09-ID-35

Committee: Infectious

Title: Public Health Reporting and National Notification for Gonorrhea

I. Statement of the Problem

CSTE position statement 07-EC-02 recognized the need to develop an official list of nationally notifiable conditions and a standardized reporting definition for each condition on the official list. The position statement also specified that each definition had to comply with American Health Information Community recommended standards to support "automated case reporting from electronic health records or other clinical care information systems." In July 2008, CSTE identified sixty-eight conditions warranting inclusion on the official list, each of which now requires a standardized reporting definition.

II. Background and Justification

Background[1]

Gonorrhea is a common sexually transmitted disease caused by the bacterium, *Neisseria gonorrhoeae*, which can be transmitted during vaginal, anal, or oral sex, and at birth to a newborn. Some men with gonorrhea may have no symptoms at all. However, some men have signs or symptoms that appear two to five days after infection; symptoms can take as long as 30 days to appear. Symptoms and signs include dysuria and purulent penile discharge. Infection can produce epididymitis, which can lead to infertility if left untreated.

In women, the symptoms of gonorrhea are often mild, but many women who are infected have no symptoms. When a woman has symptoms, they can be mistaken for a bladder or vaginal infection. Initial symptoms and signs in women include dysuria, increased vaginal discharge, and vaginal bleeding between periods. Women with gonorrhea are at risk of developing serious complications from the infection, including pelvic inflammatory disease, regardless of the presence or severity of symptoms.

Rectal infection in both men and women is usually asymptomatic but may include discharge, anal itching, soreness, bleeding, or painful bowel movements. Rarely, infection in the throat may cause pharyngitis, but most infections are asymptomatic. Gonococcal bacteremia can produce septic arthritis, polyarthritis and rarely endocarditis and meningitis.

There are several methods of diagnosing gonorrhea including gram stain and visualization of intracellular gram-negative diplococci in male urethral specimens, isolation and characterization of *Neisseria gonorrhoeae* by culture of a clinical specimen, and hybridization with a *Neisseria gonorrhoeae* DNA probe.

[1] Much of the material in the background is directly quoted from the CDC's gonorrhea Website. See the References for further information on this source.

Justification

Gonorrhea meets the following criteria for a nationally and **standard** notifiable condition, as specified in CSTE position statement 08-EC-02:

- A majority of state and territorial jurisdictions—or jurisdictions comprising a majority of the US population—have laws or regulations requiring **standard** reporting of gonorrhea to public health authorities
- CDC requests **standard** notification of gonorrhea to federal authorities
- CDC has condition-specific policies and practices concerning the agency's response to, and use of, notifications.

III. Statement of the desired action(s) to be taken

CSTE requests that CDC adopt this standardized reporting definition for gonorrhea to facilitate more timely, complete, and standardized local and national reporting of this condition.

IV. Goals of Surveillance

To provide information on the temporal, geographic, and demographic occurrence of gonorrhea to facilitate its prevention and control.

V. Methods for Surveillance

Surveillance for gonorrhea should use the sources of data and the extent of coverage listed in Table V below.

Table V. Recommended sources of data and extent of coverage for ascertaining cases of gonorrhea.

	Coverage	
Source of data for case ascertainment	Population-wide	Sentinel sites
clinician reporting	x	
laboratory reporting	x	
reporting by other entities (e.g., hospitals, veterinarians, pharmacies)	x	
death certificates		
hospital discharge or outpatient records	x	
extracts from electronic medical records	x	
telephone survey		
school-based survey		
other _____		

VI. Criteria for Reporting

Reporting refers to the process of healthcare providers or institutions (e.g., clinicians, clinical laboratories, hospitals) submitting basic information to governmental public health agencies about cases of illness that meet certain reporting requirements or criteria. The purpose of this section is to provide those criteria that should be used by humans and machines to determine whether a specific illness should be reported.[2]

A. Narrative description of criteria to determine whether a case should be reported to public health authorities

Report any illness to public health authorities that meets any of the following criteria:

- A person with one or more of the laboratory findings listed in table VI.
- A person whose healthcare record contains a diagnosis of infection or illness caused by *Neisseria gonorrhoeae.*

Other recommended reporting procedures

- All cases of gonorrhea should be reported.
- Reporting should be on-going and routine.
- Frequency of reporting should follow the state health department's routine schedule.

