Medical Checks for Children

Medical Report
South Africa, KwaZulu-Natal 2018

In collaboration with

LETCEE & Kinderfonds MAMAS

September - October 2018

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1.Introduction

From september 29th untill october 6th 2018, a Medical Checks for Children (MCC) team visited five locations in KwaZulu-Natal, a province in the south-east of South Africa. Free of cost, the MCC team checked and treated 735 children, aged newborn until 12 years. The team consisted of Ines von Rosenstiel, paediatrician and medical mission leader; Mariette van Caulil, HR officer and Janine Terwindt, psychologist, dual organizational mission leaders; Anneke Landstra, paediatric pulmonologist; Miguette Jadoul, strategist; Anton te Riet –Scholten, family physician; Carola Oranje, coaching consultant; Astrid Groeneweg, pediatric nurse; Charlotte von Rosenstiel, student master public health; Rowie Borkus, paediatric resident; Danielle de Jongh, youth health consultant; Femke van Caulil,HR officer and Marloes Duitsman , family physician in training.

Our host patron during our stay was Mary James, director of 3 Letcee projects, in partnership with the Dutch organization Kinderfonds MAMAS. This was the third mission to this region in South Africa and catering for the same areas as the 2017 medical mission.
Technical equipment and some of the supplies were brought from the Netherlands by the MCC team members. Most of the medication was ordered through the local Greytown pharmacy, with the help of Dr. Kethiwe. Hundreds of knitted hats, sweaters and blankets were donated by compassionate volunteers in our home country.

Kinderfonds MAMAS (Children's Fund MAMAS) is a Dutch charity organisation that has been co-funding dozens of high quality grassroots childcare organisations all across South Africa since 2000. Kinderfonds MAMAS believes in MAMA POWER! LETCEE works under the umbrella of Kinderfonds MAMA as a local organisation.

LETCEE is a non-profit organization that operates from Greytown, in the heart of the KwaZulu-Natal midlands. The name (Little Elephant Training Centre for Early Education) is derived from the Zulu name for Greytown eNdlovana – the place of the little elephant. LETCEE's mission is to build the confidence and capacity of adults so that they will create nurturing environments for the children in their communities.

The cooperation with LETCEE consisted mainly of the following (amongst others):

- Identifying and engaging the local stakeholders;
- Prior announcement and preparations of the medical camp in the locations;
- Selection of locations and selection of the children;
- Giving full support to the MCC team during the medical camp;
- Commitment to ensure relevant medical follow-up.

The MCC team was delighted by the cooperation with Mary James and all the local (healthcare) workers and retired nurses who helped us during this intens third medical camp under the strong leadership of our partner Kitso Maragelo.

2. Medical Checks for Children on location

During the medical checks, the children were checked following the MCC carrousel:

1. Registration of the child
2. Measuring height and weight
3. Blood test for haemoglobin
4. Physical examination
5. Giving medication and education about the correct use of it (pharmacy)
6. Education on hygiene and tooth brushing (a tooth brush was given to each child
7. Food station on some locations

Data collection

Anthropometric measurements were recorded, and a finger prick sample was taken for determination of the haemoglobin (Hb) concentration. Each child was examined by a Medical Doctor. History of illnesses was recorded. Specifically, caretakers were asked if the child had fever, diarrhea, an upper respiratory infection, vomiting, decreased appetite and/or weight loss. They were also asked if their child received treatment for any condition, and if so, from where. The data of the children are saved and analysed through the MCC database.

3. General information on the different locations

KwaZulu-Natal is located in the southeast of South-Africa, enjoying a long shoreline beside the Indian Ocean and sharing borders with three other provinces and the countries of Mozambique, Swaziland and Lesotho. Its capital is Pietermaritzburg and its largest city is Durban. It is the 2nd most populous province in South Africa with slightly less than Gauteng. 3.5 million children and adolescents live in the KwaZulu-Natal province, this approximately 23% of all the children living in South-Africa.

The average household has 5.5 members with an income of less than 1 dollar per day per member. Unemployment in this region is high: 50-75%. Adult views on anacceptable standard of living for children are captured in the South African Social Attitudes Survey[1]. The top five socially perceived necessities for children identified by adults are:

- Three meals a day
- Toiletries to be able to wash every day
- A visit to the doctor when ill and access to the required medicines
- All fees, uniform and equipment required for school
- Sufficient clothing to keep warm and dry

Children experience poverty in a range of ways. They highlight threats to personal safety, both in the home and in the community. Whether or not children personally experience violence or abuse, anxiety about it is an important feature of childhood experience in the context of poverty. The result is that the circle of poverty, abuse, malnutrition and neglect becomes even wider.

Medical facilities: Physical inaccessibility can be related to distance, transport options and costs, or road infrastructure. Physical distance and poor roads also make it difficult for mobile clinics and

[1] Bradshaw, J. and Holmes, J. (2010) 'Child poverty and socialexclusion in South Africa', in B. Roberts, M. wa Kivilu and Y.D.Davids (eds.) South African Social Attitudes: The 2nd Report.Reflections on the Age of Hope. Pretoria: HSRC Press, pp.167-182.

emergency services to reach outlying areas. Within South Africa, patterns of health care utilisation are influenced by the distance to the health service provider: Those who live further from their nearest health facility are less likely to use the facility. This "distance decay" is found even in the uptake of services that are required for all children, including immunisation and maintaining the clinic card (Road-to-Health booklet).

The pediatric department of the Pietermaritzburg hospital complex is responsible for children's health both in Pietermaritzburg and in the Western half of KwaZulu-Natal. Our point of reference was Greytown Hospital with contact person medical manager Dr. Govender and other professionals from the Department of Health and the local clinics.

Greytown hospital is a district hospital with 234 beds in the Umzinyathi health district. The hospital serves mainly the rural and semi urban population and provides a 24 hour inpatient/outpatient emergency service, a 24 hour laboratory, x-ray and blood bank facility. The department of health consisting of KwaZulu-natal workers was an integral part of the collaboration on the spot, with HIV testing facility, TB testing, an adult clinic, an ophtalmologist and nutritionist.

New Collaboration: Collaboration refers to relationships in which two or more independent parties voluntarily decide to work together to address a common purpose. Collaborative arrangements can take many forms: from informal, nonbinding agreements on topics of mutual interest to formal alliances that entail the creation of new organizational entities, substantial investments, and long-term commitments. This very year a partnership was established with Letcee, MCC and the University Hospital in Durban. Dr. Zodumo Mvo, pediatric resident, and her colleague in nursing joined us in our medical work in the Coloured Village and agreements were made in developing a successful collaboration in the years to come.

The medical checks were performed on five days at six different locations.

Program:
Day 1: Njengabantu
Day 2: Matimatolo
Day 3: Mbuba
Day 4: Nseleni/Sgedlane
Day 5: Coloured Village (Greytown)

We were thanksful to carry out the medical checks in designated areas such as the official tribal office in Njengabantu, the Busana High school in Matimatolo, Bangumuzi Primary in Mbuba, Nseleni Primary in Nseleni, Potspruit Primary in Sgedlane and the Izingane centre in Greytown.
At the different locations we checked children who were included in the LETCEE program and other children from the villages.

