step guidance for local San Benito County Public Health Services CD staff. It begins with case investigation workflow at the time of notification of a potential case and includes specific disease background information for easy reference. The CD Manual then moves through epidemiology, outbreak investigation steps, control and prevention measures, special considerations such as patient transportation and personal protective equipment, and quality improvement process. The CD Manual also includes necessary forms for reporting and documenting.

San Benito County Public Health Services will review and update this CD Manual regularly to ensure it remains current and applicable to our local staff. The CD Manual will also be a permanent Annex to the *San Benito County Public Health Services All Hazards Emergency Response Plan*.

The information in this manual was reviewed by several SBC PHS staff and partners and careful effort was made to avoid errors. However, it is possible that errors were missed. For any questions regarding this CD Manual, please contact San Benito County Public Health Services at 831-637-5367.

Chapter 2 Case Investigation Procedure Workflow



Chapter 2

Case Investigation Procedure Workflow

Work Flow



San Benito County (SBC) Public Health Services is notified of possible

case. SBC PHS Communicable Disease (CD) staff or Health Officer is notified of possible case via phone, fax, or email by:

- Laboratory
- Healthcare provider
- Confidential Morbidity Report (CMR)
- Environmental Health (EH)
- CalREDIE (California Reportable Disease Information Exchange is a computer application that the California Department of Public Health has implemented for web-based disease reporting and surveillance) -SBC CD staff checks this daily
- California Department of Public Health (CDPH)- for example, TB Control
- Schools
- Other surveillance methods such as: weekly ER diagnosis report, weekly Hazel Hawkins Memorial Hospital (HHMH) lab report, vital statistics, etc.

SBC PHS CD staff notes CDPH reporting requirement for suspected disease. [Refer to Appendix A for list of Reportable Diseases](#) and required reporting timeframes in which the disease must be reported to the local Public Health Department and, in turn, to CDPH. Timeframe definitions from CDPH include:

- **Urgent** -SBC PHS must report to CDPH within 4 hours of determining case meets notification criteria. To report, call 510-620-3737 during business hours or 800-971-9631 after business hours
- **Immediate** -SBC PHS must report to CDPH within 24 hours of determining case meets notification criteria. Depending on the disease, report by telephone, fax or email
- **Standard** -SBC PHS must report to CDPH within weekly reporting cycle. To report, enter appropriate condition information into CalREDIE

Chapter 2

Case Investigation Procedure Workflow



CD staff investigates case using CalREDIE. After CD staff is notified of a possible case, CD staff uses CalREDIE database for investigating and documenting incident

- Staff Assistant who has been trained in CalREDIE or CD Nurse searches CalREDIE database for incident
- If the incident is found, the case will already have Identification (ID) Number assigned in CalREDIE. Staff Assistant uses CalREDIE to assign case to CD Nurse for investigation
- If no incident is found, Staff Assistant enters available information into CalREDIE and assigns ID number to case. Staff Assistant uses CalREDIE to assign case to CD Nurse for investigation
- Case appears in CD Nurse Case Load in CalREDIE. Staff Assistant also forwards to CD Nurse any accompanying paperwork (lab reports, faxes)
- CD Nurse reviews information in CalREDIE and in accompanying paperwork. If additional information is needed for investigation, CD Nurse faxes **CDPH Confidential Morbidity Report (CMR)** to provider and may also need to contact patient. Blank CMR forms are kept in CD Nurse file cabinet and also available on CDPH website at:
<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph110a.pdf>
- Some diseases require a **CDPH Case Report Form** to be completed. Refer to CDPH website for disease-specific Case Report forms at:
<https://www.cdph.ca.gov/pubsforms/forms/Pages/CD-Report-Forms.aspx#infectious> and **Appendix I**. Also, refer to *Disease Protocols Chapter* for more information. If suspected disease requires a Case Report, CD Nurse prints blank Case Report Form and completes it after

Chapter 2

Case Investigation Procedure Workflow

obtaining all pertinent information. CD Nurse enters this information into CalREDIE as well. Paper Case Report form is filed in SBC PHS CD archive file cabinet

- If foodborne outbreak is suspected, follow above steps AND coordinate with SBC PHS Environmental Health (EH). CD Nurse and EH may need to use ***SBC Foodborne Outbreak (FBO) Questionnaire***. FBO Questionnaire is kept in CD Nurse file cabinet and also available on SBC Public Health m-drive at: ***FBO Questionnaire*** . Refer to *Disease Protocols Chapter* for more information
- Specific diseases, in addition to all outbreaks, require Contact Investigations (for example, Tuberculosis, bacterial meningitis, pertussis, etc.). Refer to *Disease Protocols Chapter* for more information. Contact investigations may involve face to face or telephone interviews. Use ***Contact Investigation section on CDPH Case Report Form*** available at: <https://www.cdph.ca.gov/pubsforms/forms/Pages/CD-Report-Forms.aspx#infectious>
- CD Nurse documents all investigation information and actions in appropriate tabs of CalREDIE. CD Nurse indicates case process status in CalREDIE (for example, “under investigation”, “probable”, “suspect”, “in review”, “not a case”, “confirmed”, “closed”)
- Once all investigation completed and case resolved, CD Nurse completes PHEP Surveillance measures tab in CalREDIE (required for only specific diseases as indicated in CalREDIE), located within Disease Incident section and changes case status to “closed”
- All paper files are kept on-site in SBC PHS CD archive file cabinet for two years

Chapter 2

Case Investigation Procedure Workflow



Follow disease-specific protocol. CD staff refers to *Disease Protocols Chapter* for detailed instructions regarding management of specific disease/case.

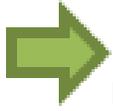


Contact laboratory if necessary. If CD staff needs more information about test results or testing, refer to ***SBC Laboratory Protocol in SBC All Hazards Plan, Annex 12*** and contact specific lab that sent results or lab that is responsible for results.

- SBC does not have a public health laboratory and will utilize HHMH laboratory when appropriate. HHMH laboratory will refer testing to outside laboratory when indicated. Laboratory results are often sent to SBC PHS directly from outside laboratory
- Hazel Hawkins Memorial Hospital (HHMH) Laboratory
911 Sunset Dr.
Hollister, CA 95023
Ph. # 831-636-2631
Fax# 831-636-2630

Chapter 2

Case Investigation Procedure Workflow



Initiate epidemiology investigation if necessary. CD staff initiates epidemiology investigation if: case indicates possible outbreak (**2 or more cases from a common source**), is a single case of specific diseases such as measles or is a suspected bioterrorism event. Refer to *Epidemiology Chapter*, as well as *Disease Protocols Chapter for more information*. Epidemiology outbreak investigations include but are not limited to:

- case definition
- line list
- epi-curve
- surveillance for new cases
- analyze collected data to inform appropriate control and prevention measures
- other



Implement control and prevention measures. CD staff as well as other PHS staff that is needed, will implement control and prevention measures specific to the situation. Refer to *Disease Protocols Chapter*, *Control and Prevention Measures Chapter* and **SBC All Hazard Plan**. Measures may include:

- Isolation
- Quarantine
- Education of public via Health advisories, alerts, etc.
- Mass vaccination or dispensing
- Appropriate PPE (Personal Protective Equipment) for public, healthcare providers, first responders, etc.
- First Responder/transportation protocols in effect
- Other Health Officer orders

Chapter 2

Case Investigation Procedure Workflow



Quality Improvement (QI) process for surveillance and investigations. CD staff will maintain a Quality Improvement (QI) process for reviewing investigations and subsequently update plans/procedures as needed. *Refer to Quality Improvement Process Chapter*

QI after every outbreak investigation:

- staff investigation lead (SBC PHS CD) will write a summary report of the investigation. Refer to Outbreak Summary Report in *Epidemiology Chapter* and *Appendix K*
- a second SBC PHS CD staff will complete a quality assurance (QA) review of the Outbreak Summary Report. Refer to QA report form in *Epidemiology Chapter* and *Appendix L*
- For large outbreaks, an After Action meeting (“hot wash”) will be conducted and After Action Report (AAR) written. Meeting will include all staff involved in investigation (for example: public health emergency preparedness and communicable disease, Environmental Health, laboratory, hospital, etc.)

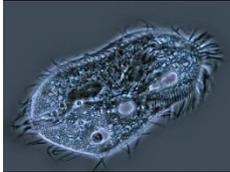
QI annually for overall CD surveillance and investigations:

- timeliness of Reportable Disease reporting to SBC PHS
- timeliness of initiating control measures
- percent of outbreak investigations for which Outbreak Investigation Summary Reports were completed
- percent of Outbreak Summary Reports containing all essential elements

Chapter 3 Disease Protocols

Amebiasis	Norovirus
Anaplasmosis	Pediculosis (outbreak)
Anisakiasis	Pertussis
Anthrax	Plague
Botulism	Pneumococcal
Brucellosis	Poliovirus
Campylobacteriosis	Psittacosis
Chickenpox	Q Fever
Chikungunya	Rabies
Cholera	Relapsing Fever
Coccidioidmycosis	Respiratory Syncytial Virus
Cryptosporidiosis	Rocky Mountain Spotted Fever
Cysticercosis	Rubella
Dengue	Salmonellosis
Diphtheria	Scabies (outbreak)
Ebola	Shigellosis
E. coli (shiga toxin)	Smallpox
Giardiasis	Streptococcal, Group A
Glanders/Melioidosis	Syphilis
Haemophilus influenza	Tetanus
Hand, Foot, Mouth Disease	Toxoplasmosis
Hantavirus	Trichinosis
Hepatitis A	Tuberculosis
Hepatitis B	Trypanosomiasis
Hepatitis C	Tularemia
Influenza	Typhoid/Paratyphoid
Legionellosis	Typhus
Leprosy	Vibriosis
Leptospirosis	West Nile Virus
Listeriosis	Yellow Fever
Lyme	Yersiniosis
Malaria	Zika
Measles	
Meningitis, bacterial	
Meningitis, viral	
Mumps	

Disease: Amebiasis



Entamoeba histolytica

Requires Case Report

Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlldForms/cdph8554.pdf>

Parasitic infection which is often asymptomatic but can lead to symptomatic intestinal and extra-intestinal disease

1. **Agent:** *Entamoeba histolytica*, a parasite that exists as trophozoite and cyst
2. **Symptoms:** Intestinal: asymptomatic cyst passage, lower abdominal pain, frequent bloody stools, fever; fulminant colitis (abdominal pain, profuse bloody diarrhea, fever); colonic perforations; ameboma
Extra-intestinal: liver abscess; pleura, peritoneum, pericardium, brain
3. **Case Definition and Classification:**

Clinical Case Definition:
Ranges from mild chronic diarrhea to fulminant dysentery
Case Classification for Suspected, Probable, Confirmed:
<http://wwwn.cdc.gov/nndss/conditions/amebiasis/case-definition/1990/>
4. **Specimen collection:**
 - **Specimen/test type** -feces (O & P)
 - **When** –as soon as possible

 - **Specimen/test type** -blood (amebiasis antibody)
 - **When** –as soon as possible

5. **Incubation:** 2-4 weeks (range: days to months)
6. **Reservoir:** humans (source: cysts from feces of infected case)
7. **Transmission:** person to person sexually or oral anal contact; ingestion of feces-contaminated food/water containing amebic cysts
8. **Communicability:** as long as cysts are passed (as long as carrier state persists) - can be months to years
9. **Risk Groups:** those living in areas of poor sanitation, crowding; unsafe drinking water; immigrants from/travelers to endemic areas; oral-anal sexual activity
10. **Treatment:**
 - Consult current medication
 - recommendations in Medical Letter, CDC: such as metronidazole, tinidazole, ornidazole or secnidazole followed by an amebicide.
 - Abscess may require surgical aspiration
 - Follow-up stool exam after completing treatment.
11. **Control Measures:**

Case

 - a. Treatment-see #10 above
 - b. Isolation; enteric precautions
 - c. Exclude from food handling and direct care of patients. May return when treatment is completed and follow-up O & P tests are negative
 - d. Sanitary disposal of feces
 - e. Exclude from recreational water venues until treatment completed and diarrhea resolved

Disease: Amebiasis

Contacts/Exposed

- a. NO post exposure prophylaxis available
- b. Test for O & P; treat if positive
- c. Adequate handwashing after defecation
- d. Sanitary disposal of feces
- e. Use condom and avoid sexual practice that permits fecal-oral contact

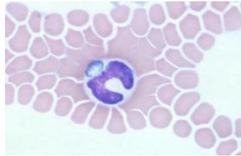
Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Handwashing, personal hygiene
 - increased risk with anal and oral-anal sex
 - Sanitary disposal of feces
 - Increased risk with colonic irrigation
 - Food/water precautions when traveling
 - Protect water supply from fecal contamination (chlorination does not always kill cysts); consider boiling, filter

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Intestinal or extra-intestinal
 - Sexual orientation
 - Colonic irrigation (when/where?)
 - Exposure to carrier or symptomatic case?
 - Additional cases among contacts (household, neighbors, fellow travelers)
 - Day care attendance
 - Institutional resident
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Anaplasmosis (Ehrlichiosis)



Anaplasma phagocytophilum

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8573.pdf>

Tick-borne bacterial infection causing illness

1. **Agent:** *Anaplasma phagocytophilum* belonging to family *Anaplasmataceae*, order *Rickettsiales*
2. **Symptoms:**—ranges from mild illness to severe, fatal disease; leukopenia, thrombocytopenia, elevated liver function tests. Most common: fever, headache, anorexia, nausea, myalgia, vomiting; rarely rash

3. Case Definition and Classification:

Clinical Case Definition:

Acute onset fever and one or more: headache, myalgia, malaise, anemia, leukopenia, thrombocytopenia, elevated hepatic transaminases

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/ehrlichiosis-and-anaplasmosis/case-definition/2008/>

4. **Specimen collection:**
 - **Specimen/test type** -blood (PCR, IgG)
 - **When** —during first week of illness and repeat week 2-4

5. **Incubation:** 7-14 days
6. **Reservoir:** ruminants, deer, field rodents, dogs (source: tick as vector-south east and south central USA)
7. **Transmission:** by the bite of an infected tick (effective transmission occurs with 24 hours or more of tick attachment)
8. **Communicability:** no evidence of person to person; although possible through blood transfusions from infected person
9. **Risk Groups:** older, immunocompromised
10. **Treatment:**
 - Doxycycline for 5-10 days.
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Remove attached ticks
 - Contacts/Exposed**
 - a. None
 - Public Health**
 - a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools,

Disease: Anaplasmosis (Ehrlichiosis)

institutions etc. *See Risk Communication in SBC All Hazards Plan*

f. Prevention/Education:

- Use tick repellants in endemic areas
- Wear protective clothing in wooded areas
- Control ticks on domestic animals
- Avoid tick infested areas when possible
- Check skin periodically and remove attached ticks immediately

- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household
 - Travel history
 - History of tick bites
 - History of possible exposure to tick bites in wooded areas
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition

Disease: Anisakiasis



Anisakis nematode

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification
(if foodborne)

<https://www.cdph.ca.gov/pubsforms/forms/CtrlldForms/cdph8567.pdf>

Parasitic disease of the GI tract occurring in individuals who eat uncooked, undercooked or inadequately treated fish

1. **Agent:** Larvae of *Anisakis* species
2. **Symptoms:** nausea, vomiting, epigastric pain, cramping, hematemesis, diarrhea, mild fever; esophagitis, difficulty swallowing

3. Case Definition and Classification:

Clinical case definition:

Clinical suspicion based on history of eating seafood, with symptoms as described above

Case classification for Suspected, Probable, Confirmed:

Endoscopic detection of larvae confirms diagnosis

4. **Specimen collection:**
 - **Specimen/test type** -endoscopy, radiography, surgery to visualize larvae
 - **When** –as soon as possible
5. **Incubation:** hours to weeks after ingestion
6. **Reservoir:** distributed in all oceans and many sea mammals; larvae transmitted to squid or fish through predation

7. **Transmission:** through ingestion of uncooked, undercooked or inadequately treated fish containing nematode larvae
8. **Communicability:** no person to person
9. **Risk Groups:** persons eating uncooked, undercooked or inadequately treated fish
10. **Treatment:**
 - Endoscopic removal of larvae
 - Surgical excision of lesions
 - Albendazole for 6-21 days

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Treatment with albendazole may be successful

Contacts/Exposed

- a. Examine others possibly exposed at same time

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Manual*

Disease: Anisakiasis

f. Prevention/Education:

- Avoid ingestion of inadequately cooked fish and squid. Larvae killed by heating to 145F
- Cleaning fish and squid as soon as possible after caught reduces number of larvae

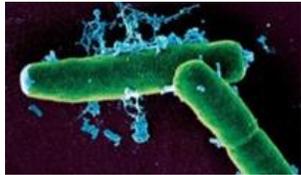
report, laboratory reports, healthcare providers, CalREDIE.

- h.** Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

- a.** *Use Outbreak Investigation Checklist found in Appendix B*
- b.** Establish case definition –see #3 above
- c.** Confirm etiology using lab data and identify mode of transmission
- d.** Conduct contact investigation (if food or water borne, coordinate with EH)
- e.** Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation
 - History of food items eaten and location where eaten
 - List of all individuals potentially exposed to suspect food
 - for suspected food item, note: source, date purchased, when consumed, how prepared
- f.** Create an epi-curve, by date of onset. Include only those that meet the case definition
- g.** Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis

Disease: Anthrax



Bacillus anthracis

Requires Case Report

URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8578.pdf>

An infrequently occurring human infection, primarily affecting veterinarian, agriculture, animal workers. However, **anthrax has potential use as a bioterrorism weapon** due to devastating ability for its spores to be deliberately released into the environment

1. **Agent:** *Bacillus anthracis* (gram positive, encapsulated, spore-forming rod) causing acute bacterial disease: cutaneous, inhalation, or gastrointestinal
2. **Symptoms:** cutaneous: initial itching at affected site, papular lesion becoming vesicular and in 2-6 days develops into black eschar, 5-20% fatality rate if untreated; inhalation: fever, malaise, mild cough or chest pain, progressing to respiratory distress, stridor, severe dyspnea, hypoxemia, diaphoresis, shock and cyanosis over 3-4 days, >85% fatality rate if untreated; gastrointestinal: abdominal pain, nausea, vomiting, followed by fever, septicemia, 40% fatality rate if untreated

3. Case Definition and Classification:

Clinical case definition:

-cutaneous: acute illness, painless skin lesion developing into black eschar in 2-6 days

inhalation: acute respiratory illness followed by hypoxia, acute distress with cyanosis and shock

gastrointestinal: acute illness, severe abdominal pain and tenderness, nausea, vomiting, hematemesis, bloody diarrhea, anorexia, fever, abdominal swelling, septicemia

Case classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/anthrax/case-definition/2010/>

4. Specimen collection:

Refer to CDC for detailed instructions on obtaining samples:

<http://www.cdc.gov/anthrax/specificgroups/lab-professionals/recommended-specimen.html>

- **Specimen/test type** -blood, lesion exudate/smears or discharges, pleural fluid, CSF, stool (culture, PCR)
 - **When** -as soon as possible before antibiotic therapy started
5. **Incubation:** cutaneous: 5-7 days (range 1-12); inhalation: 1-43 days up to 60 days; gastrointestinal: 1-6 days
 6. **Reservoir:** animals (source: spores from soil or contaminated animal products: hides, hair, meat, bones); deliberate release into environment

Disease: Anthrax

7. **Transmission:** contact with infected animals or animal parts/products, infected flies, contact with contaminated soil, direct contact with skin lesions; inhalation of spores; ingestion of contaminated meat or water

8. **Communicability:** cutaneous: through non-intact skin contact with draining lesions; inhalation: no evidence of human to human transmission; contaminated soil and products remain infective for years; aerosolizable spore containing powder: until environment decontaminated

9. **Risk Groups:** workers in veterinary, agriculture, animal industries; emergency response workers; lab workers who work with *B. anthracis*; persons using goatskin drums; heroin injection drug users

10. Treatment:

- Cutaneous: ciprofloxacin or doxycycline for 7-10 days
- Inhalation or Gastrointestinal: ciprofloxacin or doxycycline in combination with one or two other active antibiotics for 10-14 days

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. All caregivers, first responders, etc. to follow their Anthrax/Highly pathogenic CD PPE and transportation protocols
- c. Isolate infected case
- d. If cutaneous, wound and skin precautions until lesions healed
- e. Disinfection of discharges from lesions and articles soiled by discharges. Use hypochlorite to disinfect. Steam sterilization, autoclaving or burning

needed to ensure complete spore destruction.

- f. Supportive care and treatment with antibiotic

Contacts/Exposed

- a. Decontaminate with soap and water in shower. Clothing and personal effects removed, placed in plastic bag, disposed per local regulations
- b. Post-exposure prophylaxis (PEP) with: vaccine (BioThrax) and ciprofloxacin or doxycycline for 60 days

Public Health

- ◆ Immediately call CDPH, CDC
 - ◆ SBC PHS will follow procedures to activate DOC and follow ***SBC PHS All Hazards Plan***
 - ◆ Immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Anthrax/Highly Pathogenic CD protocols, including appropriate PPE. See: <http://www.cdc.gov/niosh/topics/anthrax/workers.html>,
- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with EH and other Regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to ***SBC PHS All Hazards Plan***
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools,

Disease: Anthrax

institutions etc. *See Risk Communication in SBC All Hazards Manual*

f. Prevention/Education:

- Autoclave or burn all infectious materials
- Infected animal carcasses to be burned or deeply buried and covered with calcium oxide
- Maintain proper ventilation

Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE

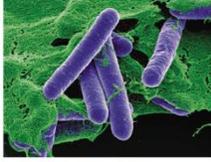
h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b.** Establish case definition –see #3 above
- c.** Confirm etiology using lab data and identify mode of transmission
- d.** Conduct contact investigation (if food or water borne, coordinate with EH)
- e.** Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Specify type: Cutaneous, Inhalational, Gastrointestinal
 - History of exposure/contact to infected animal/products and trace to place of origin
 - Ingestion of undercooked meat
 - Bioterrorism
- f.** Create an epi-curve, by date of onset. Include only those that meet the case definition
- g.** Maintain surveillance for new cases

Disease: Botulism



Clostridium botulinum

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8547.pdf>

Serious paralytic illness caused by nerve toxin produced by bacteria *Clostridium botulinum*. May be food-borne, infant or wound botulism.

Potential use as a bioterrorism weapon

1. **Agent:** toxin produced by the gram-positive bacillus spore-forming bacteria *Clostridium botulinum*
2. **Symptoms:** weakness, extreme dry mouth, constipation, vomiting, diarrhea, cranial nerve motor paralysis, ptosis, blurred vision, dysphagia; respiratory failure
3. **Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

Diplopia, blurred vision, bulbar weakness, symmetric paralysis.
Infant: constipation, poor feeding, failure to thrive, progressive weakness

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/botulism/case-definition/2011/>

4. **Specimen collection:**
 - **Specimen/test type** –stool, serum, wound, food (toxin; culture)
 - **When** - as soon as possible

5. **Incubation:** 12-72 hours of toxin ingestion; within days of injury for wound botulism
6. **Reservoir:** *C. botulinum* spores in soil, honey, vegetables, water, intestinal tracts of animals and fish (source: improperly canned foods, corn, beans, mishandled food that should be refrigerated; contaminated wounds)
7. **Transmission:** ingestion of toxin, or toxin in infected wound
8. **Communicability:** no person to person
9. **Risk Groups:** persons eating improperly preserved food
10. **Treatment:**
 - Hospitalization to manage respiratory failure; mechanical ventilation may be required
 - Supportive care (intensive)
 - Botulinum antitoxin early in the course (must contact Public Health who will contact CDPH, CDC to obtain antitoxin)
 - Avoid aminoglycoside antibiotics and anticholinergics-may worsen symptoms
 - Wound debridement
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Standard infection control precautions, although not contagious
 - Contacts/Exposed**
 - a. If food-borne, monitor persons known to have eaten implicated food and promptly treat if needed

Disease: Botulism

Public Health

- ◆ Immediately call CDPH, CDC. Also, request anti-toxin if needed
- ◆ If Bioterrorism suspected, Immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Highly Pathogenic CD protocols, including appropriate PPE. See:
<http://www.cdc.gov/niosh/topics/anthrax/workers.html>
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with EH and other Regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - If suspected food is spilled, clean spill using dilute bleach solution
 - Home-preserved foods are most common source. To avoid, prepare home-preserved food following USDA directions
 - Avoid honey in infants
 - Instruct to avoid identified contaminated food
 - Thorough wound cleaning if contaminated by soil

- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
- a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)
 - e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - history of food items eaten and location, include any home-canned foods
 - Location of remaining suspect food
 - List of individuals potentially exposed to suspect food
 - for suspected food item, note: source, date purchased, when consumed, how prepared
 - f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Brucellosis



Brucella

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631
if human transmission

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8607.pdf>

Bacterial infection spread by animals to people, mostly through unpasteurized dairy products.

Potential use as a bioterrorism weapon due to aerosol exposure

1. **Agent:** *Brucella* species, gram-negative cocco-bacillus bacteria
2. **Symptoms:** systemic infection with acute or insidious onset. Intermittent fever, headache, weakness, sweating, arthralgia, myalgia, fatigue, anorexia, weight loss. May last days, months, year or more if untreated. Complications include: osteoarticular; disability may be pronounced
3. **Case Definition and Classification:**

Clinical Case Definition:

Acute, insidious fever onset AND one or more: night sweats, arthralgia, headache, fatigue, anorexia, myalgia, weight loss, arthritis, meningitis, focal organ involvement

Case Classification for Suspected, Probable, Confirmed:

<http://www.cdc.gov/nndss/conditions/brucellosis/case-definition/2010/>

4. **Specimen collection:**
 - **specimen/test type** -blood, bone marrow (culture, agglutination)
 - **when** -first sample \leq 7 days after onset, second sample 2-4 weeks later
 - **specimen/test type** -blood (PCR)
 - **when** -sample \leq 4 days after onset
5. **Incubation:** 1-2 months (range 5 days to 5 months)
6. **Reservoir:** cattle, pig, sheep, goat, dog (source: unpasteurized milk products; tissue/blood from infected animals)
7. **Transmission:** direct contact, inhalation, ingestion
8. **Communicability:** no person to person
9. **Risk Groups:** persons working with infected animals or their tissues; laboratory workers- Biosafety level 3 precautions; persons consuming undercooked meat and unpasteurized dairy products
10. **Treatment:**
 - Antibiotics: Doxycycline and rifampicin for 6 weeks; alternatives may include streptomycin, trimethoprim-sulfamethoxazole
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Isolation
 - c. Draining, secretion precautions
 - d. Concurrent disinfection of purulent discharges

Disease: Brucellosis

Contacts/Exposed

- a. If food-borne, monitor persons known to have eaten implicated food and promptly treat if needed
- b. Disinfect contaminated areas

Public Health

- ◆ Immediately call CDPH, CDC.
 - ◆ If Bioterrorism suspected, Immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Highly Pathogenic CD protocols, including appropriate PPE. See:
<http://www.cdc.gov/niosh/topics/anthrax/workers.html>
- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. If food or water borne, coordinate with EH and other Regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Risks with consuming undercooked meat or unpasteurized dairy
 - Educate farmers, workers of slaughterhouses, meat processing plants, butcher shops about risk in handling potentially infected animal carcasses; PPE
 - Educate hunters about PPE; handwashing

- Avoid eating meat from animals appearing sick
- Search for infection in livestock
- Pasteurize milk and dairy products (boil when can't pasteurize)
- Disinfect contaminated areas

12. Epidemiology Investigation if suspect:

outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Contact with animals
 - Use and source of unpasteurized milk and dairy products
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Campylobacteriosis



Campylobacter jejuni

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlIdForms/cdph8554.pdf>

Bacterial infection, often from ingesting contaminated food or drink

1. **Agent:** *Campylobacter*, gram negative spiral shaped rod bacteria

2. **Symptoms:** watery or bloody diarrhea, abdominal pain, fever, malaise, nausea, vomiting. Complications may include: reactive arthritis, Guillain-Barre, irritable bowel syndrome; bacteremia, meningitis, other focal infections

3. **Diagnosis /Case Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

Diarrhea, abdominal pain, nausea, sometimes vomiting; rarely bacteremia, meningitis, other focal infections

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/campylobacteriosis/case-definition/2015/>

4. **Specimen collection:**

- **Specimen/test type** -feces (culture)
- **When** -during active diarrhea phase/as soon as possible after onset

5. **Incubation:** 2-5 days (range 1-10 days)

6. **Reservoir:** animals, most frequently poultry and cattle (source: feces of infected animal or person; contaminated poultry, unpasteurized milk, meat, water or food products)

7. **Transmission:** ingestion of organism in contaminated food, water, milk; contact with infected pets, farm animals or infants

8. **Communicability:** as long as organisms are excreted (2-7 weeks); person to person uncommon

9. **Risk Groups:** immunocompromised; decreased stomach acidity

10. **Treatment:**

- Rehydration; electrolyte replacement
- Antibiotics not usually indicated unless invasive case. If needed, azithromycin or fluoroquinolones

11. **Control Measures:**

Case

- a. Treatment see #10 above
- b. Isolation
- c. Enteric precautions (frequent thorough hand washing, proper disposal of soiled diapers/waste)
- d. Concurrent disinfection
- e. Exclude from sensitive occupation such as food handling or care of people in hospitals, custodial institutions, day care centers until asymptomatic

Disease: Campylobacteriosis

Contacts/Exposed

- a. Disinfect contaminated areas
- b. Exclude from sensitive occupation if become symptomatic

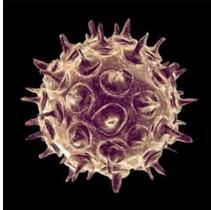
Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with EH and other Regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Thoroughly cook all meat, especially poultry. Cook to minimum internal temperature of 165F
 - Avoid cross contamination (for ex., do not use same cutting board/utensils for raw and cooked products; do not allow drippings from raw poultry to contaminate foods that are cooked or will be eaten raw)
 - Avoid unpasteurized milk/ products
 - Handwashing, personal hygiene
 - Refrigerate perishable food
 - Keep pets away from food preparation areas
 - Avoid swallowing untreated water
 - Disinfect contaminated areas

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Intestinal or extra-intestinal
 - history of recent GI procedure
 - Exposure to others with diarrhea
 - Contact to a child care center, institution or baby sitting group
 - Contact to animal or pets
 - Food history and place of purchase
 - Consumption of untreated water
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Chickenpox



Varicella Zoster

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification
(Hospitalization, death or
outbreak)

<https://www.cdph.ca.gov/pubsforms/forms/Pages/C-D-Report-Forms.aspx>

Causes two distinct diseases: varicella (chickenpox) as the primary infection and herpes zoster (shingles) may occur later if virus reactivates.

- 1. Agent:** varicella zoster virus
- 2. Symptoms:** chickenpox: acute disease, maculopapular rash followed by vesicular rash in 3-4 days then crust leaving scabs, pruritic, fever, lesions mostly on trunk but sometimes on scalp and mucous membranes, lesions occur in successive crops; shingles: grouped vesicular lesions appear unilaterally in distribution of 1-3 sensory dermatomes, severe pain, paresthesia. Rash lasts about 7-10 days and heals within 2-4 weeks. Complications of varicella include: secondary bacterial infection of skin lesions, dehydration, pneumonia, central nervous system involvement; complications of shingles include: chronic severe pain (postherpetic neuralgia) that can last for months or years, neurological damage, visual impairment. AVOID aspirin and other salicylates in children with varicella due to association with Reye Syndrome

3. Case Definition and Classification:

Clinical Case Definition:

Illness of acute onset of diffuse maculo-papulovesicular rash without other apparent cause

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/varicella/case-definition/2010/>

4. Specimen collection:

- **Specimen/test type** -laboratory diagnosis of varicella not routinely required but should be considered in confirming outbreaks
- Swab scabs, vesicular fluid or cells from base of lesion (early stage vesicle), blood (PCR, DFA, culture)
- **When** -as soon as possible during acute period

5. Incubation: 10-21 days (commonly 14-16 days). Mild prodrome 1-2 days

6. Reservoir: humans (source: mucous membranes and vesicles)

7. Transmission: direct contact with patient with varicella or zoster, droplet or airborne spread of vesicle fluid or secretions of respiratory tract; indirectly by contaminated fomites; scabs are not infectious

Disease: Chickenpox

8. **Communicability:** 5 days before eruption and up to 5 days after onset of lesions. May be prolonged if altered immunity
9. **Risk Groups:** for severe varicella and complications: infants, adolescents, adults, immunocompromised, pregnant women; for herpes zoster and complications: immunocompromised, increases with age
10. **Treatment:**
 - Acyclovir IV in susceptible immunocompromised if given within 24 hours of rash onset
 - Acyclovir, valacyclovir or famciclovir within 48-72 hours of onset

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Isolate infected case
- c. Exclude from school, work, public places until all lesions are crusted/dry (usually 5 days). If shingles patient, may go to work with immunocompetent persons if lesions covered.
- d. Avoid contact with immunocompromised patients
- e. Observe strict isolation in hospital patients
- f. Disinfect areas/articles contaminated with nose and throat discharges

Contacts/Exposed

- a. Close contact defined as direct physical, face to face or ≥ 1 hour of room contact with infectious person
- b. Post-exposure prophylaxis with varicella vaccine in exposed susceptible patients within 3-5 days of exposure. If ineligible for vaccine (immunocompromised), give varicella zoster IgG, (VariZig), within 10 days of exposure. Also, acyclovir, valacyclovir or famciclovir for 7 days starting 7-10 days after exposure
- c. Exclude unvaccinated contacts from school until 21 days after onset of last case
- d. Unvaccinated contacts may return to school two weeks after 1 dose of varicella vaccine as long as did not become ill with chickenpox

Public Health

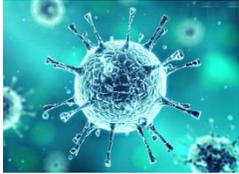
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Varicella vaccination importance
 - Avoid contact with cases

Disease: Chickenpox

**12. Epidemiology Investigation if suspect:
outbreak (2 or more cases from common
source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - History of varicella
 - varicella vaccine history (# doses)
 - Similar illness in household or community
 - Links to other cases
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Chikungunya



Chikungunya

Requires Case Report

Immediate via fax, phone,
email within 1 working day
of identification

[https://www.cdph.ca.gov/
pubsforms/forms/ctrlForms/
cdph8618.pdf](https://www.cdph.ca.gov/programs/forms/forms/ctrlForms/cdph8618.pdf)

Mosquito-borne viral disease characterized by fever and severe joint pain. “Chikungunya” derives from word meaning “to become contorted” referring to stooped appearance of those with the joint pain

1. **Agent:** *Chikungunya* virus is a RNA virus that belongs to the alphavirus genus of the family Togaviridae
2. **Symptoms:** sudden onset fever, debilitating joint pain. Also muscle pain, headache, nausea, fatigue, rash. Complications include: eye, neurological, heart
3. **Case Definition and Classification:**

Clinical Case Definition:

acute onset fever (>39°C), bilateral joint symptoms, polyarthralgia. Also may include: myalgia, headache, arthritis, conjunctivitis, nausea, vomiting, maculopapular rash

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/arboviral-diseases-neuroinvasive-and-non-neuroinvasive/case-definition/2015/>

4. Specimen collection:

- **Specimen/test type** -blood, CSF, Tissue (PCR, immunofluorescence)
- **When** -during febrile phase (≤ 5 days after onset)
- **Specimen/test type** -blood (IgG, hemagglutination)
- **When** -during acute and convalescent periods to detect antibody rise

5. Incubation: 1-12 days

6. Reservoir: primates (source: infected mosquito)

7. Transmission: bite of infected mosquito (primarily *Aedes aegypti*), exposure to infected blood, neonates during intrapartum period

8. Communicability: person most infective during first week of illness

9. Risk Groups: neonates, elderly at greater risk of severe disease

10. Treatment:

- no antiviral therapy available
- supportive care (rest, fluids)
- NSAIDs, corticosteroids, physiotherapy for joint pain

Disease: Chikungunya

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Standard blood borne precautions
- c. Protect case from further mosquito exposure during the first few days of illness to prevent other mosquitoes from becoming infected and therefore reduce the risk of further local transmission

Contacts/Exposed

- a. No post exposure prophylaxis available
- b. Search for unreported or undiagnosed cases

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Vector control (stagnant water, etc.) is KEY
 - Personal protection from mosquito bites (repellents, screening, clothing)

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation
 - Place of residence and travel history
 - History of mosquito bites
 - Additional cases among contacts (household, neighbors, fellow travelers)
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Cholera



Vibrio cholera

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8587.pdf>

Bacterial infection causing acute diarrheal disease due to ingestion of contaminated food or water

1. **Agent:** *Vibrio cholera* serogroup O1 and O139, a gram negative bacilli bacteria
2. **Symptoms:** sudden onset profuse watery diarrhea (“rice water”), vomiting, rapid dehydration. Complications include circulatory collapse; death
3. **Case Definition and Classification:**

Clinical Case Definition:
illness with diarrhea and/or vomiting of varying severity

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/cholera/case-definition/1996/>

4. **Specimen collection:**
 - **Specimen/test type** -stool (culture)
 - **When** –as soon as possible
 - **Specimen/test type** -blood (hemagglutination)
 - **When** -during acute and convalescent phases to detect antibody rise

5. **Incubation:** few hours to 5 days (usually 2-3 days)
6. **Reservoir:** humans; environment (source: feces/vomitus of infected person; contaminated water)
7. **Transmission:** ingestion of contaminated water or food
8. **Communicability:** for as long as stools are positive for *V. cholera*; usually until 2-3 days after recovery; carrier state may persist for months
9. **Risk Groups:** people without access to safe drinking water and adequate sanitation
10. **Treatment:**
 - Rehydration
 - Antibiotics (tetracycline, doxycycline, azithromycin, erythromycin, ciprofloxacin)
11. **Control Measures:**
 - Case**
 - a. Treatment see #10 above
 - b. Enteric precautions (frequent thorough hand washing, proper disposal of soiled diapers/waste)
 - c. Disinfect contaminated articles with chlorine solution or by boiling for 5 minutes
 - d. Exclude from sensitive occupation/situation until asymptomatic and negative stool

Disease: Cholera

Contacts/Exposed

- a. Surveillance of contacts who shared food/drink with case for 5 days from last exposure
- b. Stool culture only if source is in doubt
- c. Chemoprophylaxis rarely advisable unless in institutional settings (e.g. jails) following identification of index case

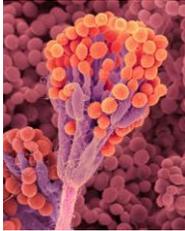
Public Health

- ◆ Immediately call CDPH, CDC
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in **SBC All Hazards Plan***
- f. **Prevention/Education:**
 - Food/water precautions while traveling to endemic areas
 - Dispose of feces, vomitus, fomites properly
 - Handwashing after defecation using soap and individual towels

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation-(if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - ingestion of contaminated food, water, seafood
 - Exposure to symptomatic persons
 - water sources
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Coccidioidomycosis



Coccidioides immitis

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlldForms/cdph8280.pdf>

Fungal infection usually beginning in lungs and is acquired from environment. It is also known as “Valley Fever”

1. **Agent:** *Coccidioides immitis*, a dimorphic fungus
2. **Symptoms:** may be asymptomatic or present as acute respiratory illness with: fever, chills, cough, rash, pleuritic pain; may develop erythema nodosum. Complications may include: fibrosis, pulmonary lesions, disseminated granulomatous disease
3. **Case Definition and Classification:**

Clinical Case Definition:

One or more symptoms: influenza-like illness; pneumonia; erythema nodosum, erythema multiforme rash; dissemination to bones, joint, skin; meningitis; involve viscera and lymph nodes.

