

# INCLUDING INFORMATION ON DISSEMINATED GONOCOCCAL INFECTION IN GONORRHEA CASE NOTIFICATIONS PROVIDED TO CDC

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## BACKGROUND

Disseminated gonococcal infection (DGI) occurs when the sexually transmitted pathogen *Neisseria gonorrhoeae* invades the bloodstream and spreads to distant sites in the body, leading to clinical manifestations such as petechial or pustular acral skin lesions, tenosynovitis, asymmetric polyarthralgia, bacteremia, oligoarticular septic arthritis, or, on rare occasions, endocarditis, osteomyelitis, or meningitis<sup>1</sup>.

DGI is uncommon and thought to occur in 0.5-3% of untreated gonorrhea cases; however, the true burden of disease is unknown<sup>2-4</sup>. Although *N. gonorrhoeae* infection, or gonorrhea, has been a Nationally Notifiable Condition in the United States since 1944, monitoring the burden of DGI has been hindered by a lack of a standardized definition for DGI. **Effective January 2023, the revised Council for State and Territorial Epidemiologists (CSTE) case definition for gonorrhea allows jurisdictions to distinguish between DGI and non-DGI in gonorrhea case notifications sent to the Centers for Disease Control and Prevention (CDC)**<sup>1</sup>. Allowing for the distinction between DGI and non-DGI infections in gonorrhea national case notification data will help strengthen national DGI surveillance.

To facilitate national DGI surveillance, the National Notifiable Diseases Surveillance System (NNDSS) modified the STD Message Mapping Guide (MMG) to include a repeating block of variables to capture clinical complications of reported STDs, including DGI. Table 1 specifies which NNDSS STD case notification methods support national DGI surveillance. Jurisdictions that have implemented Health Level 7 (HL7) STD case notification to CDC using the [STD MMG v1.1.x series](#) can denote for each reported case of gonorrhea whether the infection is identified as DGI; however, the value set for the clinical complications variable in the STD MMG v1.1.x series does not support the specificity outlined in the CSTE case definition. **The [STD MMG v1.2.x series](#) includes an updated clinical complications indicator value set that captures the level of evidence described in the 2023 gonorrhea case definition. Jurisdictions newly onboarding the STD MMG should onboard the current version.** Definitions for the value set codes used to denote DGI status in HL7 gonorrhea case notifications are captured in Table 2.

Although the case definition and NNDSS STD MMG have been updated to facilitate national surveillance, there are barriers to local DGI surveillance. DGI is usually a clinical diagnosis without microbiologic confirmation; however, the CSTE gonorrhea case definition that jurisdictions use for DGI classification, case reporting, and national notification to CDC requires laboratory test results. Another potential barrier is that the STD surveillance information system in a jurisdiction may not have the capability to store clinical complications of reportable STDs, such as DGI. Given these challenges, national case data on DGI will be considered the minimum burden of DGI disease in the United States.

## ACTION ITEMS

To strengthen DGI surveillance, beginning in 2023, jurisdictions should indicate whether each case of gonorrhea reported was identified as DGI in case notifications transmitted to CDC (see Table 1). Recognizing the current barriers to local DGI surveillance, a jurisdiction's action items for providing DGI information to CDC in gonorrhea case notifications will vary based on the ability to store data identifiable as DGI in the STD surveillance information system and report DGI to CDC. Below are potential action items that a jurisdiction should consider in order to strengthen local DGI surveillance and eventually transmit DGI surveillance data to CDC in accordance with the CSTE 2023 gonorrhea case definition:

- Amend case report forms or online case reporting portal
- Modify STD surveillance information system (see Table 2 for DGI indicator values)
- Onboard to send STD case notifications using the most [current STD MMG version](#)
  - Jurisdictions are strongly encouraged to onboard the [current STD MMG version](#) because the value set for clinical complications indicator aligns exactly with the 2023 case definition for gonorrhea.
- Ensure all gonorrhea case notifications sent to CDC using the [current STD MMG version](#) include a DGI indicator value (Table 2)

