GUIDELINE

Growth – static or downward trajectory

Scope (Staff):	Community health staff (Child Health staff)
Scope (Area):	CAHS-CH, 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

Contents

Aim

To provide guidance on the identification, management and referral of clients whose growth is presenting as static or downward trajectory.

Risk

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

Background

Aetiology

The term 'growth faltering' is widely used to refer to static growth, or an unexpected downward trajectory and/or unexpected slower rate of weight gain from a previously established pattern of growth.[1] It relates to a slow rate of weight gain that is disproportionate to growth in length. In more severe cases, length and head circumference may also be affected.[2]

Growth faltering can have both short- and long-term effects on the developing child. It can interrupt the immune response, increasing the risk of severe infection and infant mortality. Prolonged growth faltering may cause ongoing growth deficits, delay in cognitive and psychomotor development, diminished physical activity and development, behavioural problems and learning disabilities.[3,4]

In Australia the prevalence of growth faltering is higher in the Aboriginal population.[5]

Research suggests that growth faltering is caused primarily by inadequate nutrition. Only 5-10% of cases are caused by underlying disease and approximately 5% caused by neglect-related issues.[6]

Nutrition is the main driver for a child's growth, although other potential causes of growth concerns are also important (refer to Table 1 below).

Table 1. Causes of growth concerns

Nutritional	Acute or chronic illness	Psychosocial factors
Malnutrition caused by Inadequate nutrient intake Breastfeeding difficulties Incorrect formula dilution Restricted diet Anatomical causes of poor feeding such as cleft palate Early or delayed introduction of solids	Persistent vomiting, diarrhoea Cardiac, respiratory, gastrointestinal, renal diseases Malabsorption conditions such as coeliac disease Food allergy/intolerance Urinary tract infection Diabetes Chronic anaemia	Parental mental health issues Substance abuse by parent/s Coercive feeding Food insecurity or poverty Neglect Poor understanding of appropriate feeding by carer Mealtime behaviour difficulties

(Table adapted from Royal Children's Hospital (Slow weight gain)

Pregnancy-related factors, such as gestational diabetes or severe preeclampsia, influence the size of an infant at birth. These infants may not grow along the same percentile from birth, rather their growth curve may move to a lower or higher percentile. It is therefore paramount that a full assessment is taken considering the overall health and wellbeing of the child.[7]

Data from seven (7) longitudinal studies of infant growth, determined that infants who breastfeed for at least twelve (12) months grew more rapidly in the first two (2) months and less rapidly from three (3) to twelve (12) months of age.[8] In a Western Australian study, infants who breastfed for more than twelve (12) months were leaner at one (1) year of age.[9] Health professionals need to understand this differences between breastfed and formula fed infants and carefully consider before suggesting a change in feed for either group of infants.[10]

Weight loss in the first two weeks

Weight loss of up to 7-10% within the first 3 days (rarely up to 7 days) of life is normal. This is usually due to fluid balance adjustment and consumption of small amounts of colostrum and hence this is expected and not related to growth faltering. [1]

Variables associated with weight loss in these early days are:

- method of feeding: infants receiving infant formula have less weight loss than those who are exclusively breastfed
- mode of delivery: infants born via caesarean have higher weight loss compared to vaginal births
- other factors resulting in higher weight losses include: higher gestational age, higher birth weight, female sex, hot season, jaundice, maternal age >40 years, delayed secretory activation, IV fluids during late pregnancy, induction of labour and prolonged labour.[11]

Variations in growth during these first days are often managed by the maternity health service provider.

Infants who are breastfed usually begin to gain weight from around day 3 because secretory activation commences, and the infant begins to consume larger volumes of milk. Infants typically return to their birth weight by 14 days.[12] Infants who are losing weight after secretory activation has commenced, or those who have not regained their birth weight by 2 weeks of age warrant further review of lactation and breastfeeding efficiency, or infant formula consumption.

The onset of growth faltering within the first weeks of life usually has a different aetiology than later onset. A large population study found that:

- Earlier onset growth faltering was more strongly associated with low birth weight and gestational age and with the mother having smoked during pregnancy.
- Onset between 2 weeks and 4 months was associated with congenital disorders and serious somatic illness, and with difficulties in mother-child relationships.
- Later onset (between 4-8 months) was associated with feeding problems which develop in otherwise healthy children.[13]

See Appendix A for risk factors for growth faltering.

Nutrient adequacy

Adequate nutrition is paramount for normal growth and development, especially in the early years of life when brain growth is rapid. Being undernourished in utero and during the first two years of life and then gaining weight rapidly in later childhood and adolescence has been associated with a high risk of chronic disease. There is a relatively lower rate of morbidity and mortality if weight is regained during the first two years of life. This is due to the tendency for weight gained in infancy to convert to lean body mass, while weight gained in later childhood produces fat mass.[14]

Insufficient energy intake in infants and children is usually caused by feeding difficulties and/or feeding behaviour concerns. Assessing breastfeeding and implementing relevant clinical practice guidelines for improving breastfeeding efficiency can quickly improve growth in infants. Most children who are eating solid foods will respond well to targeted nutrition advice.[6] It is important to note that weight gain can be slow in children – 4-8 weeks after successful nutrition intervention.[6]

When growth falters due to undernutrition, there is a decrease in growth trajectories beginning with *weight*, then length or height and in severe circumstances head circumference. Changes in *head circumference alone* are not usually related to nutritional intake, except where there is long-term undernutrition. It is more likely due to non-nutritional factors which may impact on brain growth, for example, craniosynostosis. Serial *length* assessment can detect long term cumulative effect of poor growth which has resulted in stunting. This may be due to persistent undernutrition. A child whose stature is less than expected should be investigated further.[15]

Other considerations

Not all instances of weight loss or reduced weight trajectory are considered to be growth faltering. These include:

- Children who have growth trajectories closely tracking along a growth curve when plotted on the relevant growth chart, even when following a low percentile.
- Children who have a genetic short stature.[2]

- Children whose weight may dip sharply after minor illness.[6]
- Plotting error.[6]

Red flags for growth faltering:

- Signs of abuse, neglect, vulnerabilities in the family
- Poor parent/carer understanding or low health literacy (due to factors such as non-English speaking, intellectual disability)
- Signs of poor attachment
- Parental mental health issues
- Signs of undernutrition or significant illness
- Signs of dehydration.[16]

