



## Neonatal Component

### *What's New in the Late-Onset Sepsis and Meningitis Event Module?*

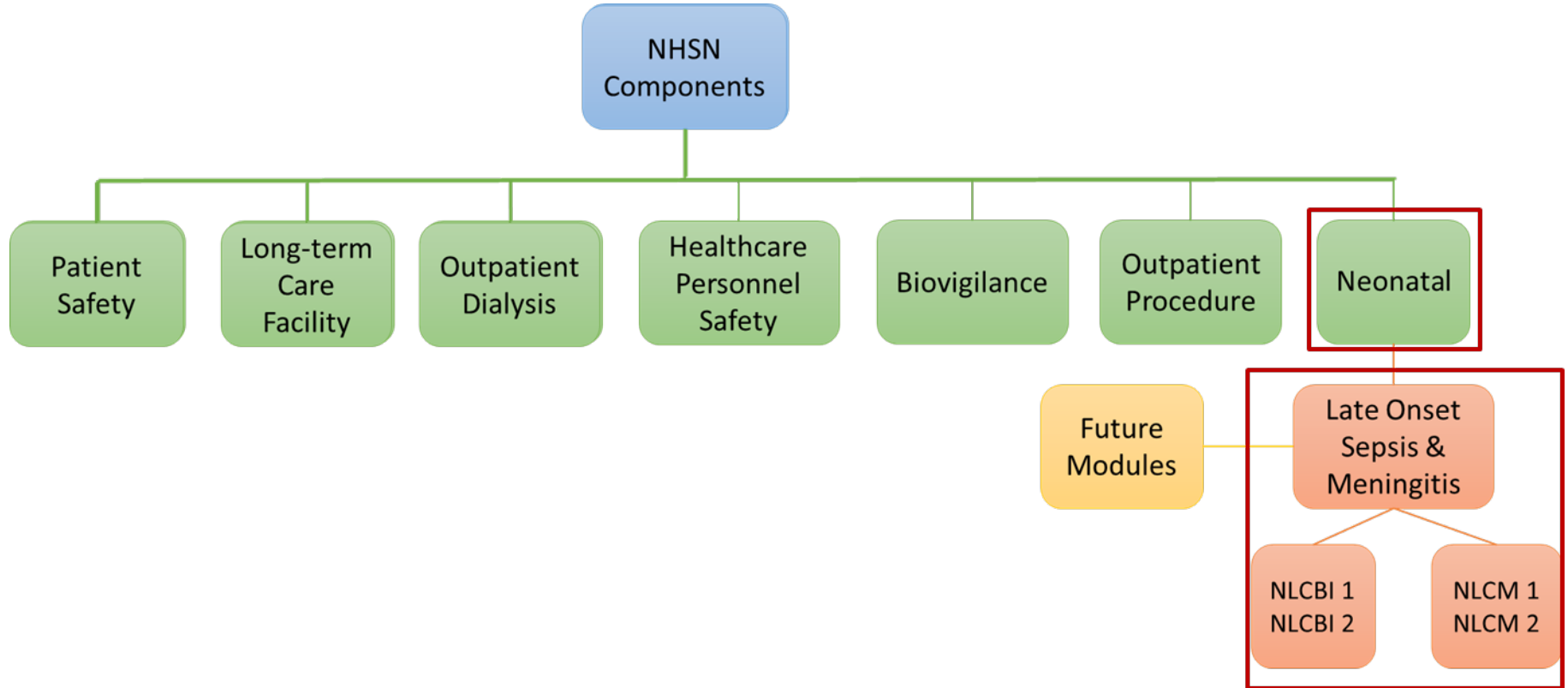
**LaTasha R. Boswell RN, BSN, MPH, CIC**  
**NHSN Protocol and Training Team**

March 2023

# Objectives

- Locate the resources for Late Onset Sepsis/Meningitis surveillance.
- Summarize the details of Late Onset Sepsis and Meningitis events.
- Describe updates related to the protocol and module.
- Identify resources required for Late Onset Sepsis/Meningitis module implementation.

