

Slide 1



Audience: AHS Public Health Nursing Staff involved with growth measurement of infants and children birth to 19 years of age.

Length: 1 – 1.5 hours

Location: Telehealth, classroom sessions, etc.

Materials Needed:

- Presentation (electronic copy)
- Laptop and projector

Resources:

Growth monitoring main page (GC and GM)

<http://www.albertahealthservices.ca/cgm.asp>

Growth measurement main page

<http://www.albertahealthservices.ca/info/Page9808.aspx>

GM Protocol: Childhood Growth Measurement: Public Health and Clinical Settings. This protocol is available for the zones to print or access via Growth monitoring main page (GC and GM)

<http://www.albertahealthservices.ca/info/Page9810.aspx>

GM protocol PDF

<http://www.albertahealthservices.ca/assets/info/hp/cgm/if-hp-cgm-measurement-protocol.pdf>

Training Resources:

Growth Measurement Posters, used to describe accurate measurement techniques:

<http://www.albertahealthservices.ca/info/Page9811.aspx>

Specifications for purchasing growth measurement equipment:

<http://www.albertahealthservices.ca/assets/Infofor/hp/if-hp-cgm-equipment-specs.pdf>

Contact site specific clinical engineering or E-facilities for equipment repair and calibration

Training Videos:

<http://www.albertahealthservices.ca/info/Page9811.aspx>

Full Length: Public Health and Clinical Settings Childhood Growth Measurement Training Video (13:50 minutes)

Measuring Birth to 24 months: Childhood Growth Measurement Training Video (3:56 minutes)

Measuring 2 to 19 years: Childhood Growth Measurement Training Video (2:02 minutes)

AH = Alberta Health

AHS = Alberta Health Services


CPEG = Canadian Pediatric Endocrine Group

WHO = World Health Organization

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Slide 2



Purpose of the Training Module:

- to increase awareness of the importance of taking accurate and reliable weights and measures
- to increase knowledge and skills in standard techniques
- to increase the accuracy and reliability of childhood growth measurement
- to increase staff confidence in the ability to use the techniques accurately

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Key Messages:

- Information on plotting and interpretation of growth using growth charts is not included in this training
- Resources to support staff training and implementation of childhood growth charts including plotting and interpretation on growth charts can be found at <http://www.albertahealthservices.ca/info/Page9813.aspx>

Facilitator Notes:


The goals for this PPT presentation are to:

1. Increase the awareness of the importance in obtaining accurate and reliable weights and measures amongst those involved in childhood growth measurement.
2. Increase knowledge and skills in standard growth measurement techniques identified by AHS.
3. Increase staff confidence in their ability to use these techniques accurately
4. Increase the number of accurate and reliable measurements taken amongst those involved in childhood growth measurement

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx>

- [Full Length: Childhood Growth Measurement Training Video \(14:32 minutes\)](#)
- [Measuring birth to 24 months: Childhood Growth Measurement Training Video \(3:56 minutes\)](#)
- [Measuring 2 to 19 years: Childhood Growth Measurement Training Video \(2:02 minutes\)](#)

Slide 3



Outline

1. Childhood Growth Measurement Protocol
2. Background
3. Equipment for Weighing & Measuring and Calibration
4. General Guidelines
5. Weighing & Measuring-Infants Birth to 24 Months of Age
6. Weighing & Measuring-Children 2 to 19 Years of Age
7. Measurement Technique Assessments
8. Key Messages
9. Resources
10. Questions

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Key Messages:

- Accurate, reliable measurements are fundamental to growth monitoring and to making sound clinical judgements on the appropriateness of a child's pattern of growth.
- They are used to monitor the growth of an individual child; detect growth abnormalities; monitor nutritional status and track the effects of medical or nutritional interventions.
- If measurements are in error, then the foundation of the growth assessment is also in error.


Facilitator Notes:

- The information in this training is intended for use for the measurement of children who present with typical development.
- The protocol provides **limited** direction on measuring children with physical disabilities or with other special circumstances that require further modifications to obtain accurate measurements. It **does not** provide direction for all special circumstances (e.g. spica casts).
- Refer to Appendix D Special Circumstances for Length/Height Measurement <http://www.albertahealthservices.ca/assets/info/hp/cgm/if-hp-cgm-measurement-protocol-appendix-special-considerations.pdf> in the protocol for direction
- If appendix D does not provide the information needed, public health nurses should assess each case and the restrictions involved and **if necessary** contact the physician specialist or therapist to determine the urgency of a growth/weight/height measurement for that clinic visit and how best to measure **if required**

Slide 4



1. Childhood Growth Measurement Protocol



Objective:

To enhance growth monitoring practices and child health outcomes by providing guidelines to ensure accurate and reliable measurements of infants, children and adolescents (birth to 19 years of age).

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Key Messages:


- The objective of the 'Childhood Growth Measurement-Public Health and Clinical Settings' protocol is to:
- Enhance growth monitoring practices and child health outcomes by providing guidelines to ensure accurate and reliable measurements of infants, children and adolescents (birth to 19 years of age)
- Provide evidence-based guidelines to support accurate and reliable measurements of childhood growth.

The protocol is a guideline for all Alberta Health Services (AHS) staff, students and volunteers involved in childhood growth measurement in an AHS program or at an AHS site

Facilitator's Notes:

- The protocol was developed using best practice evidence from the literature and information from an environmental scan of current growth measurement and monitoring practices in public health across Alberta.
- Provincial feedback from those involved in growth measurement and monitoring from across the province and continuum of care also informed the development of the protocol.
- This protocol includes information, recommended techniques and frequency of measurement in all care settings including public health and clinical settings.
- To link to this protocol, job aids and training videos for standard measurement techniques described in this presentation are available at the following link <http://www.albertahealthservices.ca/info/Page9808.aspx>

Slide 5



Childhood Growth Measurement Protocol

The Growth Measurement (GM) Protocol addresses:

Procedure (Public Health and Clinical Settings)

1. Equipment for weighing and measuring
2. Maintenance and calibration of equipment
3. Infection prevention and control
4. General guidelines for weighing and measuring

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Key Messages:


- This **protocol** applies to **all** Alberta Health Services (AHS) staff, students and volunteers involved in **taking childhood growth measurements in Public Health and Clinical Settings** (inpatient and ambulatory).
- This protocol is to be used when taking standard measurements of children (**birth to 19 years of age**) in both Public Health and Clinical Settings
- It also provides **limited** direction for measuring children with physical disabilities. It does not provide direction for all special circumstances (e.g. spica casts) where modifications may be required to obtain accurate measurements.

