

## GG2099775 Melusi “Phela Hantle” Project

Progress and Final Report – March/April 2022 report

**“If you are planning for a year, sow rice, if you are planning for a decade, plant trees, if you are planning for a lifetime, educate people.” – Chinese proverb**

This month’s report is the last report on the Melusi Rotary Global Grant Project. The project was formally handed over to the University of Pretoria, COPC Research Unit at a celebration and service delivery event in Melusi on the 20<sup>th</sup> of April 2022. Service delivery will continue through UP partners on-site at the clinic, training center and kitchen. The project included the development and placement of a kitchen and training center to support and host maternal and child care for current and future generations living in this informal settlement. The establishment of the clinic was part of an earlier collaboration between Rotarians Jeremy Newhouse, from Edina Morningside club and his employer Matter; and a USA-based company Modular; and Ellenore Meyer and her employer, the University of Pretoria. The dream of a Melusi Global Grant started in March 2017 when the clinic container was imported from the United States as a donation and delivered on site on the open space circled in red in the photo below.



**Image of the proposed project site that was identified for the Melusi clinic container to be placed and a holistic health site to be established in March 2017**

**021-22 President:** Shirley Downie | **Vice President:** Hans Mostert  
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**Rotary Club ID number 85613 | 165-703 Non-Profit Organisation**  
PO Box 709 | Fontainebleau, 2032  
Web: [www.rotaryclubsa9400.org](http://www.rotaryclubsa9400.org)



**The first community meeting on the Melusi Global Grant and clinic project with Rotarian Carolyn Khoury, Professor Jannie Hugo and Dr Gerhard Botha from the Department of Family Medicine, and a number of community leaders representing the community.**

When this project was initiated the threat of a global pandemic that would impact everyone around the globe directly or indirectly was not even considered. One of the major achievements of this Global Grant project and program was that the holistic health hub became a Covid screening and vaccination site, with hundreds of patients receiving free on-site vaccinations over the last year.

The project also achieved its goals in terms of the number of people intended to reach through key activities on maternal and child care; and on what was established on the ground as physical infrastructure to support such service delivery. This program aimed to improve maternal and child health of the Melusi community with a focus on access to training and resources for three key areas: health, nutrition and education.

“Early investments in children’s health, education, and development have benefits that compound throughout the child’s lifetime, for their future children, and society as a whole.” (The Lancet Commissions. 2020. A future for the world’s children? A WHO-LANCET Commission: Vol 395, p605). The research is clear. Follow-up studies of children exposed to poverty, from a wide range of countries, show the beneficial effects of early childhood interventions for adult earnings, cognitive and educational achievement, and health biomarkers. It also suggests that the cost of inaction for not improving child development through universal preschool and home visits, and reducing stunting, is substantial and could reach more than 10% of a country’s gross domestic product (GDP).

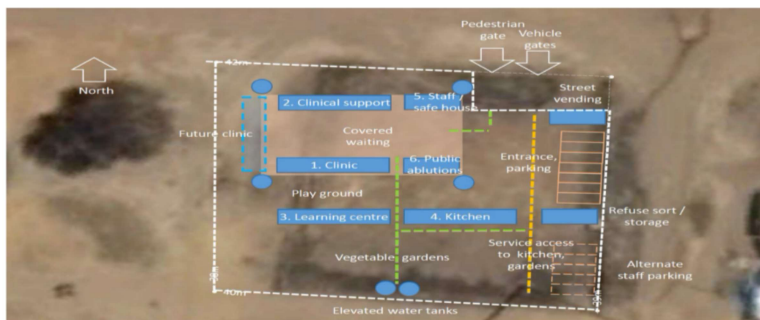
The Melusi informal settlement is made up of a community of around sixteen to twenty thousand residents stretched over an 8 km area of the Magaliesberg mountain range in the West of Pretoria, South Africa. Most of the residents in Melusi live in informal dwellings made up of a combination of corrugated tin and wood or whatever building materials the owner could find. The majority of homes do not have access to running water and local residents collect water

from tanks that the local government fill up weekly. Sanitation and toilet facilities are mostly pit toilets, as this area is still informal and part of an area that local government plans to upgrade over-time. The community however grew rapidly in numbers over the last decade with many people 'squatting' overnight by building houses that were not approved by city planning. To understand the Melusi health context, please visit the Reality Studio 2021 post-graduate architect students at the University of Pretoria's Miro Board available at the following link: <https://miro.com/app/board/o9JlNI90g4=/>. This international participatory design process maps out different communities around the globe, including Melusi.