Table 1: Number of checked children per day and geographical location

Villages	01/10/18	02/10/18	03/10/18	04/10/18	05/10/18	Total
Coloured Village	0	0	0	0	114	114
Matimatolo	0	163	0	0	0	163

Mbuba	0	2	224	0	0	226
Njengabantu	101	0	0	0	0	101
Nseleni	0	0	0	102	0	102
Potspruit	0	0	0	31	0	31
Total	**101**	**165**	**224**	**133**	**36**	**737**

Table 2: Summary of checked children per geographical location, age and gender

	Total		**Coloured Village**		**Matimatolo**		**Mbuba**		**Njenga-bantu**		**Nseleni**		**Potspruit**	
	737		**Total=114**		**Total=163**		**Total=226**		**Total=226**		**Total=102**		**Total=31**	
Age	**N**	**%**	**n**	**%**	**n**	**%**	**N**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
<=1 year	66	9%	17	15%	11	7%	21	9%	9	9%	7	7%	1	3%
>1 en <5 years	198	27%	23	20%	47	29%	65	29%	25	25%	26	25%	12	39%
<5 years	264	36%	40	35%	58	36%	86	38%	34	34%	33	32%	13	42%
>=5 en <=10 years	360	49%	64	56%	71	44%	100	44%	55	54%	57	56%	13	42%
>10 years	113	15%	10	9%	34	21%	40	18%	12	12%	12	12%	5	16%
Gender														
Boy	338	46%	51	45%	69	42%	105	46%	48	48%	51	50%	14	45%
Girl	399	54%	63	55%	94	58%	121	54%	53	52%	51	50%	17	55%

4. Specific diagnoses

1. Growth abnormality and malnutrition

Undernutrition has long been considered a consequence and cause of poor human health, development, and achievement throughout life. There are severe forms of malnutrition, characterized by classical clinical signs such as extreme thinness or edematous extremities and hair signs. More prevalent are the hidden forms of undernourishment that can stunt child growth and development and impair the immune system[2]. It is reported that over one-third of child deaths in South-Africa are due to undernutrition, mostly from increased severity of disease[3].

The following definitions categorize the different types of malnutrition:

- Underweight = weight for age at or under the third percentile of the reference population (WHO growth curves), only children up to 10 years old. This is an indicator of malnutrition or weight loss because of disease.
- Stunting = height for age at or under the third percentile of the reference population, (WHO growth curves), only children up to 19 years of age. This is an indicator of chronic malnutrition.
- Wasting = weight for height at or under the third percentile of the reference population (WHO growth curves), only children up to 120 cm in height. This is an indicator of acute malnutrition.

UNICEF distinguishes between the immediate, underlying and basic causes of malnutrition. Immediate causes of malnutrition include inadequate dietary intake and illness. This can lead to a potentially vicious cycle of illness and malnutrition, where malnutrition impairs children's immunity leading to recurrent bouts of illness, which further undermine children's nutritional status. Underlying causes include household food insecurity, inadequate maternal care, poor access to services and unhealthy living environments, which in turn are driven by the unequal distribution of resources in society.

In the area surrounding Greytown which we have visited for our medical mission, 5% of the children was classified as underweight. Nineteen percent of the children suffered from stunting and 3% suffered from wasting. If we look at children under five specifically (high risk group), we see that 8% of children is underweight, 27% is stunting and 3% is wasting.
All the children who could not be grouped in one of the WHO definitions because of the age limitations as noted above, were categorised as 'unknown' when analysing the data.

The double burden of malnutrition: there is a worrying increase in obesity and obesity-related diseases in South Africa. The double burden of malnutrition is characterised by the coexistence of undernutrition along with overweight and obesity. This was adressed in last years medical report. Paediatric obesity and stunting are both risk factors for metabolic syndrome and diseases in adulthood and are therefore relevant additional data for missions conducted in the future.

Undernutrition in South African children younger than ten years old has dropped significantly since 2005 with the exception of the age group 0-3 years. In the group aged 0-3 years, the prevalence of stunting was 26.9% for boys an 25.9% for girls in 2012. In the group aged 7-9 the percentage of stunting for boys was 10% with 8.9% for girls. This shows the vulnerability of the younger group of children.

[2] Merson, Global Health Disease Programs, Systems and Policies, page 243.
[3] UNICEF 2009 State of the World's Children report

Comparing our own data we can also conclude that these younger age groups, especially the ones younger than 1 year old, are the most vulnerable to be underweight, stunted or wasting. And thus the 1-5 year olds should be the primary target group for feeding programs.

Table 3: Prevalence of weight/age at or under P3 (underweight) per geographical location by age and gender

	Total		Coloured Village		Matimatolo		Mbuba		Njengabantu		Nseleni		Potspruit	
	737		Total=114		Total=163		Total=226		Total=101		Total=102		Total=31	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Underweight	44	6%	12	11%	7	4%	9	4%	2	2%	12	12%	2	6%
No underweight	513	70%	79	69%	110	67%	155	69%	79	78%	68	67%	22	71%
Unknown	180	24%	23	20%	46	28%	62	27%	20	20%	22	22%	7	23%
Underweight children per age														
<=1 year	7	11%	3	18%	2	18%	1	5%	1	11%	0	0%	0	0%
>1 en <5 years	14	7%	2	9%	3	6%	2	3%	1	4%	5	19%	1	8%
<5 years	21	8%	5	13%	5	9%	3	3%	2	6%	5	15%	1	8%
>=5 en <=10 years	23	8%	7	14%	2	3%	6	8%	0	0%	7	15%	1	9%
>10 years	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Underweight children per gender														
Boy	21	8%	5	13%	4	8%	4	5%	2	5%	4	9%	2	14%
Girl	23	8%	7	14%	3	5%	5	6%	0	0%	8	22%	0	0%

Table 4: Prevalence of length/age at or under P3 (stunting) per geographical location by age and gender

	Total		Coloured Village		Matimatolo		Mbuba		Njengabantu		Nseleni		Potspruit	
	737		Total=114		Total=163		Total=226		Total=101		Total=102		Total=31	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Stunting	143	19%	21	18%	37	23%	34	15%	15	15%	28	27%	8	26%
No stunting	594	81%	93	82%	126	77%	192	85%	86	85%	74	73%	23	74%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Stunting children per age														
<=1 year	23	35%	4	24%	8	73%	7	33%	2	22%	2	29%	0	0%
>1 en <5 years	49	25%	6	26%	11	23%	9	14%	6	24%	12	46%	5	42%
<5 years	72	27%	10	25%	19	33%	16	19%	8	24%	14	42%	5	38%
>=5 en <=10 years	52	14%	10	16%	9	13%	14	14%	5	9%	12	21%	2	15%
>10 years	19	17%	1	10%	9	26%	4	10%	2	17%	2	17%	1	20%
Stunting children per gender														
Boy	68	20%	6	12%	15	22%	22	21%	8	17%	14	27%	3	21%
Girl	75	19%	15	24%	22	23%	12	10%	7	13%	14	27%	5	29%

Table 5: Prevalence of weight/length at or under P3 (wasting) per geographical location by age and gender

	Total		Coloured Village		Matimatolo		Mbuba		Njengabantu		Nseleni		Potspruit	
	737		Total=114		Total=163		Total=226		Total=101		Total=102		Total=31	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%

Wasting	22	3%	10	9%	1	1%	6	3%	2	2%	3	3%	0	0%
No wasting	419	57%	58	51%	86	53%	125	55%	63	62%	63	62%	24	77%
Unknown	296	40%	46	40%	76	47%	95	42%	36	36%	36	35%	7	23%
Wasting children per age														
<=1 year	5	8%	3	18%	1	9%	0	0%	1	11%	0	0%	0	0%
>1 en <5 years	3	2%	0	0%	0	0%	1	2%	1	4%	1	4%	0	0%
<5 years	8	3%	3	8%	1	2%	1	1%	2	6%	1	3%	0	0%
>=5 en <=10 years	13	7%	6	22%	0	0%	5	11%	0	0%	2	6%	0	0%
>10 years	1	100%	1	100%	0	0%	0	0%	0	0%	0	0%	0	0%
Wasting children per gender														
Boy	10	5%	4	15%	1	3%	1	2%	1	3%	3	9%	0	0%
Girl	12	5%	6	15%	0	0%	5	7%	1	3%	0	0%	0	0%

A large portion of the children stated during their visit to our medical camp that they only drank 1 or 2 cups of water a day. Unsafe water and inadequate sanitation and hygiene are significant contributors to the 1.8 million deaths caused by diarrhoea every year. For children under five years of age, this burden is greater than that covered by HIV and malaria combined. Lack of water and chronic thirst in schoolchildren have negative effects on their concentration in school and on further academic achievements, often causing headaches.

