



**PROCEDURE**

**Growth – downward trajectory**

<b>Scope (Staff):</b>	Community health staff
<b>Scope (Area):</b>	CACH, WACHS

**Child Safe Organisation Statement of Commitment**

CAHS commits to being a child safe organisation by applying the National Principles for Child Safe Organisations. This is a commitment to a strong culture supported by robust policies and procedures to reduce the likelihood of harm to children and young people.

This document should be read in conjunction with this [disclaimer](#)

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**Aim**

To provide guidance on the identification, management and referral of clients whose growth is presenting as a downward trajectory in percentiles on the relevant growth charts for age and sex at birth.

**Risk**

Inadequate assessment and monitoring of a downward growth trajectory in percentiles may result in delayed recognition and appropriate management of a growth concern.

This document should be read in conjunction with the following:

- [Growth - Birth to 18 years](#)
- [Nutrition for children – Birth to 18 years](#)

- [Breastfeeding and lactation concerns - assessment](#)

## Background

Poor growth can be described as an unexpected downward trajectory and/or a static or slower rate of weight gain from a previously established pattern.<sup>1</sup> It is usually marked by weight gain that is disproportionate to growth in height.<sup>2</sup> Length and head circumference may be initially preserved but may also show a downward trajectory in cases of prolonged and severe insufficient nutrition.<sup>2</sup> Changes in *head circumference alone* are usually related to an underlying medical issue, except where there is long-term undernutrition. Serial *length* assessment can detect long-term effects of poor growth which has resulted in stunting. This may be due to persistent undernutrition.<sup>1</sup>

Poor growth is an issue commonly seen in primary health care settings in children under the age of two.<sup>1, 3, 4</sup> It can have both short- and long-term effects on the developing child and can interrupt the immune response, increasing the risk of severe infection and infant mortality.<sup>3, 4</sup> Prolonged poor growth may cause ongoing growth deficits, delay in cognitive and psychomotor development, diminished physical activity and development, behavioural problems and learning disabilities.<sup>2</sup>

Plotting serial growth measurements and assessing any movement in percentiles is crucial for assessing a child's growth trajectory, however growth charts are not diagnostic and considerations about growth deviations should be made in the context of holistic factors, which include a child's overall physical health, nutritional status and psychosocial factors.<sup>4</sup>

Some growth patterns are not considered to be a cause for concern. For example:

- Children who have growth trajectories closely tracking along a growth curve when plotted on the relevant growth chart, even when following a low percentile.<sup>2</sup>
- Children who have a genetic short stature.<sup>1</sup>
- Children whose weight may dip sharply after minor illness.<sup>1</sup>

Poor growth is often the result of an interplay between medical, developmental/behavioural, nutritional and psychosocial factors which result in a nutritional deficiency.<sup>4</sup> The pathogenesis of poor growth can be due to inadequate energy intake, inadequate absorption, increased/excessive energy expenditure or issues with nutrient utilisation.<sup>1</sup> However, the most common cause is inadequate nutrition.<sup>4, 5</sup> See Appendix 1: [Factors contributing to poor growth](#) for a list of factors which may contribute to poor growth.

Social and economic factors are significant contributors to poor growth.<sup>4</sup> These factors impact child health and development and are found in higher prevalence among Aboriginal communities and other communities experiencing disadvantage.<sup>6</sup> It is acknowledged that many Aboriginal families and communities are strong, well supported and do not need additional services and support. However, families facing hardship are likely to benefit from additional support, such as Universal Plus, Partnership and the WACHS Enhanced Child Health Schedule (ECHS) to ensure children thrive in their early years.

