

Meningococcal Infections Caused by *N. meningitidis*, Including: Meningococcemias Investigation Guideline

CONTENTS

Investigation Protocol:

- **Investigation Guideline**

Investigation Forms / Documentation Worksheets:

- **General Investigation Form(s)**
- **Bacterial Meningitis Supplemental Form**

Supporting Material:

- **Sample Letter, Parent Notification**
- **Sample Letter, Medical Notification**
- **Fact Sheet**

Meningococcal Infections Caused by *N. meningitidis*, Including: Meningococcemias

Disease Management and Investigative Guidelines

CASE DEFINITION (CDC 2005)

A. Clinical Description for Public Health Surveillance:

- Meningococcal disease manifests most commonly as meningitis and/or meningococemia that may progress rapidly to purpura fulminans, shock, and death. However, other manifestations might be observed.

B. Laboratory Criteria for Case Classification:

- Isolation of *Neisseria meningitidis* from a normally sterile site (e.g., blood or cerebrospinal fluid [CSF] or, less commonly, joint, pleural, or pericardial fluid) or isolated from skin scrapings of purpuric lesions.
- Positive antigen test results from urine or serum samples are unreliable for diagnosing meningococcal disease.

C. Case Classification:

- Confirmed: A clinically compatible case that is laboratory confirmed.
- Probable: A clinically compatible case that has either:
 - Evidence of *N. meningitidis* using a validated polymerase chain reaction (PCR) and DNA obtained from a normally sterile site (i.e. blood, CSF)
 - OR -
 - Evidence of *N. meningitidis* antigen by immunohistochemistry (IHC) on formalin-fixed tissue or latex agglutination of CSF
- Suspected:
 - Clinical purpura fulminans in the absence of a positive blood culture, or
 - A clinically compatible case with gram negative diplococci from a normally sterile site (e.g., blood or CSF).

D. Laboratory Testing:

- Gram stains and cultures performed routinely by commercial laboratories.
- Remarks: Submission of *N. meningitidis* isolates to the Kansas Health and Environmental Laboratories (KHEL) is required by law.
- Shipping of isolates: Use Miscellaneous Infectious Disease (IDS) Shipper.
- For additional information and/or questions concerning isolate submission, and laboratory kits call (785) 296-1620 or refer to online guidance at www.kdheks.gov/labs/packaging_and_shipping.html.

E. Bioterrorism Potential: None.

F. Outbreak Definition:

- Community outbreak: ≥ 3 confirmed or probable cases of meningococcal disease in a period of ≤ 3 months among persons residing in the same area who are not close contacts and who do not share a common affiliation.
- Organization-based outbreak: ≥ 3 confirmed or probable cases of meningococcal disease of the same serogroup in period ≤ 3 months among persons with a common affiliation but no close contact with each other.

INVESTIGATOR RESPONSIBILITIES

A. Investigation Related Tasks and Activities:

Note: Investigational activities should begin as soon as possible. Ideally within 24 hours after diagnosis, the investigator should assure that prophylaxis was received by all significantly exposed contacts.

- 1) Confirm diagnosis with appropriate medical provider.
 - Before contacting the patient or family, discuss what they have been told about his/her evaluation for disease.
 - Obtain information that supports clinical findings in the case definition and information on the onset date of the symptoms.
 - Obtain information on any laboratory tests performed and results.
 - Gram stain results should be available within 1 hour of CSF collection. Culture results may take more than 48 hours.
 - If *N. meningitidis* was isolated from clinical specimen, ensure bacterial isolate was sent to state lab.
 - For hospitalization, obtain medical records, including admission notes, progress notes, lab report(s), and discharge summary.
- 2) Conduct contact investigation to locate additional cases and/or contacts.
 - Determine if case is involved in a high-risk occupation or if another special situation is involved (i.e. college, residential facility, health care).
- 3) Initiate control and prevention measures to prevent spread of disease.
 - Assure that appropriate treatment and/or prophylactic measures were received by case(s) and/or contact(s).
 - Decisions about chemoprophylaxis should be made after consulting with a KDHE epidemiologist and/or the contact's physician.
 - If necessary, assist with the establishment of special clinics to provide prophylaxis treatment to susceptible persons at risk of infection.
 - Provide education that includes basic information about the disease including means of transmission, symptoms, incubation period and the importance of seeking medical attention if symptoms develop.
 - Initiate active surveillance:
 - For all contacts initiate for 10 days following their last exposure to the index case.
 - For cases in daycare and institutions initiate for 2 incubation periods (i.e., 20 days).
 - The routine culturing of nasopharynx is not indicated.
 - If necessary, prepare and distribute a press release in conjunction with senior health department staff and/or Office of Surveillance and Epidemiology.
- 4) Conduct case investigation to identify potential source of infection.
- 5) Report all confirmed, probable and suspect cases to the KDHE Office of Surveillance and Epidemiology at KDHE (1-877-427-7317) within 4 hours of the initial report.

