

# Infectious Disease Control Manual

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## Introduction

The Infectious Disease Control Manual (IDCM) is a project of the Bureau of Infectious Disease Control (BIDC) with the assistance of the Bureau of Health Surveillance, Information, and Operational Support (BHSIOS) and the Bureau of Public Health Laboratory (BPHL) in the Division of Prevention, Ohio Department of Health. It is designed to be a reference for health departments, hospitals, laboratories, and physicians in Ohio, providing information about infectious conditions from a public health perspective, including prevention, control, and reporting of suspected and diagnosed cases. It is also intended to assist in the development of local policies and procedures. This manual is not exhaustive; a list of additional information is included later in Section 1.

The IDCM is based on the Communicable Disease Rules 3701-3-01 through 3701-3-31 of the Ohio Administrative Code (OAC). These rules, as well as additional rules which pertain to infectious disease control, are contained in this manual as Section 2

Each reportable disease and several non-reportable infectious diseases of interest are described in Section 3. Reporting requirements are listed first, followed by descriptions of the disease agent(s), the case definition from the Centers for Disease Control and Prevention\* (if available), signs and symptoms, diagnostic criteria, epidemiology of the disease, and public health management. Forms needed for reporting purposes and to assist with case investigation are provided for each disease as appropriate. If available, disease fact sheets, suitable for distribution to the public, are included.

\*Case definitions provided in this manual are from "Case Definitions for Infectious Conditions under Public Health Surveillance" [Centers for Disease Control and Prevention. MMWR 1997;46(NO. RR-10)]. They were developed by epidemiologists at the CDC in collaboration with the Council of State and Territorial Epidemiologists. They are used by all states so that reporting to the National Electronic Telecommunications System for Surveillance (NETSS), maintained by the CDC, is standardized and uniform. [A few case definitions were modified in this manual to make them consistent with their use in Ohio]. In some instances, there was no case definition in the MMWR reference cited above; these are so noted. The complete MMWR document can be found at this website: <http://www.cdc.gov/mmwr/PDF/RR/RR4610.pdf> and periodic updates to CDC case definitions can be found at <http://www.cdc.gov/epo/dphsi/casedef/index.htm>

Section 4 describes the services available at the Ohio Department of Health Laboratory and discusses proper specimen submission.

This manual is presented in a loose-leaf format. It is also available on the internet @ [http://www.odh.ohio.gov/Resources/publications/IDCManual/ID\\_Intro.htm](http://www.odh.ohio.gov/Resources/publications/IDCManual/ID_Intro.htm). and via the enclosed CD. Please direct any comments, questions, or suggestions to the Bureau of Infectious Disease Control, Ohio Department of Health, (614) 466-0265.

The information included in this manual was reviewed by many people and every effort was made to avoid errors, however it is possible that errors might have been missed. Please confirm dosages and routes of administration of drugs and other biologicals with package inserts and current recommendations.

**Telephone Numbers**  
(as of publication date)

Bureau of Infectious Disease Control (BIDC)	(614) 466-0265
BIDC On-Call (for use after regular business hours to report Class A(1) infectious diseases only)	(614) 728-3463
Infectious Disease Surveillance ((Bureau of Health Surveillance, Information, and Operational Support [BHSIOS]))	(614) 644-1842
HIV/AIDS Prevention	(614) 644-1838
HIV/AIDS Surveillance	(614) 466-1388
Immunization Section	(614) 466-4643
Immunization Information Line	800-282-0546
ODH Laboratory	(614) 466-2278
Rabies Information Line	888-722-4371
Sexually Transmitted Diseases (STDs) Ohio Department of Health, Columbus	(614) 466-2446
ODH District Offices Cleveland District, Akron	(330) 643-1300
Dayton District	(937) 285-6250
Toledo District	(419) 245-2840
Tuberculosis (TB) Prevention and Control	(614) 466-2381
Tuberculosis (TB) Surveillance	(614) 752-8838
Vector-borne Disease Program (VBDP)	(614) 752-1029
City, county, and combined health districts: Listing available at the ODH Web page Select Directory, then Local Health Districts	<a href="http://www.odh.ohio.gov">http://www.odh.ohio.gov</a>
Web Page Addresses Centers for Disease Control and Prevention	<a href="http://www.cdc.gov">http://www.cdc.gov</a>
Food Safety Information	<a href="http://www.foodsafety.gov">http://www.foodsafety.gov</a>
Ohio Department of Health	<a href="http://www.odh.ohio.gov">http://www.odh.ohio.gov</a>

## Abbreviations

ACIP	Advisory Committee on Immunization Practices
AIDS	acquired immunodeficiency syndrome
AVMA	American Veterinary Medicine Association
BIDC	Bureau of Infectious Disease Control, Ohio Department of Health, Columbus, OH
CDC	Centers for Disease Control and Prevention, Atlanta, GA
CSF	cerebrospinal fluid
CSTE	Council of State and Territorial Epidemiologists
DFA	direct fluorescent antibody
EIA	enzyme immunoassay
FA	fluorescent antibody
HIV	human immunodeficiency virus
IFA	immunofluorescent antibody
LHD	local health department, includes city, county, and combined health districts in Ohio
MMWR	Morbidity and Mortality Weekly Report, a publication of the CDC
NASPHV	National Association of State Public Health Veterinarians
NETSS	National Electronic Telecommunication System for Surveillance
NNDSS	National Notifiable Disease Surveillance System
OAC	Ohio Administrative Code
ODH	Ohio Department of Health
ODHL	Ohio Department of Health Laboratory
ODRS	Ohio Disease Reporting System
ORC	Ohio Revised Code
PCR	polymerase chain reaction
STD	sexually transmitted disease
USDA	United States Department of Agriculture

## Definitions

The definition of any term not defined herein will be the same as in the latest edition of the Communicable Disease Rules, Section 2.

paired sera	Acute and convalescent sera used for serological testing
acute serum	First specimen collected for serological testing; generally obtained within 7 days of onset of illness; specific times noted under each disease
convalescent serum	Second specimen collected for serological testing; generally collected 2-3 weeks after the acute serum; specific times noted under each disease
case definition	Case definitions, as determined by the CSTE in conjunction with the CDC, were published in the MMWR [1997;46(RR-10)]. Modifications to the definition have been made as needed for Ohio.
suspected case	Standard criteria for disease or health effect usually based on clinical and sometimes epidemiological criteria
confirmed case	A case that is classified as "confirmed" for reporting purposes
probable case	A case that is classified as "probable" for reporting purposes
laboratory confirmed case	A case which is confirmed by one or more of the laboratory methods listed in the case definition under Laboratory Criteria for Diagnosis. Although other laboratory methods can be used in clinical diagnosis, only those listed are accepted for laboratory confirmation for national reporting purposes.
clinically compatible case	A clinical syndrome generally compatible with the disease, as described in the clinical description.
epidemiologically linked case	A case in which a) the patient has had contact with one or more persons who either have/had the disease or have been exposed to a point source of infection (i.e., a single source of infection, such as an event leading to a foodborne-disease outbreak, to which all confirmed case-patients were exposed) and b) transmission of the agent by the usual modes of transmission is plausible. A case may be considered epidemiologically linked to a laboratory-confirmed case if at least one case in the chain of transmission is laboratory confirmed.