This report will report on the impact of the Melusi 'Phela Hantle' project on the following indicators/objectives stated at the commencement of the project:

- **Health:** Improving access to essential and comprehensive medical maternal and child health services,
- **Education:** Training of community health workers, teachers of the early learning centers and mothers in the community
- **Nutrition:** Developing infrastructure to host the training, including ablution and access to water, training and kitchen facilities

### Initial drawings for proposed developments



### Local UP architect, Geoff Abbot designed the lay-out of the Melusi Holistic Hub needs (2017)

It took another 2 years after the clinic container was placed in 2017 before The Global Grant was submitted. A number of meetings were held with the local community and interested parties to agree on what was needed most urgently. The GG was approved at the end of 2020. Implementation and service delivery was scheduled to commence in 2021; and then Covid hit the world. Clinical service delivery continued on-site in Melusi, but it was not possible at that time to measure the numbers and impact to the extent that the GG said it would report on. It was decided that the project would formally run from April 2021-April 2022.



**Architect, Geoff Abbott; Dr Edith Mntla, COPC research unit; Rotarian Carolyn Khoury; Drs Ellenore Meyer and Suzi Malan and Gerhard Botha with the team of Melusi community health workers at the container clinic at the start of the Global Grant project**



**Household visits and community needs assessment in Melusi**

Below is a summary of the health and maternal activities measured against the initial outcomes specified for the period April 2021-March 2022. (This is also available as a separate attachment for better viewing).

GG 2099775 - Melusi "Phela Hantle" Project															
START DATE : 1 April 2021 [Results to 31 March 2022]															
Measure	Collection Method	Frequency	Beneficiaries	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar
Number of maternal and child health professionals trained	Direct observation	Every 3 months	20-49	12	10	10	10	10	10	50	30	35	30	30	30
Total number of beneficiaries	Surveys/questionnaires	Every 6 months	2500+	211*	313*	236*	231*	228*	215*	235*	236*	93*	263*	182*	393*
Continuous education of community health workers (and field workers) with a focus on maternal and child health	Direct observation	Every 3 months	20-49	23	23	27	31	33	33	33	33	39	23	23	23
Nutritional status assessment (and when appropriate, supplementation) of all the children linked to the selected child care centres	Direct observation	Every 4 months	100-499	153	305	294	240	340	240	240	240	240	240	240	240
Number of children under 5 receiving medical treatment	Surveys/questionnaires	Every 3 months	100-499	17	45	54	36	35	28	46	38	10	41	33	87
Number of mothers receiving prenatal care	Direct observation	Every 3 months	100-499	**	**	**	**	**	**	**	**	**	**	**	**
Number of communities that report decreased morbidity rates of children under age 5	Direct observation	Every 3 months	100-499	***	***	***	***	***	***	***	***	***	***	***	***
* Excludes Screening for COVID-19 shown here				946	1107	776	923	858	489	914	776	476	409	461	461
COVID-19 vaccinations													149	279	279
** Referred to Daspoort Clinic. With Current COVID-19 restrictions, and precautions needed, the emphasis on site is on early identification and referral. Screening for pregnancy is ongoing, and there is a focus on prevention.															
*** This has proved to be impossible to assess over a short period of time. We can be confident that there is improvement because we are aware of the positive impact of the steps we are taking.															



### Total Number of Direct Beneficiaries (Initial project reach estimated 2500 people)

The project exceeded its estimated goal and treated **2836** patients between the period of April 2021-March 2022. Primary health care consultations and dispensing of medicine were offered at no cost to 392 patients on site in Melusi in March 2022 alone. For more details on the patients seen please view also the COPC Gauteng Province summary statistical report for March 2022 and the overall GG project statistical report from April 2021-March 2022.

During this project and over the last year; three special health events were hosted that reached hundreds of residents, including World Aids Day, Breastfeeding Awareness Week and National Health Day.

A total number of 30 health professional's representative of various organizations working in the community attended the community interventions on a regular basis over the 12-month period. This included amongst others; maternal and childcare training, nutritional assessment and supplementation education, dietary and cooking education/demonstrations. Training on primary health care subjects pertaining to maternal and childcare and Covid-19.