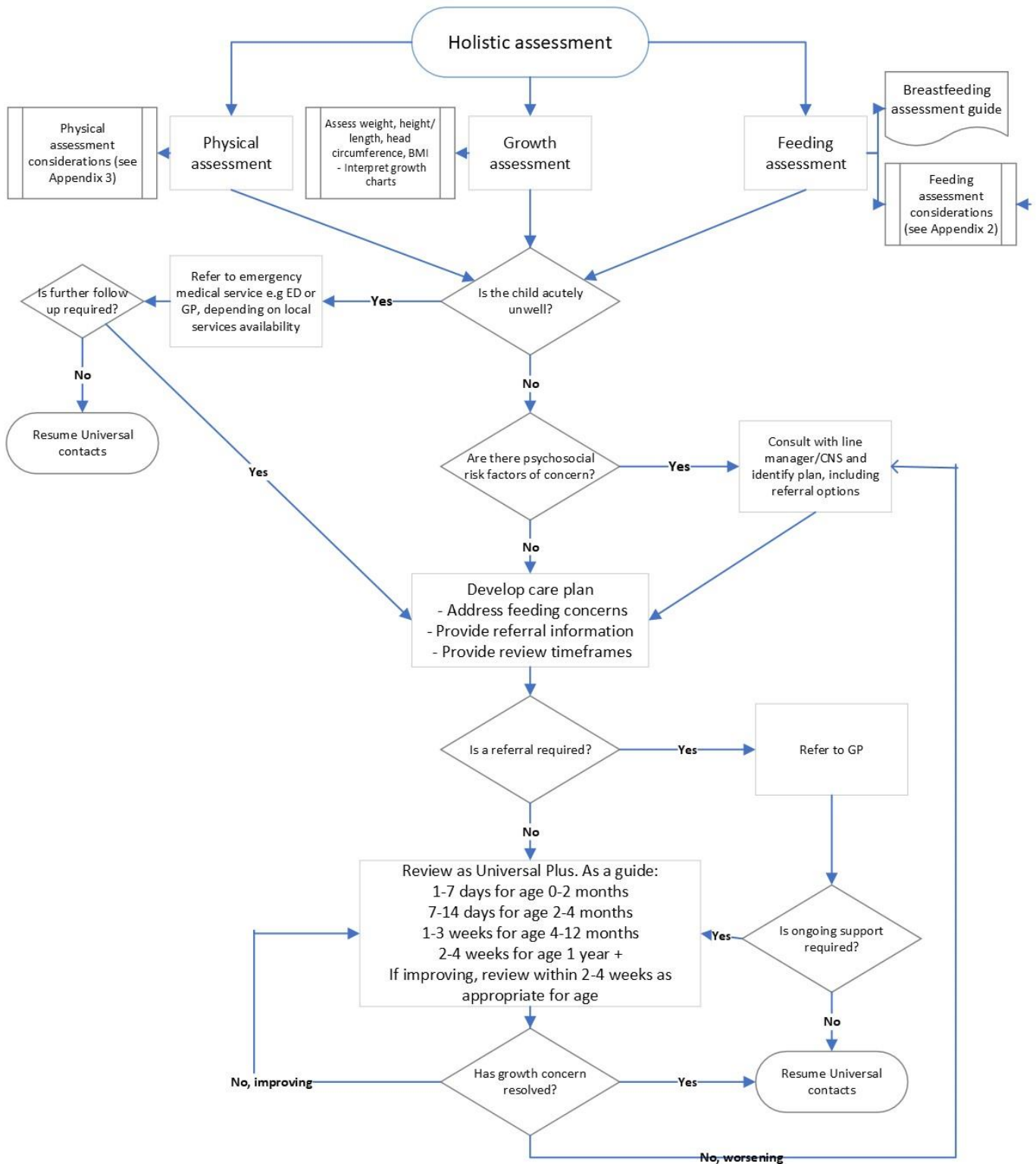
The implementation of strategies to increase energy intake can quickly improve growth in infants and most children who are eating solid foods will respond well to targeted nutrition advice.<sup>1, 5</sup> It is important to note that positive increases in growth trajectory can be slower in older children.<sup>5</sup>

CACH and WACHS Community Health Nurses play a critical role in the primary detection, early intervention, care planning, coordination and monitoring of children with growth concerns via Universal, Universal Plus, Partnership and ECHS pathways. Where possible, nurses should work collaboratively with other health professionals and key contacts to assist families in care planning for growth concerns.

## Key points

- Plotting serial measurements is crucial for assessing growth over time
- Growth charts are not diagnostic tools and decisions about care planning pathways should be considered in conjunction with a holistic assessment
- Serial measurements showing a downward trajectory in percentiles on the appropriate growth chart requires investigation and timely action to reduce short and long-term issues
- Interpreting the growth trajectories of weight, length/height and head circumference percentiles is critical. Emphasis should be on the percentile trajectory and not on changes in grams or centimetres
- Where growth concerns have been identified, nurses must document a plan of care, including a plan for review. The care plan should be reviewed at each subsequent Universal Plus contact
- Nurses should work within their scope of practice and when concerned, discuss the care plan with their line manager or Clinical Nurse Specialist (CNS) for guidance in management as required
- All nurses will refer to the Nursing and Midwifery Board AHPRA Decision-making framework in relation to scope of practice and delegation of care to ensure that decision-making is consistent, safe, person-centred and evidence-base
- Nurses need to provide a culturally safe service delivery which demonstrates a welcoming environment that recognises the importance of cultural beliefs and practices of all clients.

