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Communicable Disease Investigation & Surveillance Protocol

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Division of Responsibility

The Lewis and Clark Public Health (LCPH) Communicable Disease Surveillance and Control Division conducts active and passive disease surveillance. Public Health Nurses and Environmental Health Specialists divide responsibility according to the mode of transmission. Environmental Health Specialists are responsible for food, water and vector-borne diseases. Public health nurses are responsible for diseases with person-to-person transmission. The Environmental Health Specialists and public health nurses evaluate reports, conduct case investigations and implement control measures as described in state rules for all reportable diseases. An epi-team of public health nurses and Environmental Health Specialists is utilized on some events.

The Communicable Disease Response Guide for Reportable Conditions specifies public health nurse and Environmental Health Specialist responsibility as well as the expected level of response for different diseases (see chart below).

Communicable Disease Response Guide for Reportable Conditions		
Level of Response	Public Health Nurses	Environmental Health Specialists
Section 1 Immediately Reportable - requires evaluation and action ➔Agents most likely to be used as bioterrorism (Category A Agents)	Diphtheria[2*] Illness in a foreign traveler Measles[2*](Rubeola) Meningitis, bacterial or viral Pertussis (Whooping cough)[2*] Severe Acute Respiratory Syndrome (SARS)[2*] ➔Smallpox[2*] Tuberculosis[2] ➔ Viral Hemorrhagic Fever[2*]	➔Anthrax[2*] ➔Botulism[2*] (including infant botulism) ➔Plague[2*] Rabies[2*]or suspected human exposure ➔Tularemia[*] Typhoid fever[2*] Any unusual incident of unexplained illness or death in a human or animal
Section 2 Requires initial evaluation of the need for further action prior to going home	AIDS or HIV infection[1,2] Encephalitis Gonococcal infection Hepatitis B Haemophilus influenza B invasive Influenza Mumps Poliomyelitis[2] Rubella[2] (including congenital) Syphilis[2]	Cholera[2] Diarrheal disease outbreak[2] Hantavirus pulmonary syndrome[2] Hemolytic uremic syndrome Hepatitis A Shigellosis
Section 3 Non-emergency reportable disease	Chancroid Chicken Pox (Varicella) Chlamydia genital infection Cytomegaloviral illness Granuloma inguinale Hansen's disease (leprosy) Non-A – Non B Hepatitis Kawasaki disease Lead poisoning (≥ 10 µg/dL) Lymphogranuloma venereum Malaria Reye's Syndrome Streptococcus pneumoniae invasive disease Tetanus	Amebiasis Brucellosis[2] Campylobacter enteritis Colorado Tick Fever Cryptosporidiosis E. coli enteritis Gastroenteritis epidemic Giardiasis Legionellosis Listeriosis Lyme disease Ornithosis (Psittacosis) Q-fever Rocky Mountain spotted fever Salmonellosis Tick-borne relapsing Fever Transmissible Spongiform Encephalopathies (Creutzfeldt-Jakob Disease) Trichinosis[2] Yellow fever Yersiniosis

Diseases marked with an asterisk (*) must be reported immediately by telephone, all other cases should be reported as soon as possible by faxing, mailing or phoning a report to LCPH.

[1]AIDS and HIV infection are reportable directly to the state health department.

[2]Requires specimen to be submitted to state health department for confirmation (ARM 37.114.313).

Definitions

Active Surveillance – Health Department solicits reports of selected, reportable diseases, inquires about observed disease activity and unusual presentations, and provides information on disease activity/trends in the community.

Communicable Disease Emergency –Any of the following:

1. Single case of unusual disease
    a. Any condition on the list of reportable diseases that requires immediate reporting.
    b. Any condition listed as a threat for biological attack (Category A, B, C agents identified on Page 16)
2. An unusual number of usual diseases
3. Number of cases exceeds the ability of staff to respond in a timely manner
4. Unusual incident of unexplained death in humans or animals
5. Unusual pharmaceutical sales
    a. Report from the state that pharmaceutical sales indicate unusual number of over-the-counter pharmaceuticals for home treatment.

Cluster - closely grouped series of cases of disease or other health related phenomena with well defined distribution patterns in relation to time or place or both.

Disaster - occurrence or imminent threat of widespread or severe damage, injury, or loss of life or property from any natural or artificial cause.

Emergency - imminent threat of a disaster causing peril to life or property that timely action can prevent.

Passive Surveillance –Cases of reportable disease are reported to the health department from the health care community for investigation.

Public Health Emergency – any situation that requires rapid response to prevent or reduce the incidence of disease during natural or man-made disasters, or communicable disease event.

