Assessment of infant / child nutrition, growth and development, within the primary health care setting.

Statewide Child and Youth Clinical Network (SCYCN)

Custodian/Review Officer: Chairperson SCYCN – Child Health Sub-network

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Applicable To: Child and Youth Health Nurses, Registered Nurses, Midwives and Aboriginal and Torres Strait Islander Child Health Workers

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Accreditation References:

EQuIP and other criteria and standards

Standard 12

1. Purpose

This Guideline has been developed to promote and facilitate a standard approach for assessing nutrition, growth and development within the primary health care setting, for infants and children aged between 0-5 years. The assessment ages are in line with the child health checks in the Personal Health Record [1]

2. Scope

This Guideline has been developed for use by all Queensland Health Child Health Nurses, Registered Nurses, Midwives, Youth Health Nurses, and Aboriginal and Torres Strait Islander Health Workers, working within the Primary Health Care setting.

3. Related documents Policy and Standard/s:

Child and Youth Health Practice Manual for Child and Youth Health Nurses and Aboriginal and Torres Strait Islander Child Health Workers [2] available from;

http://www.health.qld.gov.au/child-youth/

4. Assessment of infant / child nutrition, growth and development, within the primary health care setting

4.1 Considerations for conducting an assessment [3]

4.1.1 Prior to assessing an infant / child's nutrition, growth and development review all available infant / child and maternal documentation i.e. medical record, referral

4.1.2 Provide an appropriate environment and utilise a family partnership approach [4]

- Provide privacy and confidentiality
- Utilise CALD and Aboriginal & Torres Strait Islander supports e.g. Interpreter, Aboriginal & Torres Strait Islander health liaison / health worker [5]

4.1.3 Utilise principles of communication: the AIDET framework may be used as a guide [6]

- **A** - acknowledge; greet the family – make them feel welcome
- **I** - introduce yourself
- **D** - duration; estimate how long the assessment will take
- **E** - explain your role to the parent/s and or carer/s and the purpose of the assessment;
- **T** - thank the client for their time and attending the service

4.1.4 Collect and document family health information that could impact on the infant / child's nutrition, growth and development i.e. [3]

- Antenatal history
- Birth and neonatal details
- Maternal and paternal medical history
- Maternal mental health history [7]
- Observe maternal / infant interaction, attachment [7]
- Family and psychosocial history
- Social / community supports available to the family

4.1.5 Elicit parental concerns regarding infant / child's nutrition, growth and development, and discuss concerns identified utilising a partnership approach – the Family Partnership Model can be used to explore parental / carer challenges. Refer to reference [4] for further explanation of the Family Partnership Model.

4.2 Nutritional Assessment

4.2.1 Nutritional assessment requires a holistic approach including physical, social / cultural, emotional and environmental factors [3]

4.2.2 Assess nutritional intake (quality / quantity) at each child health check. Refer to appendix 1& 2 for further nutritional assessment information and resources.

4.2.3 Assess / review the child and family's eating practices at each health check.

4.2.4 Provide opportunistic education and health promotion regarding healthy eating practices and recommended dietary guidelines [3] at each well child health check.

4.2.5 Provide parent/s and or carer/s with evidenced-based nutritional information and resources. Refer to appendix 2 for nutritional resources.

4.3 Growth and Physical Assessment

4.3.1 Utilise a systematic, body systems approach – head to toe, front to back when performing a physical examination [8, 9]. Refer to appendix 1& 2 – physical assessment for an overview of the head to toe physical assessment, and resources.

4.3.2 Conduct the assessment in partnership [4] with the parent/s and or carer/s – provide explanations for what you are doing and why.

4.3.3 Follow local Health Service Infection control policies and procedures and the "Australian Guidelines for Prevention and Control of Infection in Healthcare" Prevention and Infection Control Guidelines;

- "Standard and Transmission – Based Precautions" [10]

4.3.4 Perform growth measurements i.e. weight, length / height, head circumference. Refer to appendix 1 & 2 – growth.

4.3.5 During the assessment take the opportunity to provide parent/s and or carer/s with developmentally appropriate anticipatory guidance [3] i.e.