## **Number of Maternal and Child Health Professional's Trained (Initial project reach estimated 20-49 people)**

The total number of maternal and child professional's trained were assessed over two areas:

1. Continuous training of community health workers
2. Education and training of other caregivers (including community-based carers and teachers)

The project exceeded its estimated target with the following caregivers reached through education:

- 20 community health workers were continuously trained
- 25 community care givers graduated as Life Skills coaches
- 16 teachers from crechés graduated as Early Learning Centre teachers

Total reach **51** professionals

20 community health workers (calculated on a monthly average over 12 months) were continuously trained on health educational themes weekly throughout the year. The educational sessions were facilitated by environmental health officer, Rebaone Molebatsi, for the community health workers and patients, and by dietician Marion Beeforth for the nutritional interventions. The CHWs were expected to participate and assist in the oral health research and diet interventions, special health days; and training of mothers at the clinic and teachers at the crèches on a regular basis. Patients were educated in groups as they were seen at the clinic throughout the year. The focus was on supporting maternal and childcare as part of the CHWs service-learning activities within the community.



### **Training of community care givers on Life Skills**

16 teachers from all 15 early learning centers in Melusi were enrolled through this grant in a year-long teacher training qualification course. All of them graduated and were extremely excited to have a recognized qualification as an early learning center teacher for the first time.



**Image of the graduation ceremony of the teachers of the early learning centers in Melusi**

## **Number of mothers receiving ante-/post-natal care (Initial project reach estimated 100-499 children)**

Pregnant women were referred to the nearby government clinic for ante-natal care. The project thus focused on early identification of pregnant mothers (and appropriate referral and vitamin supplementation). Another focus was contraceptives and planning of pregnancies. The number of patients treated for contraceptives well exceeded the initial target. In March 2022 alone, 189 patients received contraceptives within the Melusi community at the health hub. Pregnant mothers that are identified on site are referred for ANC (ante-natal care) to the nearby Daspoort clinic that has more services and resources.

## **Nutritional Status Assessment and Interventions (Initial project reach estimated 100-499 children)**

**3012** nutritional status assessments were performed on children over the year period. Most of the consultations were performed on the same children monthly, every month, for the entire year of the project. On average **251** individual children were seen per month. All the children registered at the early learning centres were supplemented with micro-nutrients free of charge and continuously assessed for diseases that were treated as they were identified.

87 children consulted for a clinical condition and were assessed for their nutritional status at the health hub in March 2022. Two hundred and forty (240) children <5 received micro-nutrient supplementation at early learning centres in Melusi. Daspoort clinic is the referral clinic for Melusi patients to receive childhood immunization. Nutritional assessments and interventions for children continued at the early learning centres. Below are summary tables of the nutritional status of the children compared to the WHO standardised tables on weight and height for age for the data collected on children at the commencement of the project and then also for December. The weight and height, as well as the BMI, for age are below the expected numbers for both measurements, although an improvement can be seen. During this project, to assist with food security and nutritional status, the focus was on offering solutions for entire households to improve these statistics long-term.

In April 2021 an initial screening and survey was conducted on thirty (30) children at one of the early learning centres to establish baseline nutritional data for the project. The initial findings indicated: High malnutrition rates; that included both obesity/overweight as well as stunting at unacceptable levels.

The data indicated:

2/30 severely stunted = 0,7 %

6/30 moderately stunted = 20 %

27 % moderately to severely stunted compared to national numbers where one would hope to have less than 12% of the population suffering from stunting.