Measures to Evaluate the Local Reporting System

The timeliness of reporting diseases is evaluated by comparing the date of diagnosis with the date the health care provider reported the case to the Health Department. This data is maintained by a public health nurse who assesses reports made to both the Public Health Nurses and the Environmental Health Specialists.

Each quarter, a line listing of names in the DPHHS registry of disease cases is compared with log of cases reported to the LCPH to assure that all cases are reported to the local and state health authority, and that all reports contain the required data elements.

Passive Surveillance (Routine)

The LCPH receives reports by telephone or fax (specified diseases must be reported immediately by phone). Reports are reviewed on the day of receipt.
The LCPH is capable of receiving and reviewing reports 24 hours a day, 7 days a week via cell phone. Responsibility for receiving and evaluating reports after hours and on weekends is

alternated among health department management. The after hours cell phone number has been distributed to local providers, emergency room and hospital staff, and county dispatch center on the list of Reportable Diseases. This cell phone response is tested quarterly by DPHHS and calls to the after hours phone are logged and kept with the bag that accompanies the phone.

Communicable disease investigations are confidential. Spreadsheets listing the diagnosis, patient and other relevant data are kept in locked cabinets. Access is limited to Communicable Disease Division staff. The public health nurse or Environmental Health Specialist who investigates is responsible for completing the communicable disease report on the secure internet based Montana State surveillance program.

Disease Investigation Procedures

Algorithm is on page 13

1. Investigate all communicable diseases promptly in accordance with ARM 37.114.314 and Communicable Disease Response Guide located on page 2.
2. A report is received by phone, fax or mail from:
    a. Health Care Provider
    b. Laboratory
    c. Hospital
    d. Epidemiologist/DPHHS
3. Deliver the report to the lead public health nurse or environmental health specialist (Communicable Disease Response Guide, page 2).
4. Verify that the case is a resident of Lewis and Clark County. If not a resident, contact DPHHS for referral to the appropriate jurisdiction.
5. Verify the report by contacting:
    a. The laboratory that performed the test.
    b. The health care provider who ordered the test.
6. Notify DPHHS in accordance with the Administrative Rules of Montana, 37.114.205. Include case's date of birth, onset of symptoms, race, ethnicity, and zip code in report to DPHHS.
7. Determine if the report requires an emergency response
    a. If a case meets the definition of a ***public health emergency*** or ***communicable disease emergency*** as stated above:
        (1) Notify:
            (a) Health Officer
            (b) Medical Director
            (c) Division Administrators
            (d) County Coroner

(2) Implement highly active surveillance procedures outlined on page 10.

(3) Proceed with disease investigation steps listed in this outline.

b. If a case does not meet the definition of an emergency, proceed with disease investigation steps listed below.

8. Determine:
   a. Mode of transmission
   b. Incubation period
   c. Period of communicability
   d. Control and treatment measures of the disease
9. Disease information resources include:
   a. **CCDM (Control of Communicable Diseases Manual)**. A current copy is available in the Communicable Disease Nurse office, the Licensed Establishment offices and the Environmental Health Division office.
   b. **Red Book (American Academy of Pediatrics).** A current copy is available in the Communicable Disease Nurse office and the Licensed Establishment office.
   c. **Epidemiology and Prevention of Vaccine Preventable Diseases (Pink Book).** A current copy is available in the Communicable Disease Nurse office.
   d. Assistance from other staff (Environmental Health Specialists, public health nurses, medical advisor).
   e. Assistance from DPHHS Communicable Disease Control and Prevention Bureau :
      (1) 24/7 Contact Number – **444-0273**
   f. www.cdc.gov
10. ***Obtain all available patient information***. Conduct interviews with the provider, laboratory and patient.
    a. Name of patient
       (1) If patient is a minor (with exception of STD investigations), obtain the name and relationship of responsible party (parent, legal guardian, etc.).
    b. Age, date of birth, race, ethnicity
    c. Phone numbers
    d. Lab results
    e. Health care provider's name and number
11. Determine if the health care provider has received the laboratory report and if he/she has contacted the patient. It is best practice for the patient to receive diagnosis information from the provider first. Determine that appropriate treatment has been initiated. If unable to contact the provider within 24 hours, contact the case directly.
    a. Establish date(s) of diagnosis, start and end of symptom(s)
    b. Symptoms

c. Recent travel history

d. Food/water history if infectious agent is food or water-borne

e. Occupation- for assessment of secondary transmission risk

12. ***Prevent secondary transmission***

a. Provide patient education regarding disease process, spread and treatment

b. Implement necessary disease control measures as described in the Administrative Rules of Montana 37.114 : COMMUNICABLE DISEASE CONTROL.