## Growth concerns: Process flowchart



## Growth concerns – Process table

Steps	Additional Information
<p><b>1. Conduct a holistic assessment including growth, feeding, physical assessments, psychosocial risk factors</b></p> <p><b><u>Growth assessment</u></b></p> <p>Use CDIS/CHIS to plot weight, length/height and head circumference</p> <ul style="list-style-type: none"> <li>○ Where CDIS/CHIS is unavailable, plot growth measurements on the relevant growth charts for the child's age <ul style="list-style-type: none"> <li>- WHO 0-6m weight, length and head circumference-for-age charts (&lt;6 months)</li> <li>- WHO 0-2 years weight, length and head circumference (6 months – 2 years)</li> <li>- Body mass index Girls/Boys (CHS430 A/B) (&gt;2 years) and WHO 2-5 years weight and height</li> </ul> </li> <li>○ Use the birth and discharge weights</li> <li>○ Use Fenton growth charts for pre-term infants born under 37 weeks gestation <ul style="list-style-type: none"> <li>- Use corrected age until client is 2 years of age</li> </ul> </li> </ul> <p><b><u>Feeding assessment</u></b></p> <p>Use <a href="#">feeding assessment factors (Appendix 2)</a> to conduct a feeding assessment</p> <p><u>0-6 months</u></p> <ul style="list-style-type: none"> <li>• If there are breastfeeding issues, observe a breastfeed and use the Breastfeeding Assessment Guide</li> <li>• Number, frequency and duration of breastfeeds (in 24 hrs) including any</li> </ul>	<p>See the following for further information:</p> <ul style="list-style-type: none"> <li>• <a href="#">Weight assessment – 0 to 2 years</a></li> <li>• <a href="#">Weight assessment 2 years and over</a></li> <li>• <a href="#">Length assessment – 0-2 years</a></li> <li>• <a href="#">Height assessment 2 years and over</a></li> <li>• <a href="#">Head circumference assessment</a></li> <li>• <a href="#">Body mass index assessment</a></li> <li>• <a href="#">Breastfeeding and lactation concerns – assessment</a></li> </ul>