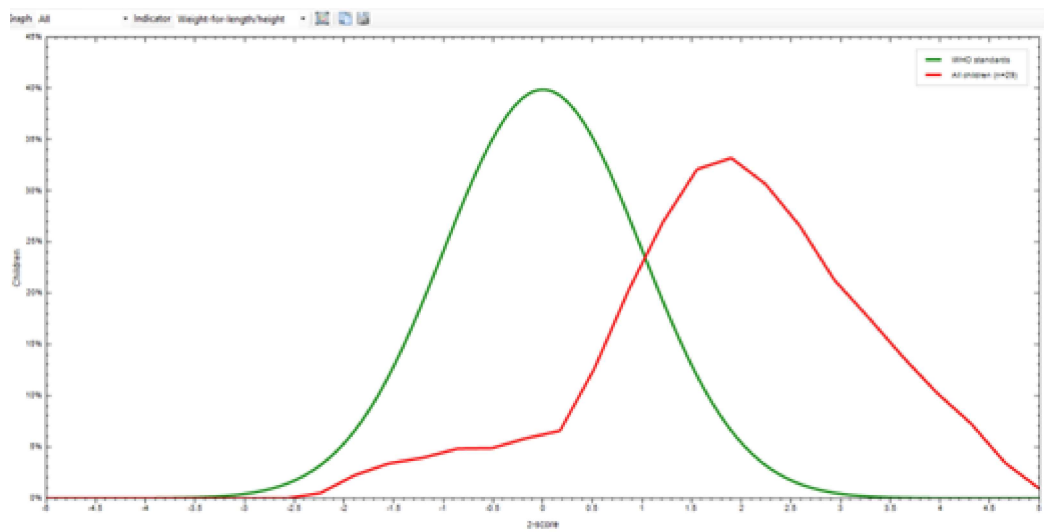
7/30 children obese (weight for height above +3 SD)

8/30 children overweight (weight for height above + 2 SD)

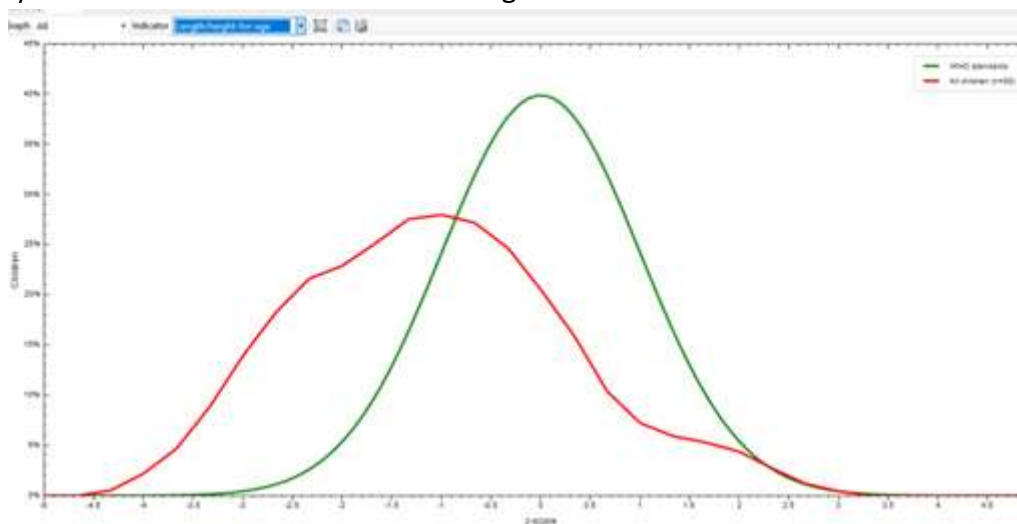
15/30 obese and overweight



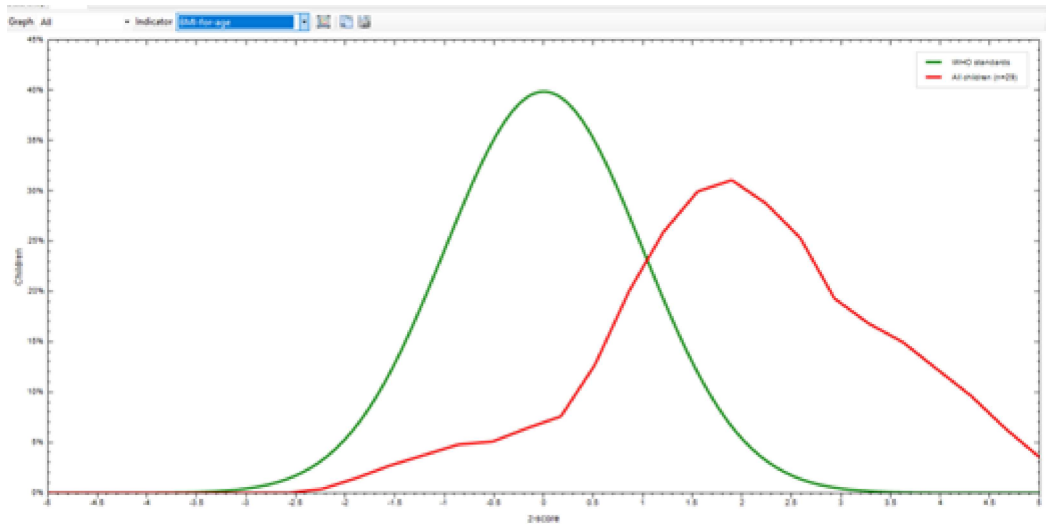
This strongly indicates to a combination of poor breastfeeding practices and early complementary diet introduction of high energy food (often lacking in protein) that is calorie dense, but often lacks nutritional value.



