



The Congenital Syphilis Morbidity & Mortality Review Toolkit

A PREVENTION TOOL FOR LOCAL HEALTH JURISDICTIONS

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

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Background

Congenital syphilis (CS), a preventable and potentially devastating disease, is increasing in California; CS cases increased over 750% between 2012 and 2017. Local health jurisdictions (LHJ) should consider examining each CS case 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 Congenital Syphilis Morbidity & Mortality (CS M&M) Review Toolkit to provide tools and strategies for local STD programs to conduct in-depth examination of CS cases, with consultation and technical assistance as needed from the CDPH STDCB. The goal for conducting CS M&M Review is to review information outside of regular syphilis case reporting to identify patterns of missed opportunities among CS cases to inform structural changes in community provider practices and/or LHJ response that could prevent future cases.

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 the California Reportable Disease Information Exchange (CalREDIE). If mother or father name additional partners, those incidents should also be reviewed.
- Compile information. Consider the following data sources: CalREDIE incident record, medical records, syphilis interview record, case investigation notes, and nursing case management notes, if applicable.
 - *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, such as medical records and full investigative history.*
- Input data on infant, mother and partner/father into face sheet, as follows (See Appendix I. for face sheet template):
 - **Mother characteristics**, including demographics, stage of syphilis, risk factors, estimated date of delivery (EDD), gravidity (number of time a female is or has been pregnant)/parity (the number of times a female has carried the pregnancies to a viable gestational age) (G/P), prenatal care, etc.
 - **Mother table**, which covers any documented health care encounter prior to or during pregnancy leading up to delivery. For each encounter, determine gestational age (GA), syphilis laboratory test results, syphilis signs/symptoms, treatment, provider/facility, and other relevant information.
 - **Infant characteristics**, including newborn weight, vital status, other relevant diagnoses, and apgar scores (a test given to newborns soon after birth that checks heart rate, muscle tone, and other signs that is usually administered at one minute and five minutes after birth and is scored between 0 and 10).
 - **Infant table**, including syphilis laboratory test results at birth, clinical findings, treatment, etc.
 - **Partner/Father characteristics**, including demographics, stage of syphilis, laboratory test results, treatment information, risk factors, etc.
 - **Justification for CS case classification** by the maternal and/or neonate pathways based on available syphilis laboratory results, history of syphilis, and treatment data. This section

also includes infant CS surveillance case classification and Centers for Disease Control and Prevention (CDC) STD Treatment Guidelines scenario.

- **Relevant prenatal and postpartum disease investigation notes.**
- **Case discussion questions** to stimulate brainstorming on missed opportunities, bright spots, 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 case(s) for discussion, disease intervention specialist (DIS), or other field investigator who worked the case, DIS supervisor, clinician, epidemiologist, and STD controller and/or additional LHJ leadership. LHJs are encouraged to include partners within their organization (e.g. Maternal, Child & Adolescent Health, behavioral health). LHJs may also want to consider including partners from outside their organization (e.g., community health care providers), though additional de-identification of cases presented may be warranted to ensure anonymity. Representatives from the CDPH STDCB are available to participate in these discussions, upon request.
- Capture missed opportunities for prevention that were identified during the CS M&M review session, as well as action items identified for follow-up (See Appendix II for notes template).
- After the M&M session, finalize notes/action items and distribute to the attendees. Ensure follow-up on action items identified during reviews.

Resources

- California Department of Public Health, Congenital Syphilis Webpage: <https://www.cdph.ca.gov/Programs/CID/DCDC/Pages/CongenitalSyphilis.aspx>
- Centers for Disease Control and Prevention's Syphilis 2018 Case Definitions: <https://wwwn.cdc.gov/nndss/conditions/syphilis/case-definition/2018/>
- Centers for Disease Control and Prevention's Congenital Syphilis Report Algorithm: <https://www.cdc.gov/std/program/Congenital-Syphilis-Form-2013.pdf>
- Centers for Disease Control and Prevention's 2015 STD Treatment Guidelines: <https://www.cdc.gov/std/tg2015/congenital.htm>

For questions about the CS M&M Review Toolkit, or for technical assistance with conducting CS M&M Reviews in your jurisdiction please contact the CDPH STDCB (STDCB@cdph.ca.gov).

Appendices

Appendix I. CS M&M Review Face Sheet Template

CONGENITAL SYPHILIS MORBIDITY & MORTALITY (CS M&M) REVIEW FACE SHEET TEMPLATE [LOCAL HEALTH JURISDICTION] | REVIEW DATE: [Month DD, YYYY]

CASE #XX

Mother ID: XXXXXXXX | Infant ID: XXXXXXXX

MOTHER INFO

- Age: XX years old
- Ethnicity/Race: X
- Stage of syphilis: X
- HIV: X
- Interview conducted: [Yes/No/Unknown], Reason interview not conducted:
- Risk factors: X
- Partner(s): X

PRENATAL INFO

- EDD: XX/XX/XXXX
- G/P: GXPX
- 1st known prenatal care visit: MM/DD/YYYY, XXwXXd GA
- Number of prenatal care visits: X
- Other health care encounters during pregnancy, e.g. emergency department: MM/DD/YYYY, XXwXXd GA, syphilis testing performed [Yes/No/Unknown]

