Annex 4

Measuringweight and length/height of children under the age of 5 years

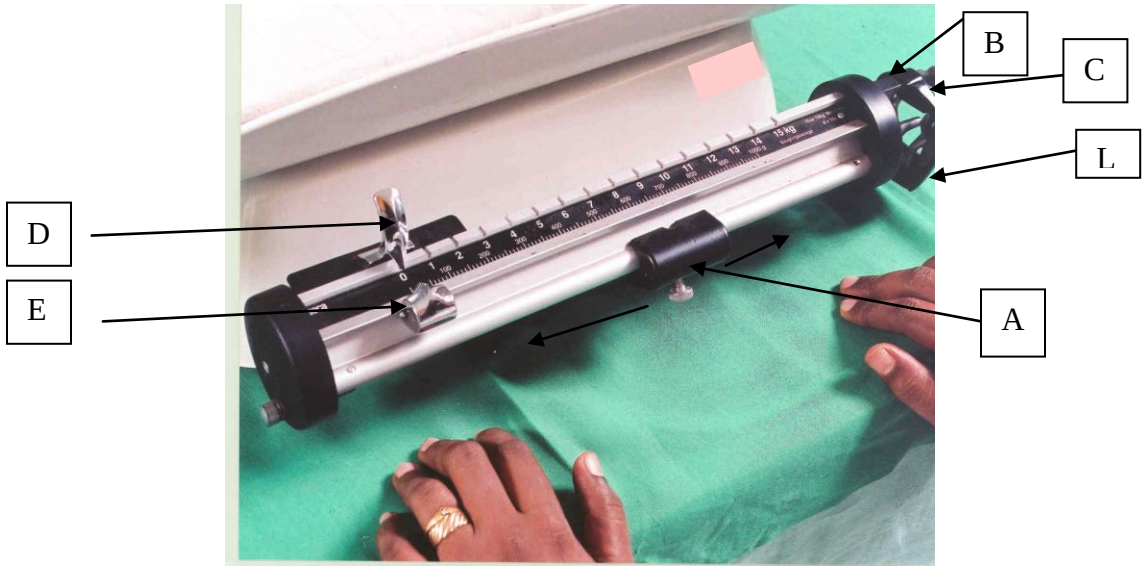
All children who attend the nutrition clinic should be weighed and measured for length/height. Then their weight for age, length/height for age and weight for length/height should be assessed.

1. Weighing

The beam balance scale should be used for infants under 6 months of age and for infants older than 6 months either the beam balance scale (till about 1 ½ years of age) or the spring balance scale can be used.

1.1 Steps in measuring weight using the beam balance scale

- Before starting to take the measurement make sure that the instrument is working properly.
- Assemble all the parts of the scale as recommended.
- Place the assembled scale on a table in a well lighted place. The scale placed on the table, should be at the measurer's eye level when seated in front of it.
- Spread a thin sheet on the tray of the scale and bring the reading to 0.
    - Bring parts D and E to 0.
    - Then move part A (the part with a screw) till parts B and C are at the same level. Then turn the screw to tighten it.



- Remove the clothing of the baby with the mother's support and place the baby on the tray.
- First, move part D towards the right side according to the likely weight (in kilo grams).
- Then move part E towards the right side till parts B and C are at the same level.
- When parts B and C are at the same level pull the L lock down and stop the balance from moving.

- Read the measurement accurately (at eye level) while sitting in front of the scale.
- Immediately on taking the reading, record this measurement in the growth record of the B portion of the child's CHDR. Then plot this measurement in the weight for age graph in the CHDR A portion and interpret the measurement according to the zone and the direction of the growth curve. Then record the relvant code again in the column provided for recording of the code in growth record of the B portion (the particular code for the zone in which the measurement falls and whether there is growth faltering according to the direction of the curve).

