GUIDELINE	
Physical assessment 0 - 4 years	
Scope (Staff):	Community health staff
Scope (Area):	CACH, WACHS

This document should be read in conjunction with this DISCLAIMER

Aim

To provide information on expected physical development, common deviations, possible causes and care planning for infants and children.

Risk

Where there are delays in identifying health and developmental concerns, this negatively impacts on children developing to the best of their ability.[1] In addition, there is considerable cost to the health system, governments and the community when timely interventions are not implemented.

Background

The early identification of developmental concerns is acknowledged as a primary health care opportunity for timely intervention, enabling children to achieve positive developmental and functional health outcomes.[2, 3] Nurses are well placed to undertake comprehensive cephalo-caudal physical assessments, as one of the components of a holistic assessment for child health and wellbeing.

The development of the *Physical assessment 0 - 4 years guideline* was guided by information from the *Paediatric physical examination: an illustrated handbook*.[4] Expected physical parameters for age, common deviations from normal, possible causes for the deviations and care planning considerations are outlined in the following appendices:

- Appendix A: Neonate - Birth to four weeks
- Appendix B: Infant - One month to twelve months
- Appendix C: Children - Twelve months to four years

Nurses will respond to parental concerns and undertake relevant assessments. Discuss with parents the outcomes of assessments, including age appropriate expectations, any identified deviations and suggested interventions. Care planning may involve additional contacts and/or referrals to appropriate health care professionals.

Key Points

- Nurses will read the *Physical assessment 0 – 4 years guideline* in conjunction with relevant policies, procedures, guidelines and resources; the *Practice guide for Community Health Nurses 2017* and the *Guidelines for Protection Children 2015 (Revised May 2017).*[5]

- Physical assessments will be undertaken according to *Universal contact guidelines* and at other times, as required.
- Nurses will review previous health professional assessments if available, use appropriate tools for health and wellbeing surveillance and act on professional judgement.
- Observation of general appearance should be completed prior to a more detailed assessment. Any areas of concerns will be documented and noted for additional monitoring and/or referral to a medical practitioner.
- Where there are significant anatomical or functional deviations, nurses will refer to relevant health professionals for further assessment.

Documentation

Nurses will document relevant findings according to local processes.

Related internal policies, procedures and guidelines
The following documents can be accessed in the Community Health Manual via the HealthPoint link or the Internet link
Universal contact guidelines

Related internal resources and forms
The following resources and forms can be accessed from the HealthPoint CACH Intranet link
Hearing Surveillance Screening for Universal Contacts
How children develop
Vision Surveillance Screening for Universal Contacts

Useful external resources
Advanced Pediatric Assessment. 2011. Chiocca, EM.
Clinical Assessment and Monitoring in Children. 2008. Fergusson, D.
From Birth To Five Years Practical Developmental Examination. 2014. Ajay Sharma and Helen Cockerill.
Guidelines for Protection Children 2015 (Revised May 2017). Statewide Protection of Children Coordination Unit, Child and Adolescent Community Health, Department of Health, Perth. Department of Health. 2017.
Mary Sheridan's From Birth To Five Years Children's Developmental Progress. 2014. Ajay Sharma and Helen Cockerill.

Appendix A: Neonate - Birth to four weeks

Legend: ⇒ Referral

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
General Appearance				
• Facial expressions • Posture • Hydration and nutritional health • Activity level • Temperament • Responsiveness • Interaction with others • Proportion of body parts • Symmetry of body parts • Movement and capacity • Skin integrity N.B. To be completed prior to formal assessment	• Initial presentation of the neonate is consistent with the situation (e.g. crying due to hunger) • Neonate is healthy and developing appropriately	• Deviations from the norm may be initially identified through assessing the general appearance of the neonate • Note signs of neglect and abuse such as lacerations, burns, bruising, poor standard of hygiene, and inappropriate clothing for age/weather/social conditions[5]	• Genetics • Pregnancy complications • Birth trauma • Congenital or non-congenital conditions	Observation of general appearance should be completed prior to a more detailed assessment. Any areas of concerns will be documented and noted for additional monitoring and/or referral to a medical practitioner

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Head (continued next page)				
Visual inspection with the neonate resting supine, and head in midline, noting: • General shape • Size • Circumference • Symmetry • Alignment	• Rounded • Symmetrical Head circumference averages: • males: 31.5–45 cm • females: 32–44 cm • When in supine position, head will comfortably sit in the midline	• Elongated • Asymmetrical • Misshapen • Measurements outside of expected norm • Birth marks • Positional head preference • Persistent head tilt (lateral flexion) • Positional rotation	• Birth trauma • Instrumental delivery • Achondroplasia • Microcephaly • Hydrocephalus • Craniostenosis • Craniosynosis • Uterine placement • Intrauterine growth condition • Torticollis • Plagiocephaly	Parent education and support may include: • Postural exercises and repositioning • Handling strategies • Massage • Positioning of toys to non-favoured side • Variable positioning of head when put down to sleep
Visual inspection and palpation of: • Suture lines • Scalp • Bony structures • Fontanelles	• Anterior fontanelle should be open, soft, flat, and 2-5 cm long by 2-3 cm wide • Posterior fontanelle should be smaller, triangular and 0.5 cm by 1 cm wide • Ridges over suture lines are common	• Bulging anterior fontanelle • Sunken anterior fontanelle • Overriding sutures • Bruising • Swelling • Pitting • Premature closure	• Birth trauma • Changes in intracranial pressure • Dehydration • Genetics • Craniostenosis • Craniosynosis • Caput succedaneum	• Monitor premature closure of sutures

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
		of sutures	• Cephalohaematoma	
Neck				

Visual inspection through the following process:
• Controlled pulling up from the supine to sitting position
• Observing supported in sitting position
• Placing in the ventral suspension
• Extending the head in all directions
• Placing in prone position
Noting:
• Symmetry
• Shape
• Range of movement
• Head control
	• A short neck, which is creased with skin folds
	• The neck rotates freely as it cannot support the weight of the head
	• The head lags when pulled up from a supine to a sitting position
	• Will briefly stay erect in this position
	• In the prone position, the head can be raised slightly
	• The head will fall forward in the sitting position
	• The head will drop below or in line with the plane of the body when in ventral suspension
		Movement deviations:
		• Limited range of motion
		• Head bobbing
		• Jerking
		• Tremors
		• Stiffness
		• Resistance to movement
		• Involuntary muscle contractions or spasms
		• Flexion of lower extremities
		• Webbed neck
		Positional deviations:
		• Head held erect
		• Persistent head tilt
		• Positional head preference
			• Intrauterine growth conditions
			• Plagiocephaly
			• Torticollis
			  ○ Turner syndrome
			  ○ Noonan syndrome
				Parent education and support may include:
				• Postural exercises and repositioning
				• Handling strategies
				• Massage
				• Positioning of toys to non-favoured side
				• Variable positioning of head when put down to sleep

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Face				
Through visual inspection observe facial features and expressions, noting: • Spacing • Size • Symmetry of features • Movement symmetry	• Face is relaxed and symmetrical • Features are symmetrical during episodes of crying • Nasolabial folds are symmetrical	• Low-set ears • Low-set hairline • Epicanthal folds inconsistent with ethnic origins • Frontal bossing • Absent philtrum • Deviated septum • Cleft lip • Unilateral flattening of nasolabial fold • Micrognathia • Lumps • Lesions	• Genetic deviation • Intrauterine exposure to teratogens • Birth or other trauma • Neurological deficit • Milia • Preauricular sinus or tag • Stork marks • Birthmarks • Foetal alcohol spectrum disorder (FASD) • Down syndrome • Congenital syphilis • Congenital hypothyroidism	⇒ Encourage medical practitioner or lactation consultant review for any concerns, in particular feeding difficulties
Philtrum (continued next page)				
Visual inspection, noting: • Definition • Depression • Length	• Is visible • Can be pronounced • Can form a teardrop like shape • Can be straight lines	• Short • Smooth • Limited definition to no depression	• FASD • Foetal valproate syndrome • Pallister Killain syndrome • Cornelia de Lange	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	from septum to tubercule		syndrome • Wolf-Hirschhorn syndrome	
Eyes				
Visual inspection, noting: • Shape • Size • Symmetry • Spacing • Position	• Eyes may move independently, appearing to intermittently squint • The upper eyelids appear symmetrical • When closed, eyelids completely cover cornea and sclera	• Discharge • Reddened sclera • Eye watering, with or without infection • Bruising • Inflammation • Oedema • Subconjunctival haemorrhages • Epicanthal folds (eyes), inconsistent with ethnic origin • Ptosis	• Acquired head injury • Trauma • Birth trauma • Infection • Immature tear ducts • Allergy • Stickler syndrome • Cri-du-chat syndrome • Prader-Willi syndrome • Myotonic	Parent education and support for eye watering may include: • Massage techniques • Regular review at universal contacts • Discussion of signs of infection ⇒ Urgent referral to ophthalmologist through medical practitioner for opacities in the pupil or corneal abnormalities
Gaze				
Assess gaze behavior through facial expressions, movements and attempts to attract attention from others	• Neonate attempts to engage with human faces, particularly caregivers, through mutual gaze	• No mutual gaze attempts made	• Trauma • Interrupted bonding and attachment • Biochemical factors	Parental education and support to promote bonding and attachment

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Vision Behaviours				
Assess vision behaviours via examining pupil and iris by shining a light into the eyes, noting: • Size • Equality of size • Colour • Clarity • Shape • Movement • Pupillary reaction • Blinking • Following the light to midline	• Pupils should be round, clear, and equal • Pupils react equally to light, movement, and patterns • Eyes turn towards diffused light sources • Eyes are turned away from bright light or neonate blinks in response to a flash of light • Increased alertness	• Leukokoria • Coloboma • Fixed pupils • Cloudiness and opacity of cornea • Slow lateral movements • Nystagmus • Sundowning • Squint (intermittent or constant) • Differing pupil size • Refusal to open eyes after exposure to the light	• Cataract • Scleral icterus • Esotropia • Exotropia • Hypertropia • Hypotropia	⇒ Prompt referral to medical practitioner, particularly for any: • Constant visual impairment • Opacity • Constant squint
Ears (continued next page)				
Assess external ear including mastoid process, auricles, tragi and external auditory meatus, noting: • Shape	• The superior portion of the auricle is equal in height to the outer canthus of the eye Pinna is: • Soft	• Discharge - pus/debris • Swelling • Inflammation • Foreign object	• Infection Sebaceous cyst • Down syndrome • Goldenhar syndrome • Wolf-Hirschhorn syndrome	Parent education and support may include ear care in relation to discharge and foreign objects