## What is Surveillance?

Surveillance is a comprehensive process which includes suspicion of an infectious disease, confirmation of disease, disease reporting, case investigation, prevention and control to limit the spread of disease, and feedback to providers (see [Figure 1](#)). The ultimate goal of the process is to protect and improve the health of the public, using the knowledge of incident cases to prevent the spread of disease and, ultimately, eliminate some diseases entirely. The conscientious cooperation of all players in the sequence - providers (reporters), local health jurisdictions, the state health department, other state and local agencies and the CDC - is required for maximum service to the public.

### *Role of reporters (physicians, labs, etc.)*

Identification of a suspected or confirmed case of an infectious disease is the first step. This can be done by physicians, laboratories, school nurses, nurse practitioners, infection control practitioners, and others. Suspected cases are to be reported so that prophylactic measures to protect contacts of the case can be planned and instituted as soon as the disease is confirmed. This is especially important in diseases which are easily spread, such as measles, or for which exposure is particularly hazardous, such as meningococcal disease. Case reporting to a local health jurisdiction, and subsequently to the state, allows identification of related cases, or outbreaks, which might not be apparent to a practitioner seeing only one or two affected patients.

Class A(1) diseases should be reported immediately by telephone to the commissioner (or his/her designee) of the local health department in Ohio within whose jurisdiction the case resides (OAC 3701-3-05 A1). Reporting of diseases designated as class A(2), A(3), B, and C (OAC 3701-3-02) should be completed on the confidential case report form (3812.11 rev 12/81), on the lab report form (HEA 3833.11 rev 4/98), or by telephone and submitted to the commissioner (or his/her designee) of the local health department in Ohio where the case resides. A summary of the reportable diseases and their reporting classes with reporting requirements is provided on pages 9 and 10.

Clinical laboratories should submit reports of positive tests (OAC 3701-3-04 and OAC 3701-3-12). Timing and method of reporting depends on the class in which the disease is categorized. Laboratory results should be reviewed by the local health department to determine if they represent a current, previously-unreported case. Timely and complete reporting of cases by physicians, laboratories, and hospitals is essential for public health surveillance, prevention and control purposes.

When the local health jurisdiction of a case is not known or the case is from out-of-state, the report should be made to the local health department where the case was identified. Patient's first and last name, and address – including city, state, and county are extremely important to report as they determine the appropriate health jurisdiction for follow-up.

### *Role of the local health department*

Local health departments are authorized by the Ohio Revised Code (statutes) to request the clinical and epidemiological information needed to interpret laboratory reports and to classify case reports according to the standardized case definitions listed in this manual. This information allows disease prevention

and control measures to be instituted and, in some cases, allows identification of disease outbreaks. The case reports are entered by the local health departments into the Ohio Disease Reporting System (ODRS).

For some reportable diseases, additional forms must be completed as part of the case investigation. Some of these forms are from ODH; others are from the CDC. Generally these forms are completed by the local health department. Some of these forms can be completed in ODRS. Those that are not available in ODRS should be sent to ODH. There are some forms which are optional and may be completed by the local health department to assist in the case investigation but do not need to be submitted to ODH. These forms are provided in this manual in association with the diseases to which they apply.

*Role of the state health department*

All laboratory and case reports and required national surveillance forms are individually reviewed at ODH prior to being forwarded to CDC. ODH is available to provide assistance as appropriate and available to the local health jurisdictions to ensure the health and safety of the public. ODH also interfaces with the CDC for issues of multistate outbreak investigation, analysis of unusual organisms, and state-of-the-art guidelines for treatment and control of infectious diseases.