1.2 Steps in measuring weight using the spring balance scale

- Before starting to take the measurement make sure that the instrument working properly.
- Hang the scale securely with the face of the scale at the measurer' eye level.
- Then hang the trouser (used to measure the child) and balance the scale to 0.
- Dress the child with minimal clothing and then the trouser (already balanced) and then hang the child on the scale with the support of the mother.
  Infants should be weighed with no clothing at all and children over 1 year of age with light underclothing only).
- If in a cold climate can wrap the baby with a blanket but this blanket has to be balanced first (as done with the trouser).
- Make sure that the child's feet are not touching the floor once the child is hung onto the scale.
- As soon as the pointer stops moving, read the measurement accurately.
- Immediately on taking the reading, record this measurement in the growth record of the B portion of the child's CHDR. Then plot this measurement in the weight for age graph in the CHDR A portion and interpret the measurement according to the zone and the direction of the growth curve. Then record the relvant code again in the column provided for recording of the code in growth record of the B portion (the particular code for the zone in which the measurement falls and whether there is growth faltering according to the direction of the curve).
- Please note that if the reading is not recorded at once after getting the measurement, inaccuracies in recording are liable to occur.

2. Measuring length/height

Depending on the child's age and ability to stand, measure the child's length or height. A child's length is measured with the child lying down (recumbent). Height is measured standing upright.

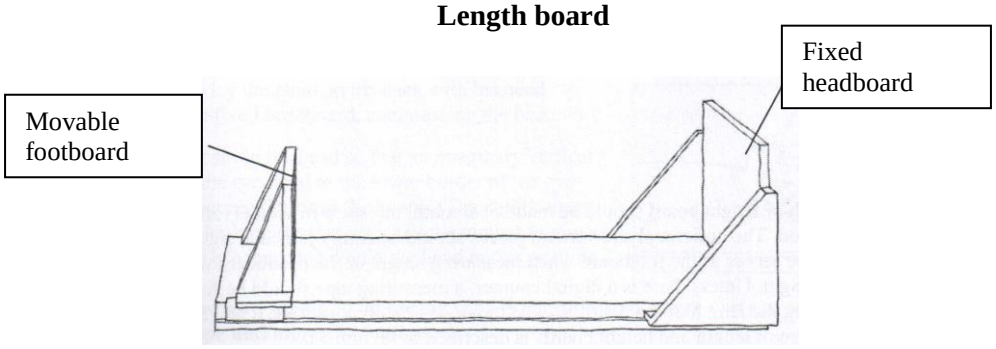
- If a child is less than 2 years old, measure recumbent length.
- If the child is aged 2 years or older and able to stand, measure standing height.

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 used to make charts in the CHDR. Therefore, it is important to adjust the measurements if length is measured instead of height and vice versa.

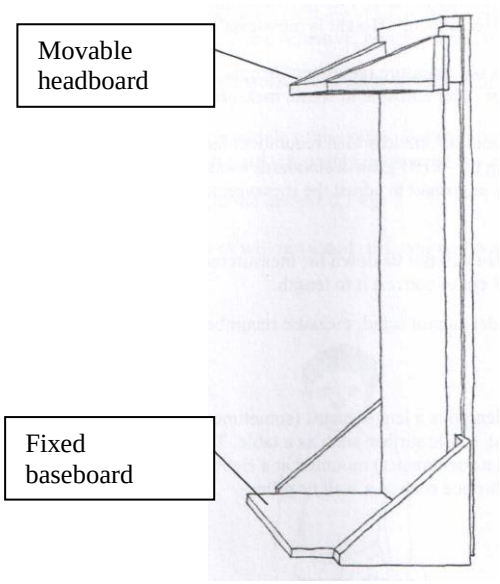
- If a child less than 2 years old will not lie down for measurement of length, measure standing height and **add 0.7 cm** to convert it to length.
- If achild aged 2 years or older cannot stand, measure recumbent length and **subtract 0.7 cm** to convert it to height.

Equipment needed to measure length is a length board (sometimes called an infantometer) which should be placed on a flat, stable surface such as a table. To measure height, use a height board (sometimes called a stadiometer) mounted at a right angle between a level floor and against a straight, verticle surface such as a wall or a pillar.

Length board



Height board



Different types of equipment may be used for measuring length or height from time to time, but the basic steps in length or height measurements are the same for all these equipment. The manual provided with the instrument should be used as a guide to assemble the parts in the correct manner and take measurements accuratetly.

2.1 Preparing a child to measure length/height

It is advisable to measure a child for length/height as soon as you finish weighing and the child still remains undressed. Therefore it is important to prepare the child both for weighing and measuring length/height **before weighing**, to avoid delay between the measurements.

Before measuring length/height, check again to see whether the child's socks and shoes, hair braids, ribbons and ornaments that would interfere with length/height mesurements are removed.