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Size • Symmetry • Patency • Position • Firmness of cartilage	• Pliable • Recoils readily when folded and released	• Excessive wax • Dysmorphic deviations: • Low-set-ears • Skin tags • Accessory tragi • Malformed auricles • Auricular sinus • Preauricular sinus	• Di George syndrome	
Assess neonatal hearing through observation of response to sounds N.B. Determine if Newborn Hearing Screen has been completed.	• Interested in sounds • Responds to calm and familiar voices • Eyes will 'corner' reflexively to the side of the noise • May startle at a loud noise beyond visual field	• Absence of startle reflex • Delay in response to voice stimulation • Signs of distress from exposure to loud noises	• Hearing impairment • Intrauterine conditions affecting audio processes • Trauma • Genetic deviations	Parent education and support for age appropriate auditory stimulation ⇒ Refer to hospital of birth or aligned medical professional for Newborn Hearing Screen follow up
Nose (continued next page)				
Visual and auditory inspection, noting: • Symmetry • Obvious deviations at	• Small and narrow • Cartilage is soft and malleable • Septum is relatively	• Nasal secretions • Swelling • Frequent detachment, or slow	• Birth processes • Facial trauma • Choanal atresia	Parent education and support may include: • Feeding strategies • Discussion around

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
bridge, columella and tip Skin integrity nares: • Shape • Size Patency septum: • Alignment • Skin integrity	straight and in the midline of the nose • Obligatory nose breathers • Nasal patency is demonstrated if neonate breathes easily with mouth closed • Removes obstructions by sneezing	or difficult feeding • Persistent snuffling • Cyanosis when feeding • Upturned nose • Flattening of bridge	• Polyps • Deviated septum • Intrauterine exposure to teratogens • FASD • Di George syndrome • Achondroplasia • Stickler syndrome	use of saline drops to clear nasal passages where appropriate ⇒ Consider referral to lactation consultant for unresolved feeding difficulties
Mouth (continued next page)				
Visual inspection, and palpation where indicated, noting: • General appearance • Gums • Integrity of hard and soft palates • Mucosa • Pharynx Lips: • Colour • Symmetry	• Healthy gums are firm, moist, and pink • The tongue surface appears rough but moist and pink to pale pink • The lingual frenulum allows the tongue to protrude over gums to meet lips and to the roof of the palate • Upper lip can be lifted to touch the nose • Tongue fills mouth to support effective	Cleft deviations: • Cleft palate • Narrow cleft • Cleft lip • Micrognathia • Sub mucosal cleft Lip deviations: • Thin lip • Loss of control of oral secretions Gum deviations: • Swelling	• Nerve damage • Infection, including Candidiasis • Epstein pearls • Nasal allergy • Dehydration • Fever • FASD • Wolf-Hirschorn syndrome • Beckwith- Wiedermann syndrome	Parent education and support may include: • Management of precocious teeth • Feeding patterns and strategies where deviations exist ⇒ Referral to lactation consultant regarding unresolved feeding concerns

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Integrity • Moisture Tongue: • Colour • Size • Movement Assess feeding comfort for mother and infant	feeding • Lips are pink at rest and occasionally blister or callus from vigorous sucking • Palate should appear dome shaped with transverse firm ridges • Palate is not deeply indented and is whiter than the buccal mucosa and soft palate	• Lesions • Reddening • Friable • Hematomas Tongue and teeth deviations: • Coated • Plaque • Geographic tongue • Macroglossia • Precocious teeth • Short or inflexible maxillary labial or lingual frenulum impacting on function	• Di George syndrome • Pierre Robin syndrome	
Vocal Behaviour (continued next page)				
Auditory observation, and parent report, noting the following: • Alertness • Cry	Cry is normally: • Strong • Lusty • Medium pitch • Intermittent, in response to discomfort	• High pitch • Continuous • Hoarseness • Excessive crying • Audible stridor	• Dehydration • Pain • Raised intracranial pressure • Gastro oesophageal reflux	Discuss provision of comfort measures with parents

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	or need		• Neonate of a drug or other substance dependent mother • Laryngeal trauma • Neurological condition • Laryngomalacia	
Chest and Respiratory Function (continued next page)				
Visual and auditory assessment, with neonate supine, noting: • Shape • Movement • Respiration functioning • Breathing sounds	• The chest is symmetrical and barrel-shaped • Circumference is very close in size to head circumference at birth • The xiphoid is often prominent • The regular breath rate is 35-55 breaths per minute • Chest rises and falls symmetrically	Respiratory deviations: • Stridor • Grunting • Crackles • Rales • Wheezing • Rhonchi • Cough • Snoring • Apnoea • Nasal flaring • Head bobbing • Paradoxical breathing • Tachypnoea	• Infection • Laryngomalacia • Trauma • Birth process • Pneumothorax • Cystic fibrosis • Intrauterine • Hormonal influences • Genetics • Acute bronchiolitis • Acute epiglottitis • Foreign body aspiration • Gastroesophageal reflux	Parent education and support may include: • Range of expected normal mucosa secretions • Normal breathing • Sounds • Expectations and management of engorged breast tissue ⇒ Seek urgent referral to medical practitioner for signs of respiratory distress or abnormal breathing sounds

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
		• Intercostal retractions • Use of accessory muscles Chest deviations: • Engorged breast tissue • Nipple secretions • Supernumerary nipples		
Musculoskeletal – General (continued next page)				
Placing neonate in supine, prone and supported sitting position, observe for overall: • Symmetry • Flexibility • Resting position • Muscle tone • Motor activity • Skin folds Observe range of movement, noting:	• Muscles are in a flexed position, normotonic and symmetrical • In the supine position, arms and legs are in a semi flexed position with the hips slightly abducted	• Poor, increased or asymmetrical tone • Asymmetry • Flaccidity • Abnormal posture or positioning of extremities • Reluctance to use or move extremities • Evidence of pain on movement	• Trauma • Genetic deviation • Hypotonia • Hypertonia • Infection • Intrauterine exposure to teratogens	⇒ Urgent referral to a medical practitioner where muscle tone deviation is accompanied by other signs of illness

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Flexion/extension • Adduction/abduction • Internal/external rotation Palpation and passive movement may be used where required to reinforce visual findings				
Reflexes				
Assess alert neonate for presence of primitive reflexes, including: • Asymmetrical tonic neck • Moro reflex • Gallant's reflex • Placing reflex • Stepping reflex • Palmar grasp • Plantar grasp • Rooting response • Sucking response	• Primitive reflexes are symmetrical and indicative of central nervous system function • Primitive reflexes diminish from 3-4 months of age with cerebral cortex maturity, and disappear by 4-6 months	• Absence • Asymmetrical • Poor or delayed expression	• Genetic deviation • Trauma • Brachial injury • Prematurity • Fragile X syndrome • Stickler syndrome • Cerebral palsy • Down syndrome • Hypotonia	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Back and Spine				
Assess general appearance of the back, noting: • Symmetry • Flexibility • Skin	• The spine is straight, and in midline	• Sacral dimple and/or tufts of hair • Curvature • Asymmetry • Masses • Swelling • Lesions	• Spina bifida • Intrauterine growth conditions • Abnormalities in spinous processes • Genetic deviation	⇒ Ensure medical practitioner review and assessment of pilonidal dimple
Upper Limbs (continued next page)				
Palpate the clavicles, and observe range of arm movement including: • Elbow • Wrists • Shoulders • Hands Assess through observation of: • Flexion/extension • Adduction/abduction • Internal/external rotation	• In the prone position, the arms are close to the chest and the elbows are fully flexed • In the supine position, the arms are kept semi-flexed, whilst the posture is symmetrical • Hands are relaxed and commonly held in a loose fist with/out thumb flex over finger • Hands open intermittently • Full range of	• Swelling • Asymmetry • Flaccidity • Asymmetrical posture, positioning, tone or movement Extra digits • Syndactyl • Digital clubbing • Webbing • Persistent thumbs in fist	• Trauma • Fractures • Dislocations • Erythema • Brachial palsy • Cerebral palsy • Intrauterine exposure to teratogens • Amniotic Banding Syndrome • Edwards syndrome • Neonatal Marfan syndrome	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Strength • Flexibility	movement when extending the arms • Movements are equal in flexibility and strength		• Rubinstein-Taybi syndrome • Achondroplasia	
Hips				
Assess the hips in the supine position.	• Skin folds are symmetrical • Hips are stable and relaxed with thighs easily adducted and abducted	• Uneven legs • Asymmetrical skin folds • Fine clicking sounds (normal) • Clunking sounds	• Dislocation • Intrauterine growth conditions • Genetics • Trauma	⇒ Refer any hip concerns to medical practitioner, or directly to PMH Orthopaedic Clinic if the infant is less than 4 months of age
Lower Limbs (continued next page)				
With neonate in supine position, assess range of leg movement, including the knee and ankle through observation of: • Flexion/extension • Adduction/abduction • Internal/external rotation Assess symmetry of:	• Legs are equal in length, with knee and hip joints extended and aligned • Knees will naturally lie apart with soles of the feet turned slightly inward • Full range of movement in all directions • Legs are equal in	• Asymmetrical skin folds • Asymmetrical movement or tone • Unequal length of legs	• Dislocation • Fractures • Trauma • Hip dysplasia • Genetic deviation • Intrauterine growth conditions • Talipes • Edwards syndrome	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Length • Strength • Flexibility • Skin folds	movement, strength and flexibility		• Rubinstein-Taybi syndrome • Achondroplasia	
Foot and heel: • Observe the position and alignment of forefoot and heel • Assess the range of motion in the ankle and plantar arch	• Supple foot • Normal angle to tibia • The plantar crease is visible	• Extra digits • Absent plantar crease • Webbing • Rigidity or limited range of movement • Deviation of position of the forefoot	• Intrauterine growth conditions • Trauma • Talipes • Hip dysplasia • Lower leg deviation • Genetics	Parent education and support may include: • Use of passive stretching exercises for minor positional deviations where feet can easily be returned to midline • Monitoring and review for resolution ⇒ Referral to medical practitioner or allied health professional where an inflexible deviation exists
Abdomen (continued next page)				
Visual inspection, and palpation where indicated, noting: • Size • Shape	• Protuberant and round • Symmetrical • Moves with respiration • Soft	• Tension • Distension • Sunken or scaphoid abdominal shape	• Malrotation of the bowel • Obstruction • Diaphragmatic hernia • Paralytic ileus	⇒ Urgent referral to medical practitioner for: • Sustained vomiting • Projectile vomiting • Reduced bowel