- Promote the value of parent / carer/ infant attachment and observing infant cues [7]
- Demonstrate developmentally appropriate skills e.g. tummy time
- Promote infant safety e.g. not leaving the infant unattended on the change table

4.3.6 During the assessment role model positive interaction with the infant / child and observe interaction between the parent/s and or carer/s and infant / child i.e.

- Talk to the infant / child
- Explain to the infant / child what is happening
- Observe infants / child's responses
- Observe parental and or carer/s response to the infant / child

4.3.7 Perform additional assessment / screening as indicated for infants and children living in rural and remote Queensland populations, as per the Chronic Disease Guidelines. Refer to appendix 1 & 2 - additional information for infants and children who are living in rural and remote populations.

4.3.8 Document assessment findings in;

- Infant / child's PHR
- Medical record
- Plot weight and height on percentile chart.

4.4 Developmental Assessment

4.4.1 Knowledge of normal infant / child development facilitates performing a developmental assessment. Appendix 1 provides a brief overview of developmental domains and milestones in line with the well child health check ages, and appendix 2 provides further developmental assessment information and resources.

4.4.2 When performing a developmental assessment utilise a holistic approach [3], which involves eliciting parental and or carer/s concerns and responding appropriately.

4.4.3 When performing a developmental assessment use the developmental assessment screening tool that is utilised in your health service, document developmental assessment findings, and follow referral and review guidelines recommended by the developmental assessment screening tool being used. Current versions of the developmental assessment tool used by the Children's Health Service (Central) are available from http://qheps.health.qld.gov.au/rch/CCHS/cchsforms.htm

4.5 Planning

4.5.1 Work in partnership with parent/s and or carer/s when exploring parental challengers and strengths to gain a clear understanding of their situation before goal setting [4], document plan.

4.5.2 Consider appropriate CALD resources.

4.5.3 Inform parent/s and or carer/s of the recommended well child health checks – as per the infant / child's PHR.

4.5.4 Provide parent/s and or carer/s with appropriate evidenced-based resources and inform them of Child Health and Community supports available [11] refer to appendix 2 for nutritional, growth and developmental resources.

4.6 Ending the Assessment

4.6.1 Assess at the next NHMRC targeted assessment / screening [3] unless an earlier review is indicated.

4.6.2 Discuss the follow up plan with the family

4.6.3 Thank the family for their cooperation / time [6]

5. Definition of Terms

Definitions of key terms are provided below.

Term	Definition / Explanation / Details	Source
BMI	Body Mass Index	[3]
CPLO	Child Protection Liaison Officer	[3]
CDG	Chronic Disease Guidelines	
CNC	Clinical Nurse Consultant	
CLR	Corneal Light Reflex	
CALD	Culturally and Linguistically Diverse	[3]
EBM	Expressed Breast Milk	
HC	Head Circumference	
LBW	Low Birth Weight	
NUM	Nurse Unit Manager	
PHR	Personal Health Record	[3]

6. References and Suggested Reading

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7. Consultation

Refer to appendix 3 for acknowledgements

8. Guideline Revision and Approval History

Version No.	Modified by	Amendments authorised by	Approved by
1.0	T Button	J Pratt	SCYCN

9. Level of Evidence

The Joanna Briggs Institute, our Collaborating Centres and Evidence Translation Groups currently assign a level of evidence to all conclusions drawn in JBI Systematic Reviews.

The JBI Levels of Evidence are:

Levels of Evidence	Feasibility F(1-4)	Appropriateness A(1-4)	Meaningfulness M(1-4)	Effectiveness E(1-4)	Economic Evidence
1	Metasynthesis of research with unequivocal synthesised findings	Metasynthesis of research with unequivocal synthesised findings	Metasynthesis of research with unequivocal synthesised findings	Meta-analysis(with homogeneity) of experimental studies (eg RCT with concealed randomisation) OR One or more large experimental studies with narrow confidence intervals	Metasynthesis (with homogeneity) of evaluations of important alternative interventions comparing all clinically relevant outcomes against appropriate cost measurement, and including a clinically sensible sensitivity analysis
2	Metasynthesis of research with credible synthesised findings	Metasynthesis of research with credible synthesised findings	Metasynthesis of research with credible synthesised findings	One or more smaller RCTs with wider confidence intervals OR Quasi-experimental studies(without randomisation)	Evaluations of important alternative interventions comparing all clinically relevant outcomes against appropriate cost measurement, and including a clinically sensible sensitivity analysis
3	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Metasynthesis of text/opinion with credible synthesised findings b. One or more single research studies of high quality	a. Cohort studies (with control group) b. Case-controled c. Observational studies(without control group)	Evaluations of important alternative interventions comparing a limited number of appropriate cost measurement, without a clinically sensible sensitivity analysis
4	Expert opinion	Expert opinion	Expert opinion	Expert opinion, or physiology bench research, or consensus	Expert opinion, or based on economic theory

10. Disclaimer

This guideline has been developed to promote and facilitate standard and consistent practice.