Suggestions:

- MCC advises to execute the strategy to ensure appropriate nutrition during the first 3 yers of a child's life. (Nurturing Care Framework)
- MCC advises that children drink at least 4 cups of water each day. We advise LETCEE to play a counseling role for parents and children herein.
- Strenghten awareness for the paradox of double burden of malnutrition in rural South Africa.

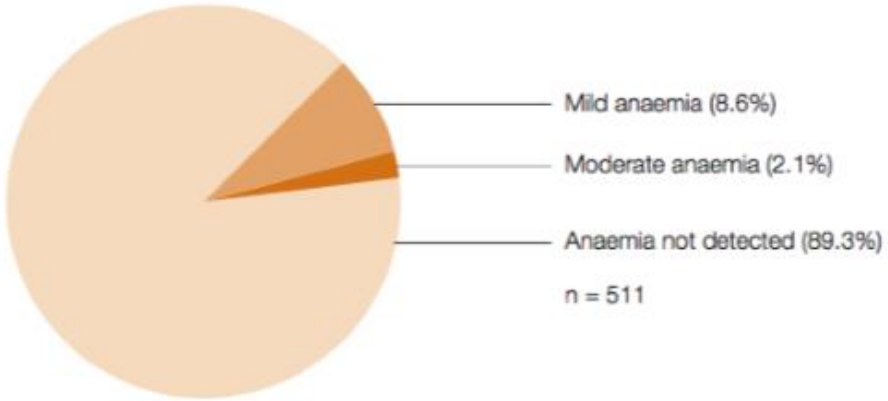
2. Anaemia

Iron is essential in the body for oxygen transportation and cellular respiration - functions that are especially critical in red cells, brain and muscle. Iron deficiency is considered the most common micronutrient deficiency in the world; anaemia, characterized by abnormally low blood hemoglobin concentration, is its major clinical manifestation. In addition to iron deficiency, other micronutrient deficiencies (such as folate, vitamin B12 and vitamin A), chronic inflammation and inherited disorders of haemoglobin structure can all cause anaemia (WHO/UNICEF/UNU 2001)[4].

Iron deficiency, a common form of nutritional deficiency during childhood, results from sustained negative iron balance, which is caused by inadequate dietary intake, absorption and/or utilisation of iron, increased iron requirements during the growth period, or blood loss due to parasitic infections such as malaria, soil-transmitted helminth infestations and schistosomiasis. In later stages of iron depletion, the haemoglobin concentration decreases, resulting in anaemia.

The South African National Health and Nutrition Survey, 2012 (Sanhanes-1 study)[5], is a survey about the national health and nutritional status of the South African nation. This study states that it is estimated that 600 million preschool- and school-age children worldwide are anaemic and it is assumed that at least half of these cases are attributable to iron deficiency (WHO/ CDC 2008). Current rates of anemia among preschool aged children in South-Africa are 24%[4]. In the South African National Health and Nutrition Survey, 2012 (Sanhanes-1 study) the prevalence of anaemia was 10.7% (children under five years of age) (see figure 3.8.2.1 from the Sahanes-1 study). The huge decrease is correlated to the beneficial effect of the Food Fortification Program.

Figure 3.8.2.1: Anaemia status of children under five years of age, South Africa 2012



** There no cases of severe anaemia among children under five years of age*

[5]Source: Sahanes-1 study

Overall the prevalence of anaemia seems to drop, although the recent publication in the South-African Journal for Child Health, *Persistent and new-onset anaemia in children aged 6 - 8 years from KwaZulu-Natal Province, South Africa*, suggests the prevalence of anemia might be higher. The baseline anaemia prevalence in this article was 56.9% and at follow-up the anaemia prevalence was 41.9%.

In South Africa no national policy has been implemented so far to provide iron supplements to pregnant women or young children. While iron deficiency is frequently the primary factor contributing to anaemia, it is important to recognise that the control of anaemia requires a multi-faceted approach. In addition to iron deficiency, infectious diseases such as worm infections, other chronic infections, particularly HIV-AIDS and tuberculosis, as well as other nutritional deficiencies are risk factors for anemia, and this as well can be a side effect of ART medication in HIV positive children.

[4] WHO. 2008. Worldwide Prevalence of Anemia 1993-2005: WHO Global Database on Anemia
[5] The South African National Health and Nutrition Survey, 2012 (SANHANES-1 study)

Anaemia is always multifactorial in cause. Household factors are important when considering malnutrition and anaemia. If we look at the baseline menu provided in KwaZulu-Natal a few observations can be made:

- The diet is rich in carbohydrates (high caloric food), such as putu.
- Fat is added.
- The vegetables are mostly roots and cabbage, spinach being the exception.

The diagnosis anemia was made in 325 of the 737 children (24%) eligible for testing their blood. Of the children under five, 45% was anemic. Cut-off values were determined based on age and height of the place where the children lived, using the World Health Organization cut-off values for anemia.

In two children (<1%) the Hb level was lower than 5.0 mmol/l after a second confirming measurement, marking a more severe form of anemia and suggesting possible underlying pathologies other than iron deficiency. Depending on the age and presence of growth abnormalities, children were given iron supplements or multivitamins for at least two months. Children with severe anemia (<5.0 mmol/l) were treated with supplementation as well as referred for further diagnostics.

In the table below percentages of anemia on the different locations are displayed.

Table 6: Prevalence of anaemia per geographical location by age and gender

	Total		**Coloured Village**		**Matimatolo**		**Mbuba**		**Njengabantu**		**Nseleni**		**Potspruit**	
	737		**Total=114**		**Total=163**		**Total=226**		**Total=101**		**Total=102**		**Total=31**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Anaemia	325	44%	54	47%	75	46%	93	41%	46	46%	45	44%	12	39%
No anaemia	372	50%	50	44%	77	47%	123	54%	51	50%	53	52%	18	58%
Unknown	40	5%	10	9%	11	7%	10	4%	4	4%	4	4%	1	3%
Hb <5,0 mmol	2	0%	1	1%	0	0%	1	0%	0	0%	0	0%	0	0%
Anaemia per age														
<=1 year	29	44%	7	41%	3	27%	11	52%	4	44%	4	57%	0	0%
>1 en <5 years	91	46%	12	52%	25	53%	29	45%	9	36%	9	35%	7	58%
<5 years	120	45%	19	48%	28	48%	40	47%	13	38%	13	39%	7	54%
>=5 en <=10 years	168	47%	33	52%	34	48%	38	38%	29	53%	30	53%	4	31%
>10 years	37	33%	2	20%	13	38%	15	38%	4	33%	2	17%	1	20%
Anaemia per gender														
Boy	166	49%	27	53%	38	55%	47	45%	25	52%	23	45%	6	43%
Girl	159	40%	27	43%	37	39%	46	38%	21	40%	22	43%	6	35%

MCC complements LETCEE on providing nutritional meals on a daily basis for children in the Coloured Village.

