Congenital syphilis management

Tendesayi Kufa-Chakezha, MBChB, PhD

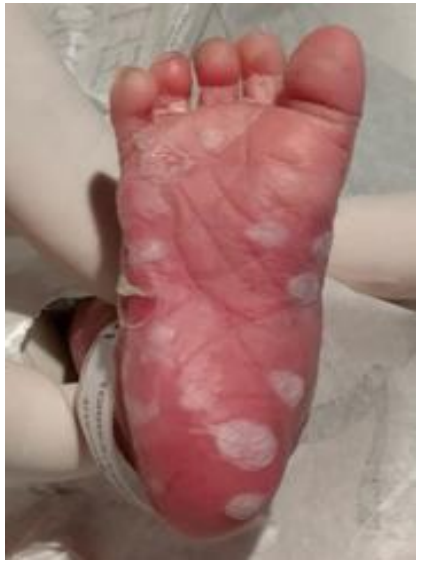
Centre for HIV and STIs

National Institute for Communicable Diseases

Outline

- Clinical features
- Diagnosis
- Treatment
- Notification

Clinical features



- CS is the result of MTCT syphilis
- Early clinical features of early congenital syphilis (<2yrs) include:
  - General examination- jaundice, oedema, lymphadenopathy, failure to thrive etc.
  - Respiratory system - respiratory distress, pneumonia alba
  - Mucocutaneous- variable features
    -Peeling rash
    -Vesiculobullous lesions
    -Petechiae
    -Rhinitis with mucopurulent bloodstained discharge
  - Gastrointestinal system - hepatosplenomegaly, ascites, hepatitis, jaundice

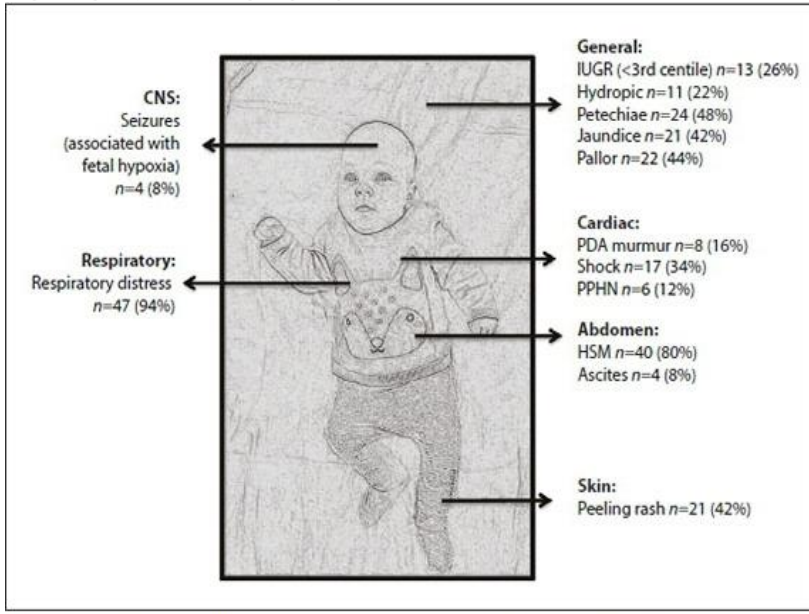
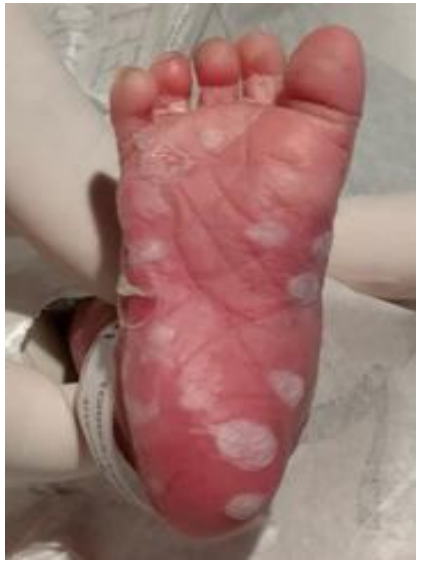


Fig. 2. Clinical signs in the 50 symptomatic neonates. (IUGR = intrauterine growth restrictio PDA = patent ductus arteriosus; PPHN = persistent pulmonary hypertension of the newborn; HSM hepatosplenomegaly; CNS = central nervous system.)

