Medical Checks for Children

Medical Report

South Africa, Eastern Cape 2022

In collaboration with

Children of the Dawn & Children's Fund MAMAS

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1. Introduction

Starting at the end of September 2022, a Medical Checks for Children (MCC) team, consisting of enthusiastic volunteers, started with the second mission in Matatiele. On this mission MCC worked together with a local organization called Children of the Dawn, which are committed to aiding vulnerable children, on supporting HIV/aids orphans and providing them with a better future. The Children of the Dawn organization itself is being supported by the Dutch organization Children's Fund MAMAS. On the 24th September, the team of MCC was welcomed by the members of Children of the Dawn. And what a welcome it was. There was a parade and lunch at the Chief's house. A great start of the mission.

The team consisted of Ines von Rosenstiel, pediatrician and medical mission leader; Dorien Jakobs, child nurse and organizational mission leader; Erica van Maanen, general practitioner, Astrid Groenweg, child nurse, Yvonne Verdonk, child nurse, Ilja Huizinga, HR manager of defense, Renske te Riet Scholten, tropical doctor in training, Janske Lock, preventive youth health physician, Felix Dikken, pediatrician, Saskia Boterenbrood, psychomotor therapist, Carmen de Jong, pediatrician in training; and Nadia Koster, resident pediatrics.

Between the first and the second mission was a gap due to the derailment of the world by the COVID-19 pandemic.The fallout from the COVID-19 pandemic goes far beyond that of a viral infection and threatens to undo decades of hard-won progress in healthcare. While it is important to understand the direct effects of the virus which affected a small proportion of children, we should not forget about all the collateral damages that this

pandemic had and still has on many children and their caregivers. The impact on nutrition and lifestyle is one of the submerged parts of this iceberg with potential intergenerational consequences. In our mission we noticed the COVID-19 impact in the fact that a large percentage of the children missed out on their regular anti-worm treatment and vaccination schedule.

From September 25th until October 1st 2022, the MCC team checked and treated 887 children, most of them aged newborn to 12 years. Aside from basic healthcare there was also room for health education for the children and their caretakers.

The check sites, local schools, were located surrounding Matatiele: Masakala, Caba, Luxeni and Zwelitsha. On these sides the school children as well as children surrounding the school were welcome. Of the 887 children, 26% of these children were anemic. Partly due to nutritional programs at schools in South Africa, there was a relatively low percentage of malnourished children (4% underweight ; 6% stunting ; 1% wasting). South Africa also has a deworming program, except due to the covid pandemic, less than 48% of the children had received the deworming treatment in the last six months. Of the checked children, 84 (9%) were treated on side for acute worm infections. An example of diagnosis given during the mission: pneumonia (N=40), acute tonsillitis (N=21), asthma (N=10), referrals to TB clinic (N=3), eye infection (N=14), skin deformation (N=77), learning disability/developmental delay (N=24), pathological heart murmur (N=2). Furthermore, at least 4% of the children showed symptoms of vitamin deficiency.

Of the 887 children, 114 were referred for further testing, treatment or support. This number, the number of referrals, is far greater (1 in 8 children) than during the medical mission in 2019. It was striking to see six children with cerebral palsy with multiple severe contractures and other comorbidities.

The MCC team was utmost grateful for the cooperation with Nandipha Magqashela, who together with her team prepared the mission down to the last detail. She received support from Palesa Matuludi, CEO of Children of the Dawn. Together with the help of local volunteers and retired nurses, under the strong and protective wings of Kitso Maragelo (Letcee partner), they've helped to make this mission an utmost success.

Before the mission took off, money and supplies were raised in our home country with several fundraisers, for example at the retirement party of Felix Dikken. A large sum was donated by an organization selflessly committed to the cause. Thanks to passionate volunteers in the Netherlands hundreds of toothbrushes, stickers, and toys were collected. A special thanks to the ladies who passionately knitted hundreds and hundreds of woolen hats and scarfs. The money is going to be used for the aftercare projects in Matatiele if necessary. We are very grateful for all the love and support that we received upfront, during and after the mission.

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 hemoglobin
4. Physical examination
5. Giving medication and education about the correct use of it (pharmacy)
6. Education on hygiene and tooth brushing (a toothbrush 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 hemoglobin (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 analyzed through the MCC database.

