This toolkit is intended for use by local health jurisdictions to conduct in-depth multidisciplinary examination of congenital syphilis cases to identify missed opportunities for prevention and potential upstream interventions to prevent future cases.
Introduction

Rationale and Objective
Congenital syphilis (CS), a preventable and potentially devastating disease, is increasing in California; there was a fourfold increase in CS cases between 2012 and 2015. Each congenital syphilis case should be considered a sentinel event for local and state health departments and examined for missed opportunities and upstream interventions to prevent future cases. The California Department of Public Health (CDPH), Sexually Transmitted Diseases Control Branch (STDCB) has prepared this CS Morbidity & Mortality Review (CS M&M) Toolkit to share with local STD programs across the state to encourage an in-depth examination of their CS cases, with consultation and technical assistance as needed from the CDPH STDCB. The goal for conducting CS M&M is to gather data on preventable congenital syphilis cases to inform change in community provider practices and/or health department response.

Instructions

- Identify primary preparer of cases for discussion:
  
- Select cases – the goal is to review cases with missed opportunities for prevention.
- Identify case(s) for review – review mother, infant, and partner/father records in CalREDIE:
  - Mother CalREDIE ID: ___________
  - Infant CalREDIE ID: ____________
  - Partner/Father CalREDIE ID: ___________
  - If mother or father name additional partners, those incidents should also be reviewed

- Compile information. Consider the following data sources: California Reportable Disease Information Exchange (CalREDIE) incident record, medical records, syphilis interview records, case investigation notes.
  - Note: if key data elements are not readily available in CalREDIE data fields, conduct a thorough review of available data in the electronic filing cabinet (EFC) within CalREDIE, e.g. medical records, full investigative history, etc.
- Use PowerPoint template to input data on infant, mother and partner/father, as follows:
  - Mother characteristics, e.g. demographics, stage of syphilis, laboratory test results, treatment information, risk factors, gravida/para/abortus (GPA), etc.
  - Mother and infant timeline, which covers healthcare encounters leading up to delivery
• For each encounter the reviewer should determine laboratory test information, syphilis signs/symptoms, treatment, and other relevant information.

• **Timelines should be tailored to each case presented;** additional relevant encounters with the healthcare system, jail, health department, or other facility can be added as additional text boxes along the timeline, as needed.
  
  o Infant characteristics, e.g. date of birth, laboratory test results, clinical signs/symptoms, treatment information, etc.
  
  o Partner/Father characteristics, e.g. demographics, stage of syphilis, laboratory test results, treatment information, risk factors, etc.
  
  o Case discussion questions to stimulate brainstorming on missed opportunities and potential interventions

• Convene multidisciplinary group to examine case(s) for missed prevention opportunities and areas for follow-up. Group should include the primary preparer of the cases for discussion, disease investigator and/or DIS supervisor, clinician, epidemiologist, and STD controller and/or additional local health department leadership. Local Health departments are encouraged to include partners within their organization, e.g. Maternal, Child & Adolescent Health, Black Infant Health, behavioral health, etc. Representatives from the CDPH STDCB are available to participate in these discussions, upon request.
  
  o Clinician: ________________________________

  o Disease Investigator (preferably the DIS who worked the case):

  ________________________________

  o Epidemiologist: ________________________________

  o STD controller/health department leadership:

  ________________________________

  o Partners within the health department (e.g. Maternal, Child & Adolescent Health, Black Infant Health, behavioral health, etc.):

  ________________________________

• The PowerPoint template covers one case, but template slides can be replicated to review multiple congenital syphilis cases.

CS M&M Review Follow-up

Missed Opportunities Identified During M&M Review, Proposed Follow-up Interventions, and Result of Follow-up Actions
**Considerations for Follow-up Interventions***