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/coccidioidomycosis/case-definition/2011/>

4. **Specimen collection:**

Requires BSL-3 Lab

- **Specimen/test type** -sputum (culture, microscopic identification)
- **When** –as soon as possible
- **Specimen/test type** -blood (IgM)
- **When** -1-2 weeks after onset of symptoms

5. **Incubation:** 1-4 weeks for primary infection; insidiously for disseminated disease

6. **Reservoir:** soil (source: dust)

7. **Transmission:** inhalation of spores from soil, dust, laboratory cultures of mold

8. **Communicability:** not directly from animal or person to person; *C. immitis* on dressings may be infectious after 7-10 days

9. **Risk Groups:** occupational exposure; those visiting/moving to endemic areas; pregnant women; African/Filipino ethnicity; immunocompromised

10. **Treatment:**

- Oral antifungals (ketoconazole, fluconazole, itraconazole)
- Amphotericin B for more severely ill

11. **Control Measures:**

Case

- a. Treatment-see #10 above
- b. Disinfect discharges and soiled articles

Contacts/Exposed

- a. None

Disease: Coccidioidomycosis

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Dust control in endemic areas
 - Disinfect fomites and discharges
 - Laboratory cultures should be sealed

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members

- Place of residence and travel history
 - similar illness in co-workers
 - skin test results
 - primary or disseminated disease
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Cryptosporidiosis



Cryptosporidiosis parvum

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/CDC5212_2.pdf

Diarrheal illness caused by parasite.

- 1. Agent:** *Cryptosporidium parvum*, a protozoan parasite
- 2. Symptoms:** profuse watery diarrhea, cramping, abdominal pain
- 3. Case and Classification:**

Clinical Case Definition:
GI illness characterized by diarrhea and one or more: diarrhea > 72 hours, abdominal cramping, vomiting, anorexia

Case Classification for Suspected, Probable, Confirmed:
<http://www.cdc.gov/nndss/conditions/cryptosporidiosis/case-definition/2012/>
- 4. Specimen collection:**
 - **Specimen/test type** -stool (microscopic identification)
 - **When** –as soon as possible
- 5. Incubation:** 1-12 days (average 7 days)
- 6. Reservoir:** humans and animals (source: oocysts in feces)
- 7. Transmission:** fecal-oral, person-to-person, animal-to-person, waterborne, foodborne

- 8. Communicability:** from onset of symptoms when oocysts first appear in stool to several weeks after recovery
- 9. Risk Groups:** children < 2 years old, animal handlers, travelers, men who have sex with men, close contacts of infected individuals, AIDS patients
- 10. Treatment:**
 - Generally self-limiting (no treatment)
 - Rehydration (fluid replacement)
 - Nitazoxanide for diarrhea

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Enteric precautions
- c. Exclude from sensitive work (food handling, patient care) until asymptomatic
- d. Exclude infected children from daycare facilities until diarrhea stops

Contacts/Exposed

- a. Test contacts only if symptomatic

Disease: Cryptosporidiosis

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Personal hygiene
 - Handwashing especially before handling food, before eating and after toilet use
 - Dispose of feces in sanitary manner
 - Boil drinking water supplies for 1 minute (chemical disinfectant not effective against oocysts)

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age

- Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - exposure to animals
 - sexual orientation
 - history of colonic irrigation
 - exposure to others with diarrheal illness during incubation period
 - Consumption of or exposure to nonpotable water
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Cysticercosis/Taeniasis



Taenium solium parasite

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8581.pdf>

Intestinal and extra intestinal infection caused by parasitic tapeworm (larvae and adult)

1. **Agent:** *Taenia solium*, a parasitic pork tapeworm. Larvae form causing cysticercosis is *Cysticercus cellulosae*
2. **Symptoms:** intestinal symptoms with adult form (digestive disturbance, abdominal pain, anorexia, weight loss); somatic disease with larvae form (muscle pain, weakness, fever, eosinophilia, hydrocephalus, meningitis, encephalitis, epilepsy)
3. **Case Definition and Classification:**

Clinical Case Definition:

Intestinal (adult tapeworm):
abdominal pain, anorexia, weight loss, nervousness, insomnia)
Tissue (larval form): muscle pain, weakness, fever, headache, fever, CNS symptoms)

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8581.pdf>
(see bottom of case report form for classifications)

4. **Specimen collection:**
 - **Specimen/test type** -stool (identification of tapeworm)
 - **Specimen/test type** -blood
 - **Specimen/test type** -CNS imaging
 - **When** –as soon as possible
5. **Incubation:** tapeworm (adult) intestinal: 8-12 weeks after ingesting infected pork; larval (cysts): months to years after infection
6. **Reservoir:** humans for adult tapeworm (source: feces); cattle, swine for larvae (source: undercooked pork/beef)
7. **Transmission:** fecal oral transmission of eggs from contaminated food/water; direct person to person; consumption of larvae from raw or undercooked pork or beef
8. **Communicability:** persons with tapeworm infections are infectious to others
9. **Risk Groups:** people who consume undercooked or raw pork/beef; living in endemic areas; household contacts of tapeworm carrier
10. **Treatment:**
 - Antihelminthics (praziquantel)
 - Surgery
 - Analgesics, steroids, anticonvulsants
 - Niclosamide (not widely available)
11. **Control Measures:**

Case

 - a. Treatment-see #10 above
 - b. Exclude from sensitive work (food handling, patient care) until one week after treatment
 - c. Dispose of feces in sanitary manner

Disease: **Cysticercosis/Taeniasis**

Contacts/Exposed

- a. Test for tapeworm infection
- b. Ensure good sanitation and waste disposal

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Explain transmission of disease
 - Cook pork and beef thoroughly
 - Handwashing especially before handling food, before eating and after toilet use
 - Dispose of feces in sanitary manner
 - Avoid sewage effluent for pasture irrigation

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - other household contacts with symptoms
 - Consumption of raw or undercooked meat, especially outside of USA
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. **Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
 - a. *Use Outbreak Investigation Checklist found in Appendix B*

Disease: Dengue



Dengue flavivirus

Requires Case Report

URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrIdForms/cdph8670.pdf>

Mosquito-borne viral disease causing mild to severe acute febrile illness endemic in most tropical and subtropic areas. Referred to as Dengue Virus Infection

1. Agent: Flavivirus family; four serotypes

2. Symptoms: sudden onset fever, headache, myalgia, arthralgia, bone pain, retro-orbital pain, anorexia, vomiting, rash, minor to severe hemorrhagic manifestations (due to plasma leakage). Illness usually self-limiting lasting one week. Critical phase at defervescence lasting 24-48 hours. Complications include: severe abdominal pain, difficulty breathing, shock, pleural effusions or ascites, hypoproteinemia, frank hemorrhage, death

3. Case Definition and Classification:

Clinical Case Definition:

fever AND one or more of the following: nausea/vomiting, rash, aches, pains, positive tourniquet test, leukopenia, any warning sign for severe Dengue

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/dengue-virus-infections/case-definition/2015/>

4. Specimen collection:

- **Specimen/test type** -serum (Dengue serology, IgM, PCR,)
- **When** -during acute febrile phase (5 days after onset) as well as during convalescent phase (10-14 days after first sample)

5. Incubation: 3-14 days (usually 4-7)

6. Reservoir: human, mosquito, monkeys in some areas (source: infected mosquito)

7. Transmission: bite of infected mosquito (primarily *Aedes aegypti*)

8. Communicability: not directly communicable person to person; person infective to mosquito for approximately 3-5 days; mosquito then becomes infective 8-12 days after biting person

9. Risk Groups: all people in dengue endemic areas, including travelers; highest in children

10. Treatment:

- None
- Supportive care
- Avoid aspirin-containing or nonsteroidal anti-inflammatory medication (risk of bleeding)

Disease: Dengue

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Standard bloodborne precautions
- c. Supportive care
- d. Screen sickroom to prevent mosquito access until fever subsides (for at least 5 days after onset)

Contacts/Exposed

- a. No post exposure prophylaxis available
- b. Search for unreported or undiagnosed cases

Public Health

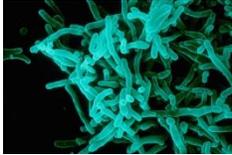
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Vector control (stagnant water, etc.) is KEY
 - Personal protection from mosquito bites (repellants, screening, clothing)

12. Epidemiology Investigation if suspect:

outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - ~~Age~~
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - History of mosquito bites
 - Additional cases among contacts (household, neighbors, fellow travelers)
 - Previous Dengue infections
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Diphtheria



Corynebacterium diphtheriae

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8579.pdf>

Highly contagious bacterial infection of the mucous membranes of throat and nose

1. **Agent:** *Corynebacterium diphtheriae*, gram positive bacillus bacteria
2. **Symptoms:** acute disease of pharynx, tonsils, larynx, nose; characteristic lesion adherent greyish white membrane; sore throat, large lymph nodes, neck swelling/edema (“bullneck”). Exotoxin causes cranial/peripheral motor and sensory nerve palsies, myocarditis, nephropathy

3. Case Definition and Classification:

Clinical Case Definition:

Upper respiratory tract infection with: sore-throat, low grade fever, adherent membrane of tonsils, pharynx, nose

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/diphtheria/case-definition/2010/>

4. **Specimen collection:**
 - **specimen/test type** -nasal, nasopharynx, throat swab (culture)
 - **when** –as soon as possible
5. **Incubation:** 2-5 days, usually longer
6. **Reservoir:** humans (source: discharges from nose, throat, skin, eye, other lesions of infected persons)
7. **Transmission:** contact with patient or carrier; rarely contact with articles soiled with discharges from lesions of infected people; raw milk
8. **Communicability:** until virulent bacilli disappear from discharges and lesions; usually 2 weeks for respiratory diphtheria; no longer contagious 48 hours after antibiotics begun; chronic carrier may shed for 6 months
9. **Risk Groups:** nonimmunized or underimmunized
10. **Treatment:**
 - Diphtheria Antitoxin for respiratory diphtheria (available from CDC)
 - Antibiotics for 14 days (erythromycin, procaine penicillin G)
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Isolation and droplet precaution for pharyngeal diphtheria and contact isolation for cutaneous until 2 cultures taken 24 hours apart and at least 24 hours after completing antibiotic therapy are negative; otherwise 14 days
 - c. Disinfection of articles

Disease: Diphtheria

Contacts/Exposed

- a. Household contacts tested (swab cultures) and kept under surveillance/quarantine for 7 days
- b. Prophylax with antibiotic for 7-10 days
- c. Booster dose of diphtheria toxoid vaccine if more than 5 years since last one
- d. Complete diphtheria vaccine series if not previously immunized
- e. Exclude from work contacts who are food handlers or closely associated with nonimmunized children until treated and tests show no longer to be carrier

Public Health

- ◆ Immediately call CDPH, CDC
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate efforts to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Diphtheria toxoid vaccination compliance
 - Booster with Tdap (11-18 years old)
 - Use pasteurized milk
 - Disinfect fomites and discharges from lesions

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Treatment with antibiotic complete
 - Links to other cases
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Ebola



ebolavirus

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631
<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8527.pdf>

A viral disease causing acute, serious illness with hemorrhagic symptoms. Also known as viral hemorrhagic fever

1. **Agent:** *ebolavirus* belonging to the *Filoviridae* family
2. **Symptoms:** fever, severe headache, muscle pain, weakness, fatigue, diarrhea, vomiting, abdominal pain, unexplained hemorrhage
3. **Case Definition and Classification:**

Clinical Case Definition:

acute onset illness with ALL of these symptoms: severe headache, muscle pain, erythematous rash, vomiting, diarrhea, pharyngitis, abdominal pain, bleeding, chest pain, proteinuria, thrombocytopenia

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/viral-hemorrhagic-fever/case-definition/2011/>

Person Under Investigation (PUI):

<http://www.cdc.gov/vhf/ebola/healthcare-us/evaluating-patients/case-definition.html>

4. **Specimen collection:**
 - refer to CDC for detailed instructions on obtaining samples:
<http://www.cdc.gov/vhf/ebola/healthcare-us/laboratories/index.html>
 - **Specimen/test type** -blood (ELISA, PCR, virus isolation)
 - **When** -within a few days of symptoms
 - **Specimen/test type** -blood (IgM, IgG antibodies)
 - **When** -later in disease course or during recover
5. **Incubation:** average 8-10 days (range 2-21 days)
6. **Reservoir:** animal-borne, likely bats (source: infected human blood, sweat, saliva, vomit, urine, feces, semen, breast milk; infected bat, rodent)
7. **Transmission:** direct contact with body fluids of an infected person, contaminated objects, or infected bats or primates
8. **Communicability:** starting at the onset of symptoms and highest during late stages when patient is vomiting, having diarrhea or hemorrhaging
9. **Risk Groups:** persons injected with contaminated needles and syringes; caregivers in affected communities; healthcare workers handling infected patients; laboratory workers processing specimens; people working with wildlife in endemic areas

Disease: Ebola

10. Treatment:

- No FDA approved vaccine yet available
- Supportive care: aggressive IV fluids; maintaining oxygen and blood pressure; pain control; nutrition support; treating any secondary infections if they occur- consider broad spectrum antibiotic for prophylaxis

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. All caregivers, first responders to follow their Ebola/Highly pathogenic CD PPE and transportation protocols
- c. Isolate infected case
See:
<http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/index.html>;
<http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/index.html>;
- d. Local transportation protocols will be followed. *Refer to Appendices O, P for: [AMR Ebola, etc. transportation protocol.pdf](#);*
<https://www.amr.net/resources/ebola>
- e. Per AMR protocol, transport destination of suspected Ebola patient will be determined prior to leaving the scene
- f. Admitting hospital will follow isolation and PPE protocols for infected case, including airborne precautions.
- g. Ebola is classified as Category A infectious substance and any associated waste or contaminated items must be packaged, transported and disposed of according to Hazardous Materials Regulations. See also:
<http://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/ebola-virus-survivability.html>

Contacts/Exposed

- a. Conduct contact interview, using CDPH Form and following strict Ebola/Highly pathogenic CD PPE and transportation protocols (see link under Case):
<https://www.cdph.ca.gov/pubsforms/forms/CtrIdForms/cdph8535.pdf>
- b. Classify contacts based on risk exposure, see CDC guidelines:
<http://www.cdc.gov/vhf/ebola/exposure/risk-factors-when-evaluating-person-for-exposure.html>
- c. If contact considered risk, notify HHMH, local laboratories, CDPH, CDC for guidance in evaluating/testing contact
- d. First responders unwittingly exposed to suspected Ebola patient will immediately be considered as a patient
- e. Health Officer may issue order for restricting movement of asymptomatic contact or strict quarantine (for 21 days after last potential exposure)
- f. For travelers with potential contact, see CDC guidelines:
<http://wwwnc.cdc.gov/travel/diseases/ebola>

Public Health

- ◆ Immediately call CDPH, CDC
- ◆ SBC PHS will follow procedures to activate DOC and follow **SBC PHS All Hazards Plan**
- ◆ Immediately alert HHMH, EMS, OES, AMR, Law Enforcement, EH, local laboratories, Waste Management to inform of case and instruct all to follow their Ebola/ Highly Pathogenic CD protocols, including appropriate PPE
See:

Disease: Ebola

<http://www.cdc.gov/niosh/topics/anthrax/workers.html>,

<http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/index.html>;

<http://www.cdc.gov/vhf/ebola/healthcare-us/emergency-services/index.html>;

- ◆ Local transportation protocols will be followed. *Refer to Appendices O, P for: [AMR Ebola, etc. transportation protocol.pdf](#);*
<https://www.amr.net/resources/ebola>
Per AMR protocol, transport destination of suspected Ebola patient will be determined prior to leaving the scene
- ◆ Ebola is classified as Category A infectious substance and any associated waste or contaminated items must be packaged, transported and disposed of according to Hazardous Materials Regulations. See also:
<http://www.cdc.gov/vhf/ebola/healthcare-us/cleaning/ebola-virus-survivability.html>
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to ***SBC PHS All Hazards Plan***
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk*

*Communication in **SBC All Hazards Plan***

f. **Prevention/Education:**

- Strict infection control
- Wash hands often
- Follow all CDC cleaning/disinfecting guidelines
- PPE at all times
- Safe laboratory practices for specimen handling
- Minimize routine blood draws
- Do NOT touch items that may have come in contact with sick person
- Do NOT touch body of person who has died from Ebola

12. **Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**

Refer to Epidemiology Chapter

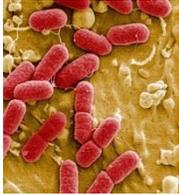
a. *Use **Outbreak Investigation Checklist** found in **Appendix B***

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - travel to Ebola-affected area within 21 days of onset of symptoms
 - employment in healthcare setting in Ebola-affected area

Disease: Ebola

- direct contact with body fluids of Ebola patient
 - caretaker or household member of Ebola patient
 - lab worker handling specimen of Ebola patient
 - direct exposure to human remains of Ebola patient (without wearing PPE)
 - direct handling of bats, rodents, primates from Ebola-affected areas
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: E. Coli (shiga toxin)



Escherichia coli



Food and water-borne illness caused by bacterial intestinal infection

1. **Agent:** *Escherichia coli* group of bacteria producing shiga toxins (STEC), including 0157, causing intestinal infection varying in virulence
2. **Symptoms:** diarrhea that is often bloody, abdominal cramping, and abdominal pain; fever in less than 1/3 of patients.
Complications include hemolytic uremic syndrome or thrombotic thrombocytopenic purpura
3. **Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

Diarrhea (often bloody), abdominal cramps, possible complication with hemolytic uremic syndrome

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/shiga-toxin-producing-escherichia-coli/case-definition/2014/>

4. **Specimen collection:**
 - **Specimen/test type** -stool (culture; PCR for research only)
 - **When** -as early as possible-difficult to detect after 1 week of illness
5. **Incubation:** 2-10 days (median 3-4)
6. **Reservoir:** humans; cattle (source: feces of infected animal or human; undercooked beef, unpasteurized milk; contaminated produce or water)
7. **Transmission:** mainly through ingestion of contaminated food (meat, produce), milk, water; also direct person-to-person
8. **Communicability:** usually 1-3 weeks; as long as organism excreted
9. **Risk Groups:** children 1-4 years old; older adults greatest risk of hemolytic uremic syndrome
10. **Treatment:**
 - Supportive; fluid/electrolyte replacement
11. **Control Measures:**
 - Case**
 - a. Treatment see #10 above
 - b. Enteric precautions (frequent thorough hand washing, proper disposal of soiled diapers/waste)
 - c. Disinfect contaminated articles by washing in hot water
 - d. Exclude from work (if sensitive occupation) for 2 successive negative stool samples at least 24 hours apart and at least 48 hours after completing antibiotic therapy

Disease: E. Coli (shiga toxin)

Contacts/Exposed

- a. Obtain cultures in contacts who are at high risk such as: food handlers, attendants, children in day care, etc.
- b. Exclude from work, if symptomatic, until 2 negative stool samples as for case, then negative weekly samples until case released or no contact with case
- c. Exclude from work, if asymptomatic, until 1 negative stool sample then weekly samples until case released
- d. Obtain culture of suspected food, livestock, produce samples especially during outbreak

Public Health

- ◆ Immediately call CDPH, CDC
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Handwashing after defecation using soap and individual towels
 - Thoroughly cook beef to internal temperature of 155° F
 - Avoid unpasteurized milk
 - Avoid cross contamination of foods

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Specific food history within 7 days prior to onset, including location
 - Specific restaurant history within 7 days prior to onset
 - Exposure to others with diarrhea in or out of household
 - Contact with farm animals
 - Contact to childcare center
 - Recreational water exposure
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Giardiasis



Giardia lamblia parasite

Requires Case Report

Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/programs/forms/forms/CtrlldForms/cdph8554.pdf>

Infection of the small intestine caused by a parasite

1. **Agent:** *Giardia lamblia* a protozoan parasite
2. **Symptoms:** chronic and recurrent diarrhea, steatorrhea, abdominal cramps, bloating, fatigue, weight loss, malabsorption of fat and fat-soluble vitamins
3. **Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

Gastrointestinal symptoms: diarrhea, abdominal cramps, bloating, weight loss, malabsorption

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/giardiasis/case-definition/2011/>

4. **Specimen collection:**
 - **Specimen/test type** -stool (identification, antigen detection)
 - **When** -sample collection on 3 separate days
5. **Incubation:** usually 3-25 days (median 7-10 days)
6. **Reservoir:** humans, animals (source: feces)

7. **Transmission:** fecal oral; person to person (hand-to-mouth); contaminated water or food
8. **Communicability:** variable; months; entire period of infection
9. **Risk Groups:** young family member in day care; persons with HIV; travelers to endemic areas; close contact with infected person; backpackers/campers (contaminated water)
10. **Treatment:**
 - Metronidazole, tinidazole, nitazoxanide
 - Alternatives: paromomycin, quinacrine, furazolidone
11. **Control Measures:**

Case

- a. Treatment-see #10 above
- b. Enteric precautions
- c. Concurrent disinfection of feces and soiled articles
- d. Exclude from work (if sensitive occupation) until asymptomatic and on treatment
- e. Exclude from day care if child or staff until asymptomatic and on treatment

Contacts/Exposed

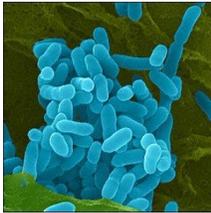
- a. If household member and symptomatic, must test

Disease: Giardiasis

Public Health

- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Explain transmission of disease
 - Handwashing especially before handling food, before eating and after toilet use
 - Dispose of feces in sanitary manner
 - Boil/disinfect water of uncertain potability when hiking/camping or international travel
 - Risk of anal intercourse
 - Avoid accidental swallowing of recreational water
- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
- a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)
 - e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel hist
 - Other household contacts with symptoms
 - Consumption of contaminated water
 - Contact with diapered children, especially in day care setting
 - Sexual orientation
 - Animal contact
 - Colonic irrigation
 - Problems with septic system
 - Recreational water use
 - f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Glanders/ Melioidosis



Burkholderia mallei

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrldForms/cdph8554.pdf>

Highly contagious bacterial infection primarily affecting horses but may infect humans. Does NOT occur naturally in the United States. **Has potential use as a bioterrorism weapon**-due to its fatal nature and ability to be aerosolized and deliberately released into the environment

1. **Agent:** *Burkholderia mallei* (glanders) and *Burkholderia pseudomallei* (melioidosis); gram negative bacilli
2. **Symptoms:** Pulmonary or cutaneous or septicemia. Localized cutaneous or visceral abscesses; necrotizing pneumonia; and/or rapidly fatal septicemia. Melioidosis may simulate typhoid fever or tuberculosis with pulmonary cavitation, empyema, abscesses and osteomyelitis. Death can occur within 48 hours of infection

3. Case Definition and Classification:

Clinical Case Definition:

localized infection with or without fever and muscle aches; acute pulmonary infection; bloodstream infection with fever; disseminated infection

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/melioidosis/case-definition/2012/>

4. **Specimen collection:**
 - BSL-3 lab required
 - **Specimen/test type** -blood, sputum, urine, skin, abscess (culture)
 - **When** -refer to CDC for detailed instructions on obtaining samples: <http://www.cdc.gov/glanders/health-care-workers.html>
5. **Incubation:** 1-21 days; or months to years for melioidosis
6. **Reservoir:** soil, water, animals
7. **Transmission:** Glanders: contact with tissue or fluids of infected animal through skin cuts and mucosal surfaces; inhalation via infected aerosols. Melioidosis: inhalation of dust, ingestion of contaminated water, contact with contaminated soil/water
8. **Communicability:** no person to person; possible by cutaneous contact; have caused laboratory acquired infections
9. **Risk Groups:** predisposing medical condition (diabetes, cirrhosis, chronic renal disease; chronic lung disease; thalassemia; immunosuppressed; living/visiting endemic areas; laboratory personnel
10. **Treatment:**
 - Intensive phase: IV antibiotic for 10-14 days
 - Eradication phase: oral antibiotic for 3-6 months

Disease: Glanders/ Melioidosis

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Isolate infected case; standard blood and body fluid precautions
- c. Safe disposal of wound and sputum discharges

Contacts/Exposed

- a. Avoid contact with blood or body fluids of infected person
- b. Laboratories handling specimens should perform employee risk assessment
- c. No vaccine available for prevention

Public Health

- ◆ Immediately call CDPH, CDC
 - ◆ Immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Highly Pathogenic CD protocols, including appropriate PPE. See: <http://www.cdc.gov/niosh/topics/anthrax/workers.html>
- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to **SBC PHS All Hazards Plan**

- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - In endemic areas, avoid contact with contaminated soil or water; ag workers should wear protective boots/gloves
 - Lab personnel to wear appropriate PPE
 - Control of Glanders in equine species

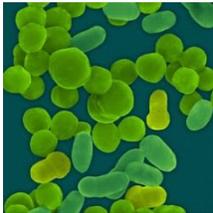
12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - History of exposure to infected animal/products and trace to place of origin
 - Contact with animals/products
 - Bioterrorism

Disease: Glanders/ Melioidosis

- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: *Haemophilus influenzae* Invasive Disease, All Serotypes



Haemophilus influenzae

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification
Only in cases < 5 yrs. old

<https://www.cdph.ca.gov/programs/forms/CtrlForm/s/pm401.pdf>

Bacterial infection causing illness mainly in babies and young children. Illness may include meningitis and pneumonia

1. **Agent:** *Haemophilus influenzae*, a gram-negative coccobacillus bacteria
2. **Symptoms:** vary depending on type of invasive illness. **Meningitis**- sudden onset fever, vomiting, lethargy, stiff neck; pneumonia, septicemia, epiglottitis, cellulitis, peritonitis, pericarditis
3. **Case Definition and Classification:**

Clinical Case Definition:

Invasive disease may manifest as: pneumonia, bacteremia, meningitis, epiglottitis, septic arthritis, cellulitis, or purulent pericarditis

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/nndss/conditions/haemophilus-influenzae-invasive-disease/case-definition/2015/>

4. **Specimen collection:**
 - **Specimen/test type** -blood, CSF (culture, other)
 - **When** –as soon as possible
5. **Incubation:** 2-4 days
6. **Reservoir:** humans
7. **Transmission:** person-to-person through respiratory secretions from nose and throat
8. **Communicability:** as long as organisms are present. Stops within 24-48 hours of starting effective antibiotic therapy
9. **Risk Groups:** unimmunized children, close contacts, daycare contacts, patients with sickle cell disease, immunocompromised, American Indians, Alaskan natives
10. **Treatment:**
 - Antibiotics for 10-14 days (3rd generation cephalosporin)
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Respiratory isolation for 24 hours after start of antibiotic
 - c. Disinfection of fomites
 - Contacts/Exposed**
 - a. Observe contacts for illness
 - b. Avoid contact with case
 - c. Prophylaxis with antibiotic, Rifampicin, to household and at risk contacts

Disease: *Haemophilus influenzae* Invasive Disease, All Serotypes

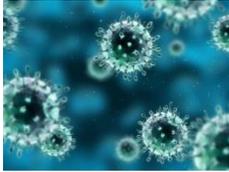
Public Health

- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Routine childhood immunization with Hib vaccine
 - Possible for children to become re-infected
 - Possible need for antibiotic prophylaxis within certain groups
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Daycare
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission

Disease: Hand, Foot, Mouth



Coxsackie enterovirus

Requires Case Report
only if outbreak or disease
of unusual occurrence

Individual case NOT
reportable

<https://www.cdph.ca.gov/pubsforms/forms/CtrIdForms/cdph8554.pdf>

A common viral illness usually affecting children younger than 5 years but adult cases can occur

- 1. Agent:** Enterovirus family; coxsackie virus is the most common cause of hand, foot, mouth disease
- 2. Symptoms:** fever, poor appetite, malaise, sore throat; painful mouth sores; skin rash characteristically on palms and soles but may appear on other areas. *Complications include secondary bacterial skin infection, dehydration, CNS complications*

3. Case Definition and Classification:

Clinical Case Definition:

any child with: mouth/tongue ulcer; and maculopapular rashes and/or vesicles on palms and soles; with or without history of fever

Case Classification for Suspected, Probable, Confirmed:

http://www.ncdc.gov.in/hand_foot_mouth.pdf

- 4. Specimen collection:**
 - **Specimen/test type** -nasopharyngeal, oropharyngeal, throat, vesicular, fecal (culture, PCR)
 - **When** –as soon as possible
- 5. Incubation:** usually 3-5 days
- 6. Reservoir:** human (source: nose and throat secretions; blister fluid; feces)
- 7. Transmission:** direct contact with nasal and oral secretions, vesicular fluid, and stools of infected persons, contaminated articles and surfaces; via aerosol droplets (coughing, sneezing)
- 8. Communicability:** during first week of illness
- 9. Risk Groups:** children in preschools, day care centers, large households
- 10. Treatment:**
 - No specific antiviral available
 - Analgesia, antipyretic, rehydration
- 11. Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Enteric precautions (wash hands with soap and water before and after leaving room; wear gloves and gown during patient care)
 - c. Disinfect contaminated articles by washing in hot water (nose and throat discharges)
 - d. Exclude from day care, school until fever and mouth sores gone
 - e. Avoid group activities

Disease: Hand, Foot, Mouth

Contacts/Exposed

- a. Follow-up contacts for clinical symptoms
- b. Disinfect contaminated surfaces, articles (including toys) with soap and water and then diluted bleach

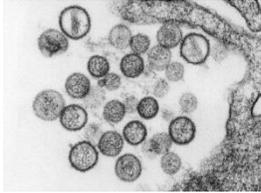
Public Health

- a. Complete and submit case report form (only if outbreak)
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies (day care, school, etc.) to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Limit person to person contact (crowd reduction, isolating infected children)
 - Promote hand washing with soap and water

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Contact to childcare center or institution
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Hantavirus



Hantavirus

Requires Case Report

Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/ubsforms/forms/CtrlDForms/cdph9077.pdf>

Acute zoonotic disease (spread by rodents)
causing severe infection in humans:
Hemorrhagic Fever with Renal syndrome (HFRS)
and Hantavirus Pulmonary Syndrome (HPS)

1. **Agent:** Hantaviruses, genus of the family *bunyaviridae*; more than 25 species exist
2. **Symptoms:** fever, myalgia, anorexia, abdominal pain, nausea, vomiting, elevated hematocrit, thrombocytopenia, abrupt onset hypotension, shock, hemorrhagic manifestations

3. **Case Definition and Classification:**

Clinical Case Definition:

For HPS-fever > 101, chills, myalgia, headache, GI symptoms and one or more of the following: bilateral diffuse interstitial edema, ARDS, pulmonary edema, unexplained respiratory illness causing death

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/hantavirus-pulmonary-syndrome/case-definition/2015/>

4. **Specimen collection:**

- *Testing done by CDPH VRDL. Coordinate with HHMH lab*
- **Specimen/test type** -blood (Hantavirus)
- **When** –during acute phase and repeat during convalescent (21 days after first specimen)
- **Specimen/test type** -blood/tissue (PCR)
- **When** –as soon as possible
- **Specimen/test type** -tissue (formalin)
- **When** –as soon as possible

5. **Incubation:** few days to 2 months (approximately 2 weeks)

6. **Reservoir:** specific rodent species (source: saliva or excreta of infected rodent)

7. **Transmission:** aerosol transmission from rodent excreta, direct contact of broken skin or mucous membrane with rodent excreta, bites of infected rodents

8. **Communicability:** no person-to-person spread

9. **Risk Groups:** persons in rural populations who come into contact with rodents; outdoor enthusiasts, laboratory workers processing clinical specimens

10. **Treatment:**

- Symptomatic
- Bed rest, early hospitalization
- Fluid management
- Dialysis
- Ribavirin during first few days

Disease: Hantavirus

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Early hospitalization
- c. Respiratory intensive care management

Contacts/Exposed

- a. Risk of human to human transmission limited to Andes virus cases (Argentina, Chile)

Public Health

- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with EH and other appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Exclude rodents from houses, etc.
 - Store food in rodent-proof containers
 - Minimize exposure to rodents
 - Disinfect rodent-contaminated areas; avoid dust inhalation by using respirators when cleaning
 - Wear appropriate PPE when working with potentially infected rodents.
 - Trap rodents and dispose appropriately

- Vaccine available in South Korea and China against Hantaan and Seoul viruses only

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Exposure to rodents/rodent excreta in 6 weeks prior to onset
 - Rural residence with signs of rodent infestation
 - Coworker or household member with similar illness
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Hepatitis, Type A



Hepatitis A virus

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8556.pdf>

Highly contagious viral infection of the liver usually due to contaminated food and water; poor sanitation

1. **Agent:** Hepatitis A virus (*Picornaviridae* Family) causing disease varying in severity
2. **Symptoms:** onset usually abrupt with fever, malaise, anorexia, nausea, abdominal discomfort which may be followed by jaundice. Recovery usually complete without sequelae
3. **Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

acute illness with discrete onset of any sign or symptom consistent with acute viral hepatitis (e.g., fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, and abdominal pain), AND either a) jaundice, or b) elevated serum ALT or AST levels.