1. Finger prick sample [1]

[1] All photos courtesy of the photographer

3. General information on the different locations

At the different locations we checked children who were included in the Children of the Dawn program and great numbers of children from the three main wards. During the mission in Matatiele, MCC saw 887 children in total from different locations.It is notable that the percentage of children of >10 years of age were more prevalent than the mission in 2019. The most important findings are described below. More detailed tables of the findings given can be found in Appendix 1.

2. Doctor's station[1]

Program:

Day 1: Masakala
Day 2: Caba
Day 3: Caba
Day 4: Luxeni
Day 5: Luxeni
Day 6: Zwelitsha

3. Surroundings[1]

Children and their caretakers visited the check sides on different locations as listed below in Table 1.

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

Location	**25-09-22**	**26-09-22**	**27-09-22**	**28-09-22**	**29-09-22**	**30-09-22**	**Total**
Luxeni	0	0	0	194	130	0	0
Caba	0	169	99	0	0	0	0
Zwelitsha	0	0	0	0	0	155	0
Masakala	140	0	0	0	0	0	0
Total	**140**	**169**	**99**	**194**	**130**	**155**	**887**

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

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
Age	**N**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
<=1 year	77	9%	19	6%	30	11%	15	10%	13	9%
>1 en <5 years	187	21%	68	21%	63	24%	30	19%	26	19%
<5 years	252	28%	84	26%	86	32%	45	29%	37	26%
>=5 en <=10 years	422	48%	153	47%	119	44%	77	50%	73	52%
>10 years	212	24%	87	27%	62	23%	33	21%	30	21%
Gender										
Boy	429	48%	139	43%	140	52%	74	48%	76	54%
Girl	456	51%	185	57%	128	48%	81	52%	62	44%

4. Specific diagnoses

The statistics of the respiratory, cardiovascular, ETN eye, and skin problems were comparable to the numbers in 2019, with an exception of the clinical pneumoniae treated with antibiotics.

1. Growth abnormality and malnutrition

Malnutrition 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 [1]. It is reported that over one -third of child deaths in South-Africa are due to undernutrition, mostly from increased severity of disease [2].

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 undermines 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 Matatiele which we have visited for our medical mission, 5% of the children were classified as underweight, 7% 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 6%of children are underweight, 13% are stunting and 5% are wasting. These statistics are remarkable in comparison with the COVID-19 poverty numbers. This could maybe be explained by the efforts of the food programs from Children of the Dawn and The Mama's. All the children who could not be grouped in one of the WHO definitions because of the age limitations as noted above, were categorized as 'unknown' when analyzing the data.

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

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 characterized by the coexistence of undernutrition along with overweight and obesity. Pediatric obesity and stunting are both risk factors for metabolic syndrome and diseases in adulthood[3].The screening on obesitas is not yet standardized within the mission, yet there was an increasing number of children with overnutrition in the form of overweight and obesity seen during the mission.

[3] Kimani-Murage, Elizabeth W., et al. "The prevalence of stunting, overweight and obesity, and metabolic disease risk in rural South African children." *BMC public health* 10.1 (2010): 158.

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

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Underweight	27	4%	8	3%	6	3%	4	4%	9	8%
No underweight	635	95%	231	95%	202	97%	107	96%	95	90%
Unknown	220		82		60		44		34	
Underweight children per age										
<=1 year	3	4%	2	11%	0	0%	1	7%	0	0%
>1 en <5 years	8	4%	4	6%	1	2%	0	0%	3	12%
<5 years	10	4%	5	6%	1	1%	1	2%	3	8%
>=5 en <=10 years	17	4%	3	2%	5	4%	3	5%	6	9%
>10 years	0	0%	0	0%	0	0%	0	0%	0	0%
Underweight children per gender										
Boy	14	4%	5	5%	1	1%	1	2%	7	11%
Girl	13	4%	3	2%	5	5%	3	5%	2	5%