# NHSN Component Structure



# Late-Onset Sepsis/Meningitis

Resources

# Neonatal Component Website

The screenshot shows the Neonatal Component website interface. On the left is a navigation menu with links such as 'NHSN Home', 'NHSN Login', 'About NHSN', 'Enroll Facility Here', 'CMS Requirements', 'Change NHSN Facility Admin', 'Resources by Facility', 'Patient Safety Component', 'Long-term Care Facility Component', 'Dialysis Component', 'Biovigilance Component', and 'Healthcare Personnel Safety Component (HPS)'. The main content area is titled 'Neonatal Component' and includes a 'Print' link, a description of the component's purpose, and a section for 'Facilities Reporting in Neonatal Component' with a link to 'Acute Care Hospitals'. A 'New Users' sidebar contains links for 'Enroll New Facility' and 'Neonatal Training'. A 'Neonatal Modules & Events' section is visible at the bottom, with a red box highlighting the 'LOS/MEN Events' link.

[NHSN Home](#)

NHSN Login

About NHSN +

Enroll Facility Here +

CMS Requirements +

Change NHSN Facility Admin

Resources by Facility +

Patient Safety Component +

Long-term Care Facility Component +

Dialysis Component +

Biovigilance Component +

Healthcare Personnel Safety Component (HPS) +

## Neonatal Component

[Print](#)

Use the Neonatal Component to track healthcare-associated infections and events in very low birthweight and extremely premature neonates housed in acute care hospital facilities.

### Facilities Reporting in Neonatal Component

[Acute Care Hospitals](#)

#### New Users

[Enroll New Facility](#)

[Neonatal Training](#)

#### Neonatal Modules & Events

Access relevant training, protocols, data collection forms and supporting materials for each module.

[LOS/MEN Events](#)

<https://www.cdc.gov/nhsn/neonatal/index.html>

# Late-Onset Sepsis/Meningitis Protocol Website

[NHSN Home](#)

[NHSN Login](#)

[About NHSN](#) +

[Enroll Facility Here](#) +

[CMS Requirements](#) +

[Change NHSN Facility Admin](#)

[Resources by Facility](#) +

[Patient Safety Component](#) +

[Long-term Care Facility Component](#) +

[Dialysis Component](#) +

[Biovigilance Component](#) +

[Healthcare Personnel Safety Component \(HPS\)](#) +

[Neonatal Component](#) -

[Quick Reference Guides](#)

[LOS/MEN Events](#)

## Late Onset Sepsis and Meningitis (LOS/MEN) Events

[Print](#)

### Protocols

[Late-Onset Sepsis/Meningitis \(LOS/MEN\) Event – January 2023](#) [PDF – 1 MB]

[2023 Neonatal Component Summary of Updates – January 2023](#) [PDF – 134 KB]

### Supporting Chapters

[NHSN Overview – January 2023](#) [PDF – 350 KB]

[CDC Location Labels and Location Descriptions – January 2023](#) [PDF – 1 MB]

[Top of Page](#)

### Data Collection Forms & Instructions

All Data Collection Forms are Print Only

### Late-Onset Sepsis Meningitis Event

[Late-Onset Sepsis Meningitis Event Form \(CDA format\).\(57.136\) – August 2021](#) [PDF – 300 KB]

### Neonatal Component Training

### Educational Roadmap

### LOS/MEN FAQs

### Supporting Materials

[NHSN Patient Safety Component Alerts](#) [PDF – 1 MB]

[Unusual Susceptibility Profiles Alert – January 2022](#) [PDF – 500 KB]

[NHSN Organism List \(All Organisms, Common Commensals, MBI Organisms, and UTI Bacteria\) – June 2022](#) [XLS – 560 KB]