Mother Table									
Date	GA	EIA	Non-trep results (i.e. RPR, VDRL)	Trep results (i.e. TPPA, FTA-ABS)	Diagnosis	Treatment	Clinician observed signs &/or symptoms	Medical provider name/hospital	Notes
LMP: XX/XX/XXXX									
DELIVERY: XX/XX/XXXX									

DELIVERY NOTES

- Postpartum birth control plan: X
- Social services referral(s): E.g., drug treatment, family planning services, child protective services, mental health treatment.
- Mother's insurance type: X

RELEVANT DIS INVESTIGATION NOTES (PRENATAL)

- X

INFANT INFO

- Apgar scores: X/X
- Weight: XXXXg
- Vital Status: [live birth/stillbirth, any other conditions]
- Other relevant diagnoses: X

Infant Table						
Date	Non-treponemal results (i.e. RPR, VDRL)	Treponemal results (i.e. TPPA, FTA-ABS)	Treatment	Other clinical findings (e.g. physical exam, CSF VDRL, CSF protein/white blood cell count*, x-ray, etc.)	Medical Provider Name/hospital	Notes (Treatment and evaluation appropriate?)
DOB: XX/XX/XXXX						

*Include red blood cell count when reporting on CSF protein and white blood cell count or VDRL to facilitate clinical interpretation.

JUSTIFICATION FOR CONGENITAL SYPHILIS CASE CLASSIFICATION

- Infant surveillance case classification: [confirmed/stillbirth/probable]
- Justification for maternal case criteria/pathway (check one):
 - Maternal criteria does not apply; not a case by maternal pathway
 - New case of syphilis diagnosed <30 days prior to delivery or at delivery
 - Untreated (diagnosed with syphilis >30 days prior to delivery)
 - Inadequately treated, e.g. incomplete treatment, inappropriate intervals between doses
 - Reinfection during pregnancy (titer increase of ≥ 4-fold)
- Justification for neonate case criteria/pathway (check one):
 - Neonate criteria does not apply; not a case by neonate pathway
 - Positive darkfield or PCR
 - Stillbirth (fetal death that occurs after 20 weeks gestation or weighing > 500g, and the mother had untreated or inadequately treated syphilis at delivery)
 - Reactive non-treponemal result, AND has any one of the following: physical signs of CS, evidence of CS on long bone x-ray, reactive CSF-VDRL, or elevated CSF WBC count or protein (without other cause)
- STD treatment guidelines scenario: Scenario X and justification

RELEVANT DIS INVESTIGATION NOTES (POST PARTUM)

- X

DISCUSSION:

- Missed opportunities (Clinical, disease investigation, other)
- Bright spots (Clinical, disease investigation, other)
- Action items (on this case and/or to prevent a similar case from happening)

Note: this template covers one case, but it can be replicated to capture review of multiple congenital syphilis cases. Acronyms used: G/P: gravidity/parity; EDD: estimated date of delivery; GA: gestational age; LMP: last menstrual period; CSF: cerebrospinal fluid; RPR: rapid plasma regain, a non-treponemal test for syphilis; VDRL: venereal disease research laboratory, a non-treponemal test for syphilis; TPPA: Treponema pallidum particle agglutination assay, a treponemal test for syphilis; FTA-ABS: Fluorescent treponemal antibody absorption, a treponemal test for syphilis

Appendix II. CS M&M Review Notes Template

CONGENITAL SYPHILIS MORBIDITY & MORTALITY (CS M&M) REVIEW NOTES TEMPLATE [LOCAL HEALTH JURISDICTION] | REVIEW DATE: [Month DD, YYYY]

Attendance:

- Local Health Jurisdiction: X
- California Department of Public Health (CDPH): X
- Other partners (e.g. Maternal, Child & Adolescent Health (MCAH), behavioral health, local hospital or prenatal care providers, etc.): X

Case 1

Mother CalREDIE ID: [#####], Baby CalREDIE ID: [#####]

- Missed opportunities
 - Disease investigation Perspective:
 - X
 - Clinical Perspective:
 - X
 - Other:
 - X
- Bright spots
 - Disease investigation Perspective:
 - X
 - Clinical Perspective:
 - X
 - Other:
 - X

Case 1 Action Items:

- X
- X
- X

Meeting Action Items:

- Draft & send out meeting notes with action items assigned (Due: XX, Assigned to: XX)
- Schedule next CS M&M review (Due: XX, Assigned to: XX)
- X

Note: this template covers one case, but it can be replicated to capture review of multiple CS cases.

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

- **Disease Intervention Opportunity:** Pregnant woman with syphilis was lost to follow-up after positive RPR results returned; no treatment administered
 - Follow-up action: Offer provider assistance with locating pregnant females with syphilis who are lost to follow-up and bringing them to treatment
- **Clinical Missed Opportunity:** Prenatal provider misdiagnosed syphilis during prenatal care visit
 - Follow-up action: Provide prenatal provider with training on syphilis diagnosis and treatment, and/or encourage and participate in a M&M with that provider or facility detailing the specifics related to this sentinel-event CS case at their institution in which there were documented missed opportunities, medical errors, or policies that need to be changed to prevent future cases
- **Other Opportunity:** Mother had contact with the local jail during pregnancy and no screening was conducted
 - Follow-up action: Meet with jail to explore the feasibility of implementing syphilis screening