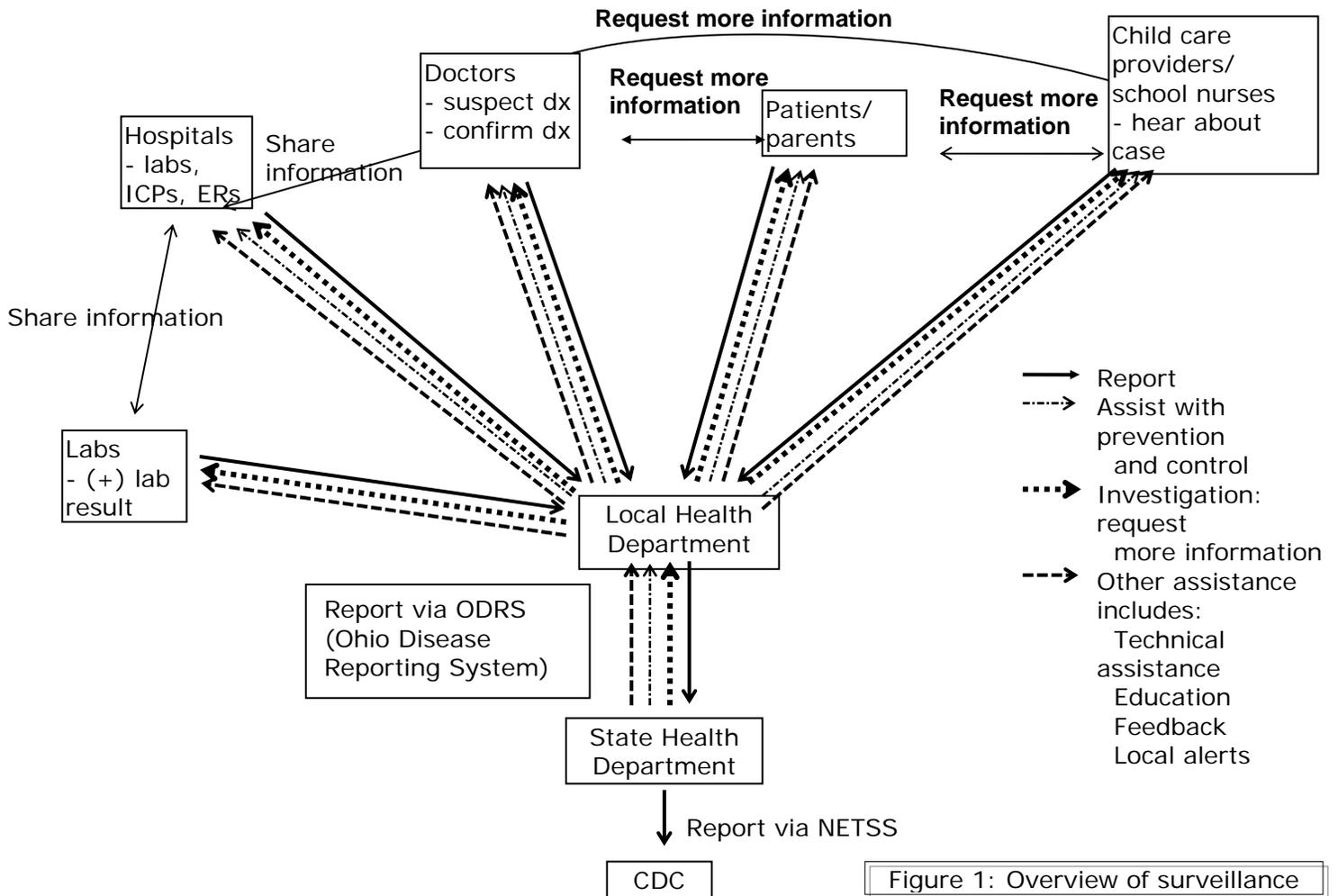


Figure 1: Overview of surveillance

## “Know Your ABCs”

### Ohio Administrative Code 3701-3-02. Effective January 1, 2006. Diseases alphabetically, with class designation.

Amebiasis	A(3)	Gonococcal infections	A(3)	vaccine-associated disease)	
Anthrax	A(1)	(urethritis, cervicitis,		Psittacosis	A(2)
Arboviral neuroinvasive and	A(2)	pelvic inflammatory		Q fever	A(2)
non-neuroinvasive Disease		disease, pharyngitis,		Rabies, human	A(1)
Eastern equine encephalitis		arthritis, endocarditis,		Reye syndrome	A(3)
virus disease		meningitis and		Rheumatic fever	A(3)
LaCrosse virus disease		neonatal conjunctivitis)		Rocky Mountain	A(3)
Powassan virus disease		Granuloma inguinale	A(2)	spotted fever (RMSF)	
St. Louis virus encephalitis		<i>Haemophilus influenzae</i>	A(2)	Rubella, congenital	A(2)
virus disease		(invasive disease)		Rubella, not congenital	A(1)
West Nile virus disease		Hantavirus	A(2)	Salmonellosis	A(2)
(also current infection)		Hemolytic uremic syndrome	A(2)	Scabies	C
Western equine encephalitis		(HUS)		Severe acute respiratory	A(1)
virus disease		Hepatitis A	A(2)	syndrome (SARS)	
Other arthropod-borne		Hepatitis B, perinatal	A(2)	Shigellosis	A(2)
disease		Hepatitis B	A(3)	Smallpox	A(1)
Blastomycosis	C	Hepatitis C	A(3)	Sporotrichosis	C
Botulism, foodborne	A(1)	Hepatitis D (delta hepatitis)	A(3)	Staphylococcal skin infections	C
Botulism, infant	A(3)	Hepatitis E	A(3)	<i>Staphylococcus aureus</i> , with	A(2)
Botulism, wound	A(3)	Herpes (congenital)	A(3)	resistance or intermediate	
Brucellosis	A(3)	Histoplasmosis	C	resistance to vancomycin	
Campylobacteriosis	A(3)	Influenza	B	(VRSA, VISA)	
Chancroid	A(2)	Influenza-associated	A(2)	Streptococcal disease,	A(3)
Chlamydia infections	A(3)	pediatric mortality		group A, invasive (IGAS)	
(urethritis, epididymitis,		Kawasaki disease	A(3)	Streptococcal disease,	A(3)
cervicitis, pelvic		(mucocutaneous lymph		group B, in newborn	
inflammatory disease,		node syndrome)		Streptococcal toxic shock	A(3)
neonatal conjunctivitis		Legionnaires' disease	A(2)	Syndrome (STSS)	
and pneumonia)		Leprosy (Hansen disease)	A(3)	<i>Streptococcus pneumoniae</i> ,	A(3)
Cholera	A(1)	Leptospirosis	A(3)	invasive disease (ISP)	
Coccidioidomycosis	A(2)	Listeriosis	A(2)	Syphilis	A(2)
Conjunctivitis, acute	C	Lyme disease	A(3)	Tetanus	A(2)
Creutzfeldt-Jakob disease	A(3)	Lymphogranuloma venereum	A(2)	Toxic shock syndrome (TSS)	A(3)
(CJD)		Malaria	A(2)	Toxoplasmosis	C
Cryptosporidiosis	A(3)	Measles	A(1)	Toxoplasmosis (congenital)	A(3)
Cyclosporiasis	A(2)	Meningitis, aseptic, including	A(2)	Trichinosis	A(3)
Cytomegalovirus (CMV)	A(3)	viral meningoencephalitis		Tuberculosis (TB), including	A(2)
(congenital)		Meningitis, including	A(3)	multi-drug resistant	
Dengue	A(2)	other bacterial		tuberculosis (MDR-TB)	
Diphtheria	A(1)	Meningococcal disease	A(1)	Tularemia	A(1)
<i>E. coli</i> O157:H7 and other	A(2)	Mumps	A(2)	Typhoid fever	A(2)
enterohemorrhagic		Mycobacterial disease, other	A(3)	Typhus fever	A(3)
(Shiga toxin-producing)		than tuberculosis (MOTT)		Varicella	A(3)
<i>E. coli</i>		Nosocomial infections	C	Vibriosis	A(3)
Ehrlichiosis	A(3)	of any type		Viral hemorrhagic fever (VHF)	A(1)
Encephalitis, other viral	A(3)	Pediculosis	C	Waterborne disease	A(2)
Encephalitis, post infection	A(3)	Pertussis	A(2)	outbreaks	
Foodborne disease outbreaks	A(2)	Plague	A(1)	Yellow fever	A(1)
Giardiasis	A(3)	Poliomyelitis (including	A(2)	Yersiniosis	A(3)

#### Reporting Requirement

##### Class A

- (1) Diseases of major public health concern because of the severity of disease or potential for epidemic spread. Report by telephone immediately upon recognition that a case, suspect case or positive laboratory result exists.
- (2) Diseases of public health concern needing timely response because of potential for epidemic spread. Report by the end of the next business day after the existence of a case, suspect case or positive laboratory result is known.
- (3) Diseases of significant public health concern. Report by the close of each working week after the existence of a case, suspect case or positive laboratory result is known.