<https://www.cdc.gov/nhsn/neonatal/los-men/index.html>

# Late-Onset Sepsis/Meningitis FAQ's

🏠 NHSN Home

NHSN Login

About NHSN +

Enroll Facility Here +

CMS Requirements +

Change NHSN Facility Admin

Resources by Facility +

Patient Safety Component +

Long-term Care Facility Component +

Dialysis Component +

Biovigilance Component +

Healthcare Personnel Safety Component (HPS) +

Neonatal Component -

Quick Reference Guides

LOS/MEN Events

LOS/MEN FAQs

## FAQs: LOS/MEN

[Print](#)

### On This Page

[Manual Reporting](#)

[LOS/MEN Implementation](#)

[Eligible Locations](#)

[Reporting Guidance](#)

### Manual Reporting

**Q1: Can I manually enter data for the Late-Onset Sepsis (LOS) and Meningitis (MEN) module?**

No. There is no manual entry of LOS events, MEN events, or denominator data. All event and denominator data must be uploaded via Clinical Document Architecture, or CDA. You will need a software vendor, electronic health record or home-grown system to upload LOS/MEN data electronically.

### LOS/MEN Implementation

**Q2: Where can I find the information to begin implementing the LOS/MEN module in my facility?**

The following are helpful resources for implementing the LOS/MEN protocol at your facility:

- [Late-Onset Sepsis Website](#)
- [LOS/MEN CDA Toolkit](#) (Please click on the "Release 9.5 – January 2021" section).

<https://www.cdc.gov/nhsn/faqs/faq-losmen.html>

# Neonatal Component Training

[NHSN Training](#)

[NHSN Home](#)

[Resources for Users New to NHSN](#) +

[NHSN Educational Roadmaps](#) +

[NHSN Analysis](#)

[Biovigilance Component \(BV\)](#)

[Dialysis Component](#)

[Healthcare Personnel Safety Component \(HPS\)](#)

[Long-term Care Facility Component \(LTCF\)](#)


**Neonatal Component Training**

[Outpatient Procedure Component \(OPC\)](#)

[Patient Safety Component \(PSC\)](#) +

[Continuing Education](#) +

[Request CDC Led Training](#)


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To receive email updates about this page, enter your email address:

## Neonatal Component Training

[Print](#)


### Self-paced Training

 [LOS/MEN Event Overview](#) [CBT - 30 min]


**Audience:** All Beginner and Intermediate users of the Late-Onset Sepsis/Meningitis (LOS/MEN)

**Description:** This training will include a complete introduction to the NHSN Late-Onset Sepsis/Meningitis (LOS/MEN) Module, provide an overview of criteria for LOS/MEN, the analysis that will be performed, and the electronic capture of the data elements to meet criteria.

### Training Videos

 Late-Onset Sepsis/Meningitis (LOS/MEN) Protocol and Analysis - May 2022

- [YouTube Link](#) [Video - 51 min]
- [Slideset 1 - Protocol](#) [PDF - 3 MB]
- [Slideset 2 - Analysis](#) [PDF - 3 MB]

 Late Onset Sepsis & Meningitis Module (LOS/MEN) Overview - September 2021

- [YouTube Link](#) [Video - 42 min]
- [Slideset](#) [PDF - 3 MB]

#### On This Page


[Self-paced Training](#)

[Training Videos](#)

#### See Also

[LOS/MEN Event](#)

#### Neonatal Roadmap

 A step-by-step guide to Neonatal surveillance for new users.