Clinical features



- Early clinical features of early congenital syphilis (<2yrs)
  - Skeletal system
    - Osteochondritis of long bones -> pseudoparalysis of limbs
    - Radiological features on X-rays of long bones- translucent metaphyseal bands, osteochondritis, osteitis, metaphysitis and periostitis
  - Haematological: anaemia, thrombocytopaenia, hypoalbuminaemia
  - Neurological: seizures, acute meningitis, delayed milestones
  - Opthalmic: chorioretinitis, uveitis

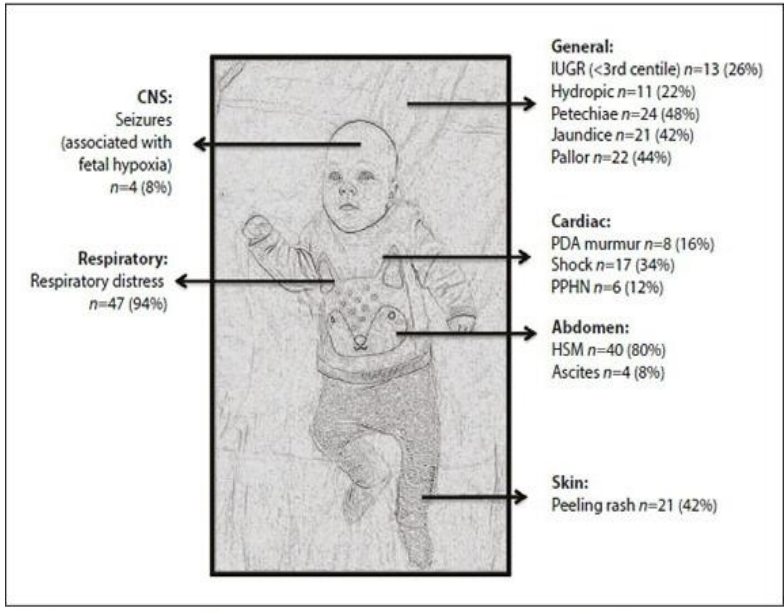
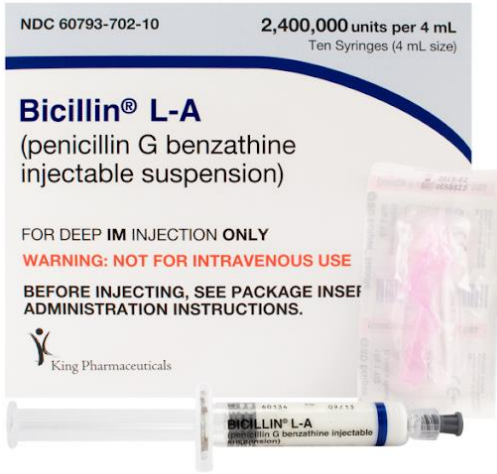


Fig. 2. Clinical signs in the 50 symptomatic neonates. (IUGR = intrauterine growth restriction; PDA = patent ductus arteriosus; PPHN = persistent pulmonary hypertension of the newborn; HSM = hepatosplenomegaly; CNS = central nervous system.)

Diagnosis of congenital syphilis

- Based on a combination of maternal history, clinical symptoms and signs, radiological features and laboratory features
- Maternal history – unbooked , untested, untreated or inadequately treated
- Clinical signs and symptoms
  - Some infants are asymptomatic at birth. Follow up of infants born to untreated/ inadequately treated mothers required
- Laboratory tests
  - Direct : PCR on fetal/ infant lesions, placenta etc
  - Indirect: serological tests on blood or CSF
    - Non-treponemal tests e.g. RPR, VDRL (CSF)
    - Treponemal tests TPAB/TPHA/TPPA, fluorescent treponemal antibody absorption test (FTA-ABS)
- Radiological features
- Research on point of care tests for CS ongoing

Treatment for congenital syphilis



Inovatiqa, 2020

- **Asymptomatic, well baby**
- Mother seropositive or result unknown, and mother has not been treated or was only partially treated:

Benzathine benzylpenicillin (long-acting, Bicillin LA = depot formulation), IM, 50 000 units/kg as a single dose into the antero-lateral thigh

- **Symptomatic baby**
  Refer all symptomatic infants to the hospital

- Procaine penicillin (long-acting), IM, 50 000 units/kg daily for 10 days (not for IV use)