Class B Report the number of cases by the close of each working week.

Class C Report an outbreak, unusual incidence, or epidemic of these diseases by the end of the next business day.

# “Know Your ABCs”: a Quick Guide to Reportable Infectious Diseases in Ohio

## Ohio Administrative Code 3701-3-02. Effective January 1, 2006.

### Class A Diseases

**(1) diseases of major public health concern because of the severity of disease or potential for epidemic spread - report by telephone immediately upon recognition that a case, suspect case or positive laboratory result exists**

Anthrax	Measles	Rubella (not congenital)	Tularemia
Botulism, foodborne	Meningococcal disease	Severe acute respiratory syndrome (SARS)	Viral hemorrhagic fever (VHF)
Cholera	Plague	Smallpox	Yellow fever
Diphtheria	Rabies, human		

Any unexpected pattern of cases, suspected cases, deaths or increased incidence of any other disease of major public health concern, because of the severity of disease or potential for epidemic spread, which may indicate a newly recognized infectious agent, outbreak, epidemic, related public health hazard or act of bioterrorism.

**(2) diseases of public health concern needing timely response because of potential for epidemic spread - report by the end of the next business day after the existence of a case, suspect case or positive laboratory result is known**

Arboviral neuroinvasive and non-neuroinvasive disease	Chancroid	Influenza-associated pediatric mortality	Rubella (congenital)
Eastern equine encephalitis virus disease	Coccidioidomycosis	Legionnaires' disease	Salmonellosis
LaCrosse virus disease (other California serogroup virus disease)	Cyclosporiasis	Listeriosis	Shigellosis
Powassan virus disease	Dengue	Lymphogranuloma venereum	<i>Staphylococcus aureus</i> , with resistance or intermediate resistance to vancomycin (VRSA, VISA)
St. Louis encephalitis virus disease	<i>E. coli</i> O157:H7 and other enterohemorrhagic (Shiga toxin-producing) <i>E. coli</i>	Malaria	Syphilis
West Nile virus disease (also current infection)	Foodborne disease outbreaks	Meningitis, aseptic, including viral meningoencephalitis	Tetanus
Western equine encephalitis virus disease	Granuloma inguinale	Mumps	Tuberculosis (TB), including multi-drug resistant tuberculosis (MDR-TB)
Other arthropod-borne disease	<i>Haemophilus influenzae</i> (invasive disease)	Pertussis	Typhoid fever
	Hantavirus	Poliomyelitis (including vaccine-associated cases)	Waterborne disease outbreaks
	Hemolytic uremic syndrome (HUS)	Psittacosis	
	Hepatitis A	Q fever	
	Hepatitis B, perinatal		

**(3) diseases of significant public health concern -- report by the close of the working week after the existence of a case, suspect case or positive laboratory result is known**

Amebiasis	Encephalitis, other viral	Kawasaki disease	Streptococcal disease, group B, in newborn
Botulism, wound	Encephalitis, post-infection	(mucocutaneous lymph node syndrome)	Streptococcal toxic shock syndrome (STSS)
Botulism, infant	Giardiasis	Leprosy (Hansen disease)	<i>Streptococcus pneumoniae</i> , invasive disease (ISP)
Brucellosis	Gonococcal infections (urethritis, cervicitis, pelvic inflammatory disease, arthritis, pharyngitis, meningitis and neonatal conjunctivitis)	Leptospirosis	Toxic shock syndrome (TSS)
Campylobacteriosis		Lyme disease	Toxoplasmosis (congenital)
Chlamydia infections (urethritis, epididymitis, cervicitis, pelvic inflammatory disease, neonatal conjunctivitis and pneumonia)		Meningitis, including other bacterial	Trichinosis
Creutzfeldt-Jakob disease (CJD)	Hepatitis B	Mycobacterial disease, other than tuberculosis (MOTT)	Typhus fever
Cryptosporidiosis	Hepatitis C	Reye syndrome	Varicella
Cytomegalovirus (CMV) (congenital)	Hepatitis D (delta hepatitis)	Rheumatic fever	Vibriosis
Ehrlichiosis	Hepatitis E	Rocky Mountain spotted fever (RMSF)	Yersiniosis
	Herpes (congenital)	Streptococcal disease, group A, invasive (IGAS)	

**Class B Disease - report the number of cases by the close of each working week**

Influenza

**Class C Diseases - report an outbreak, unusual incidence or epidemic by the end of the next business day**

Blastomycosis	Scabies	Outbreak, unusual incidence, or epidemic of other infectious diseases of known etiology not categorized as Class A, Class B or Class C
Conjunctivitis, acute	Sporotrichosis	
Histoplasmosis	Staphylococcal skin infections	
Nosocomial infections of any type	Toxoplasmosis	
Pediculosis		

Except as otherwise required for the Class A(1) diseases, reports of cases, suspect cases and positive laboratory results shall be in writing, and shall include the name and address of the case, suspect case, or person from whom the specimen was taken. A Board of Health may accept verbal reports by telephone or other electronic systems approved by the Director within the same time limitations. Reports shall include supplementary information relevant to the case or laboratory reports as needed to complete official surveillance forms provided or approved by the Director.