(1) Sensitive Occupations – See attached decision tree for restriction or exclusion for daycare providers and food handlers (page 13)

(a) Exclusion will occur when:

(i) Case is symptomatic

(ii) Alternative job duties are not available

(iii) Effectiveness of personal hygiene cannot be determined

(b) Restriction

(i) When alternative job duties are available that will eliminate risk of transmission

(ii) When effective personal hygiene practices can be determined.

(c) Notification of exclusion

(i) Case will be notified of exclusion order verbally and in writing

(ii) Employer will only be notified of exclusion (not case name or disease information) when

1) Employee gives verbal permission or requests call to employer

2) Case does not follow exclusion order

3) Disease control requires work schedule information (e.g. Hepatitis A)

(d) Exclusion will remain in effect until:

(i) Case is asymptomatic; and

(ii) Case meets requirements for restriction; OR

(iii) Samples from case are tested and found to be negative for pathogen

1) Samples can be submitted to the LCPH for transport to Montana Public Health Laboratory

2) Costs of lab tests for Public Health control measures may be paid from the Emergency Preparedness grant fund with prior approval from division administrator.

(2) School

(a) Provide appropriate information to school nurses and administrators on the effective control measures.

(b) HAN system has contact information for schools. See HAN protocols.

(3) Daycare

(a) Children must be excluded while symptomatic in accordance with daycare rules.

(b) When the risk of transmission exists for other children in the daycare, give prevention and symptom information fact sheets to the provider and parents. Do not release identifying information of the ill child.

(4) Quarantine and isolation

(a) See Quarantine and Isolation Protocols.

13. Obtain information from patient about ***contacts during the contagious period*** as applicable.
    a. Name
    b. Address
    c. Phone number
    d. Parent name if contact is a minor (except in routine sexually transmitted disease investigations).
14. Evaluate the risk of exposure based on the extent and timing of the contact
15. If contact is not a resident of Lewis and Clark County, contact DPHHS for referral to the appropriate jurisdiction.
16. Conduct contact investigation.
    a. Provide education regarding disease process, spread and treatment.
    b. Refer for treatment if indicated.
    c. Notify the contact's health care provider of the situation and LCPH's recommendations.
17. Complete the case report on DPHHS Montana Infectious Disease Information System (MIDIS), or submit by confidential fax line at 800-616-7460 if MIDIS is down.

Active Surveillance (Routine)

A public health nurse inquires about disease activity from reporting sources, solicits case reports of selected reportable diseases, and disseminates information on disease activity. Information collected about disease activity does not include protected health information.

Procedures

1. Annual activities:
    a. Distribute letter to all health care providers explaining the program and its purpose.

b. Site visits by Public health nurse to laboratories, physician offices, emergency room, urgent care clinics and other sites (as appropriate). The purpose of the visits is to:

(1) Review reporting procedures.

(2) Provide reporting packets.

c. Identify a key person at each site to maintain regular contact regarding disease activity and disease reporting.

2. Reporting sources are grouped into four categories based on the likelihood of disease incidence/activity in each particular setting (see Table 1 below.)
3. A public health nurse initiates routine contact with the person at each site to:
   a. Solicit reports of selected reportable diseases (see list)
      (1) On receipt of a case report through active surveillance, the steps outlined in passive surveillance procedure are to be followed.
      (2) A suspected cluster will trigger highly active surveillance
   b. Inquire about disease activity and unusual presentations
   c. Provide information on disease activity/trends occurring in the community.
4. Prepare and distribute weekly summary of disease activity to:
   a. Health Officer
   b. Medical Director
   c. Division Administrators
5. Prepare and distribute monthly Lewis and Clark County Communicable Disease Summary which includes key DPHHS Communicable Disease updates.
6. Evaluate the local reporting system:
   a. Maintain written and electronic spreadsheets that detail when a diagnosis was made or suspected (as determined by onset date or date of visit to provider indicated on the reporting form) and when and from whom the report was received.
      (1) A public health nurse and Environmental Health Specialists will maintain spreadsheets, documenting reports received.
   b. Match line listings of case reports in the DPHHS registry with cases reported to the LCPH once each quarter.