Key points

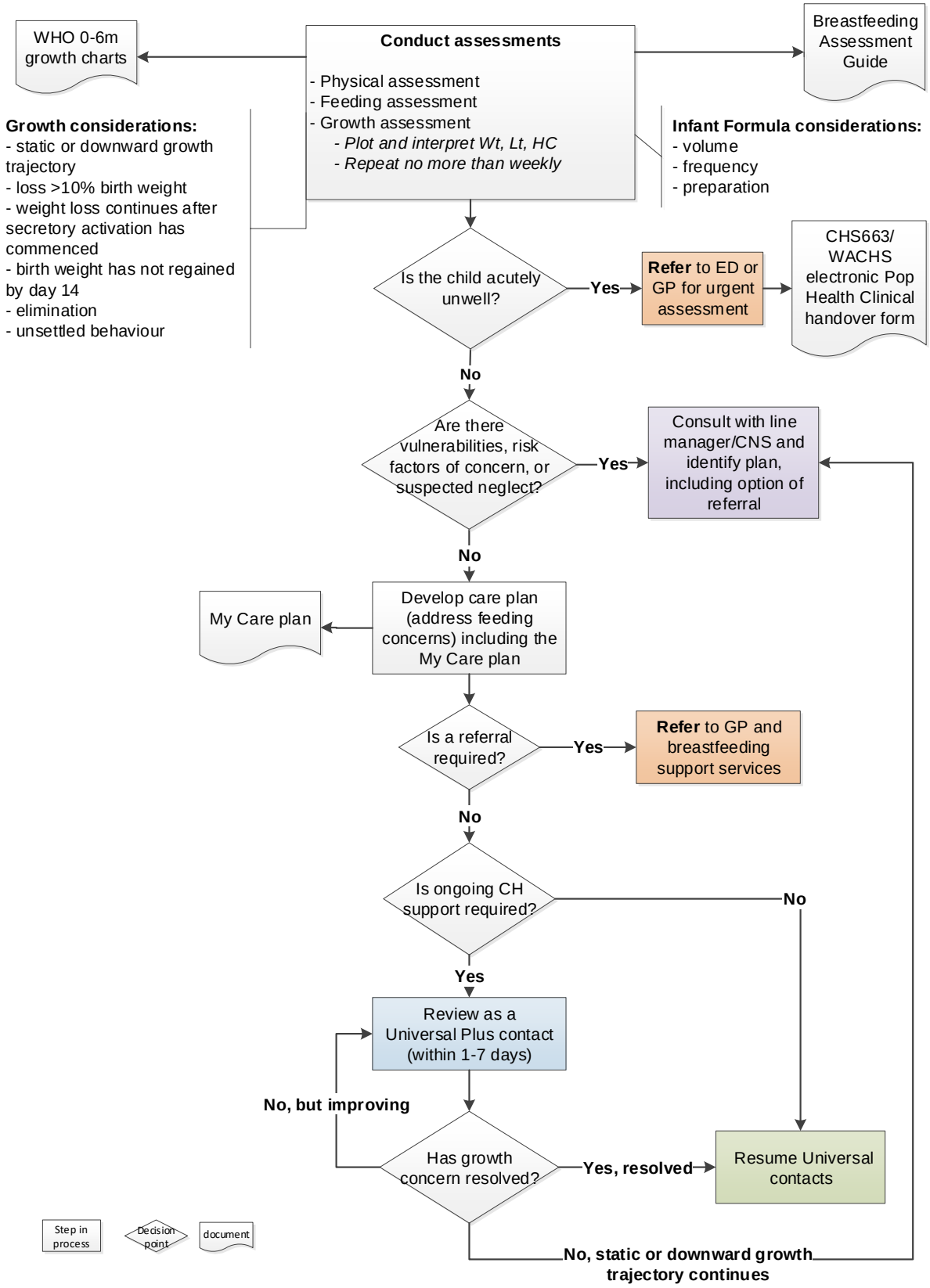
- Weight, length/height and head circumference are to be accurately assessed and precisely plotted on approved growth charts at all universal contacts* and when there are growth concerns.[17,10] (*Measure weight only at the Universal 0-14 day contact).
- Nurses should also plot growth measurements from birth and hospital discharge if available.
- Plotting serial measurements is crucial for assessing growth over time.
- Growth charts are not diagnostic tools and decisions about growth deviations should never be determined solely by these charts.[18]
- Consider recording cases which require support, monitoring and review on the Clients of concern (CofC) communication tools.
- WHO guidelines state that age is plotted in completed weeks/months/years as appropriate.[19]
- Interpretations of measurements are to be done in conjunction with a holistic assessment.
- Serial measurements showing unexpected stasis or downward trajectories on the growth charts is cause for concern which requires investigation and timely action to reduce short and longer term harm.[20]
- Interpreting the growth trajectories of weight, length/height and head circumference is critical. Emphasis should not be put on grams or centimetre changes per week.
- Nurses are to document a plan of care at the point of care including plan for review.
- Nurses think critically and use the best available evidence in making decisions and providing care that is safe, appropriate and responsive.

- 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-based.
- 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.

Tools

- CAHS-CH Growth Charts
    - CAHS CH Intranet (Forms) 0-6 months, 0-2 years and 2-5 years (CHS 800 series)
    - Child Health Record
    - Electronic information system (CAHS-CH nurses should always use CDIS to plot growth, unless unavailable)
    - Personal Health Record (PHR) (WACHS only)
- WACHS – Anthropometric data should be entered in relevant qualifiers in the Community Health Information System (CHIS) and reviewed on the client's centile chart.
- Breastfeeding Assessment Guide (CHS 012)
- My Care Plan (CHS825)
- Fenton Preterm Growth Charts.

Growth concerns: 0-6 months flowchart



Process for growth concerns: 0-6 months

Steps	Additional Information
1. Conduct assessments	
Conduct a holistic assessment to include: • Growth assessment – see Step 1a • Feeding assessment – see Step 1b • Physical assessment – see Step 1c	Assessment will assist in determining cause of the growth concern • Acute illness – see Step 2a • Vulnerabilities/risk factors of concern – see Step 2b • Feeding concerns – see Step 2c

1a. Conduct a growth assessment
• Plot weight, length and head circumference on relevant growth charts
  ○ Plot growth measurements on the WHO 0-6m growth charts
  ▪ CAHS-CH nurses must use CDIS, unless unavailable
  ▪ WACHS nurses must enter anthropometric data in relevant CHIS qualifiers and review on appropriate centile chart
  ○ Plot birth and discharge growth measurements if available.
• Interpret growth chart by considering the trajectory of serial measurements.
  ○ Is the trajectory tracking along a percentile line?
  ○ Is the trajectory static or tracking downwards?
  ○ Plot and discuss while parent is present.
• Use the growth chart plots to guide parental discussions
	• Infants born under 37 weeks gestation are considered pre-term and age is to be corrected.
	There is a cause for concern when:
	• Growth trajectory is static or is downward
	• Infant has lost more than 10% of their birth weight
	• Infant has not regained birth weight by day 14
	• Exclusively breastfed infant is continuing to lose weight after secretory activation has commenced in the early days of life. (Mother will usually self-report if 'milk has come in' when nurse enquires)
	• Elimination is not as expected for infant's age
	• Unsettled behaviour for no obvious reason
	• Listless baby, who is not displaying hunger cues.