B. Table of criteria to determine whether a case should be reported to public health authorities

Table VI-B. Criteria Proposed Table of criteria to determine whether a case should be reported to public health authorities. Note: The following criteria are proposed for evaluation before general implementation. For purposes of currently implementing reporting the narrative description in VI-A, should be used.

Criterion	Reporting
Clinical Presentation	
dysuria	C
epididymal tenderness	C
purulent cervical discharge	C

[2] "Human-based" criteria (described below under "A. Narrative") can be applied by medical care providers and laboratory staff based on clinical judgment and clinical diagnosis. Machine-based criteria (described below under "B. Table") can be applied using computerized algorithms that operate in electronic health record systems, including computerized records of laboratory test orders and laboratory test results.

Criterion	Reporting
vaginal discharge	C
lower abdominal pain	C
low back pain	C
urethral discharge	C
pelvic inflammatory disease	C
rectal discharge	C
anal itching	C
anal soreness	C
anal bleeding	C
painful bowel movements	C
pharyngitis	C
healthcare record contains a diagnosis of infection or illness caused by *Neisseria gonorrhoeae*	S
Laboratory findings	
isolation of *Neisseria gonorrhoeae* by culture of a clinical specimen	S
microscopic visualization of *Neisseria gonorrhoeae* (gram-negative intracellular diplococci of typical morphology associated with neutrophils) in a urethral specimen from men	S
detection of *Neisseria gonorrhoeae* by nucleic acid amplification (e.g., PCR) in a clinical specimen	S
detection of *Neisseria gonorrhoeae* nucleic acid by hybridization with a nucleic acid probe in a clinical specimen	S
detection of *Neisseria gonorrhoeae* antigens in a clinical specimen	S
microscopic visualization of *Neisseria gonorrhoeae* (gram-negative intracellular diplococci of typical morphology associated with neutrophils) in an endocervical specimen from a woman	S
Epidemiological risk factors	
sexual contact with a partner infected with *Neisseria gonorrhoeae*	C
new or multiple sexual partners	C

Notes:
S = This criterion alone is sufficient to report a case.
C = This finding corroborates (i.e., supports) the diagnosis of—or is associated with— *Neisseria gonorrhoeae*, but is not included in the case definition and is not required for reporting.

C. Disease Specific Data Elements:

Disease-specific data elements to be included in the initial report are listed below.

None listed.

VII. Case Definition for Case Classification

A. Narrative description of criteria to determine whether a case should be classified as confirmed or probable (presumptive):

Clinical description

A sexually transmitted infection commonly manifested by urethritis, cervicitis, or salpingitis. Infection may be asymptomatic.

Laboratory Criteria for Diagnosis

- Isolation of typical gram-negative, oxidase-positive diplococci (presumptive Neisseria gonorrhoeae) from a clinical specimen, or
- Demonstration of N. gonorrhoeae in a clinical specimen by detection of antigen or nucleic acid, or
- Observation of gram-negative intracellular diplococci in a urethral smear obtained from a male

Case Classification

Probable: a) demonstration of gram-negative intracellular diplococci in an endocervical smear obtained from a female or b) a written morbidity report of gonorrhea submitted by a physician

Confirmed: a case that is laboratory confirmed

B. Classification Tables:

Table VII-B lists the criteria that must be met for a case to be classified as confirmed or probable (presumptive).

Table VII-B. Proposed table of criteria to determine whether a case is classified. Note: The following criteria are proposed for evaluation before general implementation. For purposes of current notification, the narrative description in VII-A, should be used.

	Case Definition	
Criterion	Confirmed	Probable
Clinical Presentation		
healthcare record contains a diagnosis of infection or illness caused by *Neisseria gonorrhoeae*		O
Laboratory findings		
isolation of *Neisseria gonorrhoeae* by culture of a clinical specimen	O	
microscopic visualization of *Neisseria gonorrhoeae* (gram-negative intracellular diplococci of typical morphology associated with neutrophils) in a urethral specimen from men	O	
detection of *Neisseria gonorrhoeae* by nucleic acid amplification (e.g., PCR) in a clinical specimen	O	
detection of *Neisseria gonorrhoeae* nucleic acid by hybridization with a nucleic acid probe in a clinical specimen	O	
detection of *Neisseria gonorrhoeae* antigens in a clinical specimen	O	
microscopic visualization of *Neisseria gonorrhoeae* (gram-negative intracellular diplococci of typical morphology associated with neutrophils) in an endocervical specimen from a woman		O

Notes:
O = At least one of these "O" criteria in each category in the same column is required to classify a case.