Table 1 – Reporting Sources

Group	1 (Core)	2	3
Contact[1]	**Bi-weekly**	**Monthly**	**Annual / As Needed**
	Emergency Room	Obstetrics/Gynecology	Allergy-Immunology
	Urgent Care Center	Lewis & Clark County Detention Center Medical Dept	Ophthalmology
	Pediatrics	Intermountain Planned Parenthood	Cardiology
	Family Practice	Lewis & Clark County Coroner	Ear, Nose and Throat
	Laboratories	Shodair Infection Control	Urology
	Carroll College Health Center	Nursing Home Infection Control	Psychiatry
	School Nurses		Neurology
	St. Peter's Hospital Infection Control		Surgical
	VA Infection Control		Orthopedics
			Veterinary
			Fish, Wildlife and Parks
			Department of Livestock
			Internal Medicine
			Dermatology

[1]Increased contact will be initiated if a particular event or season indicates a need

Public Health Emergency Outbreak Response

Algorithm on page 14

A disease report is evaluated to determine if it meets the criteria for a **communicable disease emergency**. This includes whether help is needed to complete investigation, or whether event will generate public interest and concern.

1. Notify supervisor of any of the above.
2. Evaluate report to determine if it meets the criteria for a **Public Health Emergency** as defined on page 3.
3. Implement emergency outbreak response to control or contain the event.
4. Notify internal partners of a recognized or potential event by briefing meetings, e-mail, or telephone. Our internal partners will comprise a **Communicable Disease Response Team** and will expand as needed:
    a. 1st Stage – program response with guidance and resources provided by DPHHS and CDC
        (1) Health Officer, who will notify the Board of Health
        (2) Medical Advisor
        (3) Communicable Disease Division program staff
        (4) DPHHS laboratory and epidemiological staff
    b. 2nd Stage – Expanded within the department

(1) All Division Administrators

(2) Environmental Health program staff

(3) Communication Specialist

c. 3rd Stage – Declaration of Public Health Emergency

(1) County Coroner

(2) County Attorney

(3) Government Officials

(4) Any others deemed necessary for response to the agent of concern

5. The communicable disease response team (as stated above) will be activated when deemed appropriate. This team will meet to:
   a. Strategize outbreak response.
   b. Delegate tasks
   c. Conduct follow-up review to improve future surveillance and control measures.

Controlling the Outbreak

Implement disease prevention measures that are the least restrictive yet effective for reducing or eliminating the incidence of disease

1. Disease Investigation as described on Page 4.

2. Implement Highly Active Surveillance

a. Identify the health care providers most likely to encounter the syndrome of concern

(1) health care provider offices,

(2) medical laboratories,

(3) SPH Infection Control for hospital admission and ER data,

(4) schools for attendance records,

(5) long term care facilities for the health status of their residents

(6) pharmacies to monitor over-the-counter (OTC) and prescription drug usage

(7) Veterinarians for zoonotic disease,

(8) 911 response personnel

b. Identified providers will receive daily phone, fax or email contact from health department staff that may:

(1) Solicit information on disease activity

(2) Disseminate pertinent information

(3) Distribute a clinical case definition of the disease

3. Community partners will be notified of the emerging event and of current actions by email and fax using the Health Alert Network.

4. Prevention of Secondary Transmission

a. Disease and contact investigation as described on page 4

(1) Provide education

(2) Refer for treatment

(a) Specimen Transport

(i) See the **Specimen Transport Plan** located in the Communicable Disease Response Manual

(3) Initiate movement restrictions with Health Officer and Board of Health authorities as needed to prevent spread of disease

(a) Follow the Lewis & Clark County Isolation and Quarantine Protocol

(b) Closure orders for public events and buildings – when imminent threat of widespread disease or loss of life could be slowed or stopped by restricting assembly

b. Emergency Medical Countermeasures

(1) Implement emergency medical countermeasures plan when demand for vaccine or preventive medication exceeds capacity of immunization clinic

(2) Activate Strategic National Stockpile when available supplies do not meet the need

c. Mass Fatality Management

(1) When a communicable disease has been identified as the cause of fatalities, consult with DPHHS Communicable Disease Section on special precautions for handling of the deceased.

(a) Provide disease management information for coroner, health care providers, emergency responders, morticians, and the general public.

(2) Funerals for individuals who have died of a reportable disease must be conducted with instruction from the Health Officer. Any death from a disease that requires quarantine of contacts must be conducted with a closed casket and those that are quarantined must be segregated from the rest of the attendees, unless the contacts have been determined by the Health Officer to be incapable of transmitting the infection or disease which caused the death.

