Maternal and Population Risk
- 20-25% of adults have genital HSV caused by HSV type 2
- HSV type I accounts for 20-50% of genital HSV in the US
- 10% of HSV-2 seronegative women have an HSV-2 seropositive sexual partner
- 20-33% of women are seronegative for both HSV-1 and HSV-2; the chance of acquiring either virus during pregnancy is 3.7%
- 66% of women who acquire genital HSV during pregnancy are asymptomatic

Risk of Neonatal HSV Infection
- HSV infection of the neonate is relatively uncommon; however, managing potential neonatal exposure is becoming more commonplace
- Infection may be intrauterine (5%), intrapartum (85%), and postpartum (10%)
- Factors influencing transmission
  - Type of maternal infection (primary vs recurrent)
  - Maternal HSV antibody status
  - Duration of rupture of membranes
  - Integrity of mucocutaneous barriers
  - Mode of delivery

Terminology of HSV Infection and Disease
- no HSV-1 or HSV-2 antibody present, acquires genital HSV → first-episode primary infection
- pre-existing HSV-1 antibody, acquires HSV-2 genital infection → first-episode nonprimary infection
- pre-existing HSV-2 antibody, acquires HSV-1 genital infection → first episode nonprimary infection

### TABLE 2: Maternal Infection Classification by Genital HSV Viral Type and Maternal Serology*

<table>
<thead>
<tr>
<th>Classification of Maternal Infection</th>
<th>PCR/Culture From Genital Lesion</th>
<th>Maternal HSV-1 and HSV-2 IgG Antibody Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Documented first-episode primary infection</td>
<td>Positive, either virus</td>
<td>Both negative</td>
</tr>
<tr>
<td>Documented first-episode nonprimary infection</td>
<td>Positive for HSV-1</td>
<td>Positive for HSV-2 AND negative for HSV-1</td>
</tr>
<tr>
<td>Assume first-episode (primary or nonprimary)</td>
<td>Positive for HSV-2</td>
<td>Positive for HSV-1 AND negative for HSV-2</td>
</tr>
<tr>
<td>Pre-existing or nonprimary infection</td>
<td>Positive for HSV-1 OR HSV-2</td>
<td>Not available</td>
</tr>
<tr>
<td>Pre-existing or nonprimary infection</td>
<td>Negative OR not available</td>
<td>Negative for HSV-1 AND/or HSV-2 OR not available</td>
</tr>
<tr>
<td>Recurrent infection</td>
<td>Positive for HSV-1</td>
<td>Positive for HSV-1</td>
</tr>
<tr>
<td></td>
<td>Positive for HSV-2</td>
<td>Positive for HSV-2</td>
</tr>
</tbody>
</table>

* To be used for women without a clinical history of genital herpes.

* When a genital lesion is strongly suspicious for HSV, clinical judgment should supersede the virological test results for the conservative purposes of this neonatal management algorithm. Conversely, if in retrospect, the genital lesion was not likely to be caused by HSV and the PCR assay result or culture is negative, departure from the evaluation and management in this conservative algorithm may be warranted.
Active genital herpes lesions are identified by the obstetrician. Obstetric provider obtains swab of lesion for HSV PCR assay and send for culture. Send maternal type specific serology for HSV-1 and HSV-2 antibodies.

If asymptomatic at 24 hours of age do not start acyclovir, obtain from the newborn:
- HSV blood PCR
- HSV surface cultures and PCR if desired (conjunctivae, mouth, nasophrnx, rectum, skin lesion, and scalp electrode site if present)
- CSF cell count, chemistries, and HSV PCR
- Serum ALT
- If there is rupture of membranes >4-6 hours or the infant is <37 weeks consider immediate evaluation and treatment.
- Start IV acyclovir at 60 mg/kg/day in 3 divided doses
- Consider infectious disease consult

At 24 hours of age obtain the following from the newborn:
- HSV blood PCR
- HSV surface cultures and PCR if desired (conjunctivae, mouth, nasophrnx, rectum, skin lesion, and scalp electrode site if present)
- CSF cell count, chemistries, and HSV PCR
- Serum ALT
- If there is rupture of membranes >4-6 hours or the infant is <37 weeks consider immediate evaluation and treatment.
- Start IV acyclovir at 60 mg/kg/day in 3 divided doses
- Consider infectious disease consult

Maternal history of genital HSV preceding pregnancy?

No

Yes

Notify Infant Provider

If asymptomatic at 24 hours of age do not start acyclovir, obtain from the newborn:
- HSV blood PCR
- HSV surface cultures and PCR if desired (conjunctivae, mouth, nasophrnx, rectum, skin lesion, and scalp electrode site if present)
- If there is rupture of membranes >4-6 hours or the infant is <37 weeks consider immediate evaluation and treatment.
- Any signs or symptoms at any time immediate evaluation and treatment are indicated
- Consider infectious disease consult

Determine Maternal HSV Infection Classification (table)

PCR or Culture Positive?

PCR or culture positive?

No

Yes

Consult NICU/ID for management

PCR, viral cultures are negative >48 hours- stop acyclovir and consider discharge if other discharge criteria have been met. Family should receive education regarding signs and symptoms of HSV before baby is discharged home.

Acceptable to discharge newborn if HSV cultures are negative >48 hours and other discharge criteria have been met. Family should receive education regarding signs and symptoms of HSV before baby is discharged home.

Consult NICU/ID for CSF (for cell count, chemistries and HSV PCR) and serum ALT. Start Acyclovir 60/mg/kg/day in 3 divided doses.

First episode primary or first episode nonprimary

Recurrent infection

PCR or culture positive?

PCR, blood and surface PCR negative

Surface cultures positive or blood or surface PCRs positive

PCR or culture negative?

Positive surface cultures and blood and surface PCR negative