

Height/Length Measurement Device

Bo Pedersen
James Powell

Nutrition Supply Forum
6 Nov 2019

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Agenda

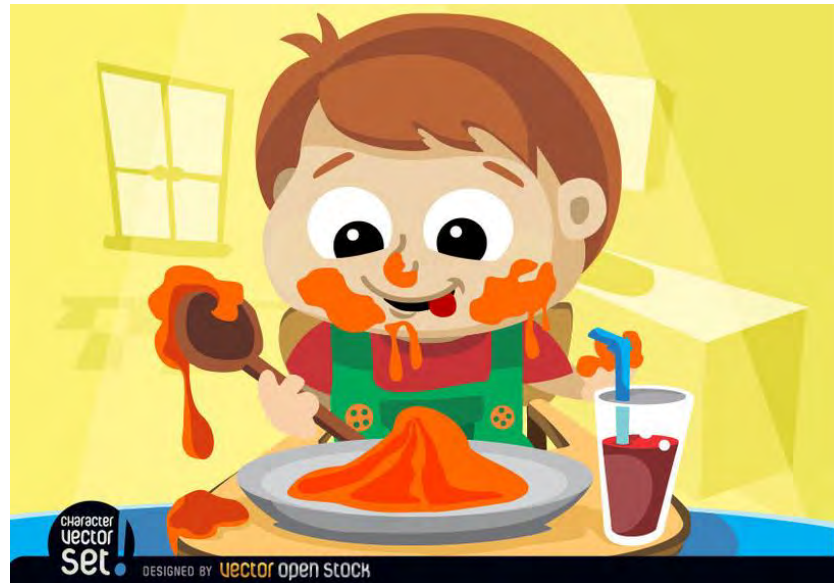
- Overview of Multiple-Indicator Cluster Surveys
- Update on Height/Length Measurement Device

MULTIPLE INDICATOR CLUSTER SURVEYS

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Overview

- Brief introduction to MICS
- Content
- Nutrition supplies - present
- Future

MICS

Round	Year/Period	Emphasis	# of Surveys
MICS1	1995	World Summit for Children Goals	63
MICS2	2000	World Summit for Children Goals	65
MICS3	2005-09	World Fit For Children Goals, MDGs, Other Global Monitoring Frameworks	53
MICS4	2009-13	MDGs, Other Global Monitoring Frameworks	60
MICS5	2013-16	Final MDG Assessment, A Promise Renewed, Other Global Monitoring Frameworks, baseline for post 2015 goals/targets	52
MICS6	2016-20	SDGs, other globally recommended indicators, new topics, emerging issues	68 

