COVID-19
Monitoring and evaluation in South Africa

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Monitoring and evaluation

• Aim:
  • Document outcomes of women and their babies with COVID-19 in pregnancy
  • Document outcomes of women and their babies without Covid-19 in pregnancy

• Process:
  • COVID-19 a notifiable condition in South Africa
  • Piggyback onto existing system (Perinatal Problem Identification Programme – PPIP)
  • Single page document for pregnant woman and her baby
Analysis

• Maternal pregnancy complications
• Maternal health system usage (normal, high care, ICU, ventilation)
• Days in hospital
• Outcome
• Route of delivery
• Relationship of complications to HIV status and ARV treatment
• Perinatal outcome – stillbirth, neonatal death, survivor
• Birthweight

• Gestational age
• Neonatal complications (HIE, prematurity, infection)
• Neonatal health system usage (stayed with mother, admitted nursery, high care, NICU, ventilation)
• Days in nursery
• Growth restriction
• COVID-19 infected
• Feeding method
• Effect of HIV status on COVID-19 in pregnancy
Form for COVID-19+ pregnant woman at birth

Please complete this form for every confirmed COVID-19 pregnant woman at time of delivery.

<table>
<thead>
<tr>
<th>HEALTH CARE FACILITY:</th>
<th>DATE SHEET COMPLETED BY:</th>
</tr>
</thead>
</table>

**Maternal obstetric condition**
- Hypertension/pre-eclampsia/eclampsia
- Gestational diabetes
- Spontaneous preterm labour
- Premature rupture of membranes
- Antepartum haemorrhage
- Postpartum haemorrhage
- Puerperal sepsis
- Pneumonia/ARDS
- Other, specify: [ ]

**Neonatal morbidity**
- Respiratory distress syndrome
- Meconium aspiration syndrome
- Hypoxic-ischaemic encephalopathy
- Necrotising enterocolitis
- Intracranial haemorrhage
- Congenital abnormality
- Neonatal sepsis
- Other, specify: [ ]

**Health systems usage: woman**
- Admitted to high-care unit
- Admitted to ICU
- Intubated & ventilated
- Death

**Health systems usage: baby**
- Stayed with the mother
- Discharge to interim caregiver
- Admitted to neonatal nursery
- Admitted to high-care unit
- Admitted to ICU
- Intubated & ventilated
- Death
**Individual data sheet for in-hospital COVID-19 exposed neonate**

<table>
<thead>
<tr>
<th>Maternal ID</th>
<th>Infant ID</th>
</tr>
</thead>
<tbody>
<tr>
<td>[link to maternal ID on obstetric COVID-19 form]</td>
<td>[keep list onsite of infant ID with names &amp; facility reference #]</td>
</tr>
</tbody>
</table>

### Maternal information
- Parity
- / not recorded
- Age
- / not recorded
- Antenatal care
- Yes / no / not recorded
- Maternal HIV status
- Positive / negative / not recorded
- If HIV-positive, maternal ART
- TEE / TLD / 2nd-line / other / intrapartum / none / not recorded
- Mode of delivery
- Vaginal / Caesarean section / not recorded
- Hypertensive disease
- PHT / eclampsia / non-pregnancy HT / none / not recorded
- Diabetes
- Yes (gestational) / yes (non-gest) / none / not recorded
- Number of foetuses
- / not recorded
- Antenatal steroids
- Yes / no / not recorded
- Prolonged rupture of membranes
- Yes / no / not recorded
- Maternal pneumonia
- Yes / no / not recorded
- Maternal level of illness
- Well / ill / critically ill (HCU or ICU) / not recorded
- Maternal death (any cause)
- Yes / no / not recorded

### Maternal positive COVID-19 test
- Date maternal COVID-19 test
- Date of birth
- Date of admission
- Birth weight
- Sex
- Male / female / not recorded
- Place of birth
- Inborn / another facility / in transit / at home / not recorded
- Gestational age
- / not recorded
- APgar score @ 1 min
- / not recorded
- APgar score @ 5 min
- / not recorded
- Admission ward
- NICU / HCU / standard neonatal / with mother / not recorded

### Neonatal signs & symptoms
- Rash / oedema / fever / hypothermia / cyanosis / resp distress / hypoglycaemia / hyperglycaemia / anoxia / lethargy / seizures / feeding intolerance / vomiting / diarrhoea / dehydration / pallor / jaundice / other:

### Neonatal diagnosis
- Prematurity / LBW / VLBW / ELBW / HMD / TTN / MAS / congenital pneumonia / cong sepstis / nosocomial sepstis / NEC / jaundice (phototherapy) / perinatal hypoxia (prem baby) / HIE / intracranial haemorrhage / shock / cong abnormalities / other:

### Interventions
- Respiratory support
- O2 / NPO / HFNC / CPAP / IPPV / Oscillation / None / other:
- Surfactant administration
- Yes / no / not recorded