Suggestions:

- MCC advises a diet rich in fruits and vegetables, greater diversity, and less added sugars.
- MCC supports the general guidelines: mothers known to be HIV infected should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary

foods thereafter and continue breastfeeding for the first 12 months of life. Breastfeeding should continue until the age of 2 years and should be supported by ART adherence strategies.

3. Worm infections

Worm infections are one of the major health problems confronting millions of school-aged children. These parasites consume nutrients from the children they infect, thus aggravating malnutrition and retarding physical development. They also destroy the tissues and organs in which they live. They cause abdominal pain, diarrhoea, intestinal obstruction, anaemia, ulcers and various other health problems.

Heavy, prolonged infection adversely affects growth, development and educational achievement, and significantly increases childhood morbidity. Parasite infections produce different manifestations according to the site, intensity and length of infection. The host response also influences the clinical course of the infection. In general, children experience the heaviest worm burden, and persistent infection is common in low- and middle-income settings.

The three main types of common intestinal worms that infect humans are large intestinal roundworm (*Ascaris lumbricoides*), hookworm *(Ancylostoma duodenale and Necator americanus*) and whipworm (*Trichuris trichuira*)[5]. The highest rates of roundworm, hookworm and whipworm infections are often in children between age 5 and 15.

The South-African Department of Health has launched a national deworming programme in 2016[6]. The department said the goal was to attain a minimum target of regular administration of deworming medication to at least 75% of school-aged children and up to 100% of those at risk of morbidity. South-Africa has a program in which children are offered preventive anti-worm medication. In our checked population, 30% of the children (223/737) had received anti-worm treatment in the last half year. This is a slight improvement compared to 2017, where only 21% received anti-worm treatment in the last half year. All of the children who had not received anti-worm treatment were given one dose of albendazole 500 mg above the age of five and 250 mg for the age of 2-5 years. Children with severe acute worm infections were treated with albendazole during three consecutive days. Along with our medical camp the nutritionist of the Department of Health of Kwazulu Natal was simulataneously monitoring the children under 5 years of age and supplying antiworm profylaxis and protein supplementation when malnourished, as well as regular high doses vitamin A 200 000IU.

With this combined effort of MCC and the nutritionist, we further hope to improve the coverage rate for the coming years.

Table 7: Prevalence preventive anti-worm treatment in the last half-year per geographical location by age and gender

	Total		Coloured Village		Matimatolo		Mbuba		Njengabantu		Nseleni		Potspruit	
	737		Total=114		Total=163		Total=226		Total=101		Total=102		Total=31	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%

[5] http://www.unicef.org/eapro/Prevention_of_intestinal_worm_infections.pdf
[6] http://allafrica.com/stories/201603010156.html

Anti-worm	223	30%	31	27%	54	33%	68	30%	43	43%	20	20%	7	23%
No anti-worm	458	62%	74	65%	86	53%	148	65%	51	50%	76	75%	23	74%
Unknown	55	7%	9	8%	22	13%	10	4%	7	7%	6	6%	1	3%
Anti-worm per age														
<=1 year	23	35%	7	41%	6	55%	2	10%	6	67%	2	29%	0	0%
>1 en <5 years	69	35%	3	13%	16	34%	22	34%	17	68%	7	27%	4	33%
<5 years	92	35%	10	25%	22	38%	24	28%	23	68%	9	27%	4	31%
>=5 en <=10 years	101	28%	18	28%	23	32%	31	31%	16	29%	10	18%	3	23%
>10 years	30	27%	3	30%	9	26%	13	33%	4	33%	1	8%	0	0%

Suggestion

- MCC advices to roll out a *community delivery strategy* of anti-worm medication delivered by trained teachers and other school personnel: twice a year one tablet of mebendazol 500 mg.

4. Respiratory problems

Acute respiratory infections comprise infections of various parts of the respiratory tract, ranging from mild viral and bacterial infections of the upper respiratory tract (e.g. common cold), to life-threatening infections of the lower respiratory tract. Lower respiratory tract infections are the cause of high morbidity and of mortality. Pneumonias in particular are typically one of the leading causes of death among infants and children younger than 5 years[7]. Risk factors for Acute Respiratory Infections (ARI) are poverty, crowding, lack of parental education, malnutrition, low birth weight and lack of breastfeeding.

In the areas surrounding and including Greytown, we saw that 3 out of 737 (<1%) suffered from a clinically evident pneumonia. Depending on their medical history and previous treatment, they were treated with amoxicilline, another type of antibiotics (amoxicillin/clavulanic acid) or referred for a chest X-ray under the suspicion of tuberculosis. A total of 9 children (1%) suffered from upper respiratory infections (otitis media, otitis externa or tonsillitis). Three children showed dyspnea because of asthma and were treated with nebulisation of salbutamol. Although there were many children seen with common could (data not recorded), the amount of serious respiratory problems was surprisingly low as in the previous years we checked these areas.

KwaZula-Natal has the highest tuberculosis (TB) burden in the country. A number of 9691 cases of TB in children under five years were reported in 2011. TB CARE II South Africa was launched in October 2014 to support the South Africa National Department of Health (NDOH) with TB prevention and control efforts, working closely with national and provincial partners to close gaps in areas identified, and to further develop sustainable systems which can carry forward long-term improvements in TB and drug-resistant (DR) TB diagnosis, care, and treatment services.

5. Cardiac problems

[7] Graham, 1990 - Merson, Global Health Disease Programs, Systems and Policies, page 191.

Congenital heart disease is the number 8 leading cause of under-five child mortality in South-Africa[8], with the ventricular septal defect as the most prevalent type. In South-Africa, rheumatic heart disease is the leading acquired heart disease among children. Acute Rheumatic Fever is caused by an untreated sore 'strep' throat, which may lead to repeated attacks affecting the joints (arthritis), skin (rash) and heart (carditis). After attacks of untreated ARF, chronic heart valve damage (RHD) may develop. In the instance of RHD, open-heart surgery is necessary to repair or replace heart valves[9].

The medical carrousel included a cardiac examination. There were no children that were suspected of having a pathological murmur. One child was suspected of a physiological heart murmur and was not referred for an ultrasound.

6.HIV

South Africa is currently the country with the largest number of people living with HIV in the world. Many children are HIV positive or have become ill and died due to AIDS. The majority of children are infected before and during the birth process and some later through breastfeeding. Children may also become infected through sexual intercourse, including sexual abuse. The prevention of mother-to-child transmission (PMTCT) has been very effective.
In a 2008 national household survey conducted by the Human Sciences Research Council, the prevalence of HIV measured in children aged 2 – 14 was 2.5% (95% CI:1.9 – 3.5%).

HIV prevalence in KwaZulu-Natal is among the highest in the world: 38.7% of the population is infected. Despite this significant progress, the number of children becoming newly infected with HIV remains unacceptably high. About 150 000 children became infected with HIV in 2015, down from 490 000 in 2000[10].

We treated 5 children children who had serious secondary infections also indicating possible underlying immuneproblems like HIV. All five were tested on the spot bij the Department of Health of Kwazulu-Natal and two children were HIV positive, hence enrolling in an ART treatment program. One of these older boys had just lost his mother to AIDS and with hearing his story the full impact of the HIV epidemic unfolded for us.