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/hepatitis-a-acute/case-definition/2012/>

4. **Specimen collection:**
 - See CDC testing guidelines: <http://www.cdc.gov/hepatitis/hav/prof/resourcesa.htm>
 - **Specimen/test type** -serum (Hep A, anti-HAV IgM)
 - **When** -detectable 1 week and up to 6 months after exposure
5. **Incubation:** average 28-30 days (range 15-50 days)
6. **Reservoir:** humans (source: feces; rarely blood)
7. **Transmission:** fecal-oral; person to person or through food
8. **Communicability:** maximum infectivity during latter half of incubation period; week before onset of jaundice; non-infectious 1 week after onset of jaundice
9. **Risk Groups:** living in intermediate to high endemic areas; traveling to or working in endemic countries; injection drug users; close personal contacts of hepatitis A patients; working with infected primates or in HAV research labs; persons with chronic liver disease (at risk of death from fulminant hepatitis A)
10. **Treatment:**
 - No curative treatment; patient to avoid sensitive occupation or situation until 7 days after onset of jaundice

Disease: Hepatitis, Type A

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Make contact within 24 hours to determine if sensitive occupation or situation
- c. Enteric precautions for first 2 weeks
- d. Avoid sensitive occupation or situation during illness and for 7 days after onset of jaundice or acute symptoms

Contacts/Exposed

- a. Contact investigation within 24 hours to determine need for post-exposure prophylaxis with Hep A Vaccine or immune globulin as soon as possible
- b. Post-exposure prophylaxis usually indicated in previously unimmunized who are: close personal contacts, day care center staff and attendees, food handlers in same establishment if case is food handler
- c. Possible post-exposure prophylaxis to patrons of affected food establishment if food was not heated, food handler had diarrhea

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools,

institutions etc. *See Risk*

Communication in SBC All Hazards Plan

f. Prevention/Education:

- Traveler vaccination
- Hepatitis A vaccination compliance
- Educate about proper sanitation, personal hygiene, handwashing, sanitary disposal of feces
- Cook foods to appropriate temperature
- Wash fresh vegetables and fruits with clean water or peel them

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

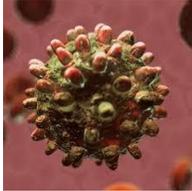
a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Ingestion of raw shellfish or untreated water within 7 weeks prior to onset
 - Street drug use
 - Links to other cases (day care association, sexual partners)

Disease: Hepatitis, Type A

- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Hepatitis, Type B



Hepatitis B virus

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForm/cdph8703.pdf>

Blood-borne viral infection of the liver causing both acute and chronic illness

1. **Agent:** Hepatitis B virus (*hepadnavirus* Family), several subtypes
2. **Symptoms:** fatigue, anorexia, vague abdominal discomfort, joint pain, nausea, vomiting, jaundice. *Complications include: cirrhosis, hepatocellular carcinoma, acute hepatic necrosis*
3. **Case Definition and Classification:**

Clinical Case Definition:
acute illness with onset of any symptom consistent with viral hepatitis (fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain AND jaundice or elevated ALT

Case Classification for Suspected, Probable, Confirmed:
<http://wwwn.cdc.gov/nndss/conditions/hepatitis-b-acute/case-definition/2012/>

4. **Specimen collection:**
 - *see CDC testing guidelines*
<http://www.cdc.gov/hepatitis/hbv/hbvfaq.htm#C3>
 - **Specimen/test type** -serum (HepBsAg)
 - **When** –detectable 1-9 weeks after exposure
5. **Incubation:** average 60-90 days (range 45-180 days).
6. **Reservoir:** humans (source: blood; sexual contact)
7. **Transmission:** parenteral and mucosal membrane exposure to infective body fluids; perinatal transmission from HepBsAg positive mothers
8. **Communicability:** before and after onset of symptoms
9. **Risk Groups:** newborns from HBsAg positive mothers; sexual partners of HBsAg-positive persons; history of injection drug use; hemodialysis; inmates; healthcare workers in contact with blood or blood-contaminated body fluids; clients/staff at risk of patient bites; recent sexual disease or sexual activity with more than one partner; international travelers; diabetics requiring frequent injections; immunosuppressed
10. **Treatment:**
 - No treatment for acute hepatitis B
 - Antiviral treatment for chronic hepatitis B (interferon alpha, nucleotide analogs)

Disease: Hepatitis, Type B

11. Control Measures:

Case

- a. See treatment-# 10 above
- b. Possible efficacy with lamivudine
- c. Supportive care
- d. Advise to repeat HBsAg test at 3 and 6 months. If still positive after 6 months, patient considered a carrier and should be evaluated for active liver disease

Contacts/Exposed

- a. Universal precautions to protect against exposures to blood/body fluids from case
- b. Disinfection of equipment
- c. Post exposure prophylaxis with hepatitis B vaccine and HBIG when indicated: infants born to HBsAg positive mothers; after needle-stick or mucous membrane exposure to blood that might contain HBV or to person with acute or chronic HBV infection

Public Health

- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*

f. Prevention/Education:

- Educate about disease may be transmitted by shared articles contaminated with blood (needles, lancets, razors, toothbrushes)
- General public compliance (especially newborns)with routine Hepatitis B vaccination at all times
- Sanitary disposal of blood and other body secretions
- Blood banks test all donated blood for HBsAg

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Contact with infected person
 - Treatment for sexual disease
 - Patient or employee of renal dialysis unit
 - Resident of long-term care facility
 - Fingerstick
 - Transfusion; IV infusion or injection

Disease: Hepatitis, Type B

- Medical or dental treatment in last 6 mos
 - Use of street drugs
 - For infant, status of mother
 - Number of sexual partners
 - Piercings, acupuncture, tattoo, electrolysis
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Hepatitis, Type C



Hepatitis C virus

Requires Case Report

Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlIdForms/cdph8703.pdf>

Blood-borne viral infection of the liver. Approximately 25%-50% of cirrhosis and hepatocellular carcinoma cases are attributable to hepatitis C infection

1. **Agent:** Hepatitis C virus (*hepacivirus* in *Flaviviridae* Family), several genotypes and subtypes
2. **Symptoms:** onset is insidious; usually asymptomatic or mild disease; 10-20% have anorexia, vague abdominal discomfort, nausea, vomiting. 75-85% of infections become chronic. *Complications include: cirrhosis and hepatocellular carcinoma*
3. **Case Definition and Classification:**

Clinical Case Definition:

discreet onset of any sign or symptom consistent with acute viral hepatitis (fever, headache, malaise, anorexia, nausea, vomiting, diarrhea, abdominal pain) AND jaundice (or ALT >200)

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/hepatitis-c-acute/case-definition/2016/>

4. **Specimen collection:**
 - *see CDC testing guidelines*
<http://www.cdc.gov/hepatitis/hcv/hcvfaq.htm#section3>
 - **Specimen/test type** -blood (anti-HCV; HCV RNA)
 - **When** –anti-HCV detectable 10-11 weeks post exposure; HCV RNA detectable within 1-2 weeks post exposure-therefore, if suspect recent exposure, test for HCV RNA first
5. **Incubation:** average 6-9 weeks (range 2 weeks to 6 months)
6. **Reservoir:** humans (source: blood or blood products)
7. **Transmission:** parenteral; exposure to inadequately sterilized blood contaminated instruments/needles; transfusion of infected blood or blood products
8. **Communicability:** one or more weeks before onset of first symptoms and may persist indefinitely
9. **Risk Groups:** persons receiving injections with nonsterilized needles/syringes; present or past injection drug users; persons receiving unscreened donated blood/blood products and organs; hemodialysis patients; body piercing/tattoos done with nonsterile instruments; needle stick in healthcare worker; HIV infected men who have sex with men; children born to HCV infected mothers

Disease: Hepatitis, Type C

10. Treatment:

- genotype influences treatment/duration
- treatment may include: (interferon alpha, ribavirin, protease inhibitors, other new antiviral agents)

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Refer to healthcare provider for long term follow-up
- c. Advise to abstain from alcohol and not to start new meds including over-the-counter or natural products without checking with doctor first
- d. Recommend vaccination with Hep A and Hep B

Contacts/Exposed

- a. NO post exposure prophylaxis available
- b. Universal precautions to protect against exposures to blood/body fluids of case
- c. Disinfection of equipment

Public Health

- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk*

Communication in SBC All Hazards Plan

f. Prevention/Education

- Disease may be transmitted by shared articles contaminated with blood (needles, lancets, razors, toothbrushes), sexually and perinatally
- HCV positive mothers to abstain from breastfeeding if nipples cracked or bleeding
- Sanitary disposal of blood and other body secretions

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Contact with infected person
 - Treatment for sexual disease
 - Patient or employee of renal dialysis unit
 - Resident of long-term care facility
 - Fingerstick
 - Transfusion; IV infusion or injection

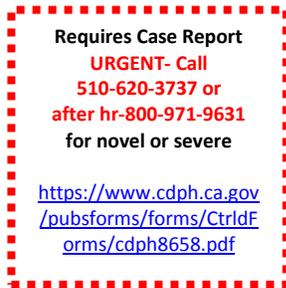
Disease: Hepatitis, Type C

- Medical or dental treatment in last 6 mos
 - Use of street drugs
 - For infant, status of mother
 - Number of sexual partners
 - Piercings, acupuncture, tattoo, electrolysis
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Influenza



Influenza virus



Seasonal influenza results in yearly epidemics of varying severity with occasional outbreaks outside of the typical seasonal pattern. Pandemics may occur when a novel influenza strain becomes able to spread easily among people globally

- 1. Agent:** Influenza virus A, B and C (orthomyxoviruses) causing an acute disease of the respiratory tract. Epidemic disease caused by influenza virus A and B. Influenza virus named based on type, geographic site of detection, laboratory number, year of isolation and subtype
- 2. Symptoms:** fever (not all), cough (usually dry), headache, myalgia, fatigue, sore throat, possible nausea/ vomiting. Symptoms usually resolve in 5-7 days. *Complications include bronchitis, pneumonia*
- 3. Case Definition and Classification:**

Clinical Case Definition:
fever $\geq 100^{\circ}\text{F}$, cough, sore throat, confirm Influenza by lab (RT-PCR)
Case Classification for Suspected, Probable, Confirmed:
<http://avianflunetwork.blogspot.com/2009/04/case-classifications-what-are-suspected.html>

- 4. Specimen collection:**
 - **Specimen/test type** -throat, nasal, nasopharyngeal secretions or tracheal aspirate or washings (PCR)
 - **When** -collect 1-5 days after onset of symptoms
- 5. Incubation:** 1-4 days; average 2 days.
- 6. Reservoir:** humans, swine, birds (source: droplet, nasal and pharyngeal secretions, fomites)
- 7. Transmission:** droplet spread through coughing, sneezing, talking (6 feet); direct contact with contaminated surface or object
- 8. Communicability:** 1 day before and up to 7 days after symptoms develop. May be longer in children
- 9. Risk Groups:** highest risk of complications among: children ≤ 2 years; adults > 64 years; any age with certain chronic medical conditions; immunodeficiency; pregnancy; neurologic/neuromuscular conditions
- 10. Treatment:**
 - Supportive care (fluids, antipyretics, rest, etc.)
 - Antiviral medication may reduce severity and duration of illness in those at risk for complications if administered within 48 hours of symptom onset
 - Secondary complications such as bronchitis and pneumonia should be treated with antibiotics

Disease: Influenza

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Hand hygiene, cough etiquette
- c. Stay out of school, work, public gatherings (social distancing) until 24 hours after fever gone
- d. Isolation for hospitalized patients and/or quarantine for group-living facilities

Contacts/Exposed

- a. Seasonal vaccination
- b. Antiviral prophylaxis when indicated (for example: exposed persons at high risk of complications, institutional outbreak, pandemic)

Public Health

- ◆ Immediately call CDPH, CDC if novel strain
- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates, including mass vaccination, mass prophylaxis, social distancing, etc.
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Annual influenza vaccination
 - Handwashing
 - Cough/sneeze etiquette
 - Stay home if ill with flu

12. Epidemiology Investigation if suspect:

outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Links to other cases
 - Avian or swine exposure
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CaREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Legionellosis



Legionellae bacteria

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8588.pdf>

Water-borne bacteria causing severe respiratory disease called Legionnaire's disease. May also cause lesser flu-like illness known as Pontiac Fever

1. **Agent:** *Legionellae*, gram negative bacilli bacteria
2. **Symptoms:** both diseases present with: anorexia, malaise, myalgia, headache, fever
Legionnaire's disease: pneumonia, nonproductive cough. Pontiac Fever: fever, cough, usually spontaneous recovery

3. Case Definition and Classification:

Clinical Case Definition:

Legionnaire's: fever, myalgia, cough, pneumonia

Pontiac Fever: milder illness without pneumonia

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/legionellosis/case-definition/2005/>

4. Specimen collection:

- **Specimen/test type** -urine (antigen detection)
 - **When** –as soon as possible
 - **Specimen/test type** -sputum, lung biopsy (culture)
 - **When** –as soon as possible, preferably before antibiotic treatment started
 - **Specimen/test type** -blood (antibody)
 - **When** -paired sera: during acute phase then repeat 3-6 weeks later to detect rise in antibody titer
5. **Incubation:** Legionnaire's: 2-10 days (usually 5-6 days); Pontiac Fever: 5-72 hours (usually 24-48 hours)
 6. **Reservoir:** waterborne (source: man-made water supplies that aerosolize water)
 7. **Transmission:** airborne; aspiration of water
 8. **Communicability:** no person-to-person documented
 9. **Risk Groups:** increasing age, cigarette smokers, diabetes, chronic lung disease, renal disease, malignancy, compromised immunity (including corticoid steroid use); common among travelers and hospitalized patients
 10. **Treatment:**
 - Legionnaire's: IV antibiotic for 14-21 days (fluoroquinolone or macrolide)
 - Pontiac fever is self-limiting and usually does not require antibiotic therapy

Disease: Legionellosis

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Hospitalization

Contacts/Exposed

- a. Consider additional case investigations to identify other cases with same exposure

Public Health

- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with EH and other appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Proper maintenance and disinfection of whirlpool spas, cooling towers, drinking water supplies
 - Cooling towers should be drained when not in use and mechanically cleaned
 - Do NOT use tap water in respiratory therapy devices
 - Use appropriate biocide when disinfecting water system

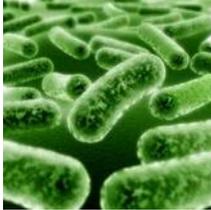
12. Epidemiology Investigation if suspect:

outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Convention attendance
 - Recent remodeling construction
 - Presence of airconditioning cooling towers at home or office
 - History chronic disease or immunodeficiency
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Leprosy (Hansen's)



Mycobacterium leprae

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrIdForms/cdph8588.pdf>

Bacterial infection causing severe disfiguring skin sores and nerve damage in arms and legs

1. **Agent:** *Mycobacterium leprae*, gram positive bacillus
2. **Symptoms:** lesions of skin, thick dry skin, severe pain, numbness of affected area, muscle weakness, paralysis, contractures, eye problems, enlarged nerves, stuffy nose, nosebleeds, ulcers on soles of feet

3. Case Definition and Classification:

Clinical Case Definition:

Chronic bacterial disease characterized by involvement of skin, peripheral nerves, mucosa. Described/classified as: tuberculoid, lepromatous, borderline, indeterminate

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/hansens-disease/case-definition/2013/>

4. Specimen collection:

- **Specimen/test type** -skin (biopsy, smear for identification of acid fast bacilli)
- **When** –as soon as possible

5. Incubation: few weeks to 30 years (average 3-10 years)

6. Reservoir: humans and armadillos (source: nasal discharges, skin lesions)

7. Transmission: close contact; from nasal mucosa to skin and respiratory tract (possible through coughing and sneezing)

8. Communicability: mildly communicable as long as viable bacilli present. Non-communicable after single dose of medication

9. Risk Groups: living in endemic area in close contact with cases

10. Treatment:

- Multidrug treatment (e.g. dapsone, rifampin, rifampicin, clofazamine)

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Isolation NOT necessary when being treated
- c. Hospitalize ONLY if surgical/treatment procedure required
- d. Dispose of nasal and lesion discharge in sanitary manner
- e. Teach safety measures to prevent injuries to anesthetic areas

Disease: Leprosy (Hansen's)

Contacts/Exposed

- a. Examine and follow-up close contacts
- b. Prompt treatment if disease detected

Public Health

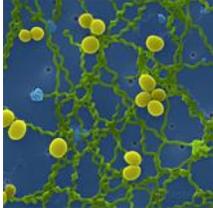
- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies (day care, school, etc.) to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Early detection/prompt multidrug treatment
 - Clarify misconceptions: patients under treatment are no longer infectious

- Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Contact with leprosy cases
 - Type of leprosy
 - Treatment with multidrug
 - Disability/deformity
 - Current medical supervision
 - List of family member
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials

Disease: Leptospirosis



Leptospira interrogans

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/publications/forms/forms/CtrldForms/cdph8577.pdf>

Bacterial zoonotic infection that can affect humans and animals causing wide range of symptoms including kidney damage and meningitis

1. **Agent:** *Leptospira interrogans*, spirochete bacteria
2. **Symptoms:** mild influenza-like illness; Weil's syndrome (jaundice, renal failure, hemorrhage, myocarditis); meningitis or meningoencephalitis; hemolytic anemia; pulmonary hemorrhage with respiratory failure
3. **Case Definition and Classification:**

Clinical Case Definition:

fever within last 2 weeks and at least 2 of the following: myalgia, headache, jaundice, conjunctival suffusion, rash OR at least 1 of the following: aseptic meningitis, GI symptoms, pulmonary complications, cardiac arrhythmia, renal insufficiency, hemorrhage, jaundice with acute renal failure

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/leptospirosis/case-definition/2013/>

4. **Specimen collection:**
 - **Specimen/test type** -blood, CSF (isolation)
 - **When** - first 7-10 days of acute illness
 - **Specimen/test type** -blood (agglutination)
 - **When** -acute and convalescent specimen at least 10 days apart
 - **Specimen/test type** -urine (isolation)
 - **When** -during second week of illness
5. **Incubation:** 2-30 days (usually 5-14 days)
6. **Reservoir:** wild and domestic animals (source: urine, tissue)
7. **Transmission:** contact of skin or mucous membrane with: contaminated moist soil or vegetation; contaminated water; urine, fluids or tissues of infected animals
8. **Communicability:** leptospire can be excreted in urine for months after acute illness; person-to-person is rare
9. **Risk Groups:** living in areas where infection is endemic in reservoirs; agricultural workers; fish workers; miners; veterinarians, animal husbandry, dairies, abattoirs, sewer workers, military troops
10. **Treatment:**
 - Antibiotics (penicillin or doxycycline) early in course of disease. Use IV antibiotics in patients with more severe disease
 - Aggressive treatment for hypotension, hemorrhage, renal and respiratory distress

Disease: Leptospirosis

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Blood/body fluid precautions
- c. Concurrent disinfection of articles soiled with urine

Contacts/Exposed

- a. Check for exposure to infected animals
- b. Check for exposure to contaminated water
- c. Consider prophylaxis with doxycycline 200mg stat then weekly for duration of exposure, especially in high risk groups with short-term exposure

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to *SBC PHS All Hazards Emergency Response Plan*
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Post risk of danger and/or drain contaminated water sites, including orders to avoid swimming

- Educate public on modes of transmission
- Clean/disinfect contaminated human habitation areas
- Protect workers in high risk occupations with proper PPE (gloves, boots, etc.)
- Control rodent and reservoir wildlife populations
- Maintain hygienic measures during handling of animals
- Immunization of farm and pet animals

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members (farmers, miners, veterinarians, sewer workers, fish/game wardens, abattoir)
 - Place of residence and travel history
 - history of drinking, swimming, in water possibly contaminated with animal urine
 - close contact with domestic or farm animals

Disease: Leptospirosis

- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Listeriosis



Listeria monocytogenes

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForm/cdph8296.pdf>

Invasive foodborne illness caused by bacteria contaminated food

1. **Agent:** *Listeria monocytogenes*, gram positive rod-shaped bacterium
2. **Symptoms:** septicemia, meningitis (fever, intense headache, nausea, vomiting), subacute meningoencephalitis; delirium; coma; endocarditis; placental invasion leading to fetal infection and sequelae

3. **Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:
Meningitis, bacteremia
Case Classification for Suspected, Probable, Confirmed:
<https://www.cdc.gov/nndss/conditions/listeriosis/case-definition/2000/>

4. **Specimen collection:**
 - **Specimen/test type** -Blood, CSF, amniotic fluid (culture)
 - **When** –as soon as possible
5. **Incubation:** usually 2-3 weeks
6. **Reservoir:** domestic and wild animals; humans; mud (source: silage water

ingestion of contaminated food, milk; direct contact with infectious material)

7. **Transmission:** foodborne (dairy products made with unpasteurized milk, processed and ready-to-eat meat, raw vegetables, cantaloupe melon); mother to fetus (transplacentally)
8. **Communicability:** mothers of infected infants may shed bacteria for 7-10 days after delivery; fecal carriage can last for months
9. **Risk Groups:** people with decreased immunity; pregnant women; elderly
10. **Treatment:**
 - Antibiotics (IV penicillin/ampicillin alone or with aminoglycoside; alternative: trimethoprim-sulfamethoxazole or erythromycin)
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Enteric precautions
 - Contacts/Exposed**
 - a. Identify common source exposures promptly
 - Public Health**
 - a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. If food or water borne, coordinate with EH and other regulatory agencies to

Disease: Listeriosis

trace source, initiate investigation and implement control measures

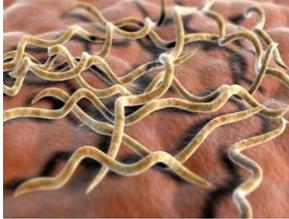
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Avoid unpasteurized milk products, ready-to-eat meats, etc.
 - Thoroughly wash raw vegetables before eating and keep separate from raw food from animal sources; thoroughly cook food from animal sources
 - Wash hands, knives, cutting boards after handling uncooked foods
 - Ensure refrigerator and freezer are at correct temperatures
 - Avoid use of untreated manure on vegetable crops
 - Veterinarians and farmers must take precautions in handling sick/dead animals

- Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Food history (especially unpasteurized dairy products, raw/undercooked foods)
 - History of immune deficiency
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials

Disease: Lyme



Borrelia burgdorferi

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrIdForms/cdph8470.pdf>

Tick-borne zoonotic bacterial infectious disease spreading to joint, heart, nervous system if untreated

1. **Agent:** *Borrelia burgdorferi*, spirochete bacteria
2. **Symptoms:** distinctive skin lesion (red macule or papule that expands slowly with central clearing; *erythema migrans*), flu-like symptoms, headache, stiff neck, myalgia, arthralgias; neurologic, rheumatologic, cardiac involvement

3. Case Definition and Classification:

Clinical Case Definition:

Erythema migrans is most common clinical marker; may also include: dermatologic, rheumatologic, neurologic, and cardiac abnormalities

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/lyme-disease/case-definition/2011/>

4. **Specimen collection:**
 - **Specimen/test type** -blood (culture)
 - **When** –as soon as possible
 - **Specimen/test type** -blood (immune assay then western blot)
 - **When** -if symptoms < 30 days, need IgM

5. **Incubation:** 3-32 days after tick exposure (mean 7-10 days)
6. **Reservoir:** wild animals; wood rat and deer in California (source: infected *Ixodes* ticks)
7. **Transmission:** tick bite; requires at least 36 hours of attachment for transmission
8. **Communicability:** no person-to-person
9. **Risk Groups:** all persons
10. **Treatment:**
 - Antibiotics for 2-4 weeks (doxycycline, amoxicillin, cefuroxime); may require IV antibiotic

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Carefully remove all ticks from patient

Contacts/Exposed

- b. Check for ticks in all exposed to same source of infection

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk*

Disease: Lyme

Communication in SBC All Hazards Plan

f. Prevention/Education:

- No blood donations allowed from people suspected with Lyme Disease
- Educate public about mode of tick transmission and personal protection
- Control ticks on domestic animals
- Avoid tick-infested areas when feasible (high grass; leaf litter)
- Wear light-colored clothing that covers legs and arms (ticks better seen); apply tick repellent to skin, sleeves, pants
- Shower soon after being outdoors; check for ticks daily; examine total body area
- Remove ticks promptly by using gentle, steady traction with tweezers applied close to skin to avoid leaving tick mouth parts in skin; protect hands with gloves/cloth/tissue when removing ticks; then wash area with soap and water

- Age
- Date onset of symptoms
- Lab result
- Hospital
- Occupation
- Place of residence and travel history
- travel 30 days prior to symptom onset
- History of tick bite
- History of possible exposure to tick bite

- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials

Disease: Malaria



Plasmodium falciparum

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8657.pdf>

Serious acute febrile illness caused by parasite infection from mosquito bite

1. **Agent:** *Plasmodium falciparum*, *P. malariae*, *P. ovale*, *P. vivax*, *P. knowlesi*, protozoan parasites

2. **Symptoms:** episodes of fever/chills every 2-3 days, headache, muscle aches, weakness, vomiting, cough, diarrhea, abdominal pain. If treatment delayed, may progress to impaired consciousness, prostration, convulsions, respiratory distress, shock and death

3. **Case Definition and Classification:**

Clinical Case Definition:

Fever, sweats, chills, headache, muscle pain, nausea, vomiting; severe malaria (confusion, coma, severe anemia, respiratory difficulties)

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/malaria/case-definition/2014/>

4. **Specimen collection:**

- **Specimen/test type** -blood (smear, microscopic)
- Blood (rapid diagnostic test: RDT)
- **When** –as soon as possible

5. **Incubation:** variable; 7-30 days or longer if inadequate prophylaxis

6. **Reservoir:** humans (source: infected female mosquitoes of *Anopheles* genus)

7. **Transmission:** bite of infected mosquito; contaminated blood or blood products, injection equipment, organ transplant; mother to infant in utero

8. **Communicability:** for as long as specific stage of parasite is present in blood; untreated or insufficiently treated persons may remain infective for years

9. **Risk Groups:** nonimmune persons, immunosuppressed, elderly; pregnant women

10. **Treatment:**

- Antimalarial medication such as chloroquine or others; see CDC treatment guidelines:

http://www.cdc.gov/malaria/diagnosis_treatment/treatment.html

11. **Control Measures:**

Case

- a. Treatment-see #10 above
- b. If hospitalized, observe blood precautions
- c. Place in mosquito-proof areas until no longer infective

Contacts/Exposed

- a. Investigate promptly if suspected of infection
- b. If history of sharing needles, investigate and treat promptly

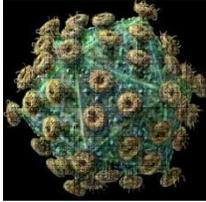
Disease: Malaria

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Prophylaxis for travelers
 - Avoid outdoor exposure during peak mosquito activity
 - Use mosquito repellent, protective clothing, bedtime netting
 - Exclude malaria patients from blood donation for recommended time period
 - Caution pregnant women about travel to endemic areas
 - Shower soon after being outdoors; check for ticks daily; examine total body area
 - Remove ticks promptly by using gentle, steady traction with tweezers applied close to skin to avoid leaving tick mouth parts in skin; protect hands with gloves/cloth/tissue when removing ticks; then wash area with soap and water

12. **Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
 - a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)
 - e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation
 - Place of residence and travel history
 - History of blood transfusion
 - History of blood donation
 - Use of parenteral drugs
 - f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Measles



Measles virus

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8345.pdf>

Highly contagious viral respiratory infection also known as rubeola

- 1. Agent:** Measles, rubeola virus (Paramyxoviridae viruses) causing acute, highly communicable febrile illness with characteristic rash and spots
- 2. Symptoms:** fever, conjunctivitis, coryza, cough, Koplik's spots on buccal mucosa. Erythematous, maculopapular rash on face 2 to 4 days after onset of prodrome then confluent in 4 to 7 days. *Complications include: otitis media, pneumonia, dehydration, seizures, encephalitis. Extremely rare subacute sclerosing panencephalitis (SSPE)*

3. Case Definition and Classification:

Clinical Case Definition:
generalized maculopapular rash lasting ≥ 3 days; temperature $\geq 101^{\circ}$ F or 38.3° C; cough, coryza, or conjunctivitis
Case Classification for Suspected, Probable, Confirmed:
<http://wwwn.cdc.gov/nndss/conditions/measles/case-definition/2013/>

- 4. Specimen collection:**
 - **Specimen/test type** -blood, throat/nasopharyngeal swab (PCR)
 - **When** -within 3-10 days of rash onset
- 5. Incubation:** approximately 10 days (range 8-13 days) from exposure to fever; average 14 days until rash appears (as long as 21 days); encephalitis can occur 2 to 6 days after rash
- 6. Reservoir:** humans (source: respiratory tract secretions)
- 7. Transmission:** direct contact with infectious droplets or less commonly by airborne spread; coughing and sneezing; sharing same airspace with infected person for up to 2 hours after infected person was present
- 8. Communicability:** 4 days before rash onset to 4 days after rash appearance
- 9. Risk Groups:** all people who have not had measles or not successfully immunized are susceptible. Highest risk of complications among: children < 5 years; adults, pregnant women and persons with vitamin A deficiency; malnutrition; immunodeficiency
- 10. Treatment:**
 - Supportive care (fluids, antipyretics, rest, etc.)
 - No antiviral agent available

Disease: Measles

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Hand hygiene, cough etiquette
- c. Stay out of school, work, public gatherings for 4 days after onset of rash
- d. Respiratory isolation for hospitalized patients and/or quarantine for group-living facilities

Contacts/Exposed

- a. Post-exposure prophylaxis of exposed, susceptible contacts with: IG (within 6 days of exposure) or MMR (within 72 hours of exposure)
- b. Exclude unvaccinated from school, daycare, etc. until 21 days after rash onset of last case of measles

Public Health

- ◆ Immediately call CDPH, CDC
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates, including mass vaccination, mass prophylaxis, social distancing, etc.
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*

f. Prevention/Education:

- Measles (MMR) vaccination importance
- Avoid contact with cases

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of prodrome
 - Date onset of rash
 - Rash duration
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Links to other cases
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Meningitis bacterial



Neisseria meningitidis

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631
<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8469.pdf>

Contagious bacterial infection of the meninges (brain and spinal cord) with potentially severe complications

- 1. Agent:** *Neisseria meningitidis* (gram negative aerobic diplococcus) serogroups A, B, C, WXY causing an acute bacterial meningitis
- 2. Symptoms:** sudden onset of fever, intense headache, nausea, vomiting, stiff neck, photophobia, petechial rash, possible delirium and coma. Fulminant cases with ecchymosis and shock. *Complications include: neurologic deficits, hearing loss, limb loss, sepsis, multiorgan failure*
- 3. Case Definition and Classification:**

Clinical Case Definition:

Clinical purpura fulminans in the absence of a positive blood culture

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/meningococcal-disease/case-definition/2015/>

- 4. Specimen collection:**
 - **Specimen/test type** -blood, cerebral spinal fluid (culture, PCR)
 - **When** -as soon as possible, preferably before antibiotic therapy started, but don't wait
- 5. Incubation:** average 3-4 days (range 2-10 days)
- 6. Reservoir:** humans (source: nose and throat secretions of case and/or carriers)
- 7. Transmission:** direct contact with infected person even if contact is asymptomatic carrier; droplet spread
- 8. Communicability:** until meningococci no longer present in nose and throat, usually 24 hours after start of effective antibiotic
- 9. Risk Groups:** travelers to countries where disease is epidemic, Hajj pilgrims, military groups, individuals with underlying immune dysfunctions, college students, crowding, alcohol use, low socioeconomic status, active or passive exposure to tobacco smoke, concurrent upper respiratory tract infections. Infants at highest risk as well as adolescents and young adults
- 10. Treatment:**
 - Parenteral ceftriaxone, penicillin, ampicillin or chloramphenicol. Begin as soon as presumptive clinical diagnosis made

Disease: Meningitis bacterial

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Immediate hospitalization
- c. Disinfect areas contaminated with nose and throat secretions
- d. Droplet precautions until 24 hours after start of antibiotic therapy

Contacts/Exposed

- a. Encourage adequate ventilation of living and sleeping quarters
- b. Post-exposure antibiotic prophylaxis of close contacts who were exposed during 7 days prior to onset of symptoms, even if previously vaccinated
- c. During outbreak, possible vaccination with vaccine A or B, depending on which serogroup responsible for outbreak
- d. Observe contacts for 10 days after last exposure to index case for early signs of illness, especially fever. If symptoms develop, refer immediately for medical evaluation and treatment

Public Health

- ◆ Immediately call CDPH, CDC-early confirmation of first case by lab
PCR is key to prevent/stop outbreak
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates, including mass vaccination, mass prophylaxis, social

distancing, etc.

- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*

f. Prevention/Education

- Meningitis A and possibly B vaccination
- Meningitis vaccination importance (two different vaccine series). Need to improve compliance with booster doses

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Residing in closed institution
 - Recent illness among contacts
 - Prior immunization history
 - Links to other cases
 - Close contacts (household, childcare, social, sports)
 - Treatment/prophylaxis

Disease: Meningitis bacterial

- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE.
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Meningitis viral



Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlIdForms/cdph8469.pdf>

Viral infection of the meninges that is more common than bacterial meningitis and usually causing less severe illness

- 1. Agent:** variety of viruses such as: Enterovirus, arbovirus, mumps, measles, herpes, varicella, adenovirus, etc.
- 2. Symptoms:** sudden onset fever, headache, stiff neck and back, photophobia, rubella-like rash, CSF reveals pleocytosis. Illness usually lasts approximately 10 days. *Complications include: weakness, muscle spasm, insomnia, personality changes*

3. Case Definition and Classification:

Clinical Case Definition:

Acute onset meningeal symptoms, fever, CSF pleocytosis with bacteriologically sterile cultures

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/meningitis-aseptic/case-definition/1990/>

4. Specimen collection::

- **Specimen/test type** -nasopharyngeal swab, stool, blood, CSF (culture, PCR)
- **When** -as soon as possible during acute period

- 5. Incubation:** varies depending on specific virus, 1-30 days
- 6. Reservoir:** varies depending on specific virus (source: varies)
- 7. Transmission:** varies depending on specific virus
- 8. Communicability:** varies depending on specific virus
- 9. Risk Groups:** varies depending on specific virus
- 10. Treatment:**
 - Supportive care
 - Varies depending on specific virus (for example, acyclovir if due to herpes simplex). No antiviral therapy available for Enterovirus

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Handwashing, personal hygiene (to limit oral-fecal transmission of Enterovirus)
- c. Isolate patient during febrile illness
- d. In hospital, enteric and standard respiratory secretion precaution recommended for 7 days after onset
- e. Disinfect areas contaminated with patient secretions and excretions

Contacts/Exposed

- a. Good personal hygiene (handwashing), disinfect surfaces/items, avoid close contact with infected person
- b. Avoid mosquito exposure if suspect West Nile

Disease: Meningitis viral

- c. If causative virus identified, follow applicable recommendations for virus
- d. Vaccinate depending on causative virus

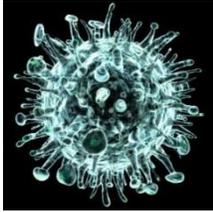
Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates, including mass vaccination, mass prophylaxis, social distancing, etc.
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education**
 - Handwashing
 - Disinfect contaminated surfaces and items
 - Avoid close contact with infected person
 - Enteric precautions
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Residing in closed institution
 - Recent illness among contacts
 - Prior immunization history
 - Links to other cases
 - Close contacts (household, childcare, social, sports)
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission

Disease: Mumps



Mumps Virus

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8690.pdf>

Contagious acute viral infection affecting parotid glands

1. **Agent:** Mumps virus; family *Paramyxoviridae*, genus *Rubulavirus*
2. **Symptoms:** fever, myalgia, anorexia, malaise, headache salivary gland swelling and tenderness; unilateral or bilateral; complications include: orchitis, meningitis, encephalitis, pancreatitis, deafness

3. Case Definition and Classification:

Clinical Case Definition:

Illness with acute onset unilateral or bilateral tender, self-limiting swelling of the parotid and/or other salivary gland. lasting at least 2 days

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/mumps/case-definition/2012/>

4. **Specimen collection:**
 - **Specimen/test type** -buccal swab (PCR, Culture)
 - **When** -within 3 days of onset (no more than 10 days)
 - **Specimen/test type** -blood (IgM, IgG)

- **When** -as soon as possible and second sample 2 weeks later

5. **Incubation:** 16-18 days (range 12-25)

6. **Reservoir:** humans (source: saliva, respiratory tract secretions)

7. **Transmission:** droplet spread; direct contact with saliva of infected person

8. **Communicability:** greatest 2 days before up to 5 days after parotid swelling

9. **Risk Groups:** lifelong immunity after infection; college students; daycare

10. **Treatment:**

- Symptomatic

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Respiratory isolation for 5 days after onset parotitis
- c. Exclude from school/work for 5 days after onset if susceptible contacts present
- d. Disinfect articles soiled with nose and throat secretions

Contacts/Exposed

- a. Immunize susceptible contacts to reduce likelihood of infection with future exposure
- b. Exclude susceptible persons from school or work from 12th-25th days after exposure if other susceptibles are present

Disease: Mumps

- c. Booster MMR may be recommended for outbreak situations such as on college campuses, etc.

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates, including mass vaccination, mass prophylaxis, social distancing, etc.
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Up to date mumps immunization (MMR)
 - Avoid close contact with infected cases
 - Disinfect articles/surfaces soiled with nose and throat secretions of infected case
 - Consider booster MMR mass vaccination for outbreak at schools, daycares, etc.

found in Appendix B

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Links to other cases
 - College dormitory
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist*

Disease: Norovirus



Norovirus

Requires Case Report

URGENT- Call
510-620-3737 or
after hr-800-971-9631
for outbreaks.