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

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Stunting	57	6%	22	7%	10	4%	9	6%	16	11%
No stunting	823	93%	297	92%	258	96%	146	94%	122	87%
Unknown	2		2		0		0		0	0%
Stunting children per age										
<=1 year	9	12%	3	16%	1	3%	4	27%	1	8%
>1 en <5 years	20	11%	7	10%	2	3%	1	3%	10	38%
<5 years	28	11%	9	11%	3	3%	5	11%	11	30%
>=5 en <=10 years	10	2%	4	3%	1	1%	2	3%	3	4%
>10 years	19	9%	9	11%	6	10%	2	6%	2	7%
Stunting children per gender										
Boy	29	7%	14	10%	3	2%	3	4%	9	12%
Girl	28	6%	8	4%	7	5%	6	7%	7	11%

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

	Total		Luxeni		Caba		Zwelitsha		Masakala	
	887		Total= 324		Total= 268		Total= 155		Total= 140	
	N	%	n	%	n	%	n	%	n	%
Wasting	8	2%	4	4%	2	1%	2	2%	0	0%
No wasting	405	97%	93	93%	150	99%	81	98%	81	98%
Unknown	469		224		116		72		57	41%
Wasting children per age										
<=1 year	1	1%	0	0%	0	0%	1	7%	0	0%
>1 en <5 years	2	1%	2	4%	0	0%	0	0%	0	0%
<5 years	3	1%	2	3%	0	0%	1	2%	0	0%
>=5 en <=10 years	5	3%	2	6%	2	3%	1	3%	0	0%
>10 years	0	0%	0	0%	0	0%	0	0%	0	0%
Wasting children per gender										
Boy	2	1%	1	3%	0	0%	1	2%	0	0%
Girl	6	3%	3	5%	2	3%	1	3%	0	0%

Suggestions:

- MCC advises to execute the strategy to ensure appropriate nutrition during the first 3 years of a child's life. (Nurturing Care Framework)
- MCC advises a fortified cooked porridge breakfast besides the NSNP to all Quintile 1 – 2 schools.
- Strengthen awareness for the paradox of double burden of malnutrition in rural South Africa
- MCC advises promotion and emphasis on creating healthy habits
- MCC advises promotion of physical education in schools and education about less ultra processed foods to tackle the double burden

2. Anemia

Globally, anemia among under-five children is a serious public health problem. The causes for anemia among under-five children are complex. Among these, low birth weight, undernutrition, poor socioeconomic status, household food insecurity, duration of breastfeeding, poor dietary iron intake, poor maternal educational status, diarrhea, fever, poverty, poor sanitation and hygiene, monotonous diet, parent's level of education, and maternal anemia were the commonest contributors for under-five anemia. The rapid growth and cognitive development of children make them more vulnerable for the development of anemia. The consequences of iron deficiency anemia (IDA) during childhood include growth retardation, reduced school achievement, impaired motor and cognitive development, and increased morbidity and mortality. Mental impairments at an early age are thought to be irreversible and the consequences may continue even after treatment, reinforcing the importance of early detection and prevention.

In general, the prevalence of anemia seems to drop. In the South African National Health and Nutrition Survey, 2012 (Sanhanes -1 study) the prevalence of anemia was 10.7% (children under five years of age) (see figure 1 from the Sahanes -1 study) . The huge decrease is correlated to the beneficial effect of the Food Fortification Program.

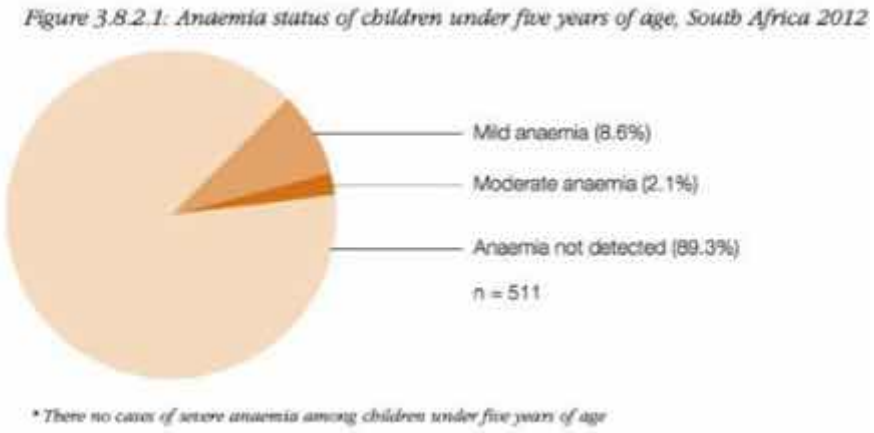

Figure 1: Anemia status of children under five years of age, South Africa 2012 [4]