○ CAHS-CH nurses must use growth charts plotted in CDIS for discussions with parents/caregivers ○ WACHS nurses to use centile charts in CHIS for discussions with parents/caregivers • Elimination ○ Enquire about urine output (reduced volume/frequency, dark in colour, strong/offensive odour ○ Enquire about stool output (reduced bowel actions, dry or hard, explosive, blood or mucous present, delayed transitioning from meconium to yellow in neonate) ○ Enquire about vomiting (posseting, regurgitation, projectile vomiting)	
1b. Conduct a feeding assessment For infants who are breastfed: • Undertake a feeding assessment using the *Breastfeeding Assessment Guide.* • If possible, observe a breastfeed and refer to the *Breastfeeding and lactation concerns - assessment* procedure as required. For infants who are receiving infant formula: • Ensure appropriate formula, volume, correct dilution, frequency and safe preparation. • For all infants: • Based on the holistic feeding assessment, feeding history and any direct observation of feeding, consider whether any of the following are contributing to faltering growth:	• If there is a growth concern and the infant is breastfed, a breastfeeding assessment must be conducted using the *Breastfeeding Assessment Guide*, even if mother reports no breastfeeding concerns. • The *Breastfeeding Assessment Guide* facilitates a comprehensive assessment of feeding and may reveal concerns that can be resolved, resulting in improved growth. • Refer to the *Breastfeeding and lactation concerns – assessment* procedure. • Refer to the *Nutrition for Children – birth to 18 years* guideline for more information on infant formula.

○ Ineffective sucking in infants who are breastfed or ineffective bottle feeding ○ Feeding patterns or routines being used, where the infant is left to sleep for long periods between feeds or required to wait prescriptive lengths of time in between feeds.	
1c. Physical assessment • Conduct a physical assessment, including hydration status ○ Is the child acutely unwell?	• When undertaking a physical assessment, focus on general appearance, oral anatomy, fontanelles, head preferences and head shape and skin integrity • Use physical signs to assess hydration status e.g. sunken fontanelles, dry mucous membranes, skin turgor, lethargy/apathy Refer to the following for more information: *Physical Assessment 0-4 years* guideline. *Recognising and responding to acute deterioration*
2. Identification of growth concerns	
Growth - static or downward trajectory has been identified when: • Client has at least two serial growth measurements plotted on a growth chart • The pattern of growth is showing a static or downward trajectory • Nurse has indicated growth concerns elsewhere in the electronic health information system.	*CAHS-CH:* Tick the 'growth faltering' box in CDIS, where clients have met the criteria identified in the left column. *WACHS:* When entering a Growth Faltering Clinical Item in CHIS, staff will ensure clients have met the identified criteria (left column).

• Nurse has completed a holistic assessment of the client, including a feeding assessment and physical assessment.	
3.Care planning	
3a. 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 a General Practitioner (GP) for same day assessment or Emergency Department (ED) 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. • Obtain parental consent to liaise with GP/ED. • Maintain contact with parents. • Follow-up with parents/caregivers to provide ongoing review and service post-acute phase/discharge.	See *Recognising and responding to acute deterioration*
3b. Vulnerabilities/risk factors of concern • Enquire about potential vulnerabilities that impact the care of the infant as a priority, such as income; family domestic violence; parent/carer mental health; access to transport and food insecurity. • Involve Line Manager and/or Clinical Nurse specialist (CNS) as required.	• WACHS staff can discuss regional clients with Department for Communities. • Consider completing a Child Protection Concern Referral form. Staff need to explicitly document observations and possible long-term outcomes if action is not taken, plan of action and review dates.

• Consider identifying the family for involvement with
  ○ Community Health - Partnership service
  ○ WACHS – Enhanced Child Health Schedule
  ○ Department for Communities.	

3c. Feeding concerns
• For infants who are breastfed, implement clinical practice guidelines, relevant to identified breastfeeding concern.
• If supplementary feeding with infant formula is required:
  ○ support the mother to maintain her milk volume by expressing and encourage opportunities for the infant to continue breastfeeding
  ○ advise expressing breastmilk to feed the infant with any available breastmilk before giving any infant formula
  ○ support to continue previously established alternative feeding method if recommended by maternity provider.[1]
• For infants who are formula fed, provide relevant strategies for appropriate formula feeding as described in Step 1b.
• Consider consultation with colleagues or manager.
	Refer to the *Breastfeeding and Lactation Concerns – Assessment* procedure and the *Nutrition for children – birth to 18 years* guideline.
	
	It should be noted that supplementary feeding with infant formula in a breastfed infant may help with weight gain, but often results in cessation of breastfeeding which has other negative long-term implications.
	
	WACHS – refer to WACHS Lactation Consultant telehealth service

3d. Develop a plan • Develop a 'My Care Plan' (CHS825), in partnership with parent/carer to ensure a shared understanding of concerns and plan.	The 'My Care Plan' will outline (where relevant): • A summary of the concern • Strategies/plan of the parents/carers to implement

• The 'My Care Plan' will outline strategies for client to implement. ○ Give one copy to client and retain a copy in client record.	• Review appointments • Referral point/s • When to escalate care, if required.
4. Review	

4a. Review Process
• Review the client within one to seven (1-7) days of the initial contact to determine the effectiveness of implemented strategies.
• Review to be conducted as a Universal Plus appointment
• Conduct a holistic assessment and review care plan.
• Assess, plot and interpret weight, length/height and head circumference – no more than weekly.
• Consider actions based on the review outcomes in Step 3b.
	Repeat growth measurements *no more than weekly*
	If clinical judgement supports a review prior to one week, the contact provides an opportunity to:
	  ○ discuss how the implementation of strategies is going for the parent/carer and infant
	  ○ reinforce what the parent is doing well
	  ○ focus on other aspects of assessment including hydration, output, how settled the infant is.
	• Weighing more often can induce significant anxiety in the parent
	• The pattern of the growth trajectory is the most important factor, rather than focusing on the number of grams gained.