<p>supplementary feeds (expressed breastmilk or formula)</p> <ul style="list-style-type: none"> <li>• Formula volume and dilution, including any supplementary feeds (where infant is also receiving breastmilk/breastfeeds)</li> <li>• Feeding patterns/routines</li> <li>• Parent/caregiver interactions</li> <li>• Parent/caregiver response to feeding cues</li> </ul> <p><u>6-12 months</u></p> <ul style="list-style-type: none"> <li>○ Milk intake (type/quantity)</li> <li>○ Timing of solids introduction</li> <li>○ Solids intake – quality, variety/texture and alignment with developmental stage/feeding skills</li> <li>○ Mealtime structure (frequency, duration, environment and equipment)</li> <li>○ Parent/caregiver interactions and response to feeding cues</li> </ul> <p><u>12 months +</u></p> <ul style="list-style-type: none"> <li>○ Food intake (texture, type, quantity)</li> <li>○ Fluid intake (including breastmilk, cow's milk/plant-based alternatives, juice and other drinks)</li> <li>○ Feeding skills (appropriate for age)</li> <li>○ Mealtime environment</li> <li>○ Parental response to feeding self-efficacy</li> </ul> <p><b><u>Physical assessment</u></b></p> <p>Use <a href="#">physical assessment factors (Appendix 3)</a> to guide the physical assessment</p> <ul style="list-style-type: none"> <li>• Is the child acutely unwell? Use physical signs to assess: <ul style="list-style-type: none"> <li>○ Hydration status e.g sunken fontanelles, dry mucous</li> </ul> </li> </ul>	<p>See <a href="#">Physical Assessment 0-4 years</a></p> <p>See <a href="#">CACH Recognising and responding to acute deterioration</a></p> <p>See <a href="#">WACHS Recognising and responding to acute deterioration</a></p>
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<p>membranes, skin turgor, lethargy/apathy, urine/stool output</p> <ul style="list-style-type: none"> <li>○ Fever</li> <li>○ Tachypnoea/tachycardia</li> <li>○ Pallor</li> <li>○ Oedema</li> <li>○ Respiratory distress</li> <li>○ Vomiting</li> <li>○ Listlessness/apathy</li> <li>○ Absence of hunger cues/loss of appetite</li> </ul> <ul style="list-style-type: none"> <li>● Consider chronic physical signs <ul style="list-style-type: none"> <li>○ Enquire about urine output e.g. reduced volume, dark in colour, strong offensive odour</li> <li>○ Enquire about stool output e.g. reduced, dry/hard/explosive bowel actions, constipation, presence of blood or mucous</li> <li>○ Enquire about vomiting e.g. excessive possetting/regurgitation, projectile vomiting</li> <li>○ Allergy</li> <li>○ Decreased appetite</li> <li>○ Wheezing/snoring/mouth breathing</li> <li>○ Physical difficulties related to feeding e.g excessive drooling, swallow issues, gagging, vomiting during eating/feeding, dentition</li> <li>○ Frequent illness/infection</li> </ul> </li> </ul> <p><b><u>Psychosocial risk factors/concerns</u></b></p>	<p>See <a href="#">Factors impacting on child health and development</a></p> <p>See <a href="#">Perinatal and infant mental health</a></p>
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2. Identification of growth concerns	
<p><b><u>A growth concern is identified when:</u></b></p> <ul style="list-style-type: none"> <li>• The client has at least two serial growth measurements plotted on a growth chart</li> <li>• The client’s weight, length, head circumference-for-age OR BMI <b>percentile</b> is tracking downwards on the growth chart <ul style="list-style-type: none"> <li>○ An infant has lost more than 10% of their birth weight</li> <li>○ An infant has not regained birth weight by day 14</li> </ul> </li> <li>• The nurse has completed a holistic assessment of the client, including a feeding assessment and physical assessment which raises concerns</li> <li>• The nurse has indicated growth concerns elsewhere in the electronic health information system.</li> </ul> <p>Use the CDIS/CHIS growth charts to discuss growth pattern/trajectory with the parent/caregiver</p>	<p><b>CACH:</b> The ‘growth faltering’ box in CDIS <b>must be ticked</b> where clients have met the criteria identified in the left column. NOTE: This is to alert growth concerns for a client, <b>it is not a faltering growth diagnosis.</b></p> <p><b>WACHS:</b> When entering a Growth Faltering Clinical Item in CHIS, staff will ensure clients have met the identified criteria (left column).</p>
3. Care planning	
<p><b><u>Develop a care plan</u></b></p> <p>Develop a ‘My Care Plan’ (CHS825), in partnership with parent/caregiver to ensure a shared understanding of concerns and plan.</p> <ul style="list-style-type: none"> <li>• The ‘My Care Plan’ will outline: <ul style="list-style-type: none"> <li>○ strategies for client to implement,</li> <li>○ review timeframe (conducted as a Universal Plus contact)</li> <li>○ when to escalate care, if required</li> </ul> </li> <li>• Give one copy to client and retain a copy in client record</li> </ul>	<p>See <a href="#">Breastfeeding and Lactation Concerns – Assessment</a></p> <p>See <a href="#">Nutrition for children – birth to 18 years.</a></p> <p>WACHS – refer to WACHS Lactation Consultant telehealth service</p>



**Acute illness**

When an infant presents with weight loss associated with signs and symptoms such as fever, respiratory distress, vomiting, lethargy and/or dehydration take immediate action to keep the child safe.

- Any acutely ill child should be urgently referred to emergency medical care for immediate medical assessment.
- Provide a completed Clinical Handover/Referral Form (CHS 663) or WACHS Electronic Population Health Clinical Handover Form.

Involve Line Manager and/or Clinical Nurse specialist (CNS) as required.