OR

- Benzylpenicillin (Penicillin G), IM/IV, 50 000 units/kg 12 hourly for 10 days

- Bicillin CR = benzathine + procaine salts of Penicillin G (IM)

- Procaine penicillin and benzathine benzylpenicillin (Bicillin) must not be given intravenously

Infant treatment for congenital syphilis

Inovatiqa, 2020

General measures and symptomatic management

- Maintain normothermia
- Maintain adequate nutrition and hydration
- Monitor hepatic and renal function

- **Pneumonia**
  To maintain oxygen saturation at 90-94% or PaO2 at 60-80 mmHg: Oxygen via a head box or nasal cannulae

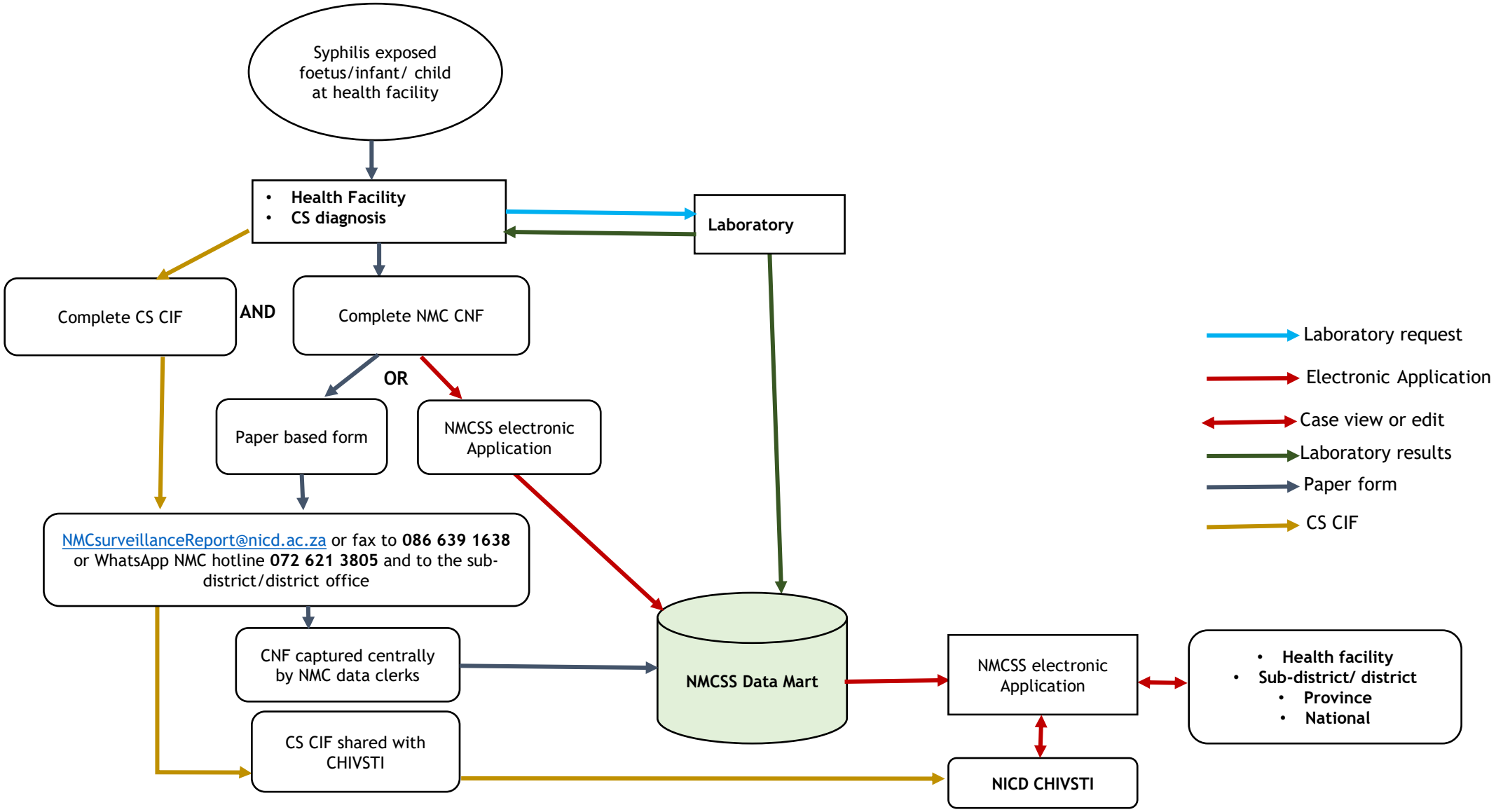
- **Anaemia**
  If Haematocrit < 40% (Hb < 13 g/dL): Give packed red cells, 10 mL/kg administered over 3 hours.