MICS

23

Years

116

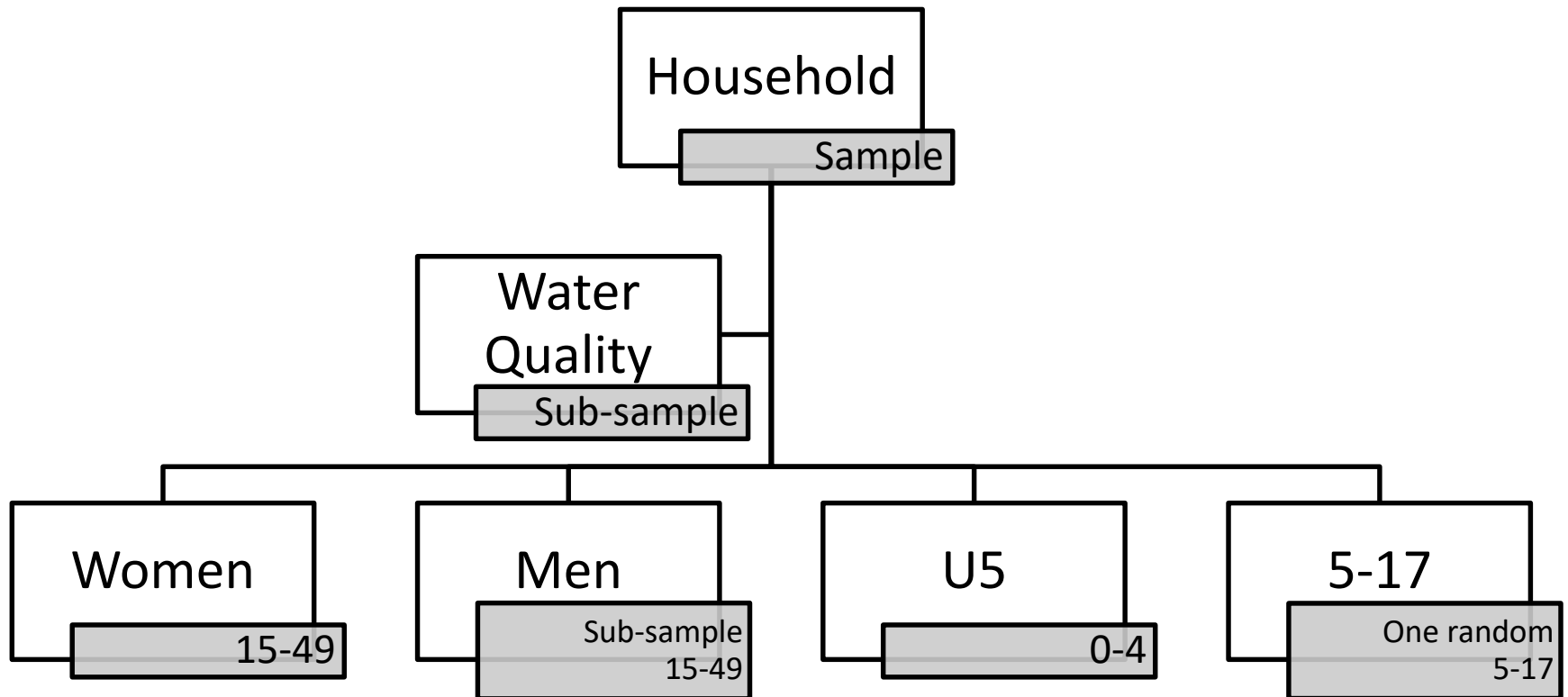
Countries

323

Surveys



In MICS



In MICS

HOUSEHOLD

List of Household Members
Education [3+]
Household Characteristics
Social Transfers
Household Energy Use
Insecticide-Treated Nets
Water and Sanitation
Handwashing
Salt Iodization

WATER QUALITY

GPS DATA COLLECTION

WOMEN AGE 15-49

Woman's Background
Mass Media and ICT
Fertility/Birth History
Desire for Last Birth
Maternal and Newborn Health
Post-natal Health Checks
Contraception
Unmet Need
Female Genital Mutilation/Cutting
Attitudes toward Domestic Violence
Victimization
Marriage/Union
Adult Functioning [18-49]
Sexual Behaviour
HIV/AIDS
Maternal Mortality
Tobacco and Alcohol Use
Life Satisfaction

MEN AGE 15-49

Man's Background
Mass Media and ICT
Fertility
Attitudes toward Domestic Violence
Victimization
Marriage/Union
Adult Functioning [18-49]
Sexual Behaviour
HIV/AIDS
Circumcision
Tobacco and Alcohol Use
Life Satisfaction

CHILDREN AGE 5-17^A

Child's Background
Child Labour
Child Discipline [5-14]
Child Functioning
Parental Involvement [7-14]
Foundational Learning Skills [7-14]

CHILDREN UNDER 5

Under-Five's Background
Birth Registration
Early Childhood Development
Child Discipline [1-4 years]
Child Functioning [2-4 years]
Breastfeeding and Dietary Intake [0-2 years]
Immunization [0-2 years]
incl. Facility Form^B
Care of Illness
Anthropometry