**Feeding concerns**

Use issues identified in [Feeding assessment considerations \(Appendix 2\)](#) to develop shared goals with the parent/caregiver

A feeding plan can include goals relating to the following:

- Strategies relating to any breastfeeding concerns identified in the assessment. If supplementary feeding is required:
  - Avoid providing parents/caregivers with specific volumes for supplementary feeds. Focus on overarching feeding strategies, such as responsive feeding/following infant cues first (where appropriate). Use clinical judgement in an unwell infant.
- Advise expressing breastmilk to feed the infant with any available breastmilk before providing infant formula (consult with the family to determine their capacity to express,

<p>store and feed supplementary breastmilk)</p> <ul style="list-style-type: none"><li>• If supplementary feeding with formula is required, support the mother to maintain her milk volume by expressing and encourage opportunities for the infant to continue breastfeeding</li><li>• Supplementary feeding with infant formula in a breastfed infant may help with weight gain, but often results in cessation of breastfeeding which may have negative long-term implications</li><li>• Food &amp; fluid intake<ul style="list-style-type: none"><li>○ Variety/quantity/texture progression</li><li>○ Water/juice/milk intake</li></ul></li><li>• Feeding skills<ul style="list-style-type: none"><li>○ Self-feeding</li><li>○ Spoon feeding</li><li>○ Gag reflex</li><li>○ Sensory preferences</li></ul></li><li>• Mealtime structure/environment<ul style="list-style-type: none"><li>○ Meal frequency</li><li>○ Supervision</li><li>○ Distractions</li><li>○ Meals eaten with family/siblings</li><li>○ Equipment (highchair/chair, cups, bottles, spoons)</li></ul></li><li>• Parent/caregiver attitudes/behaviours<ul style="list-style-type: none"><li>○ Division of Responsibility principles</li><li>○ Role modelling</li></ul></li></ul>	
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<ul style="list-style-type: none"> <li>○ Coercive feeding</li> </ul> <p><b><u>Psychosocial risk factors/concerns</u></b></p> <ul style="list-style-type: none"> <li>● Involve Line Manager and/or Clinical Nurse specialist (CNS) as required.</li> </ul> <p>Consider identifying the family for involvement with:</p> <ul style="list-style-type: none"> <li>● Community Health - Partnership service</li> <li>● WACHS – Enhanced Child Health Schedule</li> <li>● Department of Communities.</li> </ul>	<p>See <a href="#">Clients of concern management</a></p> <p>See <a href="#">Factors impacting child health and development</a></p> <p>WACHS staff can discuss regional clients with Department for Communities.</p>
<p><b>5. Referral</b></p>	
<p><b>When possible, nurses should work in collaboration with client’s GP/Paediatrician to provide optimal care, which may impact the Care Plan.</b></p> <p>Complete and provide a completed Clinical Handover/Referral Form (CHS 663) or WACHS Electronic Population Health Clinical Handover Form.</p> <p>Where there are concerns with infant growth, referral information will include:</p> <ul style="list-style-type: none"> <li>○ Serial measurements of weight, length and head circumference (including from birth and at discharge from birthing services if available)</li> <li>○ Copies of growth charts showing trajectory of growth</li> <li>○ Overview of additional concerns as noted in the holistic assessment</li> </ul>	<p>Consider all supports available to the family for example:</p> <ul style="list-style-type: none"> <li>○ WACHS Lactation Consultant telehealth service</li> <li>○ breastfeeding supports             <ul style="list-style-type: none"> <li>- Breastfeeding support service</li> <li>- Australian Breastfeeding Association</li> <li>- Local supports as available</li> </ul> </li> <li>○ Enhanced Child Health Services (WACHS)</li> <li>○ Partnership Service (CACH)</li> <li>○ Aboriginal Health Workers/AHT</li> <li>○ Department of Communities</li> <li>○ Social worker</li> <li>○ Mental health services</li> <li>○ other services in accordance with regional availability</li> </ul>