If a child was weighed without any clothing, dress the child with the nappy to avoid the child from wetting himself. If there is a cold climate and it would take sometime to measure length/height after weighing, wrap the child in a blanket. However, especially with young children whose length is measured, it is important to move quickly and surely from the scale to the length board to avoid upsetting a child.

Mother/caregiver's help and support is needed in measuring length/height and in soothing and comforting the child during the procedure. Explain to mother why the measurement is taken and the steps in the procedure. If she has any queries, answer them. Show and tell her how she can help in taking the measurement.Explain that it is important to keep the child still and calm.

2.2 Measuring the length

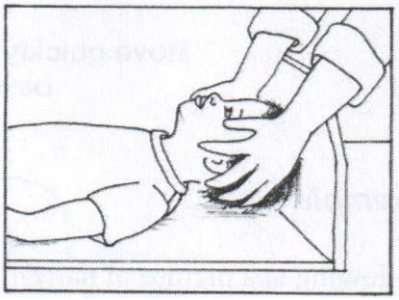
Cover the length board with a thin cloth or soft paper for hygiene and the baby's comfort.

Explain to mother that she will need to place the baby on the length board herself and then help to hold the baby's head in place while you take the measurement. Show her where to stand

when placing the baby down, i.e. opposite you on the side of the length board away from the tape. Also show her where to place the baby's head (against the fixed headboard) so that she can move quickly and surely without distressing the baby.

When the mother understands your instructions and is ready to assist;

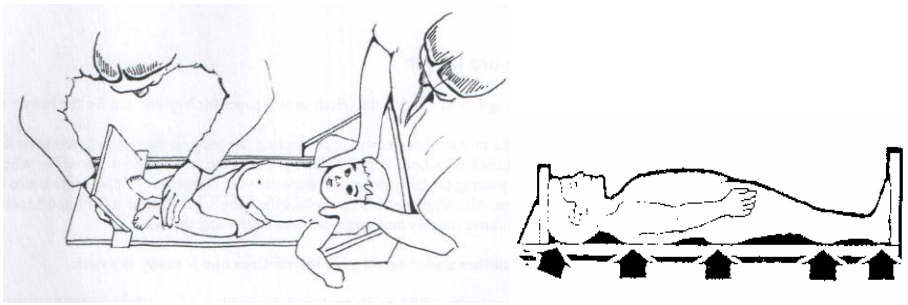
- Ask her to lay the child on his back with his head against the fixed headboard, compressing the hair.
- Quickly position the head so that an imaginary vertical line from the ear canal to the lower border of the eye socket is perpendicular to the board; i.e. the child's eyes should be looking straight up. Ask the mother to move behind the headboard and hold the head in this position.



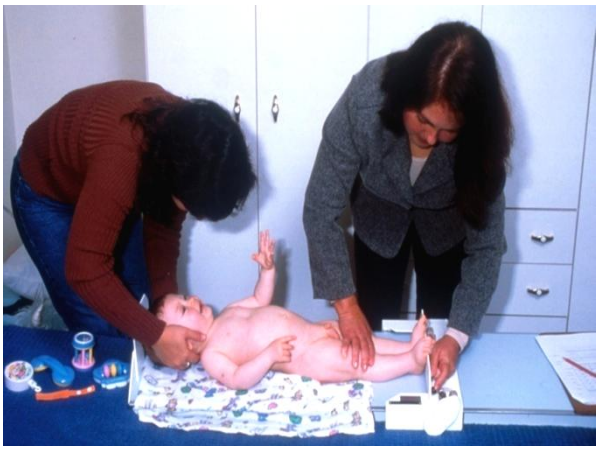
Speed is important. Standing on the side of the length board where you can see the measuring tape and move the foorboard;

- Check that the child lies straight along the board and does not change position. Shoulders should touch the board, and the spine should not be arched. Ask the mother to inform you if the child arches the back or moves out of position.
- Hold down the child's legs with one hand and move the footboard with the other. Apply gentle pressure to the knees to straighten the legs as far as they can go without causing injury. *Note: it is not possible to straighten the knees of the newborn to the same degree as older children. Their knees are fragile and could be injured easily, so apply minimum pressure.*

  If a child is extremely agitated and both legs cannot be held in position, measure with one leg in position.
- While holding the knees, pull the footboard against the child's feet. The soles of the feet should be flat against the footboard, toes pointing upwards. If the child bends the toes and prevents the footboard from touching the soles, scratch the soles slightly and slide in the footboard quickly when the child straightens the toes.
- Read the measurement and record the child's length in centimetres to the last completed 0.1 cm in the B portion of the CHDR. This is the last line that you can actually see (0.1 cm + 1 mm).
- Remember: If the child whose length you measured is 2 years old or more, subtract 0.7 cm from the length and record the result as height.