<https://www.cdph.ca.gov/pubsforms/forms/CtrlIdForms/cdph8567.pdf>

Highly contagious viral gastroenteritis

- 1. Agent:** virus belonging to family *Caliciviridae*
- 2. Symptoms:** nausea, vomiting, diarrhea, abdominal pain, myalgia, headache, malaise, low grade fever. Symptoms last 24-72 hours. Complication includes dehydration

- 3. Diagnosis /Case Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

An outbreak of norovirus is defined as an occurrence of two or more similar illnesses resulting from a common exposure that is either suspected or laboratory-confirmed to be caused by norovirus

Case Classification for Suspected, Probable, Confirmed:

<http://www.cdc.gov/norovirus/reporting/index.html>

- 4. Specimen collection:**
 - Specimen/test type** -stool, vomitus (RT-PCR)
 - When** –as soon as possible
- 5. Incubation:** 10-50 hours

- 6. Reservoir:** humans (source: feces, vomitus)
- 7. Transmission:** fecal-oral route; direct person-to-person; contaminated food, water or surfaces
- 8. Communicability:** greatest during acute phase but virus may shed for 2-3 weeks after symptom resolution
- 9. Risk Groups:** elderly, young children, immunocompromised
- 10. Treatment:**
 - Supportive, fluid and electrolyte replacement for dehydration

11. Control Measures:

Case

- Treatment-see #10 above
- Contact precautions
- Enteric precautions
- Exclude ill cases until 24-72 hours after symptoms resolve
- If food handler, exclude from work

Contacts/Exposed

- Isolate ill to reduce further exposure
- Secondary cases may occur among household members of case

Public Health

- ◆ Immediately call CDPH, CDC
- a.** Complete and submit Case Report Form
- b.** Complete contact investigation. Use contact investigation section on Case Report Form
- c.** If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d.** HO will issue orders, Health Alerts/ Advisory/ Updates

Disease: Norovirus

- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Hand hygiene with soap and water (hand sanitizer not a substitute but may be used in addition)
 - Environmental disinfection
 - Exclude ill cases until 24-72 hours after symptoms resolve
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Specific food history within 7 days prior to onset, including location
 - Specific restaurant history within 7 days prior to onset
 - Exposure to others with diarrhea in or out of household

Disease: Pediculosis (outbreak)



Pediculus capitis parasite

Requires Case Report
only if outbreak

Individual case NOT
reportable

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8554.pdf>

An infestation of the hairy parts of the body or clothing with the eggs, larvae or adults of lice

1. **Agent:** *Pediculus capitis*, an ectoparasite
2. **Symptoms:** infestation occurs on hair, eyebrows, eyelashes causing severe itching, excoriation of scalp
3. **Case Definition and Classification:**

Clinical Case Definition:

Detection of live head lice on scalp

Case Classification for Suspected, Probable, Confirmed:

<http://www.cdc.gov/parasites/lice/head/diagnosis.html>

4. **Specimen collection:**
 - **Specimen/test type** –visual identification of live lice or nit that is attached ¼ inch from base of hair shaft
5. **Incubation:** egg to first nymph is 7-10 days; nymphal stage is 9-12 days; total life cycle is 1 month
6. **Reservoir:** humans (source: infested person)
7. **Transmission:** direct contact with infected person and objects used by them

8. **Communicability:** as long as lice or eggs remain viable on infected person or fomites
9. Away from host, head lice last only 2 days and eggs last 7-10 days
10. **Risk Groups:** in those with direct contact of hair of infected person (commonly in children playing or slumber parties)

11. Treatment:

- Topical application of:
 - permethrin 1% (Nix-OTC)
ok in ages ≥ 2 months, kills only live lice not eggs, must repeat in 9 days
 - pipereonyl/pyrethrin (Rid-OTC)
ok in ages ≥ 2 years, kills only live lice not eggs, must repeat in 9 days
 - spinosad (Natroba-Rx)
ok in ages ≥ 6 months, kills live lice and eggs, do not retreat unless live lice still present 7 days after treatment
 - ivermectin (Sklice-Rx)
ok in ages ≥ 6 months, kills only live lice and nymphs, not eggs, do not retreat unless provider instructs.
 - benzyl alcohol (Ulefsia-Rx)
ok in ages ≥ 6 months, kills only live lice not eggs, must repeat in 9 days
 - malathion (Ovide-Rx)
ok in ages ≥ 6 years, kills live lice and eggs, do not retreat unless live lice still present 7-9 days after treatment.
Flammable-do not use hair dryer.
- Nit comb daily until all nits removed
- Do not use hair conditioner before applying treatment on scalp and do not wash hair for 2 days after treatment

Disease: Pediculosis (outbreak)

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Wash with hot water and hot dry cycle all bedding, hats, scarves, towels, etc.
- c. Follow Hollister and San Benito County school policies for exclusion from school

Contacts/Exposed

- a. Inspect scalp for live lice and nits
- b. Treat as case if live lice or nits present
- c. Treat household members prophylactically if share bedding, toilet articles, clothing, etc.
- d. Vacuum furniture, floors to remove infested person's hairs which may have viable nits attached.
- e. Avoid head to head contact with infected person

Public Health

- a. Complete and submit case report form (only if outbreak)
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies (day care, school, etc.) to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Educate public and schools about diagnosis, treatment and prevention

- Proper laundering of clothing, bedding, etc.
- Avoid head to head contact with infected person and with items that have been in contact with hair of infected person
- Importance of nit comb use
- Advise to check for nits for 2 weeks after treatment

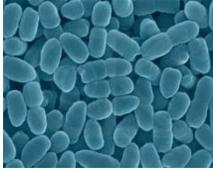
12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
- f. Contact to childcare center Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Pertussis



Pertussis bacteria

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/Pages/C-D-Report-Forms.aspx>

Highly contagious bacterial respiratory infection also known as whooping cough

1. **Agent:** *Bordetella pertussis* (gram negative pleomorphic bacillus) causing highly communicable, acute bacterial respiratory tract infection
2. **Symptoms:** catarrhal stage (cold-like symptoms for 1-2 weeks with worsening cough); paroxysmal stage (cough becoming paroxysmal within 1-2 weeks and lasting 1-2 months); paroxysms are characterized by repeated violent coughing without inhalation followed by high-pitched whoop often ending with mucus expulsion and vomiting. Fever is usually absent or minimal. *Complications include pulmonary hypertension, pneumonia, atelectasis, seizures, encephalopathy, death*

3. Case Definition and Classification:

Clinical Case Definition:

cough illness lasting ≥ 2 weeks, with at least one of these symptoms:

- paroxysms of coughing OR
- inspiratory whoop OR
- posttussive vomiting OR
- apnea (< 1 year old **Case**)

Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/pertussis/case-definition/2014/>

4. Specimen collection:

- **Specimen/test type** –nasopharyngeal swab (culture, PCR)
- **When** -during catarrhal & early paroxysmal

5. Incubation: average 9-10 days (range 6-20 days)

6. Reservoir: humans (source: respiratory tract secretions)

7. Transmission: person to person by aerosolized droplets from coughing/sneezing (sharing same airspace with infected person for ≥ 1 hour) or direct contact

8. Communicability: starting early catarrhal stage up to 21 days after start of paroxysms if untreated or up to 5 days after start of paroxysms if treated)

9. Risk Groups: all people who are not successfully immunized are susceptible. Highest incidence and highest risk of complications is in infants

10. Treatment:

- Antibiotic treatment with erythromycin, clarithromycin or azithromycin within first 3 weeks of cough onset (best if before paroxysmal stage)

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Hand hygiene, cough etiquette
- c. Exclude from school, work, public gatherings until completing 5 days of

Disease: Pertussis

antibiotic treatment for 21 days after onset of paroxysmal cough if no antibiotic

- d. Respiratory isolation for hospitalized patients; group exposed patients/staff onto same ward-no new admits of inadequately vaccinated patients until patients/staff complete 5 days of antibiotic prophylaxis

Contacts/Exposed

- a. Post-exposure Tdap or DTaP if immunization not up to date AND antibiotic prophylaxis with erythromycin, clarithromycin, or azithromycin of identified exposed, susceptible contacts
- b. Exclude, if unvaccinated, from school, day care, public gatherings for 21 days after last exposure or until case and contacts receive 5 days antibiotics and monitor for symptoms

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates, including mass vaccination, mass prophylaxis, social distancing, etc.
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*

f. Prevention/Education:

- Tdap, DTaP vaccination importance; vaccination of infant contacts; vaccination of all pregnant women with each pregnancy
- Avoid contact with cases

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Links to other cases
 - Date onset of cough
 - Date onset of paroxysms
 - Treatment with antibiotic
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Plague



Yersinia pestis bacteria

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8549.pdf>

Rare, flea-borne bacterial infection in humans causing serious illness or death. Pneumonic plague **has potential use as a bioterrorism weapon** due to ability for its deliberate release into the environment (aerosolized)

1. **Agent:** *Yersinia pestis*, gram negative bacillus
2. **Symptoms:** has 3 presentations. Initially all may present with fever, chills, malaise, myalgia, nausea, prostration, sore throat, headache. **Bubonic:** lymphadenitis in lymph nodes that drain site of flea bite, buboes **Septicemic:** bloodstream dissemination to diverse parts of body, endotoxic shock, disseminated intravascular coagulation; **Pneumonic:** pneumonia, mediastinitis, pleural effusion; respiratory droplets may serve as source. Highly communicable and possible bioterrorism weapon due to ability to aerosolize
3. **Case Definition and Classification:**

Clinical Case Definition:

Manifested by one of these: regional lymphadenitis; septicemia without evident bubo; plague pneumonia; pharyngitis, lymphadenitis

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/plague/case-definition/1996/>

4. **Specimen collection:**
 - **Specimen/test type** -blood, spinal fluid, sputum, fluid from buboes (culture)
 - **When** -as soon as possible
 - **Specimen/test type** -blood, sputum, lymph (microscopic smear)
 - **When** -as soon as possible
 - **Specimen/test type** -blood (serologic testing)
 - **When** -as soon as possible and 4-6 weeks after onset as well
5. **Incubation:** 1-7 days
6. **Reservoir:** wild rodents, domestic cats which are hosts to flea which is the vector. (source: blood, tissue from infected animal; respiratory droplets from infected animal or human; intentional release as bioterrorism agent)
7. **Transmission:** bubonic (flea bite or handling infected animal tissue); pneumonic (contact with droplets or sputum of infected patient or animal or intentional release as bioterrorism)
8. **Communicability:** human to human only in pneumonic form; fleas remain infective for months
9. **Risk Groups:** living in area with poor rodent sanitation, hunters, trappers, trekkers, veterinary staff, farmers
10. **Treatment:**
 - Hospitalize
 - Antibiotics for 10-14 days: streptomycin, fluoroquinolones,

Disease: Plague

- gentamicin, tetracycline, chloramphenicol
- <https://www.cdc.gov/plague/healthcare/clinicians.html>
- Incision, drainage of bubo

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Isolation if pneumonic plague
- c. Eliminate fleas in patient dwelling
- d. Treat clothing and baggage with insecticide
- e. Eliminate
- f. Drainage and secretion precautions
- g. Airborne precautions if pneumonic Plague
- h. Disinfect articles and surfaces contaminated with sputum, purulent discharges

Contacts/Exposed

- a. Antibiotic chemoprophylaxis and place under surveillance for 7 days
- b. Search for sick or dead rodents and their fleas and submit for laboratory analysis

Public Health

- ♦ Immediately call CDPH, CDC
 - ♦ Immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Highly Pathogenic CD protocols, including appropriate PPE. See: <http://www.cdc.gov/niosh/topics/anthrax/workers.html>
- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with EH and other

- Regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to *SBC PHS All Hazards Emergency Response Plan*
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. See *Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Educate public in prone areas about modes of exposure, transmission
 - Rodent-proofing buildings, protect food storage from rodents,
 - Avoid flea bites by using insecticides and repellents
 - Surveillance of high risk areas (testing fleas and rodents)
 - Wear gloves when hunting/handling wildlife
 - Veterinary precautions when examining sick cats

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

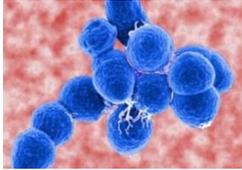
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age

Disease: Plague

- Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Method of travel (camping, hiking)
 - Contact with sick or dead animals
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Pneumococcal



Streptococcus pneumoniae

Requires Case Report
only if outbreak

Individual case NOT
reportable

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8554.pdf>

Pneumococcus bacterial infection of ear, lung, blood, brain but is the most common cause of community-acquired pneumonia. Increased incidence often seen with influenza epidemics

- 1. Agent:** *Streptococcus pneumoniae* (pneumococcus) (gram positive diplococcus) causing infection of the: ear, lung (pneumonia), blood (bacteremia), brain/spinal cord (meningitis)
- 2. Symptoms:** sudden onset high fever, rigors, pleuritic chest pain, dyspnea, tachypnea and cough with productive rusty sputum. Chest x-ray shows lobar or segmental consolidation. *Complications include empyema, acute respiratory distress syndrome, septic shock, purpura fulminans*

3 Case Definition and Classification:

Clinical Case Definition:

Various clinical syndromes depending on site of infection (for example pneumonia)

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/streptococcus-pneumoniae-drug-resistant-invasive-disease/case-definition/2007/>

4 Specimen collection:

- **Specimen/test type** -blood (culture, PCR)
- **Specimen/test type** -urine (antigen test)
- **When** -as soon as possible to identify pathogen

5 Incubation: 1-3 days

6 Reservoir: humans (source: respiratory tract secretions)

7. Transmission: person to person by droplet spread from coughing/sneezing

8. Communicability: until 24 hours after initiating effective antibiotic therapy; for as long as organism remains in respiratory secretions

9. Risk Groups: increased susceptibility among infants, elderly, chronically ill; those with influenza, pulmonary edema, aspiration, chronic lung disease, exposure to irritants (cigarettes, cooking fire smoke)

10. Treatment:

- antibiotic treatment (macrolides, doxycycline, fluoroquinolones); sensitivities of strains should be determined to guide treatment; see most recent guidelines for recommendations:
<http://www.thoracic.org/statements/sources/mtpi/idsaats-cap.pdf>

Disease: Pneumococcal

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Hand hygiene, cough etiquette
- c. Respiratory isolation for hospitalized patients with antibiotic-resistant infection

Contacts/Exposed

- a. In institutional outbreaks, consider vaccination with pneumococcal conjugate or 23-valent

Public Health

- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Prevnar and Pneumovax vaccination importance
 - Instruct institutions such as nursing homes to avoid crowded living quarters. Bedridden patients should lie in an upright position at 30-45-degree incline

- a. *Use Outbreak Investigation Checklist found in Appendix B*

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Daycare
 - Treatment with antibiotic
 - Links to other cases
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

- ### 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism
- Refer to Epidemiology Chapter*

Disease: Poliovirus



Poliovirus

Requires Case Report

Immediate via fax,
phone, email within 1
working day of
identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8421.pdf>

Highly infectious disease caused by an Enterovirus which invades the nervous system and may cause paralysis. Currently almost globally eradicated; contained to Afghanistan and Pakistan. All world labs asked to identify and destroy any polio specimens to prevent risk of wild-type virus escaping

1. **Agent:** *Poliovirus*, genus *Enterovirus*
2. **Symptoms:** acute viral illness; fever, headache, nausea, vomiting, stiffness in neck and back, flaccid paralysis that is usually asymmetric most commonly in lower extremities (poliomyelitis). Non-paralytic polio may also present at aseptic meningitis
3. **Case Definition and Classification:**

Clinical Case Definition:

Acute onset of flaccid paralysis of one or more limbs with decreased or absent tendon reflexes in the affected limbs, without other apparent cause, and without sensory or cognitive loss

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/nndss/conditions/poliomyelitis-paralytic/case-definition/2010/>

4. **Specimen collection:**
 - **Specimen/test type** -stool, throat swab (culture)
 - **When** -as soon as possible
 - **Specimen/test type** -blood (antibody serology)
 - **When** -take two samples: first one early in course and repeat 3 weeks later
5. **Incubation:** 7-14 days (range 3-35 days)
6. **Reservoir:** humans, especially in those with inapparent infections (source: pharyngeal secretions, feces)
7. **Transmission:** person-to-person via fecal-oral route or respiratory; mother to newborn
8. **Communicability:** days before and after onset of symptoms-for as long as virus is excreted; virus persists in throat for approximately 1 week and in feces for 3-6 weeks
9. **Risk Groups:** non-immunized; proximity to endemic areas
10. **Treatment:**
 - None
 - Supportive care during acute illness of complications of paralysis

Disease: Poliovirus

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Hospitalization
- c. Isolation
- d. Enteric precautions
- e. Respiratory precautions
- f. Disinfection of articles soiled with throat discharges, feces from infected case

Contacts/Exposed

- a. Identify family and other contacts
- b. Unvaccinated and incompletely immunized should receive inactivated polio vaccine (IPV) to complete required series
- c. Fully vaccinated may receive a booster dose of IPV

Public Health

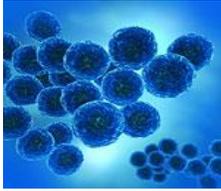
- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Recommendations for routine and booster polio vaccination doses.
 - Polio vaccine requirements for travelers to high risk areas

12. Epidemiology Investigation if suspect:

outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Psittacosis



Chlamydia

Requires Case Report

Immediate via fax,
phone, email within 1
working day of
identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrldForms/cdph8583.pdf>

Known as parrot fever, a bacterial infectious disease contracted from infected parrots, such as macaws, cockatiels and budgerigars, and pigeons, sparrows, ducks, hens, gulls and many other species of bird

1. **Agent:** *Chlamydia psittaci*, bacteria
2. **Symptoms:** acute onset fever, headache, myalgia, dry cough; rarely pleuritic chest pain and splenomegaly. Complications include: respiratory failure, hepatitis, endocarditis, encephalitis
3. **Case Definition and Classification:**

Clinical Case Definition:

fever, chills, headache, myalgia, dry cough; pneumonia often evident on chest x-ray. Endocarditis, hepatitis, and neurologic complications may occur

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/psittacosis/case-definition/2010/>

4. **Specimen collection:**
 - **Specimen/test type** -Blood, sputum, pleural fluid, tissue (for serologic testing)
 - **When**-during acute phase (as soon as possible after symptom onset) and

again during convalescent phase (2 weeks after onset)

5. **Incubation:** 1-4 weeks
6. **Reservoir:** birds, mainly of psittacine parrot family; less often other birds (source: dried bird droppings)
7. **Transmission:** inhalation of bird droppings, secretions, dust from feathers of infected birds; occupational exposure in processing plants; rare person-to-person
8. **Communicability:** rare person-to-person.
9. **Risk Groups:** elderly; occupational handling of birds; pet bird owners
10. **Treatment:**
 - Antibiotics: tetracyclines for 10-14 days; macrolides are alternative
 - Supportive care
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Cough hygiene
 - Contacts/Exposed**
 - a. Identify family and other contacts
 - b. Find bird source
 - Public Health**
 - a. Complete and submit case report form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with EH and other appropriate agencies to trace source, initiate investigation and implement control measures

Disease: Psittacosis

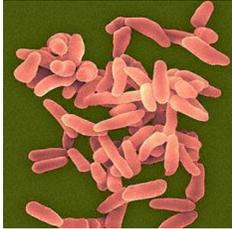
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Educate public and health care providers about symptoms, prevention, etc.
 - May need to quarantine infected farms (coordinate with Environmental Health)
 - Possible recommendation to treat or destroy infected birds
 - Surveillance of pet shops, farms, etc. where psittacosis has occurred or is suspected
- Contact with any known cases
- If source is pet bird, obtain date/place of bird acquisition
- If source is pet bird, obtain history of bird health
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

- a. *Use [Outbreak Investigation Checklist found in Appendix B](#)*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - History of bird ownership

Disease: Q Fever



Coxiella burnetii

Requires Case Report
Immediate via fax,
phone, email within 1
working day of
identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8548.pdf>

Bacterial infection from animals such as sheep, cattle, goats causing flu-like symptoms. *C. burnetii* **has potential use as a bioterrorism weapon** due to ability to be desiccated and deliberately released into the environment (aerosolized)

1. **Agent:** *Coxiella burnetii*, coccobacillus bacteria
2. **Symptoms:** acute fever, chills, headache, malaise, myalgia, sweats; pneumonitis may be found on chest x-ray; abnormal liver function tests. Complications include endocarditis, neurological syndrome, post infection fatigue syndrome
3. **Case Definition and Classification:**

Clinical Case Definition:

Acute fever, rigors, myalgia, malaise, severe retro bulbar headache, fatigue, night-sweats, dyspnea, confusion, nausea, diarrhea, abdominal pain, vomiting, non-productive cough, chest pain. Severe disease can include acute hepatitis, atypical pneumonia

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/q-fever/case-definition/2009/>

4. **Specimen collection:**
 - **Specimen/test type** –Blood (for serologic testing)
 - **When**-during acute phase (as soon as possible after symptom onset) and again during convalescent phase (2 weeks after onset)
5. **Incubation:** 3-30 days
6. **Reservoir:** sheep, cattle, goats (source: straw, wool, dust contaminated by infected animal; infected carcass; fetal/placental tissue and amniotic fluid of infected animal; unpasteurized milk)
7. **Transmission:** airborne dissemination in dust; direct contact with contaminated material; raw milk from infected animal
8. **Communicability:** rare person-to-person; bacteria may survive long periods in dry environment
9. **Risk Groups:** veterinarians, farmers, abattoir workers; persons with vascular disease, pregnancy, immunosuppression
10. **Treatment:**
 - Antibiotics: tetracyclines for 10-14 days
 - Supportive care
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. If endocarditis, surgical replacement of infected valve may be necessary
 - Contacts/Exposed**
 - a. Identify source
 - b. Disinfect clothing and environment

Disease: Q Fever

Public Health

- ◆ If suspect bioterrorism, immediately call CDPH, CDC
- ◆ If suspect bioterrorism, immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Highly Pathogenic CD protocols, including appropriate PPE
See:
<http://www.cdc.gov/niosh/topics/anthrax/workers.html>
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with EH and other Regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to **SBC PHS All Hazards Plan**
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Educate persons in high risk occupations
 - Restrict access to suspect areas of contamination
 - Dispose of animal birth fluid/material appropriately
 - Educate on importance of pasteurized milk
 - Discuss/consider vaccine for high risk workers. Commercial vaccine

- only available in Australia-need skin sensitivity testing before administering
- Consider surveillance program for high risk workers

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Exposure to animal by-products
 - Contact with any known cases
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Rabies



Lyssavirus

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8526.pdf>

Viral infection spread from saliva of infected animals to humans, causing acute infection of central nervous system

1. **Agent:** *Lyssavirus* of family Rhabdoviridae
2. **Symptoms:** headache, fever, malaise, sensory changes at site of bite, excitability, hydrophobia, spasms of swallowing muscles, delirium, convulsions, coma, death
3. **Case Definition and Classification:**

Clinical Case Definition:

acute encephalomyelitis that almost always progresses to coma or death within 10 days after the first symptom

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/nndss/conditions/rabies-human/case-definition/2011/>

4. **Specimen collection:**
 - **Specimen/Test type** –saliva, skin (PCR)
 - **When**-as soon as possible
 - **Specimen/Test type** –serum, CSF (antibodies to rabies virus)
 - **When**-as soon as possible

5. **Incubation:** few days to 1 year (usual 3-8 weeks)
6. **Reservoir:** mammals including dog, fox, coyote, wolf, skunk, raccoon, bat (source: saliva from infected animal entering bite wound or scratch on human)
7. **Transmission:** by bite or lick; ingestion of infected material; inhalation of contaminated air; transplants of infected organs/tissues
8. **Communicability:** in dogs and cats 3-10 days before onset of symptoms throughout course of disease
9. **Risk Groups:** veterinarians, animal control, researchers, kennel staff
10. **Treatment:**
 - Intensive supportive care if patient has active clinical disease
 - See below for post-exposure prophylaxis
11. **Control Measures:**

Case

 - a. Treatment-see #10 above
 - b. HCP contacts and submits Bite Form to EH and Animal Control (HCP's have bite form in office and ER)
 - c. Clean and flush wound immediately with soap and water, then 70% ethanol, tincture of iodine or povidone iodine
 - d. Disinfection of saliva, soiled articles
 - e. Contact precautions
 - f. If patient not showing active disease but HCP determines patient is at risk, give post-exposure prophylaxis as follows:

Disease: Rabies

- If no previous rabies vaccination, administer rabies immune globulin (HRIG) directly into and around wound then rabies vaccine IM (days 0, 3, 7, 14) into deltoid or antero-lateral thigh.
- If previous rabies vaccination, administer only rabies vaccine IM (days 0 and 3)
- g. Also give tetanus booster if greater than 5 years since last tetanus vaccine.

Contacts/Exposed

- a. If person has contact with saliva from patient with active disease, then administer post-exposure prophylaxis

Public Health

- ♦ Immediately call CDPH, CDC
- ♦ HCP (not SBC PH) contacts and submits Bite Form to EH and Animal Control to coordinate control measure and animal quarantine.
- ♦ HCP may contact HO for consultation on whether to prophylax bite patient.
- a. Complete and submit Case Report Form if active rabies case
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with EH, Animal Control and Other Regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to *SBC PHS All Hazards Emergency Response Plan*
- e. Follow risk communication procedures

for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk*

Communication in SBC All Hazards Plan

f. Prevention/Education:

- Vaccinate dogs and cats; educate public on pet-owner responsibilities
- Report all animal bites to animal control
- Animals demonstrating strange behavior must be reported to animal control
- Do not handle sick or strangely behaving animals, especially bats
- Do not handle wildlife
- Animal quarantine instructions
- Educate healthcare providers regarding universal precautions for saliva of infected patient

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

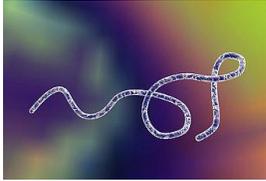
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date first bitten
 - Date animal began showing abnormal Behavior
 - identification and location of animal and owner
 - Vaccination status of biting animal

Disease: Rabies

- Vaccination history of case and contacts
- History of organ or tissue transplant
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Relapsing Fever



Borrelia recurrentis

Requires Case Report

Immediate via fax,
phone, email within 1
working day of
identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8561.pdf>

Tick or louse-borne bacterial infection causing recurring fever, headache, muscle, joint ache, nausea

1. **Agent:** *Borrelia recurrentis* (louse-borne), other *Borrelia* (tick-borne) spirochete bacteria
2. **Symptoms:** periods of fever lasting 2-7 days alternating with afebrile periods 4-14 days, headache, myalgia, arthralgia, shaking chills, GI pain

3. Case Definition and Classification:

Clinical Case Definition:

One or more episodes of fever lasting 2-7 days separated by afebrile periods lasting 4-14 days often with headache, muscle and joint ache, nausea

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8561.pdf>

4. **Specimen collection:**
 - **Specimen/Test type** –blood (microscopic smear)
 - **When**–most sensitive during febrile period

5. **Incubation:** louse-borne 8 days (range 5-15 days); tick-borne 7 days (range 2-18 days)
6. **Reservoir:** louse-borne (humans); tick-borne (rodents)
7. **Transmission:** by lice (crushing infected louse over wound or abrasion) or tick bite; no person-to-person
8. **Communicability:** louse is infected 4-5 days after ingesting blood of infected person and remains so for life (20-30 days); tick remains infective for years
9. **Risk Groups:** living in endemic area with crowded and poor sanitary conditions; sharing bedding, clothing; fetus of infected mother
10. **Treatment:**
 - Antibiotic- tetracycline, doxycycline, or erythromycin for 7 days

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Blood/body fluid precautions
- c. Case, clothing, contacts, immediate environment must be deloused or freed of ticks

Contacts/Exposed

- a. Identify source of infection
- b. Delouse and treat if become infested
- c. Consider post-exposure prophylaxis with antibiotic when at high risk of infection

Disease: Relapsing Fever

Public Health

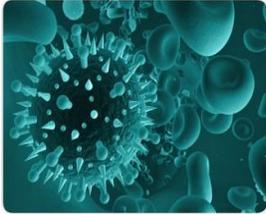
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Control lice or tick population-use insecticide if necessary
 - Control rodent population
 - Use protective clothing, repellent on clothing and bedding if in endemic area
 - Consider post-exposure prophylaxis

- Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation
 - Place of residence and travel history
 - Date of insect and tick bites
 - exposure to rodents
 - date of onset of illness
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials

Disease: Respiratory Syncytial Virus



Respiratory Syncytial virus

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification
(death in < 5 years old)

<https://www.cdph.ca.gov/pubsforms/forms/CtrlIdForms/cdph8265.pdf>

Viral infection of lung and respiratory tract causing respiratory illness

- 1. Agent:** Respiratory Syncytial virus, family *Paramyxoviridae*, subfamily *Pneumovirinae*
- 2. Symptoms:** runny nose, decreased appetite, coughing, sneezing, fever, wheezing. May cause bronchitis, croup, bronchiolitis, pneumonia
- 3. Case Definition and Classification:**

Clinical Case Definition:

Cold-like illness, fever

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/rsv/clinical/index.html>

- 4. Specimen collection:**
 - Specimen/test type** –respiratory specimens (Antigen detection, culture)
 - When** –as soon as possible
- 5. Incubation:** 4 to 6 days (range 2-8 days)
- 6. Reservoir:** humans (source: respiratory secretions)
- 7. Transmission:** virus-containing droplets in air from cough or sneeze come into contact

with other person nose, mouth, eye; also through direct or indirect contact with nasal secretions of infected people (kissing, surfaces. RSV can live on hard surfaces for several hours

- 8. Communicability:** 3 to 8 days.
- 9. Risk Groups:** most common in children
- 10. Treatment:**
 - No specific treatment
 - Supportive care

11. Control Measures:

Case

- Treatment-see #10 above
- For severe cases, supplemental oxygen, suction mucous
- Minimize exposure to others

Contacts/Exposed

- Frequent hand washing
- Clean environmental surfaces
- Minimizes exposure to case

Public Health

- Complete and submit case report form
- Complete contact investigation. Use contact investigation section on Case Report Form
- Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- HO will issue orders, Health Alerts/ Advisory/ Updates
- Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk*

Disease: Respiratory Syncytial Virus

Communication in SBC All Hazards Plan

f. Prevention/Education:

- Educate about hand washing
- Educate about cleaning environmental surfaces

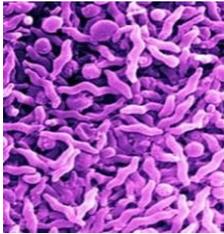
**12. Epidemiology Investigation if suspect:
outbreak (2 or more cases from common
source), high priority disease, bioterrorism**

Refer to Epidemiology Chapter

**a. *Use Outbreak Investigation Checklist
found in Appendix B***

- b.** Establish case definition –see #3 above
- c.** Confirm etiology using lab data and identify mode of transmission
- d.** Conduct contact investigation (if food or water borne, coordinate with EH)
- e.** Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Daycare
- f.** Create an epi-curve, by date of onset. Include only those that meet the case definition
- g.** Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h.** Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Rocky Mountain Spotted Fever



Rickettsia rickettsii

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/v/pubsforms/forms/ControlForms/cdph8575.pdf>

Tick-borne bacterial infection causing potentially severe and fatal illness

1. **Agent:** *Rickettsia rickettsia*, coccobacillus bacteria
2. **Symptoms:** sudden onset fever, malaise, deep muscle pain, severe headache, chills, conjunctival injection, rash on 3rd to 5th day (including on palms and soles of feet in 30% of cases), vasculitis, end organ damage
3. **Case Definition and Classification:**

Clinical Case Definition:

acute onset of fever, headache, malaise, myalgia, nausea/vomiting, or neurologic signs; a maculopapular rash appears 4-7 days following onset, often presenting on the palms and soles

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/rocky-mountain-spotted-fever/case-definition/2008/>

4. **Specimen collection:**
 - **Specimen/Test type** –blood (Antibody)
 - **When**-during acute phase (first week of illness) and again during convalescent phase (3-4 weeks after acute illness)
 - **Specimen/Test type** –blood (PCR)
 - **When**-during acute phase before antibiotic
 - **Specimen/Test type** –skin biopsy (stain or PCR)
 - **When**-acute phase before antibiotic
5. **Incubation:** 2-21 days
6. **Reservoir:** tick
7. **Transmission:** tick bite; contamination of breaks in skin with crushed tick
8. **Communicability:** not person-to-person; tick infective for life
9. **Risk Groups:** young age, elderly, alcoholism, G6PD deficiency, immunocompromised
10. **Treatment:**
 - Antibiotic- doxycycline for 5-7 days; alternative is chloramphenicol
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Remove all ticks
 - Contacts/Exposed**
 - a. Check for ticks on body
 - b. Treat if become febrile
 - c. Eradicate ticks in home, yard, pets

Disease: Rocky Mountain Spotted Fever

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Control tick population-use insecticide if necessary
 - Remove attached or crawling ticks immediately after exposure
 - Use protective clothing, repellent on clothing and bedding if in endemic area
 - Prevent exposure of domestic animals to ticks

- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation
 - Place of residence and travel history
 - Travel 30 days prior to symptom onset
 - History of tick bite
 - History of possible exposure to tick bite
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)

Disease: Rubella



Rubella virus

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/v/pubsforms/forms/CtrldForms/pm358.pdf>

Acute contagious viral infection, also known as German Measles, with potentially serious consequences in pregnant women causing fetal congenital syndrome

1. **Agent:** Rubella virus, family *Togaviridae*, genus *Rubivirus*
2. **Symptoms:** fever, malaise, headache, conjunctivitis, maculopapular rash. Postauricular, occipital and posterior cervical lymphadenopathy commonly precedes rash by 5-10 days

3. Case Definition and Classification:

Clinical Case Definition:
fever, malaise, headache, conjunctivitis, maculopapular rash. Postauricular, occipital and posterior cervical lymphadenopathy commonly precedes rash by 5-10 days. Laboratory confirmation needed because clinical diagnosis often inaccurate

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/rubella/>

4. Specimen collection:

- **Specimen/Test type** –blood (IgM)
- **When**–within 28 days of rash onset

- **Specimen/Test type** –blood (IgG)
- **When**–as soon as possible and again in 2-3 weeks to check for 4-fold rise in IgG titer

- **Specimen/Test type** –blood (RT-PCR)
- **When**–as soon as possible

5. **Incubation:** 14-17 days (range 14-21)

6. **Reservoir:** humans (nasopharyngeal secretions, blood, urine)

7. **Transmission:** contact with nasopharyngeal secretions of infected people; droplet spread; transplacental mother to fetus

8. **Communicability:** 1 week before and at least 4 days after onset of rash.; infants with congenital rubella syndrome may shed virus for up to 1 year after birth

9. **Risk Groups:** unprotected infants

10. Treatment:

- None
- Supportive care

11. Control Measures:

Case

- a. Treatment–see #10 above
- b. Droplet isolation precaution
- c. Prevent exposure to nonimmune pregnant women
- d. Exclude from work or school for 7 days after rash onset

Disease: Rubella

Contacts/Exposed

- a. Identify pregnant contacts, test and counsel accordingly. Goal is to prevent Congenital Rubella Syndrome
- b. Vaccinate susceptible persons
- c. Maintain active surveillance for 2 incubation periods after case's infectious period
- d. Exclude unimmunized contact from school from 7 days after first exposure to 23 days after last exposure to last reported case unless show proof of rubella immunity
- e. Consider IG IM within 72 hours of rubella exposure in high risk susceptible persons, such as pregnant women

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates, including mass vaccination, mass prophylaxis, social distancing, etc.
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Measles (MMR) vaccination importance
 - Avoid contact with cases

- Educate public on modes of transmission to minimize exposure/contact

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of rash
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Prior immunization history
 - Links to other cases
 - Contacts who are pregnant
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Salmonellosis



Salmonella (nontyphoidal)

Requires Case Report

Immediate via fax,
phone, email within 1
working day of
identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8640.pdf>

Bacterial infection caused by contaminated food or water. It is one of the most common food-borne diseases

1. **Agent:** *Salmonella* bacteria, gram negative bacillus
2. **Symptoms:** Sudden onset diarrhea, abdominal pain, fever, nausea, vomiting, dehydration. Diarrhea may be bloody and may persist for several days
3. **Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

variable severity commonly manifested by diarrhea, abdominal pain, nausea, and sometimes vomiting. Asymptomatic infections may occur, and the organism may cause extraintestinal infections.