7.Skin disease

An outbreak of scabies and other related skin diseases has attacked hundreds of children in the rural areas in the Greytown District from last year onwards. During our checks oktober 2017 we encountered an extremely high number of children with scabies, different locations showing numbers ranging from 13 upto 26 percent! Despite measurements taken by the Department of Health, including treatment with potassium permanganate in rinsing water, scabies was still a problem in certain communities. The shortage or absence of water was clearly stated. Scabies cases were often complicatied by impetigo. Scabies was treated with topical or oral therapies on the spot. Topical treatments included benzyl benzoate lotion and permetrin soap. Ivermectin was used as an oral therapy. Ivermectin is expensive

[8] http://www.unicef.org/southafrica/SAF_publications_mrc.pdf
[9] http://www.pcssa.org/faq/
[10] Children and HIV: fact sheet, UNAIDS, 2016

and unavailable in Greytown and was thus imported from the Netherlands to be used for the older children.

Prolonged surveillance is required for the eradication of outbreaks of scabies. Blankets and clothing do appear to be less important in transmission than first thought, and there is no conclusive evidence to suggest that washing of clothing and blankets is necessary for the prevention of spread. However, when treated for scabies, children and there caretakers received important information on hygiene measures and were advised to put their clothes in a sealed of bag and leave it in the sun for at least 2 days. We also donated many additional clothing and hats to vulnerable affected families, since many of them don't have a second set of clothes.

In respect to other skin diseases we saw 50 children (7%) with variable presentations of dermatomycoses, mainly tinea capitis. Tinea capitis in African countries is highly prevalent and linked to social stigma. Besides overcrowding, ringworm often spreads through the use of infected objects like dirty razor blades when shaving the heads of the children. The presenting signs include scaling of the scalp and is often accompanied by secondary bacterial infection(s). Follicles may be seen discharging pus. Antifungal cream and selsun shampoo were given for severe dermatomycosis. Hydrocortisone crème was given for different forms of dermatitis.

We encountered a moderate range of different kind of wounds and skin disorders, mainly impetigo. Impetigo is a contagious superficial bacterial infection manifesting on the face and extremities with lesions that progress from papules to vesicles, pustules, and crusts. The cases were treated by antibacterial creams and/or oral antibiotics in severe cases. Fifteen children (2%) had impetigo. Several underlying factors in the enviroment of the children such as lack of running water, overcrowding, poor personal hygiene, minor skin trauma or eczema are the main predisposing factors for these bacterial skin infections. A high percentage of the number of impetigo cases was secondary to the underlying scabies outbreak. Although the scabies outbreak was still ongoing, this year we saw less cases with serious extended laesions or severe secondary infections. This was also shown in the numbers of impetigo with only 2% of the total number of children affected, compared to 6% last year, which is a slight but important improvement.

Handwashing is important for reducing spread among children, and other preventive measures employed in reducing the spread of staphylococci/streptococci may also be helpful. A practical way to reduce recurrence rates of staphylococcal furunculosis is treatment with Betadine solution in water. However, the iodine needs to be rinsed off completely not to affect the thyroid function. Children who are iron deficient have higher percentages of boils and vitamin C has also been advocated to improve deficient neutrophil function in prevention of boils.

8. Dental health

Dental caries is still a major public health problem in South Africa. Dental caries is influenced by multiple factors such as diet, socio-economic status and the availability of oral health services. Of the 737 children that were checked, this widespread condition affected 112 children (15%). On top of that

38 children were suffering from caries with pain. Only the children with inevitable dental pain and discomfort were referred to the dental mobiel clinic, wich sadly and logistically was not part of our medical checks week this year. As part of our medical carousel however, the children got education on dental hygiene and all were provided with a colourful tooth brush.

Suggestions:

- MCC encourages the dental mobile clinic to regularly diagnose and treat children for dental healthcare.
- Gradual Shift from a more curative to a more preventative approach for an improvement in dental service delivery.
- Upscaling health promotion concerning dental health in all schools and daycare centers.
- Awareness in the community between the link of severe caries with high sugary sweets, incorrect diet, source of water and fluoride content.
- Affordability of toothbrushes and fluoridated toothpaste.

5. Nurturing Care Framework

'A FRAMEWORK FOR HELPING CHILDREN SURVIVE AND THRIVE TO TRANSFORM HEALTH AND HUMAN POTENTIAL (WHO)'

The Nurturing care framework is adopted as one of the first countries by South Africa in 2018. The new Nurturing Care Framework draws on state-of-the-art evidence on how early childhood development unfolds, to set out the most effective policies and services that will help parents and caregivers provide nurturing care for children. It is designed to serve as a roadmap for action, helping mobilise a coalition of parents and caregivers, national governments, civil society groups, academics, the United Nations, the private sector, educational institutions and service providers to ensure that every baby gets the best start in life. It outlines:

• Why efforts to improve health, well-being and human capital must begin in the earliest years, from pregnancy to age 3.

• The major threats to early childhood development.

• How nurturing care protects young children from the worst effects of adversity and promotes physical, emotional and cognitive development.

• What caregivers need in order to provide nurturing care for young children[11].

[11] http://www.who.int/maternal_child_adolescent/child/nurturing-care-framework/en/

Responsive care giving

It is important that the children have secure emotional relationships with caregivers and that care-seeking for childhood illness happens timely. Therefore MCC stresses the presence of caregivers accompanying the child to the medical check up. One hundred and thirteen (15%) of the children did not have a caretaker present at the day of the medical check and that was up to 28% percent in location Nseleni with extreme poverty cases (table 8). Although this is still a high number we are pleased to see that there is a significant improvement compared to last year. When there was no caretaker around, some medication was distribuated by the regional fieldworker to the specific families. A high number of grandparents or extended family memebers were more commonly involved in the care of young children bringing them to the medical checks. In South Africa work migration, abscent fatherhood and high HIV prevalence among younger-to-middle aged adults has led to a heavy burden on grandparents, especially grandmothers, to care for their grandchildren.

Table 8: Child with care taker at the day of the check

	Total		Coloured Village		Matimatolo		Mbuba		Njengabantu		Nseleni		Potspruit	
	737		Total=114		Total=163		Total=226		Total=101		Total=102		Total=31	
	N	%	n	%	N	%	n	%	n	%	n	%	n	%
No	113	15%	9	8%	39	24%	12	5%	17	17%	29	28%	7	23%
Yes	624	85%	105	92%	124	76%	214	95%	84	83%	73	72%	24	77%

Teacher	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%

Security and safety of children

Children should not experience neglect, violence, displacement or conflict. South Africa's ongoing violence against children however paints a bleak picture and emphasizes the findings by the first national prevalence study conducted in 2016 and highlighted by the Children's Institute Out of Harm's Way report, which estimates that up to 34% of the country's children are victims of sexual violence and physical abuse before they reach the age of 18.

The study further states that in the Western Cape and Mpumalanga alone, over half of the children reported a lifetime prevalence of physical abuse by caregivers, teachers or relatives.

Violence is interlinked and cumulative in nature; children who experience or witness violence are at increased risk of revictimisation or perpetration later in life and when they become parents themselves they often lack the ability to bond with their own children and are more inclined to use violence.

Furthermore, violence against children has a severe impact on SA's economy. A report by Save the Children: Violence Unwrapped — The Social and Economic Burden of Violence Against Children in South Africa, says that the estimated economic value of disability-adjusted life years lost due to violence against children (including fatal and non-fatal) totalled R202 billion in 2015. This accounted for 3,3% of SA's GDP in 2015.