Follow-up of syphilis exposed or treated infants

- Follow up children at 3 months post treatment with repeat non-treponemal serological tests (RPR/VDRL), until the test becomes non-reactive. Re-treat if there is a drop in titre less than 4-fold

- **Continuing education regarding STI prevention, partner notification and treatment. Treatment of partners to be encouraged to prevent re-infection of mothers in future pregnancies**

Overview of CS surveillance in South Africa



Surveillance case definition for congenital syphilis in SA [1]

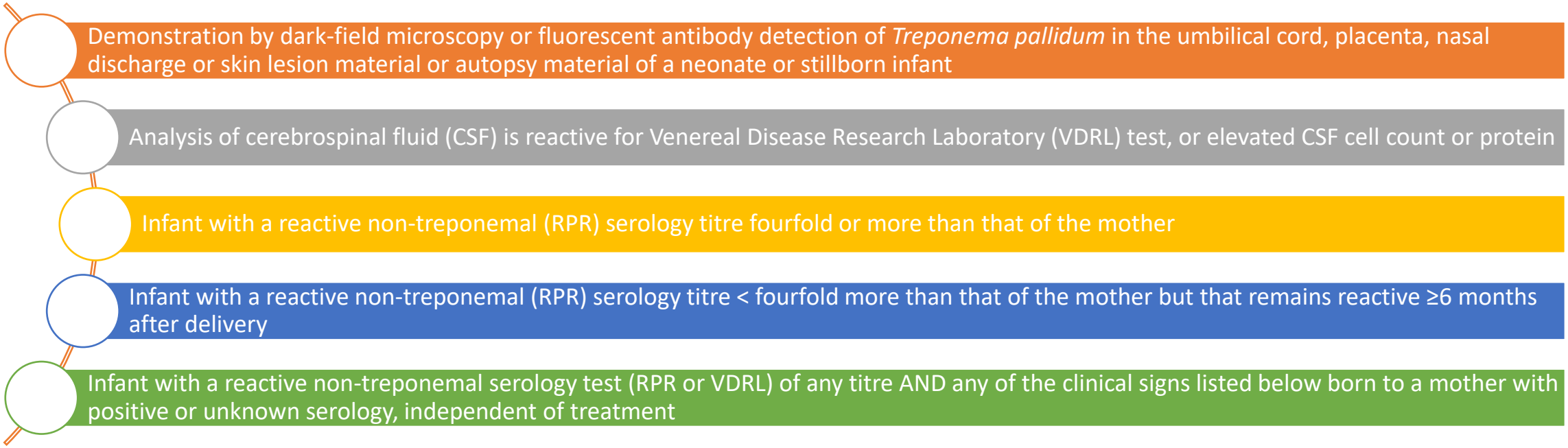
Any case meeting the following criteria will be considered a case of congenital syphilis:

- A live birth or fetal death at more than 20 weeks of gestation or >500 g (including stillbirth) born to a woman with positive syphilis serology **AND** without adequate syphilis treatment

Adequate maternal treatment is defined as at least one injection/dose of 2.4 million units of intramuscular benzathine benzylpenicillin at least 30 days prior to delivery

Surveillance case definition for congenital syphilis in SA [2]

- A live birth, stillbirth or child aged <2 years born to a woman with positive syphilis serology or with unknown serostatus, and with laboratory evidence of syphilis infection (regardless of the timing or adequacy of maternal treatment). The following constitutes acceptable laboratory evidence:



- Any stillborn infant with a reactive maternal test should be considered a congenital syphilis case (i.e. a syphilitic stillbirth)