B. Notifications:

- 1) Report all cases by telephone to the Local Health Officer, the local on-call epidemiologist and KDHE (1-877-427-7317) within 4 hours of initial report.
- 2) As appropriate, use the notification letter(s) and the disease fact sheet to notify the case, contacts and other individuals or groups.

EPIDEMIOLOGY

The greatest incidence of meningococcal disease occurs during the late winter and early spring; epidemics are irregular. It occurs most often in children < 5 years old with the highest attack rate occurring in children 3-5 months of age. However, the age distribution appears to be shifting with more cases beginning to occur in older children and young adults with approximately 50% of all cases occurring to those > 16 years of age, in males more than in females and among newly aggregated young adults in crowded living conditions (e.g., barracks and institutions). In the United States, the distribution of meningococcal serogroups has shifted in recent years with serogroup B, C, and Y each accounting for approximately 30% of reported cases; however, serogroup distribution does vary by time and location. Between 5-15% of the general population's nasopharynx are colonized with *N. meningitidis* at any given time. While asymptomatic, these carriers may act as vectors, spreading the bacteria to others through saliva and respiratory secretions while simultaneously providing an immunizing effect that may protect the carrier from future infections from that particular strain.

DISEASE OVERVIEW**A. Agent:**

Neisseria meningitidis is a gram-negative diplococcal bacterium with 13 identified serogroups. Groups A, B, C, Y and W-135 are most commonly associated with systemic disease.

B. Clinical Description:

An Invasive infection with *N. meningitidis* may cause several clinical syndromes, including meningitis, bacteremia and sepsis. Symptoms of meningitis (i.e., infection of the meninges, the membrane covering the central nervous system) typically include the sudden onset of a stiff neck, high fever and an intense headache; a petechial rash may be present. Nausea, vomiting and mental confusion are often present. The case-fatality rate for meningococcal meningitis is between 5-15%.

Meningococcemia (i.e., infection of the blood) typically presents with the abrupt onset of fever, chills, malaise, prostration and rash (e.g., urticarial, maculopapular, purpuric or petechial). Fulminant cases present with purpura, disseminated intravascular coagulation, shock, and/or coma and may lead to death within hours despite appropriate therapy. In fulminating disease, the death rate remains high despite prompt antibacterial treatment.

C. Reservoirs: Humans.**D. Mode(s) of Transmission:**

Direct contact with an infected person's oral and/or nasal secretions, including but not limited to: kissing, sharing a toothbrush or eating utensil and other markers of close social contact. It should be noted that infected person(s) may be asymptomatic.

E. Incubation Period:

Range 2-10 days; usually 3-4 days.

F. Period of Communicability:

Persons are infectious as long as *N. meningitidis* are present in their nasopharynx. Cases are considered infectious from 7 days prior to illness onset to 24 hours after initiation of an antibiotic treatment to which the organism is susceptible and which eradicates the organism from the nasopharynx (i.e. pharmacological properties of the antibiotic allow it to be present in high enough concentrations in the nasopharyngeal secretions).

G. Susceptibility and Resistance:

Immunity is life-long and develops after clinical or inapparent infections. Adults born before 1957 are likely to have been infected and are considered immune.

H. Treatment:

Parenteral Penicillin G in high doses every 4-6 hours. Chloramphenicol, cefotaxime, ceftriaxone and ampicillin are acceptable alternatives.

Note: Unless the patients received ceftriaxone, before discharge from the hospital cases should also receive rifampin or ciprofloxacin to assure elimination of the organism in the nasopharynx.