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Contours • Movement • Symmetry • Sounds	• Bowel sounds occur every 10 to 20 seconds	• Asymmetry • Visible peristalsis • Hyperactive or absent bowel sounds • Vomiting	• Intussusception • Pyloric stenosis (usually between 2-6 weeks of age • Hirschsprung's disease	sounds
Umbilicus				
Visual inspection, noting: • Separation of cord • Healing process	The umbilical cord is: • Odourless • Dry • Separates in 7-10 days • Umbilicus heals within 2 to 3 weeks from birth and should be dry and non- inflamed	• Delay in separation • Cord moisture, discharge or inflammation • Discharge from umbilicus, including faeces • Swelling, persistent or intermittent occurring where abdominal pressure is increased (crying and defecation) • Lesions • Rashes • Masses	• Infection Cyst • Umbilical polyp • Granuloma • Neonatal Omphalitis • Diastasis rectus • Urachal remnant • Omphalomesenteric duct remnant • Umbilical hernia • Environmental factors	Parental education and support may include: • Hygiene and infection control in relation to cord separation and healing • Expectations for umbilical herniation • Referral to medical practitioner for: • Umbilical granuloma • Any purulent umbilical discharge ⇒ Urgent referral to medical practitioner if omphalomesenteric duct remnant

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Buttocks and Rectal Area				
Visual inspection and discussion with parent, noting: • Anal patency • Stool consistency, colour and frequency • Skin integrity • Skin features	• Anus is located behind the vagina in females and the scrotum in males • Sphincter muscles normally maintain constriction of the anal orifice • Patency is demonstrated by the passing of faeces Neonate's faeces are: • Human milk fed – transitioning from meconium to yellow (brown and dark green may be normal in the absence of deviations) with texture from loose, granular to curdled • Infant formula fed - pale yellow to yellow, brown, green or grey with paste to semi-formed texture	Buttock deviations: • Lesions or rashes • Sacral sinus, dimples or tufts of hair • Discolouration Anus deviations: • Inflammation • Bleeding • Small opening • Evidence of pain or discomfort Stool deviations: • Explosive • Absence • Reduction in bowel movements • Frequent and/or very loose bowel actions • Faecal matter in urine	• Genetic deviation • Mongolian spot or other birthmarks • Spina bifida • Allergy or atopy • Infection, of skin or gastrointestinal tract • Normal adjustment to oral intake • Constipation • Trauma • Rectal tears • Fissures • Anal stenosis • Recto-urethral fistula	Parent education and support may include: • Expected elimination patterns • Strategies for management of minor skin irritations • Strategies for managing minor alterations in bowel actions

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Urinary System				
Assess urinary output through parental report, or visual inspection where possible, noting: • Volume • Frequency • Colour	• Normal neonatal urine output is 2 ml/kg/hour • Neonates are less able to concentrate urine	• Decrease in volume and frequency • Darker colour • Weight loss • Fever	• Dehydration • Altered feeding patterns • Infection • Jaundice • Renal deviation	Parental education and support may include: • Expected fluid input and output for age • Fluid requirements
Genitourinary – Male (continued next page)				
Visual inspection and palpation of external genitalia, noting: • Urinary meatus – position and patency • Foreskin • Scrotum • Testicular descent • Relative position of scrotum to anus N.B. Do not attempt to forcibly retract the foreskin	Urinary orifice is: • Clear • Uncovered by the prepuce • On the tip of the glans penis Foreskin: • Is usually lightly attached for the first 2-3 months • Does not retract easily until 2- 3 years old • Spontaneous testicular descent occurs usually	• Ambiguous genitals • Curvature of penis • Microphallus • Non-central position of urethral meatus, including hypospadias and epispadias • Phimosis • Paraphimosis • Chordee • Balanitis • Balanoposthitis	• Genetics • Intrauterine exposure to teratogens • Intrauterine growth conditions • Hydrocele	Parental support and education may include: • Strategies for routine hygiene and care

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	prior to birth or during the first 6 months of life	• Retractable testis • Testis absent or palpable outside scrotal sac • Masses • Swelling		
Genitourinary – Female (continued next page)				
Visual inspection of external genitalia, noting: • Labia • Presence and size of clitoris • Vaginal orifice • Location and patency of urethral orifice • Relative position of posterior fourchette and anus	• Labia majora is enlarged and puffy • Clitoris is often disproportionately enlarged • Labia minora is thickened, enlarged and dull pink • The clitoris and labia minora may be more prominent in preterm infants • Hymen is a fimbriated thickened rim of tissue surrounding the vaginal orifice, which is pink-white with a range of shapes • Creamy white, mucoid/	• Discharge • Swelling • Masses • Lesions • Rashes • Oedema	• Genetic deviation • Maternal hormone influence • Pseudo menstruation • Infection, commonly bacterial or fungal • Intrauterine exposure to teratogens • Skin tags • Polyps • Hernia • Ambiguous genitals • Imperforate hymen • Hydrocolpos	Parent support and education may include: • Expected range of normal • Strategies for routine hygiene and care • Strategies for management of minor skin irritations

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	blood - tinged vaginal discharge is normal in first 10 days			
Inguinal Area				
Visual inspection, and palpation of inguinal area, noting: • Shape • Contours • Symmetry • Femoral pulses	• Equal, strong femoral pulses can be felt midpoint between the iliac crest and symphysis pubis • A horizontal chain of inguinal nodes run along the inferior groin	• Poor or unequal femoral pulses • Swelling • Masses – either firm and reduced with pressure, or hard and immobile • Enlarged nodes	• Circulatory deviation, including coarctation of the aorta • Inguinal herniation	⇒ Prompt medical review is indicated for any inguinal swelling that does not change size when the neonate cries

Appendix B: Infant - One month to twelve months

Legend: ⇒ Referral

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
General Appearance				
• Facial expressions • Posture • Hydration • Nutritional health • Activity level • Temperament • Responsiveness • Interaction with others • Proportion of body parts • Symmetry of body parts • Movement • Skin integrity N.B. To be completed prior to formal assessment	• Initial presentation of the infant is consistent with the situation (e.g. crying due to hunger) • Infant is healthy and appropriately developed	• Deviations from the norm may be initially identified through assessing the general appearance of the infant • Signs of neglect and abuse such as lacerations, burns, bruising, poor standard of hygiene, and inappropriate clothing for age/weather/social conditions[5]	• A range of congenital or non-congenital conditions • Genetic conditions • Environmental conditions • Birth trauma • Intrauterine conditions	Observation of general appearance should be completed prior to a more detailed assessment. Any areas of concerns will be documented and noted for additional monitoring and/or referral to a medical practitioner

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Head (continued next page)				
Visual inspection, noting: • General shape • Size • Circumference • Symmetry • Alignment Head alignment is evaluated when infant is in supine and resting position after 3 to 4 months of age	• Rounded • Symmetrical Head circumference averages: • males: 35–49.5 cm • females: 35-47.5 cm By 2 months, head is held in midline By 4 months head control is achieved, and when held sitting, head is firmly erect	• Elongated • Asymmetrical • Misshapen • Circumference outside expected trajectory • Positional head preference • Positional rotation	• Trauma • Plagiocephaly • Torticollis • Intrauterine growth conditions • Microcephaly • Hydrocephalus • Craniostenosis • Craniosynosis • Achondroplasia • Vision defect • Hearing defect • Hypotonia	Parental education and support may include: • Postural exercises • Handling strategies • Massage • Positioning of toys to non-favoured side • Variable positioning of head in particular for sleep ⇒ Refer to physiotherapist for assessment of any positional or symmetry deviations that do not resolve
Visual inspection and palpation of: • Suture lines • Scalp	• Suture lines can be overlapping or protuberant • Suture lines may be	• Bulging or sunken anterior fontanelle • Overriding sutures • Caput succedaneum	• Raised intracranial pressure • Dehydration • Genetics	⇒ Ensure medical practitioner review is in place for suture concerns, including palpable suture lines

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Bony structures • Fontanelles Inspect and palpate anterior fontanelle, noting: • Size • Tension • Pulsation N.B. Nutritional assessment may provide relevant additional information where there are dehydration concerns	palpable until 6 months of age • Anterior fontanelle is flat with slight pulsation, and tension or bulging when infant cries, flattening when infant is calm • Anterior fontanelle begins to reduce in size with full closure by 18 months • Posterior fontanelle closes by 2 months of age	• Cephalhematoma • Bruising • Swelling • Pitting • Lesions • Closure of sutures before 6 months • Palpable suture lines after 6 months • Separation of sagittal sutures	• Craniostenosis • Craniosynosis • Birthmarks • Down syndrome	after 6 months of age ⇒ Urgent referral to medical practitioner where a sunken fontanelle is accompanied by other signs of dehydration, or illness such as fever, rashes, or gastrointestinal symptoms
Neck (continued next page)				
Visual inspection, noting the following: • Symmetry • Shape • Range of movement • Musculature Head control: • For infants under 3 months head is	• Neck is shortened, and musculature is gradually developed • Until 3-4 months, head lag is normal when pulled to sitting position • When in ventral suspension, the head is held well about the line of the	Movement deviation: • Persistent head lag after 3-6 months • Limited range of motion • Head bobbing • Jerking • Tremors • Stiffness	• Intrauterine growth conditions • Hypotonia • Vision defect • Hearing defect • Plagiocephaly • Torticollis • Pain	Parent education and support may include: • Postural exercises and positioning • Handling strategies • Massage • Positioning of

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
moved passively whilst infant is in supine position • For infants over 3 months observe the developing ability to follow light or an object	body	• Resistance to movement • Involuntary muscle contractions or spasms • Flexion of lower extremities • Webbed neck Positional deviations: • Head held erect • Persistent head tilt • Positional head preference	• Developmental delay • Meningismus or meningitis • Turner syndrome • Noonan syndrome	toys to non-favoured side • Variable positioning of head, particularly for sleep or for regular holding positions
Face (continued next page)				
Through visual inspection observe facial features and expressions, noting: • Symmetry • Spacing and size • Movement • Emotional expression	• Face is relaxed and symmetrical • Age appropriate development of a range of facial expressions and movements which are spontaneous and responsive to situation • Facial expressions and movement are symmetrical	• Disproportionate features • Bossing or prominence of forehead • Epicanthal folds inconsistent with ethnic origins • Micrognathia • Lesions • Lumps, particularly on or around ears • Emotional expression	• Genetic deviations • Intrauterine conditions including exposure to teratogens • Trauma • Milia • Birthmarks • Stork marks • Neurological condition • Fetal Alcohol Spectrum Disorder (FASD)	Parent education and support may include: • Feeding support where micrognathia exists • Features and management of birthmarks ⇒ Refer to medical practitioner for facial birthmarks, particularly around