Move quickly and surely to measure length accurately before the baby becomes agitated.



2.2 Measuring the height

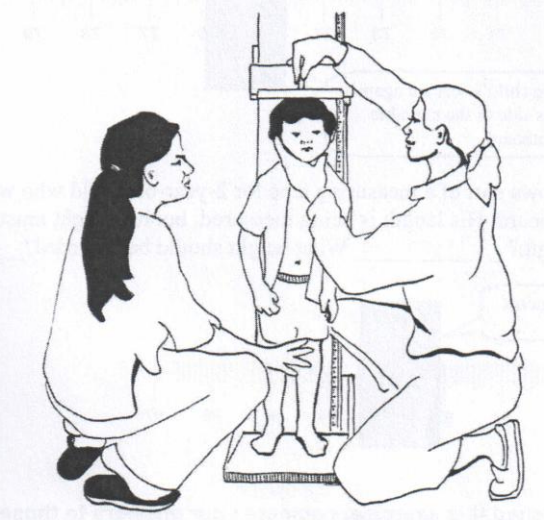
Ensure that the height board is on level ground. Check that shoes, socks and hair ornaments have been removed.

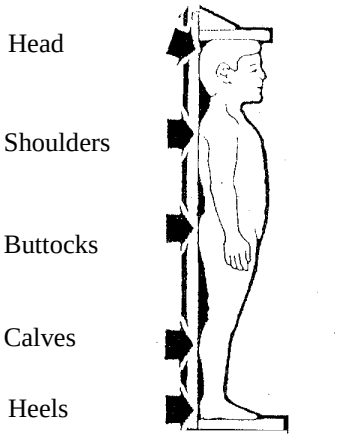
Working with the mother, and kneeling in order to get down to the level of the child;

- Help the child to stand on the baseboard with feet slightly apart. The back of the head, shoulder blades, buttocks, calves and heels should all touch the vertical board. In case of an obese child this may be difficult. If that is the case, try to get at least some parts touch the vertical board and ensure that the child keeps the back straight without bending forward or backwards.
- Ask the mother to hold the child's knees and ankles to help keep the legs straight and feet flat, with heels and calves touching the vertical board. Ask her to focus the child's attention, soothe the child as needed, and inform you if the child moves out of position.
- Position the child's head so that a horizontal line from the ear canal to the lower border of the eye socket runs parallel to the baseboard. To keep the head in this position, hold the bridge between your thumb and forefinger over the child's chin.
- If necessary, push gently on the tummy to help the child stand to full height.

- Still keeping the head in position, use your other hand to pull down the headboard to rest firmly on top of the head and compress the hair.
- Read the measurement and record the child's height in centimetres to the last **completed** 0.1 cm in the B portion of the CHDR. This is the last line that you can actually see (0.1 cm + 1 mm).

  Remember: If the child whose height you measured is less than 2 years old, add 0.7 cm to the height and record the result as length.





If height is measured using the sumatometer, it should be fixed before use according to following instructions;

- Choose a wall high enough and in a well lighted place to fix the instrument. A wall near a door or window is not suitable. The ground near the wall must be flat.
- **Fixing the instrument correctly:** Keep the instrument pressed to the ground with foot and then drag the tape vertically up and parallel to the wall till the maximum height is reached. Then fix a nail to the wall on that point and fix the instrument there (will need another person's support for this).
- **Checking the accuracy of the instrument before use:** drag the calibrated tape vertically down till the end of the tape is reached. When this is done it will be seen that the red line of the instrument hascome to the starting point of calibrattedmarkings on the tape.
- Steps for measuring height should be followed. After positioning the child correctly, drag the head piece of the sumatometr vertically down and gently onto the top of the head so that the head is well touched by the head piece. Then read the measurement correctly to the nearest milimetre(the mark immediately below the red line of the instrument)