STANDARD CASE INVESTIGATION AND CONTROL METHODS

Standard investigation activities include the following:

- 1) Confirmation of diagnosis using case definition.
- 2) Collection of demographic data (birth date, county, sex, race/ethnicity)
 - If less <6 years of age, is patient in daycare.
- 3) Collection of clinical and vaccine status data:
 - Date of illness onset
 - Symptoms
 - Type of infection (i.e. Primary Bacteremia, meningitis)
 - Date first positive culture obtained; specimen from which organism isolated
 - Serogroup
 - Organism resistance to sulfa or rifampin.
 - Hospitalizations
 - Outcomes: survived or date of death
 - History of meningococcal vaccine: dates of vaccination, manufacturer, number of doses, and lot numbers or why not vaccinated
- 4) Determination of risk factors and transmission settings (i.e. outside of household, further documented spread, travel outside of country)
- 5) Investigation of epi-links among cases (cluster, household, co-workers, etc).

Standard investigation **includes** completion of the General Investigation Form and Bacterial Meningitis Supplemental Form. Further activity should include:

A. Case Investigation - Identify Potential Source of Infection:

Note: Due to the high number of asymptomatic carriers it may not be possible to identify the source of infection. Focus more effort on contact investigation.

Consider the incubation period of 10 days prior to symptom onset for:

- Determine recent illness among contacts; include name, address and telephone, date of birth and occupation of ill contacts. In addition the name of school and grade or residence in a closed institution (if applicable) should be noted.
 - Epi-links: For highly suspected sources search for previous reports filed with state. Note the state investigation ID number for cases previously reported. Highly suspected sources not previously reported should be investigated as a suspect case and reported.
- Identify social or athletic contacts (e.g., nightclubs, parties or competitive sports). Research for earlier reported cases at these activities or events.

B. Contact Investigation – Identify Exposed Individuals / Populations:

Focus on those in contact with case 7 days prior to onset of symptoms.

- Contacts should be identified as soon as possible and informed about their increased risk of disease and the need to seek immediate medical attention if febrile illness or other symptoms consistent with a meningococcal infection develop.
- Interview case or case's family or close acquaintances to identify at risk activities 7 days prior to onset of symptoms:
 - Case's occupation and living and/or sleeping accommodations; high-risk situations include those living in institutional or residential facilities or involved in direct patient care.
 - Name of school and grade or residence in a closed institution.
 - Social or athletic activities. (e.g., nightclubs, parties, competitive sports).
- Contacts and include:
 - High risk: chemoprophylaxis recommended (close contacts):
 - Household contact, especially young children.
 - Child care or day care contact during 7 days before onset of illness.
 - Direct exposure to index patient's secretions through kissing or through sharing toothbrushes or eating utensils, or other markers of close social contact, during 7 days before onset of illness.
 - Mouth-to-mouth resuscitation, unprotected contact during endotracheal intubation or suctioning, during 7 days before onset.
 - Frequently slept or ate in same dwelling as index patient, during 7 days before onset of illness.
 - Passengers seated directly next to the infectious index case during airline flights lasting more than 8 hours.
 - Low risk: chemoprophylaxis **not** recommended:
 - Casual contact: no history of direct exposure to index patient's oral secretions (e.g., work).
 - Indirect contact: only contact is with a high-risk contact, no direct

- o contact with the index patient
 - o Health care professionals without direct exposure to oral secretions
- Follow-up symptomatic contacts as suspect cases.

C. Isolation, Work and Daycare Restrictions

- K.A.R 28-1-6 for Meningitis, meningococcal:
 - Each infected person shall remain in respiratory isolation for 24 hours after initiation of antibiotic therapy.
- Hospital Settings: Use droplet precautions in addition to universal precautions until 24 hours after start of antibiotic therapy.

D. Case Management, Including Follow-up of cases:

- Follow up with cases is indicated to assure proper chemoprophylaxis was given to assure elimination of the organism in the nasopharynx (i.e., rifampin or ciprofloxacin).