Clinical material offered in this guideline does not replace or remove clinical judgement or the professional duty of care necessary for each individual client.

Clinicians and health care workers must work within their individual scope of practice, adhering to legislative requirements and Code of Conduct [12]

Clinical care provided in accordance with this guideline should be provided within the context of locally available resources and expertise.

Assessing: nutrition, growth and development from 0-5 years of age

Appendix 1

Domain	AGE							
	0-4 weeks	2 months	4 months	6 months	12 months	18 months	2.5-3.5 years	4-5 years
Nutrition [8, 13-15]	Assess • Breastfeeding • Formula feeding • Breast and formula feeding • Safe use of EBM • Maternal nutrition • Safe use of infant formula including availability, preparation & storage • No cows milk or solid foods	Assess • Breastfeeding • Formula feeding • Breast and formula feeding • Safe use of EBM • Maternal nutrition • Safe use of infant formula including availability, preparation & storage • No cows milk or solid foods	Assess • Breastfeeding • Formula feeding • Breast and formula feeding • Safe use of EBM • Maternal nutrition • Safe use of infant formula including availability, preparation & storage • No cows milk • No solid foods until around 6 months • Developmental signs that	Assess • Breastfeeding • Formula feeding • Breast and formula feeding • Safe use of EBM • Maternal nutrition • Safe use of infant formula including availability, preparation & storage • No cows milk *to drink* • Starting solid foods and texture transition from 6-12 months • Cooled boiled water from a	Assess • Transition on to family foods / encouraging variety from 5 food groups • Healthy snacks/meals • Continuing breastfeeding • Stopping infant formula • Introducing cows milk *(full cream)* and normal water from a cup • Offer appropriate amount of food & allow infant to decide for themselves how much	Assess • Family foods based on 5 food groups • Healthy snacks/meals • Continuing breastfeeding • No infant formula /bottles • Full cream cows milk or water • Limit soft drinks, juice and cordial • Offer appropriate amount of food & allow infant to decide for themselves how much	Assess • Family foods based on 5 food groups • Healthy snacks/meals • No bottles • Reduced fat cows milk or water • Limit soft drinks, juice and cordial • Offer appropriate amount of food & allow infant to decide for themselves how much they eat • Food security (availability, access,	Assess • Family foods based on 5 food groups • Healthy snacks/meals • No bottles • Reduced fat cows milk or water • Limit soft drinks, juice and cordial • Offer appropriate amount of food & allow infant to decide for themselves how much they eat • Food security (availability, access,

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Domain	AGE							
	0-4 weeks	2 months	4 months	6 months	12 months	18 months	2.5-3.5 years	4-5 years
	Elimination number of nappies; wet / bowel motions	**Elimination** number of nappies; wet / bowel motions	indicate infant is ready to start solid foods, refer to section 4 [13] **Oral health** [16] **Elimination** number of nappies; wet / bowel motions	cup • Offer food that is age & developmentally appropriate • Offer appropriate amount of food & allow infant to decide for themselves how much they eat • Food security (availability, access, preparation & storage) e.g. If infant is hungry is food always available? **Oral health** [16] **Elimination** number of nappies; wet / bowel motions	they eat • Food security (availability, access, preparation & storage) e.g. If child is hungry is food always available? • Mealtime environment • Self feeding **Oral health** [16] **Elimination**	they eat • Food security (availability, access, preparation & storage) e.g. If child is hungry is food always available? • Mealtime environment • Independent eating **Oral health** [16] **Elimination**	preparation & storage) e.g. If child is hungry is food always available? • Mealtime environment **Oral health** [16] **Elimination**	preparation & storage) e.g. If child is hungry is food always available? • Mealtime environment **Oral health** [16] **Elimination**
Growth [11]	**Measure** and plot on CDC growth chart [3] • weight • length • HC	**Measure** and plot on CDC growth chart [3]; • weight • length • HC	**Measure** and plot on CDC growth chart [3] • weight • length • HC	**Measure** and plot on CDC growth chart [3] • weight • length • HC	**Measure** and plot on CDC growth chart [3] • weight • length • HC	**Measure** and plot on CDC growth chart [3] • weight • length *(height from 2 years)*	**Measure** and plot on CDC growth chart [3] • weight • height • HC *(up to 2*	**Measure** and plot on CDC growth chart [3] • weight • height • BMI