- Conduct data quality assurance activities (e.g., review anatomic site of infection and history of hospitalization among gonorrhea cases to identify potential missed DGI cases for further review)

## RESOURCES

**Table 1. National Notifiable Diseases Surveillance System (NNDSS) case notification method<sup>5,6</sup> and capability to denote disseminated gonococcal infection (DGI) classification in gonorrhea case notifications**

NNDSS case notification method	Can jurisdiction distinguish between DGI and non-DGI in gonorrhea case notifications to CDC?	DGI value set aligns with 2023 gonorrhea case definition?
NETSS (all versions)	No	N/A
STD MMG v1.0.x series	No	N/A
STD MMG v1.1.x series	Yes	No
STD MMG v1.2.x series	Yes	Yes

**Table 2. Disseminated gonococcal infection (DGI) indicator values\* in the current STD MMG version for cases meeting gonorrhea case definition**

DGI Indicator	Definition
Yes, Verified <sup>†</sup>	a person with a <b>positive <i>Neisseria gonorrhoeae</i> test result</b> for culture or nucleic acid <b>from a disseminated site of infection</b> (e.g., skin, synovial fluid, blood, or cerebrospinal fluid [CSF])
Yes, Likely <sup>†</sup>	a person who has <b>documented clinical symptoms or signs consistent with DGI</b> without other known causes <b>AND isolation or detection of <i>N. gonorrhoeae</i> from a mucosal site of infection</b> by culture or nucleic acid amplification test (NAAT), <b>AND no test result indicating a <i>N. gonorrhoeae</i> infection in a disseminated site of infection</b> (e.g., skin, synovial fluid, blood, or cerebrospinal fluid [CSF]), including persons not tested
No <sup>§</sup>	a person who has <b>documentation of no clinical symptoms or signs consistent with DGI</b> (excluding persons missing information on clinical symptoms and signs) <b>AND no test result indicating a <i>N. gonorrhoeae</i> infection in a disseminated site of infection</b> (e.g., skin, synovial fluid, blood, or cerebrospinal fluid [CSF]), including persons not tested
Unknown	a person who does not meet the definition of “Yes, Verified DGI,” “Yes, Likely DGI,” or “No DGI,” as described above

\*DGI indicator values for the STD MMG v1.1.x series are incompatible with the 2023 CSTE case definition for gonorrhea.

<sup>†</sup>Cases that meet the 2023 CSTE case definition for gonorrhea by fulfilling the presumptive laboratory evidence in the absence of confirmatory laboratory evidence (i.e., gonorrhea cases with a probable case classification status) cannot be classified for DGI as “Yes, Verified” or “Yes, Likely.”

<sup>§</sup>This is expected to be a very rare situation.

## REFERENCES

1. CSTE Position Statement 22-ID-03. Available at: [https://cdn.ymaws.com/www.cste.org/resource/resmgr/ps/ps2022/22-ID-03\\_Gonorrhea.pdf](https://cdn.ymaws.com/www.cste.org/resource/resmgr/ps/ps2022/22-ID-03_Gonorrhea.pdf)
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5. National Notifiable Diseases Surveillance System. STD Message Mapping Guide. Available at: <https://ndc.services.cdc.gov/mmgpage/std-message-mapping-guide/>
6. The National Electronic Telecommunications System for Surveillance (NETSS) CDC Implementation Plan for STD Surveillance Data (January 2018). Available at: [https://www.cdc.gov/std/program/STD-NETSSIMPLN-V5\\_2018Jan.pdf](https://www.cdc.gov/std/program/STD-NETSSIMPLN-V5_2018Jan.pdf)

Questions? Send e-mail to [STD\\_Surv\\_Inquiry@cdc.gov](mailto:STD_Surv_Inquiry@cdc.gov)

Division of STD Prevention | Surveillance and Data Science Branch | Case-Based Surveillance Team | Last Modified: 7/13/23