VIII. Period of Surveillance

Surveillance should be on-going.

IX. Data sharing/release and print criteria

Notification to CDC of confirmed and probable cases of Gonorrhea is recommended.

- Cumulative or aggregated data are used to monitor rates, trends, and geographic distribution of STDs and their sequelae. At least monthly, current year-to-date (YTD) case counts are compared to prior year YTD counts to identify and investigate unusual reporting increases or decreases by jurisdiction to determine if data reflect disease incidence or surveillance artifacts.

- Each state should have the capacity to analyze its own STD morbidity data. Each week, total disease-specific case counts by jurisdiction are reported in the weekly *MMWR*. Compiled case data are provided at least annually to states and territories in one or more of DSTDP's annual STD surveillance reports and on the Internet.

- Weekly *MMWR* Tables, quarterly data quality reports to reporting jurisdictions, and various annual surveillance reports (DSTDP main and disease-specific surveillance reports, *MMWR* Summary of Notifiable Disease Surveillance, NCHHSTP consolidated surveillance report) presenting STD surveillance data are disseminated in print and via the Internet. Periodically, STD surveillance updates are provided in the *MMWR*, peer-reviewed publications, or at professional meetings.

- DSTDP follows the "Data release guidelines of the CSTE for the National Public Health Surveillance System, June 1996" for re-release of finalized STD surveillance data. Ad hoc requests for finalized STD surveillance data from academics, policy-makers, or the general public are periodically released in accordance with the 1996 CSTE guidance.

X. References

Centers for Disease Control and Prevention (CDC). Case definitions for infectious conditions under public health surveillance. MMWR 1997;46(No. RR-10):1–57. Available from: http://www.cdc.gov/mmwr/

Centers for Disease Control and Prevention [Internet]. Gonorrhea. Atlanta: CDC. Available from: http://www.cdc.gov/std/Gonorrhea/default.htm Last updated: 2008 Jun 5. Accessed: 2008 Aug 11.

Centers for Disease Control and Prevention [Internet]. National notifiable diseases surveillance system: case definitions. Atlanta: CDC. Available from: http://www.cdc.gov/ncphi/disss/nndss/casedef/index.htm Last updated: 2008 Jan 9. Accessed: 2008 Aug 16.

Council of State and Territorial Epidemiologists (CSTE). CSTE official list of nationally notifiable conditions. CSTE position statement 07-EC-02. Atlanta: CSTE; June 2007. Available from: http://www.cste.org.

Council of State and Territorial Epidemiologists (CSTE). Criteria for inclusion of conditions on CSTE nationally notifiable condition list and for categorization as immediately or routinely notifiable. CSTE position statement 08-EC-02. Atlanta: CSTE; June 2008. Available from: http://www.cste.org.

Council of State and Territorial Epidemiologists, Centers for Disease Control and Prevention. CDC-CSTE Intergovernmental Data Release Guidelines Working Group (DRGWG) Report: CDC-ATSDR Data Release Guidelines and Procedures for Re-release of State-Provided Data. Atlanta: CSTE; 2005. Available from: http://www.cste.org/pdffiles/2005/drgwgreport.pdf or http://www.cdc.gov/od/foia/policies/drgwg.pdf.

Council of State and Territorial Epidemiologists (CSTE). Revised Case Definitions for Public Health Surveillance: Infectious Disease. 1996-18. Available from: www.cste.org

Handsfield HH, Sparling PF. Chapter 209 – *Neisseria gonorrhoeae*. In: Mandell GL, Bennett JE, Dolin R, editors. Principles and Practice of Infectious Diseases, 6th edition. Philadelphia: Churchill Livingstone; 2005.

Heymann DL, editor. Control of communicable diseases manual. 18th edition. Washington: American Public Health Association; 2004.

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