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/nndss/conditions/salmonellosis/case-definition/2012/>

4. **Specimen collection:**
 - **Specimen/Test type** –stool (culture)
 - **When**-during acute stage of illness
5. **Incubation:** 6-72 hours (usually 12-36)

6. **Reservoir:** domestic and wild animals including poultry, reptiles, amphibians, swine, cattle, rodents (source: feces, undercooked meat); raw/undercooked eggs; humans (feces); feces-contaminated water or food including fresh produce
7. **Transmission:** fecal-oral route (ingestion of contaminated food or water, direct contact)
8. **Communicability:** throughout course of infection and as long as organisms are excreted-usually 2-5 weeks, but may last months to years
9. **Risk Groups:** infants, elderly, immunosuppressed, persons with: achlorhydria, antacid treatment, GI surgery, prior or current antimicrobial therapy
10. **Treatment:**
 - None if uncomplicated case
 - Rehydration, electrolyte replacement if needed
 - Antibiotics if more severe case or at high risk: ciprofloxacin, ampicillin, amoxicillin
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Collect patient stool specimens
 - c. Enteric precautions
 - d. Exclude from sensitive occupation (food handler, child or patient care provider, etc.) until 2 consecutive negative stool cultures collected not less than 24 hours apart. If antibiotic started, first culture taken at least 48 hours after last dose
 - e. Disinfection of soiled articles

Disease: Salmonellosis

Contacts/Exposed

- a. Culture stool of household contacts who are involved in food handling, direct patient care, daycare

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Food safety (thoroughly cooking, refrigeration, etc.)
 - Importance of handwashing
 - Avoid high risk foods
 - Risk from pets

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)

- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Specific food history prior to onset, including location
 - Specific restaurant history prior to onset
 - Exposure to others with diarrhea in or out of household
 - Contact with pets
 - Water source usage
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Scabies (outbreak)



Sarcoptes scabiei mite

Requires Case Report
only if outbreak

Individual case NOT
reportable

<https://www.cdph.ca.gov/v/pubsforms/forms/CtrlForms/cdph8554.pdf>

Itchy skin disorder caused by a human parasite (mite) which can be passed from one person to another

1. **Agent:** *Sarcoptes scabiei*, a mite
2. **Symptoms:** intense itching (due to IgE allergic reaction), lesions prominent around finger webs, anterior wrists, elbows, axillary folds, belt line, thighs, nipples, abdomen, lower buttocks

3. Case Definition and Classification:

Clinical Case Definition:

typical appearance/distribution of rash and presence of burrows.

Detection of mite or mite eggs

Case Classification for Suspected, Probable, Confirmed:

<http://www.cdc.gov/parasites/scabies/diagnosis.html>

4. **Specimen collection:**
 - **Specimen/Test type** –identification of mite, eggs or mite feces taken from a burrow on skin (microscopic).
 - **When**–as soon as possible
5. **Incubation:** 2-6 weeks if no previous exposure; 1-4 days if previously infested
6. **Reservoir:** human (infested human or fomite)

7. **Transmission:** direct or indirect contact

8. **Communicability:** until mites and eggs destroyed by treatment usually after 1 or 2 treatments (1 week apart)

9. **Risk Groups:** household members, sexual partners of infested person; those living in close conditions with infested person (e.g. nursing home, daycare)

10. Treatment:

- Topical application of:
 - permethrin 1% (Nix-OTC)
ok in ages \geq 2 months, kills only live lice not eggs, must repeat in 9 days
 - crotamiton 10% (Eurax-Rx)
ok in adults only, frequent treatment failureTopical agents are applied from neck down to toes, left on for prescribed time (usually overnight), then washed off. Itching may persist for 1-2 weeks
- oral use of:
 - ivermectin (Stromectol-Rx)
not proven safe in children or pregnant women; not FDA approved for scabies; use if patient failed topical treatment; must repeat dose in 7-14 days

11. Control Measures:

Case

- a. Treatment–see #10 above
- b. Disinfest clothing, bedding using hot cycles of washer and dryer
- c. Exclude infested case from work/school until day after treatment
- d. For hospitalized patients, contact isolation for 24 hours after start of treatment

Disease: Scabies (outbreak)

Contacts/Exposed

- a. Treat contacts who have had skin to skin contact with infested case to prevent infestation
- b. Segregate infested cases if possible when living in close conditions

Public Health

- a. Complete and submit case report form (only if outbreak)
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies (day care, school, etc.) to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Educate public and schools about diagnosis, treatment and prevention
 - Proper laundering of clothing, bedding, etc.
 - Educate about mode of transmission, recognizing early signs and symptoms and treatment as soon as possible

found in Appendix B

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
- f. Contact to childcare center Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. **Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist*

Disease: Shigellosis



Shigella bacteria

Requires Case Report

Immediate via fax,
phone, email within 1
working day of
identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForms/cdph8554.pdf>

Bacterial infection causing intestinal disease, also known as bacillary dysentery

1. **Agent:** *Shigella* bacteria, gram-negative bacillus anaerobic. Four subgroups: A (*dysenteriae*), B, C, D

2. **Symptoms:** loose stools, fever, nausea, toxemia, vomiting, cramps, tenesmus. Stools may contain blood and mucus

3. **Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:

diarrhea, fever, nausea, cramps, and tenesmus. Asymptomatic infections may occur

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/shigellosis/case-definition/2012/>

4. **Specimen collection:**

- **Specimen/Test type** –feces/rectal swabs
- **When**-as soon as possible

5. **Incubation:** 1-3 days (range 12-96 hours)

6. **Reservoir:** human (feces)

7. **Transmission:** fecal oral; person to person; contact with contaminated object; ingestion contaminated food or water; certain sexual practices

8. **Communicability:** during acute infection and until infectious agent no longer present in feces (4 weeks)

9. **Risk Groups:** children, elderly, debilitated, malnourished; outbreaks in crowded conditions; among men who have sex with men

10. **Treatment:**

- Fluid and electrolyte replacement
- Antibiotics according to local susceptibility

11. **Control Measures:**

Case

- Treatment-see #10 above
- Enteric precautions
- Exclude from sensitive occupation (food handler, child or patient care provider, etc.) until negative fecal samples
- Case to avoid recreational water use while symptomatic
- Importance of handwashing
- Do not prepare food while sick
- Disinfection of contaminated articles
- Avoid sex until 2 weeks after recovery; wash body and hands before and after sex; use barriers to reduce exposure during sex

Contacts/Exposed

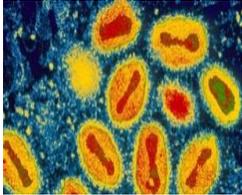
- Exclude ill contacts from food handling, caring for children or patients until diarrhea stops and negative fecal samples
- Teach about importance and effectiveness of handwashing

Disease: Shigellosis

Public Health

- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Educate about hygiene and hand washing
 - Avoid swallowing recreational water
 - Wash raw fruits and vegetables thoroughly
 - Proper food handling and sanitary storage
 - Properly prepare infant formula
 - Use condoms and other barriers during sex
 - Wash body and hands after sex
- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
- a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Specific food history prior to onset, including location
 - Specific restaurant history prior to onset
 - Exposure to others with diarrhea in or out of household
 - Source of water, food
 - Attendance at group gathering
 - Recreational water use
 - Colonic irrigation
 - Sexual contacts within incubation period
 - f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Smallpox



Variola virus

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8554.pdf>

Highly contagious viral infection causing disfiguring and deadly disease. Naturally occurring smallpox has been eradicated. Currently exists in only designated laboratories for research purposes. **Smallpox has potential use as a bioterrorism weapon**

1. **Agent:** *Variola virus*, family *orthopoxvirus*
2. **Symptoms:** prodrome sudden onset high fever, malaise, headache, prostration, severe backache for 2-4 days followed by rash (stages: macules, papules, vesicles, pustules, crusted scabs in 14 days) first appearing on face and extremities, then trunk
3. **Case Definition and Classification:**

Clinical Case Definition:

acute onset of fever $\geq 101^{\circ}\text{F}$ ($\geq 38.3^{\circ}\text{C}$) followed by a rash characterized by firm, deep seated vesicles or pustules in the same stage of development without other apparent cause.

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/smallpox/case-definition/2004/>

4. **Specimen collection:**
Testing to be done by CDPH VRDL and CDC laboratories-call for specific instructions see:
<http://emergency.cdc.gov/agent/smallpox/lab-testing/>
 - **Specimen/Test type** –blood (PCR)
 - **When**-as soon as possible
 - **Specimen/Test type** –pustular vesicular or scab fluid (culture)
 - **When**-as soon as possible
 - **Specimen/Test type** –blood (electron microscopy)
 - **When**-as soon as possible
5. **Incubation:** 7-19 days
6. **Reservoir:** human (macules, papules, vesicles, pustules, scabs)
7. **Transmission:** via respiratory tract (droplet spread) or skin inoculation; conjunctivae; placenta
8. **Communicability:** from earliest sign of rash to disappearance of all scabs (3 weeks)
9. **Risk Groups:** smallpox research scientists
10. **Treatment:**
 - None
 - Supportive treatment
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Isolation for duration of disease

Disease: Smallpox

Contacts/Exposed

- a. Identify and interview each contact
- b. Vaccinate contact if asymptomatic: live virus vaccine available from CDC
- c. Surveillance of contact
- d. Isolate contact if fever develops

Public Health

- ◆ Immediately call CDPH, CDC
 - ◆ Immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Highly Pathogenic CD protocols, including appropriate PPE. See: <http://www.cdc.gov/niosh/topics/anthrax/workers.html>
- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with other regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to *SBC PHS All Hazards Emergency Response Plan*
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. See *Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Transmission and communicability
 - Precautions for handling case's clothing, bedding, linen, eating utensils

- Decontamination of household surfaces

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Attendance at group gathering
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Streptococcal, Group A



Streptococcus pyogenes

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification
**(for outbreaks and for
individual cases in food
handlers/dairy workers)**
[https://www.cdph.ca.gov/
pubsforms/forms/CtrlDFor
ms/cdph8554.pdf](https://www.cdph.ca.gov/pubsforms/forms/CtrlDFor.ms/cdph8554.pdf)

Bacterial infection causing range of illness from skin infection or sore throat to invasive life-threatening conditions

1. **Agent:** *Streptococcus pyogenes*, gram positive, beta-hemolytic bacteria
2. **Symptoms:** pharyngitis (sudden onset fever, sore throat, enlarged cervical lymph nodes), tonsillitis, skin infections (impetigo), scarlet fever (rash, enanthem, strawberry tongue, exanthema), cellulitis, wound infections, erysipelas, otitis media, pneumonia, septicemia, necrotizing fasciitis, toxic shock syndrome

3. Diagnosis /Case Classification:

Clinical Case Definition:

may manifest as: pneumonia, bacteremia in association with cutaneous infection; deep soft-tissue; meningitis; peritonitis; osteomyelitis; septic arthritis; sepsis

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/streptococcus-disease-invasive-group-a/case-definition/1995/>

4. **Specimen collection:**
 - **Specimen/test type** -throat swab (rapid antigen, culture)
 - **When** –as soon as possible

5. **Incubation:** 1-3 days for pharyngitis; 7-10 days for impetigo
6. **Reservoir:** humans (source: discharge from nose, throat, lesions, scabs)
7. **Transmission:** direct contact with infected patients; also through large respiratory droplets
8. **Communicability:** highest during acute phase and in untreated cases of pharyngitis; non-infectious within 24 hours of starting antibiotic treatment
9. **Risk Groups:** patients with skin breakdown (burns, wounds); those with chronic disease; elderly; school age children
10. **Treatment:**
 - Antibiotics for at least 10 days (penicillin or alternatives: erythromycin, clindamycin, cephalosporins) to avoid development of rheumatic heart disease
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Exclude from sensitive occupation or school until at least 24 hours after beginning antibiotic and afebrile
 - c. Drainage/secretion precautions until after 24 hours of antibiotic
 - d. Concurrent disinfection of discharges and soiled articles
 - e. Long term penicillin prophylaxis in patients with acute rheumatic fever

Disease: Streptococcal, Group A

Contacts/Exposed

- a. Culture symptomatic contacts
- b. If symptomatic, exclude from sensitive occupation or school as with case
- c. If asymptomatic, daily surveillance until case released or 3 days after contact broken
- d. Mass prophylaxis may be considered in special groups (newborn nurseries, military, etc.)

Public Health

- a. Complete and submit case report form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with appropriate agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Stress handwashing, personal hygiene
 - Investigate promptly to identify common sources
 - Prepare, store, refrigerate food properly
 - Disinfect articles contaminated with purulent discharges and dispose of appropriately
 - Educate public on modes of transmission

12. **Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
 - a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)
 - e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Daycare
 - Symptoms (evidence of virulent strain)
 - f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Syphilis



Treponema pallidum

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

[https://www.cdph.ca.gov/
pubsforms/forms/CtrlldFor
ms/cdph9063.pdf](https://www.cdph.ca.gov/Programs/OPA/Pages/P09063.aspx)

Highly contagious bacterial infection spread by sexual contact with potentially serious complications if untreated

1. **Agent:** *Treponema pallidum*, a spirochete bacteria
2. **Symptoms:** primary stage characterized by chancre ulcer at site of exposure; secondary stage occurs several weeks after primary as macular-to-papulosquamous skin lesion on trunk, palms, soles, mucous patches in mouth, condyloma lata on genital area, fever, sore throat, malaise; untreated cases go to latent infection for years with 1/3 into tertiary stage which may include CNS, musculoskeletal, cardiac manifestations

3. Case Definition and Classification:

Clinical Case Definition:

See CDC definitions for all stages:
latent, late, primary, secondary

**Case Classification for Suspected,
Probable, Confirmed:**

[https://wwwn.cdc.gov/nndss/conditi
ons/syphilis/case-definition/2014/](https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2014/)

*Presumptive diagnosis requires two
tests: nontreponemal (VRDL) and
treponemal*

see:

[https://www.cdc.gov/std/tq2015/syp
hilis.htm](https://www.cdc.gov/std/tq2015/syphilis.htm)

4. Specimen collection:

- **Specimen/Test type** –blood
- **When**-as soon as possible
- **Specimen/Test type** –lesion exudate (microscopy smear) or (PCR)
- **When**-if primary lesions appear

5. Incubation: 10 days to 3 months (usually 3 weeks)

6. Reservoir: human (lesions)

7. Transmission: direct contact with lesions from infected person through sexual contact; blood transfusion; mother to fetus

8. Communicability: until end of early latent period (approx.. 2 years after infection)

9. Risk Groups: persons with multiple sex partners; persons with other diagnosed sexually transmitted infections (including HIV); commercial sex workers, MSM

10. Treatment:

- Parenteral long-acting penicillin: IM benzathine penicillin G

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Test for other sexually transmitted infections (STI's), particularly HIV
- c. Use universal precautions when coming into contact with blood, lesions, other body fluids of infected case
- d. Abstain from sexual contact until treatment complete and lesions gone
- e. Sexual partners of case must also be treated

Disease: Syphilis

Contacts/Exposed

- a. Identify sexual contacts of case to test and treat
- b. Encourage to obtain HIV counseling and testing

Public Health

- a. Complete and submit Case Report Form
- b. Contact partners to inform about testing and treatment and complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with schools, day care centers, to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates as needed
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education**
 - Educate about decreasing risk by having monogamous partnerships and practicing safe sex
 - Healthcare providers should screen for syphilis in presence of other STI's, including HIV
 - Screen pregnant women in first trimester

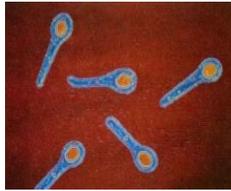
found in Appendix B

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Treatment
 - Sexual partners notified
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. **Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist*

Disease: Tetanus



Clostridium tetani

Requires Case Report

Standard via fax, phone, email within 7 working days of identification

<https://www.cdph.ca.gov/pubsforms/forms/Documents/CDC-Appendix18-Tetanus.pdf>

Acute bacterial infection characterized by muscle spasms. Also known as lockjaw

- 1. Agent:** Exotoxin of *Clostridium tetani*, a gram positive bacillus
- 2. Symptoms:** painful muscle contractions primarily of masseter and neck muscles, secondarily of trunk muscles; extreme hyperextension of body; rigidity of abdomen or region of injury

3. Case Definition and Classification:

Clinical Case Definition:

Acute illness with muscle spasms or hypertonia

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/nndss/conditions/tetanus/case-definition/2010/>

- 4. Specimen collection:**
 - No confirmatory laboratory tests available
- 5. Incubation:** 3 to 21 days
- 6. Reservoir:** spores are normal flora found in environment (soil, feces, sutures, injection drug use)

- 7. Transmission:** spores enter body through: a wound, injection of contaminated drugs, unhygienic surgery, umbilical stump
- 8. Communicability:** not human to human
- 9. Risk Groups:** persons at increased risk of traumatic or puncture injury
- 10. Treatment:**
 - Dose of Tetanus toxoid vaccine (Td, Tdap, DTaP)
 - Also dose of tetanus immune globulin (TIG) if not previously immunized
 - Antibiotic (metronidazole) for 7-14 days

11. Control Measures:

Case

- Treatment-see #10 above
- Adequate airway
- Muscle relaxants, sedatives
- Wound debridement

Contacts/Exposed

- Not applicable

Public Health

- Complete and submit Case Report Form
- Complete contact investigation. Use contact investigation section on Case Report Form
- Coordinate with EH and other agencies to trace source, initiate investigation and implement control measures
- HO will issue orders, Health Alerts/ Advisory/ Updates including orders as needed
- Follow risk communication procedures

Disease: Tetanus

for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*

f. Prevention/Education:

- Educate about importance of complete vaccination and boosters every 10 years
- Educate about injury prevention and care
- Prenatal immunization of mother
- Teach aseptic care of umbilical cord stump to those caring for newborn

Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE

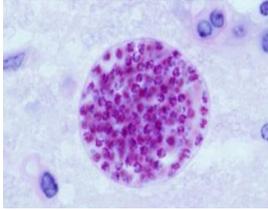
- h.** Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism
Refer to Epidemiology Chapter

a. *Use Outbreak Investigation Checklist found in Appendix B*

- b.** Establish case definition –see #3 above
- c.** Confirm etiology using lab data and identify mode of transmission
- d.** Conduct contact investigation (if food or water borne, coordinate with EH)
- e.** Create line list that could include:
- Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - History of IV drug use
 - Recent surgical procedure
- f.** Create an epi-curve, by date of onset. Include only those that meet the case definition
- g.** Maintain surveillance for new cases

Disease: Toxoplasmosis



Toxoplasma gondii,

Requires Case Report
only if outbreak

Individual case NOT
reportable

<https://www.cdph.ca.gov/pubsforms/forms/CtrldForms/cdph8554.pdf>

Parasitic disease with most potential for harm in pregnant women and immunocompromised persons. Cats play important role in spreading this disease

1. **Agent:** *Toxoplasma gondii*, coccidian protozoa, family *sarcocystidae*, class *Sporozoa*
2. **Symptoms:** fever, lymphadenopathy, lymphocytosis, rash, pneumonia, headache, skeletomuscular, myocarditis; in pregnant women may cause stillbirth
3. **Case Definition and Classification:**

Clinical Case Definition:

Flu-like symptoms which may last weeks to months; fever, confusion, headache, nausea, seizures

Case Classification for Suspected, Probable, Confirmed:

http://www.cdc.gov/parasites/toxoplasmosis/health_professionals/index.h

4. **Specimen collection:**
 - **Specimen/test type** –blood (IgG, IgM)
 - **When** –first sample as soon as possible; second sample two weeks after first. Note, in congenital cases, test both mother and infant
5. **Incubation:** 5 to 23 days

6. **Reservoir:** most commonly cats but may include other animals (cat feces, infected raw meat, soil contaminated with animal feces)
7. **Transmission:** transplacental; cats shedding oocysts; ingesting raw/undercooked meat; ingesting/inhaling infective oocysts from other sources such as: sand boxes, playgrounds, yards, contaminated water
8. **Communicability:** infective oocysts may survive for over 1 year in water, soil, etc.; in raw meat for as long as meat is edible and uncooked
9. **Risk Groups:** pregnant women; immunocompromised, including HIV patients
10. **Treatment:**
 - Combo of: Pyramethamine, sulfadiazine, folic acid for severe symptomatic cases
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. If ocular disease, treat accordingly
 - c. AID patients who have had Toxoplasmosis, must receive life-time prophylaxis with pyramethamine, sulfadiazine, folic acid.
 - Contacts/Exposed**
 - a. Determine antibody levels in mother and infant
 - b. Determine antibody levels in household contacts with common exposure to cat feces, soil, untreated water, raw meat, unwashed vegetables

Disease: Toxoplasmosis

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates as needed
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Educate pregnant women about: thoroughly cooked meat; washing or peeling fruits and vegetables; avoiding changing cat litter; wearing gloves when gardening; washing hands thoroughly
 - Educate public about washing hands thoroughly before eating and after handling raw meat or contact with soil
 - Dispose of cat feces and litter daily
 - Control stray cats
 - Keep sandboxes covered when not in use
 - Avoid drinking untreated water

found in Appendix B

- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Contact with animal or feces, especially cats
 - History of ingesting raw or undercooked meat
 - Type of cat food
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist*

Disease: Trichinosis



Trichinella spiralis,

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/programs/forms/forms/ctrlForms/cdph8606.pdf>

Infection caused by parasite round worm which people get from ingesting raw or undercooked contaminated meat

1. **Agent:** *Trichinella spiralis*, intestinal nematode, a round worm
2. **Symptoms:** vary and may include: sudden muscle soreness, pain, periorbital or facial edema, fever, ocular signs and then profuse sweating, chills. GI symptoms (diarrhea) may appear before ocular symptoms. Cardiac and neurological complications may occur

3. Case Definition and Classification:

Clinical Case Definition:

Eosinophilia, fever, myalgia, and periorbital edema

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/nndss/conditions/trichinellosis/case-definition/2014/>

4. Specimen collection:

- **Specimen/test type** –blood
- **When** –first sample as soon as possible; second sample two weeks after first

- **Specimen/test type** –skeletal muscle biopsy
- **When** –more than 10 days after infection

- **Specimen/test type** –suspected food sample (parasitology test)
- **When** –as soon as possible

5. Incubation: 5 to 45 days

6. Reservoir: swine, dogs, cats, horses, rats, wild animals (meat of infected animal)

7. Transmission: ingestion of raw or undercooked meat containing encysted larvae, mainly pork and wild game. In small intestine, larvae develop into adults, penetrating lymphatics and disseminating into bloodstream throughout body. Larvae become encapsulated in skeletal muscle

8. Communicability: animals remain infective for months and meat remains infective unless cooked, frozen or irradiated to kill larvae

9. Risk Groups: people who ingest raw or undercooked meat, especially pork and wild animal meat

10. Treatment:

- Anthelmintics: albendazole or mebendazole as soon as possible
- Possible corticosteroids in severe cases

11. Control Measures:

Case

- a. Treatment-see #10 above

Disease: Trichinosis

Contacts/Exposed

- a. Evaluate family members and others who have eaten suspected meat
- b. Dispose of any remaining suspected food

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Educate public about need to cook meat, especially pork and wild animals, sufficiently (at least 160°F)
 - Grind pork separately or clean grinder thoroughly in between uses.
 - Educate hunters about cooking wild animal meat sufficiently.
 - Home freezing does not necessarily kill Trichinae
 - Avoid feeding uncooked garbage to swine

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Other household contacts with symptoms
 - Consumption of raw or undercooked meat
 - Types of meat eaten in last month
 - Names of others who ate suspected meat
 - Source of meat (restaurant, grocery store, etc)
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Trypanosomiasis



Trypanosoma cruzi

Requires Case Report
only if outbreak

Individual case NOT
reportable

<https://www.cdph.ca.gov/pubsforms/forms/CtrldForms/cdph8554.pdf>

Inflammatory infectious disease also known as Chagas Disease caused by parasite (“kissing bug”)

1. **Agent:** *Trypanosoma cruzi*, parasite
2. **Symptoms:** acute illness, fever, lymphadenopathy, malaise, hepatosplenomegaly, usually in children; infection often asymptomatic; chagoma (inflammatory reaction at site of bite).
Complications: myocarditis, meningoencephalitis

3. Case Definition and Classification:

Clinical Case Definition:

fever, malaise, hepatosplenomegaly and lymphadenopathy in the acute phase; chagoma

Case Classification for Suspected, Probable, Confirmed:

http://www.cdc.gov/parasites/chagas/health_professionals/dx.html

4. **Specimen collection:**
 - **Specimen/test type** -blood (stain, culture)
 - **When** -during acute phase
 - **Specimen/test type** -blood (serologic tests: ELISA, etc.), (PCR)
 - **When** -during chronic phase

5. **Incubation:** 5-14 days after bite of insect vector; 30-40 days if infected via blood transfusion
6. **Reservoir:** humans, domestic and wild animals (source: infected *Reduviidae* bug, kissing bug)
7. **Transmission:** infected vector (*Reduviidae* bug); transfusion
8. **Communicability:** bug infective 10-30 days after biting infected host; bug infective for life (2 years); trypanosome present in infected human during acute phase and may persist at low levels
9. **Risk Groups:** younger people; immunosuppressed
10. **Treatment:**
 - Parasitic drugs during acute phase (benznidazole, nifurtimox)-NOT FDA approved- obtain from CDC: Division of Parasitic Diseases (404-718-4745; email parasites@cdc.gov), after-hours, through the CDC Emergency Operations Center (770-488-7100)
11. **Control Measures:**
 - Case**
 - a. Treatment see #10 above
 - b. Blood/body fluid precautions
 - Contacts/Exposed**
 - a. Examine family members of case
 - b. Evaluate infants born to seropositive mothers for congenital infection
 - c. Investigate suspected organ/blood donors
 - d. Vector control in living environment (bedding, rooms, etc.)

Disease: Trypanosomiasis

Public Health

Not reportable, unless blood donor or transfusion suspected, then contact CDPH. May use “other reportable disease” form: <https://www.cdph.ca.gov/pubsforms/forms/CtrldForms/cdph8554.pdf> if necessary

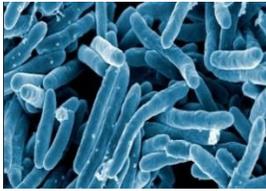
- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Vector control
 - Advise on how to protect against mosquito bites
 - Screen blood and organ donors

- Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation
 - Place of residence and travel history
 - Transplant, blood transfusion history
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:

Disease: Tuberculosis, Active



Mycobacterium tuberculosis

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8620a.pdf>
see also 8620b, 8620c

Potentially serious bacterial infection that primarily affects the lungs

1. **Agent:** *Mycobacterium tuberculosis*
2. **Symptoms:** cough, fatigue, fever, night sweats, weight loss, hemoptysis, hoarseness; TST or IGRA usually positive; chest radiograph usually abnormal; respiratory specimens usually positive
3. **Case Definition and Classification:**

Clinical Case Definition:

positive tuberculin skin test or positive interferon gamma release assay for *M. tuberculosis* **AND** other signs and symptoms compatible with tuberculosis (abnormal chest x-ray or CT or other, clinical evidence of current disease)

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/tuberculosis/casedefinition/2009/definition/2014/>

4. **Specimen collection:**
Note: SBC PHS CD does NOT administer TST. Patient must see healthcare provider for testing and reading

- **Specimen/test type** –Tuberculin Skin Test (TST)
 - **When** –If person infected, TST will detect reaction 2 to 8 weeks after patient infected. Reading of TST must occur within 48 to 72 hours of administration
 - **Specimen/test type** –Blood (IGRA)
 - **When** –If person infected, IGRA will detect infection approximately 10 weeks after patient infected
 - **Specimen/test type** –Chest radiograph
 - **When** –if patient has positive TST or IGRA or is close contact of infectious TB patient
 - **Specimen/test type** –Sputum (smear,culture)
 - **When**–if patient has positive TST or IGRA and either abnormal chest radiograph or presence of respiratory symptoms
5. **Incubation:** 2-10 weeks from infection to lesion or positive TST or IGRA
 6. **Reservoir:** humans (saliva droplets)
 7. **Transmission:** by coughing, singing, sneezing of active TB patient. Droplet inhaled into lungs of contact
 8. **Communicability:** as long as viable *M. tuberculosis* bacteria are discharged in the sputum; some may be contagious for years if inadequately treated. Also depends on: degree of exposure, number of bacilli discharged, virulence of bacilli, adequacy of ventilation

Disease: Tuberculosis, Active

9. **Risk Groups:** children, adolescents, young adults, elderly, immunocompromised, HIV patients

10. Treatment:

- Four drug combination therapy with: isoniazid (INH), rifampin (RIF), pyrazinamide (PZA), and ethambutol (EMB), to include Intensive Phase and Continuation Phase. See most current treatment guidelines from CDPH-CTCA at: <http://ctca.org/menus/cdph-ctca-joint-guidelines.html>
- Directly Observed Therapy (DOT) to be determined by healthcare provider and SBC PHS CD nurse. DOT is recommended for patients who are: high risk, non-compliant, etc. SBC PHS CD nurse will coordinate DOT treatment plan:
 - Patient home visit assessment
 - Develop DOT visit schedule
 - Determine DOT location
 - Request PHS staff to assist
 - Utilize incentives/enablers such as gift cards, to encourage patient adherence to treatment plan
 - Coordinate with pharmacy
 - Monitor patient progress
 - Address patient concerns, medication issues, etc. through ongoing communication with provider and/or Health Officer
 - Document all visits/calls in CalREDIE as well as chart in CD nurse office

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Respiratory precautions-case to cover nose and mouth with cloth or mask to prevent spread while coughing, sneezing, etc.
- c. If sputum smear-positive, recommend isolation. If patient refuses treatment, isolation and quarantine may need to be implemented and enforced via Public Health Officer order
- d. Hand washing, infection control
- e. Adequate air ventilation
- f. Test for HIV

Contacts/Exposed

- a. Use information from Case (infectious period, area of transmission, etc.) to identify and locate potential contacts. **Use Tuberculosis Contact Investigations found in Appendix E** to determine if Contact Investigation is indicated
- b. Test contacts with TST or IGRA. If negative, repeat 8-10 weeks after exposure to active TB case has ended
- c. Treat for Latent TB if contact has positive TST or IGRA or contact is high risk (e.g. children < 5yo, person with HIV, etc.)
- d. If entering room where active TB case resides, contact to wear personal respiratory protective device, such as N95 mask (surgical masks not recommended)
- e. **See Latent TB Disease Protocol** for managing contacts/patients diagnosed with Latent TB

Disease: Tuberculosis, Active

Public Health

Public Health receives initial TB patient notification report which must include an individual treatment plan consisting of:

- Patient name, address, date of birth, telephone number, occupation, ethnic group, social security number, sex
 - Date of diagnosis, diagnosis status
 - Test results (TST or IGRA; radiographic findings; sputum smears, cultures)
 - Risk of transmission to others
 - Medication list with doses and start dates; DOT
 - Date of onset of disease
 - Site of disease
 - Disposition to home, transfer to another facility
- a. Complete and submit Case Report Form to CDPH TB Control Branch
 - b. Complete Contact Investigation if indicated. Use contact investigation section on Case Report Form
 - c. SBC PHS CD Nurse:
 - Contacts patient and healthcare provider to obtain information on: baseline labs and tests, treatment, DOT, isolation orders, any medical/psychological/social issues, hospital or facility discharge,
 - Identifies contacts and determines need for Contact Investigation
 - Assesses patient in person for: introduction, establishing good rapport, explaining public health services, providing education, home environment (space, ventilation, presence of at risk household members), patient
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates including Isolation and/or Quarantine if necessary for patient treatment compliance
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Educate public regarding mode of transmission, symptoms, control, importance of early diagnosis and treatment
 - Ensure infection control measures in place
 - Importance of hand washing
 - Importance of respiratory precautions
- understanding of disease, fears, questions and any cultural factors
 - Collaborates with healthcare provider to establish treatment plan, including DOT schedule as described in Treatment section above
 - Regularly follows up with healthcare provider, HO, pharmacy, lab
 - Ensures appropriate testing done: weekly sputum smears, monthly sputum culture, LFTs, vision and hearing tests
 - Continuously evaluates plan throughout patient care for: clinical response, symptom resolution, adverse reactions, etc.
 - Includes all documentation in CalREDIE as well as CD Nurse office chart

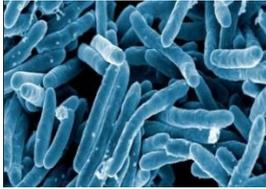
Disease: Tuberculosis, Active

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Treatment status
 - Institutional/group setting
 - Close contacts exposed
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Tuberculosis, Latent (LTBI)



Mycobacterium tuberculosis

Requires Case Report

Immediate via fax, phone, email within 1 working day of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8620a.pdf>
see also 8620b, 8620c

Potentially serious bacterial infection that primarily affects the lungs. In latent tuberculosis, infection is not active and patient is not contagious

1. **Agent:** *Mycobacterium tuberculosis*

2. **Symptoms:** usually no symptoms or physical findings; TST or IGRA usually positive; chest radiograph normal, respiratory specimens negative

3. **Case Definition and Classification:**

Clinical Case Definition:

Persons do not feel sick and do not have any symptoms; infected with *M. tuberculosis*, but do not have TB disease; positive reaction to the tuberculin skin test or IGRA; usually normal chest radiograph and negative respiratory specimens

Case Classification for Suspected, Probable, Confirmed:

<http://www.cdc.gov/tb/publications/factsheets/general/ltbiandactivetb.htm>

4. **Specimen collection:**

Note: SBC PHS CD does NOT administer TST. Patient must see healthcare provider for testing

The presence of active TB disease must be excluded before treatment for LTBI is initiated because failure to do so may result in inadequate treatment and development of drug resistance. CDC discourages use of diagnostic tests for LTBI among individuals and populations at low risk for infection with *M. tuberculosis*

▪ **specimen/test type** –Tuberculin Skin Test (TST)

▪ **when** –If person infected, TST will detect reaction 2 to 8 weeks after patient infected. Reading of TST must occur within 48 to 72 hours of administration

▪ **specimen/test type** –Blood (IGRA)

▪ **when** –If person infected, IGRA will detect infection approximately 10 weeks after patient infected

▪ **specimen/test type** –Chest radiograph

▪ **when** –if patient has positive TST or IGRA or is close contact of infectious TB patient

▪ **specimen/test type** –Sputum (smear,culture)

▪ **when** –if patient has positive TST or IGRA and either abnormal chest radiograph or presence of respiratory symptoms

5. **Incubation:** 2-10 weeks (up to years later) from infection to lesion or positive TST or IGRA. Latent TB can persist for lifetime

6. **Reservoir:** humans (not contagious if LTBI)

Disease: Tuberculosis, Latent (LTBI)

7. Transmission:—Persons with latent TB infection are not infectious and cannot spread TB infection to others

8. Communicability: LTBI is not infectious

9. Risk Groups: immunocompromised, especially HIV patients are at risk of developing active TB

10. Treatment:

Before starting treatment for LTBI, rule out Active TB via chest x-ray, sputum culture, IGRA. Treatment of LTBI can prevent infected persons from developing TB disease and stop the further spread of TB
See most current treatment guidelines from CDPH-CTCA at:

<http://ctca.org/menus/cdph-ctca-joint-guidelines.html>

- Various regimens with: isoniazid (INH), rifapentine (RPT), rifampin (RIF), including a 12 dose (once weekly) INH/RPT regimen. *See most current treatment guidelines from CDPH-CTCA at:*
<http://ctca.org/menus/cdph-ctca-joint-guidelines.html>
- Directly Observed Therapy (DOT) to be determined by healthcare provider and SBC PHS CD nurse. DOT is recommended for patients who are: high risk, non-compliant, etc. SBC PHS CD nurse will coordinate DOT treatment plan:
 - Patient home visit assessment
 - Develop DOT visit schedule
 - Determine DOT location

- Request PHS staff to assist
- Utilize incentives/enablers such as gift cards, to encourage patient adherence to treatment plan
- Coordinate with pharmacy
- Monitor patient progress
- Address patient concerns, medication issues, etc. through ongoing communication with provider and/or Health Officer
- Document all visits/calls in CalREDIE as well as chart in CD nurse office

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Assess if immunocompromised
- c. Regular check for symptoms of active disease
- d. Compliance with treatment until completed
- e. Latent TB cases are not contagious

Contacts/Exposed

- a. LTBI patients are not contagious; can not spread TB to others

Public Health

Public Health receives initial LTBI patient notification report which must include an individual treatment plan consisting of:

- Patient name, address, date of birth, telephone number, occupation, ethnic group, social security number, sex
- Date of diagnosis, diagnosis status

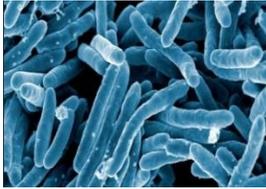
Disease: Tuberculosis, Latent (LTBI)

- Test results (TST or IGRA; radiographic findings; sputum smears, cultures)
 - Risk of transmission to others
 - Medication list with doses and start dates; DOT
 - Date of onset of disease
 - Site of disease
 - Disposition to home, transfer to another facility
- a. Complete and submit Case Report Form to CDPH TB Control Branch
 - b. Complete Contact Investigation if indicated. Use contact investigation section on Case Report Form
 - c. SBC PHS CD Nurse:
 - Contacts patient and healthcare provider to obtain information on: baseline labs and tests, treatment, DOT, isolation orders, any medical/psychological/social issues, hospital or facility discharge
 - Identifies contacts and determines need for Contact Investigation
 - Assesses patient in person for: introduction, establishing good rapport, explaining public health services, providing education, home environment (space, ventilation, presence of at risk household members), patient understanding of disease, fears, questions and any cultural factors
 - Collaborates with healthcare provider to establish treatment plan, including DOT schedule as described in Treatment section above
 - Regularly follows up with healthcare provider, HO, pharmacy, lab
 - d. Ensures appropriate testing done: LFT's –for certain medications and if risk factors: HIV, pregnant, liver disease, alcoholic, elderly
 - e. Continuously evaluates plan throughout patient care for: clinical response, symptom resolution, adverse reactions, etc.
 - f. Includes all documentation in CalREDIE as well as CD Nurse chart
- d. HO will issue orders, Health Alerts/ Advisory/ Updates including Isolation and/or Quarantine if necessary for patient treatment compliance
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Educate public regarding mode of transmission, symptoms, control, importance of early diagnosis and treatment
 - Ensure infection control measures in place
 - Importance of hand washing
 - Importance of respiratory precautions
- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
- a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)