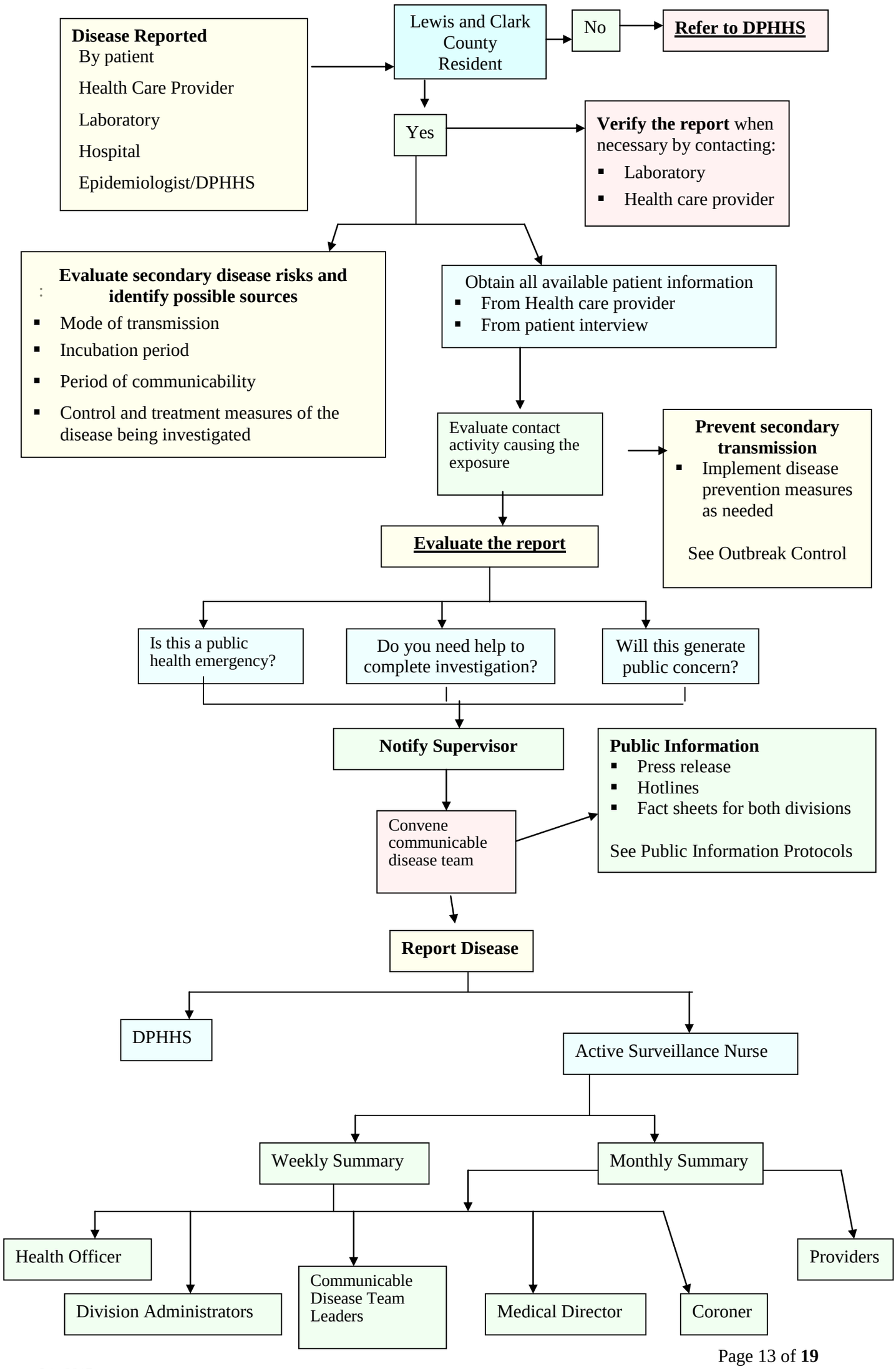
5. On receipt of a case report through active surveillance, follow the steps outlined in Disease Investigation Procedures described on Pages 4-7 & 13.
6. The Health Officer and the Division Administrators have authority to implement the Public Health All Hazards Annex. Circumstances that trigger the use of the All Hazards Annex:

- When a response includes staff call out after business hours.
- When a response requires reassignment of staff for an extended period of time
- Routine services are suspended
- Frontline staff can't keep up with the calls for information on a specific topic