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
		inconsistent with expectations for age	• Russell-Silver syndrome	lips, eyes, nose or scalp
Philtrum				
Visual inspection, noting: • Definition • Depression • Length	• Philtrum is visible and can be pronounced • Tear drop shaped • Can be in straight lines from septum to tubercule	• Short • Smooth • Limited definition through to no depression	• FASD • Foetal valproate syndrome • Pallister-Killian syndrome • Cornelia de Lange syndrome • Wolf-Hirschhorn syndrome • Amsterdam dwarfism	
Eyes (continued next page)				
Visual inspection, noting: • Shape • Size • Symmetry • Spacing • Position Examine pupil and iris by shining a light into the eyes, noting:	• Eyes are symmetrical, horizontal and in line with top of pinna • The upper eyelids are symmetrical • When closed, eyelid completely covers cornea and sclera • Pupils are round,	• Discharge, watery or purulent • Reddened sclera • Bruising or bleeding • Oedema • Epicanthal folds, inconsistent with ethnic origin • Squint	• Acquired head injury • Trauma • Infection • Subconjunctival haemorrhage • Immature blocked tear ducts • Allergy • Intrauterine conditions	Parent education may include: • Eye toilet and hygiene • Techniques for blocked tear ducts including massage Review eye watering regularly at universal contacts (may take

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Size • Equality of size • Colour • Clarity • Shape • Pupillary constriction • Refusal to open eyes after exposure to light	clear, and equal • Pupils react equally to light, movement, and patterns • Eye colour is established by around 6 months • Sclera visible above and below the cornea	• Ptosis • Leukokoria • Coloboma • Fixed pupils • Cloudiness and opacity of cornea • Nystagmus • Sundowning • Sensitivity to light	• Environmental conditions • Retinoblastoma (commonly linked with Leukokoria) • Cataract • Scleral icterus • Photophobia • Congenital glaucoma • Stickler syndrome • Dacryocystitis • Cri-du-chat syndrome • Sundowning • Prader-Willi syndrome	up to 12 months to resolve)
Gaze (continued next page)				
Assess gaze behaviour through observation of facial expressions, movements and attempts to attract attention from others	• Will move head to deliberately gaze attentively around • Watches movement of people, animals or motor vehicles • Recognises and enjoys the sight of familiar people	• No mutual gaze attempts made • Infant does not show an interest in their surroundings	• Trauma • Interrupted bonding and attachment • Biochemical factors	Parent education and support may include strategies to promote bonding and attachment

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	approaching from a distance			
Vision Behaviours				
Assess vision behaviours, noting: • Eye movements • Blinking • Increased alertness and attention to surroundings Assess also through presentation of an object or light source for infant to fixate and follow.	• Eyes may move in unison until 3months of age • Coordination of extra-ocular muscles should occur by 3 months • Infants can distinguish colour from 3 to 5 months of age • Will follow an object at 15-30 cm distance through an arc of 30 degrees from midline at 6-8 weeks, increasing to180 degrees by 12 months of age	• Slow lateral movements • Squint - constant • Squint - intermittent (deviation from normal after 3 months of age)	• Esotropia • Exotropia • Hypertropia • Hypotropia • Trauma • Refractive error • Strabismus • Haemorrhage • Hyphema	⇒ Prompt referral to medical practitioner for constant visual impairment or evident squint over 3 months of age ⇒ Urgent referral to ophthalmologist through medical practitioner for opacities in the pupil or corneal abnormalities
Ears (continued next page)				
Assess external ear for: • Shape • Size	• Pinna is soft, pliable, and recoils readily when folded and released	• Pus/debris • Sebaceous cyst • Inflammation	• Infection • Foreign objects • Myringitis	Parental education and support for ear care in particular to:

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Symmetry • Patency • Position • Auricles • Colour • Firmness of ear cartilage • Obstruction	• The superior portion of the auricle should be equal in height to the outer canthus of the eye • Auricles are vertical with no more than a 10-degree tilt • Auricles are similar to facial skin colour • Outer ear canal is covered with fine hair • Cerumen is a normal protective secretion, ranging from grey, dry and flaky to wet, honey to dark brown colour and texture • Tympanic membrane is pearl-grey, sometimes pinkish or yellow tinged, translucent, intact, and in neutral position	• Excessive wax formation • Evidence of fluid in middle ear • Tympanic membrane deviations Dysmorphic deviations: • Low-set ears • Skin tags • Accessory tragi • Malformed auricles • Auricular sinus • Preauricular sinus	• Down syndrome • Goldenhar syndrome • Wolf-Hischhorn syndrome • Di George syndrome	• Discharge • Foreign objects • Excessive wax ⇒ Refer to medical practitioner for any suspected infection
Assess infant hearing as a component of ear health assessment, through discussion with parent,	• Attentive to everyday sounds, in particular will turn eyes and/or	• Startle reflex persistent after 3 months of age • Delay in response to	• Intrauterine conditions affecting audiometric processes	Parent education and support may include strategies to promote appropriate

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
and observation of the following: • Vocalisation • Response to auditory stimuli	head towards voices • Develops recognition and response to own name • Vocalisations are appropriate for age • Age-appropriate response to sounds	voice stimulation • Language delay • Decrease in age-appropriate response to range of sounds	• Trauma • Genetic deviation • Infection • Environmental conditions	auditory stimulation
Nose				
Visual and auditory inspection, noting in relation to nasal bridge, nares, columella and septum: • Symmetry • Shape • Size • Integrity • Patency of nares • Alignment	• Nose is flattened and malleable • Prone to increased airway resistance because of small passages • Infant removes obstructions by sneezing • Septum is relatively straight and in the midline of the nose • Infant nose breathes during feeding	• Mucous and other nasal secretions • Epistaxis • Narrowing of the nares • Infant frequently detaching during feeding • Nasal flaring • Swelling • Lesions • Upturned nose • Discolouration • Deviated septum	• Facial trauma • Intrauterine exposure to teratogens • Infection • Polyps • Inflammation • Environmental factors • Choanal atresia • FASD • Di George syndrome • Achondroplasia • Stickler syndrome	Parent education and support may include: • Strategies to clear nasal passages where patency is interfering with feeding • Management of feeding difficulties associated with nasal deviations

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Mouth (continued next page)				
Visually inspect: • Gums • Hard and soft palates • Mucosa • Lips • Tongue • Teeth Note the following: • Tooth eruption • Odour Lips and mucosa: • Colour • Symmetry • Integrity • Moisture Tongue: • Colour • Size • Movement • Symmetry	• Gums are firm, moist and pink • The tongue surface appears rough, but moist, and pink to pale pink • The lingual frenulum allows the tongue to protrude over gums to meet lips and to reach the roof of the palate • Tongue fills mouth to support effective feeding • Palate appears dome shaped with transverse firm ridges • Palate is not deeply indented and are whiter than soft palate and buccal mucosa • Deciduous teeth erupt from 6 – 24	Cleft deviations: • Cleft palate • Narrow cleft • Sub mucosal cleft Lip deviations: • Cleft lip • Thin lip • Swelling • Dryness • Lesions • Loss in control of oral secretions and drooling Gum deviations: • Swelling • Lesions • Reddening • Friable • Hematomas Tongue and teeth deviations: • Coated	• Neurological deficit • Infection • Genetic deviations • Intrauterine conditions • Environmental factors • Dehydration • Fever • Hematoma • Trauma • Tooth eruption • Allergy • FASD • Wolf-Hirschhorn syndrome • Beckwith-Wiedermann syndrome • Di George syndrome • Pierre Robin syndrome	Parent education and support may include management of deviations such as: • Precocious teeth • Teething processes • Drooling • Minor lesions ⇒ Refer to lactation consultant or other relevant health professional for unresolved feeding concerns

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
The 'Lift the Lip' resource should be used from 12 months of age, to assess oral health. Assessment of feeding patterns and feeding comfort may be relevant where oral deviations exist.	months • Anterior permanent teeth begin to calcify at 3 to 12 months • Drooling increases as objects are taken into mouth • Infant gradually develops capacity to hold, bite and chew a small piece of food • Deciduous teeth are smooth and glossy with a whitish hue • The biting surface of the molar teeth is grooved and pitted	• Plaque • Unusual odour • Geographic tongue • Macroglossia • Ankyloglossia • Precocious teeth • Excessive upper lip frenulum • Lesions, including white, yellow or brown spots • Tooth cavities • Ulceration or other alteration in skin integrity		
Vocal Behaviour (continued next page)				
Auditory observation, and parent report, noting the following: • Alertness • Cry • Pitch of sounds • Language acquisition	• Strong, lusty and of medium pitch • Will develop deliberate vocalisation as a means of interpersonal communication • Screams in	• High pitch • Continuous • Hoarseness • Monotonous vocalisation or inconsistency with developmental expectations over 8 - 9	• Dehydration • Pain • Raised intracranial pressure • Gastro oesophageal reflux • Laryngeal trauma • Neurological	Parent education and support may include: • Discussion of comfort measures • Expected vocal development

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	annoyance • Laughs, chuckles or squeals during play • Gradual development of a range of vocal sounds	months • Excessive crying • Audible stridor	condition • Croup • Infant of narcotic, or other substance-dependent mother • Hearing impairment	for age
Chest and Respiratory Function (continued next page)				
Visual and auditory assessment, with infant supported in upright position, noting: • Chest shape • Movement • Respiratory rate • Respiratory effort • Breathing pattern • Breathing sounds • Assessment of sleep patterns through parent report may offer additional information related to respiratory tract, allergy or infection	• The chest is symmetrical and barrel-shaped • Chest circumference is close in size to head circumference up to 2 years of age • Chest then gradually develops adult shape • Rhythm of breaths is regular including symmetrical rise and fall of chest • The regular breath rate is 25-55 breaths per minute (between birth and 12 months) • Infant may use oral airway	• Oral/nasal mucosal secretions • Stridor • Grunting • Crackles • Rales • Wheezing • Rhonchi • Cough • Snoring • Apnoea • Nasal flaring • Head bobbing • Paradoxical breathing	• Infection, including bronchiolitis and epiglottitis • Laryngomalacia • Trauma • Foreign body aspiration • Asthma • Croup • Gastroesophageal reflux • Pneumothorax • Genetics • Cystic fibrosis • Joubert syndrome	Parent education and support may include: • The range of normal mucosal secretions • Strategies for management of specific deviations • Signs to alert parent to need for further review ⇒ Seek urgent medical review for any signs of respiratory distress