E. Contact Management, Including Protection of Contacts:

- The protection of contacts is multi-faceted and involves many public health prevention strategies including: prophylaxis, active surveillance and the possible use of vaccine.
- Chemoprophylaxis is indicated for all identified close contacts and should be administered immediately and no later than 14 days after last exposure.
 - Rifampin is the antimicrobial of choice, unless the contact is pregnant.
 - o Adults and children ≥ 1 month of age: 10 mg/kg twice daily for 2 days to a maximum of 600 mg/dose.
 - o Infants < 1 month of age: 5 mg/kg twice daily for 2 days.
 - Ceftriaxone is an alternative antimicrobial for prophylaxis therapy. It is safe for use during pregnancy.
 - o < 15 years of age: 125 mg in a single IM injection.
 - o ≥ 15 years of age: 250 mg in a single IM injection.
 - Ciprofloxacin is an alternative antimicrobial for prophylaxis therapy for and older. It is not recommended for pregnant women or routinely recommended for those < 18 years of age but may be considered for use in a mass chemoprophylaxis setting. Some cases of ciprofloxacin resistance have been noted.
- Vaccine available provides immunity to serogroup A, C, Y and W-135 only.
 - May be useful when a significant outbreak of disease due to serogroup A, C, Y, or W-135 is continuing in a defined population.
 - Induces specific serogroup immunity within 14 days and protection may last up to 3-5 years.
 - Contacts should receive appropriate antibiotic chemoprophylaxis whether or not they are vaccinated for meningococcal disease.
 - Vaccination is not recommended to protect contacts of sporadic cases.
- All contacts should be placed under active surveillance for at least 10 days after their last contact with the case. Contacts should be monitored for fever and other early signs of infection.

- Additional control strategies should be discussed with an epidemiologist from the Office of Surveillance and Epidemiology.

F. Environmental Measures:

- In outbreak settings an investigation may be warranted to identify environmental factors (e.g., disinfection practices, ventilation patterns, etc.) that may favor droplet transmission.

G. Education:

- Contacts should be instructed to watch for fever, rash, lethargy, irritability, headache, loss of appetite, or vomiting.
- Contacts with these symptoms developing ≤ 10 days after last exposure with the case should seek medical care immediately.

MANAGING SPECIAL SITUATIONS

A. Outbreak Investigation:

- Notify KDHE immediately, 1-877-427-7317.
- Active case finding will be an important part of any investigation.

B. School or Child Care Settings:

- Coordinate activities with school nurse and/or administration.
- While the risk of transmission in a school is relatively low; the age of the case will determine the extent of chemoprophylaxis.
 - Daycare and preschool attendees are generally considered at higher risk for transmission due to the younger age of the children.
 - All children attending or visiting the facilities should be evaluated for at risk activities and interactions to determine the need for prophylaxis.
- Identify potential contacts to observe for symptoms and chemoprophylaxis, based on the following situations:
 - Child care centers: With extensive contact between children, consider entire class (or entire center if the child care center is not divided into classes). With minimum interaction between children, consider only individual(s) or groups with significant exposure.
 - Home child care setting: Consider all children, the child-care provider and members of his/her family who have had contact with case.
 - Schools: Consider patterns of interaction that increase the potential for sharing oral secretions among group members. Chemoprophylaxis groups with significant risk of exposure to the case's oral secretions.
 - Elementary school or middle school where students do not change classes frequently or high-risk settings such as residential schools for ill or developmentally delayed children: Consider entire classroom, staff, aides and volunteers. Investigate after school activities and core groups of close friends for exposure.
 - High school and other higher level education facilities: Consider contacts based on risk of direct contact with case's oral secretions and the presence of activities that would allow for the exchange of

oral secretions. Consider those who work closely with or sit next to the case (school or transport), those sharing living arrangements, and the case's core group of close friends and social or work contacts.

- Extra-curricular activity: Other extra-curricular groups, including teams, are examined based on the risk of group activities allowing for the direct exchange of oral secretions. Direct exchange of oral secretions is allowed by sharing drinking cups or bottles, sharing eating utensils at a single setting, kissing or other markers of close social contact. Those inanimate objects that are not directly shared with contacts after being used by a case do not usually allow for this direct exchange of oral secretions. Exceptions are made for younger children who are more likely to have significant oral contact with toys and other inanimate objects.
- For classrooms, teams and other groups in which there are > 2 confirmed cases, it may be appropriate to expand the definition of a close contact (i.e. entire class, team or group who would not have been considered with only one confirmed case).
- Providing chemoprophylaxis to an entire school or large child care center is not recommended under normal circumstances.
- Create listing(s) of contacts organized by group setting. Evaluate extent of exposure for each group. For at-risk close contacts (those at risk for sharing oral secretions) perform the following:
 - Evaluate for symptoms of meningitis and refer symptomatic contacts for medical treatment.
 - Refer asymptomatic contacts for chemoprophylaxis.
 - Notify parents of close contacts of the case (preferably in writing) of the occurrence of meningococcal disease in the facility. The notice should advise parents to:
 - Seek chemoprophylaxis for their attending children without delay.
 - Watch their children carefully for a 2-week period for signs of illness, especially fever, and seek medical care immediately if illness should occur.
- As a case of invasive meningococcal illness in a school often causes panic in parents and in the community, discuss with the facility's administration if there is a need for and best way to provide additional information about meningococcal disease and its transmission.
- Initiate active surveillance among close contacts and for at least 2 incubation periods (i.e., 20 days) after last case has been identified.