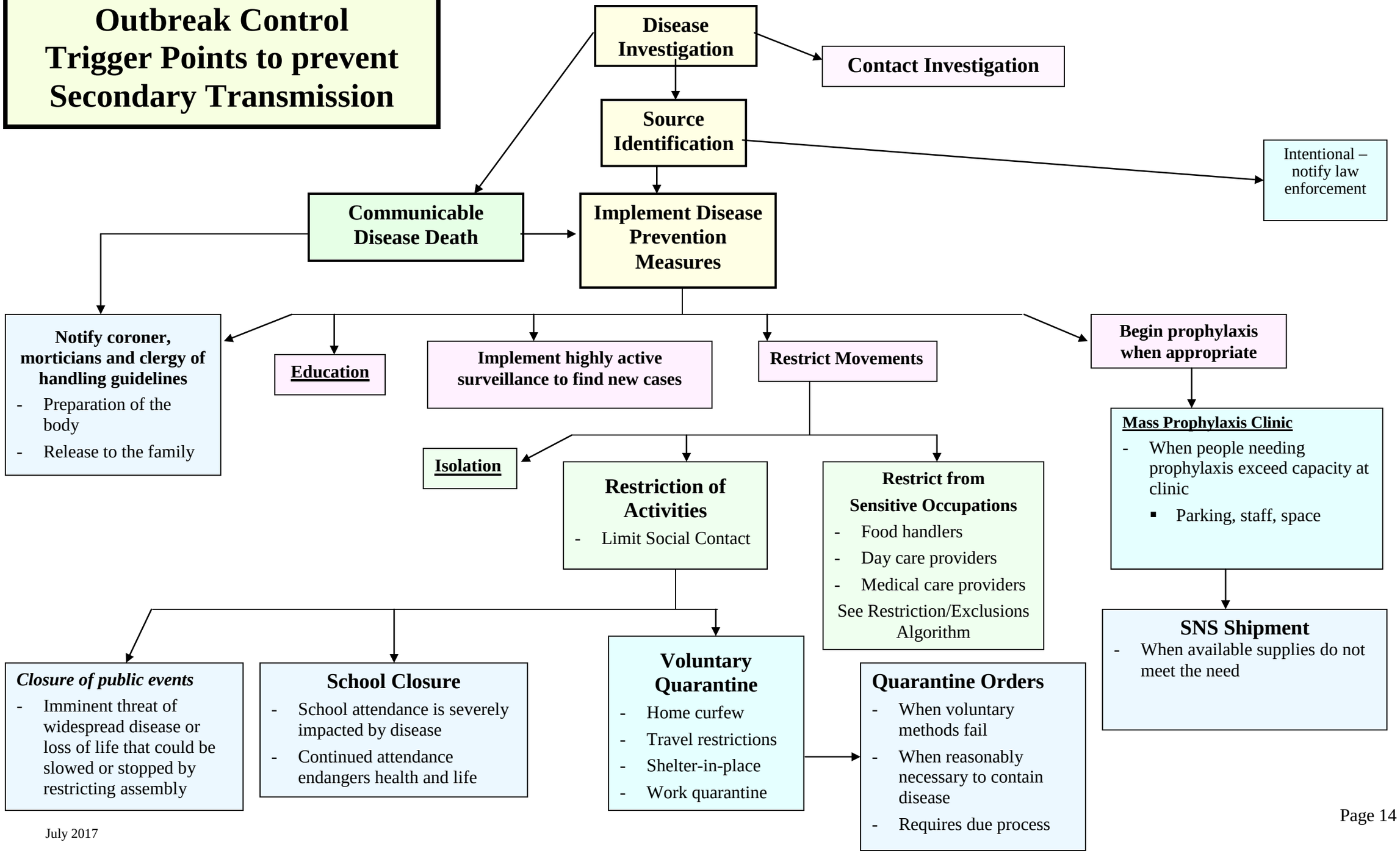
- Unusual number of usual diseases
- Single case of unusual disease
- Series of health events or cases of disease closely grouped by time and/or place
    - Naturally-occurring diseases of highest concern are listed in section 1 on the Communicable Disease Response Guide. (Page 2)
    - Agents of highest concern for biological attack as identified on page 16.

7. The Health Department Incident Command Post will be activated when:
    a. Response requires emergency reassignment of staff for an extended period of time
    b. Routine services are suspended
8. When the event has escalated to command post activation, the supervisor must evaluate health department employees and volunteers for symptoms when beginning shifts to prevent further spread of disease.
9. Declaration of an emergency and activation of Emergency Operations Center will be requested when:
    a. Resources are required outside our agency
    b. Time required for response will be excessive
    c. Response requires activation of the strategic national stockpile
    d. Compulsory closure of public events is anticipated to prevent further spread of disease
    e. Large-scale quarantine is needed.
10. Emergency outbreak procedures will remain in effect until incidence of disease has been eliminated. A communicable disease outbreak will be "under control" when 3 successive incubation periods have passed with no new cases.