The weight for height measurements indicates being overweight could be on the increase, as showed by the distribution around the mean e.g. towards + 2.5 SD rather than 0



Stunting is a predominant nutritional deficiency with median at -1 SD, the distribution is skew, negative and towards stunting, according to this more than 30% of the children in Melusi potentially would have a height for age below -2 SD

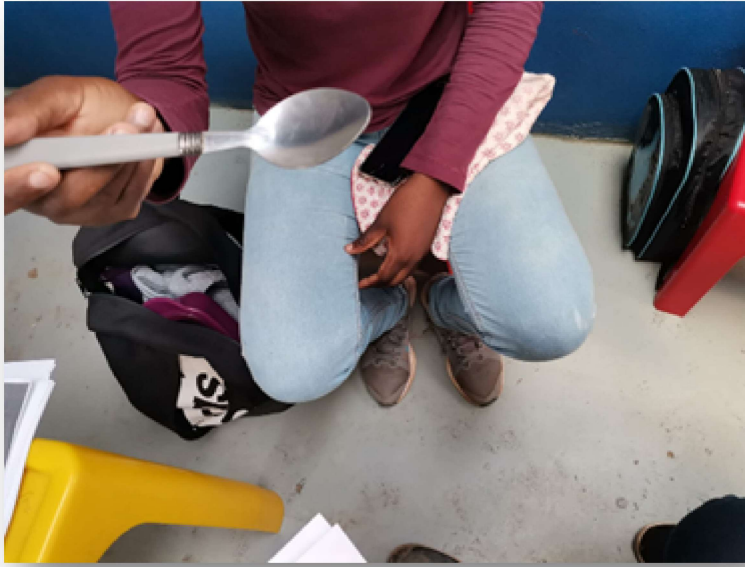


BMI for age also show a skew distribution towards overweight.

Training of mothers, fathers and community caregivers in early learning centers and at the local non-profit organization, MYDO, continued throughout the year with a focus on education on dietary intake and portion size as well as a protein rich diet. Tower Garden training (where mothers are taught to farm vegetables in bags as they often do not have enough/good soil in their backyards) were done at the clinic/kitchen and early learning centers throughout the year. Advice when visiting crèches as part of the diet research and training included training on how to prepare a healthy meal and individual counselling.



Image of a food example for the diet intake questionnaire



**Image of a mother showing her dishing spoon**



**Plate waste measurement**

Community health workers and crèche teachers were trained in measuring portion size and plate waste. Each plate was numbered per child name and the portion served measured.



**Image of children lined up as the teacher called their numbers with the food weighed for lunch**



**Image of a community health worker doing a nutritional status assessment/growth monitoring on a child**

In December 2021 a follow-up to the initial data was done and dietary intake was also linked to oral health screening and education. This was also submitted to the University of Pretoria's research/ethics committee and approved as a formal research study that will continue throughout 2022.

### Objectives and tools used in the study

	Objectives	Tools
1	To explore and describe socio economic and demographic characteristics of the children Melusi	Structured questionnaire (Addendum)
2	To assess and describe the nutritional status of the children in Melusi	Anthropometric measurements weight, height and mid-upper arm circumference (Addendum SOP measurement and cut-off values
3	To explore and describe dietary intake of the children	24 h dietary recall, multiple pass method of two consecutive week days and one weekend day

4	To assess and describe the macronutrient and micronutrient intake of children under 5 years at Early Learning centres at Malusi	24 h dietary recall Food finder analysis (Addendum)
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### Dental and nutritional research