Six children were referred to a social worker together with regional fieldworkers because of suspicion of domestic violence, sexual abuse and/or neglect. During this years medical check the most concerning location in which social problems and medical problems were frequent as consequence of a deplorable circumstances, was Nseleni. In this area almost half of the children suffered from scabies, 44% was anemic and, as stated earlier, 28% did not have a caretaker. Letcee has made a start in 2017 with a helping hand to the closed community, setting up a local feeding program and advocating for running water. We hope that the new efforts of Letcee will be able to make the same amazing difference as their project in the Coloured Village did last year.

In 2017 we witnessed an amazing progress in physical and emotional health in the former often homely maltreated or abused children in the Barracks (informal housing), now called the Coloured Village .

More than 125 children of the Coloured Village had found shelter, food as in free breakfast and lunch, a safe heaven, a caring, loving adult or buddy and a place to play and learn within the wonderful programs of Letcee.

Seeing these children being happy and more healthy in our third year follow up was a great joy to our volunteers, examplyfing the difference made by all the tremendous efforts by the professionals from Letcee. At the end of the week the lively children performed traditional South African and modern dance as thanks for our support.

Children with physical and intellectual disabilities

The overall confirmed prevalence rate for children with disabilities under 10 years in South Africa is 6%. During this years visit we encountered less handicapped children than in 2017 (7 resp. 14 children). The most prevalent disabilities we saw during the 2018 medical mission were mild perceptual or learning disabilities, followed by cerebral palsy, autism and seizure disorders and one albino girl of three years old with multiple disabilities.

Albinism is a condition where a child is unable to produce normal colouring of the skin, hair and eyes due to lack of pigments. Albinism is an inherited, genetic disorder.
The girl wearing a large brimmed hat was brought to the medical check up by her mother who asked for help (medical /psychosocial /socio-economic and physical protection).
Her daughter had multiple problems as to:

- Very low vision/blind
- Pre cancerous sores on sun –exposed areas
- Intelectual handicap

Although the extent of violent crimes targeting South Africans with albinism has never reached the levels encountered in other African countries, these vulnerable children need high protection as to the fact that trading in albino body parts sadly still constitutes a lucrative enterprise in crime. A temporary shelter for the girl was found in a nearby orphanage to win time for placement in a safe special needs home and school.

Foetal Alcohol Syndrome (FAS) is thaught to be the third highest cause of congenital mental retardation. This syndrome is associated with cranio-facial malformations, growth retardation, abnormalities in the nervous system and organ malformation. Foetal Alcohol effects are preventable simply by women refraiming from alcohol during pregnancy. FAS is permanent and irreversible and impairs a child's lifetime ability to function mentally, physically and socially[12].

During this years visit we diagnosed two children with behavioural problems and clinical FAS, which were referred to the social workers of Letcee. During our annual visit we did not see children with the syndrome of Down as the year before.

MCC complements the great efforts of LETCEE and local healthcare workers towards ongoing support and treatment of maltreated and (sexually) abused children by continous awareness and the enlargment of the staff with an additional social worker.

Suggestions:

- Strengthening efforts in collaboration with local NGO's and national initiatives adressing physical, emotional and sexual abuse.
- Improve data-gathering and screening that would help children with disabilities to go to neighbourhood schools and receive support in inclusive settings from an early age.
- Strengthen partnerships between government and NGO's for better chances for children with diabilities and special needs.

[12] http://www.fasfacts.org.za/

- https://www.unicef.org/southafrica/SAF_resources_sitandisability.pdf as a practical guide and www.nurturing-care.org as a valuable guide.

6. Referrals

During MCC's visit to the rural areas around Greytown a list was made for children needing referral for further diagnosis and/or treatment for suspected pathologies. There was a total of 83 (11%) children who were referred by MCC for follow-up. The largest proportion was for dental referrals, with 16 referalls to be seen by a specialist.
Caregiver compliance with referrals for child health services is essential to child health outcomes and there is a lack of data of referral compliance in the regions in KwaZulu Natal.
In one 2014 South African study in KwaZulu Natal the overall compliance rate for children with suspected non-acute conditions was 45 percent. Referral compliance was especially low for suspected disorders of vision, hearing and development. Referral compliance was significantly lower for children with younger caregivers, those living in households with low educational attainment and for those with unstable caregiving[13].

Additional studies are in progress to identify other possible contributory factors including: caregiver knowledge and attitudes about referrals, environmental factors (e.g. financial and geographical accessibility) and health system factors (e.g. service availability, health worker availability and health system responsiveness).

This year we were pleased to see that referral process was optimised. Every child being referred was immediately seen by one of the LETCEE members to confirm contact details and were noted in a separate list on the spot to be followed by the social workers. In the coming months we will exchange information by e-mail on the follow-up and the outcomes of the children being referred.

Suggestions:

- Active collaboration with the Department of Health and Letcee is essential in developing interventions to strengthen referral processes as a means to improve the quality of life for disadvantaged and vulnerable children.

Table 9: Follow-up of all children per geographical location

	Total		**Coloured Village**		**Matimatolo**		**Mbuba**		**Njengabantu**		**Nseleni**		**Potspruit**	
	737		**Total=114**		**Total=163**		**Total=226**		**Total=101**		**Total=102**		**Total=31**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Dentist	48	7%	7	6%	7	4%	18	8%	4	4%	10	10%	2	6%
Specialist in hospital	16	2%	1	1%	4	2%	6	3%	3	3%	2	2%	0	0%
X-thorax	4	1%	0	0%	1	1%	1	0%	0	0%	1	1%	1	3%

[13] Compliance with referrals for non-acute child health conditions: evidence from the longitudinal ASENZE study in KwaZulu Natal, South Africa and BMC Health Serv Res. 2014; 14: 242

Bloodtest after 3 months	3	0%	0	0%	0	0%	2	1%	1	1%	0	0%	0	0%
Other…	12	2%	2	2%	5	3%	3	1%	0	0%	2	2%	0	0%

7.Treatment

Table 10: Treatment among all children per geographical location

	Total		**Coloured Village**		**Matimatolo**		**Mbuba**		**Njengabantu**		**Nseleni**		**Potspruit**	
	737		**Total=114**		**Total=163**		**Total=226**		**Total=101**		**Total=102**		**Total=31**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
ferro	12	2%	0	0%	4	2%	5	2%	2	2%	1	1%	0	0%
mother iron	6	1%	1	1%	2	1%	1	0%	2	2%	0	0%	0	0%
multivitamins	440	60%	61	54%	105	64%	129	57%	55	54%	73	72%	17	55%
anti-worm	362	49%	61	54%	68	42%	110	49%	50	50%	53	52%	20	65%
acute worm	91	12%	4	4%	27	17%	21	9%	10	10%	25	25%	4	13%
anti-scabies	140	19%	18	16%	35	21%	34	15%	9	9%	38	37%	6	19%
niclosamide	1	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
amoxicillin	15	2%	0	0%	4	2%	4	2%	0	0%	7	7%	0	0%
augmentin	5	1%	0	0%	0	0%	4	2%	0	0%	1	1%	0	0%
2e lijns antibiotica	9	1%	0	0%	5	3%	4	2%	0	0%	0	0%	0	0%
co-trimoxazol	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
paracetamol	5	1%	1	1%	1	1%	0	0%	2	2%	1	1%	0	0%
ORS	3	0%	0	0%	1	1%	1	0%	0	0%	1	1%	0	0%
mupirocine=Bactroban	10	1%	0	0%	2	1%	6	3%	2	2%	0	0%	0	0%
hydrocortisone cream	15	2%	2	2%	6	4%	2	1%	1	1%	3	3%	1	3%
dactarin cream	38	5%	6	5%	3	2%	9	4%	11	11%	7	7%	2	6%
dactacort cream	2	0%	0	0%	0	0%	1	0%	0	0%	1	1%	0	0%
fusidin cream	17	2%	0	0%	9	6%	4	2%	2	2%	2	2%	0	0%
iodine	2	0%	0	0%	0	0%	0	0%	0	0%	2	2%	0	0%
griseofulvin	2	0%	0	0%	1	1%	1	0%	0	0%	0	0%	0	0%
eyedrops	1	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%

8. Committing to action

Concrete commitments and collective action are needed to implement the strategic actions in supporting nurturing care and realize the Nurturing Care Framework's vision in the Greytown area.