C. Case Attends College/University or Boarding School:

If a suspected or diagnosed case of meningococcal disease is reported on campus, the following intervention measures should be considered:

- Notify college administration and health care personnel.
- Intensify surveillance and increase awareness among college health services, community physicians, and hospitals.
- Begin education on the college campus and in surrounding areas about

transmission.

- Pursue early diagnosis and treatment of cases and contacts.
- Contacts of cases of meningococcal disease should receive appropriate antibiotic chemoprophylaxis whether or not they are vaccinated for meningococcal disease.
 - Use the definition of high risk contacts under “Contact Investigation” when evaluating living situations and the need for prophylaxis.
- Consider mass immunization of students to prevent additional cases if an outbreak occurs and the serogroup is covered by the vaccine (i.e., A, C, Y, or W135).

DATA MANAGEMENT AND REPORTING TO THE KDHE

- A.** Organize, collect and report data with the “General Investigation Form(s)” and “Bacterial Meningitis Supplemental Form.”
- B.** Report data electronically via KS-EDSS or by fax, include:
 - All essential data that was collected during the investigation, especially data that helps to confirm or classify a case. (For epi-linked cases please include the KS-EDSS investigation ID of the related case.)
 - All information collected on the General Investigation and Bacterial Meningitis Supplemental forms.

Note: Events can be entered into the Kansas surveillance system as “Meningitis, *N. meningitidis*” or as “Meningococemia”. All cases will be reported in the Kansas Annual Summary as “Meningococcal Infections.”

ADDITIONAL INFORMATION / REFERENCES

- A. **Treatment / Differential Diagnosis:** American Academy of Pediatrics. 2006 Red Book: Report of the Committee on Infectious Disease, 27th Edition. Illinois, Academy of Pediatrics, 2006.
- B. **Epidemiology, Investigation and Control:** Heymann. D., ed., Control of Communicable Diseases Manual, 18th Edition. Washington, DC, American Public Health Association, 2004.
- C. **Case Definitions:** CDC Division of Public Health Surveillance and Informatics, Available at: http://www.cdc.gov/ncphi/diss/nndss/casedef/case_definitions.htm
- D. **Quarantine and Isolation:** Kansas Community Containment Isolation/ Quarantine Toolbox Section III, Guidelines and Sample Legal Orders <http://www.waldcenter.org/Quarantine%20and%20Isolation%20Information%20for%20Health%20Officers.pdf>
- E. **Kansas Regulations/Statutes Related to Infectious Disease:** <http://www.kdheks.gov/epi/regulations.htm>
- F. **Pink Book:** Epidemiology and Prevention of Vaccine-Preventable Diseases. Available at: <http://www.cdc.gov/vaccines/pubs/pinkbook/default.htm>
- G. **Manual for the Surveillance of Vaccine-Preventable Diseases:** Available at: <http://www.cdc.gov/vaccines/pubs/surv-manual/default.htm> .
- H. **Additional Information (CDC):** <http://www.cdc.gov/health/default.htm>