The data consisted of three parts; an oral examination, an anthropometric examination and a diet and oral hygiene survey that was sent to the parents to complete. A dietitian and dietitian student with two community health workers conducted the anthropometric measurements on the day of the research. The dietitian instructed the student on the use of the equipment. The student followed the standard anthropometric procedure. One community health worker verified the child's consent form and completed the name and surname and date of birth on the record form. The second community health worker recorded the reading. The dietitian was present in the room and oversaw the processes (consent, correct learner, date of birth, correct use of equipment). Anthropometry of 39 children within the category 3-6 years were collected for to compare to the original findings



**Dietician Marion Beeforth tests the consistency of the porridge**



**A community health worker records the food intake of each individual**

## **Dietary data**

24-hour data recall for one weekend and two consecutive week-days were collected. Meals consumed at school were weighed. The amount dished and the amount left over were recorded. Parents were phoned and it was explained that the questionnaire will be send home to complete. The dietary information of the previous day (Sunday) was asked to complete as well as supper of the current day. One reason was that the researchers wanted the recall done as soon as possible for the recall to be accurate. Breakfast information was collected by weighing the bowl and porridge and plate waste for each child (both week-days). The second day a form with the dietary recall was send home. Parents who brought children to the school and children who fetched children were asked to verify the information supplied.



**Covo fresh from the garden of the ECD was used for meal preparation.**



EEx  
Ec

**An example of food listed by parents (crispy deep fried non-perishable chips)**



Dietary Questionnaire

ST 49  
ANTHRU 29

SECTION A: Please answer all questions related to your child

No	Questions	Response
1	Age (as at last birthday) in years	3 yrs
	DOB	2018-03-08
2	Gender	Male <input checked="" type="checkbox"/> Female <input type="checkbox"/>
3	Name of School	Rogae
4	Class	ERR
5	Birth Position (1st born, 2nd born, 3rd born...)	2nd born
6	Does your child/guardian live with one parent, both parents and a guardian?	1. Both parents <input checked="" type="checkbox"/> 2. Single parent <input type="checkbox"/> 3. Guardian <input type="checkbox"/>
7	Father's occupation	
8	Mother's occupation	
9	Father's level of education	1. No formal education <input type="checkbox"/> 2. Completed Primary School <input checked="" type="checkbox"/> 3. Completed Secondary School <input type="checkbox"/> 4. Completed university or Technicon <input type="checkbox"/>
10	Mother's level of education	1. No formal education <input type="checkbox"/> 2. Completed Primary School <input type="checkbox"/> 3. Completed Secondary School <input checked="" type="checkbox"/> 4. Completed university or Technicon <input type="checkbox"/>

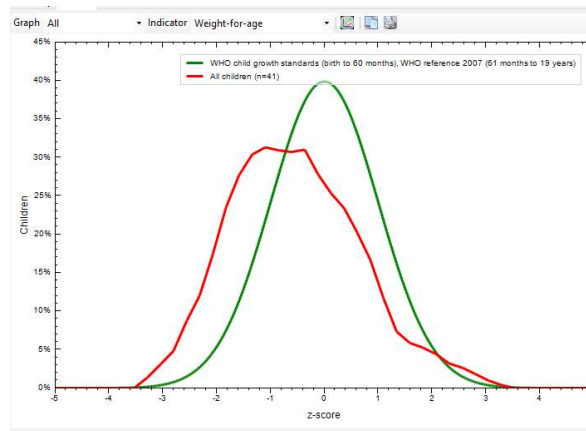
SECTION B: Dental Section

No	Questions	Response
1	How often does your child eat sugar containing snacks or drinks between the main meals?	1. About 3 times a day or more <input type="checkbox"/> 2. About twice a day <input type="checkbox"/> 3. About once a day <input type="checkbox"/> 4. Occasionally; not every day <input checked="" type="checkbox"/> 5. Rarely or never eat between meals <input type="checkbox"/>
2 a	How do you clean your child's teeth?	Toothbrush / toothpaste
2 b	How often do you or your child brush his/her teeth?	1. Irregularly or never <input checked="" type="checkbox"/> 2. Once a week <input type="checkbox"/> 3. A few (2-3) times a week <input type="checkbox"/> 4. Once a day <input type="checkbox"/> 5. Twice a day <input type="checkbox"/> 6. Thrice a day <input type="checkbox"/> 7. More than thrice a day <input type="checkbox"/>
3	How often do you clean in between the teeth of your child, use dental floss?	1. Never <input type="checkbox"/> 2. Occasionally <input checked="" type="checkbox"/> 3. A few (2-3) times a week <input type="checkbox"/> 4. Once in a day <input type="checkbox"/> 5. More than one time a day <input type="checkbox"/>
4	How often does your child use toothpaste?	1. Always <input type="checkbox"/> 2. Quite often <input checked="" type="checkbox"/> 3. Seldom <input type="checkbox"/> 4. Not at all <input type="checkbox"/>