Anemia is always multifactorial in cause. Household factors are important when considering malnutrition and anemia. A study on the diversity of the diet of the population in Eastern Cape showed [5]:

The diagnosis anemia was made in 227 of the 887 children (26%) eligible for testing their blood. Of the children under five , 23% were 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. If we take a closer look at the differences between the three visited wards, we see a remarkable difference. Masakala has a remarkably high prevalence of anemia of 39% in comparison with the other locations. For example Zwelitsha has a prevalence of 16%. For the future it will be interesting to explore the possible causes of this difference.

In five children 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. There was one teenager, 15 years old, who suffered from a severe anemia of 1.9 mmol/L and was later diagnosed with leukemia. He received a blood transfusion and started the leukemia treatment in Dora Nginza Hospital . During his dark times his mother stayed by his bedside constantly. Acting as a pillar of strength to guide her son through his treatment. Strong support was also given by Nandipha Magqashela (Children of the Dawn) who kept a lifeline with the family and gave updates to the other members of our team.

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[4] The South African National Health and Nutrition Survey, 2012 (SANHANES-1 study)
[5] Labadarios, Demetre, Nelia Patricia Steyn, and Johanna Nel. "How diverse is the diet of adult South Africans?." Nutrition journal 10.1 (2011): 33.

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

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

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Anemia	227	26%	88	27%	61	23%	24	16%	54	39%
No anemia	652	74%	235	73%	205	77%	129	84%	83	59%
Unknown	6		1		2		2		1	1%
Hb <5,0 mmol	5	1%	0	0%	2	1%	1	1%	2	1%
Anemia per age										
<=1 year	14	18%	5	26%	4	13%	2	13%	3	23%
>1 en <5 years	46	25%	20	29%	10	16%	5	17%	11	42%
<5 years	58	23%	25	30%	13	15%	7	16%	13	35%
>=5 en <=10 years	119	28%	43	28%	31	26%	12	16%	33	45%
>10 years	50	24%	20	23%	17	27%	5	15%	8	27%
Anemia per gender										
Boy	117	27%	37	27%	34	24%	15	20%	31	41%
Girl	110	24%	51	28%	27	21%	9	11%	23	37%

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

3. Worm infections

Worm infection is imposing an unnecessary burden on many South-African children and on the overall cost of healthcare. Disadvantaged children carry most of the load, especially those who live in densely populated and underserved urban informal settlements, as well as in some rural areas. The presence of intestinal parasites in a population group is indicative of lack of proper sanitation, low economic standards and poor educational background. 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, diarrhea, intestinal obstruction, anemia, ulcers and various other health problems. Heavy, prolonged infection adversely affectsgrowth, 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 South-African Department of Health has launched a national deworming program 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. As stated before, there was a dramatic decrease in children who received the preventive anti-worm treatment in the checked areas. Only 26%of the children (235/887) had received anti -worm treatment in the last half year, in comparison to 76% in 2019. These numbers confirm the disruption in service delivery, service access and child wellbeing as a consequence of the COVID-19 pandemic. Due to the shockingly high number of children in need of preventive anti-worm treatment the MCC supplies had to be refilled during the mission. All of the children who had not received anti-worm treatment were dewormed on the spot. Children with severe acute worm infections were treated with albendazole during three consecutive days.