Appendix 1

Domain	AGE							
	0-4 weeks	2 months	4 months	6 months	12 months	18 months	2.5-3.5 years	4-5 years
						• HC *(up to 2 yrs)* • BMI *(from 2yrs)*	*years)* • BMI	
Physical **[5, 6, 11]**	**Assess** • General appearance • Skin • Head / Fontanelle • Face, Eyes, Neck • Chest, Abdomen • Genitalia • Extremities • Hips • Back • Neurological (posture, tone, reflexes) [8, 9, 17]	**Assess** • General appearance • Skin • Head / Fontanelle • Face, Eyes, Neck • Chest, Abdomen • Genitalia • Extremities • Hips • Back • Neurological (posture, tone, reflexes) [8, 9, 17]	**Assess** • General appearance • Skin • Head / Fontanelle • Face, Eyes, Neck • Chest, Abdomen • Hips • Genitalia • Neurological (posture, tone, reflexes) [8, 9, 17]	**Assess** • General appearance / behaviour • Head / Fontanelle • Face, Eyes Neck • CLR • Hips • Genitalia • Neurological (posture, tone, reflexes) [8, 9, 17]	**Assess** • General appearance / behaviour • Head / Fontanelle • Face, Eyes, Neck • CLR • Hips [8, 9, 17]	**Assess** • General appearance / behaviour • Head / Fontanelle • Face, Eyes, Neck • CLR • Gait [8, 9, 17]	**Assess** • General appearance / behaviour • Head, Face, Eyes, Neck • CLR • Gait [8, 9, 17]	**Assess** • General appearance / behaviour • Head, Face, Eyes, Neck • CLR • Hearing • Gait [8, 9, 17]

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Domain	AGE							
	0-4 weeks	2 months	4 months	6 months	12 months	18 months	2.5-3.5 years	4-5 years
Development	***Perform age appropriate Developmental Assessment*** ***(when performing a developmental assessment, knowledge of developmental stages will facilitate assessment)***							
Social / Emotional	• Infant momentarily looks at faces • Shows preference for people to inanimate objects • Turns head in response to familiar parental voice or smell [18-21] • Mother *(or primary care giver)* is sensitive to and responds appropriately to infant's cues [3, 22, 23]	• Social smile 6-8 weeks • Physiological regulation developing patterns of settling feeding and alertness [18-21] • Mother *(or primary care giver)* is sensitive to and responds appropriately to infant's cues [3, 22, 23]	• Shows excitement in response to people • First signs of infant's preference towards certain adults e.g. smiles, gestures • Engages in 'peek-a-boo' [18-21] • Mother *(or primary care giver)* is sensitive to and responds appropriately to infant's cues [3, 22, 23]	• Separation protest present - the beginning of 'stranger anxiety' • Infant shows clear preference for certain adults • Increasing need for infant to 'check in' with parent - with voice or visual cues [18-21] • Mother *(or primary care giver)* is sensitive to and responds appropriately to infant's cues [3, 22, 23]	• Shows emotions e.g. may give affection hugs/kisses • Waves 'bye-bye', claps hands together [8, 9, 24] • Actively seeks their mother *(or primary care giver)* when distressed • Readily comforted when reunited with their mother (*or primary* care giver) [18-21] • Infant explores their environment, returning to their mother *(or primary care giver)* for reassurance	• Beginning to show recognition of themselves in the mirror • Shows verbal self - identity when speaking e.g. 'I', 'me', 'mine' • Development of imaginative play • Beginning to protest e.g. 'no' and experiments with control over events and people [18-21] • Becoming less fearful with strangers [8, 9, 24] • Explores their environment, returning to their mother *(or primary care giver)* for	• Notices gender differences e.g. I'm a girl [8] • At 3 years children begin to understand others i.e. empathy • Possess a range of words for their own emotions • Able to fully cooperate in play • Can become wilful or possessive • Begin to predict events • Able to separate from parents more easily • Can tolerate longer separations from mother *(or primary care giver)*	• Symbolic and imaginative play becomes more elaborate • Increasingly aware of social expectations / responsibilities • Friendships develop and strengthen • Increasingly flexible and resilient under stress • Beginnings of capacity to know that others have thoughts and feelings separate from their own [18-21] • Tolerates separation from mother *(or primary care giver)* [11]