Disease: Tuberculosis, Latent (LTBI)

- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Treatment status
 - Institutional/group setting
 - Close contacts exposed
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Tuberculosis, Class A/B (Immigrants)



Mycobacterium tuberculosis

Requires Case Report

Via fax, phone, email
within 14 working days of
notification. See EDN
follow-up worksheet

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8620a.pdf>

see also 8620b, 8620c

Potentially serious bacterial infection that primarily affects the lungs; goals of immigrant A/B Classification are to identify all active TB cases as well as LTBI cases eligible for treatment to prevent progression of disease

1. **Agent:** *Mycobacterium tuberculosis*
2. **Symptoms:** See active or latent TB symptoms as previously described
3. **Case Definition and Classification:**

Clinical Case Definition:

Active TB: positive tuberculin skin test or positive interferon gamma release assay for *M. tuberculosis* **AND** other signs and symptoms compatible with tuberculosis (abnormal chest x-ray or CT or other, clinical evidence of current disease)

Latent TB: Persons do not feel sick and do not have any symptoms; infected with *M. tuberculosis*, but do not have TB disease; positive reaction to the tuberculin skin test or IGRA; usually normal chest radiograph and negative respiratory specimens

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/tuberculosis/casedefinition/2009/definition/2014/>

4. Specimen collection:

Note: SBC PHS CD does NOT administer TST. Patient must see healthcare provider for testing

The presence of active TB disease must be excluded before treatment for LTBI is initiated because failure to do so may result in inadequate treatment and development of drug resistance. CDC discourages use of diagnostic tests for LTBI among individuals and populations at low risk for infection with *M. tuberculosis*

- **specimen/test type** –Tuberculin Skin Test (TST)
 - **when** –If person infected, TST will detect reaction 2 to 8 weeks after patient infected. Reading of TST must occur within 48 to 72 hours of administration
 - **specimen/test type** –Blood (IGRA)
 - **when** –If person infected, IGRA will detect infection 8-10 weeks after patient infected.
 - **specimen/test type** –Chest radiograph
 - **when** –if patient has positive TST or IGRA or is close contact of infectious TB patient
 - **specimen/test type** –Sputum (smear,culture)
 - **when** –if patient has positive TST or IGRA and either abnormal chest radiograph or presence of respiratory symptoms
5. **Incubation:** See active or latent TB
 6. **Reservoir:** See active or latent TB

Disease: Tuberculosis, Class A/B (Immigrants)

7. **Transmission:** see active or latent TB

8. **Communicability:** see active or latent TB

9. **Risk Groups:** see active or latent TB

10. **Treatment:**

- See active or latent TB

11. **Control Measures:**

Case

- Immigrant applicant A/B Classification
 - No TB: normal TB screening exam
 - Class A w/ waiver: active TB but granted waiver (rare)
 - Class B1 TB Pulmonary: findings suggestive of TB but negative AFB smears/cultures and
 - NOT diagnosed with TB or can wait for TB treatment after immigration
 - Successfully completed DOT therapy prior to immigration
 - Class B1 TB Extrapulmonary: show evidence of extrapulmonary TB; document anatomic site of infection
 - Class B2 LTBI: TST \geq 10mm or positive IGRA but otherwise negative TB evaluation
 - Class B3 TB Contact Evaluation: is a recent contact of a known TB case

Contacts/Exposed

- See active or latent TB

Public Health

Public Health receives Electronic Disease Notification (EDN) from CDC for any Class B

immigrant who has resettled in SBC jurisdiction

- Complete and submit Case Report Form to CDPH TB Control Branch
- Complete Contact Investigation if indicated. Use contact investigation section on Case Report Form
- SBC PHS CD Nurse:
 - Reviews overseas screening paperwork sent by CDPH (via mail) and if case has positive TST or chest x-ray, then attempts to contact case via telephone. If unreachable, send letter to case's physical address indicating need to contact SBC PHS to schedule evaluation within 14 days or alert CDPH within 30 days if can't reach case. *Refer to Appendix F for Tuberculosis Sample Letter*
 - Completes EDN B Notification follow-up worksheet to report domestic TB evaluation results within 90 days.
<https://www.cdph.ca.gov/programs/tb/Documents/TBCB-CDC-EDN-TB-Follow-up-Guide.pdf> or *Refer to Appendix G for TB Evaluation Worksheet hard copy*
 - Contacts patient and healthcare provider for case evaluation information: baseline labs and tests, treatment, DOT, isolation orders, any medical/psychological/social issues, hospital or facility discharge, etc. For questions regarding evaluation of Class B cases, contact the CDPH Tuberculosis Control Branch: Gayle Schack, R.N., M.S., 510-620-3048, Gayle.Schack@cdph.ca.gov
 - Identifies contacts and determines need for Contact Investigation

Disease: Tuberculosis, Class A/B (Immigrants)

- Assesses patient in person for: introduction, establishing good rapport, explaining public health services, providing education, home environment (space, ventilation, presence of at risk household members), patient understanding of disease, fears, questions and any cultural factors
 - Collaborates with healthcare provider to establish treatment plan, including DOT schedule as described in Treatment section above
 - Regularly follows up with healthcare provider, HO, pharmacy, lab
 - Ensures appropriate testing done: weekly sputum smears, monthly sputum culture, LFTs, vision and hearing tests
 - Continuously evaluates plan throughout patient care for: clinical response, symptom resolution, adverse reactions, etc.
 - Includes all documentation in TBCB Evaluation Worksheet, CalREDIE as well as CD Nurse office chart
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates including Isolation and/or Quarantine if necessary for patient treatment compliance
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Educate public regarding mode of transmission, symptoms, control, importance of early diagnosis and treatment
 - Ensure infection control measures in place
 - Importance of hand washing
 - Importance of respiratory precautions
- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
- a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)
 - e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Treatment status
 - Institutional/group setting
 - Close contacts exposed
 - f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Tularemia



Francisella tularensis

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrIdForms/cdph8559.pdf>

Highly infectious bacterial disease in humans and animals causing potentially serious illness such as glandular, pneumonic, typhoidal.

Tularemia has potential use as a bioterrorism weapon

1. **Agent:** *Francisella tularensis*, gram-negative coccobacillus bacteria
2. **Symptoms:** ulcer forms at site of bacteria entry with regional lymphadenopathy; sudden high fever, chills, fatigue, body aches, headache, nausea; pneumonia with pleural effusion; purulent conjunctivitis
3. **Case Definition and Classification:**

Clinical Case Definition:

Illness characterized by distinct forms: ulceroglandular, glandular, oculoglandular, oropharyngeal, intestinal, pneumonic, typhoidal

Case Classification for Suspected, Probable, Confirmed:

https://wwwn.cdc.gov/nndss/conditions/tularemia/case-definition/1999/health_professionals/dx.html
[definition/2014/](https://wwwn.cdc.gov/nndss/conditions/tularemia/case-definition/2014/)

4. **Specimen collection:**
 - **Specimen/test type** –blood
 - **When** –first sample as soon as possible; second sample several weeks after first
 - **Specimen/test type** –specimens (for culture) such as skin lesion swab, lymph node aspirate, pharyngeal swab, sputum
 - **When** –as soon as possible
5. **Incubation:** 3 to 5 days (range 1-14 days)
6. **Reservoir:** wild animals such as rabbits, hares, beavers, hard ticks (infected blood and tissue of animals, contaminated water, dust containing bacteria)
7. **Transmission:** through bites of infected ticks, deerfly, mosquitoes; handling infected animal tissues; ingestion of contaminated food or water; inhalation of contaminated aerosols. Tularemia bacteria is highly infectious and can enter human body via skin, mouth, eyes, lungs
8. **Communicability:** not person to person
9. **Risk Groups:** hunters, veterinarians, forest rangers, hikers, campers; farmers; laboratory workers; pet industry workers
10. **Treatment:**
 - Antibiotics: aminoglycosides (gentamicin or streptomycin), doxycycline, ciprofloxacin for 10-21 days

Disease: Tularemia

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Wound and body fluid precautions
- c. Disinfection of discharges from ulcers, lymph nodes, conjunctival sacs

Contacts/Exposed

- a. Identify contacts with potential exposure to same source of infection
- b. Vaccine not generally available in U.S.- currently under review by FDA

Public Health

- ◆ Immediately call CDPH, CDC
 - ◆ Immediately alert HHMH, EMS, OES, AMR, Law Enforcement of case and instruct all to follow their Highly Pathogenic CD protocols, including appropriate PPE. See: <http://www.cdc.gov/niosh/topics/anthrax/workers.html>,
- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with EH and other Regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for evacuation, decontamination, mass prophylaxis. If mass prophylaxis ordered, refer to *SBC PHS All Hazards Emergency Response Plan*
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. See *Risk*

Communication in SBC All Hazards Plan

f. Prevention/Education

- Educate public to avoid insect bites (ticks, mosquitoes, flies, etc.)-use insect repellants
- Avoid drinking untreated water
- Use gloves when handling animals, especially rabbits
- Cook game meat thoroughly
- Laboratory workers handling *F. tularensis* cultures, must be in class II biosafety cabinets and wearing appropriate PPE

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - History of insect bite
 - Contact with animals
 - Source of food/water
 - Location of lesions
 - Contacts with same potential exposure

Disease: Tularemia

- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Typhoid/Paratyphoid



Salmonella enterica

Requires Case Report

Immediate via fax,
phone, email within 1
working day of
identification

<https://www.cdph.ca.gov/v/pubsforms/forms/CtrlForms/cdph8586.pdf>

Acute illness caused by bacterial infection causing enteric fever

- 1. Agent:** Typhoid Fever caused by gram negative bacteria, *Salmonella enterica*. Paratyphoid Fever caused by *Salmonella enterica Paratyphi*
- 2. Symptoms:** insidious onset fever, marked headache, malaise, anorexia, rose spots on trunk, constipation more often than diarrhea, mental dullness, slight deafness, parotitis

3. Case Definition and Classification:

Clinical Case Definition:

insidious onset of sustained fever, headache, malaise, anorexia, relative bradycardia, constipation or diarrhea, and nonproductive cough

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditons/typhoid-fever/case-definition/1997/>

- 4. Specimen collection:**
 - **Specimen/test type** -blood (culture)
 - **When** -within first week of symptoms
 - **Specimen/test type** -urine, feces (culture)

- **When** -after first week of symptoms

- 5. Incubation:** typhoid fever is 3 days to more than 60 days (usual 8-14 days); paratyphoid fever is 1-10 days
- 6. Reservoir:** humans (source: feces, urine, infected wound)
- 7. Transmission:** ingesting food or water contaminated by feces or urine of infected person. Examples: shellfish, raw fruit and vegetables, frozen fruit, contaminated milk products, untreated drinking water
- 8. Communicability:** as long as bacteria is shed (usually from first week of illness through convalescence); may become chronic carrier
- 9. Risk Groups:** international travelers; patients with gastric achlorhydria; preschoolers and children 5-19 living in endemic areas
- 10. Treatment:**
 - Antibiotic treatment with fluoroquinolones (ciprofloxacin, ofloxacin, etc.); azithromycin, ceftriaxone; test for antibiotic susceptibility
 - Short term, high dose corticosteroid
 - Supportive care
 - Immediate surgical repair if intestinal perforation
- 11. Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Enteric precautions
 - c. Hospital care during acute illness

Disease: Typhoid/Paratyphoid

- d. Disinfection of feces, urine, soiled articles
- e. Exclude from work (if sensitive occupation) for 3 consecutive negative cultures of feces at least 24 hours apart, at least 48 hours after antibiotic and not sooner than 1 month after onset
- e. Determine actual/probable source

Contacts/Exposed

- a. Follow all members of travel group in which a case is identified
- b. If contact or household member works in sensitive occupation, obtain 2 negative stool cultures taken at least 24 hours apart before allowing returning to work
- c. Immunization for Typhoid Fever not routinely recommended, except for: occupational exposure (lab workers), household members of known carriers, and travelers to high risk areas. No immunization for paratyphoid fever

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*

f. Prevention/Education:

- Personal hygiene, hand washing
- Dispose of human feces safely
- Protect, purify public water/sewer systems
- May need to treat water chemically or by boiling
- Careful food preparation: refrigerate, etc.
- Shellfish from only approved sources- boil or steam before serving
- Exclude typhoid carriers from preparing food or patient care
- Control fly population: pesticides or traps

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Date/source positive culture
 - Birthplace
 - known exposure to other cases
 - recent food source
 - water source

Disease: Typhoid/Paratyphoid

- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Typhus



Rickettsia typhi bacteria

Requires Case Report
Standard via fax, phone,
email within 7 working
days of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlldForms/cdph8580.pdf>

Acute bacterial infection transmitted to humans by fleas or lice which acquired the bacteria from other animals such as rats, cats, raccoons, etc. Also known as murine Typhus. Typhus is a disease unrelated to the disease Typhoid Fever

1. **Agent:** *Rickettsia typhi*, *Rickettsia felis*, coccobacillus bacteria
2. **Symptoms:** abrupt onset fever, headache, myalgia; rash; sometimes nausea, vomiting, abdominal pain may occur
3. **Case Definition and Classification:**

Clinical Case Definition:

Acute onset fever and at least one: headache, myalgia or rash; and leukopenia, thrombocytopenia or elevation of hepatic transaminases

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdph.ca.gov/pubsforms/forms/CtrlldForms/cdph8580.pdf>

4. **Specimen collection:**
 - **Specimen/test type** –blood (IFA)
 - **When** –first sample in first week of illness; second sample 3 to 4 weeks after first.

5. **Incubation:** 1 to 2 weeks (usually 12 days)
6. **Reservoir:** rats, mice, other small to medium size mammals (host-flea-host cycle)
7. **Transmission:** infected fleas bite human and contaminate bite site
8. **Communicability:** fleas remain infective for life (up to 1 year)
9. **Risk Groups:** general; especially in areas where people and rats live in close proximity
10. **Treatment:**
 - Antibiotics: doxycycline for 5 to 10 days. Begin empirically-do not wait for lab results
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - Contacts/Exposed**
 - a. Control rodents in patient/contact living environment
 - Public Health**
 - a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates
 - e. Follow risk communication procedures

Disease: Typhus

for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in **SBC All Hazards Plan***

f. Prevention/Education:

- Control rodent, flea and wild animal population around living and work environment
- Educate travelers to minimize exposure: wear protective clothing, use repellent
- Check body daily for ticks when traveling to endemic areas and remove attached ticks promptly

Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE

h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism

Refer to Epidemiology Chapter

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation
 - Place of residence and travel history
 - history of insect bite
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases.

Disease: Vibriosis (non-cholera)



Vibrio bacteria

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlForm/cdph8587.pdf>

Bacterial illness from raw or undercooked seafood or wound exposure to seawater

- 1. Agent:** Gram-negative rod shaped bacteria. Many *Vibrio* species such as: *V. mimicus*, *G. hollisae*, *V. furnissii*, *V. fluvialis*, etc.
- 2. Symptoms:** gastroenteritis, septicemia, wound infection
- 3. Case Definition and Classification:**
See Appendix D, Common Causes of GI Illness and Incubation Periods

Clinical Case Definition:
watery diarrhea, primary septicemia,
or wound infection
**Case Classification for Suspected,
Probable, Confirmed:**
<https://wwwn.cdc.gov/nndss/conditions/vibriosis/case-definition/2012/>

- 4. Specimen collection:**
 - **Specimen/test type** –stool, wound or blood (culture)
 - **When** –as soon as possible
- 5. Incubation:** 12 to 24 hours
- 6. Reservoir:** marine coastal region (wound contact with brackish or salt water; contaminated seafood)

- 7. Transmission:** consumption of raw or undercooked seafood; potential for fecal-oral; wound infection
- 8. Communicability:** generally not person to person
- 9. Risk Groups:** immunocompromised
- 10. Treatment:**
 - Fluid replacement
 - Antibiotics in severe gastrointestinal disease
 - Antibiotics for wound infection

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Enteric precautions or wound precautions
- c. Supportive care
- d. Exclude from sensitive occupation (food handler, child or patient care provider, etc.) until negative fecal samples

Contacts/Exposed

- a. Trace source of contamination

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. If food or water borne, coordinate with EH and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates

Disease: Vibriosis (non-cholera)

- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Avoid seawater exposure of open wounds
 - Wash wounds that have been exposed to sea or brackish waters with soap and clean water
 - Educate about risks of eating raw or undercooked seafood, especially oysters and other shellfish
 - Hand washing and personal hygiene
 - Avoid ingestion of seawater
 - protect water supply from contamination
- exposure to water
- preexisting wound
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - history of seafood consumption, including location, source, date

Disease: West Nile Virus



West Nile Virus

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8687.pdf>

Mosquito-borne viral infection causing febrile illness and potential brain infection

- 1. Agent:** West Nile Virus, family *Flaviridae*, genus *Flavivirus* (arbovirus)
- 2. Symptoms:** majority of infected persons are asymptomatic; acute febrile illness, headache, myalgia, arthralgia, GI symptoms, rash; less than 1% neuroinvasive disease (meningitis, encephalitis, acute flaccid paralysis)

3. Case Definition and Classification:

Clinical Case Definition:

Neuroinvasive (meningitis, encephalitis, flaccid paralysis or other acute neurologic dysfunction)

Nonneuroinvasive (fever, absence of neuroinvasive disease)

Both may include: headache, myalgia, rash, arthralgia, vertigo, vomiting

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/arboviral-diseases-neuroinvasive-and-non-neuroinvasive/case-definition/2015/>

- 4. Specimen collection:**
 - **Specimen/test type** –blood, CSF (IgM)
 - **When** –as soon as possible; if negative and < 3 days since onset of symptoms, repeat in 3-5 days
- 5. Incubation:** 2-6 days (range 2-14 days)
- 6. Reservoir:** birds (infective mosquito); (blood product, organ tissue, transplacental)
- 7. Transmission:** bite of infected mosquito; blood transfusion, organ transplant, intrauterine, breast milk, percutaneous and mucosal exposure in lab workers and occupational settings
- 8. Communicability:** generally not person to person
- 9. Risk Groups:** once infected, groups at higher risk of severe disease include: elderly, chronic renal disease, immunosuppressed, etc.
- 10. Treatment:**
 - Supportive
- 11. Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Blood and bodily fluid precautions
 - Contacts/Exposed**
 - a. No post exposure prophylaxis available
 - b. Search for unreported or undiagnosed cases in area where case was exposed

Disease: West Nile Virus

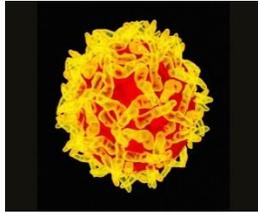
Public Health

- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Mosquito bite prevention with protective clothing and repellent
 - Vector control (eliminate mosquito breeding sites such as stagnant water, etc.) is KEY
 - g. Occupation
 - h. Place of residence and travel history
 - i. History of mosquito bites
 - j. Additional cases among contacts (household, neighbors, fellow travelers)
 - k. Increased mortality of dead crows or other corvid birds
 - l. Blood transfusion or organ transplant
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital

Disease: Yellow Fever



Yellow Fever Virus

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8584.pdf>

Mosquito-borne viral infection causing acute hemorrhagic disease

1. **Agent:** Yellow Fever Virus, family *Flaviridae*, genus *Flavivirus*
2. **Symptoms:** Majority of infected persons are asymptomatic; sudden onset fever, chills, headache, backache, muscle pain, prostration, nausea and vomiting, bradycardia; leukopenia; jaundice; hemorrhagic symptoms

3. Case Definition and Classification:

Clinical Case Definition:

Acute onset constitutional symptoms followed by brief remission and then recurrence of fever, hepatitis, albuminuria; in some patients: renal failure, shock, hemorrhage

Case Classification for Suspected, Probable, Confirmed:

<https://wwwn.cdc.gov/nndss/conditions/yellow-fever/case-definition/1997/>

4. **Specimen collection:**
 - **Specimen/test type** –blood (IgM)
 - **When** –acute and convalescent (first specimen as soon as possible and second 2-3 weeks after first)

5. **Incubation:** 3-6 days
6. **Reservoir:** in urban areas, humans and mosquitoes; in forest areas, primates and forest mosquitoes (infected mosquito)
7. **Transmission:** bite of infected mosquito
8. **Communicability:** blood of patients is infective for mosquitoes shortly before onset of fever and for first 3-5 days of illness (up to 17 days after onset of illness)
9. **Risk Groups:** unvaccinated travelers to endemic areas, forest workers in endemic areas, unvaccinated persons living near endemic areas
10. **Treatment:**
 - Supportive
 - Avoid aspirin-containing or nonsteroidal anti-inflammatory medication (risk of bleeding)
11. **Control Measures:**
 - Case**
 - a. Treatment-see #10 above
 - b. Blood and bodily fluid precautions
 - c. Protect case from further mosquito exposure during first few days of illness to prevent infecting other mosquitoes and therefore reduce the risk of further local transmission
 - Contacts/Exposed**
 - a. Immunize if not previously immunized
 - b. Identify contacts of case and locations case visited to find source of mosquitoes

Disease: Yellow Fever

Public Health

- a. Complete and submit Case Report Form
- b. Complete contact investigation. Use contact investigation section on Case Report Form
- c. Coordinate with local Vector Control and other regulatory agencies to trace source, initiate investigation and implement control measures
- d. HO will issue orders, Health Alerts/ Advisory/ Updates
- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Vaccinating all people at risk due to residence, occupation or travel
 - Bite prevention with protective clothing and repellent
 - Vector control (eliminate mosquito breeding sites such as stagnant water, etc.) is KEY
- g. Lab result
- h. Hospital
- i. Occupation
- j. Place of residence and travel history
- k. History of mosquito bites
- l. Additional cases among contacts (household, neighbors, fellow travelers)
- m. Create an epi-curve, by date of onset. Include only those that meet the case definition
- n. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- o. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH)
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms

Disease: Yersiniosis



Yersinia enterocolitica

Requires Case Report
Immediate via fax, phone,
email within 1 working day
of identification

<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8554.pdf>

Bacterial infection caused by eating contaminated raw or undercooked pork

- 1. Agent:** *Yersinia enterocolitica*, *Yersinia pseudotuberculosis*, gram-negative bacilli
- 2. Symptoms:** acute fever, diarrhea, abdominal pain, mesenteric lymphadenitis, appendicitis-like illness
- 3. Case Definition and Classification:**

Clinical Case Definition:

fever, abdominal pain (may mimic appendicitis), and diarrhea (may be bloody and can persist for several weeks)

Case Classification for Suspected, Probable, Confirmed:

<https://www.cdc.gov/yersinia/healthcare.html>

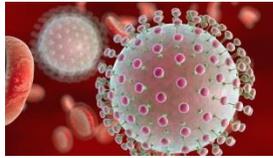
- 4. Specimen collection:**
 - Specimen/test type** –stool, blood, bile, wound, throat swab, CSF, peritoneal fluid (culture)
 - When** –as soon as possible
- 5. Incubation:** 3-7 days

- 6. Reservoir:** animals (pork, household pets, chocolate milk, soybean cake, pork chitterlings)
- 7. Transmission:** fecal-oral through consumption of contaminated food or water or through contact with infected people or animals
- 8. Communicability:** fecal shedding for 2-3 weeks up to 2-3 months
- 9. Risk Groups:** children at risk of more severe diarrhea
- 10. Treatment:**
 - Antibiotics: aminoglycosides for septicemia; trimethoprim/sulfamethoxazole; quinolones
- 11. Control Measures:**
 - Case**
 - Treatment-see #10 above
 - Blood and enteric precautions
 - Exclude from sensitive occupation (food handler, child or patient care provider, etc.)
 - Disinfection of soiled articles
 - Contacts/Exposed**
 - Investigation of contacts and common source
 - Public Health**
 - Complete and submit Case Report Form
 - Complete contact investigation. Use contact investigation section on Case Report Form
 - If food or water borne, coordinate with Environmental Health and other regulatory agencies to trace source,

Disease: Yersiniosis

- initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates
 - e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
 - f. **Prevention/Education:**
 - Prepare meat and other foods in sanitary manner
 - Avoid eating raw pork
 - Wash hands before food handling and eating and after handling raw pork
 - Dispose of human, dog and cat feces in sanitary manner
- 12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism**
Refer to Epidemiology Chapter
- a. *Use Outbreak Investigation Checklist found in Appendix B*
 - b. Establish case definition –see #3 above
 - c. Confirm etiology using lab data and identify mode of transmission
 - d. Conduct contact investigation (if food or water borne, coordinate with EH)
 - e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history
 - Other household contacts with symptoms
 - Consumption of raw or undercooked meat
 - types of meat eaten in last month
 - names of others who ate suspected meat
 - source of meat (restaurant, grocery store, etc)
 - Source of food and water
 - Attendance at group gatherings where food was served
 - Sensitive occupation
 - history of blood transfusion
 - f. Create an epi-curve, by date of onset. Include only those that meet the case definition
 - g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
 - h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Disease: Zika



Zika Virus

Requires Case Report
URGENT- Call
510-620-3737 or
after hr-800-971-9631
<https://www.cdph.ca.gov/pubsforms/forms/CtrlDForms/cdph8680.pdf>

Mosquito-borne viral infection, usually causing mild illness. However, it has been associated with microcephaly in newborns

1. **Agent:** Zika virus, *Flaviviridae* family (arbovirus)

2. **Symptoms:** usually mild illness causing fever, rash, joint pain, conjunctivitis
Complications may include: Guillain-Barre syndrome; possible cause of microcephaly in newborns

3. **Case Definition and Classification:**

Clinical Case Definition:

Ranges from mild febrile illness to severe encephalitis. Arboviral disease cases are categorized into two primary groups: neuroinvasive disease and nonneuroinvasive disease)

Case Classification for Suspected, Probable, Confirmed:

<http://wwwn.cdc.gov/nndss/conditions/arboviral-diseases-neuroinvasive-and-non-neuroinvasive/case->

4. **Specimen collection:**

Provider must obtain authorization from PHS CD staff for testing. HHMH laboratory will obtain sample and send to Monterey County Public Health lab and/or CDPH VRDL for actual testing. Refer to [Appendix H Request for Zika Virus Screening Form](#)

- **Specimen/test type** -blood (RT-PCR)
- **When** -within 7 days of symptom onset

- **Specimen/test type** -urine (RT-PCR)
- **When** -within 21 days of symptom onset

- **Specimen/test type** -blood (Zika IgM)
- **When** -at least 7 days after symptom onset and 2-12 weeks after last exposure in asymptomatic pregnant patient

- **Specimen/test type** -blood (Zika PRNT)
- **When** -if receive IgM result that is positive, equivocal or nonspecific

5. **Incubation:** 2-14 days

6. **Reservoir:** humans, mosquito (source: infected mosquito)

7. **Transmission:** through bite of infected *Aedes* species mosquito; from mother to child during pregnancy or delivery; blood transfusion; sexual contact

8. **Communicability:** mosquitoes remain infectious throughout their life

9. **Risk Groups:** determined by exposure to infected mosquitoes; children; visitors new to endemic area; immunocompromised

10. **Treatment:**

- NO antiviral treatment available
- Supportive (rest, fluids, analgesics)
- Avoid aspirin or NSAIDs until rule out Dengue due to hemorrhage with Dengue.

Disease: Zika

11. Control Measures:

Case

- a. Treatment-see #10 above
- b. Standard blood borne precautions
- c. Protect case from further mosquito exposure during first few days of illness to prevent infecting other mosquitoes and therefore reduce the risk of further local transmission.
- d. For pregnant women, follow appropriate testing and monitoring guidelines from CDC and CDPH; consider amniocentesis and consultation with maternal-fetal medicine specialist if appropriate-see: <https://www.cdc.gov/zika/hc-providers/>

Contacts/Exposed

- a. NO post exposure prophylaxis available
- b. Avoid sexual contact with infected case
- c. Search for unreported or undiagnosed cases

Public Health

- ◆ Immediately call CDPH, CDC
 - ◆ Immediately alert HHMH, local laboratories, Vector Control, OES and other appropriate agencies to inform of case and instruct all to follow their Highly Pathogenic CD protocols
- a. Complete and submit Case Report Form
 - b. Complete contact investigation. Use contact investigation section on Case Report Form
 - c. Coordinate with Vector Control and other appropriate agencies to trace source, initiate investigation and implement control measures
 - d. HO will issue orders, Health Alerts/ Advisory/ Updates including orders for quarantine, geographic advisories, testing, etc.

- e. Follow risk communication procedures for disseminating information to the public, healthcare providers, schools, institutions etc. *See Risk Communication in SBC All Hazards Plan*
- f. **Prevention/Education:**
 - Advise if traveling to endemic area, protect against mosquito bites (protective clothing, screen on windows/doors; use repellent)
 - Advise women who are pregnant or trying to become pregnant should postpone travel to areas of active transmission
 - Advise about sexual contact
 - Vector control (eliminate mosquito breeding sites such as stagnant water, etc.) is KEY

12. Epidemiology Investigation if suspect: outbreak (2 or more cases from common source), high priority disease, bioterrorism *Refer to Epidemiology Chapter*

- a. *Use Outbreak Investigation Checklist found in Appendix B*
- b. Establish case definition –see #3 above
- c. Confirm etiology using lab data and identify mode of transmission
- d. Conduct contact investigation (if food or water borne, coordinate with EH). For Zika, coordinate with Vector Control for contact investigations.
- e. Create line list that could include:
 - Name/initials
 - Age
 - Date onset of symptoms
 - Lab result
 - Hospital
 - Occupation of case and household members
 - Place of residence and travel history

Disease: Zika

- History of mosquito bites
- Additional cases among contacts (household, neighbors, fellow travelers)
- For infants, status of mother
- f. Create an epi-curve, by date of onset. Include only those that meet the case definition
- g. Maintain surveillance for new cases. Surveillance data may be obtained from (but not limited to): interviews, HHMH weekly Emergency Room Diagnosis report, laboratory reports, healthcare providers, CalREDIE
- h. Implement appropriate control and prevention measures. *Refer to Control and Prevention Measures Chapter*

Chapter 4 Epidemiology

Epidemiology is the study of disease in populations. Epidemiology focuses on the community rather than the individual patient. Public Health surveillance and epidemiological investigation consists of the ability to perform the following:

1. Conduct public health surveillance and detection
2. Conduct public health and epidemiological investigations
3. Recommend, monitor and analyze mitigation actions
4. Improve public health surveillance and epidemiological investigation systems through quality improvement processes

Surveillance

Public Health surveillance is the ongoing, systematic collection, analysis and interpretation of health-related data to help guide public health decision making and action for disease prevention and control measures. Surveillance serves as an early warning system and identifies public health emergencies.

SBC PHS CD collaborates with various stakeholders including local and regional hospitals, laboratories, healthcare providers, etc. for obtaining data to assist with our overall surveillance program which includes the following sources:

- CalREDIE
- Healthcare providers
- Confidential Morbidity Report (CMR)
- CDPH alerts
- Weekly HHMH ER diagnosis report
- Weekly HHMH Lab report
- HO death certificate review

- Vital statistics report (major causes of mortality)-to be developed
- Pharmacies (report unusual sales)-to be developed)

SBC PHS CD staff reviews the data/information from these sources for: unusual patterns of illness, disease clusters, increases above seasonal levels, and other diseases requiring investigation.

SBC PHS CD staff also relies on CalREDIE, our electronic database, for surveillance as well as case reporting, case classifications, lab results, sharing of information, etc.

Reporting

SBC PHS CD receives case reports from various surveillance sources via telephone, fax or email/electronically, depending on the timeframe reporting requirement. SBC PHS is accessible 24/7. After hours, the caller is directed to call the after-hours number and/or Regional 911.

The California Code of Regulations, [Title 17 Reportable Diseases](#), mandates certain diseases and conditions be reported to the local health department. SBC PHS CD staff enters Reportable Diseases into the CalREDIE database which is compatible with the National Electronic Disease Surveillance System (NNDSS) [Refer to Appendix A for list of Reportable Diseases](#). This list includes the required timeframes in which the disease must be reported to the local Public Health Department.

Staffing

SBC PHS does not have an epidemiologist on staff for conducting data collection, analysis, reporting and investigation. According to the

Chapter 4 Epidemiology

CDPH Epidemiology Capacity Survey completed in 2015, SBC PHS has four staff who meet the minimum requirements for Tier 1 epidemiologist.

During an emergency response to an outbreak or bioterrorism event when expanded capacity is needed for surveillance and epidemiological investigation, *refer to **SBC All Hazards Plan, Annex 1***. SBC PHS will likely request assistance from CDPH and neighboring counties (Monterey, Santa Cruz, Santa Clara).

SBC PHS staff available to assist with epidemiology and surveillance as needed may include:

- SBC PHS CD Program (leads)
 - PH CD nurse
 - PH immunization nurse
 - Other clinical staff
- All SBC PH nurses
- SBC PHS Health Officer
- SBC PHS Emergency Prep staff
- SBC PHS Environmental Health
- SBC PHS clerical staff

Outbreak Investigation Steps

Upon notification of a potential case, CD staff documents all pertinent information in CalREDIE and initiates an epidemiology investigation if:

- ✓ case indicates possible outbreak (2 or more cases from a common source)
- ✓ single cases of specific diseases such as measles
- ✓ suspected bioterrorism event

Follow the Outbreak Investigation Checklist in Appendix B. Steps include but not limited to:

1. Determine that an outbreak has occurred
 - Conduct Initial Assessment Meeting
 - Maintain log of all events, actions, etc. throughout incident, *refer to Appendix C for Outbreak Events Log*
 - Create a calendar timeline to show timing of symptom onset, diagnosis, contact with others, etc.
 - Summarize info to date: Are there more cases than normally expected? Compare current number of cases with number from previous few weeks or months
 - Attack Rate:
 $\# \text{ reported cases} \div \text{pop at risk}$
 - Make plan; assign tasks/roles
2. Coordinate with key personnel
 - Complete all local notifications
 - Complete all other notifications as needed such as: CDPH, CDC
3. Collect/organize information related to outbreak
 - If gastrointestinal (GI) related symptoms, *refer to Appendix D for Common causes of GI Illness and Incubation periods*
 - Make plan for collecting and analyzing data
 - Establish a Case Definition. This is a standard set of criteria used to determine if person should be classified as having the disease (a case). For CDC list of definitions, see: <https://www.cdc.gov/nndss/conditions/>

Chapter 4 Epidemiology

- Establish/clarify time frames for receiving case notifications, implementing control/prevention measures, etc.
- Collect information/data using the appropriate investigation case report forms. This may include interviewing the case as well as contacts and/or others potentially exposed. *Refer to Appendix I for CDPH Case Report Form and CalREDIE electronic case report at: <https://www.cdph.ca.gov/pubsforms/forms/CtrldForms/cdph8554.pdf> <https://www.cdph.ca.gov/pubsforms/forms/CtrldForms/cdph9060.pdf>*
- Create a Line List
Use Excel to create an electronic spreadsheet to record information in a systematic way: case personal information, symptoms, lab results, relevant exposures, etc. The spread sheet will make analysis easier by: sorting data, creating epi-curve, computing tallies. *Refer to Appendix J for Line list example*
- Create Epi-Curve
Use Excel to create a graph of the epidemic time course. This gives a visual display of the outbreak's magnitude and time trend. It will tell you where you are in the course of the epidemic and help project its future course. By knowing the incubation period, you may be able to estimate time of exposure which will help in the investigation questions. The Epi-Curve will also help determine whether the outbreak is from a common source or person-to-person *Refer to Appendix J for epi-curve example*
- 4. Laboratory testing
 - *Refer to SBC Lab Protocol in **SBC All Hazards Plan***
 - Coordinate with local Hazel Hawkins Memorial Hospital Laboratory, outside laboratory, Environmental Health, CDPH, etc. for guidance on obtaining, shipping and transporting samples
 - Notify healthcare providers of procedures for testing
- 5. Conduct environmental investigation if needed
 - Coordinate with Environmental Health for the investigation
 - Use appropriate investigation form (food borne outbreak questionnaire, etc.)
 - Interview/follow-up with all potential consumers of suspected food
 - Obtain detailed list of food items listed on menu and/or served
 - Collect appropriate food samples as soon as possible
 - Identify all food handlers and test accordingly
- 6. Identify and implement Control and Prevention Measures
 - Identify appropriate control and prevention measures according to suspected disease
 - Make plan including timeline for implementing measures
 - Implement control and prevention measures as soon as possible- immediately and within first few hours.
 - Provide education about disease and control measures to public and healthcare providers

Chapter 4 Epidemiology

- If treatment required, plan how individuals may obtain treatment: through healthcare providers, hospital, clinics, etc. If mass treatment or prophylaxis is needed, *refer to **SBC MCM Plan and SBC All Hazards Plan.***

- 7. After incident is over, follow QI process for reviewing investigation
 - Submit all completed electronic forms via CalREDIE
 - Lead CD investigator completes Outbreak Summary Report *Refer to **appendix K***
 - Second investigator or CD team member completes Outbreak Summary QA Form *Refer to **Appendix L***
 - For larger outbreak, conduct After Action Meeting (Hot wash) and complete After Action Report (AAR)
 - Implement corrective actions based on findings from AAR and QI process. Update pertinent plans such as the CD Manual, SBC All Hazards, and SBC MCM accordingly. Communicate corrective actions with key stakeholders.