In MICS

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Anthropometry

Supplies

- Salt test kits
- Length/Height measuring device
- Weight measuring device
- Mean # households ~ 13,000 (880 – 64,000)
- Mean # surveys ~ 15 (5 – 30)
- Somewhat stable

- Well...
- Permanent and increasing demand to include a multitude of questions, some requiring equipment
- Increased demand for “easier” tests and for precision and accuracy – titration, micronutrients
- Counter-pressure to reduce



Coordinates

Multiple Indicator Cluster Surveys

- Web: mics.unicef.org
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Household Survey Consultant

Global MICS Team

Innovation Project Update

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Current Device

Recent reviews of household survey data quality have shown that the current techniques and devices used to measure height and length of infants, children and adults may not produce accurate results. UNICEF is therefore seeking solutions that are capable of producing highly accurate recorded readings.



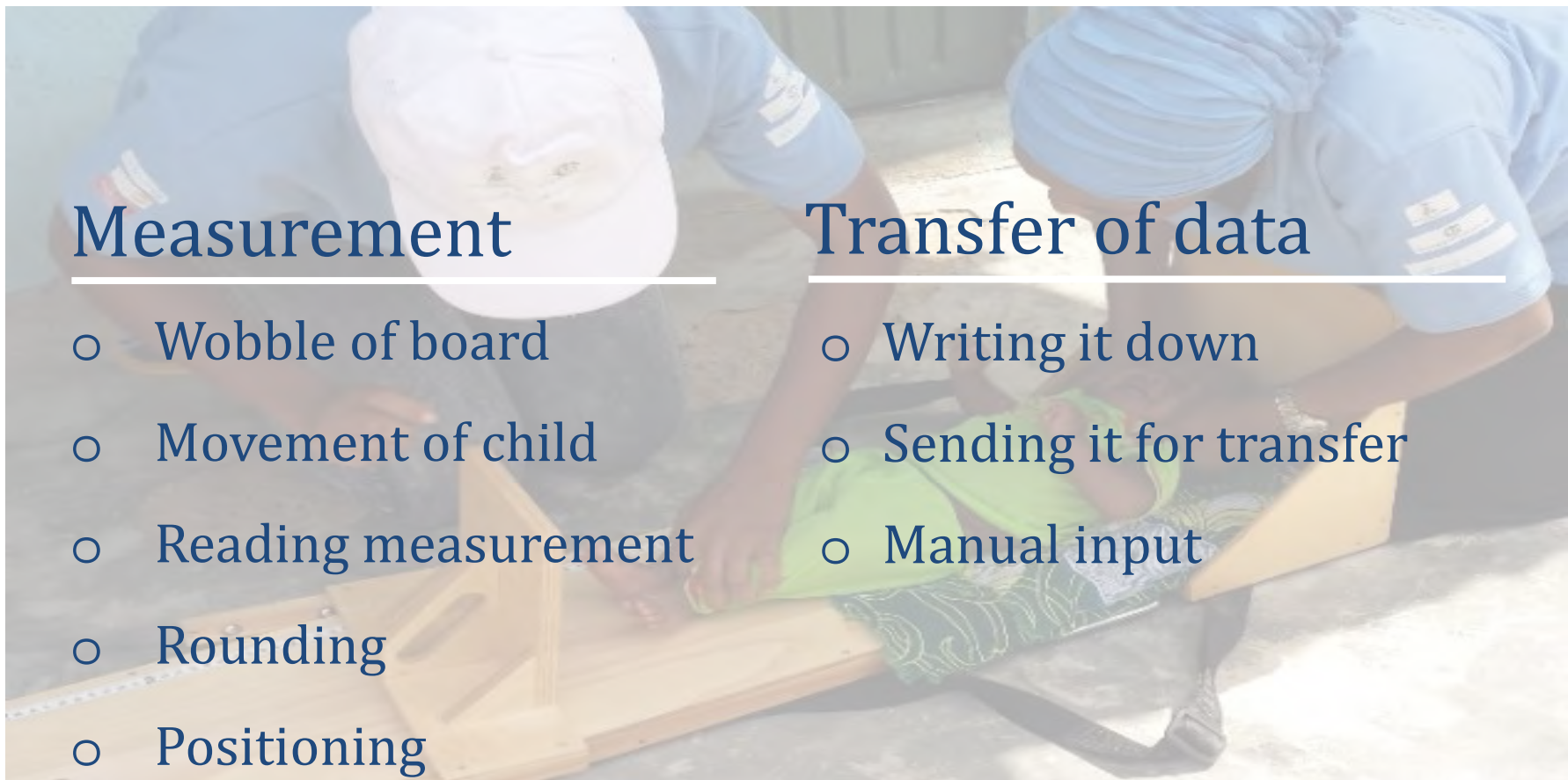
Existing Challenges

Measurement

- Wobble of board
- Movement of child
- Reading measurement
- Rounding
- Positioning

Transfer of data

- Writing it down
- Sending it for transfer
- Manual input

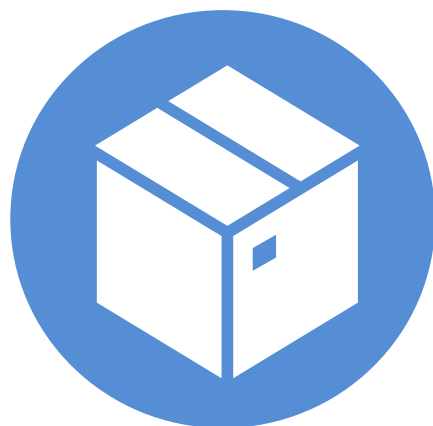


Background



Use cases:

- Household Data Collection (MICS, DHS etc.)
- General Growth Monitoring (Communities and clinics)



Currently available sizes:

- A portable baby/child length and height measuring board, made of wood. Accuracy/Precision of the device: ± 0.2 cm. Range 0-120cm.
- A portable baby/child/adult length and height measuring board, made of wood. Accuracy/Precision of the device: ± 0.2 cm. 4 Range 0-210cm. (2 items: main board + extension).

