Routine newborn assessment

Clinical Guideline Presentation v.2.0

45 minutes
Towards your CPD Hours
References:
The Queensland Clinical Guideline *Routine newborn assessment* is the primary reference for this package.

Recommended citation:

Disclaimer:
This presentation is an implementation tool and should be used in conjunction with the published guideline. This information does not supersede or replace the guideline. Consult the guideline for further information and references.

Feedback and contact details:

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Learning outcomes

• At the end of this presentation the participant will be able to:
  ◦ Describe timing and preparation for newborn assessment
  ◦ Outline the assessment process
  ◦ List discharge planning considerations
  ◦ Locate relevant parent information
Clinician responsibilities

• Be appropriately trained in assessment skills
• Practise and maintain skills
• Recognise variances from normality
• Seek guidance and refer as required
• Document findings and discuss findings with parents
Initial brief examination after birth

- Within the first few minutes of life
- Perform after resuscitation
- Confirm gender
- Identify obvious anomalies

Flexible timing to maintain ‘skin to skin’ contact with mother
Full and detailed assessment

- Within 48 hours after birth
- Prior to discharge
- Stage as clinically indicated if premature or unwell
- Performance of pulse oximetry is optional as determined by local service
Pulse Oximetry

• A non-invasive technology to detect hypoxemia, a clinical sign of critical congenital heart disease (CCHD)
• Can also identify non-cardiac problems (e.g. sepsis and respiratory problems)
• Incorporation into the routine newborn assessment is becoming more common nationally and internationally, although not yet widespread in Queensland
## Pulse oximetry results

<table>
<thead>
<tr>
<th>Result</th>
<th>SpO₂</th>
<th>Action</th>
</tr>
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</table>
| **Negative Screen**  | ≥ 95%    | • Normal  
• Discharge is appropriate                                |
| **Repeat Screen**    | 90 - 94% | • Repeat screening  
• Consider investigations                                    |
| **Positive Screen**  | < 90%    | • Medical review  
• Investigate  
• Discharge not appropriate                                  |
Preparation – Review history

• Review maternal history (medical, social, family)
• Events of current pregnancy
• Labour and birth details
• Gestational age
• Newborn observations since birth
• Newborn feeding since birth
Preparation

• Explain purpose, procedure, limitations
• Seek consent from and involve parents
• Adequate warmth and light
• Correctly identify newborn
• Standard infection control precautions
Equipment

• Overhead warmer if required
• Stethoscope
• Ophthalmoscope
• Pencil torch / tongue depressor
• Tape measure, scales and growth charts
• Documentation
  ◦ Infant Personal Health Record
  ◦ Hospital medical record
Physical examination

• Use a systematic approach
  ◦ Head to Toe
  ◦ Front to Back
• Undress newborn down to nappy
• If uncertain about findings or need for follow-up – seek expert advice
✅ Urgent follow-up

- Immediate and/or life threatening health concern
- Same day (as soon as possible)
  - Emergency Dept, GP, neonatologist
- Document all actions and arrangements
- Advise parents/family and explain importance of immediate review
General appearance

- Skin colour, warmth, perfusion
- State of alertness and responsiveness
- Activity and range of spontaneous movement
- Posture
- Muscle tone
Growth and feeding

• Document on the appropriate centile charts:
  ◦ Weight
  ◦ Length
  ◦ Head circumference

Urgent follow-up

☑ Bilious vomiting
Skin

- Skin colour
- Trauma
- Congenital or subcutaneous skin lesions
- Oedema

Urgent follow-up

- Jaundice at less than 24 hours of age
- Central cyanosis
Head

- Shape and symmetry
- Scalp
- Anterior and posterior fontanelle
- Sutures
- Scalp lacerations/lesions