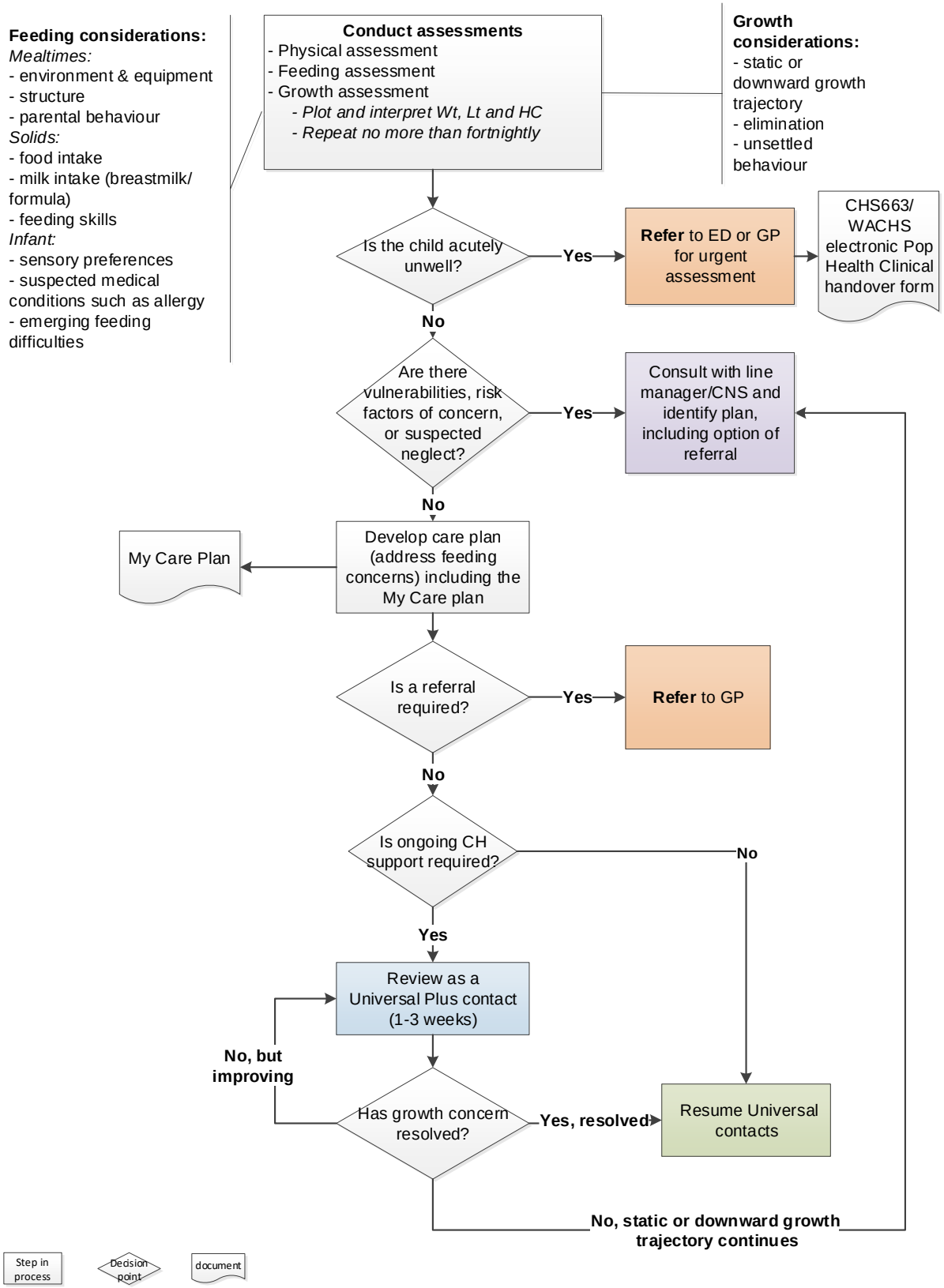
4b. Review Outcomes **<u>Improving</u> (growth tracking upwards)** • Develop a follow-up care plan in partnership with parents and other health professionals involved with the case. • Document all care. • Monitor within 2-4 weeks until consistent gain or an upward trend is established. **<u>Static or downward trajectory continues</u>**	

• Escalate actions with urgent referral to ED or GP for same day assessment • Consider other supports available to the family eg: breastfeeding supports, enhanced child health services (ECHS in WACHS or Partnership Service in CAHS-CH), Aboriginal Health Workers, Department of Communities, social worker, mental health services and other locally known services. • Document all care. • Discuss the care plan with the Line Manager and/or Clinical Nurse Specialist (CNS). • Maintain contact with parents/caregivers and provide ongoing service if required.	The Australian Breastfeeding Association offers a 24-hour telephone helpline.
5. Referral	

• Where there are concerns with infant growth, referral information will include:
  ○ Serial measurements of weight, length and head circumference (including from birth and at discharge from birthing services if available)
  ○ Weight loss and/or static weight within a stated timeframe
  ○ Copies of growth charts showing trajectory of growth.
• Provide a completed Clinical Handover/Referral Form (CHS 663) or WACHS Electronic Population Health Clinical Handover Form.
• Follow up must occur with parents/carers to determine if the referral has been actioned with	

priority given to those with vulnerability risk factors. • 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. • Nurses may work in collaboration with client's GP/Pediatrician to provide optimal care, which may impact the Care Plan.	

Growth concerns: 6 - 12 months flowchart



Process for growth concerns: 6-12 months

Steps	Additional Information
1. Conduct assessments	
Holistic assessment will include: • Growth assessment – see Step 1a • Feeding assessment – see step 1b • Physical assessment – see Step 1c	Assessment will assist in determining cause of the growth concern • Acute illness – see Step 2a • Vulnerabilities or risk factors of concern – see Step 2b • Feeding concerns – see Step 2c

1a. Conduct a growth assessment
• Plot weight, length and head circumference on WHO 0–2-year growth charts
  ○ CAHS-CH nurses must use CDIS, unless unavailable
  ○ WACHS nurses must enter anthropometric data in relevant CHIS qualifiers and review on appropriate centile chart
• Ensure birth and discharge growth measurements have been plotted if available.
• Interpret by considering the trajectory.
• Use the growth chart plots to guide parental discussions.
• Elimination
  ○ Enquire about urine output (reduced volume, dark in colour, strong/offensive odour)
  ○ Enquire about stool output (reduced, dry or hard bowel actions, constipation, explosive, blood or mucous present)
  ○ Enquire about vomiting (posseting, regurgitation, projectile vomiting).
	There is a cause for concern when growth trajectory is static or tracking downward

1b. Conduct a feeding assessment Infants receiving breastmilk: • Undertake a breastfeeding assessment using the *Breastfeeding Assessment Guide.* • Observe a breastfeed and refer to the *Breastfeeding and Lactation Assessment* protocol as required. • Infants receiving infant formula: • Ensure appropriate formula, volume, correct dilution, frequency and safe preparation. • Based on the feeding history and any direct observation of feeding, consider whether any of the following are contributing to faltering growth: • ineffective sucking in infants who are breastfed or ineffective bottle feeding • feeding patterns or routines being used, where the infant is left to sleep for long periods between feeds or required to wait prescriptive lengths of time in between feeds • the feeding environment • feeding aversion • parent/caregiver-infant interactions • how parents/caregivers respond to the infant's feeding cues • physical disorders affecting feeding.[1] **Solid foods** Undertake a nutritional assessment by reviewing: • mealtime environment and equipment • mealtime structure (frequency, duration) • parental behaviour • timing of solids introduction	• Refer to the Breastfeeding and Lactation Concerns – Assessment procedure. • Refer to the Nutrition for Children – birth to 18 years guideline for more information on infant formula. • Refer to the Nutrition for Children – 0 to 18 years guideline.

• food intake (texture, type and quantity) • milk intake (type and quantity) • infant's feeding skills (appropriate for age) • consider signs and symptoms of allergy if suspected • emerging feeding difficulties if relevant • sensory preferences.	
1c. Physical assessment • Conduct a physical assessment, including hydration status: ○ Is the child acutely unwell?	Use physical signs to assess hydration status e.g. dry mucous membranes, sunken eyes, skin turgor, lethargy/apathy Refer to the *Physical Assessment 0-4 years* guideline.
2. Identification of growth concerns	
Consider identification of growth – static or downward trajectory when: • Client has *at least two* serial growth measurements plotted on a growth chart ○ The pattern of growth is showing a static or downward trajectory • Nurse has indicated growth concerns elsewhere in the electronic health information system. • Nurse has completed a holistic assessment of the client, including a feeding assessment and physical assessment.	*CAHS-CH:* Prior to ticking 'growth faltering' box in CDIS, staff will ensure clients have met the identified criteria (left column) have been met. *WACHS:* When entering a Growth Faltering Clinical Item in CHIS, staff will ensure clients have met the identified criteria (left column) have been met.