<table>
<thead>
<tr>
<th>Missed Opportunity</th>
<th>Potential Follow-up Interventions</th>
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| Lack of Prenatal Care | • Congenital syphilis public education campaign  
|                     | • Partner with community-based organizations to conduct outreach to vulnerable populations  
|                     | • Partner with providers to reduce barriers to prenatal care  
|                     | • Partner with internal local health department staff, including Maternal, Child, and Adolescent Health colleagues to reduce barriers to prenatal care |
| Missed Syphilis Diagnosis | • Provider visitation and training on syphilis diagnosis and local syphilis epidemiologic data  
|                       | • Grand rounds for providers at healthcare facilities |
| Missed Screening Opportunity | • Provider visitation and training on screening recommendations and local syphilis epidemiologic data  
|                           | • Work with corrections to facilitate screening in jails |
| Missed Treatment Opportunity | • Ensure benzathine penicillin G availability  
|                               | • Provider education on recommended treatment and importance of timely treatment  
<p>|                               | • Partner with providers to ensure that pregnant women with syphilis are brought to treatment after positive lab result |</p>
<table>
<thead>
<tr>
<th>Missed Opportunity Category</th>
<th>Potential Follow-up Interventions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Health Department Follow-up</td>
<td>• Syphilis reactor prioritization evaluation</td>
</tr>
<tr>
<td></td>
<td>• Ensure timeliness of syphilis case follow-up</td>
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<tr>
<td></td>
<td>• Consider local systems and procedures that can improve prevention efforts</td>
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<tr>
<td>Other:</td>
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*Note that this list highlights some potential follow-up interventions but is not comprehensive or targeted for any particular case or jurisdiction.

For questions about the CS M&M Toolkit, or for technical assistance with conducting CS case reviews of this nature in your jurisdiction, please contact Ashley Dockter at the CDPH STDCB (ashley.dockter@cdph.ca.gov).
Appendices

Appendix I. Case Examples of Missed Opportunities Identified & Follow-up Actions Taken

- **Disease Investigation Opportunity:** Pregnant woman with syphilis lost to follow-up after positive RPR results returned; no treatment administered
  - Follow-up action: Offer provider assistance with locating pregnant women with syphilis who are lost to follow-up and bringing them to treatment

- **Clinical Missed Opportunity:** OBGYN misdiagnosed syphilis during prenatal care visit
  - Follow-up action: Provide OBGYN with training on syphilis diagnosis and treatment, and/or encourage and participate in a Morbidity and Mortality Conference (M&M) with that provider or facility detailing the specifics related to this sentinel-event congenital syphilis case at their institution in which there were documented missed opportunities, medical errors, or policies that need to be changed to prevent future cases

- **Policy/Systems Level Missed Opportunity:** Baby discharged without a negative RPR
  - Follow-up action: Meet with delivery hospital risk management team to discuss policy change to prevent baby discharge without confirmed negative RPR

- **Surveillance/Informatics Missed Opportunity:** Delayed assignment of pregnant women with syphilis
  - Follow-up action: Promote prompt syphilis CMR submission with pregnancy status included among high-morbidity clinicians

- **Other:** Mothers who use drugs not accessing prenatal care due to fear of punishment or losing their baby if toxicology results are positive
  - Proposed follow-up action: Meet with healthcare facility to address barriers to pregnant women accessing prenatal care
Appendix II. Congenital Syphilis Prevention Framework
Appendix III. Common Pathway to Delivering a Baby with Congenital Syphilis

- Syphilis acquired prior to pregnancy; not diagnosed and/or not treated
- Syphilis not detected early and/or not effectively treated in time
- Syphilis acquired during pregnancy and not detected and treated in time
- Treatment failure, or too late to prevent fetal damage

Woman acquires syphilis prior to pregnancy
- Not diagnosed, not tested
- Not adequately treated
- SHE BECOMES PREGNANT

She acquires syphilis during pregnancy
- Not diagnosed (late to prenatal care or no prenatal care, early screen negative and not repeated, seroconverted after birth)
- Not treated (treatment not ordered, lost to follow up)
- Late to treatment (treatment initiated <30 days prior to delivery)
- Inadequate treatment (wrong drug or dose, lack or delay in 2nd or 3rd shots for late latent syphilis)

RARELY, among those diagnosed and treated:
- Maternal treatment failure
- Fetal demise
- Permanent fetal damage prior to treatment
Appendix IV. Public Health Response: Points of Intervention to Prevent Congenital Syphilis

Pre-pregnancy
- Screening/diagnosis/treatment
- Timely partner services
- Accessible highly effective contraception

During pregnancy
- Linkage to prenatal care
- Screening/diagnosis
- Timely treatment appropriate for stage
- Timely partner services
- Case management
- Prevent and detect new infection

Birth
- Evaluation and treatment of baby