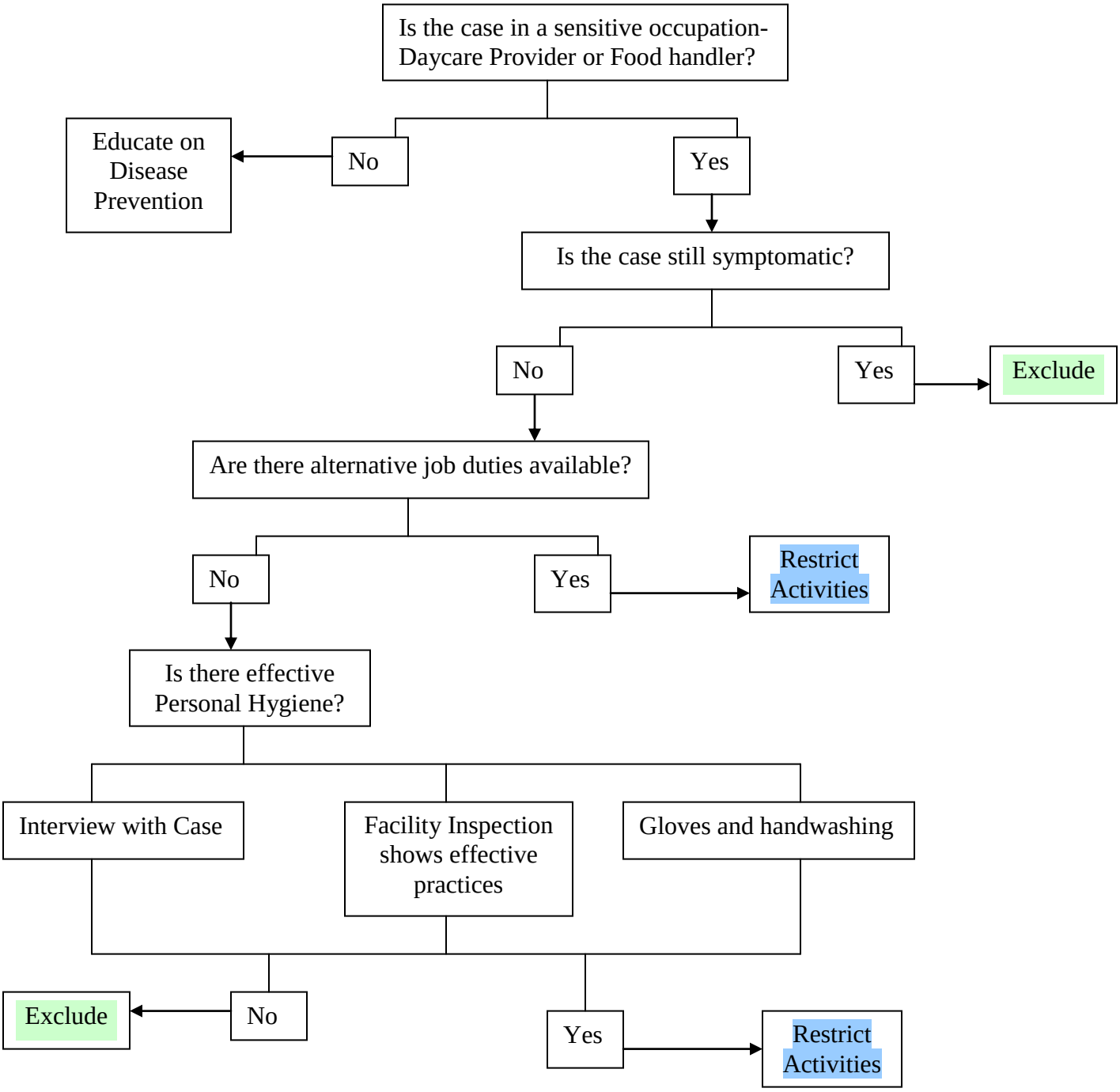
Routine Disease Investigation



Outbreak Control Trigger Points to prevent Secondary Transmission



Prevention of Secondary Disease Transmission
By Restriction or Exclusion from Sensitive Occupations



Biological Agents of Highest Concern for a Bioterrorism Attack

Category A	
1	Small Pox --Variola Major
2	Anthrax -- Bacillus anthracis
3	Plague -- Yersinia Pestis
4	*Botulinum* Toxin
5	Tularemia -- *Fransisella tularensis*
6	Hemorrhagic Fever

Highest-priority agents, **Category A**

Include organisms that pose a risk because they

- Can be easily disseminated or transmitted person-to-person;
- Cause high mortality and subsequently have a major public health impact
- Might cause public panic and social disruption; and
- Require special action for public health preparedness.