Facilitator Notes:

The protocol is divided into 3 sections:

1. *Procedure* which relates to both Public Health and Clinical Settings
2. *Public Health* specific measurement criteria
3. *Clinical Settings* (inpatient and ambulatory) specific measurement criteria

Slide 6



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Childhood Growth Measurement Protocol

Public Health

5. Measuring weight
6. Measuring length or height
7. Measuring head circumference

Clinical Settings (inpatient and ambulatory)


8. Measuring weight
9. Measuring length or height
10. Measuring head circumference

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Key Messages:

Facilitator Notes:

Slide 7



Childhood Growth Measurement Protocol

Appendices include:

- Appendix A - Specifications for New Growth Measurement Equipment
- Appendix B - Childhood Growth Measurement Initiative: Equipment List
- Appendix C - Maintenance and Calibration of Growth Measurement Equipment
- Appendix D - Special Considerations for Length/Height Measurement

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Key Messages:

Facilitator Notes:

Also included in the protocol are the following 4 appendices:

1. Appendix A Specifications for New Growth Measurement Equipment
2. Appendix B Childhood Growth Measurement Initiative: Equipment List
3. Appendix C Maintenance and Calibration of Growth Measurement Equipment
4. Appendix D Special Considerations for Length/Height Measurement

Slide 8



2. Background



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Key Messages:

Facilitator Notes:

This slide indicates the beginning of the section on 'Why Focus on Growth Measurement'

Slide 9



Why Focus on Growth Measurement?

PROMOTING OPTIMAL MONITORING OF CHILD GROWTH IN CANADA:
USING THE NEW WHO GROWTH CHARTS

A COLLABORATIVE STATEMENT FROM: DIETITIANS OF CANADA
CANADIAN PAEDIATRIC SOCIETY
THE COLLEGE OF FAMILY PHYSICIANS OF CANADA
COMMUNITY HEALTH NURSES OF CANADA


Available from: <http://www.cps.ca/english/statements/N/growth-charts-statement-FULL.pdf>.

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Facilitator Notes:

- Growth Measurement has been identified as a priority by Alberta Health Services as well as other national and international organizations. Four leading national health professional associations, Dietitians of Canada, Canadian Pediatric Society, The College of Family Physicians of Canada and Community Health Nurses of Canada, have released a collaborative statement titled *Promoting Optimal Monitoring of Child Growth in Canada: Using the New WHO Growth Charts*.. The Statement recommends that growth monitoring should be a routine part of health care for all Canadian children.
- It also states that “serial measurements of recumbent length (birth to 24 months of age) or standing height (2 to 19years of age), weight, and head circumference (birth to two years) should be part of scheduled well-baby and well-child or well-adolescent health visits. Measurements should also be performed at visits for those who are not brought for recommended well-health visits.”

Slide 10



Accurate Measurements are Used to:

- monitor the growth of an individual
- detect growth abnormalities
- monitor nutritional status
- track the effects of medical or nutritional intervention
- provide descriptive information for program planning and evaluation

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Key Messages:

Facilitator Notes:

Why do we care about growth measurement?

1. Accurate, reliable measurements are fundamental to growth monitoring and to making sound clinical judgements on the appropriateness of a child's pattern of growth.
2. They are used to monitor the growth of an individual child; detect growth abnormalities; monitor nutritional status and track the effects of medical or nutritional interventions.
3. If measurements are in error, then the foundation of the growth assessment is also in error.

Slide 11



Components of Accurate Measurements

- quality equipment which is calibrated and accurate
- a standardized measurement technique
- trained measurers who are reliable and precise in their technique

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Facilitator Notes:

There are three components of accurate measuring:


1. A standardized measurement technique
2. Quality equipment that is calibrated and accurate
3. Trained measurers who are reliable and precise in their technique

- There is a deceptive simplicity about the measurement of length or height and weight. Many measurers believe the procedures to be used are so straightforward and obvious that they do not require any training to accurately perform the measures.
- However, standardized exercises and research has demonstrated that even experienced measurers can be inaccurate or even careless in performing weight or length/height measurements.


Background Information:



- It is important that an appropriate technique for each measure be utilized. These techniques should be similar to those used when developing the growth charts to ensure the measures are both accurate and reliable.
- Accurate and reliable measurements also allow for an ongoing, systematic process of collection, analysis, interpretation and dissemination of descriptive information for monitoring growth and for use in program planning and evaluation.
- A child's measurements should be consistently and accurately recorded in an age and gender-appropriate growth record, carefully plotted and analyzed to identify any disturbances in the pattern of growth.

Slide 12

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3. Equipment for Weighing & Measuring




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Key Messages:

Facilitator Notes:

This slide indicates the beginning of the section on 'Equipment for Weighing and Measuring'



Equipment for Weighing and Measuring

Infants - Birth to 24 months of age		Children - 2 to 19 years of age	
Measure	Equipment to be used	Measure	Equipment to be used
Weight	Infant scale	Weight	•Child and adolescent (adult) scale •*Wheel chair scale for non ambulatory children
Recumbent length	Infant length board	Standing height	•Stadiometer •*Recumbent length board for non ambulatory children
Head circumference	Head circumference tape		

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Key Messages:

Purchase and use of special circumstances equipment to be determined by setting and need refer to **Appendix D** *Special Considerations for Length/Height Measurement*

Facilitator Notes:

- The equipment used to obtain growth measurements must be appropriate for the age and size of the child.
- Weighing and measuring equipment that cannot be cleaned adequately must be repaired or replaced.
- New equipment should be purchased using the guidelines outlined in the 2014 ‘Childhood Growth Measurement-Public Health and Clinical Settings’ Protocol **Appendix A** *Specifications for New Growth Measurement Equipment*).
- -Refer to **Appendix B** *Childhood Growth Measurement Initiative: Equipment List* for a list of the equipment purchased during the Childhood Growth Measurement Initiative 2010-2013 with grant funding from the Alberta Cancer Prevention Legacy Fund. This list may support the purchase of new growth measurement equipment
- The equipment listed in **Appendix B** may or may not be still available.
- There are many sources of high quality, reliable measurement equipment that will meet the equipment specifications outlined in **Appendix A**. Consult with your purchasing department to determine which products are available for purchase.
- -Child and adolescent scale (same as an adult scale but must cover the weight range of children 2 to 19 years).
- Length board and infantometer are terms used for the same measuring device

Slide 14



Maintenance and Calibration

Maintenance is a regular daily event:

- zero scales prior to each clinic and prior to use with each child
- ensure length boards and stadiometers pieces are firmly joined

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Key Messages:

- Regular maintenance and calibration helps to ensure that growth measurement equipment produces accurate and reliable measurements when proper measurements techniques are followed.
- Quality equipment which is regularly calibrated and accurate is one of three components essential to achieving accurate measurements


Facilitator Notes:

- Check for damage. Equipment that shows evidence of damage and/or cannot be cleaned adequately must be repaired or replaced
- Scales should be checked and 'zeroed' before each daily clinic and before weighing each child.
- Length boards and stadiometers should be checked to ensure that horizontal and vertical pieces are firmly joined at right angles and zeroed daily.
- Store equipment at normal indoor temperature, protected from humidity and wetness.
- Refer to **Appendix C Maintenance and Calibration of Growth Measurement Equipment**

Growth measurement equipment that is not functioning properly or is in need of repair should be reported to the appropriate AHS Clinical Engineering or Facilities contact via the Capital Management's provincial E-Facilities system. The Capital Management's provincial E-Facilities system provides all AHS users a Customer Service Portal website to request service or repair of their equipment. Service requests will be triaged and directed to the responsible zone, department and personnel to respond to your request.