Chapter 5 Control / Prevention Measures

SBC PHS will use the data and information collected, literature search, consultations with the State and subject matter experts, etc. to determine the appropriate recommendations and implementation of public health interventions to control and prevent further spread of disease as soon as possible. Control measures should be aimed at: causative agent/organism, source, reservoir and/or reducing susceptibility to the disease. Control and prevention measures must also be specific for the case, contacts/exposed and general public. Measures must be communicated to the public, healthcare providers, etc. in a timely manner through a variety of modalities (health advisories/ alerts, emails, faxes, automated phone messaging, flyers, social media, news media, etc.)

Refer to the Disease Protocols Chapter for disease specific control/prevention measures.

SBC PHS will continue monitoring and analyzing effects of control and prevention measures throughout the duration of the public health threat or incident and adjust accordingly.

SBC PHS CD staff will monitor compliance with initiating control and prevention measures within the appropriate timeframe on an annual basis and after every outbreak investigation through its QI Process.

Examples of control and prevention measures include:

- Hand washing and respiratory hygiene
- PPE for public, healthcare providers, first responders
- Insect repellent, protective clothing

- Environmental cleaning (includes disinfecting desks, counters, etc.)
- Destroying mosquito breeding sites
- Excluding persons at risk for transmitting disease from schools, work, etc.
- Patient cohorting
- Isolation
- Quarantine
- First responder transportation protocols for highly infectious diseases in effect *Refer to Appendices O, P Transportation Protocols*
- Mass vaccination/dispensing (*refer to SBC PHS All Hazards Plan*)
- Restricting sale/use of implicated food
- Destroying contaminated food
- Sterilizing contaminated water
- Excluding infectious food handlers from work
- Enforce facility/restaurant closure
- Health Officer orders as indicated

Chapter 6 Quality Improvement Process

SBC PHS CD staff maintains a Quality Improvement (QI) process which includes annual review of compliance with case reporting/ investigations throughout the year and after every outbreak investigation. The QI process assists SBC PHS in ongoing improvement of infectious disease reporting, investigations, response and plans.

ANNUALLY

Annually, SBC PHS CD will conduct a QI review using data from CalREDIE to include the following measures: *Refer to Appendix M Annual QI Review*

- Determine % of selected reportable diseases received by SBC PHS within the required time frame (*refer to Appendix A List of Reportable Diseases* for required time frame)

$$\frac{\text{Numerator: \# reports of selected reportable disease received within required timeframe}}{\text{Denominator: \# reports of selected reportable disease received total}}$$

- Determine % of selected reportable diseases received by SBC PHS for which public health control measures were initiated within the appropriate time frame (*refer to Appendix N Table of Public Health Control Measures* for appropriate time frame)

$$\frac{\text{Numerator: \# reports of selected reportable diseases for which control and prevention measures were initiated within an appropriate time frame}}{\text{Denominator: \# reports of selected reportable disease received total}}$$

- Determine % of outbreak investigations for which Outbreak Summary Report was completed

$$\frac{\text{Numerator: \# Outbreak Investigation Summary Reports completed}}{\text{Denominator: \# Outbreaks investigated}}$$

- Determine % of Outbreak Summary Reports that contain all minimal elements

$$\frac{\text{Numerator: \# Outbreak Investigation Summary Reports containing all minimal elements}}{\text{Denominator: \# Outbreak Investigation Summary Reports completed}}$$

AFTER EVERY OUTBREAK INVESTIGATION

After every outbreak investigation, SBC PHS CD will conduct a QI review that includes:

- Outbreak Summary Report (*refer to Appendix K for Report form*)
- Outbreak Summary QA Form (*refer to Appendix L for QA form*)
- For large outbreaks, an After Action meeting (Hot wash) with AAR

Chapter 7 Special Considerations

Transportation

Patients with highly pathogenic disease or emerging infectious disease, including Ebola, require specialized attention. It is necessary to transport infected or contaminated patients with specially prepared emergency vehicles and personnel to minimize cross-contamination, disease spread and first responder risk. These patients may need to be transported, for example, to a designated Ebola treatment center for further management and care, if they initially present at a local hospital or clinic. The following agencies must coordinate to facilitate appropriate and safe patient transportation: Medical Health Operational Area Coordinator (MHOAC), Public Health Services (PHS), Emergency Medical Services (EMS), Office of Emergency Services (OES), law enforcement, contracted 911 ambulance provider, other response agencies, hospital, and medical providers.

San Benito County is included in the California Region II Emerging Infectious Disease Transportation Plan (*refer to Appendix O for Region II Transportation plan*). The point of contact in San Benito County for medical/health emergency management and activating the Transportation plan is the MHOAC. The MHOAC will facilitate the transportation process.

Communication flow regarding patient with suspected or confirmed highly pathogenic or emerging infectious disease/Ebola will be as follows:

1. SBC PHS and/or MHOAC deems patient needs an assessment at hospital

2. MHOAC contacts Region II RDMHS for hospital destination selection and specialized EMS transport if needed and notifies selected receiving hospital.
3. RDMHS coordinates with Region II MHOACs to identify specialized EMS transport team. Coordinating MHOACs will then contact specialized EMS providers for activation and response
4. Selected specialized EMS transport provider(s) will respond and contact the destination treatment/assessment hospital with ETA as soon as possible. Responding ambulance team will mobilize transport vehicle and appropriate medical personnel within two hours per agreement with Region II RDMHC program.

SBC Emergency Medical Services (EMS) provides emergency response and transportation through American Medical Response (AMR) or other contracted 911 ambulance provider. AMR will notify San Benito County Public Health of any patient suspected of a highly pathogenic disease or person under investigation (PUI) and will then follow specific AMR guidelines for reducing risk of infectious disease exposure to themselves and patients. The guidelines address: call source, vehicle preparation, PPE, patient PPE, facility notification, and decontamination. (*Refer to Appendix P for Core Principles for EMS Response to Biohazard Emergencies-Ebola, Emergency Medical Services Program, AMR Ebola Response Plan*).

Chapter 7

Special Considerations

PPE

Healthcare workers and emergency response personnel must be trained on and follow appropriate PPE protocol to ensure that no infectious material reaches unprotected skin or mucous membranes while providing patient care. This includes: donning (putting on), during patient care and doffing (removing).

Guidance on the types of PPE to be used and the processes for donning and doffing PPE can be found on the CDC website at:

<http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html> and
<http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/calculator.html>

Refer to Appendix Q for CDC estimated PPE needs

Refer to Appendix P for Core Principles for EMS Response to Biohazard Emergencies-Ebola, Emergency Medical Services Program, AMR Ebola Response Plan.

Key points from the CDC include:

- Healthcare workers caring for patients with Ebola must have received comprehensive training and demonstrated competency in performing Ebola-related infection control practices and procedures
- PPE that covers the clothing and skin and completely protects mucous membranes is required when caring for patients with Ebola
- Personnel providing care to patients with Ebola must be supervised by an onsite manager at all times, and a trained observer must supervise each step of every PPE donning/doffing

procedure to ensure established PPE protocols are completed correctly

- Individuals unable or unwilling to adhere to infection control and PPE use procedures should not provide care for patients with Ebola

PPE SBC PHS Inventory:

Onsite

- Gloves
- N95 masks (all employees fit tested)

Offsite Alternate Care Site (ACS) cache

- Gloves (exam and surgical)
- Hand sanitizer
- N95's
- Surgical masks
- Plastic eye shields
- Full faceguards
- Gowns (exam, isolation, staff splash resistant)

Waste Management

Waste generated during the care of persons under investigation (PUI) or patients with confirmed Ebola, other highly pathogenic or emerging infectious disease, is subject to local, state and federal regulations.

Waste contaminated or suspected to be contaminated with Ebola virus is a Category A infectious substance regulated as a hazardous material under the U.S. Department of Transportation (DOT) Hazardous Materials. Local San Benito County Waste Management does not have the resources readily available to provide remediation, decontamination and waste removal services for such an incident.

Chapter 7

Special Considerations

CDPH and Region II (includes San Benito County) has provided guidelines, flow chart, and list of companies that can assist with proper waste disposal during an incident involving highly pathogenic infectious disease. Refer to: <http://www.bepreparedcalifornia.ca.gov/Pages/Home.aspx>

SBC PHS will coordinate with appropriate agencies including SBC Environmental Health, Waste Management, etc. *Refer to Appendix R for Ebola Waste Management for Non-Healthcare Settings*

Chapter 8

Appendices

Appendix A-Reportable Diseases

Appendix B-Outbreak Investigation Checklist

Appendix C-Outbreak Events Log

Appendix D-Common Causes of GI Illness and Incubation Periods

Appendix E- Tuberculosis Contact Investigations CDC Algorithm

Appendix F- Class A/B Tuberculosis Sample Letter

Appendix G- Class A/B Tuberculosis Follow-up Worksheet

Appendix H-Request for Zika Virus Screening (SBC PHS)

Appendix I-Investigation Case Report Forms

Appendix J-Line list and Epi-Curve

Appendix k-Outbreak Summary Form

Appendix L-Outbreak Summary Quality Assurance (QA) Form

Appendix M-Annual Quality Improvement Review Form

Appendix N-Table of Public Health Control Measures

Appendix O-Transportation Plans-Region II Regional Emerging Infectious Disease

Appendix P-Transportation Plans-Regional EMS

Appendix Q-CDC Estimated PPE Needs

Appendix R- Ebola Waste Management for Non-Healthcare Settings

Appendix A: Reportable Diseases and Conditions, Title 17

Title 17, California Code of Regulations (CCR) §2500, §2593, §2641.5-2643.20, and §2800-2812 Reportable Diseases and Conditions*

§ 2500. REPORTING TO THE LOCAL HEALTH AUTHORITY.

- § 2500(b) It shall be the duty of every health care provider, knowing of or in attendance on a case or suspected case of any of the diseases or condition listed below, to report to the local health officer for the jurisdiction where the patient resides. Where no health care provider is in attendance, any individual having knowledge of a person who is suspected to be suffering from one of the diseases or conditions listed below may make such a report to the local health officer for the jurisdiction where the patient resides.
- § 2500(c) The administrator of each health facility, clinic, or other setting where more than one health care provider may know of a case, a suspected case or an outbreak of disease within the facility shall establish and be responsible for administrative procedures to assure that reports are made to the local officer.
- § 2500(a)(14) "Health care provider" means a physician and surgeon, a veterinarian, a podiatrist, a nurse practitioner, a physician assistant, a registered nurse, a nurse midwife, a school nurse, an infection control practitioner, a medical examiner, a coroner, or a dentist.

URGENCY REPORTING REQUIREMENTS [17 CCR §2500(h)(1)]

- Ⓢ = Report immediately by telephone (designated by a * in regulations).
- † = Report immediately by telephone when two or more cases or suspected cases of foodborne disease from separate households are suspected to have the same source of illness (designated by a * in regulations).
- Ⓣ = Report by telephone within one working day of identification (designated by a * in regulations).
- FAX Ⓢ = Report by electronic transmission (including FAX), telephone, or mail within one working day of identification (designated by a + in regulations).
- + All other diseases/conditions should be reported by electronic transmission (including FAX), telephone, or mail within seven calendar days of identification.

REPORTABLE COMMUNICABLE DISEASES §2500(i)(1)

FAX Ⓢ Ⓢ	Amebiasis	FAX Ⓢ Ⓢ	Listeriosis
Ⓢ !	Anaplasmosis	FAX Ⓢ Ⓢ	Lyme Disease
FAX Ⓢ Ⓢ	Anthrax, human or animal	FAX Ⓢ Ⓢ	Malaria
Ⓢ !	Babesiosis	Ⓢ !	Measles (Rubella)
Ⓢ !	Botulism (Infant, Foodborne, Wound, Other)	FAX Ⓢ Ⓢ	Meningitis, Specify Etiology: Viral, Bacterial, Fungal, Parasitic
Ⓢ !	Brucellosis, animal (except infections due to Brucella canis)	Ⓢ !	Meningococcal Infections
Ⓢ !	Brucellosis, human	Ⓢ !	Mumps
FAX Ⓢ Ⓢ	Campylobacteriosis	Ⓢ !	Novel Virus Infection with Pandemic Potential
Ⓢ !	Chancroid	Ⓢ !	Paralytic Shellfish Poisoning
FAX Ⓢ Ⓢ	Chikungunya (Varicella) (outbreaks, hospitalizations and deaths)	FAX Ⓢ Ⓢ	Pertussis (Whooping Cough)
Ⓢ !	Chlamydia trachomatis infections, including lymphogranuloma venereum (LGV)	Ⓢ !	Plague, human or animal
FAX Ⓢ Ⓢ	Chikungunya Virus Infection	FAX Ⓢ Ⓢ	Poliovirus Infection
Ⓢ !	Cholera	FAX Ⓢ Ⓢ	Psittacosis
Ⓢ !	Ciguatera Fish Poisoning	FAX Ⓢ Ⓢ	Q Fever
Ⓢ !	Coccidioidomycosis	Ⓢ !	Rabies, human or animal
Ⓢ !	Creutzfeldt-Jakob Disease (CJD) and other Transmissible Spongiform Encephalopathies (TSE)	FAX Ⓢ Ⓢ	Relapsing Fever
FAX Ⓢ Ⓢ	Cryptosporidiosis	Ⓢ !	Respiratory Syncytial Virus (only report a death in a patient less than five years of age)
Ⓢ !	Cyclosporiasis	Ⓢ !	Rickettsial Diseases (non-Rocky Mountain Spotted Fever), including Typhus and Typhus-like illnesses
Ⓢ !	Cytcocarcinoma or leishiasis	Ⓢ !	Rocky Mountain Spotted Fever
Ⓢ !	Dengue Virus Infection	Ⓢ !	Rubella (German Measles)
Ⓢ !	Diphtheria	Ⓢ !	Rubella Syndrome, Congenital
Ⓢ !	Domoic Acid Poisoning (Amesic Shellfish Poisoning)	FAX Ⓢ Ⓢ	Salmonellosis (Other than Typhoid Fever)
Ⓢ !	Ehrlichiosis	Ⓢ !	Scombroid Fish Poisoning
FAX Ⓢ Ⓢ	Encephalitis, Specify Etiology: Viral, Bacterial, Fungal, Parasitic	Ⓢ !	Shiga toxin (detected in feces)
Ⓢ !	Escherichia coli: shiga toxin producing (STEC) including E. coli O157	FAX Ⓢ Ⓢ	Shigellosis
Ⓢ !	Flavivirus infection of undetermined species	Ⓢ !	Smallpox (Variola)
† FAX Ⓢ Ⓢ	Foodborne Disease	FAX Ⓢ Ⓢ	Streptococcal Infections (Outbreaks of Any Type and Individual Cases in Food Handlers and Dairy Workers Only)
Ⓢ !	Giardiasis	FAX Ⓢ Ⓢ	Syphilis
Ⓢ !	Genococcal Infections	Ⓢ !	Tetanus
FAX Ⓢ Ⓢ	Haemophilus influenzae, invasive disease, all serotypes (report an incident of less than five years of age)	FAX Ⓢ Ⓢ	Tichniosis
FAX Ⓢ Ⓢ	Hantavirus Infections	FAX Ⓢ Ⓢ	Tuberculosis
Ⓢ !	Hemolytic Uremic Syndrome	Ⓢ !	Tularemia, animal
FAX Ⓢ Ⓢ	Hepatitis A, acute infection	Ⓢ !	Tularemia, human
Ⓢ !	Hepatitis B (specify acute case or chronic)	FAX Ⓢ Ⓢ	Typhoid Fever, Cases and Carriers
Ⓢ !	Hepatitis C (specify acute case or chronic)	FAX Ⓢ Ⓢ	Viral Infections
Ⓢ !	Hepatitis D (Delta) (specify acute case or chronic)	Ⓢ !	Viral Hemorrhagic Fevers, human or animal (e.g., Crimean-Congo, Ebola, Lassa, and Marburg viruses)
Ⓢ !	Hepatitis E, acute infection	FAX Ⓢ Ⓢ	West Nile Virus (WNV) Infection
Ⓢ !	Human Immunodeficiency Virus (HIV) Infection, stage 3 (AIDS)	Ⓢ !	Yellow Fever
Ⓢ !	Human Immunodeficiency Virus (HIV), acute infection	FAX Ⓢ Ⓢ	Yersiniosis
Ⓢ !	Influenza, deaths in laboratory-confirmed cases for age 0-64 years	Ⓢ !	Zika Virus Infection
Ⓢ !	Influenza, novel strains (human)	Ⓢ !	OCCURRENCE OF ANY UNUSUAL DISEASE
Ⓢ !	Legionellosis	Ⓢ !	OUTBREAKS OF ANY DISEASE (including diseases not listed in § 2500; Specify if institutional and/or open community.
Ⓢ !	Leptospirosis		

HIV REPORTING BY HEALTH CARE PROVIDERS §2641.30-2643.20

Human Immunodeficiency Virus (HIV) infection at all stages is reportable by traceable mail, person-to-person transfer, or electronically within seven calendar days. For complete HIV-specific reporting requirements, see Title 17, CCR, §2641.30-2643.20 and <http://www.cdph.ca.gov/programs/aids/Pages/OAHU3rptoSP.aspx>

REPORTABLE NONCOMMUNICABLE DISEASES AND CONDITIONS §2800-2812 and §2593(b)

Disorders Characterized by Losses of Consciousness (§2800-2812)

Pesticide-related illness or injury (known or suspected cases)**

Cancer, including benign and borderline brain tumors (except (1) basal and squamous skin cancer unless occurring on genitalia, and (2) carcinoma in-situ and CIN III of the Cervix) (§2593)***

LOCALLY REPORTABLE DISEASES (if Applicable):

* This form is designed for health care providers to report those diseases mandated by Title 17, California Code of Regulations (CCR). Failure to report is a misdemeanor (Health & Safety Code §120295) and is a citable offense under the Medical Board of California Citation and Fine Program (Title 16, CCR, §1364.10 and 1364.11).

** Failure to report is a citable offense and subject to civil penalty (§250) (Health and Safety Code §105200).

*** The Confidential Physician Cancer Reporting Form may also be used. See Physician Reporting Requirements for Cancer Reporting in CA at: www.cdph.ca.gov

Appendix B: Outbreak Investigation Checklist (page 1 of 2)

Insert initials of person(s) responsible for task inside box:

	Health Officer	Incident Commander	Lead CD Investigator	CD staff	PH Nurse	PH Staff	Environmental Health	Recorder	Other
1. Determine outbreak has occurred									
A. Set up Initial Assessment Meeting									
B. Maintain log of all events, actions, etc.									
C. Summarize information to date									
D. # cases to date? Is this more than normal? What is attack rate?									
E. Make plan; assign tasks & roles									
2. Contact and coordinate with key persons									
A. Complete all local notifications									
B. Complete all other notifications as needed such as: CDPH, CDC, etc.									
3. Collect/organize information									
A. Identify who is collecting data/analyzing									
B. Establish Case Definition									
C. Establish time frames for receiving case notifications and implementing control and prevention measures									
D. Collect data/information using appropriate investigation report forms									
E. Create Line List									
F. Create Epi-Curve									
4. Laboratory Testing									
A. Coordinate with local HHMH, outside lab, EH, CDPH, etc. for guidance on obtaining, shipping and transporting samples (also, refer to SBC Lab Protocol in SBC All Hazards Plan)									
B. Notify healthcare providers of procedures for testing									

Appendix B: Outbreak Investigation Checklist (page 2 of 2)

5. Conduct Environmental investigation if needed									
A. Coordinate with EH for investigation									
B. Use appropriate food borne, water borne, investigation form/ questionnaire									
C. Interview/follow-up with all potential consumers of suspected food, water									
D. Obtain detailed list of food items on menu and/or served									
E. Collect appropriate food samples as soon as possible									
F. Identify all food handlers and test accordingly									
6. Control and Prevention Measures									
A. Identify appropriate control and prevention measures according to situation and disease									
B. Make plan including timeline for implementing measures									
C. Implement measures as soon as possible									
D. Provide education to public and healthcare providers about specific disease and control measures									
E. If treatment or prophylaxis required, make plan for providing. If mass treatment/prophylaxis needed, refer to SBC MCM Plan and SBC All Hazards Plan									
7. Quality Improvement Process									
A. Submit all completed electronic forms via CalREDIE									
B. Lead CD Investigator completes Outbreak Summary Report Form									
C. Second CD staff completes Outbreak Summary Quality Assurance Form									
D. For larger outbreak, conduct After Action Meeting and complete AAR									
E. Incorporate findings and associated corrective actions into Improvement Plan and implement. Communicate corrective actions to key stakeholders									

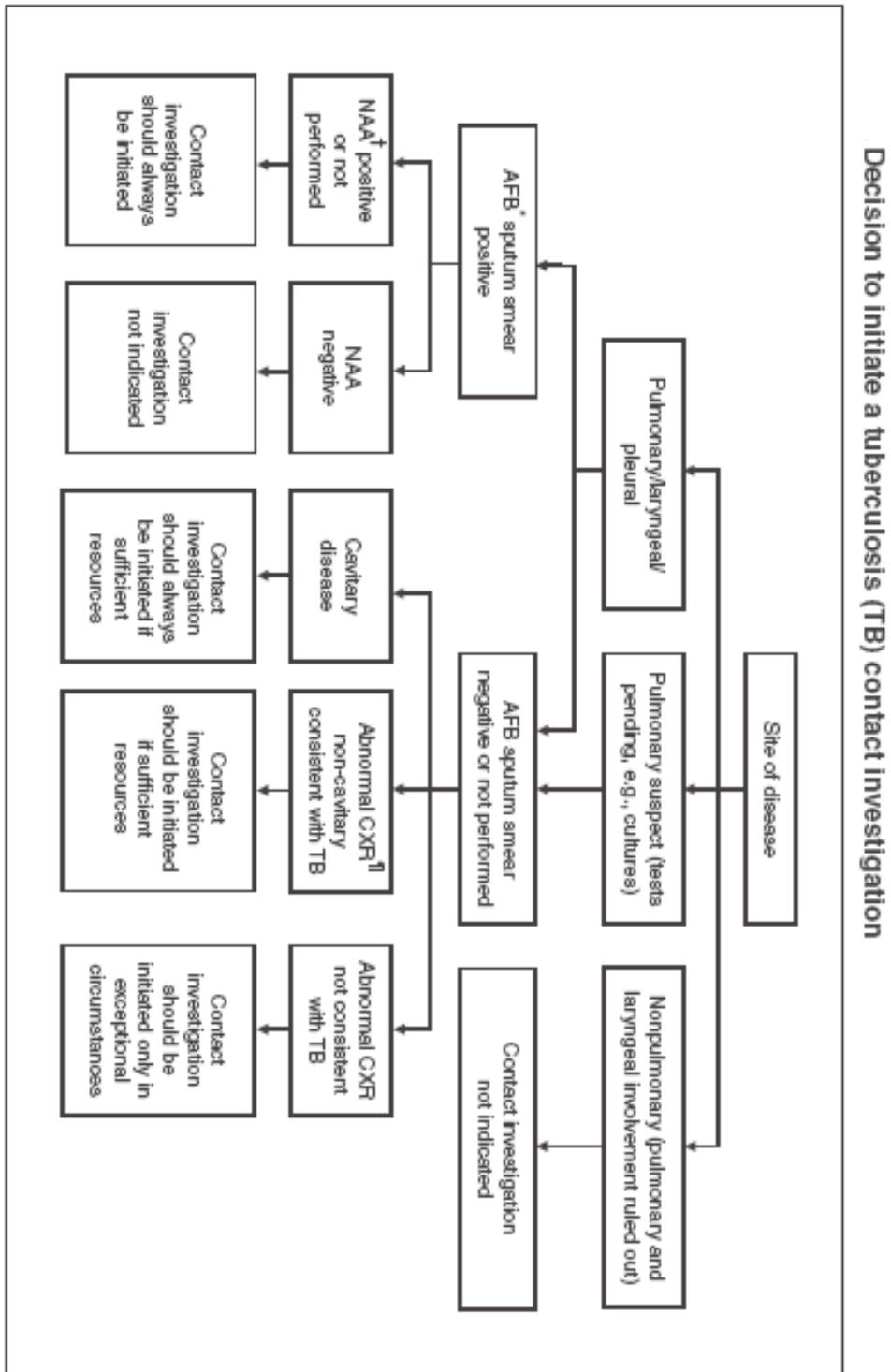
Appendix D: Common Causes of GI Illness and Incubation Periods

Agent	Common Source	Incubation Period	Duration
<i>Bacillus cereus</i> (bacteria toxin)	Rice, other foods left out at room temp	30 mins-6 hrs. (vomiting) 6-15 hrs. (diarrhea)	24 hrs.
Botulism (bacteria toxin)	Honey; improperly canned foods	3-30 days (infants) 12-72 hrs. (children, adult)	Variable
<i>Campylobacter</i> (bacteria)	Raw, undercooked poultry; unpasteurized milk, contaminated water	2-5 days	2-10 days
<i>Clostridium</i> (bacteria)	Beef, poultry, gravy	6-24 hrs.	24 hrs. or less
<i>E coli</i>	Undercooked, raw food; contaminated water; direct contact	1-10 days (If HUS occurs, develops after 1 wk.)	5-10 days
<i>Giardia</i> (parasite)	Fecal-oral; water, food; direct contact	3-25 days	2-6 wks.
Hepatitis A (virus)	Undercooked, raw food; contact with infected food handler	28 days	2 wk-3 mos.
<i>Listeria</i> (bacteria)	Ready-to-eat deli meat; refrigerated meat spreads; unpasteurized dairy; smoked food; raw sprouts	3-70 days	Days-wks.
Norovirus (virus)	Shellfish; water, air, surfaces; contact with infected food workers	12-48 hrs.	1-3 days
Rotavirus (virus)	Water, food; direct contact	24-72 hrs. (seasonal outbreaks)	4-6 days
<i>Salmonella</i> (bacteria)	Contaminated raw, undercooked food such as eggs, poultry, meat, milk; reptiles	12-72 hrs.	4-7 days
<i>Shigella</i> (bacteria)	Contaminated food, water; contact with infected person; associated with salads, sandwiches involving hand contact in preparation	1-7 days	2-7 days
<i>Staph aureus</i> (bacteria)	Food made with hand contact and no further cooking	1-6 hrs.	24-48 hrs.
<i>Vibrio</i>	Raw undercooked shellfish	2-48 hrs./ 1-7 days	2-8 days

<https://www.foodsafety.gov/poisoning/causes/index.html>

Heymann DL, ed. Control of Communicable Diseases Manual. 20th ed. American Public Health Association 2015

Appendix E: Tuberculosis Contact Investigations CDC Algorithm



* Acid-fast bacilli.
† Nucleic acid assay.
§ According to CDC guidelines.
¶ Chest radiograph.

Appendix F: Class A/B Tuberculosis Sample Letter

[Insert Health Department Logo]

Date:

Dear:

Welcome to *name of state!*

We have been notified by the Division of Global Migration and Quarantine through the **Bureau of Immigration and Customs Enforcement** that you are now residing in *name of jurisdiction* and we are **requiring** that you have a medical evaluation for tuberculosis within the next two weeks.

Please report to the **Tuberculosis Clinic**, *address* for clearance of your tuberculosis waiver on *date* at *time*.

Our clinic hours are: *clinic hours*

Please bring this letter, all x-ray films and any medical forms that you have with you.

If you have already reported to this clinic or if you need to change your appointment, please call *phone number*.

Sincerely,

Name of Sender

Title of Sender

Name of TB Control Program

Appendix H: Request for Zika Virus Screening (SBC PHS)



SAN BENITO COUNTY PUBLIC HEALTH SERVICES
Communicable Disease Unit
439 Fourth Street, Hollister CA 95023
(831) 637-5367; Fax (831) 637-9073; After Hours Phone: (831) 637-7945

Updated 05/24/2016

Request for Zika Virus Screening

Healthcare Providers: Please fill out Sections A & B completely then fax to 831-637-9073. Do not send patients for blood withdraw until Communicable Disease Unit staff communicate with you. Specimens that are not pre-authorized by the Communicable Disease Unit will not be processed by the laboratory.

A. Submitting Provider's Information

Healthcare Provider: _____ Healthcare Facility: _____

Street Address: _____ Phone #: _____

City, State, ZIP: _____ Fax #: _____

Ordering Provider's Signature for Testing: _____

B. Patient Information

Name (Last) _____ (First) _____ Birth Date ____/____/____

Street Address _____ City _____ State ____ ZIP _____

Phone # (Home) _____ (Cell) _____ (Work) _____

Gender: _____ Pregnant: No Yes, Expected Date of Delivery: _____

Ethnicity: _____ Race: _____ Language: _____

Symptomatic? No Yes, Date of Onset _____ Symptoms (mark all that apply):
 Fever Rash Conjunctivitis Joint Pain Muscle Pain Other: _____

Travel to a Zika-affected area? No Yes, Location(s): _____

Dates of Travel: _____

C. Health Department Approval

Meets California Department of Public Health testing criteria? Yes No Healthcare provider notified? Yes No
Was phlebotomy service provider notified? Yes No VRDL form completed & sent to PHL? Yes No

Certified by (printed name): _____ Date: _____

Signature: _____ Phone: _____

D. Laboratory Instructions

If Section C above indicates testing criteria are met, please collect the following:

- Asymptomatic Patients: At least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube.
- Symptomatic Patients: 1) at least 2 ml of serum (5-10 ml of blood) in a red top or serum separator tube OR at least 1 ml of CSF, AND 2) 3-5 ml of urine. It is not necessary to spin or process the urine.
- Store all specimens at 4°C. Ship on cold pack within 24 to 72 hours to the Monterey County Public Health Laboratory, 1270 Natividad Road, Salinas (831-755-4516). Specimens are accepted between 8:00 am and 4:30 pm Monday through Friday.

Appendix I: Investigation Case Report Forms (CDPH)

State of California—Health and Human Services Agency

California Department of Public Health
Surveillance and Statistics Section
P. O. Box 997377, MS 7306
Sacramento, CA 95899-7377

- OTHER OUTBREAK (Use CDC 52.12 for waterborne disease outbreaks; CDC 52.13 for foodborne disease outbreaks.)
 OTHER REPORTABLE DISEASE OR DISEASE OF UNUSUAL OCCURRENCE

- Confirmed Not confirmed Suspected

Kind of outbreak/illness

PERSONAL DATA—FOR SINGLE CASE ONLY

Patient name—last		first	middle initial	Date of birth	Age	Sex
Address—number, street			City	State	County	ZIP code
RACE (check one)				ETHNICITY (check one)		
<input type="checkbox"/> African-American/Black <input type="checkbox"/> White <input type="checkbox"/> Native American <input type="checkbox"/> Asian/Pacific Islander <input type="checkbox"/> Other _____				<input type="checkbox"/> Hispanic/Latino <input type="checkbox"/> Non-Hispanic/Non-Latino		
If Asian/Pacific Islander, please check one:						
<input type="checkbox"/> Asian Indian		<input type="checkbox"/> Cambodian		<input type="checkbox"/> Chinese		<input type="checkbox"/> Filipino
<input type="checkbox"/> Japanese		<input type="checkbox"/> Korean		<input type="checkbox"/> Laotian		<input type="checkbox"/> Samoan
				<input type="checkbox"/> Vietnamese		<input type="checkbox"/> Other _____

LOCATION AND SCOPE OF OUTBREAK—FOR OUTBREAK ONLY

City	County	Name of community, camp, or institution							
Population at risk	Number of persons investigated epidemiologically	Number of persons ill	Number of cases laboratory confirmed	Number hospitalized	Number of deaths				
Date of Onset		Number of persons ill by age group	Under 1 year	1–4 years	5–9 years	10–19 years	20–39 years	40–59 years	60 and over
First case:	Last case:								

REASON FOR INVESTIGATION

Was the California Department of Public Health notified? Yes No

HISTORY OF ILLNESS

Brief description of clinical course and the characteristics of the epidemic or case. Include date of onset and hospitalization for case.

Incubation period (range in hours or days)		Average duration of symptoms	Outcome of case
Minimum:	Maximum:		<input type="checkbox"/> Recovered <input type="checkbox"/> Fatal Date of death _____

DIAGNOSTIC TESTS

SPECIMENS		DATE COLLECTED	TYPE OF TEST	RESULTS		NAME AND ADDRESS OF LABORATORY
Type	Number of Patients			Number Positive	Etiology	

RESULTS OF INVESTIGATION AND REMARKS

Summary of investigation, giving probable source with sustaining evidence; also name and address of suspected carrier or missed cases.