3. Care planning	
3a. Acute illness When a child 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 a General Practitioner (GP) for same day assessment or Emergency Department (ED) 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. • Obtain parental consent to liaise with GP/ED. • Maintain contact with parents. • Follow-up with parents/caregivers to provide ongoing review and service post-acute phase/discharge.	
3b. Vulnerabilities/risk factors of concern • Enquire about potential vulnerabilities that impact the care of the child as a priority, such as income; family domestic violence; parent/carer mental health; access to transport and food insecurity. • Involve Line Manager and/or Clinical Nurse specialist (CNS) as required. • Consider identifying the family for involvement with ○ Community Health - Partnership service	• WACHS staff can discuss regional clients with Department for Communities. • Consider completing a Child Protection Concern Referral form. Staff need to explicitly document observations and possible long-term outcomes if action is not taken, plan of action and review dates.

○ WACHS – Enhanced Child Health Schedule ○ Department of Communities.	
3c. Feeding concerns • Discuss feeding strategies for parent/carer to implement. • If supplementary feeding with infant formula is required: ○ support the mother to maintain her milk volume by expressing and encourage opportunities for the infant to continue breastfeeding ○ advise expressing breastmilk to feed the infant with any available breastmilk before giving any infant formula.	It should be noted that supplementary feeding with infant formula in a infant who is breastfed may help with weight gain, but often results in cessation of breastfeeding which has other negative long term implications.[1] The aim of the feeding plan is to normalise food intake. The feeding plan can include goals relating to: • parents provide, children decide • mealtime environment ○ avoid distractions ○ equipment ○ sitting at the table • structure ○ frequency ○ supervision • feeding skills ○ texture progression ○ self-feeding ○ spoon feeding ○ appropriate gag reflex ○ use of cup • parental behaviour ○ coercive feeding ○ role modeling • sensory preferences • food intake ○ variety from 5 food groups

	• fluid consumption
	  ○ water
	  ○ milk intake (breastmilk, infant formula)
	• plan for suspected allergy if relevant.
	
	Refer to *Nutrition for children – birth to 18 years* guideline for more information.
	
	Nurse to consider a referral for more complex feeding concerns.

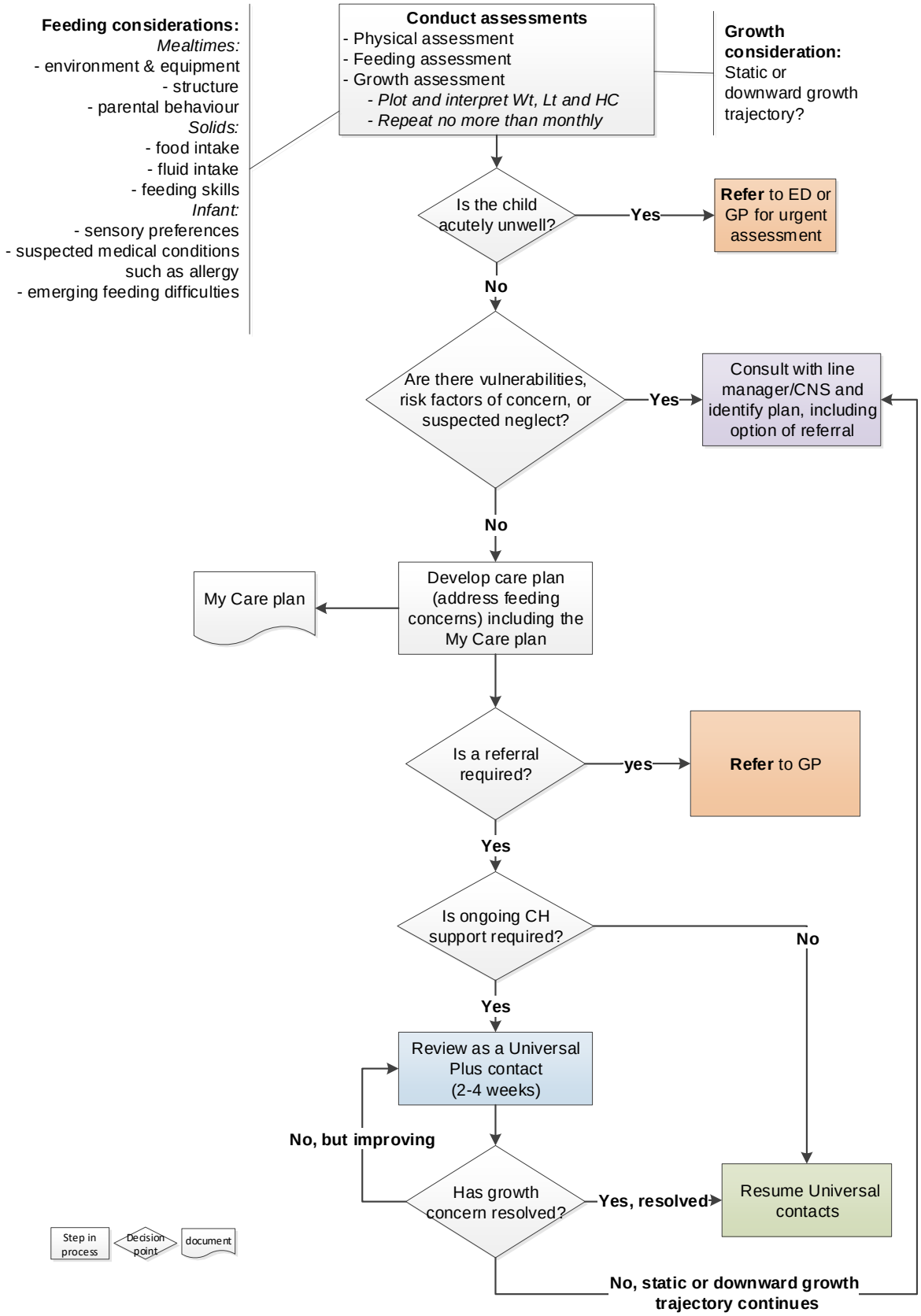
3d. Develop a plan • Develop a 'My Care Plan' (CHS825), in partnership with parent/carer to ensure a shared understanding of concerns and plan. • The 'My Care Plan' will outline strategies for client to implement. ○ Give one copy to client and retain a copy in client record.	The 'My Care Plan' will outline (where relevant): • A summary of the concern • Strategies/plan of the parents/carers to implement • Review appointments • Referral point/s • When to escalate care, if required.
4. Review	

4a. Review Process
• Review the client within one to three (1-3) weeks of the initial contact to determine the effectiveness of implemented strategies.
• Review is to be conducted as a Universal Plus appointment.
• Conduct a holistic assessment and review care plan.
• Assess, plot, and interpret weight, length/height, and head circumference.
• Consider actions based on the review outcomes in Step 3b.
	Repeat growth measurements *no more than fortnightly.*
	
	If clinical judgement supports a review prior to one fortnight, the contact provides an opportunity to:
	  ○ reinforce what the parent is doing well
	  ○ focus on other aspects of assessment including hydration, output, how settled the child is
	  ○ progress towards previously set care plan strategies.
	• Weighing more often can induce significant anxiety in the parent.
	• The pattern of the growth trajectory is the most important factor, rather than focusing on the number of grams gained.