<https://www.cdc.gov/nhsn/training/neonatal/index.html>



# Late-Onset Sepsis/Meningitis

Surveillance Details

# Surveillance Settings

- Level II/III Intermediate or Step Down Neonatal Intensive Care Units
- Level III Neonatal Intensive Care Units
- Level IV Neonatal Intensive Care Units

As defined by the American Academy of Pediatrics (AAP), 2004

# Eligible Infant

- Inpatient > 2 days,
- Housed on a Level II/III, Level III, or Level IV location
- Birth Weight 401 to 1500 grams
- DOL 4 -120
  - Birth Date = DOL 1, regardless of the time of birth

## Late-Onset Sepsis (LOS)

Neonatal Laboratory-  
Confirmed Bloodstream  
Infection 1  
(NLCBI 1)

Neonatal Laboratory-  
Confirmed Bloodstream  
Infection 2  
(NLCBI 2)

## Meningitis (MEN)

Neonatal Laboratory-  
Confirmed Meningitis 1  
(NLCM 1)

Neonatal Laboratory-  
Confirmed Meningitis 2  
(NLCM 2)

# Late-Onset Sepsis Events (NLCBI 1)

Table 3: Neonatal Laboratory-Confirmed Bloodstream Infection Criteria

Criterion	Neonatal Laboratory-Confirmed Bloodstream Infection (NLCBI)
	<p><i>Comments and reporting instructions that follow the site-specific criteria provide further explanation and are integral to the correct application of the criteria.</i></p> <p>Must meet one of the following criteria:</p>
<b>NLCBI 1</b>	An eligible infant with a recognized pathogen (specifically a bacterial or fungal organism which is not on the Common Commensals tab of the <a href="#">NHSN Organisms List</a> ) identified from one or more blood specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).
<b>OR</b>	
<b>NLCBI 2</b>	<p>An eligible infant with a common commensal (specifically, a bacterial organism which is on the Common Commensals tab of the <a href="#">NHSN Organisms List</a>) identified from one or more blood specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).</p> <p><b>AND</b></p> <p>Treatment is initiated during the LOS/MEN Window Period, on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent(s)*.</p> <p>* New IV antimicrobial agent: Defined as any agent for which all 4 of the following are true:</p> <ol style="list-style-type: none"><li>1. Is listed in <a href="#">Table 6</a>.</li><li>2. The antimicrobial "start date", which is the date of antimicrobial initiation, must occur sometime within the LOS/MEN Window Period, which is 2 calendar days before, the day of, or within 2 calendar days after the specimen collection date.</li><li>3. Antimicrobial start date must occur on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent*(s) and continued for 5 or more qualifying antimicrobial days (QADs). Days between administrations of a new antimicrobial agent also count as QADs provided there is a gap of no more than 1 calendar day between administrations.</li><li>4. Was NOT given to the patient on either of the 2 days preceding the first antimicrobial initiated in the LOS/MEN Window Period current start date. (See <a href="#">Table 5: Examples of the Use of Antimicrobials Days and the LOS/MEN Window Period.</a>)</li></ol> <p><b>Note:</b> Substitution of a different antimicrobial agent from <a href="#">Table 6</a> within the LOS/MEN Window Period due to therapy/organism sensitivity factors will continue to meet the requirements for QADs.</p>

## NLCBI 1

In eligible infant with a recognized pathogen (specifically a bacterial or fungal organism which is not on the Common Commensals tab of the NHSN Organisms List) identified from one or more blood specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).

# Late-Onset Sepsis Events (NLCBI 2)

Table 3: Neonatal Laboratory-Confirmed Bloodstream Infection Criteria

Criterion	Neonatal Laboratory-Confirmed Bloodstream Infection (NLCBI)
	<i>Comments and reporting instructions that follow the site-specific criteria provide further explanation and are integral to the correct application of the criteria.</i>
	Must meet one of the following criteria:
<b>NLCBI 1</b>	An eligible infant with a recognized pathogen (specifically a bacterial or fungal organism which is not on the Common Commensals tab of the <a href="#">NHSN Organisms List</a> ) identified from one or more blood specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).