**Cases of AIDS (acquired immune deficiency syndrome), AIDS-related conditions, HIV (human immunodeficiency virus) infection, perinatal exposure to HIV, and CD4 T-lymphocytes counts <200 or 14% must be reported on forms and in a manner prescribed by the Director.**

## Basics of Epidemiologic Investigation

### I. Reporting

#### A. Suspected and confirmed cases of diseases other than HIV/AIDS, rash illnesses and influenza, and STDs

Reports of suspected and confirmed cases of disease are made to the local health jurisdiction of the case's residence. Class A1 diseases are to be reported immediately by telephone. Laboratory reports (ODH form 3833.11 rev. 4/98, [Figure 2](#)) and physician reports (confidential case report card, ODH form 3812.11 rev. 12/81, [Figure 3](#)) of other diseases can be submitted via US mail. Some health departments will also accept reports by fax and/or by telephone; check with your local health department for its policy. The local health jurisdiction should then report to ODH by telephone (for class A1 diseases) and by entering the reports into the Ohio Disease Reporting System (ODRS). Please contact ODH at 614 644-1842 to register as an ODRS user. The mailing address for ODH is:

Ohio Department of Health  
Infectious Disease Surveillance  
246 N. High Street  
Columbus, OH 43215

#### B. HIV/AIDS

Laboratories initiating the report (ODH 3833.11 rev 4/98, same as the lab report form, [Figure 2](#)) should send it to the designated health department in the county. The designated health department is the county health department, except in the following counties:

County:	Mail completed report to:
Cuyahoga	Cleveland Health Department
Franklin	Columbus Health Department
Hamilton	Cincinnati Health Department
Jefferson	Steubenville Health Department
Licking	Newark Health Department
Lucas	Toledo Health Department
Mahoning	Youngstown Health Department
Montgomery	Dayton/Montgomery County Combined Health Department
Stark	Canton Health Department
Summit	Akron Health Department

Figure 2: Laboratory report form, ODH 3833.11 rev. 4/98

Patient name (last-first-middle)			County	Telephone	Date reported
Address			City	ZIP	Date collected
Sex	Age	Race <input type="checkbox"/> White <input type="checkbox"/> Black <input type="checkbox"/> American Indian/AN <input type="checkbox"/> Asian/PI	Ethnicity <input type="checkbox"/> Hispanic	Reason for test <input type="checkbox"/> Prenatal <input type="checkbox"/> Repeat pos	Specimen Site/Type
<b>Check block for disease suspected — Indicate positive test results</b>					
<input type="checkbox"/> HIV <small>Report only repeatedly positive Elisa results: confirmed by Western Blot or other confirmatory test (specify)</small>	<input type="checkbox"/> Syphilis RPR/VDRL Titer	<input type="checkbox"/> Chlamydia FTA/MHA	<input type="checkbox"/> Gonorrhea Smear	Tuberculosis <input type="checkbox"/> Smear <input type="checkbox"/> Culture	
	DKFD	Culture	Elisa	Culture	Result
Other positive lab findings <input type="checkbox"/> Campylobacter <input type="checkbox"/> Salmonella <input type="checkbox"/> Hepatitis A IgM <input type="checkbox"/> Neisseria meningitidis <input type="checkbox"/> Shigella <input type="checkbox"/> HbC Ab-IgM <input type="checkbox"/> Haemophilus influenzae <input type="checkbox"/> Giardia <input type="checkbox"/> HBs Ag -			Other disease suspected Test Result		
Treatment (if given) Type/Amount			Result		
Laboratory—name/address			Physician—name/address		
Lab code			Phone ( )		
<b>Positive Laboratory Findings for Reportable Diseases</b>				Form no. 3833.11 (Rev. 4/98) for LHD use	
HEA 3333				per Ohio Admin. Code 3701-3-02 and 3701-3-12	

Figure 3: Confidential Case Report Card ODH 3812.11 rev. 12/81 (side A)  
(Side B is for reporting Sexually Transmitted Diseases and Tuberculosis)

Disease		Date of Report	Date of Onset	
Patient's Name			Age	Sex
Street Address			Apt. No.	Phone No.
City		County	Health Jurisdiction or District	
Name of Head of Household				
Case is: Suspected <input type="checkbox"/>	Patient Expired Yes <input type="checkbox"/>	Unknown <input type="checkbox"/>		
Confirmed <input type="checkbox"/>	No <input type="checkbox"/>			
Name of Physician — Reporting Individual or Agency			<input type="checkbox"/> Sensitive Case Contact Physician Before Patient	
Office Address			Phone No.	
Weekly report of Class B diseases. List Report total number by week below: Week ending Date				
Chickenpox	Herpes Genital	Streptococcal Infections	Influenza	NGU
Remarks:			Check if additional cards needed:	
Ohio Department of Health #3812.11 Rev. 12/81			<input type="checkbox"/> HEALTH DEPARTMENT <input type="checkbox"/> PHYSICIAN HOSPITAL	
HEA 3334			Completes reverse side for information on STD and TB	

Health departments forward the laboratory reports to ODH at the following address:

HIV/STD Prevention  
Ohio Department of Health  
246 N High Street  
Columbus, OH 43215  
contact (614) 466-2446

Physicians also initiate case reports (CDC forms 50.42A and 50.42B, see HIV/AIDS article in Section 3) and submit them to the designated local health department. Additionally, physicians are contacted by ODH staff to assist with completing the case report form (CDC forms 50.42A and 50.42B) as follow-up to positive laboratory reports. Designated local health departments and physicians submit case reports to ODH at the following address:

HIV/AIDS Surveillance  
Ohio Department of Health  
246 N. High Street  
Columbus, OH 43215  
contact (614) 466-1388

*C. Rash illnesses and influenza*

Rash/fever illnesses suspected of being rubeola (measles) or rubella, and suspected influenza outbreaks, should be reported by the local health departments to the nearest district Immunization Unit:

<b>Unit</b>	<b>Address</b>	<b>Phone</b>
Akron	161 S. High Street Akron, 44308	(330) 643-1300
Columbus	246 N. High Street Columbus, 43214	1-800-282- 0546
Toledo	One Government Center, 13th Floor Toledo, 43604	(419) 245-2840

*D. STDs*

Sexually transmitted diseases should be reported on the confidential case report card (ODH #3812.11 rev. 12/81 Figure 3). Positive laboratory reports for STDs should be reported on the positive laboratory findings for reportable diseases form (form no. 3833.11 rev. 4/98, Figure 2). These forms should be sent to the local health department. The local health department will forward the forms to Ohio Department of Health at:

Ohio Department of Health  
STD Prevention  
246 N. High Street  
Columbus, Ohio 43215  
(614) 466-2446

*E. Tuberculosis*

Positive laboratory results (form 3833.11 rev 4/98, Figure 2) and physician reports (form 3812.11 rev 12/81) should be reported to the local health jurisdiction of the cases residence. The local health department forwards the reports with the completed Report of Suspected/Verified Case of Tuberculosis forms (HEA 3325 6/93, see TB article in Section 3) to ODH at

TB Registry Program  
Ohio Department of Health  
246 N High Street  
Columbus, OH 43215  
(614) 752-8838

*F. Positive laboratory results*

Positive laboratory results should be reported on the laboratory report form (3833.11 rev. 4/98, Figure 2) to the local health jurisdiction of the case's residence. The local health jurisdiction should enter the report into the Ohio Disease Reporting System (ODRS).