4b. Review Outcomes **<u>Improving</u> (growth is tracking upwards)** • Develop a follow-up care plan in partnership with parents and other health professionals involved with the case. • Document all care. • Monitor within 2-4 weeks until consistent gains or an upward trend is established. **<u>Static or downward trajectory continues</u>** • Escalate actions with urgent referral to ED or GP for same day assessment. • Consider other supports available to the family, e.g. enhanced child health services (including ECHS in WACHS and Partnership service in CAHS-CH), Aboriginal Health Workers, Department of Communities, social worker, mental health services and other locally known services. • Document all care. • Discuss the care plan with the Line Manager and/or Clinical Nurse Specialist (CNS). • Maintain contact with parents/caregivers and provide ongoing service if required.	
5. Referral	
• Where there are concerns with infant growth, referral information will include: • Serial measurements of weight, length and head circumference (including from birth and at discharge from birthing services if available) • Weight loss and/or static weight within a stated timeframe	Where dietetic referral is required for nutrition concerns, in addition to GP referral: • WACHS can refer to dietitian pending regional availability • In CAHS-CH, GP may consider paediatric dietetic providers where appropriate.

• Copies of growth charts showing trajectory of growth. • Provide a completed Clinical Handover/Referral Form (CHS 663) or WACHS Electronic Population Health Clinical Handover Form. • Where practical, follow up must occur with parents/carers to determine if the referral has been actioned with priority given to those with vulnerability risk factors. • When nurses are unable to establish contact with the client after reasonable attempts, and where there are identified risk factors, nurse will discuss with their Line Manager. This may include consultation with client's GP. • Nurses may work in collaboration with client's GP/Pediatrician to provide optimal care, which may impact the Care Plan.	

Growth concerns: over 12 months flowchart



Process for growth concerns: Over 12 months

Steps	Additional Information
1. Conduct assessments	
Holistic assessment will include: • Growth assessment – see Step 1a • Feeding efficiency and nutrition assessment – see step 1b • Physical assessment – see Step 1c	Assessment will assist in determining cause of the growth concern • Acute illness – see Step 2a • Vulnerabilities/risk factors of concern – see step 2b • Feeding concerns – see step 2c

1a. Conduct a growth assessment
• Plot weight, length/height, and head circumference on WHO 0–2-year growth charts.
  ○ CAHS-CH nurses must use CDIS, unless unavailable
  ○ WACHS nurses must enter anthropometric data in relevant CHIS qualifiers and review on appropriate centile chart
• Interpret by considering the trajectory
• Use the growth chart plots to guide parental discussions.
	There is a cause for concern when growth trajectory is static or is tracking downward.

1b. Conduct a feeding assessment
• Based on the feeding history and any direct observation of feeding, consider whether any of the following are contributing to faltering growth:
  ○ mealtime environment, equipment and frequency
  ○ parental behaviour (including parent/carer-child interactions, and responses to cues)
  ○ food intake (texture, type and quantity)	

○ fluid intake (including breastmilk, cow's milk, juice volumes) ○ infant's feeding skills (appropriate for age) ○ signs and symptoms of allergy if suspected ○ emerging feeding difficulties.	
1c. Physical assessment • Conduct a physical assessment ○ Is the child acutely unwell?	Refer to the *Physical Assessment 0-4 years* guideline for more information.
2. Identification of growth concerns	
Consider identification of growth – static or downward trajectory when: • Client has *at least two* serial growth measurements plotted on a growth chart ○ The pattern of growth is showing a static or downward trajectory • Nurse has indicated growth concerns elsewhere in the electronic health information system. • Nurse has completed a holistic assessment of the client, including a feeding assessment and physical assessment.	*CAHS-CH:* Prior to ticking 'growth faltering' box in CDIS, staff will ensure clients have met the identified criteria (left column) have been met. *WACHS:* When entering a Growth Faltering Clinical Item in CHIS, staff will ensure clients have met the identified criteria (left column) have been met.
3. Care planning	
3a. Acute illness – When a child 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 a General	

Practitioner (GP) for same day assessment or Emergency Department (ED) 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. • Obtain parental consent to liaise with GP/ED. • Maintain contact with parents. • Follow-up with parents/caregivers to provide ongoing review and service post-acute phase/discharge.	

3b. Vulnerabilities/risk factors of concern
• Enquire about potential vulnerabilities that impact the care of the infant as a priority, such as income; family domestic violence; parent/carer mental health; access to transport and food insecurity.
• Involve Line Manager and/or Clinical Nurse specialist (CNS) as required.
• Consider identifying the family for involvement with:
  ○ Community Health - Partnership service
  ○ WACHS – Enhanced Child Health Schedule
  ○ Department for Communities.
	• WACHS staff can discuss regional clients with Department for Communities.
	• Consider completing a Child Protection Concern Referral form. Staff need to explicitly document observations and possible long-term outcomes if action is not taken, plan of action and review dates.

3c. Feeding concerns • Discuss feeding strategies for parent/carer to implement.	The aim of the feeding plan is to normalise food intake. The feeding plan can include goals relating to: • parents provide, children decide

	• mealtime environment
	  ○ avoid distractions
	  ○ equipment
	  ○ family meals at the table
	• structure
	  ○ frequency (avoid grazing)
	  ○ supervision
	• parental behaviour
	  ○ role modeling
	• feeding skills
	  ○ texture progression
	  ○ self-feeding
	  ○ use of cup
	• sensory preferences
	  ○ food refusal
	• offer a variety of foods
	  ○ 5 food groups
	  ○ 3 meals, 2 snacks
	• fluid intake
	  ○ water and cow's milk consumption
	  ○ breastmilk
	  ○ other drinks
	• plan for suspected allergy if relevant
	• eating at daycare if relevant.
	Refer to *Nutrition for children – 0-18 years* for more information.
	Nurse to consider a referral for more complex feeding concerns.

3d. Develop a plan • Develop a 'My Care Plan' (CHS825), in partnership with parent/carer to ensure a shared understanding of concerns and plan. • The 'My Care Plan' will outline strategies for client to implement. ○ Give one copy to client and retain a copy in client record.	The 'My Care Plan' will outline (where relevant): • A summary of the concern • Strategies/plan of the parents/carers to implement • Review appointments • Referral point/s • When to escalate care, if required.
4. Review	

4a. Review Process
• Review the client within two to four (2-4) weeks
• Review is to be conducted as a Universal Plus appointment.
• Conduct a holistic assessment and review care plan.
• Assess, plot and interpret weight, length/height and head circumference.
• Review feeding plan and/or care plan, in partnership with parent.
• Consider actions based on the review outcomes in Step 3b.
	Repeat growth measurements *no more than monthly.*
	If clinical judgement supports a review prior to one month, the contact provides an opportunity to:
	  ○ reinforce what the parent is doing well
	  ○ focus on other aspects of assessment including hydration, output, how settled the child is.
	  ○ progress towards previously set care plan strategies
	• Weighing more often can induce significant anxiety in the parent.
	• The pattern of the growth trajectory is the most important factor, rather than focusing on the number of grams gained.

4b. Review Outcomes **<u>Improving</u>** • Develop a follow-up care plan in partnership with parents and other health professionals involved with the case. • Document all care.	