Kansas Disease Investigation Guidelines

General Investigation Form

Investigation Information		
Case Type: <input type="checkbox"/> Human Case <input type="checkbox"/> Non-human Case	Disease Name: _____	
Classification: <input type="checkbox"/> Suspect <input type="checkbox"/> Probable <input type="checkbox"/> Confirmed	KS-EDSS Investigation ID: _____	
Outbreak: <input type="checkbox"/> Yes <input type="checkbox"/> No	Outbreak Name: _____	Outbreak #: _____
Onset Date: _____	Diagnosis Date: _____	Report Date: _____
Assigned to (Investigator): _____	Patient Died: <input type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Unknown	
Patient Information		
Name Type: <input type="checkbox"/> Default/Common <input type="checkbox"/> Legal <input type="checkbox"/> Maiden <input type="checkbox"/> Nickname		
Last: _____	First: _____	Middle: _____
Street: _____	City/State: _____	Zip: _____
Evening Phone #: _____	Daytime Phone #: _____	
Sex: <input type="checkbox"/> Failure to Report <input type="checkbox"/> Female <input type="checkbox"/> Male <input type="checkbox"/> Other <input type="checkbox"/> Transexual <input type="checkbox"/> Unknown		
Race: <input type="checkbox"/> American Indian or Alaska Native <input type="checkbox"/> Asian <input type="checkbox"/> Black or African American <input type="checkbox"/> Native Hawaiian or Other Pacific Islander <input type="checkbox"/> White <input type="checkbox"/> Unknown		
Hispanic / Latino Ethnicity: <input type="checkbox"/> Yes <input type="checkbox"/> No		
Date of Birth: _____	Age: _____	Age Unit: <input type="checkbox"/> Days <input type="checkbox"/> Weeks <input type="checkbox"/> Months <input type="checkbox"/> Years
Parent Information (if under 18)		
Last: _____	First: _____	Middle: _____
Street: _____	City/State: _____	Zip: _____
Evening Phone #: _____	Daytime Phone #: _____	
Work / Occupation or School / Grade		
Worksites / School: _____		
Occupations / Grade: _____		
Travel History		
1st	Destination: _____	Depart Date: _____ Return Date: _____
2nd	Destination: _____	Depart Date: _____ Return Date: _____
3rd	Destination: _____	Depart Date: _____ Return Date: _____
4th	Destination: _____	Depart Date: _____ Return Date: _____

Supplemental Laboratory Report Form

Lab Reports

Laboratory Name: _____

Lab Report Date: _____

Ordering Provider Name: _____

Phone: _____

Facility: _____

Specimen Accession Number: _____

Specimen Collection Date: _____

Organism Name: _____

Organism Species: _____

Organism Serogroup: _____

Organism Serotype: _____

PFGE Results

Pattern 1 KS: _____

Other State: _____

CDC: _____

Pattern 2 KS: _____

Other State: _____

CDC: _____

Pattern 3 KS: _____

Other State: _____

CDC: _____

Additional Results Information

Reported Test Name:

Coded Result:

Text Result:

Numeric Result:

Comments:

Supplemental Contact Form

Contacts

Last: _____ **First:** _____ **Middle:** _____

Street: _____ **City/State:** _____ **Zip:** _____

Evening Phone #: _____ **Daytime Phone #:** _____ **E-mail:** _____

Sex: Failure to Report Female Male Other Transexual Unknown

Race: American Indian or Alaska Native Asian Black or African American Native Hawaiian or Other Pacific Islander White Unknown

Hispanic / Latino Ethnicity: Yes No

Date of Birth: _____ **Age:** _____ **Age Unit:** Days Weeks Months Years

Worksites / School: _____

Occupations / Grade: _____

Exposure Information

Contact Type: Household Sexual Other: _____ **Partner / Cluster Code:** _____

Date of First Exposure: _____ **Date of Last Exposure:** _____ **Frequency:** _____

Nature of Exposure: _____ **Comments:** _____

Testing and Treatment Information

Clinic Code: _____ **Examination Date:** _____

Examination Test: _____ **Examination Result:** _____

Prophylaxis/empiric treatment date: _____ **Drug / Dosage:** _____

Provider (Name / Facility): _____

Disposition and Diagnosis Information

Initiation Date: _____ **Disposition Date:** _____ **Disposition:** _____

Diagnosis: _____ **Referral Type:** Patient Provider **Post-test Counseled :** Yes No

Currently Assigned To: _____ **Follow-up Date:** _____

Risk Factors

Pregnant: Yes No **If Yes, # of Weeks:** _____

Risk factors for complications in contact: None Pregnant Woman HIV Seropositive Unimmunized Index case is a super-spreader

Child younger than 5 Age > 65 Otherwise immunosuppressed (s/p transplant, high dose steroids, etc)

National Bacterial Meningitis and Bacteremia Supplemental Form

Kansas Department of Health

Epidemiologic Case History

* indicates required fields

Case Type* <i>Human Case Non Human Case</i>	Classification* <i>Confirmed Not a Case Probable Suspect Deleted Unknown</i>
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Supplemental Form Status
Not Done Form Complete Form in Progress Form Approved Form Sent to CDC