*G. Unknown local health jurisdiction*

When the local health jurisdiction of a case is not known or the case is from out-of-state, the report should be made to the local health department in Ohio where the case was identified. The local health department receiving the report should enter the report into the Ohio Disease Reporting System (ODRS).

*H. Other (non-infectious) notifiable conditions*

Reports on other notifiable conditions are submitted directly to ODH. These include

Occupational Diseases - contact (614) 466-4183  
Cancer - contact (614) – contact (614) 466-5350  
Lead, Mercury, Arsenic, and Cadmium Poisoning - contact (614) 728-6816  
Elevated lead levels in children - contact (614) 466-5332

## **II. Review of reports**

Upon receipt of a case or laboratory report, the local health department should enter the report into the Ohio Disease Reporting System. The case should be entered as a "suspected" case until the local health department has determined if the report meets the case definition of a reportable disease as provided in section 3 of this manual. Since not all positive laboratory reports represent cases and not all case reports are supplemented or confirmed by a positive laboratory report, additional information will be needed. Complete information, including clinical and laboratory findings as listed in section 3, should be obtained from the appropriate reporting authority, allowing a decision to be made regarding the status of the report. The Ohio Revised Code (statutes) and the Ohio Administrative Code (rules and regulations) broadly authorize local health departments to request the clinical and epidemiologic information needed to interpret and classify laboratory and case reports.

Once it is determined that a report represents a suspected, probable, confirmed case, staff at the local health department should enter in ODRS and forward the any additional reports and forms not available in ODRS, including supplemental forms as provided in Section 3, to ODH. Information from case reports is used to prevent and control the spread of disease, usually at the local level and occasionally at the state or national level. Information from individual case reports is forwarded to CDC without personal identifiers. State statistical summaries are published annually, and national statistical summaries appear weekly in CDC's *Morbidity and Mortality Weekly Report*.

## **III. Recognition of disease outbreaks**

The log or database of case and lab reports maintained by the local and state health departments will help public health personnel to recognize clusters or outbreaks of communicable diseases. The log should be reviewed periodically to establish the background (endemic) level of disease, allowing recognition of unusually high disease incidence, which is the definition of an outbreak. For many diseases, there is no acceptable endemic level and each case report should be investigated. These include diseases with critical individual and public health impact, such as measles, meningococcal infection, and botulism, and diseases with ongoing individual and public health impact, such as tuberculosis and syphilis.

## **IV. Outbreak investigation**

### *A. Case list*

As soon as a cluster or outbreak is identified, compile a case list. This list is specific to the outbreak and includes all the information relevant to the outbreak for each case. The relevant information in a first list includes:

- person - name, age, gender
- location - address, zip code, county
- illness - date (and time) of onset, symptoms, laboratory findings

Cases are determined by a case definition, which might change as an investigation proceeds. The case list will be continually refined as the investigation proceeds and more information is obtained. Two examples of case lists are given in [Table 1](#) and [Table 2](#).

### *B. Outbreak curve*

To construct an outbreak curve, sort the cases on the case list by date and/or time of onset of illness, then plot onset of illness by time, as demonstrated in Figure 4 and Figure 5. (Intro-18). The outbreak curve provides information about the probable source of the outbreak (point source with or without secondary transmission or propagated disease source) and possible causative organisms, based on the length of time from possible exposure to onset of symptoms.

### *C. Obtain additional information*

For a suspected foodborne or waterborne outbreak, this might include questionnaires eliciting food/drink histories of cases and controls. For suspected respiratory or environmental outbreaks, exposure to ill people or potential environmental agents will be elicited. For unusual vector-borne diseases, a complete travel history is required.

Epidemiologists at ODH can help develop data-gathering questionnaires and/or provide standard questionnaires to assist with this part of the investigation.

Table 1: Case List – Hepatitis A Outbreak  
 XXX County, Ohio  
 November, 1997 – March 1998

Name	Age	Sex	Onset	Received IG	Anti-HAV IgM
Sharon Smith	52	F	11/30	No	Not tested
Alicia Brown	26	F	01/03	No	(+)
Janelle Smith	14	F	01/03	No	(+)
Linda Smith	18	F	01/19	No	(+)
Harold Brown	29	M	01/21	No	(+)
Judy Green	24	F	02/14	No	(+)
Carolyn Jones	26	F	03/19	No	(+)

Table 2: Case List – Salmonellosis Outbreak  
 ZZZ County, Ohio  
 May, 1998

Name	Age	Sex	Onset	Culture
Sharon Jones	22	F	8/10, 5A	Yes (+)
Bill Green	34	M	8/10, 7A	Yes (+)
George Green	8	M	8/10, 7A	Yes (+)
Bobby Green	12	M	8/10, 10A	Yes (+)
Alice Green	28	F	8/10, 10:30A	Yes (+)
Rick Green	33	M	8/10, 11A	Yes (+)
Harold Green	49	M	8/10, 11A	Yes (+)
Frank Jones	25	M	8/10, 12N	Yes (+)
Linda Green	29	F	8/10, 2:30 P	Yes (+)
Mark Green	5	M	8/10, 3P	Yes (+)
Nathan Green	2	M	8/10, 2P	No
Rocky Hammer	29	M	--	No
Kathy Green	11	F	8/10, 9P	Yes (-)
Kim Green	6	F	8/10, 9:30P	Yes (+)
Alice Green	48	F	8/11, 1A	No

Figure 4: Onset of Illness, Hepatitis A outbreak (from line-listing, Table 1)

