Appendix A
Specifications for New Growth Measurement Equipment

General Information:

- Equipment for measuring must be used for the purpose for which it was designed.
- Equipment specifications are for both stationary and portable equipment.
- There are many sources of high quality, reliable measurement equipment that will meet the equipment specifications outlined below. Consult with your purchasing department and refer to *Appendix B Childhood Growth Measurement: Equipment List* to determine which products are currently available for purchase
- Equipment purchased should have contact surfaces that are smooth and easy to clean with AHS-approved disinfectants. Equipment with many complex surfaces or with unsealed joints and crevices cannot be cleaned and are not acceptable.

The following specifications should be used when purchasing new equipment:

INFANTS (birth to 24 months of age)

1) Scales for weighing infants:

An accurate scale for weighing infants can be either a beam balance or electronic scale. Scale should be durable, accurate and safe for the infant. Length devices attached to infant scales are notably inaccurate and should not be used because they do not have a stable footpiece.

a) Infant scale specifications:

i. Medical quality balance beam or electronic scale.
ii. Weigh to a maximum weight of 20 kg.
iii. Weigh in 0.001 kg (1 g) or 0.01 kg (10 g) increments.
iv. Easily ‘zeroed’ and checked.
v. Can easily be ‘tared’ to zero.
vi. Tray is large enough to support the infant.
vii. No sharp edges.
viii. Can be calibrated.
ix. Length devices are not attached to scale.
x. Desirable features for electronic scales include: “average weight”, ability to ‘lock in’ weight and a motion detector/stabilizer.

2) Length boards for measuring length:

The length board will be durable, accurate and safe for the infant or child being measured. Devices attached to scales, rulers or tapes on examination tables should not be used. Inappropriate equipment used for measuring has a tendency to measure ’short’.

a) Infant length board specifications (infantometer):

i. A firm, flat horizontal surface.
ii. Measuring tape will have 0.1 cm (1 mm) increments.

iii. Fixed tape is stable and easily read.
iv. An immovable headpiece at a right angle to the tape.
v. A moveable foot piece, perpendicular to the tape.
vi. It is desirable that the length board have a measuring range to at least 40 to 99 cm so that the majority of infants from birth to 24 months of age can be measured in a recumbent position.

3) Tapes for measuring infant head circumference:
Insertion tapes provide a more accurate 'view' of the head circumference measure than that obtained by overlapping the edges of a tape measure.

a) Head circumference tape measure specifications:

i. Flexible, non-stretchable measuring tape.
ii. A plasticized tape is recommended.
iii. Measures in 0.1 cm (1 mm) increments.
iv. It is desirable that an insertion tape be used.

CHILDREN AND ADOLESCENTS (2 to 19 years of age)

1) Scales for weighing children and adolescents:
An accurate scale for weighing children and adolescents can be either a beam balance or electronic scale. Bathroom 'spring' scales should not be used to weigh children or adolescents. Safety and accuracy require that the scale has a large enough platform to support the child being weighed.

a) Scale specifications:

i. Medical quality balance beam or electronic scale.
ii. Weigh in 0.1 kg (100 gm) increments.
iii. Can be calibrated.
iv. Can easily be 'tared' to zero.
v. Stable weighing platform.
vi. No height (stature) device attached to the scale.
vii. Ability to 'lock in' weight is desirable on electronic scales.
viii. It is desirable that the scale should weigh from at least 5 kg to 105 kg so that it can be used with the majority of children.

b) Wheel chair scales:

Providing accessible weigh scales can improve the quality of care provided to those with disabilities and activity limitations. The most common type of accessible scale is a wheelchair scale. They can be used for those in a wheelchair, with limited stability and those needing to sit on a chair while being weighed.

i. These types of scales include:
- Folding portable
- Stationary and
- Platform (portable and in ground)

ii. In addition to the specifications for child and adolescent scales wheel chair scales should have contain:
- Sturdy handrails
- Wide platform to accommodate power wheelchairs
- Slip resistant platform
- Large, easy to read digital display

iii. Some manufacturers of Accessible scales are as follows:
- Detecto, www.detectoscale.com 1-800-641-2008
- Heath-o-Meter, www.healthometer.com
- SECA, www.itinscale.com
- Tantia, www.tanita.com 1-847-640-9241

Note: The Scaletronix wheel chair scale model 6002 supplied by *Global Medical Products* meets the specifications for clinical settings in Alberta Health Services.

2) Stadiometers and length boards for measuring height of children and adolescents:

Height devices attached to scales are notably inaccurate and should not be used. A common failing of the portable stadiometer is a base that is too small. If the base is too small the stadiometer is not stable and entirely perpendicular to the floor.

a) Stadiometer specifications:

i. A vertical board with an attached metric rule.
ii. An easily moveable horizontal headpiece that can be brought into contact with the superior part of the head.
iii. A wide and stable platform or firm uncarpeted floor as the base.
iv. Easily read, stable tape or digital readout in 0.1 cm (1 mm) increments.
v. It is desirable that the stadiometer have a height range of at least 70 cm to 205 cm so that it can be used with the majority of children and adolescents.

b) Recumbent length board specifications for non ambulatory children

i. A firm, flat horizontal surface.
ii. Measuring tape will have 0.1 cm (1 mm) increments.
iii. Fixed tape is stable and easily read.
iv. An immovable headpiece at a right angle to the tape.
v. A moveable footpiece, perpendicular to the tape.
vi. It is desirable that the length board have a measuring range to least 180cm so that the majority of children from 2 to 19 years of age can be measured in a recumbent position.

Note: The O'Leary Adult Recumbent Board Model REC LB-6X supplied by *Ellard Instrumentation* meets the specifications for clinical settings in Alberta Health Services.