### Neonatal COVID-19 testing
- Result COVID-19 test (test 1)
- Positive / negative / indeterminate / not recorded / not done
- Date COVID-19 test (test 1)
- COVID-19 specimen type (test 1)
- NPA / OPA / tracheal aspirate / other:
- Type COVID-19 test (test 1)
- PCR / antibody / other:
- Result COVID-19 test (test 2)
- Positive / negative / indeterminate / not recorded / not done
- Date COVID-19 test (test 2)
- COVID-19 specimen type (test 2)
- NPA / OPA / tracheal aspirate / other:
- Type COVID-19 test (test 2)
- PCR / antibody / other:

### Infant feeding
- Infant feeding type
- Breastfeeding / expressed breast milk / infant formula / donor milk / TPN / not recorded

### Neonatal outcome
- Discharge type
- Remained with mother / discharged to mother / discharged to caregiver / referred out for neonatal care / down-referred (step-down) / death
- Date of discharge / death
# Delivery data for one week

## Health Care Facility:
___

### Data Period:
(from Monday until Sunday)

**From:** DDMMYYYY  **Until:** DDMMYYYY

## Delivery Data for One Week

<table>
<thead>
<tr>
<th>Total number of deliveries:</th>
<th>Total number of confirmed COVID-19 deliveries:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Deliveries during this week

<table>
<thead>
<tr>
<th>Weight Group</th>
<th>Total</th>
<th>Stillborn</th>
<th>Neonatal deaths</th>
<th>Early</th>
<th>Late</th>
<th>Alive on discharge</th>
</tr>
</thead>
<tbody>
<tr>
<td>500 - 999g</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.000 - 1.499g</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.500 - 1.999g</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.000 - 2.499g</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.500g+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Delivery Methods

- Normal vaginal delivery: ___
- Ventouse: ___
- Forceps: ___
- Vaginal breech: ___
- Caesarean section: ___
- Other (destruction etc.): ___

### Maternal Age

- Younger than 18 years: ___
- 18-19 years: ___
- 35y and older: ___

### HIV Serology

- Positive: ___
- Negative: ___
- Not done: ___

### Antiretroviral Therapy

- HIV positive mother: ___
- Prophylactic ART: ___
- Long-term ART: ___
- Intrapartum ART only: ___
- ART type unknown: ___
- Received no ART: ___
- Received drugs: ___

### Multiple Pregnancies

- Pregnancies: ___
- Neonates: ___

### Morbidity Markers

- Antepartum haemorrhage: ___
- Portpartum haemorrhage: ___
- Severe pre-eclampsia: ___
- Eclampsia: ___
- Induction of labour: ___
- Prolonged rupture of membranes: ___
- Ruptured uterus: ___
- Sepsis: ___
- Obstructed/prolonged labour: ___
- Retained placenta: ___
- Manual removal of the placenta: ___
- Bag/mask neonatal resuscitation: ___

### Parity

- Primiparae: ___
- Multiparae: ___
- Grand multiparae: ___

### Identification

- Data sheet completed by: ___
### Weekly health facility data on in-hospital COVID-19-exposed neonates

**Name of health care facility:** _____________________________  **Province:** _____________________________

**Data period (from Monday until Sunday):**
From DD – MM – YYYY until DD – MM – YYYY

### COVID-exposed neonates

<table>
<thead>
<tr>
<th>Description</th>
<th>Nr</th>
</tr>
</thead>
<tbody>
<tr>
<td>COVID-exposed neonates rooming-in with mother</td>
<td></td>
</tr>
<tr>
<td>Admitted to any neonatal/ paediatric ward (incl NICU / HCU)</td>
<td></td>
</tr>
<tr>
<td>Admitted to NICU / HCU</td>
<td></td>
</tr>
<tr>
<td>Ventilated: Non-invasive/ Invasive</td>
<td></td>
</tr>
<tr>
<td>Given no breastmilk since birth</td>
<td></td>
</tr>
<tr>
<td>Mixed fed (given any breast milk and formula)</td>
<td></td>
</tr>
</tbody>
</table>

### COVID-19 testing in COVID-exposed neonates

<table>
<thead>
<tr>
<th>Description</th>
<th>Nr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Well COVID-exposed neonates tested</td>
<td></td>
</tr>
<tr>
<td>Well COVID-exposed neonates tested positive</td>
<td></td>
</tr>
<tr>
<td>Sick/ admitted COVID-exposed neonates tested</td>
<td></td>
</tr>
<tr>
<td>Sick/ admitted COVID-exposed neonates tested positive</td>
<td></td>
</tr>
</tbody>
</table>

### Outcome of in-hospital COVID-exposed neonates

<table>
<thead>
<tr>
<th>Description</th>
<th>Nr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Remained with mother</td>
<td></td>
</tr>
<tr>
<td>Discharged to mother</td>
<td></td>
</tr>
<tr>
<td>Discharged to caregiver</td>
<td></td>
</tr>
<tr>
<td>Referred out for further neonatal care</td>
<td></td>
</tr>
<tr>
<td>Down-referred (step-down)</td>
<td></td>
</tr>
<tr>
<td>Early neonatal death (0 to 6 days of age)</td>
<td></td>
</tr>
<tr>
<td>Late neonatal death (7 to 27 days of age)</td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
</tr>
</tbody>
</table>