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

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Anti-worm	235	26%	82	25%	68	25%	48	31%	37	26%
No anti-worm	650	73%	242	75%	200	75%	107	69%	101	72%
Unknown	0		0		0		0		0	
Anti-worm per age										
<=1 year	21	27%	5	26%	7	23%	6	40%	3	23%
>1 en <5 years	85	45%	34	50%	22	35%	17	57%	12	46%
<5 years	101	40%	37	44%	26	30%	23	51%	15	41%
>=5 en <=10 years	100	24%	34	22%	30	25%	20	26%	16	22%
>10 years	34	16%	11	13%	12	19%	5	15%	6	20%

Suggestion:

- MCC advises to continue the *community delivery strategy* of anti -worm medication : twice a year one tablet of mebendazol 500 mg.
- MCC advises to optimize the community delivery strategy of anti-worm medication in cooperation with the department of health by implementing training for teachers and other school personnel who will hand out the medication

[6] South Africa: Government Launches Deworming Programme for Learners. 29 feb 2016. http://allafric a.c om/stories/201603010156.html

4. Psycho- social, emotional and mental health - developmental disabilities.

Mental health problems in childhood and adolescence pose a major threat to public health. Epidemiological studies in high, middle and low income countries indicate that approximately one in five children and adolescents suffer from a mental disorder. In many instances these persist into adulthood. In South Africa, HIV infection, substance use, and exposure to violence increase vulnerability to mental disorder.

COVID-19 has put the mental health and well-being of an entire generation at even greater risk. The disruption of their routines, education, recreation, as well as concern for family income and health, is leaving many young people feeling afraid, angry and anxious for their future.Therefore special emphasis was put on the mental and emotional well being of the children checked. Recent numbers given by UNICEF highlights this problem.[7] Anxiety and depression made up about 40% of diagnosed mental disorders; the others include attention deficit/hyperactivity disorder, conduct disorder, intellectual disability, bipolar disorder, eating disorders, autism, schizophrenia, and a group of personality disorders. Roughly 50 children were helped by social workers from Children of the Dawn, either directly on the spot or in the referral process later on. There were appalling cases of domestic violence, sexual abuse, and other ACEs (adverse childhood experiences)

Suggestions:

- MCC advocates for an approach to prevention, risk reduction and early intervention for traumatized youth.
- MCC advocates delivery of social health services from skilled socials workers like Nandipha Magqashela (Children of the Dawn)
- MCC sincerely advocates building an infrastructure for preventive and curative interventions

[7] Highlighting the importance of child and adolescent mental health. Child Cauge 2022. UNICEF South Africa.

5. Cerebral Palsy (CP)

During our medical camp we encountered a considerable number of special needs children. There were a group of children (nine in total) with (spastic) cerebral palsy which suffered from severe contractures and were clearly in pain. The sight of these children suffering was almost unbearable. This brought up a call to action for optimizing the treatment for these children and support for their families. Intervention programs should focus not only on the child's (motor and mental) development, but also on the quality of life, stress and knowledge for caregivers; and social participation together with knowledge and attitudes towards children with cerebral palsy in the communities.

Little has been published about cerebral palsy in South Africa. There remain large gaps in the knowledge of its etiology, risk factors and prevalence. It seems that (most preventable) conditions such as (perinatal) asphyxia, kernicterus, and neonatal infections of the central nervous system are causes of cerebral palsy in South Africa.[8]

4. Girl with CP carried by her father [1]

The development of contractures is a common problem in people with cerebral palsy. Specialist treatment on a regular basis is needed with for example physiotherapists to treat and prevent these contractures. Providing and going to these treatments can be very challenging for families in most parts of South Africa due to for example financial and logistic challenges. Parents are an untapped resource in rural areas. To teach parents the basic rehabilitation techniques for contractures for example, may be more plausible than a system that demands parents regularly bring children to a hospital.

5. Children with CP and severe spasticity accompanied by their loving caretakers [1]

Muscle relaxants are an important adjunct in CP therapy and are crucial in treatment of pain, as well as enabling participation in other forms of treatments. Baclofen is such a muscle relaxant. It can be helpful for spasticity management. Baclofen will help temporarily relieve high muscle tone. This makes it possible to practice movements (with correct form)and eases the pain.[9]

Suggestions:

- MCC advises involving the caretakers and specialist therapists in basic rehabilitation techniques to treat and prevent contractures.
- MCC investigates possibilities to deliver Baclofen tablets to the families as a treatment for the severe contractures to ease the pain and create a window of opportunity to train daily movements.An important condition for implementation of baclofen support free of charge is monitoring by local doctors,who may increase the dose as needed or tolerated.
- MCC donates two wheel chairs
- Supporting NGOs as 'Cerebral Palsy Africa' in their battle to prevent cerebral palsy.
- Involvement of a local neurologist is a prerequisite for the program rollout

[8] Burton A. Fighting cerebral palsy in Africa. Lancet Neurol. 2015 Sep;14(9):876-7. doi: 10.1016/S1474-4422(15)00189-1. PMID: 26293560.