Appendix 1

Domain	AGE							
	0-4 weeks	2 months	4 months	6 months	12 months	18 months	2.5-3.5 years	4-5 years
					[11]	reassurance [11]	[18-21]	
Communication / Language [8, 24]	• Cries to alert parent/s they require attention e.g. feeding, cuddle, nappy change etc	• Cries to alert parent/s they require attention e.g. feeding, cuddle, nappy change etc • Vocalizes coos	• Cries to alert parent/s they require attention e.g. feeding, cuddle, nappy change etc • Squeals	• Cries to alert parent/s they require attention e.g. feeding, cuddle, nappy change etc • Vocalizes; Begins to imitate sounds • Enjoys hearing own sounds and talking to self in the mirror.	• Says 3-5 words • Understands simple commands, responds to their own name being called • Imitates animal sounds	• Says > 10 words • Forming word combinations	• Understands directions given • Saying >300 words • Using 2-3 word combinations	• Uses sentences • Likes telling stories • Questions
Fine Motor [8, 24]	• Hands mostly closed - fists	• Hands more relaxed - often open	• Looks at and plays with his/her hands	• Transfers toys from one hand to the other	• Pincer grasp – picks up small objects with thumb and forefinger	• Scribbles • Builds tower of 3-4 blocks	• Holds crayon with fingers • Draws circles and lines	• Draws a person in three parts • Uses scissors
Gross Motor [8, 24]	• In the prone position Infant can turn his/her head to	• In the prone position infant can lift their head 45	• In the prone position the infant is able to lift his/her	• In the prone position the infant is able to lift his/her	• Infant is able to walk holding onto furniture • When sitting	• Walks well / runs stiffly • Is able to seat themself in a	• Walks up and down stairs • Throws and	• Hops on one foot • Throws and catches a ball

Appendix 1

Domain	AGE							
	0-4 weeks	2 months	4 months	6 months	12 months	18 months	2.5-3.5 years	4-5 years
	the side	degrees. • In the supine position moves arms & legs, generally spontaneous motor activity	head up and upper chest well with weight on forearms • When pulled to the sitting position head follows (little or no head lag)	head and chest well up, pushes up on hands / extends arms • When pulled to the sitting position head follows **No head lag**	on the floor infant is well balanced in all directions and is able to get in & out of the sitting position independently.	chair	kicks a ball	well
Additional Information for rural and remote populations and Aboriginal & Torres Strait Islander Children [25] section 4	**Clinical Measurement** • Breathing • Heart sounds **Hearing** • Ask hearing assessment questions	**Clinical Measurements** • Breathing • Heart sounds **Hearing** • Ask hearing assessment questions • Otoscopy	**Clinical Measurements** • Breathing • Heart sounds **Hearing** • Ask hearing assessment questions • Otoscopy	**Clinical Measurements** • Breathing • Heart sounds • Haemoglobin **Hearing** • Ask hearing assessment questions • Otoscopy	**Clinical Measurements** • Breathing • Heart sounds • Haemoglobin **Hearing** • Ask hearing assessment questions • Otoscopy • Tympanometry	**Clinical Measurements** • Breathing • Heart sounds • Haemoglobin **Hearing** • Ask hearing assessment questions • Otoscopy • Tympanometry	**Clinical Measurements** • Breathing • Heart sounds • Haemoglobin • BMI (yearly from 2 years) **Hearing** • Ask hearing assessment questions • Otoscopy • Tympanometry	**Clinical Measurements** • Breathing • Heart sounds • Haemoglobin • BMI **Hearing** • Ask hearing assessment questions • Otoscopy • Tympanometry • Audiometry