AHS Staff: Details and more information available on Insite, AHS staff intranet, enter Childhood Growth Measurement FAQ in search.

Slide 15



When to Check Calibration

Equipment	Check Calibration	Responsible	Calibration equipment used:
Stationary equipment			
Infant scales	Upon installation and monthly thereafter	End user	Calibration weights
Length board (pediatric) and stadiometers	Upon installation and monthly thereafter	End user	Calibration rod
Wheel chair scale for non ambulatory children	Upon installation and yearly	Professional calibration	Professional calibration
Child/adolescent scale	Upon installation and yearly thereafter	Professional calibration	Professional calibration


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Key Messages:

Facilitator Notes:

- This calibration schedule applies to all Alberta Health Services (AHS) weighing and measuring equipment in public health settings.

Questions for Audience: *Who is responsible for checking calibration of growth measurement equipment?* (In some zones this decision is made at the site level. More than one staff member should be trained to check the calibration of GM equipment)



When to Check Calibration

Equipment	Check Calibration	Responsible	Calibration equipment used:
Portable equipment			
Infant scales	At least once per day if used daily Before each use, if used less frequently	End user	Calibration weights
Length board (pediatric) and stadiometers	At least once per day if used daily Before each use, if used less frequently	End user	Calibration rod
Child/adolescent scale	Upon installation and yearly thereafter	Professional calibration	Professional calibration

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Key Messages:

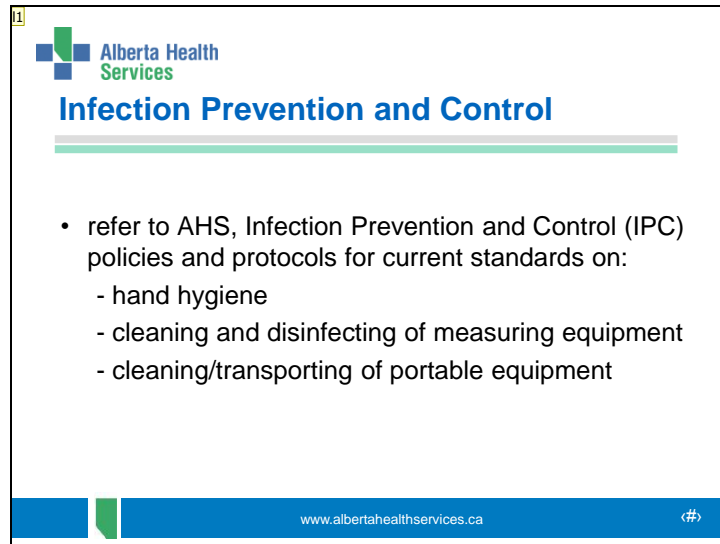
Facilitator Notes:

Schedule for Stationary Equipment:

- Infant Scale: check calibration upon installation and monthly thereafter using a standard weight (5kg weight)
- Infant Length Board and Stadiometer: check calibration upon installation and monthly thereafter using a rod of fixed length to check calibration (95 cm rod)
- Child/adolescent scale: schedule professional calibration upon installation and yearly thereafter
- The GM initiative 2010-2013 supplied 1 calibration weight of 5kg and 1 calibration rod of 95cm to each CHC/PHU

AHS Staff: Details and more information available on Insite, AHS staff intranet, enter Childhood Growth Measurement FAQ in search.

Slide 17



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Infection Prevention and Control

- refer to AHS, Infection Prevention and Control (IPC) policies and protocols for current standards on:
 - hand hygiene
 - cleaning and disinfecting of measuring equipment
 - cleaning/transporting of portable equipment

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Key Messages:

Follow AHS Infection Prevention and Control (IPC) policies and protocols for hand hygiene, cleaning and disinfecting of measuring equipment (non-critical multi-use medical equipment/devices) and cleaning/transporting of portable equipment.

Facilitator Notes:

- Use a new paper barrier between infant/child and measuring equipment. The same barrier can be used for both pieces of equipment with the same child. Discard used paper barrier after use.
- Weighing and measuring equipment that cannot be cleaned adequately must be repaired or replaced.

Questions to the audience:


When is it important to use hand hygiene? (before and after measuring)

What should you do if a parent or patient is exhibiting flu like symptoms?


How often should growth measurement equipment be cleaned?

- Reusable equipment requires cleaning between each use and allowed to air dry. This includes the infant scale, infant length board, head circumference tape and UAL measuring tape.
- Stadiometer and standing scale requires cleaning once a day.
- Cleaning product used can be Hydro Peroxide based (i.e. ACCEL) or CAVI wipes, gloves are recommended when using CAVI wipes, do not mix cleaning products
- The paper barrier does not have to be a specific material


AHS Staff: Details and more information available on Insite, AHS staff intranet, enter Childhood Growth Measurement FAQ in search.

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4. General Guidelines



- explain all procedures and enlist help as needed
- respect personal, religious or cultural perspectives
- respect privacy
- ensure equipment is placed on a flat, hard, stable and even surface


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Key Messages:

- Measurers should use sensitive language (e.g. "Let's check your weight," rather than, "Let's see how big you are") depending on the child's age and the clinical, diagnostic or therapeutic situation.

Facilitator Notes:

- When weighing and measuring infants and children follow procedures that yield accurate and reliable measurements and use equipment that is well maintained. Weigh in metric.
- Explain all procedures to the parent/caregiver/child and enlist their help as needed.
- Work with the parent/caregiver/child to weigh and measure in a manner that respects their personal, religious or cultural perspectives.
- For all children there is a need to respect privacy. Privacy includes where the measurements are taken, describing the measuring process, and interpreting the numbers.
- Ensure equipment is placed on a flat, hard, stable and even surface
- Record measurements immediately after taking them.



Acceptable Standard for Measurement Accuracy:

Infants	Children
Birth to 24 months of age	2 to 19 years of age
Infant weight: 0.01 kg (10 g) Infant length: 0.5 cm Head circumference: 0.2 cm	Child weight: 0.1 kg (100 g) Child height: 0.5 cm

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Key Messages:

- It is recommended that measurements be repeated if seem unreasonable or if a poor growth pattern is identified. Compare measurements.
- Refer to AHS Childhood Growth Measurement – Public Health and Clinical Settings Protocol April 2014

***** If measurements are not in agreement measure a third time.**

Facilitator Notes:

- Occasionally there is a need to re-measure a child’s weight or height. For example when a plotted point on a growth chart seems unreasonable (i.e. an infant’s length is shorter than at the previous visit) or is inconsistent with previous visits (i.e. the child is on roughly the same percentile lines as before).
- When there is a need to re-measure a child, repeat the measures in question and compare measurements against an acceptable standard to ensure measurement accuracy
- An acceptable standard for measurement accuracy is as follows:


Birth to 24months of age

- Weight is within 0.01 kg (10 g)
- Infant length is within 0.5cm
- Head circumference is within 0.2 cm


2 to 19 years of age



- Weight is within 0.1 kg (100 g)
- Height is within 0.5cm

Slide 20

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5. WEIGHING AND MEASURING INFANTS BIRTH TO 24 MONTHS




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Key Messages


Facilitator Notes

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx>
[Measuring birth to 24 months: Childhood Growth Measurement Training Video \(3:56 minutes\)](#)