OR

<b>NLCBI 2</b>	<p>An eligible infant with a common commensal (specifically, a bacterial organism which is on the Common Commensal tab of the <a href="#">NHSN Organisms List</a>) identified from one or more blood specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).</p> <p><b>AND</b></p> <p>Treatment is initiated during the LOS/MEN Window Period, on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent(s)*.</p> <p>* New IV antimicrobial agent: Defined as any agent for which all 4 of the following are true:</p> <ol style="list-style-type: none"><li>1. Is listed in <a href="#">Table 6</a>.</li><li>2. The antimicrobial "start date", which is the date of antimicrobial initiation, must occur sometime within the LOS/MEN Window Period, which is 2 calendar days before, the day of, or within 2 calendar days after the specimen collection date.</li><li>3. Antimicrobial start date must occur on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent*(s) and continued for 5 or more qualifying antimicrobial days (QADs). Days between administrations of a new antimicrobial agent also count as QADs provided there is a gap of no more than 1 calendar day between administrations.</li><li>4. Was NOT given to the patient on either of the 2 days preceding the first antimicrobial initiated in the LOS/MEN Window Period current start date. (See <a href="#">Table 5: Examples of the Use of Antimicrobials Days and the LOS/MEN Window Period.</a>)</li></ol> <p><b>Note:</b> Substitution of a different antimicrobial agent from <a href="#">Table 6</a> within the LOS/MEN Window Period due to therapy/organism sensitivity factors will continue to meet the requirements for QADs.</p>
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## NLCBI 2

An eligible infant with a common commensal (specifically, a bacterial organism which is on the Common Commensal tab of the NHSN Organisms List) identified from one or more blood specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).

## AND

Treatment is initiated during the LOS/MEN Window Period, on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent(s)\*

# Meningitis Events (NLCM 1)

Table 4: Neonatal Laboratory-Confirmed Meningitis Criteria

Criterion	Neonatal Laboratory-Confirmed Meningitis (NLCM)
	<p><i>Comments and reporting instructions that follow the site-specific criteria provide further explanation and are integral to the correct application of the criteria.</i></p> <p>Must meet one of the following criteria:</p>
<b>NLCM 1</b>	An eligible infant with a recognized pathogen (specifically, a bacterial or fungal organism which is not on the Common Commensal tab of the <a href="#">NHSN Organisms List</a> ) identified from a CSF specimen by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).
<b>OR</b>	
<b>NLCM 2</b>	<p>An eligible infant with a common commensal (specifically, a bacterial organism which is on the Common Commensal tab of the <a href="#">NHSN Organisms List</a>) identified from a CSF specimen from one or more CSF specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).</p> <p><b>AND</b></p> <p>Treatment is initiated during the LOS/MEN Window Period, on or after DOL 4 with one or more <b>new</b> intravenous (IV) antimicrobial agent(s)*.</p> <p>* New IV antimicrobial agent: Defined as any agent for which all 4 of the following are true:</p> <ol style="list-style-type: none"><li>1. Is listed in <a href="#">Table 6</a>.</li><li>2. The antimicrobial "start date", which is the date of antimicrobial initiation, must occur sometime within the LOS/MEN Window Period which includes 2 calendar days before, the day of, or within 2 calendar days after the specimen collection date.</li><li>3. Antimicrobial start date must occur on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent*(s) and continued for 5 or more qualifying antimicrobial days (QADs). Days between administrations of a new antimicrobial agent also count as QADs provided there is a gap of no more than 1 calendar day between administrations.</li><li>4. Was NOT given to the patient on either of the 2 days preceding the first antimicrobial initiated in the LOS/MEN Window Period. (See <a href="#">Table 5: Examples of the Use of Antimicrobials Days and the LOS/MEN Window Period.</a>)</li></ol> <p><b>Note:</b> Substitution of a different antimicrobial agent from <a href="#">Table 6</a> within the LOS/MEN Window Period due to therapy/organism sensitivity factors will continue to meet the requirements for QADs.</p>

## NLCM 1

An eligible infant with a recognized pathogen (specifically, a bacterial or fungal organism which is not on the Common Commensal tab of the NHSN Organisms List) identified from a CSF specimen by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).