Appendix J: Line List and Epi-Curve example

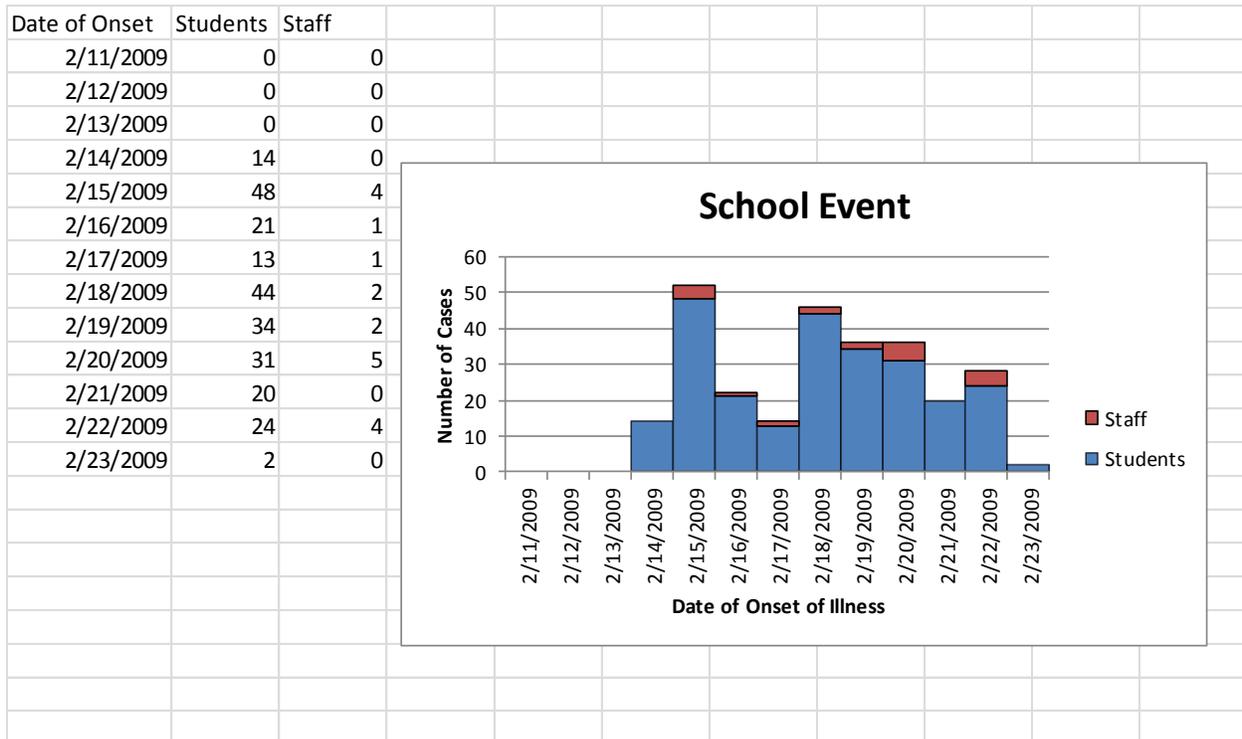
Line List example:

Case #	Initials	Date notified	Date onset	MD Dx	Nausea	Vomiting	Anorexia	Fever	Dark urine	Jaundice	IgM HAV	Age	Sex
1	TK	4/6/04	4/2/04	HepA	0	1	0	1	1	1	+	45	F
2	CC	6/20/04	6/15/04	HepA	1	1	1	1	1	1	+	57	M
3	JD	7/7/04	7/2/04	HepA	0	1	0	1	1	1	+	23	M

Epi-Curve example:

For instructions on how to create Epi-Curve using Excel, see link below:

https://www.cdc.gov/nceh/vsp/cruiselines/epi_tools/steps-to-creating-an-epidemic-curve-in-ms-excel-2007.pdf



Appendix K: Outbreak Summary Report Form

To be completed by Lead CD Investigator for every outbreak investigation:

Name of Lead Investigator completing form: _____ Date: _____

Summary

1. Background Information (when initially notified, when was first case(s) affected-dates/times), (population affected, estimated number of persons exposed and number of ill, location, geographical area involved, suspected or known etiology):

2. Initiation of Investigation (information regarding receipt of notification and initiation of the investigation-dates/times):

3. Investigation Methods (initial investigation activity such as verifying lab results; data collection and analysis methods; tools used such as interviews, epi curves, attack rate tables, questionnaires; case definitions; exposure assessments)

4. Investigation Findings/Results: (epi, lab, clinical, other):

5. Discussion and/or Conclusions:

6. Control and Prevention Measures (recommendations; when and what implemented):

7. Areas of strength of investigation:

8. Areas of improvement needed of investigation:

Appendix L: Outbreak Summary Report Quality Assurance Form

To be completed by a CD staff (other than Lead CD Investigator) for every Outbreak Summary Report completed:

Name of CD staff completing QA Form: _____ Date: _____

Does Outbreak Summary Report contain all minimal elements?	<input type="checkbox"/> yes <input type="checkbox"/> no
Was notification of case(s) received within required time frame? (Use List of Reportable Diseases time frames or other if established by CD Investigation team). What % of notifications was received on time?	<input type="checkbox"/> yes <input type="checkbox"/> no _____ % received within time frame
Length of time between notification of case and initiation of investigation? (Date/time PH notified – Date/time PH initiated investigation)	_____ hrs./days/weeks
Were tools used to help with investigation? <i>(For ex: epi curves, attack rate tables, interviews, questionnaires)</i>	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> other explanation:
Was a Case Definition established and used?	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> other explanation:
Were data collection and analysis methods used?	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> other explanation:
Were findings/results included in report?	<input type="checkbox"/> yes <input type="checkbox"/> no <input type="checkbox"/> other explanation:
Were appropriate conclusions drawn?	<input type="checkbox"/> yes <input type="checkbox"/> no
Were recommendations/control measures initiated within established time frame?	<input type="checkbox"/> yes <input type="checkbox"/> no
Was information entered into CalREDIE?	<input type="checkbox"/> yes <input type="checkbox"/> no
Was post-incident Outbreak Summary Report completed by Lead CD Investigator?	<input type="checkbox"/> yes <input type="checkbox"/> no
If large outbreak, was post-incident “hot wash” conducted.	<input type="checkbox"/> yes <input type="checkbox"/> no
If large outbreak, was post-incident AAR/Improvement Plan written?	<input type="checkbox"/> yes <input type="checkbox"/> no
Were corrective actions/recommendations implemented?	<input type="checkbox"/> yes <input type="checkbox"/> no

Appendix M: Annual Quality Improvement Review Form: Case Reporting and Investigations

Select 3 Reportable Diseases reported in the last 12 months (Botulism, Tularemia, E. coli, Hepatitis A, Measles, Meningococcal disease-Neisseria meningitides per CDPH) Use data from CalREDIE Disease Incident and PHEP Surveillance tabs			
	Disease 1	Disease 2	Disease 3
Total # of these Reportable Disease cases reported to PHS			
% of cases reported to PHS within the required time frame: Numerator: # reports of selected reportable disease received within required timeframe \div Denominator: # reports of selected reportable disease received total			
% of cases reported to PHS for which control and prevention measures were initiated with the appropriate time frame (see <i>Public Health Control Measures Table for time frames- Appendix N</i>): Numerator: # reports of selected reportable diseases for which control and prevention measures were initiated within an appropriate time frame \div Denominator: # reports of selected reportable disease received total			
For <u>outbreak</u> investigations conducted in the last 12 months			
Total # of Outbreak Investigations			
% of outbreak investigations for which Outbreak Summary Report was completed: Numerator: # Outbreak Investigation Summary Reports completed \div Denominator: # Outbreaks investigated			
% of Outbreak Summary Reports that contain all minimal elements: Numerator: # Outbreak Investigation Summary Reports containing all minimal elements \div Denominator: # Outbreak Investigation Summary Reports completed			

Appendix N: Table of Public Health Control Measures

Disease agent	Example control measures	Initiation timeframe
Botulism	Identification of potentially exposed individuals Identification / recovery of suspected source of infection, as applicable	Within 24 hours of initial case identification
<i>E. coli</i> (STEC)	Contact tracing Education: contacts as applicable Exclusions: child care, food handling as applicable	Within 3 days of initial case identification
Hepatitis A, Acute	Contact tracing Education: contacts Immunization (active/passive) administered or recommended to contacts, as appropriate	Within 1 week of initial case identification
Measles	Contact tracing Education: contacts Immunization (active/passive) administered or recommended for susceptible individuals Isolation: confirmed cases	Within 24 hours of initial case identification
Meningococcal Disease	Contact tracing Education: contacts Prophylaxis administered or recommended for susceptible individuals	Within 24 hours of initial case identification
Tularemia	Identification of potentially exposed individuals Identification of source of infection, as applicable	Within 48 hours Within 48 hours of initial case identification

Public Health Emergency Preparedness Cooperative Agreement
BP1 Performance Measures Specifications and Implementation Guidance

Appendix O: Transportation Plans-Region II

State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan (Page 1 of 7)..[\Region II ID-Ebola Con Ops V2 3-14-16.pdf](#)

March 14, 2016 REGIONAL EMERGING INFECTIOUS DISEASE TRANSPORTATION PLAN

I. Overview, Goals and Objectives:

Overview-

The sixteen (16) counties which make up California Mutual Aid Region II (Alameda, Contra Costa, Del Norte, Humboldt, Lake, Marin, Mendocino, Monterey, Napa, San Benito, San Francisco, San Mateo, Santa Clara, Santa Cruz, Solano, and Sonoma) have a population of approximately 12 million residents, tens of thousands of visitors, and hundreds of high profile transportation, historical, industrial, tourism, and environmental resources in the region. The large population and wide geography make California Region II susceptible to emerging infectious diseases such as Ebola, Influenza, and other novel viruses.

The California Department of Public Health (CDPH) and the state Emergency Medical Services Authority (EMSA) and the sixteen (16) in Region II have already adopted the all-hazard [California Public Health and Medical Emergency Operations Manual](#) (EOM) which fulfills the information sharing and resource request requirements of the Standardized Emergency Management System (SEMS). Each county has established a single point of contact for medical and health emergency management: the Medical and Health Operational Area Coordinator (MHOAC), and the region has a Regional Disaster Medical Health Coordination (RDMHC) program to facilitate these processes. At every level Public Health and Medical representatives partner with their counterparts from law enforcement, fire suppression and emergency management agencies.

However, patients with highly infectious emerging diseases or other forms of contamination require specialized attention. It is necessary to transport infected or contaminated patients with specially prepared vehicles and personnel to minimize cross-contamination, disease spread, and first responder risk.

Since the 2014 West African Ebola outbreak, and subsequent return of Ebola healthcare workers to California, the RDMHC program has worked with local MHOAC programs and several large ambulance providers to prepare for transport of potential or confirmed Ebola Virus Disease (EVD) patients. These companies have set aside a number of specially prepared ambulances which have the inside of the patient transport compartments draped in heavy plastic over their existing walls, and storage compartments to decrease contamination and speed decontamination processes. These companies have also invested significant money and time in training, exercising, and PPE procurement with little to no financial compensation for their efforts.

While this ad-hoc approach has been a necessary interim response to Ebola in Region II, there is a need for a more established and structured concept of operations in response to emerging infectious disease (EID) and Ebola. With the establishment of the *State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan* as a structure, specialized teams of EID/Ebola prehospital medical responders throughout Region II will be more prepared to train, exercise, and respond to future EID/Ebola patients.

Appendix O: Transportation Plans-Region II

State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan (Page 2 of 7)

Goal -

To address specialized regional prehospital medical transportation situations to minimize impact of these patients/incidents on the healthcare system while maximizing patient and healthcare provider safety.

Objectives-

- Reinforce the current all-hazard system of information sharing and resource requesting through the EOM.
- Address the operational components of a specialized transport program including:
 - o Specialized vehicle preparation and upkeep.
 - o Specialized training for transport and evaluation personnel.
 - o Effective cooperation between local health department (LHD) authorities, transport personnel, and receiving medical facilities through specialized training and exercising.
 - o Decontamination and demobilization of specialized vehicles after an incident.

II. Strategies, Policies and Constraints:

Strategies-

This plan will address the following strategies for specialized transports.

- Standardization of vehicles, equipment and decontamination.
- Standardization of training/exercises.
- Standardization of response policies.
- Standardization of activating specialized resources and sharing information.

Policies-

These operations will continue to utilize the applicable policies and relevant authorities including:

- California Vehicle Code.
- California Health and Safety Code.
- California Public Health and Medical Emergency Operations Manual.
- Local policies and procedures from Local Emergency Medical Services Agencies.
- Local policies and procedures from Health Departments/Healthcare Agencies.
- Local policies and procedures from the participating ambulance providers.
- Local policies and procedures from participating hospitals.

Constraints-

As noted above, the current, improvised method of response to EID/Ebola is in need of standardization and structure.

Appendix O: Transportation Plans-Region II

State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan (Page 3 of 7)

III. Participants and Activities:

Participants-

- California Department of Public Health.
- California Emergency Medical Services Authority.
- California Governor's Office of Emergency Service (CalOES).
- Region II Disaster Medical Health Coordination program (RDMHC).
- Health Departments/LEMSA's/Healthcare Agencies:
 - o County of Alameda
 - o City of Berkeley
 - o County of Contra Costa
 - o County of Del Norte
 - o County of Humboldt
 - o County of Lake
 - o County of Marin
 - o County of Mendocino
 - o County of Monterey
 - o County of Napa
 - o County of San Benito
 - o County of San Francisco
 - o County of San Mateo
 - o County of Santa Clara
 - o County of Santa Cruz
 - o County of Solano
 - o County of Sonoma
 - o Coastal Valleys EMS Agency
 - o North Coast EMS Agency
- Ambulance providers, as Pre-Designated by the RDMHC program – Region II, currently:
 - o AMR Ambulance- Contra Costa County
 - o Sonoma Life Support Ambulance- Sonoma County
 - o NorCal Ambulance – Alameda County
 - o Pro Transport Ambulance- Alameda County
 - o Medic Ambulance- Solano County
- Ebola Treatment and Assessment Centers, as Pre-Designated by the CDC/CDPH/Health Departments/Healthcare Agencies and RDMHC – Region II, currently:
 - o **Kaiser Permanente – Oakland (Treatment)**
 - o **University of California, San Francisco (Assessment)**
 - o University of California, Davis (Region IV in Sacramento)
 - o Kaiser Permanente – South Sacramento (Region IV in Sacramento)

Appendix O: Transportation Plans-Region II

State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan (Page 4 of 7)

Activities-

- Region II has been granted HPP Supplemental Ebola funding from CDC/CDPH. A portion of the funds will be used to purchase prehospital medical provider PPE, IsoPods, and responder mental health training and monitoring.
- Region II will also use a portion of the HPP supplemental Ebola funding to create and implement a five year specialized emerging disease personnel training plan. Elements include:
 - o Create a standardized training curriculum
 - o Train-the-trainer classes for ambulance providers, LEMSA's, Public Health, and treatment/assessment hospital personnel.
 - o Work with Kaiser Oakland and UCSF to integrate prehospital providers into their EID/Ebola exercises.
- The Region will continue to exercise the EOM established process of requesting resources and sharing information during all trainings and exercises.

IV. Responsibilities and Authorities Delegated:

Responsibilities-

- The Region II RDMHC program will be responsible for implementing this plan including training and exercises, and monitoring responses, operations, and demobilization.
- The MHOAC programs for each county will be responsible for activating the plan and requesting specialized Region II prehospital transport resources in accordance with local procedures and the EOM standards. The MHOAC program will be responsible for notifications to the RDMHC program, LHD, LEMSA, Law Enforcement (LE), Fire Departments (FD), and Emergency Management (EM) during a "real event" as needed, as well as participating in plan revision, training, and exercises.
- County LHD/LEMSA's/Healthcare Agencies (if different from MHOACs) will be responsible for following local procedures and plans in dealing with specialized transport situations for suspect EID/Ebola patients, contacting MHOAC programs, and ensuring proper disposal of medical waste and decontamination of responding ambulances. They will also be responsible for participating in plan revision, training, and exercises.
- Pre-Designated ambulance providers will be responsible for maintaining specialized vehicles, participating in training and exercises, maintaining PPE caches including PAPR's and IsoPods, activating for response when necessary, and post-response operational review.
- Designated Treatment/Assessment hospital facilities (Kaiser Oakland, UCSF) will be responsible for maintaining receiving capabilities as determined by local healthcare agencies, participating in training and exercises, activating for reception of patients, and post-response operational review.

Appendix O: Transportation Plans-Region II

State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan (Page 5 of 7)

Authority Delegated-

All MHOACs in Region II have agreed to waive county medical transport regulations in an EID/Ebola emergency, allowing specialized transport vehicles to operate in their jurisdictions as necessary.

V. Operational processes:

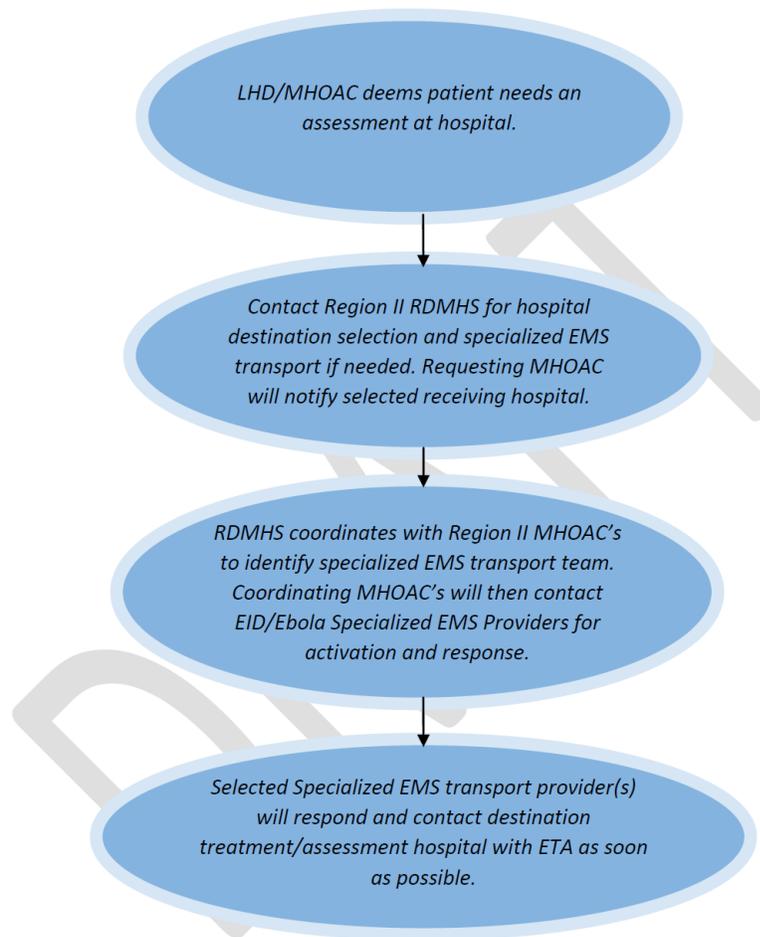
Activation-

- The *State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan* activation process will be initiated by the **MHOAC** for the county wishing to have a patient(s) transported. If the requesting county does not have a specialized EID/Ebola transport team within their Operational Area (OA), the MHOAC will provide the Region II RDMHC program with a situational briefing and medical/health resource request (verbal and/or written) if necessary. The MHOAC will then maintain ongoing communications with all appropriate stakeholders throughout the activation.
- The Region II RDMHC program will work with Region II MHOAC programs to activate specialized EID/Ebola transportation team(s) response. The Region II RDMHC program will inform the CDPH and EMSA duty officers and Coastal Region CalOES representatives.
- County/City LHD/LEMSA's/Healthcare Agencies will provide safety monitoring, information updates, incident guidance, and incident monitoring per local policies and procedures.
- During activation, the Region II RDMHC program, the requesting MHOAC, and the local county Public Health/LEMSA's/Healthcare Agencies will work together to determine the most appropriate destination for the suspect EID/Ebola patient, and make appropriate pre-notifications to the selected receiving facility or facilities.

Appendix O: Transportation Plans-Region II

State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan (Page 6 of 7)

External Communication Flowchart for Patient with Suspected or Confirmed
Ebola/Emerging Infectious Disease



Appendix O: Transportation Plans-Region II

State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan (Page 7 of 7)

Resource Mobilization and Patient Transportation-

- The selected specialized EID/Ebola responding ambulance team(s) will mobilize the transport vehicle and appropriate medical personnel **within two (2) hours** per their agreement with the Region II RDMHC program.
- The responding specialized EID/Ebola ambulance team(s) will maintain communications with their "home" county MHOAC program, as well as communications with the MHOAC program for the requesting county throughout the activation, mobilization, and transport.
- Upon activation by Health Officials, the Pre-Designated Region II **Treatment/Assessment Hospitals (Kaiser Oakland, UCSF)** will mobilize evaluation team(s) and treatment areas, as needed per their agreements with County Health Departments/LEMSA's/Healthcare Agencies.
- Upon arrival at the appropriate EID/Ebola receiving hospital, the specialized EID/Ebola EMS transport team will make contact with the receiving team at the hospital and initiate proper transfer of patient care.

Post-Incident Procedures-

- The EMS EID/Ebola transport team will initiate PPE doffing procedures upon completion of the patient transfer and initiate decontamination protocols for the transporting ambulance vehicle.
- The responding ambulance company will perform ongoing medical surveillance of treatment personnel as directed by County LHD/LEMSA's/Healthcare Agencies.

VI. Initiation, maintenance, and retirement

The *State of California Mutual Aid Region II Regional Emerging Infectious Disease Transportation Plan* will go into effect when approved by the sixteen (16) county MHOACs or designees as well as the Region II Regional Disaster Medical Health Coordinator (RDMHC).

This policy will be reviewed and revised annually at the fourth quarter regional MHOAC meeting and as needed.

This policy will be retired when requested by the majority of the MHOACs in Region II.

Appendix P: Transportation Plans-Regional EMS

Core Principles for Regional EMS Response to Biohazard Emergencies-Ebola, Emergency Medical Services Program, AMR Ebola Response Plan (Page 1 of 6)
[..\AMR Ebola, etc. transportation protocol.pdf](#)



EMSIA OF SANTA CRUZ COUNTY
EMERGENCY MEDICAL SERVICES INTEGRATION AUTHORITY



Santa Cruz County
Emergency Medical Services Program

Core Principles For EMS Response to Biohazard Emergencies - Ebola

Rule #1 – EMS responses to suspected Ebola viral disease (EVD) infected patients need to be treated as hazardous materials (HAZMAT) calls.

- a. The safety of the public and responders, and prevention of the spread of EVD, are the most important priorities on this call.
- b. Suspected Ebola patients will be categorized, and referred to, as a “Person Under Investigation” (PUI).

Rule #2- The management of a PUI must always be weighed against the risk to responders and the public, and interventions should only be rendered when the safety of responders and the public has been relatively assured.

Rule #3 – The most important initial task of EMS is to screen for PUIs to prevent responder exposures.

Rule #4 – When a PUI is identified the EMS response will stop until appropriate PPE and other contagion precautions have been fully implemented, no matter the acuity of the patient.

- a. The normal time parameters for managing patients no longer apply to patient care.
- b. The initial action of responders is to deny access to the patient and to prevent any further exposure to this patient.

Rule #5 – Response to a PUI should be a system response.

- a. This response should include activating personnel with equipment and expertise for handling EVD patients as well as the decontamination of any providers who have been exposed to this patient.
- b. Response should also include early notification to possible receiving hospitals, as well as notification to overhead personnel, NetCom, and public health.

Appendix P: Transportation Plans-Regional EMS

Core Principles for Regional EMS Response to Biohazard Emergencies-Ebola, Emergency Medical Services Program, AMR Ebola Response Plan (Page 2of 6)

Rule #6 – Responders who have unwittingly been exposed to a PUI immediately become patients.

- a. Their top priority is to limit this exposure as soon as possible by backing away from the patient.
- b. Responders who have been exposed must be decontaminated as soon as possible.

Rule #7 – Management of PUIs should utilize the concepts of hot, warm, and cold zones.

- a. The hot zone will be defined as the area immediately within 3 feet of the patient or when working with fomites that the patient has recently touched or which contain contaminants (body fluids) from the patient.
- b. The “warm zone” will be defined as that area through which the PUI recently passed without directly contaminating any objects.
- c. The “cold zone” will be defined as that area that is fully protected from a PUI (safe areas in the hospital, vehicles which have not been used to transport PUIs) or which have been thoroughly decontaminated.

Rule #8 – EMS response to PUIs will utilize specifically trained personnel to assist with donning and doffing PPE, and with decontaminating any contaminated or exposed responders or bystanders. Personnel trained in HAZMAT will be utilized for this work.

Rule #9 – Medical interventions for PUIs will be limited in order to reduce infectious exposure risk.

- a. The more symptomatic the PUI is, the greater the infectious risk. The most infectious patients are those with severe disease symptoms, or those who have recently died.
- b. PUIs presenting with shock, severe bleeding, or cardiorespiratory failure experience 100% mortality despite resuscitative efforts. In confirmed EVD cases with severe symptoms, active prehospital resuscitation is not warranted.
- c. In general BLS care will be the expected standard of care.

Rule #10 – Transport destination for PUIs will be determined prior to leaving the scene.

Appendix P: Transportation Plans-Regional EMS

Core Principles for Regional EMS Response to Biohazard Emergencies-Ebola, Emergency Medical Services Program, AMR Ebola Response Plan (Page 3of 6)

Rule #11 – EMS personnel will not transport PUIs into the receiving medical facility.

- a. Hospital personnel will come out of the hospital and will arrange for transport of the patient into their facility using hospital approved transport devices.

Rule #12 – Decontamination of EMS personnel and equipment, and disposal of all hazardous waste, will follow national and local guidelines. Decontamination of EMS personnel will be completed BEFORE doffing PPE in order to greatly reduce the risk of exposure. This will be supervised and monitored by HAZMAT specialists.

Rule #13 – All PUIs will immediately be reported to County Public Health.

Appendix P: Transportation Plans-Regional EMS

Core Principles for Regional EMS Response to Biohazard Emergencies-Ebola, Emergency Medical Services Program, AMR Ebola Response Plan (Page 4 of 6)



EMERGENCY MEDICAL
SERVICES PROGRAM

County of Santa Cruz

HEALTH SERVICES AGENCY

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Protocol No. 4010
December 1, 2014

Emergency Medical Services Program

Approved

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Subject: EMS PERSONNEL INFECTIOUS DISEASE PRECAUTIONS AND EXPOSURE MANAGEMENT

I. AUTHORITY

Division 2.5, California Health and Safety Code, Sections 1797.186, 1797.188, 1797.189. www.leginfo.ca.gov
Bloodborne pathogens - 1910.1030, U.S. Department of Labor. www.osha.gov/SLTC/bloodbornepathogens/

II. PURPOSE

To provide guidelines and procedures for EMS prehospital personnel, to reduce risk of infectious disease exposure to themselves and patients, and to evaluate and report suspected exposures to the Santa Cruz County Public Health Division's Communicable Disease Unit.

- A. Although the presence of disease-causing agents may or may not be known, these agents may be present in body fluids and substances. Even apparently healthy persons may carry and be capable of transmitting disease.
- B. Precautions identified in this policy are intended to provide prehospital personnel with information to safely care for all patients, regardless of disease status.

III. EXPOSURE RISK REDUCTION

- A. Prehospital Personnel. Prehospital personnel shall:
 1. Follow employer's policies/procedures for infection control to protect both patients and themselves. When employer's policies differ from these policies then the most stringent policy shall apply.
 2. Use standard precautions for all patient contacts. Additional barrier precautions are to be used based on the potential for exposure to body fluids and substances.
 3. Wash hands, prior to and following patient contact at a minimum, regardless of the use of gloves or other barrier precautions. Thorough hand washing with soap and water is the most effective infection control activity for prehospital personnel. Waterless hand sanitizers are an option if soap and water are not available.

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- B. **Provider Agency.** Each EMS provider agency shall:
1. Comply with all federal, state, and local regulations regarding infectious disease precautions.
 2. Establish and maintain a written exposure control plan designed to eliminate or minimize employee exposure. This plan shall include a procedure to be used if an employee is possibly exposed to a communicable disease and this plan shall be made easily accessible.
 3. Designate an infection control officer to evaluate and respond to possible infectious disease exposure of provider agency's prehospital personnel.
 4. Make available equipment, supplies and training necessary for prehospital personnel to reasonably protect themselves and their patients against infectious disease exposure.
- C. **Receiving Facility.** Receiving hospitals should have staff procedures for:
1. Assisting possibly exposed prehospital personnel in assessing the significance of the exposure, and the need for and provision of prophylaxis.
 2. Obtaining the appropriate testing to determine whether or not the source patient is infected with a communicable disease.

IV. EXPOSURE DEFINITION

A significant communicable disease exposure is defined by criteria set by the Centers for Disease Control (CDC) and the Local Public Health Department and may include:

- A. Contact with patient's blood, bodily tissue, or other body fluids containing visible blood on non-intact skin (e.g. open wound; exposed skin that is chapped, abraded, affected with a rash) and/or mucous membranes (e.g., eye, mouth).
- B. Contaminated (used) needle stick injury.
- C. Unprotected mouth-to-mouth resuscitation.
- D. Face-to-face contact in areas with restricted ventilation with patients who have airborne and or droplet transmissible diseases (e.g. Influenza, Measles, Chickenpox, Pertussis, Tuberculosis or Meningitis). See <http://www.cdc.gov/hicpac/pdf/isolation/Isolation2007.pdf>
- E. If extent of exposure is in question contact Santa Cruz County Public Health Department for additional guidance. (831) 454-4114 (weekdays), (831) 471-1170 (afterhours/weekends/holidays)

V. CENTER FOR DISEASE CONTROL RECOMMENDATIONS

CDC recommendations should be used for post-exposure prophylaxis following significant exposures. Provider agencies, designated officers, occupational injury treatment centers, and emergency department staffs are expected to coordinate efforts to ensure prompt treatment for affected prehospital personnel.

VI. RESPONSIBILITIES IN A CASE OF SUSPECTED EXPOSURE

- A. Individual that may have been exposed shall:
 1. Contact his or her employer's Infection Control Officer/Designated Officer as soon as possible to determine the extent of the exposure and if follow-up recommendations including prophylaxis are required.

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2. Refer to employer's internal notification requirements and internal policy for direction and advice on reporting, evaluation and treatment.
 - B. EMS Provider Agency of the individual who may have been exposed should:
 1. Assess the potential exposure to determine if the exposure meets the definition as defined above.
 2. Assure the individual with a suspected exposure is instructed to report immediately to emergency department, or other health treatment facilities for risk assessment and determination of need for prophylactic treatment.
- VII. RECEIVING HOSPITAL RESPONSIBILITIES – SOURCE PATIENT**
- A. Evaluate source patient for any history, signs or symptoms of a communicable disease.
 - B. Obtain consent to, and collect appropriate specimens (e.g. blood, sputum) from the source patient necessary to determine potential risk to the exposed person.
 - C. Expedite the testing process (select the tests with rapid turnaround in mind), to the extent possible, in consideration of the exposed individual's concerns and the need for continued prophylactic care.
 - D. Complete a CONFIDENTIAL MORBIDITY REPORT form and promptly report any reportable communicable diseases found in the source patient to the Public Health Division's Communicable Disease Unit in accordance with the CONFIDENTIAL MORBIDITY REPORT form instructions as required by law.
- VIII. RECEIVING HOSPITAL RESPONSIBILITIES – EXPOSED INDIVIDUAL**
- A. Receiving hospitals must assist prehospital personnel who have had significant exposures.
 - B. Receiving hospital emergency department staff shall:
 1. Actively assist exposed prehospital personnel in evaluating risk and recommending and/or providing appropriate prophylactic care when indicated.
 2. Obtain blood and necessary tests from the exposed prehospital person necessary to determine base-line status.
 - C. Emergency departments are expected to follow CDC guidelines when managing prehospital exposure to potentially infectious substances. Go to <http://www.cdc.gov/> for the latest information.
- IX. SANTA CRUZ COUNTY PUBLIC HEALTH DIVISION RESPONSIBILITIES**
- Upon notification, the Public Health Division will:
- A. Verify the exposure is significant and contact the receiving hospital(s) and the prehospital employer's designated officer for infection control.
 - B. Dependent on the disease, notify the exposed person of any recommended disease prevention/prophylaxis.
 - C. If exposed individuals or her employer's Infection Control Officer/Designated Officer have immediate concerns about possible exposures, or if the exposures are significant, they should contact the Public Health Division's Communicable Disease Unit using the contact phone numbers on the CONFIDENTIAL MORBIDITY REPORT form.

Appendix Q: CDC Estimated Ebola PPE Needs

Estimated Disposable PPE Needed by Role per Shift*													
Health Care Team Roles**	Either Gowns or Coveralls Needed^		All Needed				Either PAPRs^^ or N95 Respirators Needed^						
	Gown	Coverall	Glove, Extended Cuff	Glove Exam	Boot/Shoe Cover	Fluid Resistant Apron	PAPR Shroud/Hood	PAPR Battery	PAPR Filter#	N95 Resp###	Surgical Hood	Face Shield	Surgical Mask
Nurse with patient contact	2	2	12	4	4	2	2	4	2	2	2	2	0
Doctor with patient contact	1	1	2	2	2	1	1	2	1	1	1	1	0
Trained Observer	2	0	2	2	2	0	0	0	0	0	0	2	2
Environmental cleaning	2	2	12	12	12	2	2	4	2	2	2	2	0
Lab Staff	2	2	4	4	4	2	2	4	2	2	2	2	0

Center for Disease Control and Prevention, January 2016

* Quantity of product per shift may vary based on multiple factors including patient acuity, length of shifts, breaks etc. Estimates in table assume 3-4 hour shift.

**Hospitals may have additional roles that need to be considered. Roles in the table are defined under “Healthcare Team Roles and Descriptions.”

^ Reference [CDC PPE guidance\(http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html\)](http://www.cdc.gov/vhf/ebola/healthcare-us/ppe/guidance.html) for specifications for impermeable and fluid-resistant gowns and coveralls.

^^ Powered air purifying respirator (PAPR) blower units/system s are not included in the table. These items may be reused post decontamination. Therefore, the quantity of PAPR blower units/systems needed per shift and per day should be based on the number of persons that may be using a PAPR blower and the time needed to decontaminate and ensure that these products are ready for use. One PAPR blower units/system will be needed for each staff member per shift who will be in direct contact with the patient. Should consider having 1.5 to 2 shifts worth of PAPR blower units/systems on hand to account for changing of staff and decontamination time.

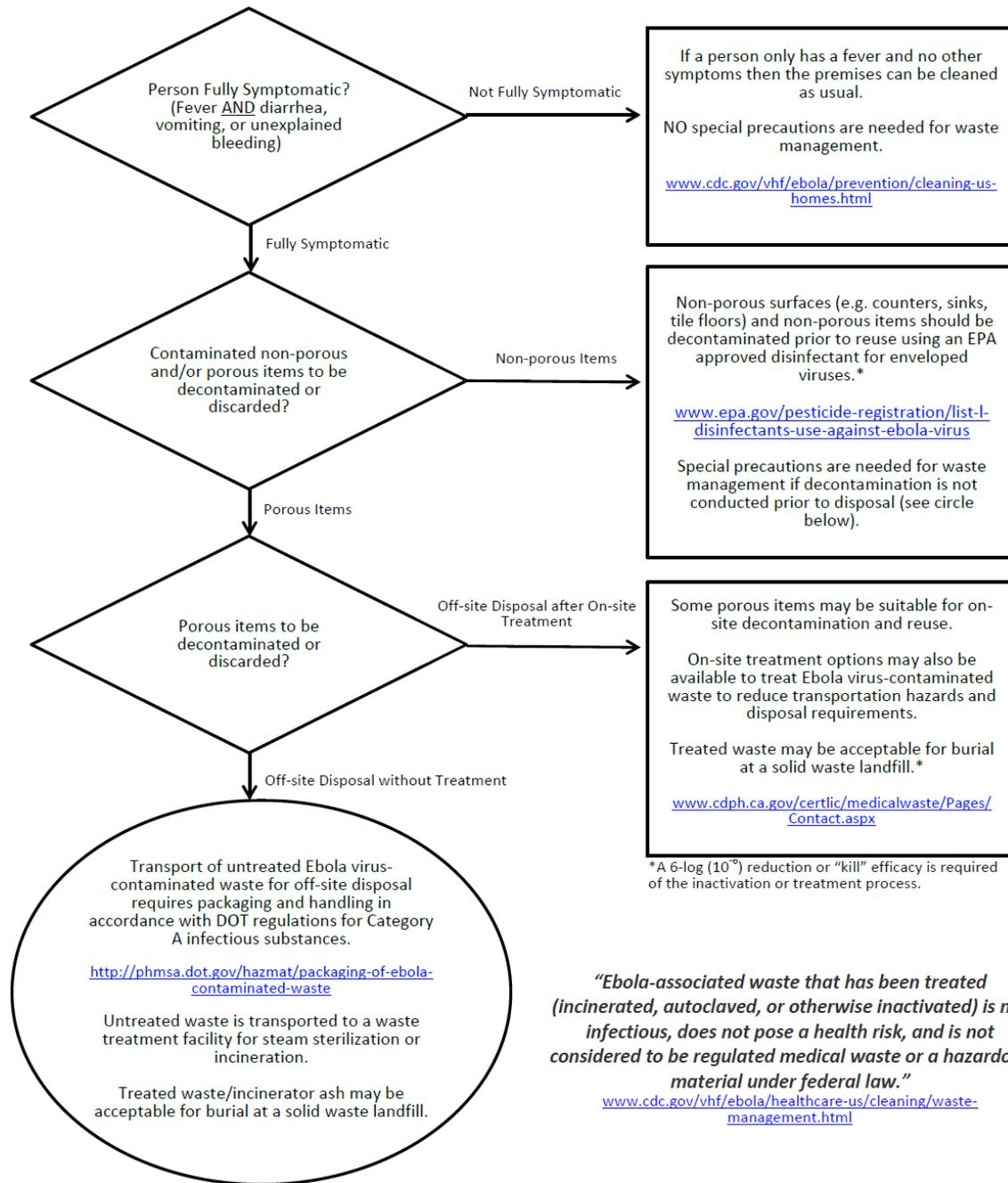
Follow the manufacturer's guidance to determine the need to replace/dispose of a filter during PAPR decontamination. Several manufacturers have added specific instructions for cleaning, disinfecting, and decontamination after use with a known or suspected Ebola patient. Estimate in the table assumes filter is being changed with each shroud/hood change.

N95 respirator selection must include surgical hood and full face shield.

Appendix R: Ebola Waste Management for Non-Healthcare Settings

Ebola Waste Management for Non-Healthcare Settings

This flow chart shows how Ebola virus-related wastes generated from the cleaning/decontamination of a home or other non-healthcare setting should be managed. For more information contact the local public or environmental health department or the California Department of Public Health.



July 2016

For additional California Department of Public Health Ebola-related waste guidance, visit:
www.cdph.ca.gov/certlic/medicalwaste/Pages/Contact.aspx



Acronyms/Definitions

AAR	After Action Report
ACS	Alternate Care Site
AMR	American Medical Response
CalREDIE	California Reportable Disease Information Exchange
Case Definition	A set of uniform criteria used to define a disease for public health surveillance. Classified as suspected, probable or confirmed
CD	Communicable Disease
CDC	Centers for Disease Control
CDPH	California Department of Public Health
Close Contact	Direct physical, face to face or ≥ 1 hour of room contact with infectious person
DOC	Department Operations Center
DOT	Direct Observational Therapy
EDN	Electronic Disease Notification
EH	Environmental Health
EMS	Emergency Medical Services
FDA	Food and Drug Administration
GI	Gastrointestinal
HMH	Hazel Hawkins Memorial Hospital
HO	Health Officer
IGRA	Interferon-Gamma Release Assay
Isolation	Separates sick people with a contagious disease from people who are not sick
MCM	Medical Countermeasure
MHOAC	Medical Health Operational Area Coordinator
NNDSS	National Electronic Disease Surveillance System
OES	Office of Emergency Services
O & P	Ova and Parasite
PHEP	Public Health Emergency Preparedness
PHEP	Public Health Emergency Preparedness
PPE	Personal Protective Equipment
PHS	Public Health Services
PUI	Person Under Investigation
QA	Quality Assurance
QI	Quality Improvement
Quarantine	Separates and restricts the movement of people who were exposed to a contagious disease to see if they become sick
RDMHS	Regional Disease Medical Health Specialist
SBC	San Benito County
SME	Subject Matter Expert
TST	Tuberculin Skin Test
WHO	World Health Organization

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