	<p>Where indicated, consider completing a <a href="#">Child Protection Concern Referral</a> form.</p> <ul style="list-style-type: none"> <li>○ Staff must explicitly document observations and possible long-term outcomes if action is not taken, plan of action and review dates.</li> </ul>
<p><b>6. Review</b></p>	
<p><b><u>Review and follow-up</u></b></p> <p>Conduct a Universal Plus contact to review the client in accordance with their age. The following timeframes (from initial contact) can be used as a guide:</p> <ul style="list-style-type: none"> <li>○ within one to seven (1-7) days for infants aged 0-2 months</li> <li>○ within 7-14 days for infants aged 2-4 months</li> <li>○ within 1-3 weeks for infants aged 4-12 months</li> <li>○ within 2-4 weeks for children aged &gt;12 months</li> <li>○ Consider the suitability of a telephone review where a GP/ED referral has been made</li> </ul> <p>Clinical judgement should be used when determining review timeframes for Universal Plus contacts for growth concerns.</p> <p><b><u>Review the client’s My Care Plan to assess progress</u></b></p> <ul style="list-style-type: none"> <li>○ Assess, plot and interpret growth (weight, length/height, head circumference or BMI as applicable for client’s age). Consider holistic aspects in addition to growth parameters e.g. satiety, output, feeding cues, hydration status</li> </ul>	<p>The pattern of weight, height/length, head circumference and BMI <b>percentiles</b> is the most important factor, rather than focusing on the number of grams/cms.</p> <p>Consider the frequency of growth measurements determined in the review plan, as assessing more often can induce anxiety in the parent/caregiver.</p>

- Discuss the implementation of strategies documented in My Care Plan and consider their effectiveness
- Use a strengths-based approach

### **Review Outcomes**

#### **Improving (growth tracking upwards)**

- Review/adjust My Care Plan (CHS825) in partnership with parents and other health professionals involved with the infant/child's care
- Monitor within 2-4 weeks until consistent gain or an upward trend is established (consider longer review timeframes for children aged >12 months of age).

#### **Downward trajectory continues**

##### **Is the child acutely unwell?**

- Any acutely ill child should be urgently referred to emergency medical care for immediate medical assessment e.g. ED or GP, depending on local service availability
- If not acutely unwell, escalate actions with urgent referral to GP
- Discuss the care plan with the Line Manager and/or Clinical Nurse Specialist (CNS)
- Maintain contact with parents/caregivers. Use clinical judgement to determine review/follow-up timeframes
- Document all care

Follow up must occur with parents/carers to determine if the referral has been actioned with priority given to those with psychosocial risk factors/clients of concern.

When nurses are unable to establish contact with the client after reasonable attempts, and where there are identified

risk factors, nurse will discuss next steps with their Line Manager. This may include consultation with client's GP.	
<b>7. Documentation</b>	
<p>Serial growth measurements <u>must be precisely plotted on the relevant growth charts</u></p> <ul style="list-style-type: none"> <li>• CACH nurses must use CDIS to plot growth and use CDIS growth charts to discuss growth trajectories with parents/caregivers, (unless CDIS is unavailable).</li> <li>• WACHS nurses must enter anthropometric measures into relevant qualifiers in CHIS and review centile charts to monitor growth trajectories and record in the Personal Health Record (PHR).</li> </ul> <p>All relevant assessment findings and management strategies are to be accurately recorded according to local processes.</p> <p><b>Observations, decisions, plans and actions (including a decision and justification not to take any action), must be documented in the child health record and electronic information systems where available.</b></p>	

<b>References</b>	
<ol style="list-style-type: none"> <li>1. Duryea TK. Poor weight gain in children younger than two years in resource abundant settings: Etiology and evaluation.2023. Available from: <a href="https://www.uptodate.com.pklibresources.health.wa.gov.au/contents/poor-weight-gain-in-children-younger-than-two-years-in-resource-abundant-settings-etiology-and-evaluation?search=poor%20growth&amp;source=search_result&amp;selectedTitle=3~150&amp;usage_type=default&amp;display_rank=3">https://www.uptodate.com.pklibresources.health.wa.gov.au/contents/poor-weight-gain-in-children-younger-than-two-years-in-resource-abundant-settings-etiology-and-evaluation?search=poor%20growth&amp;source=search_result&amp;selectedTitle=3~150&amp;usage_type=default&amp;display_rank=3</a>.</li> <li>2. The Royal Children's Hospital Melbourne. Slow weight gain 2021. Available from: <a href="https://www.rch.org.au/clinicalguide/guideline_index/Slow_weight_gain/">https://www.rch.org.au/clinicalguide/guideline_index/Slow_weight_gain/</a>.</li> <li>3. Cooke R, Goulet O, Huysentruyt K, Joosten KFM, Khadilkar AV, Mao M, et al. Catch-up growth in infants and young children with faltering growth: Expert opinion to guide general clinicians. Journal of Pediatric Gastroenterology and Nutrition. 2023;77.</li> <li>4. Tang MN, Adolphe S, Rogers SR, Frank DA. Failure to thrive or growth faltering: Medical, developmental/behavioural, nutritional and social dimensions. Pediatrics in Review. 2021;42(11).</li> </ol>	

5. Goodwin ET, Buel KL, Cantrell LD. Growth faltering and failure to thrive in children. American Family Physician. 2023;107(6).