# Meningitis Events (NLCM 2)

Table 4: Neonatal Laboratory-Confirmed Meningitis Criteria

Criterion	Neonatal Laboratory-Confirmed Meningitis (NLCM)
	<p><i>Comments and reporting instructions that follow the site-specific criteria provide further explanation and are integral to the correct application of the criteria.</i></p> <p>Must meet one of the following criteria:</p>
NLCM 1	An eligible infant with a recognized pathogen (specifically, a bacterial or fungal organism which is not on the Common Commensal tab of the <a href="#">NHSN Organisms List</a> ) identified from a CSF specimen by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).

OR

NLCM 2	<p>An eligible infant with a common commensal (specifically, a bacterial organism which is on the Common Commensal tab of the <a href="#">NHSN Organisms List</a>) identified from a CSF specimen from one or more CSF specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).</p> <p><b>AND</b></p> <p>Treatment is initiated during the LOS/MEN Window Period, on or after DOL 4 with one or more <b>new</b> intravenous (IV) antimicrobial agent(s)*.</p> <p>* New IV antimicrobial agent: Defined as any agent for which all 4 of the following are true:</p> <ol style="list-style-type: none"> <li>1. Is listed in <a href="#">Table 6</a>.</li> <li>2. The antimicrobial "start date", which is the date of antimicrobial initiation, must occur sometime within the LOS/MEN Window Period which includes 2 calendar days before, the day of, or within 2 calendar days after the specimen collection date.</li> <li>3. Antimicrobial start date must occur on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent*(s) and continued for 5 or more qualifying antimicrobial days (QADs). Days between administrations of a new antimicrobial agent also count as QADs provided there is a gap of no more than 1 calendar day between administrations.</li> <li>4. Was NOT given to the patient on either of the 2 days preceding the first antimicrobial initiated in the LOS/MEN Window Period. (See <a href="#">Table 5: Examples of the Use of Antimicrobials Days and the LOS/MEN Window Period.</a>)</li> </ol> <p><b>Note:</b> Substitution of a different antimicrobial agent from <a href="#">Table 6</a> within the LOS/MEN Window Period due to therapy/organism sensitivity factors will continue to meet the requirements for QADs.</p>
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## NLCM 2

An eligible infant with a common commensal (specifically, a bacterial organism which is on the Common Commensal tab of the NHSN Organisms List) identified from a from one or more CSF specimens by a culture or non-culture based microbiologic testing method which is performed for purposes of clinical diagnosis or treatment (for example, not Active Surveillance Culture/Testing).

## AND

Treatment is initiated during the LOS/MEN Window Period, on or after DOL 4 with one or more new intravenous (IV) antimicrobial agent(s)\*.



# Late-Onset Sepsis/Meningitis

Updates

# Protocol Updates

## Late Onset Sepsis / Meningitis Event

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### Introduction:

Late onset sepsis (LOS) and Meningitis (MEN) are common complications of extreme prematurity. Studies have indicated that 36% of extremely low gestational age (22-28 weeks) infants develop LOS and 21% of very low birth weight (VLBW) infants surviving beyond three days of life (DOL) will develop LOS.<sup>1</sup> Another study found that meningitis occurs in 23% of bacteremic infants while 38% of infants with a pathogen isolated from the cerebrospinal fluid (CSF) may not have an organism isolated from blood.<sup>2</sup> These infections are usually serious, causing a prolonged hospital stay and increased risk of mortality.<sup>3</sup>

Some cases of LOS can be prevented through proper central line insertion and maintenance practices. These are addressed in the CDC's Healthcare Infection Control Practices Advisory Committee (CDC/HICPAC) *Guidelines for the Prevention of Intravascular Catheter-Related Infections, 2011*.<sup>4</sup> However, in a quality improvement study, almost one-third of LOS events were not related to central-lines.<sup>5</sup> Prevention strategies for these non-central line-related infection events have yet to be fully defined, but include adherence to hand-hygiene, parent and visitor education, and optimum nursery design features.<sup>6</sup> Other areas that likely influence the development of LOS include early enteral nutritional support and skin care practices.<sup>6,7</sup>