Appendix 1

Domain	AGE							
	0-4 weeks	2 months	4 months	6 months	12 months	18 months	2.5-3.5 years	4-5 years
	Eyes and vision • Appearance • Red Eye Reflex	**Eyes and vision** • Appearance • Red Eye Reflex	**Eyes and vision** • Appearance • Red Eye Reflex	**Eyes and vision** • Appearance • Red Eye Reflex • CLR	**Eyes and vision** • Red Eye Reflex • CLR	**Eyes and vision** • Red Eye Reflex • CLR		

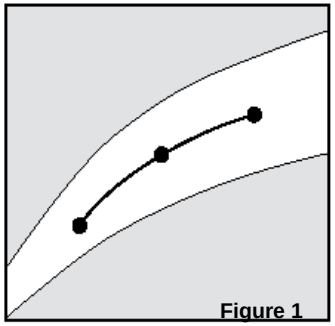
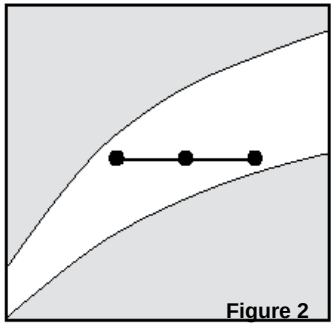
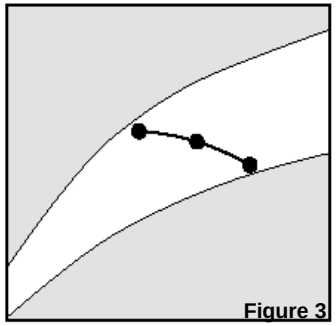
Appendix 2

Domain	Assessment	Resources
Nutrition	• Breastfeeding is the normal way of providing infants and young children with the nutrition they need for healthy growth and development [13] • Assess infant / child's nutritional status at each child health check [26] [13] ; ask broad open – ended questions e.g. what signs does you baby show when she/he is hungry? Ask closed ended questions if you need specific details e.g. how many wet nappies does your baby have each day? [8] • Provide mothers with support to manage breastfeeding challenges, when establishing and also maintaining breastfeeding [3]. Refer mothers' for further breastfeeding assessment / support as required [11] • Assess safe use of infant formula; preparation and cleaning of infant feeding equipment, storage and transport of infant formula [15, 27] • Food security assessment; availability, access, preparation and storage of food e.g. if the toddler / child is hungry is there food available? • Provide parent/s and or carer/s with accurate evidenced-based information and resources • Discuss with parent/s and or carer/s developmental signs that indicate infants readiness to start solid foods, refer to section 4 [13] 'A Healthy Start in Life • Provide additional resources for Aboriginal & Torres Strait Islander Children e.g. Growing Strong: Feeding you and your baby [14]	• Queensland Health Breastfeeding Policy and Breastfeeding implementation standard available on QHEPS policy site http://qheps.health.qld.gov.au/policy/html/b.htm • Breastfeeding website http://www.health.qld.gov.au/breastfeeding • Infant Feeding Cues http://www.health.qld.gov.au/breastfeeding/documents/feeding_cues.pdf • A Healthy Start in Life http://www.health.qld.gov.au/healthieryou/healthystartinlife.asp • Growing Strong pamphlets available for download from: http://www.health.qld.gov.au/ph/documents/hpu/growing_strong.asp • Breastfeeding Helpline 1800 mum 2 mum **1800 686 2 686** • Australian Breastfeeding Association www.breastfeeding.asn.au • Lactation Consultants of Australia and New Zealand (LCANZ) www.lcanz.org • 13 HEALTH **13 43 25 84** (24 hr health information phone line) • Child Health Information Your guide to the first 12 months [27] http://qheps.health.qld.gov.au/cyhu/info_booklet.htm • QHEPS http://www.health.qld.gov.au/cchs/nutrition.asp • QHEPS Child Health Information – Fact Sheets www.health.qld.gov.au/child-youth/ • Fun not fuss with food