Here are *five recommended ways* for social workers and regional field workers within Letcee to help support nurturing care.

- Check identity citizenship for every child

- Empower families and children in disadvantaged circumstances
- Ensure there is a continuum of care
- Protect children from maltreatment and family dissolution
- Integrate children who have additional needs and reach out to the most vulnerable

Our medical findings and the mentioned suggestions/recommendations above, should be underpinning the five components in the nurturing care framework. Necessary interventions can be focused on caregiver capabilities, empowerment of communities, supporting services and/or enabling policies.
The table below lists the outcomes of the different components of nurturing care. Although it will be a long raod to travel to get them all accomplished in the bigger picture, we can make continuous small steps in the right direction with joined forces.

Outcomes (Components of nurturing care)				
Good health	**Adequate nutrition**	**Responsive caregiving**	**Opportunities for early learning**	**Security and safety**
• Caregivers are mentally and physically healthy • Antenatal, childbirth and postnatal care are of good quality • Mothers and children are immunized • Care-seeking for childhood illness is timely • Childhood illness is appropriately managed	• Caregivers' nutritional status is adequate • Breastfeeding is exclusive and initiated early • Complementary feeding and child nutrition are appropriate • Micronutrient supplementation is given as needed • Childhood malnutrition is managed	• The child has secure emotional relations with caregivers • Caregivers are sensitive and responsive to the child's cues • Caregiver-child interactions are enjoyable and stimulating • Communication is bi-directional	• Communication is language-rich • There are opportunities for age-appropriate play and early learning at home and in the community	• Families and children live in clean and safe environments • Families and children practise good hygiene • Children experience supportive discipline • Children do not experience neglect, violence, displacement or conflict

Good Health

- MCC advices to monitor the *community delivery strategy* of anti-worm medication delivered by the Department of Health.
- Active co-operation of the Department of Health and Letcee is essential in developing interventions to strengthen referral processes as a means to improve the quality of life for disadvantaged and vulnerable children.

- MCC encourages the dental mobile clinic to be on the spot at the same days we do our medical checks for an efficiant referral system and pain treatment.
- Upscaling health promotion concerning dental health in all schools and daycare centers.
- Awareness in the community between the link of severe caries with high sugary sweets, incorrect diet, source of water and fluoride content.

Adequate Nutrition

- MCC advises adequate nutrition during the first 5 years of a child's life (Nurturing Care framwork).
- MCC advises a diet rich in fruits and vegetables, greater diversity, and less added sugars in the daily diet and three meals a day with a minimum of 3 cups of water a day.
- MCC supports the general guidelines: mothers known to be HIV infected should exclusively breastfeed their infants for the first 6 months of life, introducing appropriate complementary foods thereafter and continue breastfeeding for the first 12 months of life. Breastfeeding should continue until the age of 2 years and should be supported by ART adherence strategies.
- Strenghten awareness for the paradox of double burden of malnutrition in Kwazulu Natal.

Responsive care giving

- No child shall be medically checked without a dedicated caregiver.
- A minimum of 75 percent of all the referrals should have had adequate follow-up by 3 upto a maximum of 6 months after the MCC visit.

Opportunity for early learning

- Continuation of Letcee's professional early learning programs and up-scaling to more communities.
- Simultanous outreach and up-scaling of the mobile Toy Trucks.
- Improve data-gathering and screening that would help children with disabilities to go to special needs schools and receive support in inclusive settings from an early age.
- Strengthen partnerships between government and NGO's for better chances for children with diabilities and special needs.

Security and Safety

- Health promotion on good hygiene.
- Health promotion of a safe and clean environment.
- Ongoing strengthening efforts in collaboration with local NGO's and national initiatives adressing physical, emotional and sexual abuse and maltreatment.

9.Concluding comments and last words

We feel grateful for the amazing support from all the professionals, outreach volunteers, the highly qualified retired nurses and staff from LETCEE in the triangle with the the Department of Health. The MCC team felt more than welcome at our third medical camp in KwaZulu-Natal in South Africa. Mutual targets were hit, and personal connections were strengthened in a harmonious partnership climate. All three parties (Kinderfonds MAMAS, LETCEE and MCC) have agreed to continue joined

forces in the 2019 medical mission to further improve local child's health in KwaZulu-Natal. We are excited to continue our close collaboration with all the stakeholders and will monitor the referrals in the coming months. Additionally, we aspire to empower local current and future healthcare workers in future venture and look forward to intensifying the coolaboration with the university hospital in Durban.

We are grateful to all caretakers and the communities for bringing the children to location and helping to conduct the program. We are happy we got the opportunity to work with and to learn from all volunteers, translators and others who have helped directly or indirectly, despite their own obligations. And last but not least, we would like to thank the children and their caretakers who came to the checks for their inspiring presence.

We will be back in September 2019!

On behalf of the MCC LETCEE team 2018:

10. Appendices

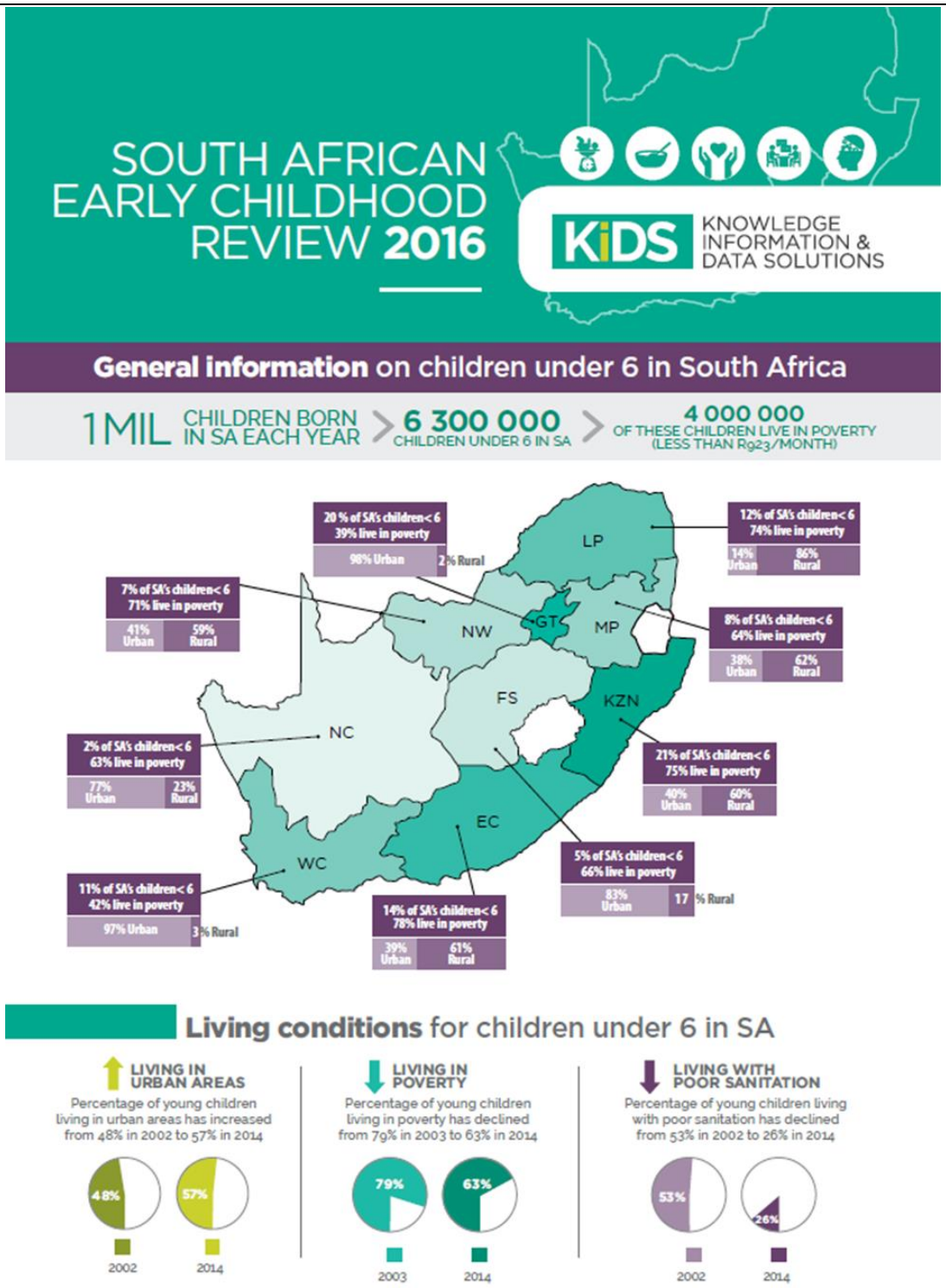
Appendix 1:

Table 11: Disease prevalence among all children per geographical location

	Total		Coloured Village		Matimatolo		Mbuba		Njengabantu		Nseleni		Potspruit	
	737		Total=114		Total=163		Total=226		Total=101		Total=102		Total=31	
	N	%	n	%	n	%	n	%	n	%	N	%	n	%

Underweight	44	6%	12	11%	7	4%	9	4%	2	2%	12	12%	2	6%
Stunting	143	19%	21	18%	37	23%	34	15%	15	15%	28	27%	8	26%
Wasting	22	3%	10	9%	1	1%	6	3%	2	2%	3	3%	0	0%
Anaemia	325	44%	54	47%	75	46%	93	41%	46	46%	45	44%	12	39%
HIV pos.	4	1%	0	0%	2	1%	2	1%	0	0%	0	0%	0	0%
AIDS	2	0%	0	0%	2	1%	0	0%	0	0%	0	0%	0	0%
vitamin deficit (clinical signs)	45	6%	11	10%	11	7%	14	6%	1	1%	6	6%	2	6%
Bilharzia	1	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%
pneumonia (clinical)	3	0%	0	0%	2	1%	1	0%	0	0%	0	0%	0	0%
tuberculosis (clinical)	3	0%	0	0%	2	1%	1	0%	0	0%	0	0%	0	0%
BHR/asthma	3	0%	1	1%	0	0%	1	0%	1	1%	0	0%	0	0%
dehydration : acute diarrhoea	1	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
active worm infection	82	11%	3	3%	29	18%	21	9%	9	9%	17	17%	3	10%
active lintworm	3	0%	0	0%	0	0%	0	0%	0	0%	3	3%	0	0%
otitis media acuta	5	1%	0	0%	4	2%	0	0%	0	0%	1	1%	0	0%
otitis media with effusion	7	1%	3	3%	2	1%	1	0%	1	1%	0	0%	0	0%
otitis externa	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
mastoiditis	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
(adeno)tonsillitis	3	0%	0	0%	1	1%	1	0%	1	1%	0	0%	0	0%
candida stomatitis	1	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%
hearing impairment	3	0%	0	0%	1	1%	2	1%	0	0%	0	0%	0	0%
other	2	0%	0	0%	0	0%	1	0%	0	0%	0	0%	1	3%
cariës n.o.s.	112	15%	28	25%	31	19%	24	11%	8	8%	15	15%	6	19%
pain n.o.s	6	1%	0	0%	1	1%	2	1%	0	0%	2	2%	1	3%
caries with pain	38	5%	5	4%	6	4%	16	7%	4	4%	7	7%	0	0%
wounds n.o.s.	23	3%	2	2%	8	5%	8	4%	2	2%	3	3%	0	0%
eczema n.o.s.	11	1%	2	2%	4	2%	3	1%	1	1%	0	0%	1	3%
dermatomycosis	50	7%	7	6%	7	4%	13	6%	11	11%	10	10%	2	6%
Impetigo/furunculosis	15	2%	0	0%	3	2%	7	3%	2	2%	2	2%	1	3%
Scabies	146	20%	18	16%	36	22%	32	14%	8	8%	45	44%	7	23%
wounds infected,	10	1%	0	0%	2	1%	5	2%	2	2%	1	1%	0	0%
other (psoriasis etc)	4	1%	0	0%	1	1%	0	0%	2	2%	1	1%	0	0%
psychomotoric retardation	7	1%	1	1%	4	2%	0	0%	0	0%	2	2%	0	0%
hypertonia	1	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%
Epilepsy	1	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
migraine/headache	3	0%	1	1%	2	1%	0	0%	0	0%	0	0%	0	0%
physiological murmer	1	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%
refractory problem	1	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%
keratoconjunctivitis	1	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%
amblyopia	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
hernia(umbilical etc)	5	1%	2	2%	1	1%	0	0%	1	1%	0	0%	1	3%

Appendix 2


SOUTH AFRICAN EARLY CHILDHOOD REVIEW 2016
KiDS KNOWLEDGE INFORMATION & DATA SOLUTIONS
General information on children under 6 in South Africa
1 MIL CHILDREN BORN IN SA EACH YEAR
6 300 000 CHILDREN UNDER 6 IN SA
4 000 000 OF THESE CHILDREN LIVE IN POVERTY (LESS THAN Rg23/MONTH)
20 % of SA's children< 6 39% live in poverty
98% Urban 2% Rural
12% of SA's children< 6 74% live in poverty
14% Urban 86% Rural
7% of SA's children< 6 71% live in poverty
41% Urban 59% Rural
8% of SA's children< 6 64% live in poverty
38% Urban 62% Rural
2% of SA's children< 6 63% live in poverty
77% Urban 23% Rural
21% of SA's children< 6 75% live in poverty
40% Urban 60% Rural
5% of SA's children< 6 66% live in poverty
83% Urban 17 % Rural
11% of SA's children< 6 42% live in poverty
97% Urban 3 % Rural
14% of SA's children< 6 78% live in poverty
39% Urban 61% Rural
LP
NW
GT
MP
FS
KZN
NC
EC
WC
Living conditions for children under 6 in SA
LIVING IN URBAN AREAS
Percentage of young children living in urban areas has increased from 48% in 2002 to 57% in 2014
48%
57%
2002
2014
LIVING IN POVERTY
Percentage of young children living in poverty has declined from 79% in 2003 to 63% in 2014
79%
63%
2003
2014
LIVING WITH POOR SANITATION
Percentage of young children living with poor sanitation has declined from 53% in 2002 to 26% in 2014
53%
26%
2002
2014