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	spontaneously or in response to nasal occlusion	• Tachypnoea • Intercostal retraction • Use of accessory muscles • Cyanosis central or extremities		including stridor, grunting, apnoea episodes, or other altered breathing sounds
Musculoskeletal – General (continued next page)				
Through placing infant in prone or sitting position, observe for overall: • Symmetry • Flexibility • Resting position • Muscle tone • Motor activity • Skin folds Assess range of movement through observation of age-appropriate activity, noting: • Flexion/extension • Adduction/abduction • Internal/external rotation	• Muscles are in a flexed position, normotonic and symmetrical • In the supine position, arms and legs are in a semi flexed position with the hips slightly abducted • Infant will start to transition from a 'bear walk' crawl to pulling up to standing position • When hands are held, will purposefully step on alternating feet and may start to walk	• Asymmetry in tone • Flaccidity • Abnormal posture or positioning of extremities • Movement limitation or reluctance to use limbs • Unbalanced gait • Evidence of pain or tenderness on movement • Swelling • Masses • Inflammation	• Trauma • Infection • Genetic deviation • Hypotonia • Hypertonia	Parent education and support may include: • Safety • Avoidance of common injuries related to developmental milestones

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Palpation and/or passive movement may be used to reinforce visual findings Assess crawling, standing or walking, noting: • Balance and pivots • Agility • Gait	alone			
Reflexes (continued next page)				
Assess alert infant for presence and gradual diminishing of primitive reflexes, including: • Palmar grasp • Asymmetrical tonic neck reflex • Moro reflex • Stepping reflex • Rooting response • Sucking response Assess gradual age-appropriate development of postural and voluntary movement, including:	• Primitive reflexes are symmetrical and indicative of central nervous system function • Primitive reflexes diminish from 3-4 months of age with cerebral cortex maturity, and disappear by 4-6 months • As primitive reflexes diminish, infant develops postural reflexes and voluntary movements which	• Asymmetrical • Poor expression or delay in response • Persistence of primitive reflexes beyond 4-6 months • Delay in development of postural reflexes and voluntary movements by 9 months of age	• Genetic deviation • Trauma • Brachial palsy • Hypotonia • Fragile X syndrome • Stickler syndrome • Cerebral palsy • Down syndrome	⇒ Refer to medical practitioner where reflexes persist beyond expected time frame, especially in association with other concerns

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Head control • Facial expressions • Grasp • Reach • Weight bearing capacity	support control of balance, posture and movement in a gravity based environment			
Back and Spine				
Assess general appearance of the back, noting: • Symmetry • Flexibility • Curvature • Skin	• The spine is initially straight, in midline, and flat • The head should be aligned directly over the sacrum • Spine gradually develops a C-shaped curve by the age of 4 years, including lordosis of neck and lumbar region, and kyphosis of thoracic region	• Sacral dimple or sinus • Tufts of hair, particularly in sacral area • Pronounced curvature • Swelling • Asymmetry • Masses • Lesions	• Intrauterine growth conditions • Spina bifida • Genetics • Abnormalities in spinous processes	⇒ Ensure medical practitioner review of any pilonidal dimple or sinus
Upper Limbs (continued next page)				
Palpate the clavicles, and observe range of arm movement including:	• Infant will gradually develop capacity to lift chest up when	• Swelling • Distortion	• Trauma including, fracture, subluxation, or dislocation	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Elbow • Wrists • Shoulders • Hands Assess through observation of: • Flexion/extension • Adduction/abduction • Internal/external rotation • Symmetry • Strength • Flexibility	lying on abdomen, supporting at first on forearm, and later on extended arms and flattened palms • Age-appropriate development in use of both hands. May show a preference for one by 18 months • Develops capacity to pick up small objects with a pincer grasp • Limbs gradually become more pliable and movements become smoother and continuous • Should have full range of movement when extending the arms in all directions • Movements are equal in flexibility and in strength	• Bruising • Limited, reluctance or discomfort on movement • Erythema • Extra digits • Syndactyl • Webbing • Digital clubbing • Persistent thumbs in fist • Clenched fists • Early preference for one hand • Asymmetrical movement or muscle tone	• Brachial palsy • Intrauterine exposure to teratogens • Cerebral palsy • Environmental conditions • Edwards syndrome • Marfan syndrome • Rubinstein-Taybi syndrome • Achondroplasia	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Hips				
Assess hips	• Skin folds are symmetrical • Hips are stable and thighs are easily adducted and abducted • Knees are equally aligned	• Uneven leg length • Asymmetrical buttock folds and thigh creases • Movement restriction • Reluctance to move • Non crawling • Bottom shuffling or alternative crawling method • Limping or waddling gait	• Dislocation • Intrauterine growth conditions • Genetics • Trauma • Environmental conditions, including constrictive wrapping	⇒ Refer any hip concerns to medical practitioner, or directly to PMH Orthopaedic Clinic if the infant is less than 4 months of age
Lower Limbs (continued next page)				
Assess while infant is supine or in standing position, noting: • length • strength • flexibility • movement • skin folds Through observation of: • flexion/extension	• Legs are equal in length with symmetry in skin folds • Legs are equal in movement, strength and flexibility • Knee and hip joints extended and aligned • Knees will naturally lie apart with soles of the feet turned	• Unequal leg length • Asymmetry in skin folds • Asymmetrical movement • Asymmetrical muscle tone • Genu varum • Genu valgum	• Birth trauma • Trauma, including fractures or dislocations • Genetic deviation • Intrauterine growth conditions • Talipes • Tibial torsion • Nutritional deficiency	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• adduction/abduction • internal/external rotation	slightly inward • Bow leggedness is a common occurrence • As the ability to walk is developed, the infant's stance is wide with small steps and rapid cadence		• Edwards syndrome • Rubinstein-Taybi syndrome • Achondroplasia	
Foot and heel • Assess forefoot and heel for position and alignment • Assess ankle and plantar arch for range of motion	• Foot is supple • Visible plantar crease • In the supine position, the medial and lateral malleoli are parallel	• Rigidity or limited range of movement, including: ○ Limited dorsiflexion ○ Adduction of forefoot ○ Fixed position of hindfoot • Extra digits • Absent plantar crease • Webbing	• Intrauterine growth conditions • Genetic deviations • Metatarsus adductus • Trauma	Parent education and support may include: • Use of passive stretching exercises for minor positional deviations where feet can easily be returned to midline • Monitoring and review for resolution ⇒ Referral to medical practitioner or allied health professional where an inflexible

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
				deviation exists
Abdomen				
Visual inspection, and palpation where indicated, noting: • Size • Shape • Symmetry • Sounds • Skin integrity	• Protuberant and round (pot-bellied) • Symmetrical • Moves with respiration • Soft • Bowel sounds are present	• Tension • Distension • Sunken or scaphoid shape • Asymmetry • Visible peristalsis • Vomiting • Evidence of pain or discomfort	• Changes in oral intake • Infection • Constipation • Intolerance or atopy • Malrotation of bowel • Obstruction • Intussusception • Paralytic ileus • Pyloric stenosis (usually between 2-6 weeks of age • Hirschsprung's disease	⇒ Urgent referral to medical practitioner for: • Sustained vomiting • Projectile vomiting • Reduced bowel sounds
Umbilicus (continued next page)				
Visual inspection, noting: • Size • Shape • Contours • Integrity • Separation of cord	• The umbilical cord has separated • The umbilicus is dry, non-inflamed and healed • Lies at vertical level corresponding to	• Intermittent or constant bulging or swelling, more pronounced with increased abdominal pressure (crying and defecation) • Discharge from umbilicus	• Umbilical hernia • Diastasis rectus • Infection • Omphalomesenteric duct remnant • Urachal remnant	Parent education and support may include: • Routine umbilical care • Strategies for management of

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Healing of cord stump	between L3 and L5 • Forms a visible depression on skin in 90% of infants • Protrusion may occur in10% of infants • Size shape, depth, length, and overall appearance is variable • Underlying abdominal muscles surrounding umbilicus are concave	• Redness • Inflammation • Lesions • Masses • Omphalitis • Umbilical lint	• Cyst • Umbilical polyp • Granuloma • Cellulitis • Environmental conditions	minor infections ⇒ Prompt referral to medical practitioner for umbilical discharge
Buttocks and Rectal Area (continued next page)				
Inspection should include discussion with parent, noting: • Anal patency • Skin integrity • Skin features	Patency demonstrated through passing of faeces which is normally: • Human milk fed – yellow (brown and dark green may be normal in the absence of deviations) with texture from loose,	Buttock deviations: • Lesions • Discolouration • Sacral sinus or tufts of hair Rectal deviations: • Changes in frequency of bowel motions or • Changes in colour or	• Birthmarks • Trauma • Genetic deviation • Response to change in dietary and fluid intake • Constipation • Infection: bacterial, viral or parasitic • Fissures	Parent education and support may include: • Dietary needs • Normal patterns of output • Strategies to address minor deviations

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	granular to curdled • Infant formula fed - pale yellow to yellow, brown, green or grey with paste to semi-formed texture • Infant faeces become darker, more formed and odour increases with solid food introduction	consistency of bowel motions • Bleeding	• Rectal tears	
Urinary System				
Assess urinary output through parental report, or visual inspection where possible Note: Nutritional assessment may contribute to findings	• Normal urine output is >2 ml/kg/hour in infants • Infants void an average of 20 times per day/once per hour • Infant bladder will completely empty at least once during a four hour period	Change in urine: • Volume • Frequency • Colour • Presence of blood • Weight loss • Altered feeding patterns • Behavioural irritability	• Infection • Urinary tract infection • Pyelonephritis • Dehydration • Changes in fluid intake • Urinary reflux • Jaundice • Diabetes	Parental education and support may include: • Expected urinary output for age and how to monitor • Fluid requirements

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Genitourinary – Male				
Visual inspection of penis and scrotum and inguinal areas, and palpation of testes, noting: • Position • Size • Patency of urethra • Skin • Testicular descent N.B. Do not attempt to forcibly retract the foreskin	• Urinary orifice is patent, uncovered by the prepuce, located at the tip of the glans penis • Foreskin is lightly attached for the first 2 to 3 months • Foreskin retraction is not possible within the first year • Spontaneous testicular descent occurs during the first 6 months • Cremasteric reflex can be activated by cold, emotion, or touch	• Curvature of penis • Microphallus • Deviation in position of urethral meatus, including hypospadias and epispadias • Phimosis (tight foreskin) • Paraphimosis • Chordee • Balanitis • Balanoposthitis • Scrotal swelling, acute or persistent • Abnormal distance from scrotum to anus • Circumcision – healing complications include bleeding, redness, cyanosis, discharge, or swelling	• Genetics deviations • Intrauterine exposure to teratogens • Infection • Testicular torsion • Intrauterine exposure to teratogens • Intrauterine growth conditions • Hydrocele	Parent education and support may include routine hygiene needs and age appropriate expectations ⇒ Urgent referral to emergency department for paediatric surgical review for signs of torsion ⇒ Refer to medical practitioner for review of any deviation in testicular descent over 6 months of age