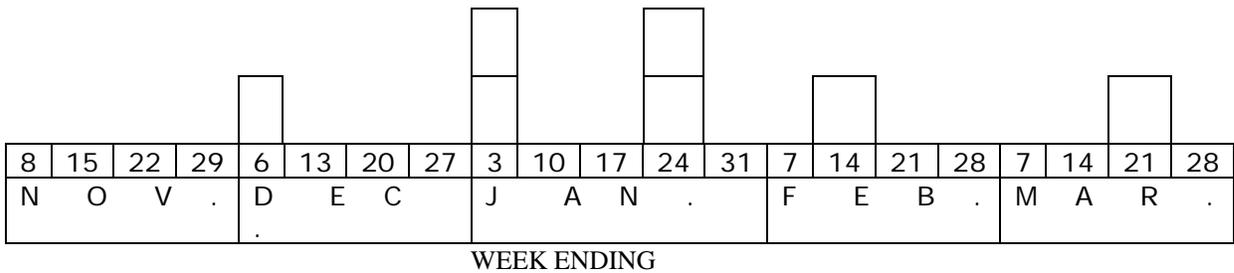


Figure 5: Onset of Illness, Salmonellosis outbreak (from line-listing, Table 2)

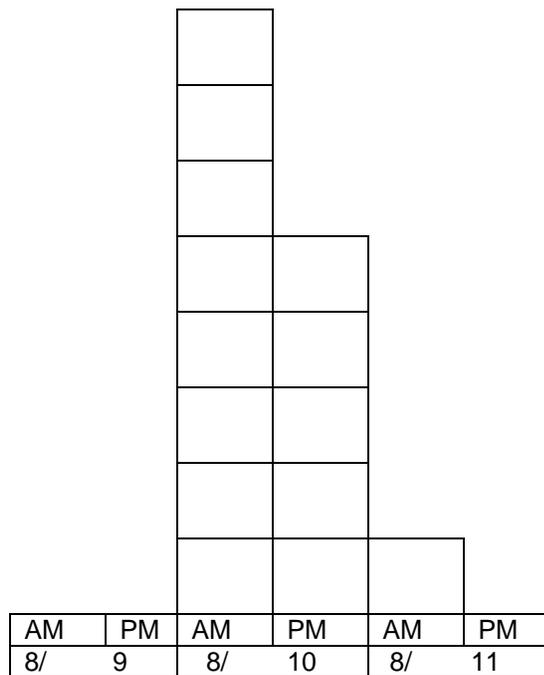


Figure 4 is a very flat outbreak curve, a characteristic of a propagated outbreak, and demands an explanation for the concentration of cases in females of child-bearing age. Investigation revealed that Sharon Smith is the mother of Janelle and Linda Smith and sister of Alicia Brown. Sharon prepared Thanksgiving dinner immediately prior to the onset of her illness; the dinner was attended by her daughters and Harold Brown, Alicia's husband. They likely acquired the infection at this time. Sharon Smith also provides child care in her home for Judy Green's 2 year old son and Carolyn Jones' 3 year old daughter. Both of these children received immune globulin (IG) following their exposure in child care, but their mothers did not. The investigation of this outbreak demonstrated the role exposed, asymptomatic (protected by IG) children can play in the transmission of hepatitis A, and strongly suggests the use of IG to protect parents of children who are exposed to hepatitis A in child care.

Figure 5 is a sharply-peaked outbreak curve typical of a common-source outbreak in which no secondary transmission takes place. Investigation revealed that all cases except one (Kathy Green) had eaten homemade ice cream at the family picnic. The ice cream custard was made with fresh shell eggs, and, counter to current recommendations, was uncooked. Note: Rocky Hammer is not included in the outbreak curve; during the investigation he was out of town and could not be reached for interview. Although he was known to be ill, the time of onset of illness was not determined. In an outbreak as clear-cut as this one, a 100% case representation is not necessary to demonstrate the dynamics of the event.

#### *D. Use of computer programs*

EpiInfo is a DOS-based program available free from the CDC (it can be downloaded from: <http://www.cdc.gov/epiinfo/>) It can be used to create line lists of cases and perform statistical analyses to assist in determination of source(s) of exposure in outbreak situations. Other database programs can be adapted by knowledgeable public health investigators to provide similar information.

#### *E. Other sources of information*

Methods of epidemiologic investigation are basic to infectious disease investigation and control. The ODH Infectious Disease Investigation Section is available for consultation and assistance. The CDC offers several programs on infectious disease investigation and principles of epidemiology. These are available as home-study courses or on-site in Atlanta. Numerous texts which present the principles of epidemiology are also available.

- ODH (614) 466-0265  
CDC for information on courses in Atlanta, contact 1-800-41-TRAIN and/or <http://www.cdc.gov/phtn/catalog.htm>  
*Principles of Epidemiology* self-study course 3030-G, available at the CDC telephone number above  
WHO Beaglehole R, Bonita R, and Kjellstrom T. *Basic Epidemiology*. Geneva: World Health Organization, 1993

### **V. Measures to limit spread and prevent additional occurrences of disease**

#### *A. Identification of susceptible contacts*

Persons who have been in contact with a case in such a manner as to place them at risk for acquiring the illness must be identified, generally by questioning the case about whom s/he might have contacted. This applies to illnesses which are spread by respiratory means, such as pertussis; by the fecal-oral route, such as hepatitis A; by sexual transmission, such as gonorrhea; via blood or blood products, such as HIV/AIDS; or via direct contact, such as scabies. This also applies to common exposures, i.e., persons who are not yet ill but had exposure to the same common sources as the case. Greater details are given under each disease listing in Section 3.

#### *B. Isolation and/or restricted activities of case and/or susceptible contacts*

Isolation requirements are described in the Ohio Administrative Code 3701-3-13. These requirements will help to prevent further transmission of disease.

#### *C. Evaluation and prophylaxis of contacts*

Once contacts are identified, prophylaxis can be administered if available. Prophylaxis includes measures such as testing and treatment for sexual contacts to gonorrhea, rifampin for close contacts to meningococcal disease, and INH for contacts to TB who have converted their skin test. Complete details are listed with each disease in Section 3.

*D. Vaccination, if available*

Contacts who do not have active or passive immunity to vaccine-preventable diseases might benefit from vaccination during a brief time following exposure to the disease. The contact's immunization status and disease history must be documented.

*E. Education*

Education about the epidemiology of disease and disease prevention and control is necessary to prevent further disease. Educational materials can be aimed at professionals and the public, and can be delivered by health educators, the media, and others.