• Monitor within 2-4 weeks until consistent gains or an upward trend is established. **<u>Static or downward trajectory continues</u>** • Escalate actions with urgent referral to GP or ED. • Consider other supports available to the family, e.g. enhanced child health services (including ECHS in WACHS and Partnership Service in CAHS-CH) Aboriginal Health Workers, Department of Communities, social worker, mental health services and other locally known services. • Document all care. • Discuss the care plan with the Line Manager and/or Clinical Nurse Specialist (CNS). • Maintain contact with parents/caregivers and provide ongoing service if required.	
5. Referral	

• Where there are concerns with infant growth, referral information will include:
  ○ Serial measurements of weight, length and head circumference (including from birth and at discharge from birthing services if available)
  ○ Weight loss and/or static weight within a stated timeframe
  ○ Copies of growth charts showing trajectory of growth.
• Provide a completed Clinical Handover/Referral Form (CHS 663) or WACHS Electronic Population Health Clinical Handover Form.
	Where dietetic referral is required for nutrition concerns, in addition to GP referral:
	• WACHS can refer to dietitian pending regional availability
	• In CAHS-CH, GP may consider paediatric dietetic providers where appropriate.

• Where practical, follow up must occur with parents/carers to determine if the referral has been actioned with priority given to those with vulnerability risk factors. • When nurses are unable to establish contact with the client after reasonable attempts, and where there are identified risk factors, nurse will discuss with their Line Manager. This may include consultation with client's GP. • Nurses may work in collaboration with client's GP/Pediatrician to provide optimal care, which may impact the Care Plan.	

Documentation

Serial growth measurements must be precisely plotted on the WHO growth charts in the child health record and Personal Health Record (PHR) (WACHS only)**.** CAHS-CH nurses must use CDIS to plot growth and use CDIS growth charts to discuss growth trajectories with parents/caregivers, unless CDIS is unavailable). WACHS nurses must enter anthropometric measures into relevant qualifiers in CHIS and review centile charts to monitor growth trajectories.

All relevant assessment findings and management strategies are to be accurately recorded according to local processes.

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.

Nurses maintain accurate, comprehensive, and contemporaneous documentation of assessments, planning, decision making and evaluations according to CAHS-CH and WACHS processes.

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Related internal policies, procedures and guidelines

The following documents can be accessed in the CH Clinical Nursing Manual: HealthPoint link or Internet link or for WACHS staff in the WACHS Policy link

Body Mass Index assessment – child health
Body Mass Index assessment – primary school
Breastfeeding and lactation assessment
Clinical handover
Growth - birth to 18 years
Head circumference assessment
Height assessment 2 years and over
Length assessment 0 – 2 years
Neglect
Nutrition for children – 0 to 18 years
Physical assessment 0 - 4 years
Universal contact guidelines
Weight assessment 0 - 2 years
Weight assessment 2 years and over
The following documents can be accessed in the CAHS-CH Operational Policy Manual
Client identification
Consent for Services
Hand Hygiene
Infection Control manual
The following documents can be accessed in the WACHS Policy Manual
WACHS Enhanced Child Health Schedule

Related external legislation, policies, and guidelines
Clinical Governance, Safety and Quality

Related internal resources (including related forms)
How children develop
Nutrition Resource Catalogue
Breastfeeding Assessment Guide
Body Mass Index Girls (CHS430A)
Body Mass Index Boys (CHS430B)
Clinical handover/Referral form (CHS 663)
My Care Plan (CHS825)
Preterm Fenton Growth Charts (external link)
World Health Organization Charts 0 - 6 months (external link)
World Health Organization Growth Charts (CHS800A series)

Related external resources (including related forms)
Australian Breastfeeding Association offer a 24-hour telephone counselling helpline
Breastfeeding Centre of WA offers a telephone counselling service or Telehealth consultations for families in WA. Appointments are available for mothers and babies who birthed at KEMH.
Australian Dietary Guidelines summary
Guidelines for Protecting Children 2020
Infant Feeding Guidelines
Royal Children's Hospital –Child growth e-learning resource

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

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Appendix A - Risk factors for growth faltering

Key risk indicators for growth faltering are outlined in Table 1 below. If any of the following risk factors are present, consider conducting weight, length/height and head circumference measurements (until age 2) at every contact.

Table 1: Risk factors for growth faltering[1,2]

Child	Maternal
• congenital disorders	• alcohol and drug abuse
• intrauterine growth restriction (IUGR)	• family domestic violence
• low birth weight (<2500 gms)	• smoking, alcohol, or medication use during pregnancy
• preterm birth[1]	• parental depression and/or anxiety
• neurodevelopmental concerns[1]	• psychiatric illness including attachment disorder
• physical illness	• poor or disorganised parental/child attachment or a lack of emotional nurturing
• anatomical and functioning issues impacting on the capacity to feed	• parental eating disorder
• under nutrition/ lack of appropriate food	• parental intellectual incapacity
• feeding difficulties	• maternal health issues impacting on lactation
• sleep difficulties	
• delayed introduction to solid foods	
• transition to solid foods that are inadequate in quality and quantity	
• signs of abuse or neglect [16,6]	
• allergies	
• chronic loose bowels (malabsorption)	
• **Risk factors for both** • family social isolation, poverty, food insecurity, large number of family members, family conflict • living in remote communities with inadequate access to healthy foods and other factors such as chronic infection and exposure to parasites.[5]	

Appendix B: Growth patterns – case studies

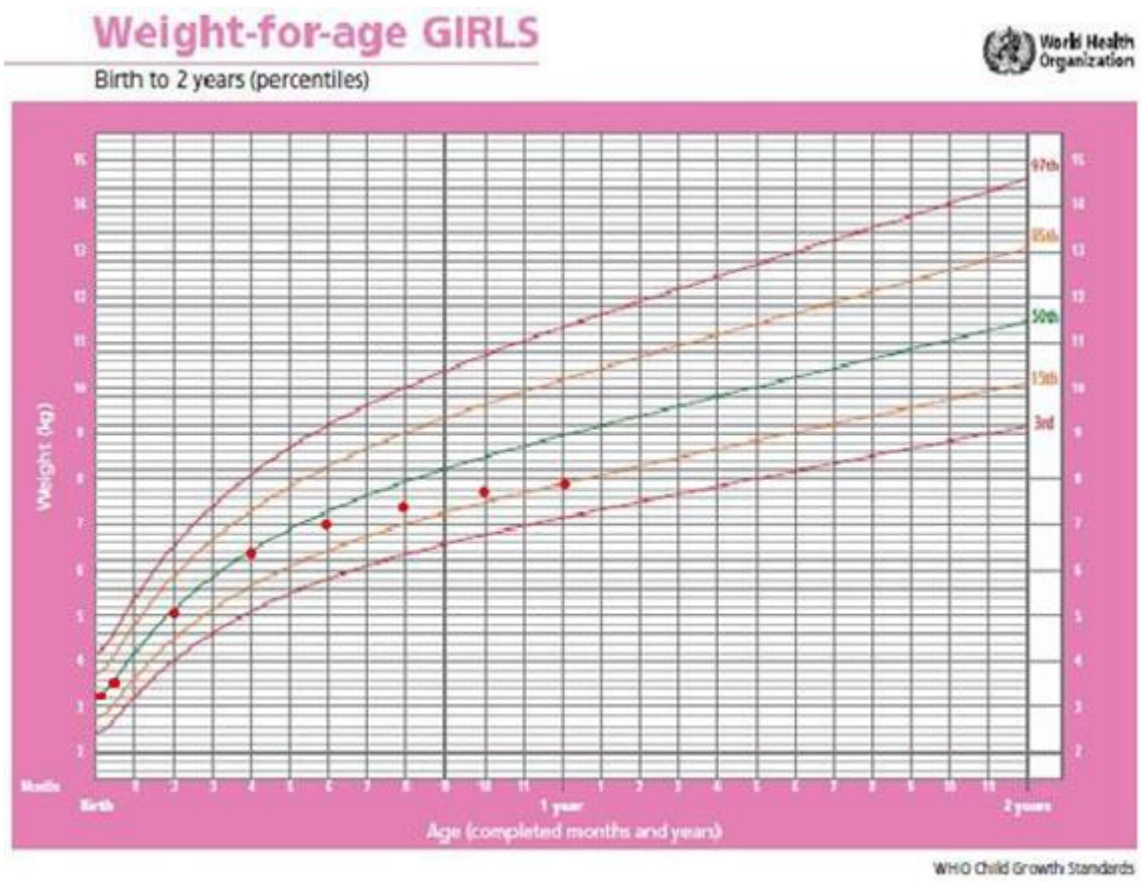
The graphs outlined below show examples of typical patterns of suboptimal weight trajectory, which may be encountered within child health practice. All of these patterns indicate a need for additional monitoring, consideration of a combination of growth assessment measures [21] and assessment of overall health, wellbeing, and developmental progress. Clinical judgment, including knowledge of the child's history will assist in determination of plan of action.[18]