Appendix 2

Domain	Assessment	Resources
		• http://www.health.qld.gov.au/ph/documents/saphs/27484.pdf
Growth	• Normal physical growth is an important indicator of an infant / child's overall health and nutritional status. Physical growth is best assessed by measuring weight, length/height and head circumference [28] • Following birth infants can lose up to 10% of their birth weight. By day 6 they should start to regain this weight and should have regained their birth weight by 2 weeks [28, 29]. There should be regular weight gain throughout the first year of life, approximately; o birth to 3 months a gain of 150g – 200g per week o 3 - 6 months a gain of 100g – 150g per week o 6 - 12 months a gain of 70g – 90g per week [13, 28] o Weight gain between 1-5 years of age approximately 2-3kg per year [8] • Breastfeed infants have different growth patterns compared with formula fed infants in the first 12 months therefore caution should be exercised when interpreting results for breast fed infants using Centre for Disease Control (CDC) charts. Breastfeed infants appear to grow faster than average during the first 6 months but more slowly thereafter. They also tend to be taller and thinner compared with mostly formula fed infants. • Refer to the Child and Youth Health Practice Manual Section 3 for the recommended procedures for measuring infants and children – weight, length / height and head circumference; link available in resource column. • Body Mass Index (BMI) can be calculated and plotted from weight and height from 2 years; refer to Child and Youth Health Practice Manual Section 3; link available in resource column.	• The WHO Child Growth Standards www.who.int/childgrowth/standards/en • Centres for Disease Control www.cdc.gov/growthcharts [30] • Chronic Diseases Guidelines [25] http://www.health.qld.gov.au/cdg/html/cdg_resource.asp • Community Child Health Service www.health.qld.gov.au/cchs • Growth chart within infant/child's PHR http://qheps.health.qld.gov.au/cyhu/health_record.htm • A healthy start in life [13] http://www.health.qld.gov.au/healthieryou/healthystartinlife.asp • Child and Youth Health Practice Manual for Child and Youth Health Nurses and Indigenous Child Health Workers [3, 11] http://www.health.qld.gov.au/child-youth/webpages/CYHP-manual.asp

Appendix 2

Domain	Assessment	Resources
Growth	• Document growth measurements in the infant / child's medical record and PHR. • Plot measurements on the CDC growth chart – correct age for preterm infants [3, 31] • **Interpreting growth charts** – After measuring the child and plotting measurements on the appropriate chart for age and gender, assess the child's growth curve against the growth percentile lines. **Growth**  Figure 1  Figure 2  Figure 3 Figure 1 → If the child's growth is following the growth trend percentiles, it is an indication of good growth [25] Figure 2 & 3→ A flat line or a downwards direction can indicate growth faltering [25] **Arrange appropriate referral or review when problems are identified.** For **Referral & Review criteria refer to section 3 of the Child and Youth Health Practice Manual** [11]available from http://www.health.qld.gov.au/child-youth/webpages/CYHP-manual.asp	

Appendix 2

<table>
<tr><th>Domain</th><th>Assessment</th><th>Resources</th></tr>
<tr><td rowspan="2">Physical Assessment</td><td>

General appearance – Infant's response to parent/ s & examiner, state of alertness, activity, range of spontaneous movement, posture, muscle tone, odour, how infant is dressed i.e. clean / dressed appropriately for weather.
Skin – integrity, turgor, colour, marks, pigmentation, rashes, lesions, sores, bites, jaundice, bruising, anomalies
Head

Shape and symmetry
Fontanelle; posterior fontanelle closed by 8 weeks, anterior fontanelle closes 12-18 months.
sutures

</td><td>

Wong's Nursing Care Of Infants And Children [8]
Pocket Guide to Pediatric Assessment [9]
Paediatric Handbook [17]
State wide Maternity Clinical Guideline: Examination of the newborn baby [32] http://www.health.qld.gov.au/qcg/
Newborn screening laboratory 36 36 70 51
Child and Youth Health Practice Manual for Child and Youth Health Nurses and Indigenous Child Health Workers [3, 11]

http://www.health.qld.gov.au/child-youth/webpages/CYHP-manual.asp
</td></tr>
<tr><td colspan="2">

Face

Symmetry
Note any unusual facial proportions e.g. small receding chin, wide or close set eyes
Ears – position, structure –including patency of the external auditory meatus, startle reflex present to sudden loud noise, check that Neonatal hearing screen has been completed
Eyes – pupil restricts in response to light, No opacities or haziness, white / clear sclera, 0-4 weeks- infants ability to look at faces and by 6 months their ability to follow moving objects.
Mouth – hard and soft palates, mucosal lining of lips cheeks, tongue and frenulum
Nose – patent nares

Neck

Normal range of movement – limited range of movement may indicate torticollis or wryneck

Back

Symmetry of scapulae and buttocks
spine intact

Hips

Equal hip abduction
Prone - thigh symmetry
Supine - symmetric thigh and gluteal folds.