## 2023 Updates

- Minimal changes
- Revisions made for clarity
  - Example:
    - “> DOL3 and < 121”  
changed to “DOL4-120”

# Validation Protocol Section Added - 2023

LOS/MEN  
Protocol  
Page  
16 & 17

## Validation:

### **LOS/MEN Synthetic Data Set (SDS):**

An LOS/MEN Synthetic Data Set (SDS) was created to validate the software vendor or homegrown system's (homegrown system is a program created by the facility to capture and report data) uptake of LOS and MEN numerator and denominator data. An SDS, is a document of fake numerator and denominator data that is processed through the facility's electronic data collection system to ensure that data is accurately captured. The LOS/MEN SDS is comprised of 80 patients that test multiple positive and negative scenarios pertinent to the protocol. An answer key is provided for self-evaluation purposes. This validation process is optional but recommended upon initial implementation. To obtain the LOS/MEN SDS, contact [NHSN@cdc.gov](mailto:NHSN@cdc.gov), Subject Line: LOS/MEN Synthetic Data Set.

<https://www.cdc.gov/nhsn/pdfs/neonatal/losmen/los-men-protocol-508.pdf>

# Late-Onset Sepsis/Meningitis

Resources for Implementation

# Resources for Implementation

- LOS/MEN CDA Toolkit:  
<https://www.cdc.gov/nhsn/cdaportal/toolkits.html#accordion-2-collapse-1> (Please click on the "Release 9.5 - January 2021" section)
- Late-Onset Sepsis/Meningitis Synthetic Data Set (optional): Available Upon Request at [NHSN@cdc.gov](mailto:NHSN@cdc.gov), Subject: Late-Onset Sepsis/Meningitis Synthetic Data Set, Attn: LaTasha Boswell
- Late-Onset Sepsis/Meningitis Calculator (optional): Available Upon Request at [NHSN@cdc.gov](mailto:NHSN@cdc.gov), Subject: Late-Onset Sepsis/Meningitis LOS/MEN Calculator, Attn: LaTasha Boswell

# Summary

- Resources for the Late-Onset Sepsis/Meningitis event module are available below:
  - <https://www.cdc.gov/nhsn/neonatal/index.html>
  - <https://www.cdc.gov/nhsn/neonatal/los-men/index.html>
- The following events are available in the Late-Onset Sepsis/Meningitis module
  - LOS: NLCBI 1 & NLCBI 2
  - MEN: NLCM 1 & NLCM 2
- Updates:
  - Minimal changes made to the LOS/MEN protocol
  - ‘Validation’ section added to inform users of the SDS
- Resources available for LOS/MEN module implementation

# Resources

- Neonatal Component website:  
<https://www.cdc.gov/nhsn/neonatal/index.html>
- Late-Onset Sepsis/Meningitis website:  
<https://www.cdc.gov/nhsn/neonatal/los-men/index.html>
- Neonatal Training Page:  
<https://www.cdc.gov/nhsn/training/neonatal/index.html>

**For any questions or concerns,  
contact the NHSN Helpdesk at [nhsn@cdc.gov](mailto:nhsn@cdc.gov)**

**For more information please contact Centers for Disease Control and Prevention**

1600 Clifton Road NE, Atlanta, GA 30333

Telephone, 1-800-CDC-INFO (232-4636) TTY: 1-888-232-6348

E-mail: [cdcinfo@cdc.gov](mailto:cdcinfo@cdc.gov) Web: [www.cdc.gov](http://www.cdc.gov)

The findings and conclusions in this report are those of the authors and do not necessarily represent the official position of the Centers for Disease Control and Prevention.