Report Date*
mm/dd/yyyy

Patient Demographic Information

* indicates required fields

Last Name*	First Name*	Middle Name	Name Type*	Age
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Age Unit <i>Days Weeks Months Years</i>	Date of Birth <small>mm/dd/yyyy</small>
--	---

Race*
(Check all that apply)

*American Indian or Alaska Native Asian Black or African American
Native Hawaiian or Other Pacific Islander White Unknown*

Ethnicity*
Hispanic or Latino Not Hispanic or Latino Unknown

Sex*
Failure to Report Female Male Other Transsexual Unknown

Street Address

City	County	State	Zip
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Evening Phone <small>###-###-####</small>	Daytime Phone <small>###-###-####</small>
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Occupation

Person Providing Report

Name of Reporting Facility*

National Bacterial Meningitis and Bacteremia Case Report

If <6 years of age, is the patient in daycare?

Daycare is defined as a supervised group of 2 or more unrelated children for greater than 4 hours per week

Yes No Unknown

Type of Infection Caused by Organism

(Check all that apply)

Primary Bacteremia Meningitis Otitis media Pneumonia Cellulitis Epiglottitis
 Peritonitis Pericarditis Septic arthritis Conjunctivitis Other (specify) _____

Bacterial Species Isolated From Any Normally Sterile Site

Neisseria meningitidis Haemophilus influenzae
 Group A Streptococcus Group B Streptococcus
 Lysteria monocytogenes Streptococcus pneumoniae (pneumococcus)
 Other Bacterial Species (Specify: include mycobacteria, fungi) _____

Has Patient Received Cochlear Implants?

Yes No Unknown

If yes, date

mm/dd/yyyy

Physician

-Important- Please Complete For The Following Organisms:

Haemophilus Influenzae

Did the Patient Receive Haemophilus b Vaccine

If YES, please complete the list below.

Yes No Unknown

Dose	Date Given	Vaccine Name	Vaccine Manufacturer	Lot Number
	mm/dd/yyyy			
1				
2				
3				
4				

If H. Influenzae was isolated from blood or CSF, was it resistant to:

Ampicillin	Chloramphenicol	Rifampin
Yes No Not Tested or Unknown	Yes No Not Tested or Unknown	Yes No Not Tested or Unknown

Meningococcal vaccine

Did the patient receive meningococcal vaccine

Yes No Unknown

Dose	Date Given	Vaccine Name	Vaccine Manufacturer	Lot Number
	mm/dd/yyyy			
1				
2				
3				
4				

Did the patient receive the Streptococcus pneumoniae (pneumococcus) vaccine

Yes No Unknown

Dose	Date Given	Vaccine Name	Vaccine Manufacturer	Lot Number
	mm/dd/yyyy			
1				
2				
3				

If N. meningitidis was isolated from blood or CSF, was it resistant to:

Sulfa <i>Yes No Not Tested or Unknown</i>	Rifampin <i>Yes No Not Tested or Unknown</i>
---	--

Date:

Dear Parent:

A child who attends the _____ has been recently diagnosed with:

Meningococcal meningitis:

Meningococcal disease:

So that others do not get this illness, the Health Department recommends that children who had close contact with the ill child from _____ to _____ receive preventive medication. Preventive treatment will help protect your child from becoming ill. An antibiotic is usually used for this treatment. All persons who were in contact with the sick child should be watched. Anyone who has an unusual fever, headache, rash or any other unusual symptoms should be given immediate medical care. In some cases, meningococcal disease may progress very rapidly and lead to severe illness and even death. An information sheet on meningococcal disease is enclosed.

The Health Department:

Has:

Has Not:

Made arrangements to provide antibiotics free-of-charge for your child. You may pick up the prescription at _____ pharmacy after _____ a.m./p.m.

If you have questions, please contact your physician or the Health Department.

Sincerely,

Investigator Name, Title

Phone #

Address Line 1

Address Line 2

City, State Zip Code

Date:

Doctor's name

Address

City, State Zip Code

Dear Dr. _____,

A case of meningococcal disease/meningococcal meningitis has been diagnosed in a child at the _____ daycare center. Children from this facility center are being referred to their physicians for chemoprophylaxis. Please be alert to the presence of this disease in your community and report any suspected cases promptly. If you have any questions, please contact the Health Department.

Sincerely,

Investigator Name, Title

Phone #

Address Line 1

Address Line 2

City, State Zip Code

Public Health Fact Sheet

Meningococcal Disease

What is meningococcal disease?