Background



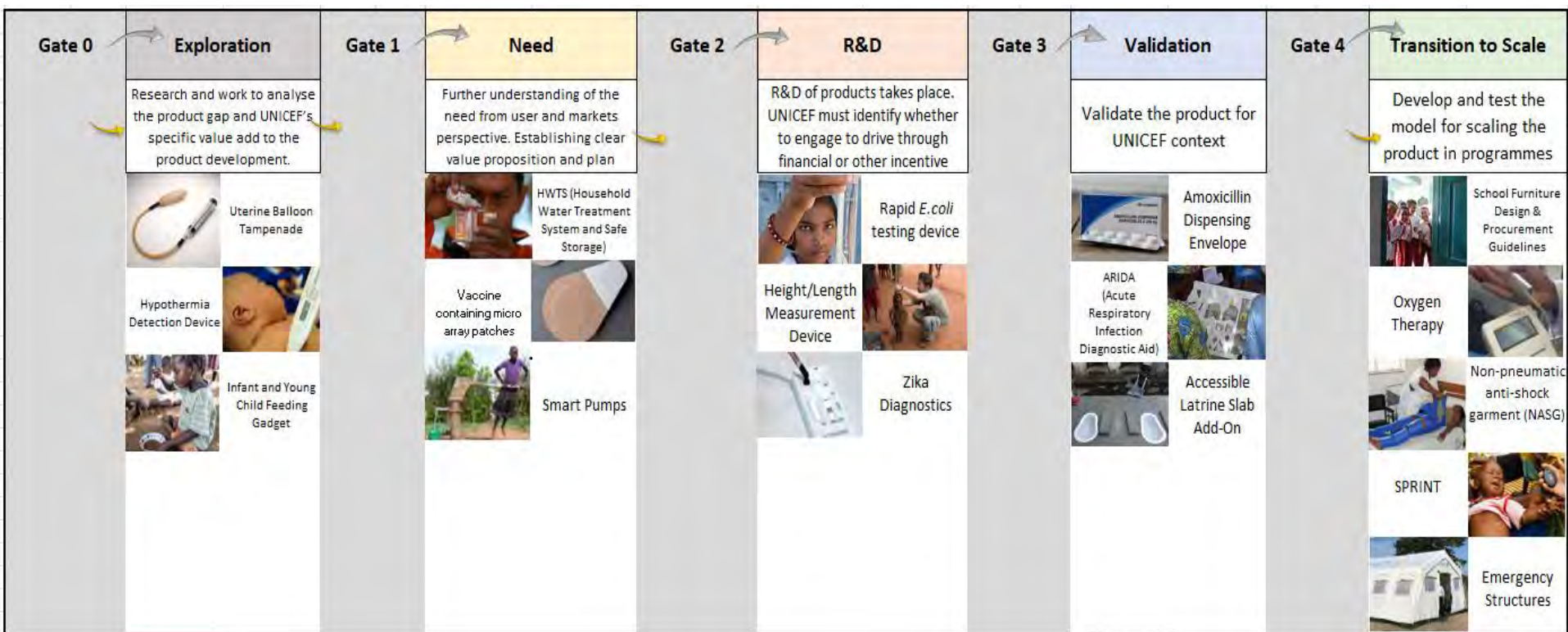
65
THOUSAND
DEVICES
SUPPLIED



11.9
MILLION
USD




Innovation at UNICEF



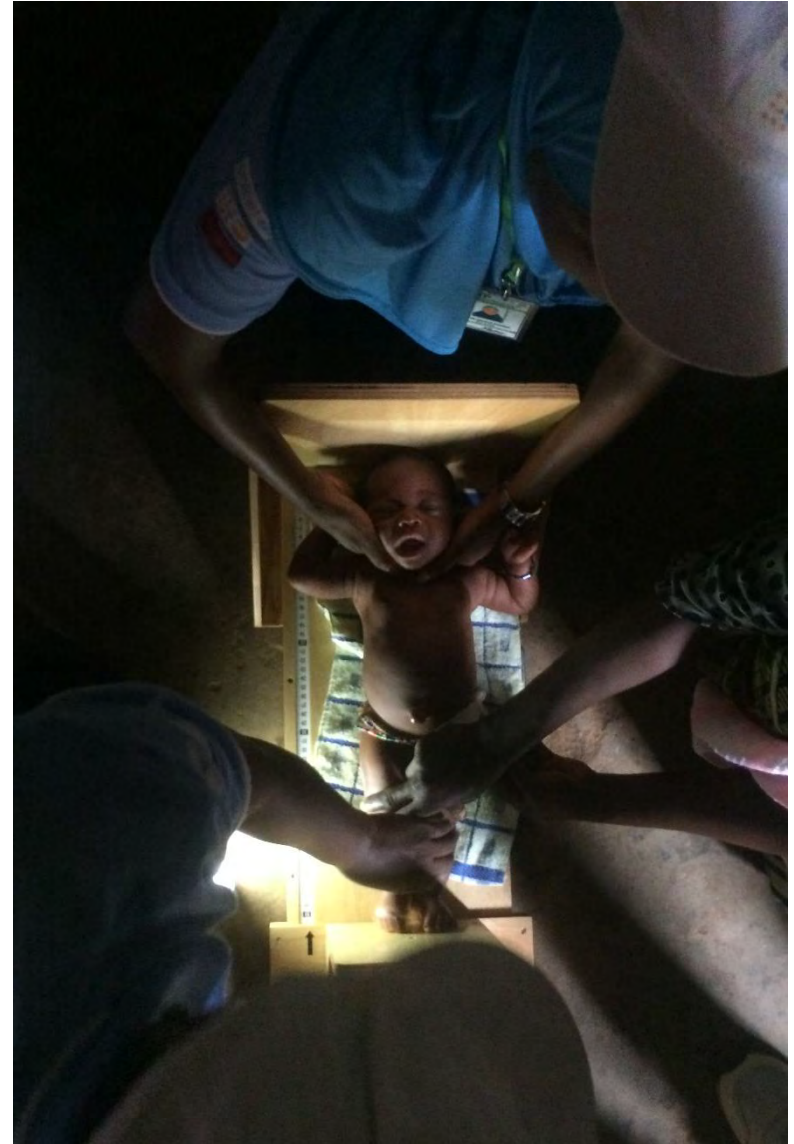
Explore Phase - Research

- Validated the assumed need
- Investigated reasons for the low quality of data
- Identified measurement devices commercial available and technologies in development
- Identified the key stakeholders

Through:

- Literature review
 - Interviews and consultations with subject matter experts and key stakeholders
 - Interviews with nutrition specialists from the 5 most procuring country offices of measuring boards
 - Market review (current products and future measurement technologies)
 - Field observations including interviews with measurers during MISC 5, Nigeria
- 

MICS Anthropometric field data collection - Nigeria



Purpose of Project

The goal of the project is to increase the quality of anthropometric data through development of portable, accurate and child-friendly height/length measurement devices.



Target Product Profile (TPP)

Attribute	Minimum Performance	Ideal Performance
Accuracy of device	Measurement of static object ± 3 mm	Measurement of static object ± 1 mm
Accuracy of recorded readings	Field measurement of humans (infants, children and adults) recorded by trained surveyors within ± 3 mm	Field measurement of humans (infants, children and adults) recorded by trained surveyors within ± 1 mm
Physical characteristics	The device must be child-friendly and designed to avoid distress or harm of the individual	
Time for Result	Immediate	
Method of Use	a) Recumbent length of a baby up to 24 months old. b) Height of a child aged 24 months and up in vertical position. c) Height of adults in vertical position.	Measurement of height/length regardless of position and performed with a single device.