[9] Peck J, Urits I, Crane J, McNally A, Noor N, Patel M, Berger AA, Cornett EM, Kassem H, Kaye AD, Viswanath O. Oral Muscle Relaxants for the Treatment of Chronic Pain Associated with Cerebral Palsy. Psychopharmacol Bull. 2020 Oct 15;50(4 Suppl 1):142-162. PMID: 33633423; PMCID: PMC7901132.

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 mobilize 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[10].

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

Responsive caregiving

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. Only 9 (1 %) of the children did not have a caretaker present at the day of the medical check (table 8) . We were very pleased with this high attendance of caretakers . When there was no caretaker around, some medication was distributed by the regional field worker to the specific families . A high number of grandparents or extended family members were more commonly involved in the care of young children bringing them to the medical checks. In South Africa work migration, absent 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		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
No	9	1%	2	1%	0	0%	2	1%	5	4%
Yes	876	99%	322	99%	268	100%	153	99%	133	95%
Teacher	0	0%	0	0%	0	0%	0	0%	0	0%

Table 9: Children checked in 2019?

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
No	823	93%	324	100%	259	97%	155	100%	85	61%
Yes	38	4%	0	0%	0	0%	0	0%	38	27%
Unknown	24	3%	0	0%	9	3%	0	0%	15	11%

6. Referrals

During MCC's visit to the rural areas around Matatiele, a list was made for children needing referral for further diagnosis and/or treatment for suspected pathologies. There was a remarkable total of 147/887 children who were referred by MCC for follow -up. A tripling of the number seen in 2019! This was mainly due to the high number of special needs children and children with learning and behavioral problems. MCC has deep respect for the efforts made by the team of Children of the Dawn for their hard work and commitment in following up these children and their families. To this date we have received regular updates of the referrals.

Suggestions:

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

Table 10: Follow -up of all children per geographical location

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Dentist	68	8%	23	7%	26	10%	7	5%	12	9%
Specialist in hospital	41	5%	15	5%	20	7%	4	3%	2	1%
Revisit	5	1%	0	0%	5	2%	0	0%	0	0%
Social program	74	8%	35	11%	28	10%	7	5%	4	3%
Diagnostics (HIV/Malaria)	6	1%	3	1%	1	0%	2	1%	0	0%
Bloodtest after 3 months	2	0%	0	0%	0	0%	1	1%	1	1%
Other…	19	2%	7	2%	8	3%	4	3%	0	0%

7. Treatment

Apart from the higher number of distributed antibiotics (due to the high number of clinical pneumoniae) there were no large differences compared to 2019.

Table 11: Treatment among all children per geographical location

	Total		**Luxeni**		**Caba**		**Zwelitsha**		**Masakala**	
	887		**Total= 324**		**Total= 268**		**Total= 155**		**Total= 140**	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
ferro	3	0%	0	0%	1	0%	1	1%	1	1%
mother iron	4	0%	1	0%	2	1%	0	0%	1	1%
multivitamins	383	43%	149	46%	96	36%	72	46%	66	47%
vitamin C	75	8%	47	15%	0	0%	28	18%	0	0%
anti-worm	458	52%	181	56%	163	61%	37	24%	77	55%
acute worm	84	9%	18	6%	32	12%	5	3%	29	21%
anti-scabies	12	1%	3	1%	8	3%	1	1%	0	0%
amoxicillin	64	7%	17	5%	13	5%	18	12%	16	11%
augmentin	27	3%	11	3%	7	3%	6	4%	3	2%
2e lijns antibiotica	4	0%	0	0%	0	0%	3	2%	1	1%
Ivermectine for lice	7	1%	5	2%	1	0%	0	0%	1	1%
metranidazol	1	0%	0	0%	0	0%	0	0%	1	1%
co-trimoxazol	3	0%	2	1%	1	0%	0	0%	0	0%
paracetamol	15	2%	9	3%	5	2%	0	0%	1	1%
ORS	2	0%	0	0%	0	0%	1	1%	1	1%
eardrops	2	0%	1	0%	1	0%	0	0%	0	0%
mupirocine=Bactroban	8	1%	4	1%	0	0%	0	0%	4	3%
hydrocortisone cream	10	1%	3	1%	4	1%	2	1%	1	1%
dactarin cream	53	6%	16	5%	15	6%	12	8%	10	7%
dactacort cream	1	0%	1	0%	0	0%	0	0%	0	0%
fusidin cream	1	0%	0	0%	0	0%	1	1%	0	0%
neutral cream	8	1%	1	0%	2	1%	5	3%	0	0%
griseofulvin	84	9%	40	12%	31	12%	13	8%	0	0%
eyedrops	37	4%	16	5%	7	3%	8	5%	6	4%