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Genitourinary – Female				
Visual inspection of: • Labia • Vaginal orifice • Urethral meatus • Perianal area Noting the following: • Shape • Position • Contours • Patency • Skin integrity N.B. Careful examination should be conducted where discharge exists	• Clitoris is about 3mm in length in transverse diameter • The labia minora are thin ridges of tissue which cover the urethral and vaginal orifices and meet at the clitoris • Labia minora frequently protrude from the labia majora • Urethral meatus may be difficult to visualise due to thickened hymen • Vaginal orifice is patent, surrounded by hymen, with no discharge	• Rashes • Lesions • Redness • Lacerations • Bruising • Swelling or oedema • Pain • Discharge • Odour	• Trauma • Allergy or atopy • Environmental conditions or irritants • Infection • Genetic deviation • Herniation • Hydrocolpos	Parent support and education may include routine hygiene needs and age appropriate expectations ⇒ Consider referral to specialist services where child protection issues are suspected Refer to *Guidelines for Protecting Children 2015* for further information, including information on mandatory reporting

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Inguinal Area				
Visual inspection, and palpation of inguinal area along the: • Juncture of the thigh and abdomen • Along the inguinal ligament and the saphenous vein	• A horizontal chain of inguinal nodes run along the inferior groin • Regular femoral pulses can be felt midpoint between the iliac crest and symphysis pubis	• Bulges • Tenderness • Enlarged glands • Absence of femoral pulses	• Prematurity • Genetic deviation • Lymphadenopathy • Infection • Inguinal hernia • Coarctation of the aorta	⇒ Prompt medical review is indicated where any inguinal swelling is reddened, painful, or does not change size when the infant cries, especially if accompanied by other signs of illness such as fever, vomiting or distended abdomen
Skin (continued next page)				
Visual inspection, and palpation where required, noting the following: • Colour • Texture • Integrity • Turgor • Hydration of exposed skin and mucous membranes	• The skin is smooth, even, clear and intact • Mucous membranes are moist • Normal colour according to race • Skin is elastic and returns rapidly to original shape following gentle pinching	• Pallor • Redness • Plethora • Bruising • Rashes • Lesions • Scars • Thickening • Dryness or cracking	• Jaundice • Erythema toxicum neonatorum • Milia • Trauma • Cutis marmorata • Genetic deviations • Dehydration • Allergy • Eczema (atopic	Parent education and support may include strategies for management of deviations such as: • Minor infections • Infestation • Allergy and eczema (atopic dermatitis) • Environmental

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Temperature N.B. Skin should be inspected in areas of natural light, or a well-lit space with fluorescent lighting where possible	• Capillary refill is under 2 seconds • Pigmentation variations occur in darker skinned infants in nail-bed, palm, sole and genital areas	• Flaking or scaling • Blistering • Itching • Papules • Plaques • Vesicles • Nodules • Skin tags • Unusual pigmentation or discolouration • Dimples • Cysts • Scarring • Cyanosis Hydration deviations: • Reduction in skin elasticity • Flushed appearance • Xerosis • Skin takes > 3 secs to return to original shape	dermatitis) • Infection - bacterial, viral or fungal • Fever or overheating • Infestation, including scabies • Macular or cavernous haemangioma • Nevus vasculosus • Congenital dermal melanocytosis (Mongolian blue spot) • Telangiectatic nevi • Intrauterine exposure to teratogens	influences • Expected fluid intake and output for age ⇒ Referral to a medical practitioner for birthmarks and rashes, particularly where birthmarks are located on face, head or buttock areas ⇒ Prompt referral to a medical practitioner where deviations are accompanied by other signs of illness

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Hair (continued next page)				
Visual inspection, noting: • Distribution • Colour • Hair line • Quantity • Texture • Growth pattern	• Fine soft, downy lanugo hair is present at birth and can persist for up to 3-4 months • Lanugo is gradually shed and replaced by vellus hair which is short, fine, soft, poorly pigmented and covers most of body • Vellus type hair is also present on the scalp from birth, gradually replaced from 3-7 months of age by intermediate scalp hair • Terminal hair is pigmented, longer, thicker and replaces vellus hair on the scalp by 2 years of age • Growth is uniform, and specific to body	• Absent hair or bald patches • Dryness • Oiliness • Infestation • Coarse texture • Change in growth rate • Irritation, dryness, lesions or scaling of scalp	• Seborrheic dermatitis (cradle cap) • Infection, e.g. tinea capitus (ringworm) or impetigo • Environmental conditions, including friction on surfaces • Infection, e.g. tinea capitus (ringworm) or impetigo • Trauma • Nutritional deficiency • Stress or recent illness • Pallister-Killian syndrome	Parent education and support may include strategies for management of: • Seborrhic dermatitis • Hygiene needs • Control of environmental factors

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	area			
Nails (continued next page)				
Visual inspection, noting: • Colour • Contour • Shape • Texture • Cleanliness	• Nails are soft, pliable and fast growing • Nails are adherent to nail bed • Nail beds are pink, smooth, flat or slightly convex, with uniform thickness	• Short and thick • Fragile or thin • Nail shedding (onychomadesis) • Dryness • Transverse depressions or grooves (Beau's lines) • Pruritus • Clubbing • Paronychia • Odour • Cyanosis • Nail atrophy/ absence	• Infection: bacterial, viral or fungal • Environmental conditions, including exposure to moisture • Psoriasis • Ectodermal dysplasia • Trauma • Stress or significant illness	Parent education and support may include: • Routine care and hygiene strategies • Expected growth patterns

Appendix C: Children - Twelve months to four years

Legend: ⇒ Referral

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
General Appearance				
• Facial expressions • Posture • Activity level • Temperament • Responsiveness • Interaction with others • Symmetry of body parts • Movement • Nutritional status	• Initial presentation of the child is constant with the situation (e.g. crying due to tiredness or pain) • Child appears healthy and appropriately developed	• Deviations from the norm may be initially identified through overall assessment of general appearance of the child • Signs of neglect or abuse such as lacerations, burns, bruises, poor standard of hygiene; inappropriate clothing for age, weather and social conditions[5]	• A range of congenital or non-congenital conditions • Genetic conditions • Environmental conditions	Observation of general appearance should be completed prior to a more detailed assessment. Any areas of concerns will be documented and noted for additional monitoring and/or referral to a medical practitioner
Head (continued next page)				
Visual inspection with the head at midline, while sitting supported, noting: • General shape • Size • Circumference	• Rounded • Symmetrical • When child is upright, head will comfortably sit in the midline • Brain reaches 80%	• Asymmetrical • Circumference outside expected trajectory • Bruising • Swelling • Lesions	• Plagiocephaly • Dehydration • Trauma • Space-occupying intracranial lesions • Gastro-oesophageal reflux disease (GORD)	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Symmetry • Alignment • Range of motion, movement, tone and flexibility	of adult size by 2 years • Sutures are proximate and immobile • Skin is flush with scalp • Anterior fontanelle closes by around 18 months of age	• Positional head preference or tilt • Jerking, tremors or involuntary spasms • Persistence or premature closure of anterior fontanelle • Bulging or sunken anterior fontanelle in younger child	where overfeeding contributes to torticollis • Neurological condition • Visual or hearing deficit • Hydrocephaly • Microcephaly • Fetal alcohol spectrum disorder (FASD) • Craniostenosis	
Neck				
Visual inspection, noting the following: • Symmetry • Shape • Mobility • Musculature • Lymph nodes Consider relevant history from parent report, including: injury, head tilt, pain, stiffness, persistent lymph gland swelling and respiratory infection	• Neck lengthens at 3- 4 years, and neck to body proportion becomes closer to adult size • Trachea is at midline or slightly to right • Lymph nodes are non-visible, mobile, non-tender and not warm to touch	• Stiffness or resistance to movement or range of motion • Pain • Lateral inclination of the head • Lymphadenopathy • Positional shift of Trachea	• Torticollis • GORD • Raised intracranial pressure • Meningitis • Infection • Cerebral palsy • Hypotonia • Turner's syndrome • Down syndrome	⇒ Urgent referral for medical review of any child with neck stiffness accompanied by signs of acute illness

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Face				
Through visual inspection observe facial features and expressions, noting: • Symmetry • Spacing and size • Movement • Emotional expression	• Face is relaxed and symmetrical • Nose should be symmetric and in centre of child's face • Facial expressions are spontaneous and responsive to situation • Symmetry of smile, laugh, creases and wrinkles reveal normal function/ innervation	• Bruising • Swelling or oedema • Alteration in skin integrity • Asymmetry • Lesions • Dark circles under eyes • Lack of, or inappropriate, emotional expression • Involuntary movements	• Trauma • Fatigue • Allergy • Environmental conditions • Infection • Neurological deficit • Medication side effect • Mental illness • Abuse • Myotonia	
Eyes (continued next page)				
Visual inspection, noting: • Shape • Size • Symmetry • Position and spacing • Visual engagement	• Eyebrows extend to just beyond the outer canthus • Raising and lowering of eyebrows is symmetrical • Eyelashes are full and evenly	• Discharge, watery or purulent • Conjunctival redness or inflammation • Crusting or scaling • Eyelid inflammation, swelling, lesions, or discoloration	• Acquired head injury • Infection, bacterial, viral or fungal • Allergy • Dehydration • Trauma	Parent education and support for infection control measures and hygiene where eye infection is suspected

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	distributed • Upper and lower eyelids and palpebral fissures symmetrical • Gaze is symmetrical • Eyes are symmetrical, horizontal and in line with top of pinna • Conjunctiva and sclera are smooth, clear, whitish and glistening (yellow tinge normal in children with dark skin)	• Sunken eyelids • Ptosis • Loss of hair - eyelashes or eyebrows • Subconjunctival haemorrhage		
Vision Behaviours (continued next page)				
Assess by examining the pupil and iris, and by shining a light into the eyes, noting: • Size • Symmetry	• Pupils are round, clear, equal in size and reactivity to light • Pupils may be larger than adults • Irises are circular	• Fixed or unequal pupil size • Sluggish reactivity to light • Corneal cloudiness or opacity	• Retinoblastoma • Cataract • Scleral icterus • Hypertropia • Hypotropia	⇒ Prompt referral to medical practitioner for any visual impairment, opacity or squint

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Colour • Clarity • Shape • Movement • Pupillary constriction • Light sensitivity • Ability to fix and follow	• Eyes move in unison • Fixates and follows an object at 15-30 cm distance through an arc of 180o from 12 months of age	• Nystagmus • Squint – intermittent or constant • Limitation in expected eye movements • Coloboma	• Photophobia • Glaucoma • Optic nerve deficit • Neurological deficit • Trauma	
Ears (continued next page)				
Assess external ear including mastoid process, auricles, tragi and external auditory meatus, noting: • Position • Shape • Symmetry • Colour • Skin integrity • Patency • Firmness of ear cartilage • Observe for infection or discharge of	• The superior portion of the auricle is equal in height to the outer canthus of the eye • Auricles are vertical with less than 10o tilt • The pinna is 80% of adult size by 4 – 5 years of age • The pinna is soft and pliable and recoils readily when folded and released • Colour is similar to	• Inflammation • Redness • Swelling • Tenderness • Discharge • Lesions or masses • Abrasions • Piercings – deviations may include inflammation, scar tissue, trauma	• Otitis Externa • Mastoiditis • Other infection • Sebaceous cysts • Trauma • Environmental conditions	Parent education and support related to external ear may include: • Wax production • Hygiene • Infection control