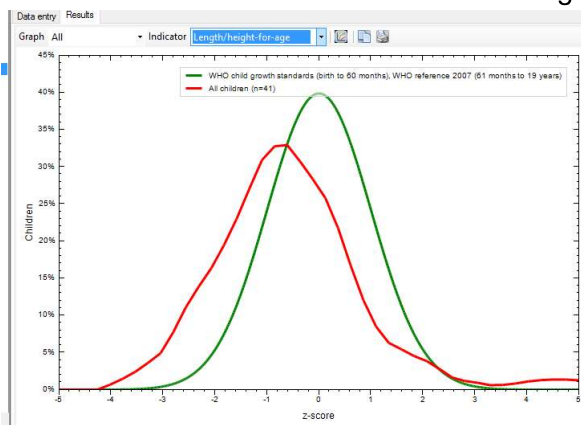
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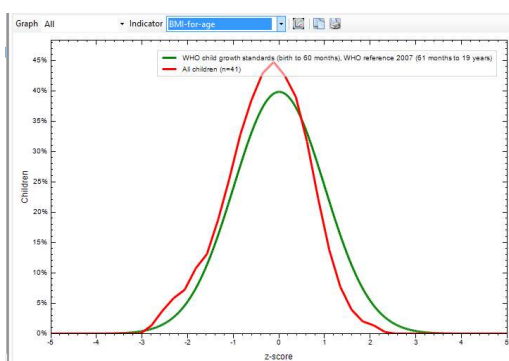
The following graphs summarize the median according to the WHO Anthropometric data compared to the two early learning centers.