Slide 21



When To Measure



- birth and postnatal period
- routine well-child visits: 2, 4, 6, 12 and 18 months
- follow-up visits
- when a child's health or nutritional status warrants


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Key Messages:

Measurements at well-child visits include weight, length and head circumference

Facilitator Notes:

- Growth measurements are obtained on follow-up visits to when feeding or child health warrant careful monitoring as identified at a well-child visit.
- Growth measurements are also measured in other settings to track the effects of medical or nutritional interventions. (i.e. acute care settings)



Measurement & Equipment

Infants – Birth to 24 months of age	
Measure	Equipment to be used
Weight < 20 kg	Infant scale
Recumbent length	Infant length board
Head circumference	Head circumference tape

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Key Messages:

- Infants’ birth to 24 months of age are weighed on an infant scale and measured in a recumbent position on a length board.
- Devices attached to scales, rulers or tapes on examination tables are notably inaccurate and should not be used to measure length.
- Head circumference is measured using a flexible head circumference tape.

Facilitator Notes:

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Measure Weight



- weigh infants *birth to 8 weeks* nude
- weigh infants *2 to 24 months* in a clean, dry diaper
- put paper barrier in place and 'zero' scale, place infant in middle of the scale
- measure and immediately record the weight to the nearest 0.001kg or 0.01kg

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Key Messages:

- Infants' **birth to 8 weeks** should be weighed **nude**.
- Infants **2 to 24 months** should be weighed wearing a **clean, dry diaper**.
- Weighing with a disposable diaper is recommended as cloth diapers are considerably heavier.
- Follow AHS policies for hand hygiene, cleaning and disinfecting of measuring equipment.

Facilitator Notes:

1. Place a paper barrier on the scale and tare to zero
2. Place the infant in the middle of the scale (the parent/caregiver can be asked to do this).
3. It may be necessary to wait a minute or so until the infant is still, or ask the parent/caregiver to distract an active infant. If your scale has an "average weight" or "damping system" feature it will accommodate those infants who do not remain still during the weight taking. The feature helps to equalize movements giving precise measurements even when the baby is more restless.
4. Immediately record the weight in grams to the nearest 0.001 kg (1 g) or 0.01kg (10 g).

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx>
[Measuring birth to 24 months: Childhood Growth Measurement Training Video \(3:56 minutes\)](#)

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Modified Measurement Technique



- weigh the infant being held on a standing scale
- subtract the weight of the person holding the child from their combined weight
- measure and immediately record the weight to the nearest 0.1 kg

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Facilitator Notes:


- The modified measurement technique may be used when the standard method does not produce an accurate or reliable measure
- If an infant is unable to remain still in the infant scale, or the standard method does not give an accurate measure, have an adult hold the infant and subtract the weight of the adult from the combined weight. Record the weight to the nearest 0.1 kg.
- Use the tare weight feature on the scale for this method, if available. Taring the scale will set the weight of the scale at 'zero' when the adult is on the scale (See definition below). The infant, can then be held by the adult and the weight of the infant read directly from the scale.
- A drawback of combined *weights (tared weights)* is that adult scales only weigh to the nearest 0.1 kg so this will miss the more subtle weight changes.
- Also, infants birth to 8 weeks are weighed nude; however you may want to weigh the infant with a diaper using this technique. A diaper could be added to the tared weight.
- Record what method was used when weighing the infant.

Definition of tared weight: to set the weight of the scale at 'zero' when a weight (person) is on the scale. Another person, in this case, the child, can then be added and the weight of the infant read directly from the scale.


Special Circumstances:

- Children who weigh **less than 20 kg** and are **unable to stand** on their own should be weighed on an infant scale
- Children who weigh **greater than 20kg** and are **unable to stand** on their own may need to be weighed held by someone, with the weight of the person holding the child subtracted from their combined weight
- A larger child unable to stand on their own or too heavy to be held, may need to be weighed on a sit-down or wheel chair scale.

Slide 25



Measure Length - Preparation



- remove or undo hair styles and hair accessories
- light clothing and/or diaper
- two people are required to get an accurate measurement
- cover the length board with a paper barrier
- place infant on back in centre of length board

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Key Messages:

Length is measured with a length board in a recumbent position birth to 24 months of age


Facilitator Notes:

- The infant should be measured wearing light clothing and/or diaper. Make sure that shoes, hat and bulky clothing such as coats and sweaters are removed.
- Remove or undo hair styles and hair accessories that interfere with taking a measurement.
- Two people are required to get an accurate measurement. Ask the parent/caregiver to assist when possible.

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Measure Length – Positioning

Frankfort Horizontal Plane



- head against headboard
- eyes looking straight up
- chin not tucked or stretched

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Key Message:

Length is measured with a length board in a recumbent position birth to 24 months of age


Facilitator Notes:

- Cover the length board with a paper barrier.
- Ask the parent/caregiver to place the infant on their back in the centre of the length board with their head against the fixed headboard, compressing the hair.
- Quickly position the head so that the infant is looking vertically upward, with the crown of the head in contact with the headpiece in the Frankfort Horizontal Plane.
- Have the parent/caregiver gently cup the infant's ears while holding the head so it is firmly but gently held in position. Make sure the infant's chin is not tucked in against his chest or stretched too far back.

The head is in the **Frankfort Horizontal Plane (FHP)** when the horizontal line from the ear canal to the lower border orbit of the eye is parallel to the floor (or fixed headboard) and perpendicular to the vertical backboard (CDC). Most people automatically stand in the FHP but minor adjustments to positioning may be needed.

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Measure Length – Positioning



- align trunk and legs
- extend both legs (keep knees down) with toes pointed up
- bring footboard against the heels
- measure and immediately record the length to nearest 0.1 cm

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Key Messages: Alignment of head, trunk and legs while maintaining extension of both legs is necessary for measurement accuracy and reliability.

Facilitator Notes

- Stand on the side of the board where the measurement increments can be seen and the footboard can be easily moved. Align the infant's trunk and legs and gently extend both legs.
- Place one hand on the infant's knees to maintain full extension of the legs.
- Bring the foot piece firmly against the heels while the toes are pointed upwards. It is important that both legs be fully extended for an accurate length measurement.
- Measure to the nearest 0.1 cm and record immediately.

Measuring technique: if the infant is pushing his/her toes forward against the footboard swipe your finger along the sole of each foot to engage the Babinski reflex; the big toe should move toward the top surface of each foot and the other toes should fan out.

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx>
[Measuring birth to 24 months: Childhood Growth Measurement Training Video \(3:56 minutes\)](#)



Modified Measurement Technique


Birth to 24 months of age	
Unable to measure in recumbent position	Equipment to be used
<ul style="list-style-type: none"> •Measure standing height •Add 0.7 cm to convert to length •Immediately record the height to the nearest 0.1cm 	Stadiometer

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Key Messages *This may be new information for some participants*
 Standing **height is approximately 0.7 cm less** than recumbent length.
 Infants are longer in a recumbent position.