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
preauricular sinus/ skin tags, or Darwin tubercles • Size	facial skin			
Examine ear canal and visualise tympanic membrane using otoscopy Visible tympanic membrane landmarks include cone of light, umbo, and handle of malleus	• Skin of distal two thirds of ear canal is similar to external ear, and is covered with fine hair • Cerumen is a normal protective secretion, ranging from grey, dry and flaky to wet, honey to dark brown colour and texture • Cone of light position: 4-6 o'clock on the right and 6-8 o'clock on the left	• Redness • Bulging • Retracted • Perforated • Discharge	• External ear infection • Trauma • Foreign objects, which may precipitate wax production or discharge • Inadequate middle ear drainage • Middle ear infection	⇒ Referral options and parent education and support for: • Foreign bodies • Discharge • Excessive wax or suspected infection

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Nose				
Visual and auditory inspection, noting in relation to nasal bridge, nares, columella and septum: • Symmetry • Shape • Size • Skin integrity • Patency of nasal passages	• Child breathes easily with mouth closed • Septum is straight and in midline of the nose • Nasal passages are narrow and easily occluded • Child removes obstructions by sneezing	• Mucous or other secretions • Swelling • Epistaxis • Nasal flaring • Asymmetry • Narrowing of the nares • Flattening	• Infection • Inflammation • Foreign body • Allergy • Nasal polyps • Trauma • FASD	
Mouth (continued next page)				
Using the Oral health examination procedure and Lift the Lip, inspect: • Gums • Mucosa • Lips • Tongue • Teeth Noting the following:	• Oral mucosa is firm, shiny, smooth, moist, and pink (bluish or pale in child with dark skin) • Deciduous teeth appear between 6–24 months • Drooling is normal between 3 and 15 months of age	Lip deviations: • Swelling • Dryness • Lesions • Fissures • Persistent drooling • Persistence of upper frenulum Gum deviations:	• Dehydration • Infection: bacterial, viral or fungal • Trauma • Allergy • Environmental conditions • Poor hygiene • Neurological impairment	Parental support and education for minor deviations may include: • Teething processes • Drooling • Minor lesions or infections • Dental hygiene ⇒ Direct referral to Dental practitioner is recommended for parental

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Colour • Symmetry • Integrity • Moisture • Movement of tongue • Tooth eruption • Odour	• Upper frenulum gradually disappears with growth of maxilla • Dorsal surface of tongue is rough, moist and pink, sometimes patterned; ventral surface thin, with prominent vessels • Lingual frenulum allows child to poke tongue out past lips and move from side to side	• Swelling • Lesions • Inflammation • Friable • Halitosis Tongue deviations: • Coated • Plaque or lesions • Geographic tongue • Macroglossia • Ankyloglossia • Difficulty swallowing Tooth deviations: • Plaque • Lesions • Trauma	• Tooth eruption • Nutritional deficiency • FASD • Myotonia	or professional concerns regarding teeth
Vocal Behaviour (continued next page)				
Auditory observation, and parent report, noting the following: • Speech patterns	• Strong, lusty and of medium pitch • Will vocalise deliberately as a means of	• High pitch • Continuous • Hoarseness, acute or prolonged	• Raised intracranial pressure • Infection, particularly in upper respiratory tract	Parental education and support for minor deviations, may include: • Croup and other upper respiratory infection

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Pitch of sounds • Language acquisition	interpersonal communication • May scream in annoyance • Gradual age-appropriate development of a range of vocal sounds	• Excessive crying • Speech sounds inconsistent with developmental expectations	• Allergy • Hypothyroidism • Dehydration • Pain • Laryngeal trauma • Neurological condition • Hearing impairment	strategies • Allergy control
Chest and Respiratory Function (continued next page)				
Visual and auditory assessment, with child sitting upright, noting: • Chest shape • Movement • Respiratory rate • Respiratory effort • Breathing pattern • Breathing sounds N.B. Assessment of sleep patterns through parent report may give information related to respiratory tract, allergy or infection	• Chest shape is round, barrel like and equal to head circumference until about 2 years • After 2 years, chest becomes adult shaped, gradually exceeding head circumference by 5-7 cm • Respirations regular at rate of 20-30 per minute from 1-5 years • Symmetrical chest	• Noisy breathing, including grunting or stridor • Snoring • Crackles • Wheezing • Rhonchi • Cough • Apnoea • Breath-holding • Cheyne-Stokes breathing • Intercostal retraction • Accessory muscle use	• Infection, including bronchiolitis and epiglottitis • Laryngomalacia • Trauma • Foreign body aspiration • Asthma • Croup • Pneumothorax • Increased intracranial pressure • Adenoid or tonsillar hypertrophy	Parent education and support may include: • Hygiene practices for respiratory infection control • Asthma education and action plan as appropriate ⇒ Seek urgent medical review for any signs of respiratory distress which may include stridor, grunting and wheezing

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	rise and fall • Child may use oral airway spontaneously or in response to nasal occlusion	• Persistent barrel chest	• Cardiac conditions • Genetics • Cystic fibrosis • Joubert syndrome	
Musculoskeletal – General (continued next page)				
Observe for overall symmetry, including: • Length • Strength • Flexibility • Skin folds • Range of motion • Mobility of joints • Circulation • Sensation Assess range of movement through observation of activity or play, noting: • Flexion and extension • Adduction and abduction	• Movements are equal in flexibility and strength • Upper and lower limbs are symmetrical in length • Laxity of ligaments predisposes to musculoskeletal injury in young children • Movements gradually become smoother and continuous • Mature pattern of muscle action and motion by 3 years of age	• Muscular pain or tenderness • Bone or joint pain • Swelling • Warmth • Movement limitation • Unilateral weakness • Disproportionate limb or digit size, outside normal expectations • Hyper mobility of joints • Palpable masses • Muscle contracture	• Sprain • Strain • Subluxation/dislocation • Fracture • Neurological disorder • Scoliosis • Spina bifida • Rheumatoid arthritis • Haemophilia • Down Syndrome • FASD • Marfan syndrome • Osteogenesis imperfecta • Osteomalacia • Duchenne muscular	Parent education and support regarding safety, and avoidance of common injuries related to developmental milestones Be alert to non- accidental injury, which may manifest commonly with rib, clavicular, sternal or spinal musculoskeletal injuries

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Internal/external rotation Palpation and passive movement assessment may be required to reinforce visual findings	• Gradual age-appropriate increase in fine and gross motor control and capacity		dystrophy • Tumour • Synovitis • Leukaemia	
Back and Spine				
Assess general appearance of back while the child is standing erect, noting: • Symmetry, including hips, shoulders and rib cage • Curvature • Flexibility • Range of movement • Skin	• Lumbar curve forms between 12 to 18 months • Exaggerated lumbar lordosis is normal in young children • Normal curvature develops by 4 years, including neck and lumbar lordosis, and thoracic kyphosis • Bending and stretching should be without resistance	• Rigidity, particularly while sitting • Lateral curvature • Pronounced curvature • Pain	• Genetics • Trauma • Kyphosis • Scoliosis	

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Upper Limbs				
Assess range of movement in: • Elbow • Wrists • Shoulders • Hands Noting the following: • Strength • Flexibility	• Able to use both hands and arms • May show hand preference by 18 months of age • Development and ossification of the hands continues until 11 years of age • Normal arm swing begins from 18 months	• Swelling • Distortion • Limited or reluctance with movement • Pain or discomfort on movement • Asymmetrical tone or movement, including limpness • Digital clubbing • Persistent fist formation	• Trauma including, fracture, subluxation, or soft tissue injury • Neurological deficit • Edwards syndrome • Marfan syndrome • Rubinstein-Taybi syndrome • Achondroplasia • Cerebral palsy • Environmental conditions • Abuse	Parent education and support for: • Expected range of movement and ability for age • Injury prevention e.g. radial-ulnar joint subluxation and shoulder dislocation are common from 2-4 years of age
Hips (continued next page)				
Assess hips	• Gait is symmetrical, though may be disjointed in toddler		• Conditions which may be associated with hip deviations include: • Down syndrome • Larson's syndrome • Arthrogryposis • Plagiocephaly	⇒ Referral for medical review where any previously undiagnosed hip dysplasia is suspected

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
			• Torticollis • Scoliosis • Spina bifida	
Lower Limbs (continued next page)				
Assess lower limbs through observation of child standing and gait, noting: • Muscle tone • Strength Observe for symmetry in; • Length • Strength • Flexibility and • Skin folds	• Legs are equal in length, movement, strength and flexibility • Stance includes wide base of support, hyperextension of knees and hips, and disjointed pattern when walking, which gradually becomes more smooth • In-toeing normal from 15 months and by resolves by 10 years • Bowleggedness - Genu varum normal to 2.5–3 years • Knock knees -	• Asymmetry in skin folds • Asymmetrical movement • Asymmetrical tone • Asymmetrical rotation • Unequal limb length • Bowed legs with space greater than 5 cm between knees after 2.5–3 years • In-toeing affecting mobilisation	• Trauma, including fractures or subluxation • Genetics • Talipes • Tibial torsion • Nutritional deficiency • Edwards syndrome • Rubinstein-Taybi syndrome • Achondroplasia	Parent education and reassurance of common deviations which should resolve spontaneously, including: • Tibial torsion by 4-5 years • Genu valgum by 7 years • Genu varum by 2.5–3 years ⇒ Consider referral to GP relevant allied health services for specialised treatment of positioning or movement deviations

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	Genu valgum common until 7 years			
Assess foot and heel, noting: • Position and alignment • Range of motion	• Feet are supple • Plantar crease is visible on each foot • When supine, the lateral malleoli may normally rotate up to 20 degrees in young children • Pes planus (flat feet) are normal in early walking phase • Longitudinal arch develops by 2-3 years • Toe walking is common until 3 years	• Rigidity or limited range of movement, including dorsiflexion • Flat feet (Pes planus) persistent after 2-3 years • Heel or arch pain • Toe-walking persisting beyond 3 years	• Trauma • Genetics • Short Achilles tendon • Duchenne muscular dystrophy • Cerebral palsy • Autism	Parent education and support may include: • Discourage the use of equipment such as walkers and jolly jumpers ⇒ Consider referral to relevant allied health services for specialised treatment of positioning or movement deviations