Output	Digital display in cm with one decimal digit	
Operating Conditions	Stored and used in a wide-ranging climate (heat, cold, humid, dry, dust, wet). Used at health clinics and for mobile field use. Often moved in and out of vehicles; carried over distance on harsh and bumpy terrain.	
Portability	The device is comfortably and easily relocated from one site to another by the use/support of handles, straps of backpacks. Max. 6 kg.	The device is comfortably and easily relocated from one site to another by the use/support of handles, straps of backpacks. Max. 2 kg.
Power requirements	Rechargeable battery lasting for minimum 24 hours	Rechargeable battery lasting minimum 48 hours including a/c plug, DC 12 volt plug (for recharge through a car battery) solar powered battery, or a combination

Tender Update

RFP Issued – 90 vendors invited. 6 submitted offers.

- 10 mandatory Requirements (training <1 day, weight <6kg, digital output)
- Technical Evaluation
 - Company Profile (financial statements, children's rights, production capacity)
 - Evidence
 - Sample (16 areas: power supply, packaging, ease of set up, ease of operation, dim light settings, stability of device)

Financial Proposal Score

Total Score

Top reasons for failing review

- Unavailable for manufacturing
- Inaccurate
- Lack digital output
- Missing components in sample

Outcome: 2 of the 6 pass the evaluation for field trial.

0 products had regulatory approval in place. Any product contracted will need it prior to LTA being signed.

Next Step

1. Q1 2020 Field Validation of Successful bids
 - User feedback
 - Accuracy
 - Training requirements
2. LTA finalization (pending certifications)
3. Q2 2020 Catalogue inclusion
4. Review more radical approaches.