Facilitator Notes

- If a child **less than** 24 months of age will not lie down for measurement of length, measure standing height and **add 0.7 cm** to convert it to length and document.
- In general, standing height is about 0.7 cm less than recumbent length. This difference was taken into account in developing the WHO growth standards. It is important to adjust the measurements if length is taken instead of height for children 24 months of age and older or if height is taken instead of length for children under 24 months of age.
- There are some conditions or circumstances which pose challenges to obtaining accurate length and height measurements. *Refer to **Appendix D Special Considerations for Length/Height Measurement** for suggested approaches*

 Alberta Health Services

Measure Head Circumference



- remove hair accessories and place infant on lap or flat surface
- tape measure above the eyebrows and ears and around the prominent part on the back of the head
- pull the tape snugly to compress the hair
- measure and record to the nearest 0.1 cm.

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Key Messages:

- Move the tape up and down over the back of the head to locate the maximal circumference.


Facilitator Notes:

- Measure head circumference at all routine well-child visits according to the recommended immunization schedule: 2, 4, 6, 12 and 18 months
1. Remove or undo any hair styles and hair accessories that interfere with taking a measurement.
 2. Sit the child on a flat surface or on the parent's lap. (The child may be more comfortable on the lap of a parent/caregiver)
 3. Position a flexible, non-stretchable measuring tape just above the eyebrows over the supraorbital ridges, above the ears and around the most prominent part on the back of the head (occiput).
 4. Pull the tape snugly to compress the hair.
 5. Measure to the nearest 0.1 cm and immediately record.


Head circumference is also measured in older children as determined by clinical requirements.


Training videos for standard measurement techniques described in this presentation can be found in the Resource <http://www.albertahealthservices.ca/info/Page9811.aspx>
[Measuring birth to 24 months: Childhood Growth Measurement Training Video \(3:56 minutes\)](#)

Slide 30

 Alberta Health Services

6. WEIGHING AND MEASURING - CHILDREN 2 TO 19 YEARS




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Key Messages:


Facilitator Notes:

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx>
[Measuring 2 to 19 years: Childhood Growth Measurement Training Video \(2:02 minutes\)](http://www.albertahealthservices.ca/info/Page9811.aspx)

Slide 31



When To Measure



- routine well-child visits:
4-6 years of age
- follow-up visits
- when a child's health or nutritional status warrants


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Key Messages:

Facilitator Notes:

- Children should be measured at routine well-child visits according to the immunization schedule at 4-6 years of age.
- Growth measurements are obtained on follow-up visits when feeding or child health warrant careful monitoring as identified during a well-child visit.
- Growth measurements are also obtained in other settings to track the effects of medical or nutritional interventions. (i.e. acute care)

Measurements at well child visits include: weight and height.



Measurement & Equipment


Children 2 to 19 years of age	
Measure	Equipment to be used
Weight	•Child and adolescent (adult) electronic scale
Standing height	•Stadiometer

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Key Messages:

Facilitator Notes:

- Children 2 to 19 years of age are weighed standing on a beam balance or electronic child and adolescent scale and measured in a standing position using a stadiometer.
- A child and adolescent scale is the same as an adult scale; but must cover the weight range of children 2 to 19 years.
- Weight - Child and adolescent (adult) scale *Wheel chair scale for non-ambulatory children
- Height - *Recumbent length board for non-ambulatory children
- Height devices attached to scales are notably inaccurate and should not be used to measure height.
- Heights are measured in a standing position using a stadiometer.

 Alberta Health Services

Measure Weight



- remove shoes, hats or bulky items like coats and sweaters
- lightweight outer clothing or light undergarments
- place a paper barrier on the scale
- with the paper barrier in place “zero” the scale

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Key Messages:

Children/Adolescents 2 to 19 years of age should be weighed wearing light undergarments or lightweight outer clothing.


Facilitator Notes:

1. Follow AHS policies for hand hygiene, cleaning and disinfecting of measuring equipment.
2. Remove shoes, hats or bulky items such as coats and sweaters.
3. Weigh child wearing lightweight outer clothing or light undergarments.
4. Place a paper barrier over the measuring pan of the scale. New paper barrier is always used between clients on the scales, infant length board and stadiometer (same barrier can be used for both pieces of equipment with the same child). Discard any paper barrier that is used after use.
5. With the paper barrier in place “zero” the scale.

Slide 34



Measure Weight



- child/adolescent should stand in the middle of the scale
- child/adolescent must be able to stand without assistance
- measure and immediately record the weight to the nearest 0.1 kg

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Key Messages:

Children able to stand unassisted are weighed standing in the middle of the scale platform and measured to the nearest 0.1 kg.

Facilitator Notes:

6. The child should be weighed standing in the middle of the scale platform.
7. The child must be able to stand without assistance. (i.e. child must be able to stand without holding on to something or someone for support).
8. Immediately record the weight to the nearest 0.1 kg.

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx> [Measuring 2 to 19 years: Childhood Growth Measurement Training Video \(2:02 minutes\)](#)



Modified Measurement Technique

Children 2 to 19 years of age	
Unable to Stand Unassisted	Alternate Equipment
< 20 kg	• Infant scale
> 20 kg	• Child and adolescent scale for tare weight, • Sit-down, wheelchair scale

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Key Messages:

- Children who **weigh less than 20 kg** and are unable to stand on their own should be weighed on an infant scale
- Children who **weigh greater than 20kg** and are unable to stand on their own may need to be weighed held by someone, with the weight of the person holding the child subtracted from their combined weight. (Use tare weight feature on scale if available see definition below).
- A larger child unable to stand on their own or too heavy to be held, may need to be weighed on a sit-down or wheel chair scale.


Facilitator Notes:

- A larger child unable to stand on their own or too heavy to be held may need to be weighed on a sit-down or wheel chair scale.
- Definition of tared weight: to set the weight of the scale at ‘zero’ when a weight (person) is on the scale. Another person, in this case, the child, can then be added and the weight of the infant read directly from the scale.

Slide 36



Measure Height - Preparation



- remove or undo hair styles and hair accessories
- remove shoes, hat and bulky clothing such as coats and sweaters

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Key Messages:

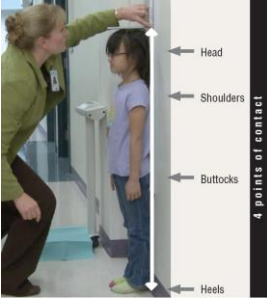
Facilitator Notes:

1. Remove shoes, hat and bulky clothing such as coats and sweaters.
2. Remove or undo hair styles and hair accessories that interfere with taking a measurement.

Slide 37

Alberta Health Services

Measure Height - Positioning



- heels almost together, legs straight, arms at sides, and shoulders relaxed
- heels, buttocks, shoulders and head touching surface
- child looking straight ahead in Frankfort Horizontal Plane

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Key Messages:

Positioning is important! **Four points** of contact: Heels, buttocks, shoulders and head touching


Facilitator Notes:

3. Ask the child to stand against the stadiometer, with heels together, legs straight, arms at sides, and shoulders relaxed.
4. The child is measured standing with heels, buttocks, shoulders and head touching a flat upright surface.
5. The child should be looking straight ahead in the Frankfort Horizontal Plane.