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
Abdomen				
Visual inspection and palpation where required, noting: • Size • Shape • Symmetry • Contours • Bowel sounds • Skin texture, colour and integrity • Nutritional status	• Protuberant and round (pot-bellied) normal until 4 years • Abdomen moves with respiration • Soft • Bowel sounds present	• Reduction or increase in bowel motions, including consistency, or colour • Vomiting • Pain, tenderness or guarding • Distension • Tension or rigidity • Visible peristalsis • Palpable masses or protrusions • Swelling or lesions • Hyperactive or absent bowel sounds	• Gastrointestinal infection • Constipation • Normal response to dietary changes • Peritonitis • Full bladder • Obstruction • Paralytic ileus • Trauma • Malnutrition • Foreign body • Coeliac disease • Cystic fibrosis • Hirschsprung's disease	
Umbilicus (continued next page)				
Visual inspection, noting: • Size • Shape • Contours	• Forms a visible depression or protrusion on skin • Size shape, depth, length, and overall	• Swelling • Masses • Lesions • Discharge	• Herniation • Polyp • Granuloma • Dermoid Cyst	Parent education and support may include: • Routine umbilical care

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Skin integrity	appearance is variable	• Lint	• Diastasis recti abdominis	
Buttocks and Rectal Area				
Inspection should include discussion with parent, noting: • Anal patency • Skin • Elimination patterns • Toilet training History of dietary intake and growth pattern may contribute to assessment	• Stools may be passed normally from 1-3 times per day through to 2-3 times per week • Stool consistency is highly variable, but should be soft, formed, and easy to pass without pain or trauma • Continence develops from 2 years of age with an average of 3 years	• Lesions • Lacerations or tears • Bruising • Discolouration • Tufts of hair, particularly in crease • Evidence of itching • Inflammation • Fissures • Skin Tags • Changes in frequency or consistency of bowel motions	• Response to change in nutritional intake • Genetics • Infestation • Constipation • Infection • Polyps • Trauma • Abuse	Parental support and education may include: • Normal patterns of elimination • Nutritional needs • Physical activity needs for normal bowel function • Hygiene • Toilet training • Strategies to address minor deviations
Urinary System (continued next page)				
Assess urinary output by parental report, noting: • Frequency • Amount	• Young child's urine output is >1 ml/kg/h • Bladder capacity is about 1% of child's	• Decrease in volume and frequency • Cloudy urine • Weight loss	• Diabetes • Urinary tract infection • Renal reflux • Pyelonephritis	Parental education and support may include: • Fluid requirements • Expected urinary output

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
• Bladder control Assess fluid intake Visual assessment of urine sample where relevant, noting: • Colour • Amount • Dip stick analysis (in relevant settings)	body weight • Toddlers and pre-schoolers will void on average between 8-14 times per day • Kidneys immature until 2 years, predisposing child to dehydration and hypovolaemia • Urine colour is clear, and pale yellow to amber	• Signs of dehydration • Haematuria • Strong smelling urine • Behavioural irritability • Fever • Vomiting	• Glomerulonephritis • Other infection	• Timing and strategies for developing bladder control ⇒ Refer for medical review of any signs of urinary tract infection
Genitourinary – Male (continued next page)				
Use visual inspection of penis and scrotum and inguinal areas, and palpation of testes, noting: • Position • Size • Patency of urethra • Skin • Testicular descent N.B. Do not attempt	• Urinary orifice is patent, uncovered by the prepuce, located at the tip of the glans penis • Retraction of foreskin is possible by 3 years of age • Scrotum is normally loose and wrinkled • Cremasteric reflex	• Balinitis • Hypospadias • Chordee • Phimosis (tight foreskin) • Deviations in position of testes • Small flat scrotum • Enlarged scrotum • Absent cremasteric	• Genetics • Infection • Undescended testis • Retractile testis • Hydrocele • Testicular torsion • Inguinal herniation	⇒ Urgent referral for paediatric surgical review of signs of torsion which may include: pain, scrotal swelling, unilateral absence of cremasteric reflex, nausea and/or vomiting and later, scrotal oedema ⇒ Refer to medical practitioner for review of any deviations in testicular descent

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
to forcibly retract the foreskin	is strong in early childhood initiated in response to cold, wet or anxiety	reflex • Scrotal pain • Lymphadenopathy • Inguinal swelling • Circumcision – post surgical deviations may include bleeding, redness, cyanosis, discharge or swelling		
Genitourinary – Female (continued next page)				
Visual inspection of: • Labia • Vaginal orifice • Urethral meatus • Perianal area • Inguinal area Noting the following: • Shape • Position • Contours • Patency • Skin integrity	• Labia minora is thin, covers the vestibule, including the urethral and vaginal orifices • Labia minora frequently protrudes from the labia majora • The vaginal orifice is partly covered by the hymen membrane, which varies but is normally annular and crescent shaped	• Rashes • Lesions • Redness • Lacerations • Bruising • Swelling or oedema • Pain • Discharge • Odour • Labial adhesion or partial fusion • Tenderness in the lower abdomen	• Allergy • Infection, including fungal, viral or bacterial • Trauma • Abuse • Foreign body • Allergy or atopy • Infestation, e.g. pinworm	Parental education and support may include: • Normal age appropriate developmental expectations • Hygiene requirements ⇒ Refer the child for immediate specialised assessment where there are any child protection concerns Refer to *Guidelines for Protecting Children 2015* for further information, including information on

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
	• No vaginal discharge • Urethral meatus is small	• Bulging or tenderness in inguinal area • Lymphadenopathy		mandatory reporting
Skin (continued next page)				
Visual inspection, and palpation where required, noting the following: • Colour • Texture • Integrity • Turgor • Hydration of exposed skin and mucous membranes • Temperature N.B. • Skin should be inspected in areas of natural light, or a well-lit space with fluorescent lighting where possible • Where colour change is suspected, inspect	• Exposed skin areas normally feel dryer than body creases • Mucous membranes are moist • A child's skin is normally smooth and even • Skin colour variation occurs between and within races and affects assessment findings • Darker skin is often normally drier	• Pallor • Redness • Plethora • Bruising • Rashes • Lesions • Scars • Thickening • Dryness or cracking • Flaking or scaling • Blistering • Itching • Clamminess • Hairy patches, or dimpling in the lumbosacral area • Cyanosis, either	• Syncope • Anaemia • Hypo or hyperthermia • Trauma • Abuse • Stress • Dehydration • Burns • Infection, including fungal, viral or bacterial • Eczema (atopic dermatitis) • Infestation • Nutritional deficit • Raynaud's phenomenon • Exposure to environmental	Parental education and support may include strategies for: • Minor rashes, infections or infestations • Allergy and eczema (atopic dermatitis) • Hygiene • Safety and avoidance of common skin injuries related to developmental milestones, including sun safety

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
skin in an area where there is less melanin, and use palpation and temperature assessment to add to findings		extremities or central • Jaundice • Clustered pigmentation	extremes • Behavioural deviations, such as thumb or finger sucking • Neurological disorder • Endocrine disorders • Liver disease • Congenital heart or lung disease	
Nails (continued next page)				
Visual inspection, noting: • Colour • Contour • Thickness • Texture Assess time of capillary refill (in relevant settings)	• Nail beds are pink, smooth, flat or slightly convex, with uniform thickness • Nails are adherent to nail bed • Capillary refill is 2-3 seconds or less	• Dry or brittle nails • Paronychia (inflammation of surrounding skin) • Tenderness • Convex or concave curving • Cyanosis • Pallor • Yellow or white colour • Thickened nail bed • Transverse depressions or grooves (Beau's lines)	• Anaemia • Nutritional deficiency • Trauma • Infection, commonly bacterial or fungal • Hypoxia • Endocrine disorder • Trachonychia • Ectodermal dysplasia • Chronic respiratory or cardiac disease • Behavioural deviations such as nail-biting,	Parental education and support may include strategies related to: • Nail care • Behavioural deviations • Localised infections • Nutritional needs

Area	Within The Norm	Common Deviations	Possible Causes	Specific Strategies
		• Splinter haemorrhages • Nail-biting or picking • Clubbing • Prolonged capillary refill	thumb sucking • Stress or significant illness • Genetic deviation	
Hair				
Visual inspection, noting: • Colour • Quality • Texture • Quantity • Distribution	• Short, fine, poorly pigmented vellus hair covers all but the palms, soles and mucous membrane areas • Thick, mature terminal hair replaces intermediate vellus hair on scalp by 2 years of age • Terminal hair is shiny, strong and elastic	• Coarse • Dull, dry or brittle • Delayed growth • Thin distribution • Alopecia • Irritation, dryness, lesions or scaling of scalp • Infestation • Matting • Oily or dirty hair • Precocious or delay in body hair distribution	• Infection, e.g. tinea capitus(ringworm) or impetigo • Seborrheic dermatitis • Nutritional deficiency • Thyroid disorder • Immune disorder • Hormonal disorder • Behavioural disorder, such as hair pulling • Infestation • Ectodermal dysplasia • Neglect • Stress or recent illness • Environmental exposure e.g. chlorine, frequent washing	Parental education and support may be provided for common deviations such as: • Infestation • Infection • Dermatitis • Hygiene needs • Age appropriate behavioural management related to hair

References

1. Sharma A, Cockerill H. From birth to five years: Practical developmental examination: Routledge; 2014.

2. Bellman M, Byrne O, Sege R. Developmental assessments of children. British Medical Journal. 2013.10.1136/bmj.e8687:

3. Jackson B, Needelman H, Roberts H, Willet S, McMorris C. Bayley scales of infant development screening test-gross motor subtest: Efficacy in determining need for services. Pediatric Physical Therapy. 2012;24(1):58-62

4. Dunderstadt K. Pediatric physical examination: an illustrated handbook. 2nd ed. Missouri: Mosby Elsevier; 2014.

5. Statewide Protection of Children Coordination Unit. Guidelines for Protecting Children 2015. In: Child and Adolescent Community Health, editor. Perth: Department of Health; 2017.

This document can be made available in alternative formats on request for a person with a disability.

Document Owner:	Director Clinical Services Community Health		
Reviewer / Team:	Clinical Nursing Policy Team		
Date First Issued:	2007	Scheduled Review Date:	Feb 2021
Last Reviewed:	Dec 2014 (amendments 02-08-2016) Feb 2018		
Approved by:	CACH/WACHS Community Health Clinical Nursing Policy Governance Group		
Endorsed by:	Executive Director CACH	Date:	28 Feb 2018
Standards Applicable:	NSQHS Standards: 1.7, 1.8		
Printed or personally saved electronic copies of this document are considered uncontrolled			