6. Australian Institute of health and welfare. Determinants of health for Indigenous Australians 2022. Available from: <https://www.aihw.gov.au/reports/australias-health/social-determinants-and-indigenous-health>.

Related internal policies, procedures and guidelines
The following documents can be accessed in the CH Clinical Nursing Manual: <a href="#">HealthPoint link</a> or <a href="#">Internet link</a>
Body Mass Index assessment
Breastfeeding and lactation concerns - assessment
Clients of concern management
Clinical handover
Factors impacting child health and development
Growth - birth to 18 years
Head circumference assessment
Length assessment 0 – 2 years & Height assessment 2 years and over
Nutrition for children – 0 to 18 years
Perinatal and infant mental health
Physical assessment 0 - 4 years
Universal contact guidelines
Universal Plus – Child Health & School health
Weight assessment 0 - 2 years & Weight assessment 2 years and over
The following documents can be accessed in the <a href="#">CAHS-CH Operational Policy Manual</a>
Client identification
Consent for Services



Hand Hygiene
Infection Control manual
Recognising and responding to acute deterioration
<b>The following documents can be accessed in the WACHS Policy Manual</b>
Recognising and responding to acute deterioration
WACHS Enhanced Child Health Schedule


<b>Related external legislation, policies, and guidelines</b>
Clinical Governance, Safety and Quality

<b>Related internal resources (including related forms)</b>
How children develop
<a href="#">Nutrition Resource Catalogue</a>
Breastfeeding Assessment Guide
Body Mass Index Girls (CHS430A) & Body Mass Index Boys (CHS430B)
Clinical handover/Referral form (CHS663)
My Care Plan (CHS825)
World Health Organization Growth Charts (CHS800A series)

<b>Related external resources (including related forms)</b>
<a href="#">Australian Breastfeeding Association</a> offer a 24-hour telephone counselling helpline
<a href="#">Breastfeeding Centre of WA</a> offers a telephone counselling service or Telehealth consultations for families in WA. Appointments are available for mothers and babies who birthed at KEMH.
<a href="#">Australian Dietary Guidelines</a> summary
<a href="#">Guidelines for Protecting Children 2020</a>

<a href="#">NHMRC Infant feeding guidelines</a>
<a href="#">Fenton preterm growth charts (external link)</a>
<a href="#">Royal Children’s Hospital –Child growth e-learning resource</a>
<a href="#">World Health Organization growth standards</a>

This document can be made available in alternative formats on request.

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## Healthy kids, healthy communities

Compassion
Excellence
Collaboration
Accountability
Equity
Respect

Neonatology | Community Health | Mental Health | Perth Children’s Hospital

## Appendix 1: Factors contributing to poor growth

Key risk indicators for poor growth are outlined in Table 1 below.

**Table 1: Risk factors for poor growth** <sup>1,2</sup>

Infant/child age	Contributing factors
Prenatal	Foetal (intrauterine) growth restriction
	Prematurity
	Prenatal infection
	Congenital syndrome (metabolic or chromosomal)
	Teratogenic exposure (e.g. alcohol, anticonvulsant, tobacco smoke, FASD)
	Low birth weight (<2500g)
Birth to 6 months	Poor suck (whether fed at breast or via teat) and/or oro-motor dysfunction
	Improper formula preparation
	Breastfeeding problems
	Inadequate number of feedings
	Poor feeding interactions (caretaker misreads infant cues, infant gags/vomits during feedings)
	Metabolic, chromosomal or anatomic abnormalities
	Underfeeding
	Allergy e.g. cow's milk protein
	Congenital heart disease
	Gastroesophageal reflux disease
7-12 months	Feeding problems, for example: <ul style="list-style-type: none"> <li>• Autonomy struggles/coercive feeding</li> <li>• Oro-motor dysfunction that interferes with adaptation to more textured foods</li> <li>• Delayed introduction of solid foods</li> <li>• Refusal to eat new foods and parent/caregiver ceasing to offer again</li> </ul>