Case study 1.

The example below shows appropriate weight tracking until around 6 months, then a decreasing trajectory to the 15th percentile over a period of 8 months. Common contributing factors to this trend may include factors related to transition to solids, malabsorption, or low health literacy of the parent/carer.

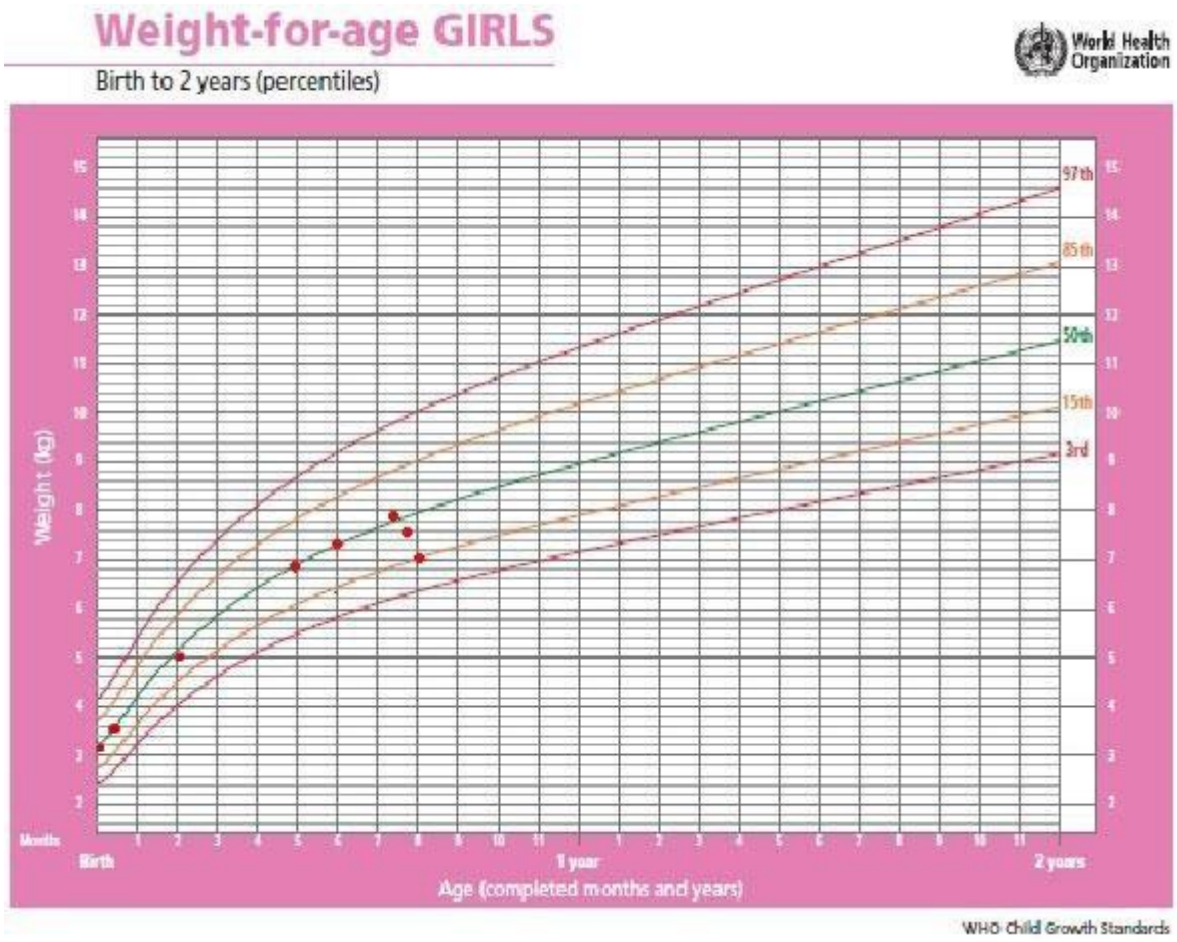
Current guidelines recommend that after the growth assessment at 6 months, this client's growth would have been reviewed 1- 3 weeks later at a Universal Plus appointment. As growth continued to plateau, a care plan was developed in partnership with the parent, which outlined strategies for the parent to implement at home in relation to solids introduction. A discussion of the care plan with the line manager would then take place.

Poor feeding would be considered as a possible cause for the concern. However, it is important to investigate underlying causes, hence referral to a GP for further investigation is recommended. (Attempting to modify infant's feeding to improve growth without investigating the underlying cause is not recommended).



Case study 2.

The example below shows weight tracking along the 50th percentile from birth, and then a rapid decrease in weight trajectory to the 15th percentile after 7 months of age, over a rapid period of 2 weeks. Common contributing factors to this trend may include illness, neglect or factors related to transition to solids.



Case study 3.

The following example shows a male infant who lost significant weight in the first fortnight.
A holistic assessment revealed:

- Although not pictured here, the length for age and head circumference followed similar trajectories.
- The infant's mother was short in stature.

At the Universal 0–14-day contact, the nurse had concerns about this infant and completed a *Breastfeeding Assessment Guide*. The client's mother was given feeding strategies to implement, which were relevant to the concerns identified in the breastfeeding assessment. The nurse decided a Universal Plus appointment was warranted to follow up on progress towards strategies and re-check growth. The nurse continued to review this client weekly until growth was tracking upwards.

Despite being below the third centile, holistic assessments continued to show this infant was healthy and no further action was required.