Nervous system

Behaviour
Posture
Muscle tone
Movement

Reflexes → Moro, Suck, Rooting, Grasp, Stepping/Walking

</td></tr>
</table>

Appendix 2

Domain	Assessment	Resources
	Arrange appropriate referral or review when problems are identified	
Development	• Ask the parent/s and or carer/s if they have any concerns regarding their infant/ child's development. • Observe infant – paternal interaction. Refer to section 3 in the Child Health Manual [11] 'Milestones in the development of attachment' • Gather information by asking the parent/s and or carer/s and by observing the infant / child [8] • Perform age appropriate developmental assessment • Allow for prematurity until the child is 2 years of age [31] • Follow referral guidelines for the developmental screening tool used, and refer concerns identified for further assessment and or management to an appropriate service [3] • Refer any regression of developmental milestones for further developmental assessment • Promote development - provide parent/s and or carer/s with accurate evidenced-based information and resources • Use of the 'Red Flags Early Intervention Guide for Children 0-5 Years' can assist parent/s and or carer/s, and, health professionals to identify developmental concerns 'red flags' that require referral for developmental assessment.	• Child and Youth Health Practice Manual for Child and Youth Health Nurses and Indigenous Child Health Workers [3, 11] http://www.health.qld.gov.au/health_professionals/childrens_health/child_youth_health.asp • Child Development Milestones http://www.health.qld.gov.au/cchs/growth_approp.asp • Child Health Information – fact sheets www.health.qld.gov.au/child-youth/ • Move Baby Move (QH publication) http://www.sportrec.qld.gov.au/CommunityPrograms/Schoolcommunity/Earlychildhoodprograms/Activebaby.aspx • Child Youth & Health website www.cyh.com • Raising Children Network http://raisingchildren.net.au/ • Wong's Nursing Care Of Infants And Children [8] • Pocket Guide to Pediatric Assessment [9] • Red Flags Early Intervention Guide for Children 0-5 Years http://qheps.health.qld.gov.au/rch/CCHS/cchsresources.htm • Queensland Centre for Perinatal and Infant Mental Health (QCPIMH) http://www.health.qld.gov.au/qcpimh
Additional Information for rural and remote	Perform additional child health assessments / screening for rural and remote populations, as outlined in the Chronic Disease Guideline [25]; • Perform additional child health checks at 9, 15 and 21 months → The	• Chronic Diseases Guidelines; Section 4, Child Health Check and Attachment – Child Health Check Activity Summary http://www.health.qld.gov.au/cdg/html/cdg_resource.asp

Appendix 2

Domain	Assessment	Resources
populations **AND** **Aboriginal & Torres Strait Islander Children**	purpose of these additional child health checks are to ensure follow up for those children who have not met growth and nutrition targets at previous checks • **Fontanelle** → Check at each well child health check from 0-4 weeks up to and including 2 years • **Ears and hearing** (There is a high level of hearing loss in Aboriginal and Torres Strait Islander people) • **Eyes and vision** → Appearance of the eye, Red eye reflex and Corneal light reflex • **Haemoglobin** → Check haemoglobin at 6 months of age (if preterm or LBW infant check from 4 months) then 3 monthly to 2 years • **BMI** yearly from 2 years of age Refer to the **Chronic Disease Guidelines: Section 4, Child Health Check**, and **Attachment – Child Health Check Activity Summary** [25] for detailed information regarding health check ages, content and health check procedures - including when to refer.	• Primary Clinical Care Manual [33] http://www.health.qld.gov.au/pccm/pccm_pdf.asp • Growing Strong Feeding You And Your Baby Resources available for download from: http://www.health.qld.gov.au/ph/documents/hpu/growing_strong.asp

Appendix 3

Project Officer

Tracey Button

Model of Care for Child Health working group co-chairs:

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