Category B	
Animal / Human Diseases	
1	Q Fever -- *Coxiella burnetti* (Rickettsia)
2	Brucellosis -- *Brucella* species
3	Glanders -- *Burkholderia mallei*
4	Alphaviruses
	Venezuelan encephalomyelitis
	Eastern and western equine encephalomyelitis
Toxins	
1	Ricin Toxin from *ricinus communis* (Castor beans)
2	Epsilon Toxin of *Clostridium perfringens*
3	*Staphylococcus* enterotoxin B
Foodborne or Waterborne	
1	*Salmonella* Species
2	*Shigella dysenteriae*
3	*Escherichia coli* 0157:H7
4	*Vibrio Cholerae*
5	*Cryptosporidium parvum*

Category B

Includes agents that are

- Moderately easy to disseminate
- Cause moderate morbidity and low mortality; and
- Require specific enhancements of CDC

Category C	
1	Nipah virus
2	Hantaviruses
3	Tickborne hemorrhagic fever viruses
4	Tickborne Encephalitis viruses
5	Yellow fever virus
6	Multi-drug resistant Mycobacterium tuberculosis

Category C

Includes emerging pathogens that could be engineered for mass dissemination because

- Availability
- Ease of production and dissemination
- Potential for high morbidity and mortality and major health impact

Trigger Points for Response to Public Health Emergencies

Single Case of Unusual Disease

Identified as:

- Any condition that requires immediate reporting -- See Disease Reporting List attached
- Agents of highest concern for biological attack – table attached

Unusual Number of Usual Diseases

Number of cases exceeds the ability of assigned staff to respond in a timely manner

Series of health related phenomenon or cases of disease closely grouped by time and/or place e.g. unexplained deaths in humans or animals

Communicable Disease Emergency Response

Incident Management

See following pages

Outbreak Control

See following pages

Public Information

See following pages

Incident Management

Communicable Disease Response Team Meeting

- Information sharing
- Determine action plans
- Assign public information responsibilities

Partial opening of the EOC
For expanded hotline service

Activation of the Health Department Incident Command Post

- Health Department emergency response requires reassignment of staff for an extended period of time
- Routine services are suspended

Declaration of an Emergency and Activation of the County Emergency Operations Center

- Resources are required from outside our agency
- Time required to respond will be extensive
- Response requires activation of the Strategic National Stockpile
- Compulsory closure of public events is required to prevent further spread of disease
- Large scale modern quarantine is needed

Emergency is defined as the imminent threat of a disaster causing immediate peril to life or property that timely action can prevent.

Disaster is defined as the occurrence or imminent threat of widespread or severe damage, injury, or loss of life or property resulting from any natural or artificial cause

Public Information

Hotlines

- Frontline staff can't keep up with the calls for information on a specific topic
- Professional staff responds to enough questions about the same topic that other work is suspended
- Division Administrators note an extraordinary need for information from the public

See Hotline Protocols

Evaluate Need for Escalation of Hotline Response

- By hotline staff - when staff can't keep up with the messages and phones
- By telephone system manager - when system is not keeping up with the demand
- By frontline staff - when public complains the phones are always busy

Establish Additional Hotlines

- Dedicate additional department hotlines with staff
  - Reassign staff and suspend routine services as needed
- Open hotlines in Emergency Operations Center (EOC) – three phone lines available
  - DES Coordinator has volunteers that can staff hotlines

Health Alert Network

Notify community partners of emerging event, by broadcast fax

- Health care providers &Coroner
  - Clinical information
- First Responders
  - PPE's
- Laboratories
- Veterinarians
  - Disease is shared between animals and humans
- Special Populations
  - Precautions are identified that can protect high risk populations

See Surveillance Protocols

Statewide HAN network

- To notify of emergent situation

Issue Press Releases

- When needed to prevent rumor, fear and promote prevention measures

Public Health Messages should contain:

- Accurate information about disease
- Adequate information to allow evaluation of personal risk
- Prevention measures

Establish department spokesperson

- Appointed by Department Operations Chief
- For providing accurate information responding to public concern and maintaining public trust

Establish Joint Information Center

- Coordinated through EOC by County PIO
- Used to establish consistent message for the public

Teleconferencing

- Press Conferences when personal contact or public assembly is not advised or prohibited

Issue Emergency Alerts

- Through EOC
- Notification of imminent emergency or disaster
- Issue instructions for public safety