Slide 38



Measure Height - Positioning



- move the headpiece down to touch the crown of the head
- view the measurement with eyes parallel to the headpiece
- measure and immediately record the height to the nearest 0.1 cm


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Facilitator Notes:

6. Ask the child to stand fully erect without altering the position of the heels. Make sure the heels do not rise off the foot plate.
7. Bring the perpendicular headpiece down to touch the crown of the head with enough pressure to compress the hair.
8. Measurer's eyes should be parallel with the headpiece in order to read the measurement.
9. Measure to the nearest 0.1 cm and immediately record.

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx>

[Measuring 2 to 19 years: Childhood Growth Measurement Training Video \(2:02 minutes\)](#)



Modified Measurement Technique

Children 2 to 19 years of age	
Cannot Stand Unassisted	Alternate Equipment
<ul style="list-style-type: none"> •Measure length on a recumbent length board •Subtract 0.7cm to convert it to height •Immediately record the length to the nearest 0.1cm 	Recumbent length board


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Key Messages: *This may be new information for some participants.*

- Standing height is **approximately 0.7 cm** less than recumbent length.
- Children are longer in recumbent position.

Facilitator Notes:

- Children with physical disabilities (unable to stand) may require length measured using a recumbent length board or may require the usage of other segment length measurements such as upper arm length(UAL). UAL will be reviewed later in the presentation.
- If a child cannot stand unassisted, measure recumbent length and **subtract 0.7 cm** to convert it to height and record to the nearest 0.1cm.
- In general, standing height is about 0.7 cm less than recumbent length. This difference was taken into account in developing the WHO growth standards. It is important to adjust the measurements if length is taken instead of height for children 2 years and older or if height is taken instead of length for children less than 24 months of age.



Special Considerations – 2 to 19 Years of Age

- **vertical plane**- aim for at least 2 points of contact
- **leg asymmetry** - stand on longer leg with shorter leg supported
- **cultural headpiece**
 - topknot - measure to the side of the topknot
 - turban - upper arm length with equation
- **physical disabilities**
 - pediatric length board
 - upper arm length with equation

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This may be new information for some participants

Key Messages: *This information is available in Appendix D of the Childhood Growth Measurement Protocol- Public Health and Clinical Settings*

Facilitator's Notes:

- If appendix D does not provide the information needed, public health nurses should assess each case and the restrictions involved and **if necessary** contact the physician specialist or therapist to determine the urgency of a growth/weight/height measurement for that clinic visit and how best to measure **if required**

Vertical Plane-If the child cannot easily place their head, shoulders, buttocks, and heels in one vertical plane (i.e. above a healthy weight), a minimum of two contact points (the back of the head and buttocks, or the heels and buttocks) should be in contact with the wall or vertical surface of the measuring device with the trunk vertical and balanced over the waist. Record the change in technique.

Leg Asymmetry-If the child has leg length asymmetry, the child should stand on the longer leg with the shorter leg supported by a block or wedge of suitable height until the pelvis is level and both knees are fully extended. When measuring length, keep the legs together and measure to the heel of the longest leg. Record the presence of leg length asymmetry.

Cultural Head Piece-Sikh children aged up to 11 years often have topknots rather than turbans. In children with topknots, the measuring arm of the stadiometer can be placed to one side of the topknot to obtain a reading. If the head covering does not fit close to the head, such as a turban, choose an alternative means of measuring height, such as upper arm length. Record the method used to obtain height measurement

Physical Disability-If measurement of standing height of a child with a disability is not possible, use either a recumbent length board, or and upper arm length:


- In children without contractures but who are non-ambulatory, use full body recumbent (supine) length. Remember to subtract 0.7cm from the length to concert it to a height.
- If recumbent length is measured in a child with spasticity, contractures, and/or other musculoskeletal abnormalities, measure the side of the body that is unaffected or less affected and that can be extended the fullest. Record the side measured and the presence of spasticity, joint contractures, and/or other musculoskeletal abnormalities.
- If the child has **severe contractures, spasticity or scoliosis** or is too heavy to be lifted from wheelchair, **upper arm length** may be used to track growth in height over time.

Training videos for standard measurement techniques described in this presentation can be found in the Resource Section <http://www.albertahealthservices.ca/info/Page9811.aspx>.

Alberta Health Services

Upper Arm Length (UAL) - Measurement

- arm at 90°, palm up
- mark the **acromion process**
- measure to the **olecranon process**
- immediately record the UAL to the nearest 0.1 cm



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Facilitator Notes: *This may be new for some participants.*

- Upper arm length can be used to estimate height in children who have significant lower leg involvement or have their knee, hip or ankle at a 90 degree angle and therefore cannot be measured in a recumbent position.

Upper Arm Length (UAL)

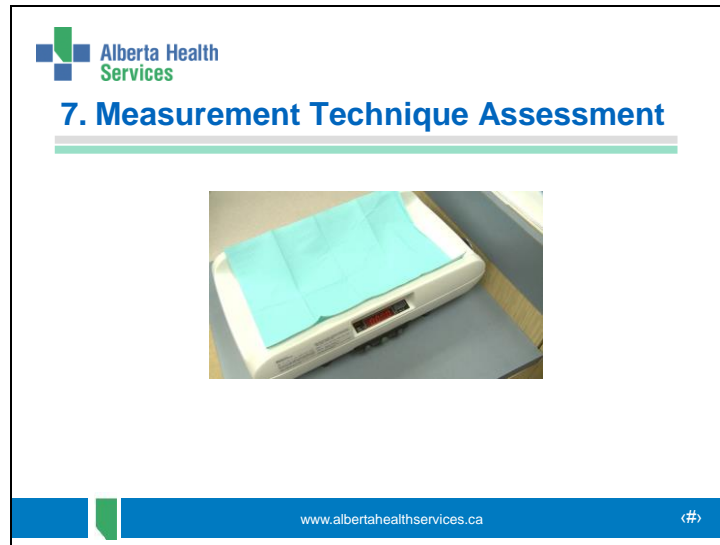
1. This is a segmental measurement that has been shown by research to provide a good estimate of standing height. Repeated measures using the same techniques can demonstrate growth over time.
2. The child should face away from the measurer the right arm should be bent at a 90 degree angle at the elbow with the right palm facing up.
3. Mark the measurement site: Locate the end of the spine of the right scapula by following the scapula out to the arm until it makes a sharp V-turn to the front of the body. Make a horizontal line on the uppermost edge of the posterior border of the spine extending from the acromion process.
4. Take the measurement: Hold the zero end of the measuring tape at this mark and extend the tape down the posterior surface of the arm to the tip of the olecranon process, the bony part of the mid-elbow. Take the measurement to the nearest 0.1 cm and record.

In order to plot the child on a growth chart, use the following equation to convert upper arm length to height: $(\text{standing ht}) = (4.35 \times \text{UAL in cm}) + 21.8$.