8. Conclusions and recommendations

We feel grateful for the amazing support from all the professionals, outreach volunteers, the highly qualified retired nurses and staff from Matatiele. We are excited to continue our close collaboration with all the stakeholders and will monitor the referrals in the coming months.

To summarize our suggestions from the chapters:

- MCC advises to execute the strategy to ensure appropriate nutrition during the first 3 years of a child's life. (Nurturing Care Framework)
- MCC advises a fortified cooked porridge breakfast besides the NSNP to all Quintile 1 – 2 schools.
- Strengthen awareness for the paradox of double burden of malnutrition in rural South Africa
- MCC advises promotion and emphasis on creating healthy habits
- MCC advises promotion of physical education in schools and education about less ultra processed foods to tackle the double burden
- 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
- MCC advises to continue the *community delivery strategy* of anti -worm medication : twice a year one tablet of mebendazol 500 mg.
- MCC advises to optimize the community delivery strategy of anti-worm medication in cooperation with the department of health by implementing training for teachers and other school personnel who will hand out the medication
- MCC advocates for an approach to prevention, risk reduction and early intervention for traumatized youth.
- MCC advocates delivery of social health services from skilled socials workers like Nandipha Magqashela (Children of the Dawn)
- MCC sincerely advocates building an infrastructure for preventive and curative interventions
- MCC advises involving the caretakers and specialist therapists in basic rehabilitation techniques to treat and prevent contractures.
- MCC investigates possibilities to deliver Baclofen tablets to the families as a treatment for the severe contractures to ease the pain and create a window of opportunity to train daily movements.An important condition for implementation of baclofen support free of charge is monitoring by local doctors,who may increase the dose as needed or tolerated.
- MCC donates two wheel chairs
- Supporting NGOs as 'Cerebral Palsy Africa' in their battle to prevent cerebral palsy.
- Involvement of a local neurologist is a prerequisite for the program rollout
- Active collaboration with the Department of Health and Children of the Dawn is essential in developing interventions to strengthen referral processes as a means to improve the quality of life for disadvantaged and vulnerable children.

Finally, 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.

We will be back in October 2023!

MCC South Africa Eastern Cape
September - October 2022

On behalf of the MCC Matatiele team 2022

9. Appendices

Appendix 1:

Table 12: Disease prevalence among all children per geographical location

	Total		Luxeni		Caba		Zwelitsha		Masakala	
	887		Total= 324		Total= 268		Total= 155		Total= 140	
	N	%	n	%	n	%	n	%	n	%
Underweight	27	3%	8	2%	6	2%	4	3%	9	6%
Stunting	57	6%	22	7%	10	4%	9	6%	16	11%
Wasting	8	1%	4	1%	2	1%	2	1%	0	0%
Anaemia	227	26%	88	27%	61	23%	24	15%	54	39%
HIV pos.	1	0%	1	0%	0	0%	0	0%	0	0%
AIDS	1	0%	0	0%	0	0%	0	0%	1	1%
vitamin deficit (clin. signs)	38	4%	17	5%	9	3%	8	5%	4	3%
HIV/AIDS (suspected)	1	0%	0	0%	0	0%	1	1%	0	0%
Abuse/neglect	9	1%	7	2%	2	1%	0	0%	0	0%
syndrome n.o.s.	1	0%	0	0%	1	0%	0	0%	0	0%
pneumonia (clinical)	40	5%	11	3%	7	3%	11	7%	11	8%
pneumonia (X-ray conf)	1	0%	1	0%	0	0%	0	0%	0	0%
tuberculosis (clinical)	3	0%	2	1%	1	0%	0	0%	0	0%
bronchitis	3	0%	2	1%	0	0%	1	1%	0	0%
BHR/asthma	10	1%	2	1%	5	2%	2	1%	1	1%
dehydration acute diarrhoea	1	0%	0	0%	0	0%	1	1%	0	0%
diarrhoea without dehydration	3	0%	2	1%	0	0%	0	0%	1	1%
constipation	3	0%	0	0%	2	1%	1	1%	0	0%
active worm infection	84	9%	18	6%	29	11%	9	6%	28	20%
otitis media acuta	10	1%	3	1%	2	1%	3	2%	2	1%
otitis media with effusion	7	1%	2	1%	2	1%	0	0%	3	2%
otitis externa	1	0%	0	0%	0	0%	1	1%	0	0%
tympanic perforation	1	0%	0	0%	0	0%	0	0%	1	1%
(adeno)tonsillitis	21	2%	7	2%	7	3%	7	5%	0	0%
candida stomatitis	2	0%	1	0%	1	0%	0	0%	0	0%
sinusitis	8	1%	2	1%	4	1%	1	1%	1	1%
hearing impairment	9	1%	1	0%	4	1%	2	1%	2	1%
other	17	2%	5	2%	3	1%	6	4%	3	2%
cariës n.o.s.	186	21%	79	24%	55	21%	30	19%	22	16%
pain n.o.s	3	0%	0	0%	2	1%	0	0%	1	1%
caries with pain	79	9%	26	8%	32	12%	6	4%	15	11%
other	6	1%	1	0%	0	0%	2	1%	3	2%
wounds n.o.s.	6	1%	1	0%	0	0%	2	1%	3	2%
eczema n.o.s.	11	1%	2	1%	3	1%	5	3%	1	1%
dermatomycosis	44	5%	16	5%	9	3%	10	6%	9	6%
Impetigo/furunculosis	6	1%	3	1%	0	0%	1	1%	2	1%
lice	1	0%	0	0%	1	0%	0	0%	0	0%
scabies	30	3%	15	5%	13	5%	1	1%	1	1%
Tinea Capitis	91	10%	41	13%	33	12%	14	9%	3	2%
wounds infected,	2	0%	1	0%	0	0%	0	0%	1	1%
insect bite	1	0%	1	0%	0	0%	0	0%	0	0%
other (psoriasis etc)	15	2%	4	1%	7	3%	0	0%	4	3%
psychomotoric retardation	24	3%	12	4%	6	2%	4	3%	2	1%
hypertonia	6	1%	5	2%	1	0%	0	0%	0	0%
epilepsy	9	1%	4	1%	1	0%	3	2%	1	1%

MCC South Africa Eastern Cape
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	Total		Luxeni		Caba		Zwelitsha		Masakala	
	887		Total= 324		Total= 268		Total= 155		Total= 140	
	N	%	n	%	n	%	n	%	n	%
migraine/headache	8	1%	0	0%	5	2%	3	2%	0	0%
leg kramps	2	0%	2	1%	0	0%	0	0%	0	0%
physiological murmer	2	0%	0	0%	1	0%	1	1%	0	0%
pathological murmur (suspected)	1	0%	0	0%	1	0%	0	0%	0	0%
refractory problem	5	1%	1	0%	2	1%	2	1%	0	0%
strabismus	2	0%	2	1%	0	0%	0	0%	0	0%
keratoconjunctivitis	34	4%	13	4%	7	3%	10	6%	4	3%
obesitas	10	1%	4	1%	4	1%	1	1%	1	1%
inguinal hernia	2	0%	1	0%	0	0%	0	0%	1	1%
urinary infection	3	0%	2	1%	1	0%	0	0%	0	0%
artralgia n.o.s.	1	0%	0	0%	1	0%	0	0%	0	0%
septic arthritis	1	0%	0	0%	1	0%	0	0%	0	0%
hernia(umbilical etc)	6	1%	2	1%	2	1%	0	0%	2	1%