**Urgent follow-up**
- Enlarged bulging or sunken fontanelles
- Subgaleal haemorrhage
Face

• Size and symmetry of structure, features
  ◦ Eyes – red light reflex
  ◦ Nose – nares and septum
  ◦ Mouth – lips, palate, tongue, gums
  ◦ Ears – position, patency of external auditory canal
  ◦ Jaw size

Urgent follow-up
☑ Non patent nares especially bilateral
Neck, Shoulders, Arms

- Structure and symmetry
- Range of movement
- Masses
- Length
- Proportions
- Number of digits
Chest and respiratory

• Chest:
  ◦ Size, shape, symmetry,
  ◦ Breast tissue, number and position of nipples

• Respiratory:
  ◦ Chest movement and effort with respiration
  ◦ Respiratory rate, breath sounds

Urgent follow-up

☑ Signs of respiratory distress
☑ Apnoeic episodes
Cardio-respiratory

- Pulses – brachial and femoral
- Skin colour/perfusion
- Heart rate, rhythm, sounds
- Pulse oximetry – performance optional

Urgent follow-up

☑️ Weak or absent pulses
☑️ Positive pulse oximetry
Abdomen

• Shape and symmetry
• Palpate for enlargement of liver, spleen, kidneys, bladder
• Bowel sounds
• Tenderness
• Umbilicus - number of arteries

Urgent follow-up
✓ Organomegaly
Genitalia

• Male genitalia
  ◦ Penis, testes, scrotum - confirm testes bilateral, observe for scrotal discolouration
  ◦ Other masses such as hydrocele

• Female genitalia
  ◦ Clitoris, Labia, Hymen
  ◦ Discuss pseudomenses

Urgent follow-up
☑ Ambiguous genitalia
☑ Testicular torsion
Urine and Stool

• Has the newborn passed meconium?
• Has the newborn passed urine?
• Anal position
• Anal patency

Urgent follow-up
✓ No meconium passed within 24 hours
✓ No urine passed within 24 hours
Hips, legs and feet

• Use Ortolani and Barlow’s manoeuvres
• A firm surface to examine hips is necessary
• Assess legs and feet for
  ◦ Length
  ◦ Proportions
  ◦ Symmetry
• Structure and number of digits
Back

- Spinal column
- Scapulae and buttocks for symmetry
- Skin

Source: Stanford School of Medicine [accessed 2013 August 5
http://newborns.stanford.edu/PhotoGallery/]
Neurological

- Observe throughout assessment:
  - Behaviour, posture, cry
  - Muscle tone
  - Movements

- Examine reflexes
  - Moro, Suck, Grasp

Urgent follow-up
- Seizures
- Altered state of consciousness
Isolated abnormalities of no concern

- Folded-over ears
- Hyperextensibility of thumbs
- Syndactyly of second and third toes
- Single palmar crease
- Polydactyly, especially if familial
- Single umbilical artery
- Hydrocele
- Fifth finger clinodactyly
- Simple sacral dimple
- Single café-au-lait spot
- Single ash leaf macule
- Third fontanelle
- Capillary haemangioma apart from those described in table above
- Accessory nipples
Discharge planning

• Discharge criteria:
  ◦ Suck feeding
  ◦ Observations – temperature, respiratory rate
  ◦ Urine and stool passage
  ◦ Newborn assessment completed
  ◦ Vitamin K status

• Explain importance of:
  ◦ Hearing screen
  ◦ Neonatal Screen Test
Health promotion

• Discuss
  ◦ Support agencies (e.g. GP, 13Health, Child Health, Midwife, LC)
  ◦ Normal newborn care
  ◦ Warning signs of illness
  ◦ Sudden Unexpected Deaths in Infancy (SUDI)
  ◦ Immunisation schedule
  ◦ Anticipatory guidance (e.g. circumcision)
  ◦ Injury prevention
Referral and follow-up

• Advise parents of importance of follow-up assessments at 5-7 days and 6 weeks
• Arrange referral as indicated
• Document arrangements and inform family
• Provide discharge information to GP
• Document in infant health record and medical record