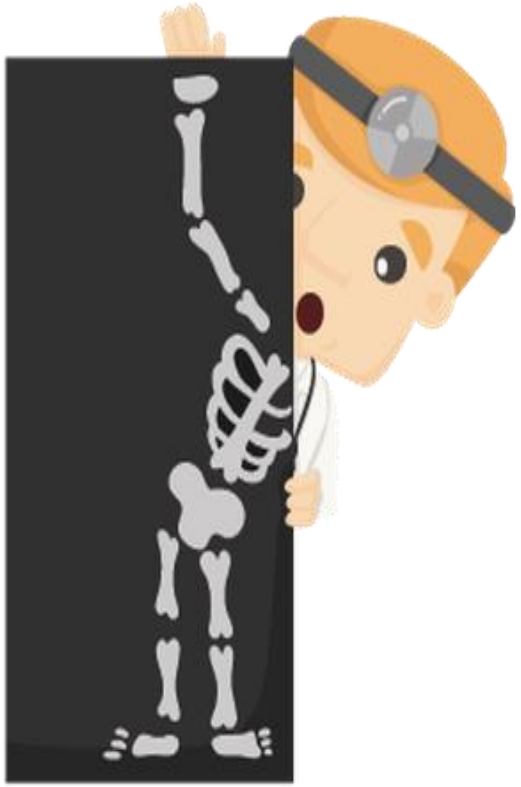
Surveillance case definition for congenital syphilis in SA [3]

- A live birth, stillbirth or child aged <2 years born to a woman with positive syphilis serology **OR** unknown serostatus, **AND** radiographic clinical evidence of syphilis infection (regardless of the timing or adequacy of maternal treatment)

Acceptable radiological evidence refers to:

- Long bone radiographs suggestive of congenital syphilis

e.g. osteochondritis, diaphyseal osteomyelitis, periostitis



Surveillance case definition for congenital syphilis in SA [4]

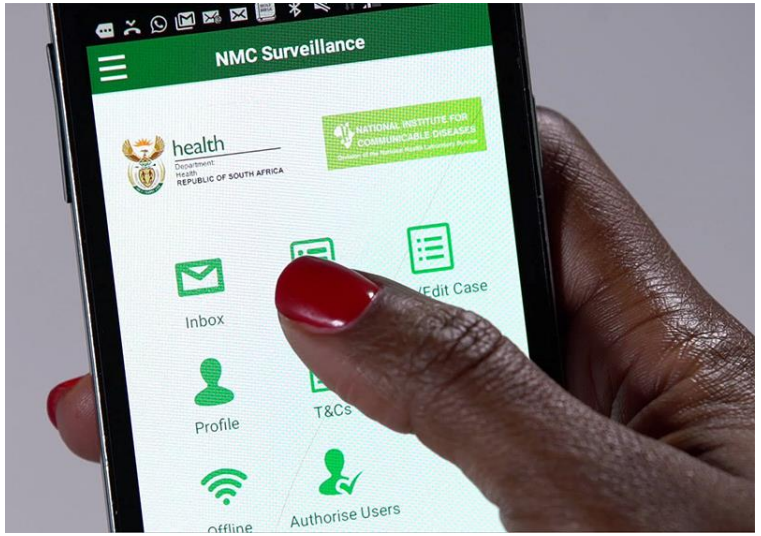
- A live birth, stillbirth or child aged <2 years born to a woman with positive syphilis serology **OR** unknown serostatus, **AND** clinical evidence of syphilis infection (regardless of the timing or adequacy of maternal treatment). Acceptable clinical evidence comprises :

Early clinical signs that may be present in an infant with congenital syphilis include non-immune hydrops, hepatosplenomegaly, rhinitis (snuffles), and skin rash, pseudoparalysis of an extremity or failure to thrive or achieve developmental milestones

An older infant or child may develop additional signs or symptoms such as frontal bossing, notched and pegged teeth (Hutchinson teeth), clouding of the cornea, blindness, bone pain, decreased hearing or deafness, joint swelling, sabre shins, and scarring of the skin around the mouth, genitals and anus

- In settings where a non-treponemal (RPR) titre is not available, an infant born to a mother with reactive or unknown serology, independent of treatment, and whose 6-month examination demonstrates any of the early clinical signs listed below

Notification process



- Cases can be notified electronically using Notifiable Medical Conditions (NMC): Capture the case details on the zero-rated NMC mobile app or web browser. (For CS, CIF and CNF now combined)

- Paper-based notification: Complete the NMC Case Notification Form in the NMC booklet (for CS CIF and CNF now combined.
  Email to NMCsurveillanceReport@nicd.ac.za
  Fax to 086 639 1638
  WhatsApp/SMS to 072 621 3805

  Blue copy – in patient's file / referral
  Pink copy – keep in booklet

NATIONAL INSTITUTE FOR COMMUNICABLE DISEASES
Division of the National Health Laboratory Service

Notification process