Refer to **Appendix D** *Special Considerations for Length/Height Measurement*


<http://www.albertahealthservices.ca/assets/info/hp/cgm/if-hp-cgm-measurement-protocol-appendix-special-considerations.pdf>

Slide 42



Alberta Health Services

7. Measurement Technique Assessment



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Key Messages:

This slide indicates the beginning of the section on 'Measurement Technique Assessment'

Activity:

1. Ask that everyone form into groups of up to 5 people. (The size and number of groups will depend on how many people are attending the session).
2. Let everyone know that they will be shown pictures of children being weighed and measured.
3. Ask each group to discuss whether the technique that is shown in the picture is appropriate or inappropriate and list the reasons why for each.
4. Ask each group to take turns sharing the results of their group discussion.
5. Reveal the slide with the answers. Encourage discussion.

Questions: Ask the participants to highlight both appropriate and inappropriate techniques.


What is the nurse doing well?

What does she need to change in order to obtain an accurate measurement?


Facilitator Notes:

The purpose of this section is to provide an opportunity to review the information that we have discussed and determine whether the measurement technique that is shown in the following pictures demonstrates appropriate or inappropriate techniques. An opportunity to discuss the rationale as to why the technique is or is not appropriate will also be provided.

Slide 43




Assess the Technique: Weight



Is the technique:

- Appropriate
- Inappropriate

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Key Messages:

Facilitator Notes:

Questions: Ask the participants to highlight both appropriate and inappropriate techniques.


What is the nurse doing well?

What does she need to change in order to obtain an accurate measurement?

Slide 44

Alberta Health Services

Assess the Technique: Weight



The technique is:

- Inappropriate

Weight will be inaccurate:

- too many clothes
- holding a book
- not centred on the scale

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Key Messages:

Child should be weighed wearing a clean, dry diaper

Facilitator Notes:

Child is being weighed on the right scale (infant scale)

Safety is being addressed.

Protocol:

1. An infant **birth to 8 weeks** of age should be weighed **nude**
2. An infant **2 to 24 months** of age should be weighed wearing a **clean, dry diaper**. Weighing with a disposable diaper is recommended as cloth diapers are considerably heavier.
3. Place a paper barrier over the measuring pan of the scale.
4. With the paper barrier in place, tare to zero.
5. Place the infant in the middle of the scale (the parent/caregiver can be asked to do this).
6. It may be necessary to wait a minute or so until the infant is still, or ask the parent/caregiver to distract an active infant.
7. Immediately record the weight to the nearest 0.001 kg (1 g) or 0.01 kg (10 g) increment.
8. If the infant is too active, weigh the infant being held by someone on a child and adolescent scale, with the weight of the person holding the child subtracted from their combined weight. Record the weight to the nearest 0.1 kg.
9. Note: Child and adolescent scales are generally only accurate to 0.1 kg increments and therefore you will receive a less accurate measure. Indicate how the weight was obtained on the chart if possible.

Slide 45

 Alberta Health Services

Assess the Technique: Weight



Is the technique:

- Appropriate
- Inappropriate

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Key Messages:

Facilitator Notes:


Questions: Ask the participants to highlight both appropriate and inappropriate techniques.

What is the nurse doing well?

What does she need to change in order to obtain an accurate measurement?

Alberta Health Services

Assess the Technique: Weight



The technique is:
 Inappropriate

Weight will be inaccurate:

- parent touching infant
- foot is touching wall

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Key Messages:

Child must not be touched by caregiver/staff or touching a surface other than the scale when the measurement is taken.

Facilitator Notes:


Protocol:

1. An infant birth to **8 weeks** should be weighed **nude**.
2. An infant **2 to 24 months** should be weighed in a **clean, dry diaper**. Weighing with a disposable diaper is recommended as cloth diapers are considerably heavier.
3. Place a paper barrier over the measuring pan of the scale.
4. With the paper barrier in place, tare to zero.
5. Place the infant in the middle of the scale (the parent/caregiver can be asked to do this).
6. It may be necessary to wait a minute or so until the infant is still, or ask the parent/caregiver to distract an active infant.
7. Immediately record the weight to the nearest 0.001 kg (1 g) or 0.01 kg (10 g) increment.

Slide 47

Alberta Health Services

Assess the Technique: Length



Is the technique:

- Appropriate
- Inappropriate

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Key Messages:

Facilitator Notes:


Questions: Ask the participants to highlight both appropriate and inappropriate techniques.

What is the nurse doing well?

What does she need to change in order to obtain an accurate measurement?

Alberta Health Services

Assess the Technique: Length



The technique is:
 Inappropriate

Length will be inaccurate:

- inappropriate equipment
- feet are not flat against footboard
- toes are not pointed upward
- head is not in the Frankfort Horizontal Plane

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Key Messages: Use the appropriate piece of measurement equipment to measure length


Facilitator Notes:

Protocol:

1. The child should be measured wearing light clothing and/or diaper. Remove shoes, hat and bulky clothing such as coats and sweaters.
2. Remove or undo hair styles and hair accessories that interfere with taking a measurement.
3. Two people are needed to get an accurate measurement.
4. Cover the length board with a paper barrier.
5. Ask the parent/caregiver to place the infant on their back in the centre of the length board with their head against the fixed headboard, compressing the hair. Eyes should be looking up.
6. Quickly position the head so that the infant is looking vertically upward, with the crown of the head in contact with the headpiece in the Frankfort Horizontal Plane.
7. Have the parent/caregiver gently cup the infant's ears while holding the head so it is firmly but gently held in position. Make sure the infant's chin is not tucked in against his chest or stretched too far back.
8. Standing on the side of the board where the measuring tape can be seen and you can move the footboard, align the infant's trunk and legs, gently extend both legs, and bring the foot piece firmly against the heels with feet against the foot piece. Place one hand on the infant's knees to maintain full extension of the legs. The infant's toes should be pointed upward. It is important that both legs be fully extended for an accurate length measurement.
9. Measure to the nearest 0.1 cm and immediately record.

Alberta Health Services

Assess the Technique: Length



Is the technique:

- Appropriate
- Inappropriate

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Key Messages:

Facilitator Notes:


Questions: Ask the participants to highlight both appropriate and inappropriate techniques.

What is the nurse doing well?

What does she need to change in order to obtain an accurate measurement?

Alberta Health Services

Assess the Technique: Length



The technique is:
 Inappropriate

Length will be inaccurate:

- trunk and legs are not aligned
- hand only on one knee

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Key Messages:

- Align the infant's trunk and legs, gently extend both legs, and bring the foot piece firmly against the heels with feet against the foot piece.
- Place one hand on the infant's knees to maintain full extension of the legs. The infant's toes should be pointed upward. It is important that both legs be fully extended for an accurate length measurement.

Facilitator Notes:


The right piece of equipment is being used (infant length board).

The child is being measured wearing light clothing and/or diaper.