Weight for age graph



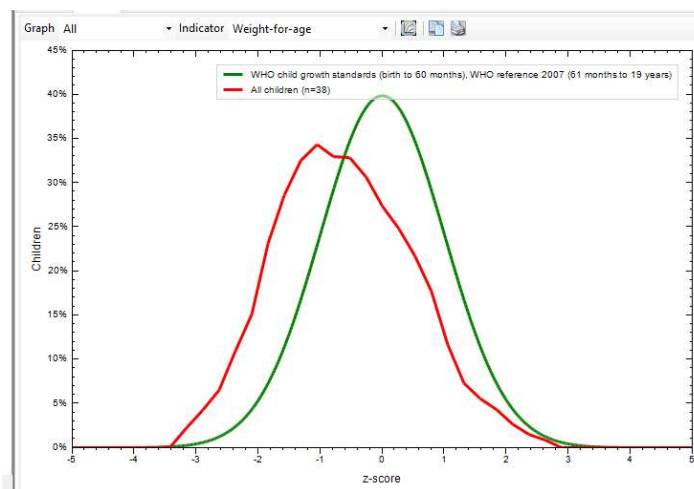
Height for age graph



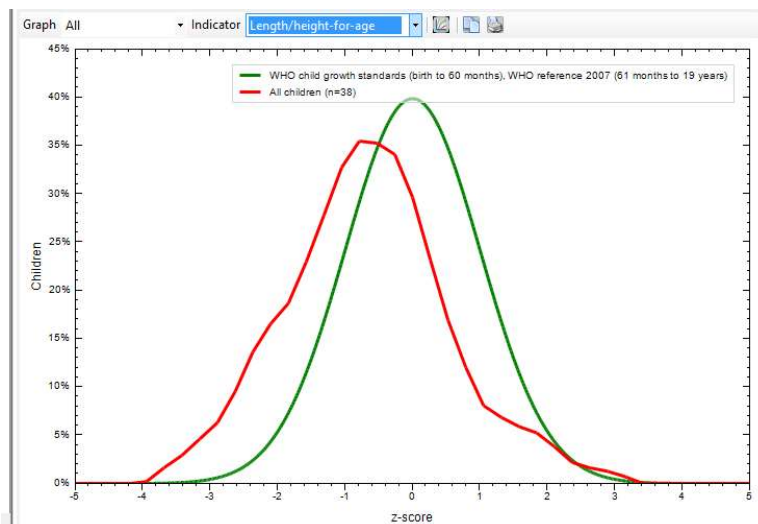
BMI for age graph

### Dental survey summary of nutritional status crèche 1

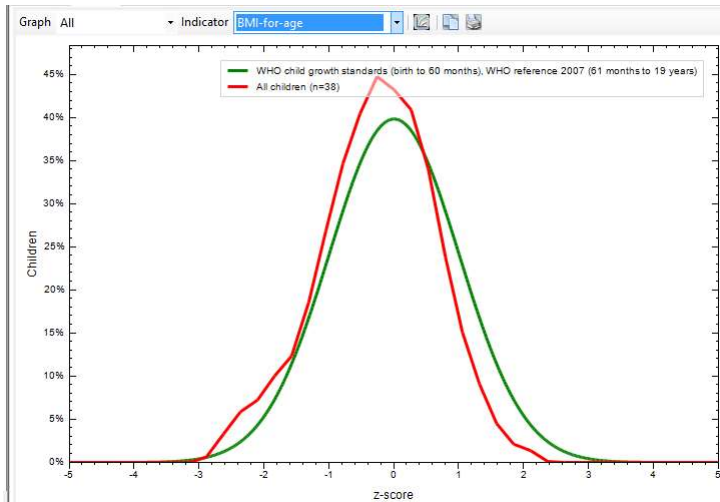
Moderate Acute Malnutrition (MAM)	2/39	5 %
Underweight	2/39	5%
Stunting	4/39	10%



Weight for age graph



Height for age graph



BMI for age graph

Dental survey summary of nutritional status of crèche 2		
Weight-for-height and BMI-for-age (wasting)	2/31	6%
Weight -for- age (underweight)	3/31	10%
MUAC- for -age (wasting)	1/31	3%
Height -for- age (stunting)	4/31	13%

The data collected from two early learning centers in December indicate that despite the last year's interventions and supplementation, there are still some children with acute and chronic malnutrition. This is however much better compared to other informal settlement clinical data without interventions where originally 6/30 children were moderately malnourished. It is also (in post-Covid times) less than the national average. The study will however have to be continued to make final conclusions. The nutritional support and gardens established at the ECDs proved to have been rewarding. Below are some photos of the progress made at the local school gardens.



**A teacher harvesting cabbage**



**Community health coordinator Rebaone Molebatsi**

Rebaone said the following about this project: “Working with the community of Melusi has been a demonstration of linkage to care and care coordination in all aspects including nutrition and education. We have seen mothers take ownership and interest in the growth and development of their children. The turn-out of mothers and children during the educational interventions has been a great success and shows the importance of learning within a community context. Our approach in life skills training, health education and nutritional education was to enhance existing skills and knowledge that participants already have and showcased that it is possible to support and learn a healthy lifestyle and have a healthy growing baby despite limited resources. We have seen fathers participating in our program which is very positive. The work the community health workers and fieldworkers play in building relationships with the household members have been the foundation of the success of the project.”



**Cutting of the ribbon at the official Rotary handover of the project to the University of Pretoria**

Rotarians from a number of clubs attended this wonderful celebration. Speakers at this event included Jeremy Newhouse, Carolyn Khoury and Ellenore Meyer. South African District Governor, Annemarie Mostert and USA based Governor Tom Gump were both celebrated for the role they played in making this Global Grant possible.

The photos below showcase the facilities that were placed as part of the project. This includes ablution facilities with running water, a training centre and a demonstration kitchen.



**Image of the ablution facilities**



**The outside of the ablution facility**



**The opening day attended by community members, leaders and service providers**



**Registration at the entrance and the security/guard house**





**Community Health Workers demonstrating in the kitchen to mothers on how to prepare a meal**



**Rotarians Jeremy Newhouse and Annemarie Mostert outside the training facility**



**The inside of the training facility**



**A group of Rotarians celebrating the Global Grant**



**Celebrating the Global Grant (1)**



**Celebrating the Global Grant (2)**



**A street view of the facilities and patients being seen at the various points of care**

Thank you for investing in the Melusi community!  
Stronger together.