	<ul style="list-style-type: none"> <li>Parent caregiver offers limited quantity/variety of foods</li> </ul>
	Intestinal parasites
	Food allergies
>12 months	Coercive feeding
	Selective/picky eating
	Highly distractable child
	Food environment (distracting, noisy)
	Acquired illness e.g enteric pathogens
	Sensory-based feeding disorders
	Chewing or swallowing dysfunction
	Excessive juice or milk intake
	Underlying illness e.g coeliac disease, inflammatory bowel disease
	Food allergy
Psychosocial risk factors (note: these can be present at any age)	Child neglect
	Parental/caregiver mental health issues e.g. depression, anxiety, disordered eating
	Parental/caregiver cognitive disability/poor intellectual capacity
	Parental/caregiver substance use issues
	Food insecurity
	Poor parent/caregiver to child attachment

Adapted from poor weight gain in children younger than two years in resource abundant settings: Aetiology and Evaluation.<sup>1</sup>

## Appendix 2: Feeding assessment considerations (as relevant for age) <sup>1, 4, 5</sup>

<b>Breastfed infants</b>
Has secretory activation commenced (has milk 'come in')?
How often does the infant breastfeed (per 24 hours)
How long does the infant breastfeed?
How does the parent/caregiver know when the infant requires a breastfeed?
Can the mother hear the infant swallow?
Does the baby have a strong suck?
Does the parent/caregiver observe signs of a letdown?
Is the parent/caregiver overly stressed/fatigued?
Is the latch comfortable?
Does the infant tire with feeding?
<b>Formula-fed infants</b>
How much formula does the infant consume (per 24 hours)?
How is the formula mixed?
Does the parent/caregiver add anything to bottles?
How does the parent/caregiver know when the infant requires a feed?
How does the parent/caregiver hold the infant and position the bottle when feeding?
<b>Solids/food/other drinks</b>
How many meals/day does the child eat?
Quantity/variety/good source of iron?
When did the infant begin solid foods?
Are food textures appropriate for age/developmental stage?
Does the family follow any special diet pattern?

Does the infant/child drink any sweetened beverages/juice?
Does the infant/child have food allergy, or signs/symptoms of food allergy?
How much milk/formula does the child drink (and milk type)?
<b>Physical aspects</b>
Does the child have any difficulties swallowing?
Does the child spit-up/vomit/gag in response to feeding?
Are there are sensory preferences for specific food textures?
<b>Feeding behaviour/interactions</b>
How does the parent/caregiver know when the child is hungry/full?
Does the parent/caregiver say or do anything when the child eats well/poorly?
Does the child refuse food?
Do the caregiver and child have struggles over feeding/eating?
Does the child have strong food preferences and how does the parent/caregiver respond to these preferences?
Who feeds the child and if fed by multiple caregivers, are they consistent?
Does the child feed differently with different people/in different environments?
<b>Feeding/eating environment</b>
Where does the child eat (e.g. in a suitable chair, caregiver's lap)?
Does the child usually eat alone or with others?
Are there set mealtimes and do these times align with other in the family (where applicable)?
Are there distractions during mealtimes? Eg television, tablets, electronic devices
Are messy mealtimes an issue for the parent/caregiver?
Are there limitations/ barriers to accessing food or limitations to food preparation? Eg: food security/access issues, inadequate resources for food preparation

### Appendix 3: Physical assessment considerations <sup>1</sup>

<b>Acute</b>	
Tachypnoea/tachycardia	Reduced urine output, dark/strong smelling, concentrated urine
Sunken fontanelles	Hard/dry/explosive stools or diarrhoea
Dry mucous membranes	Skin turgor
Pallor	Lethargy/apathy/listlessness
Oedema	Vomiting
Fever	Respiratory distress
Loss of appetite	Infant not displaying hunger cues
<b>Chronic</b>	
Diarrhoea	Constipation
Excessive drooling (particularly while feeding)	Inadequate adiposity, cachexia, temporal wasting, sparse hair
Abdominal pain	Vomiting/gagging/possetting
Decreased appetite	Recent travel to developing country, camping, housing in shelter, over-crowded housing, day care
Otitis media	Allergy
Gagging, tactile hypersensitivity, prolonged feeding time	Snoring or mouth breathing
Wheezing	Recent/frequent infection
Polydipsia, polyuria, polyphagia	Dentition