## INTERAGENCY COOPERATION

The work of public health and infectious disease control and prevention often requires the cooperation of several local, state, and federal agencies. A non-exhaustive list of these includes:

- Local Health District
- State Health Department
- Centers for Disease Control and Prevention
- Local Police and/or Sheriff's Departments
- Federal Bureau of Investigation
- Ohio Department of Agriculture
- US Department of Agriculture
- Ohio Environmental Protection Agency
- US Environmental Protection Agency
- US Food and Drug Administration
- State Board of Pharmacy

How do you decide if another agency should be involved in a given disease or outbreak situation? ODH can provide guidance indicating which agencies are responsible for various components of disease or outbreak investigations. A few guidelines follow:

*All suspected or confirmed outbreaks* should be reported to ODH, Bureau of Infectious Disease Control (614) 466-0265 as described in Section 3 of this manual.

*Infectious Disease On-Call (ID On-Call)* (attached protocol (Intro-22)).

ODH has an infectious disease On-Call Officer to respond to urgent infectious disease reports, outbreaks and potential bioterrorism events on a 24/7/365 basis. These types of reports are called Class A(1) reports and should be reported immediately by phone to ODH. During business hours, the reports need to be called to the Bureau of Infectious Disease Control at (614) 466-0265. After business hours, Class A(1) reports need to be made by telephone to the ODH Infectious Disease On-Call officer. The after business hours ID On-Call contact number is (614) 728-3463. For a listing of Class A(1) diseases, please refer to the "Know Your ABCs": A Quick Guide to Reportable Diseases in Ohio", Section 1 of this manual. Also see algorithm, page 22, this section.

*Is tampering or adulteration of a food or drug product suspected?* The local police department should be contacted for problems related to foods or drugs with evidence of tampering or adulteration after retail sale. The local police might contact the FBI if tampering is evident.

*Is crime or criminal activity suspected?* Contact the local law enforcement agency.

*Is food testing being requested?* Local Health Departments should consult with the Ohio Department of Health and the Ohio Department of Agriculture regarding requests for food testing.

*Does a foodborne outbreak investigation implicate a meat, poultry, or related product (e.g., meat-containing stew, pizza, or frozen food) or a processed egg product (e.g., liquid, frozen, or dried pasteurized egg products)?* The US

Department of Agriculture might become involved.

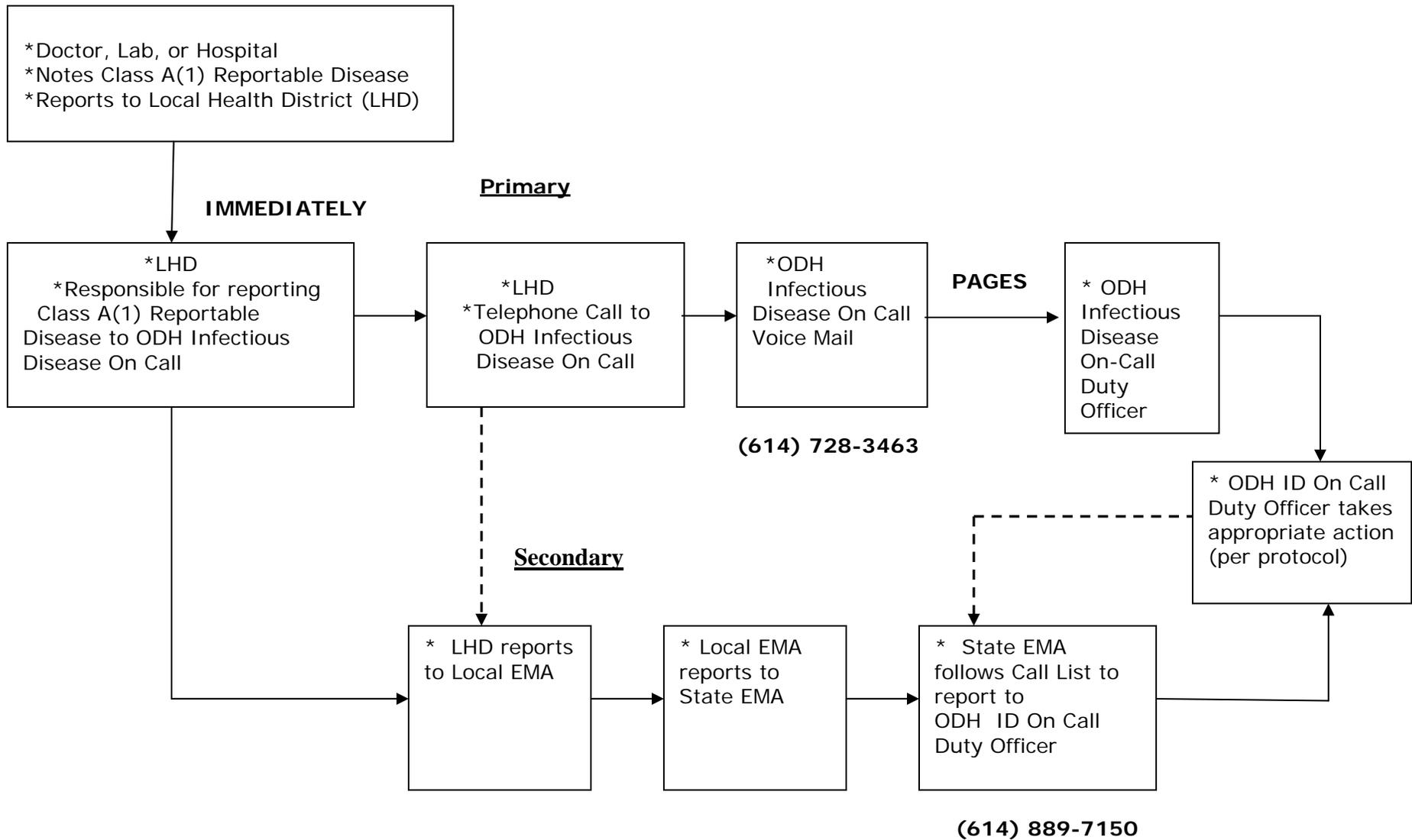
*Does a foodborne outbreak investigation implicate a meat processed in Ohio?* The Ohio Department of Agriculture might become involved.

*Does a foodborne outbreak investigation implicate a food (including shell eggs, bottled water) sold through interstate commerce?* The US Food and Drug Administration might become involved.

*Does the outbreak involve more than one state?* Outbreak investigations involving more than one state are sometimes coordinated by the Centers for Disease Control and Prevention.

# Division of Prevention

## Communicable Disease Reporting Class A(1) – Non-Business Hours



— — — — Dotted line response-Contact if there is an immediate threat to public health/community or media sensitive issue.

## References

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