Protocol

1. The child should be measured wearing light clothing and/or diaper. Remove shoes, hat and bulky clothing such as coats and sweaters.
2. Remove or undo hair styles and hair accessories that interfere with taking a measurement.
3. Two people are needed to get an accurate measurement.
4. Cover the length board with a paper barrier.
5. Ask the parent/caregiver to place the infant on their back in the centre of the length board with their head against the fixed headboard, compressing the hair. Eyes should be looking up.
6. Quickly position the head so that the infant is looking vertically upward, with the crown of the head in contact with the headpiece in the Frankfort Horizontal Plane.
7. Have the parent/caregiver gently cup the infant's ears while holding the head so it is firmly but gently held in position. Make sure the infant's chin is not tucked in against his chest or stretched too far back.
8. Standing on the side of the board where the measuring tape can be seen and you can move the footboard, align the infant's trunk and legs, gently extend both legs, and bring the foot piece firmly against the heels with feet against the foot piece. Place one hand on the infant's knees to maintain full extension of the legs. The infant's toes should be pointed upward. It is important that both legs be fully extended for an accurate length measurement.
9. Measure to the nearest 0.1 cm and immediately record.

Slide 51


 Alberta Health Services

Assess the Technique: Head Circumference



Is the technique:

- Appropriate
- Inappropriate

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Key Messages:

Facilitator Notes:


Questions: Ask the participants to highlight both appropriate and inappropriate techniques.

What is the nurse doing well?

What does she need to change in order to obtain an accurate measurement?

Alberta Health Services

Assess the Technique: Head Circumference



The technique is:
 Inappropriate

Head circumference will be inaccurate:

- tape over ear
- tape too low
- tape not pulled snugly

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Key Messages:

- Positioning is important!
- Position a flexible, non-stretchable measuring tape just above the eyebrows over the supraorbital ridges, above the ears and around the prominent part on the back of the head (occiput). Pull the tape snugly to compress the hair.

Facilitator Notes:


Protocol:

1. Ask parent/caregiver to remove or undo any hair styles and hair accessories that interfere with taking a measurement.
2. Sit the child on a flat surface or on the parent's lap. The child may be more comfortable in the arms of a parent or caregiver.
3. Position a flexible, non-stretchable measuring tape just above the eyebrows over the supraorbital ridges, above the ears and around the prominent part on the back of the head (occiput).
4. Pull the tape snugly to compress the hair.
5. Measure to the nearest 0.1 cm and immediately record.

Slide 53

Alberta Health Services

Assess the Technique: Height



Is the technique:

- Appropriate
- Inappropriate

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Key Messages:

Facilitator Notes:


Questions: Ask the participants to highlight both appropriate and inappropriate techniques.

What is the nurse doing well?

What does she need to change in order to obtain an accurate measurement?

Alberta Health Services

Assess the Technique: Height



The technique is:
 Inappropriate

Height will be inaccurate:

- shoes, hat and jacket on
- heels are not against the flat surface
- head not in Frankfort Horizontal plane
- measurer not reading at eye level

www.albertahealthservices.ca

Key Messages:

- Remove shoes, hat and bulky clothing such as coats and sweaters.
- Positioning is important! Ensure four points of contact with the child measured standing with heels, buttocks, shoulders and head touching a flat upright surface.

Facilitator Notes:

Protocol:

1. Remove shoes, hat and bulky clothing such as coats and sweaters.
2. Remove or undo hair styles and hair accessories that interfere with taking a measurement.
3. Place a paper barrier over the stadiometer pan or floor.
4. Ask the child to stand against the stadiometer, with heels together, legs straight, arms at sides, and shoulders relaxed.
5. The child is measured standing with heels, buttocks, shoulders and head touching a flat upright surface.
6. Child should be looking straight ahead in the Frankfort Horizontal Plane.
7. Ask the child to inhale deeply and to stand fully erect without altering the position of the heels. Make sure the heels do not rise off the foot plate or floor.
8. Bring the perpendicular headpiece down to touch the crown of the head with enough pressure to compress the hair.
9. Measurer's eyes should be parallel with the headpiece in order to read the measurement.



8. Key Messages



- use the right equipment for the child's age and size
- double-check measurements when reading the equipment
- record measurements immediately

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Key Messages:

This slide indicates the beginning of the section on “Key messages”

Facilitator Notes:

1. Use the right equipment for the child's age whenever possible (exception is special circumstances as already discussed)
2. Double-check and record measurements immediately to reduce errors in reading equipment and recording data
3. Record the measurements immediately
4. Check and 'zero' the equipment daily and between each use. (calibration and maintenance are important)

Slide 56



Weight

- check that the child is wearing the right amount of clothing
- 'zero' the scale with the barrier in place before weighing


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Key Messages:

Facilitator Notes:

1. Use the right equipment for the child's age whenever possible (exception is special circumstances as already discussed)
2. Double-check and record measurements immediately to reduce errors in reading equipment and recording data
3. Record the measurements immediately
4. Check and 'zero' the equipment daily and between each use. (calibration and maintenance are important)

Slide 57



Alberta Health
Services

Length/Height


- ask for assistance when measuring infant length
- fully extend both legs when measuring infants
- check that the head is in the Frankfort Horizontal Plane
- make sure shoes, hats and hair accessories are removed

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Key Messages:

Facilitator Notes:

1. Two people are needed to get an accurate length measurement. Ask parent/caregiver to help.
2. Remember to fully extend infants so that the knees are not bent and heels are touching the footboard.
3. Check that the head of the infant or child is in the Frankfort Horizontal Plane so that the chin is not tucked in or the neck is not stretched too far back.
4. Make sure shoes and hats are removed.
5. Remove or undo hair styles or accessories that interfere with the measurement.



9. Resources

- AHS Childhood Growth Measurement - Public Health and Clinical Settings Protocol
- Public Health Childhood Growth Measurement Training Module (PPT)
- Childhood Growth Measurement Posters
- Training Videos
- Calibration Recording Form
- FAQ Childhood Growth Measurement
- AHS Website <http://www.albertahealthservices.ca/cgm.asp>

www.albertahealthservices.ca

Key Messages:

Any resources available provincially will be included in this section.

Facilitator Notes:

The following resources are available for Public Health staffs who are involved in Growth Measurement (both for trainers and measurers):

Growth measurement main page

<http://www.albertahealthservices.ca/info/Page9808.aspx>

GM Protocol: Childhood Growth Measurement: Public Health and Clinical Settings.

<http://www.albertahealthservices.ca/info/Page9810.aspx>

GM protocol PDF

<http://www.albertahealthservices.ca/assets/info/hp/cgm/if-hp-cgm-measurement-protocol.pdf>

Resources Training Resources (module and videos)

<http://www.albertahealthservices.ca/info/Page9811.aspx>

Specifications for purchasing growth measurement equipment:

<http://www.albertahealthservices.ca/assets/Infofor/hp/if-hp-cgm-equipment-specs.pdf>

Maintenance and Calibration Guidelines and Form:


<http://www.albertahealthservices.ca/assets/Infofor/hp/if-hp-cgm-equip-maint-calibration.pdf>

<http://www.albertahealthservices.ca/assets/Infofor/hp/if-hp-cgm-calibration-recording-template.pdf>

Training Videos: <http://www.albertahealthservices.ca/info/Page9811.aspx>


AHS Staff: Details and more information available on Insite, AHS staff intranet, enter Childhood Growth Measurement FAQ in search.

Slide 59



Alberta Health
Services

10. Questions




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Key Messages:

Facilitator Notes:

Slide 60



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Slide 61




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Slide 62



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