Meningococcal meningitis and meningococemia are 2 forms of meningococcal disease. Meningococcal meningitis is an infection of the tissue that surrounds the brain and spinal cord. Meningococemia is an infection of the blood and may also involve other organs. Both of these illnesses are caused by a bacterium called *Neisseria meningitidis*.

What is *Neisseria meningitidis*?

Neisseria meningitidis is a bacterium that may be found throughout the community. About 5-20% of people will have these bacteria in their noses and throats and do not get sick. In rare cases, the bacteria may get into the blood or the tissue surrounding the spine and brain and cause severe illness.

How are the bacteria spread?

The bacteria are spread from person-to-person through saliva (i.e., spit) or respiratory secretions. You must be in close contact with a sick person's saliva or respiratory secretions in order for the bacteria to spread. Close contact with someone who has been sick is involvement in activities that result in being directly sneezed or coughed upon, kissing, sharing a water bottle or sharing eating/drinking utensils. It is not spread by casual contact or by simply breathing the air where a person with meningitis has been.

How is meningococcal disease diagnosed?

Persons showing signs of illness are diagnosed by having a sample of their spinal fluid or blood placed under conditions in a laboratory that allow the bacteria to grow and be detected. It may take up to 72 hours to have test results.

What are the signs and symptoms of illness?

Meningitis: Signs and symptoms of meningitis include a sudden onset of a high fever, a stiff neck, headache, nausea, vomiting, and/or mental confusion. Changes in behavior such as confusion, sleepiness, and being hard to wake up are important symptoms of this illness. A rash may be present. In babies, the only signs of illness may be acting more tired, acting more irritable, and / or eating less than usual. Babies with meningitis will usually have a fever, but this is not a reliable sign of illness.

Meningococemia: Signs and symptoms of meningococemia include a sudden onset of fever, chills, and feeling unusually weak and tired. A rash may also be present.

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How are these illnesses treated?

Antibiotics are used to treat people with both meningitis and meningococemia. People who have had close contact with the sick person during the 2 weeks before they became ill may also need to take antibiotics. Preventive treatments of all close contacts should be implemented within 2 weeks after the initial person became ill but preferably within the first 24 hours.

Why do close contacts of a sick person need to be treated?

Close contacts of a person who has meningococcal disease are treated with antibiotics because the bacteria may be spread from the sick person to other people through contact with the saliva of the sick person. The antibiotics will kill the bacteria and prevent illness.

Is there a vaccine to protect me from getting sick?

Meningococcal polysaccharide vaccine (MCV4) is routinely recommended for all children at their routine preadolescent visit (11 to 12 years of age). For those who have never gotten MCV4 previously, a dose is recommended at high school entry. Other adolescents who want to decrease their risk of meningococcal disease can also get the vaccine. Other people at increased risk for whom routine vaccination is recommended are college freshmen living in dormitories, microbiologists who are routinely exposed to meningococcal bacteria, U.S. military recruits, anyone who has a damaged spleen or whose spleen has been removed; anyone who has terminal complement component deficiency (an immune system disorder), anyone who is traveling to the countries which have an outbreak of meningococcal disease, and those who might have been exposed to meningitis during an outbreak. MCV4 is the preferred vaccine for people 11 to 55 years of age in these risk groups, but MPSV4 can be used if MCV4 is not available. MPSV4 should be used for children 2 to 10 years old and adults over 55, who are at risk.

Overseas travelers should check to see if meningococcal vaccine is recommended for their destination. Travelers should receive the vaccine at least 1 week before departure, if possible. Information on areas for which meningococcal vaccine is recommended can be obtained from the Centers for Disease Control and Prevention at (404)-332-4565 or online <http://wwwn.cdc.gov/travel/default.aspx> .

What should I do if I have had contact with a person who has a meningococcal illness?

If you have had close contact with a person who has been diagnosed with a meningococcal illness, you should call your health care provider and get an antibiotic. If you have had contact with an ill person, but have not had close contact, you should be aware of the symptoms of illness and contact your doctor immediately if you have any of these symptoms.

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Where can I get more information?

- Your Local Health Department
- Kansas Department of Health and Environment, Epidemiologic Services Section at (877) 427-7317
- <http://www.cdc.gov/health/default.htm>
- Your doctor, nurse, or local health center

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