*Additional information on COVID-exposed neonates to be captured on individual COVID-exposed data sheet

### All admitted neonates

<table>
<thead>
<tr>
<th>Description</th>
<th>Nr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Admitted to any neonatal/ paediatric ward (incl NICU / HCU)</td>
<td></td>
</tr>
<tr>
<td>Admitted to NICU / HCU</td>
<td></td>
</tr>
<tr>
<td>Admitted who were born with BW 500 – 999g</td>
<td></td>
</tr>
<tr>
<td>Admitted who were born with BW 1000 – 1499g</td>
<td></td>
</tr>
<tr>
<td>Admitted who were born with BW 1500 – 1999g</td>
<td></td>
</tr>
<tr>
<td>Admitted who were born with BW 2000 – 2499g</td>
<td></td>
</tr>
<tr>
<td>Admitted who were born with BW 2500</td>
<td></td>
</tr>
<tr>
<td>Ventilated: Non-invasive/ Invasive</td>
<td></td>
</tr>
<tr>
<td>Given surfactant</td>
<td></td>
</tr>
<tr>
<td>Given no breastmilk since birth</td>
<td></td>
</tr>
<tr>
<td>Mixed fed (given any breast milk and formula)</td>
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### Outcome of all admitted neonates

<table>
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<tr>
<th>Description</th>
<th>Nr</th>
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<tr>
<td>Discharged to mother</td>
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<tr>
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<td>Other</td>
<td></td>
</tr>
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</table>
Data capture

- Complete individual form for each COVID-19 positive pregnant woman at delivery
- Complete individual form for each COVID-19 positive exposed infant at discharge
- Complete weekly form from birth register
- Complete weekly neonatal form from discharge register
- Enter data on Google drive database
Data entry and access

• Google drive on Excel form
• Access controlled to site of entry for their data only
• Access given to district managers etc. for their areas
Reports

• Weekly count of COVID-19+ pregnant women who had delivered
• Outcome of those pregnancies

• South Africa
  - Weekly COVID-19 numbers and outcome
  - Monthly report of pregnancies and impact of COVID-19 on rest of pregnancies
  - Comparison of same month one year previously ("collateral damage")
3.3. District Management and district managers

Note: The below actions provide information for the implementation of the strategy at district level.

Messages should be consistent across all levels
For resources and guidelines consult [https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-resources/](https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-resources/) for health professionals and [https://sacoronavirus.co.za/](https://sacoronavirus.co.za/) for the public

<table>
<thead>
<tr>
<th>TASK / ACTION</th>
<th>PROGRESS</th>
<th>HYPERLINK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Explain to the district and the health system</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) the danger of COVID-19 (also for pregnant and postnatal women and their babies) and strategies to mitigate risk</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) the role of various levels of care of the health system in managing COVID-19, from PHC to special COVID-19 hospitals and quarantine sites</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) The need for essential preventative health care services to continue even during lock-down (including contraception and termination of pregnancy services, antenatal, intrapartum and postnatal care, and oncology services)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Receive guidance and provide inputs:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) Receive policy guidance from PDOH on the need for transport to various sites and how to explain this to the health services and the community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) Give inputs to PDOH for the development of a transport plan if requested</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
3.13. Doctors, midwives and emergency medical services (EMS) personnel

Messages should be consistent across all levels
For resources and guidelines consult [https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-resources/](https://www.nicd.ac.za/diseases-a-z-index/covid-19/covid-19-resources/) for health professionals and [https://sacoronavirus.co.za/](https://sacoronavirus.co.za/) for the public

<table>
<thead>
<tr>
<th>TASK / ACTION</th>
<th>PROGRESS</th>
<th>HYPERLINK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Familiarise themselves with the</td>
<td></td>
<td></td>
</tr>
<tr>
<td>a) health messages given to patients and community</td>
<td></td>
<td></td>
</tr>
<tr>
<td>b) precautions against infection (PPE and dressing and undressing with PPE)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>c) disposal of PPE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>d) protocols for managing pregnant and postnatal women and their babies antenatally, intrapartum, post-natally</td>
<td></td>
<td></td>
</tr>
<tr>
<td>e) referral criteria and routes</td>
<td>[A2]</td>
<td></td>
</tr>
<tr>
<td>2. Complete the relevant monitoring forms as required.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Refer to the tasks and actions for the health system level or health facility level to which they are designated</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Reflections ...

• See what you can piggyback on
• Get data on most important things first
  - Number of cases (and where)
    • Identifies hotspots
  - Outcome data
    • Indicates resources required
    • Management problems, etc.
• Who is going to enter and analyse the data?
• What security systems are built in?
Thank you