

Medical Report

Kenya Nairobi 2018

Medical Checks for Children



Introduction

From March 19th until March 24th 2018, a new Medical Checks for Children (MCC) team visited different schools and other locations in Nairobi and Nyeri. Free of cost, the MCC team checked and, as needed, treated 948 children, newborns to teenagers.

The team included:

- Nadine van Dijk, emergency physician, mission leader, responsible for medical issues & organization
- Carolien Siersma, pediatrician - pediatric ICU, mission leader, responsible for medical issues & organization
- Natasja Kruger, general pediatrician
- Jolijn van der Zande, medical doctor, resident in pediatrics
- Roos van Amerongen, medical doctor
- Janneke Boers, pediatric nurse
- Lisa Zwiers, pediatric nurse
- Marriëtte Pullen, theologian
- Carine de Bruijne, physical therapist

As in former years our host patron during this medical camp was Archbishop Makarios, Head of the Orthodox Seminary in Riruta, Nairobi. The checks were organized in close collaboration with the Sophia Foundation for Children (SFFC, www.sophia-foundation.com).

Since the first explorative checks in Nairobi in 2008, yearly successful checks have been performed at different locations.

Technical equipment, medical supplies and toothbrushes were brought in from the Netherlands by our team members. Most of the medication was ordered by SFFC and supplied by the main Kenyan pharmacy in Nairobi.



The cooperation with the Sophia Foundation for Children and Archbishop Makarios existed amongst others out of the following

- Transfer of knowledge about expected problems and diseases, partly by experienced earlier work in Kenya
- Transfer of data on demographics
- Selection of primary schools and other check locations (orphanage, refugee camp)
- Accommodation arrangement around check locations
- Transportation of the MCC team
- Prior announcement of the medical camps at the different locations
- Ordering and delivery of medication
- Supporting the medical team during the medical camp
- Management of referrals and (pre)payment of in- & outpatient hospital costs (at Riruta Clinic Nyeri and Coptic Hospital Nairobi), during and after medical check dates.

The MCC team was again delighted with the cooperation with Archbishop Makarios and the experienced input of the Sophia Foundation for Children. We would especially like to thank Marina Shacola, Nopi Telemachou, Marinos Constandinou, David Alimasi, Nelson Aderi, Gerald Mochirien,

Hesbon Aderi, and Lameck Koech, for their work and support during our medical camp. Further regards go to all teachers and translators at the different locations, volunteers and the local community. We are grateful to have had the opportunity to work with and learn from all these inspiring people who have helped us directly or indirectly. And last but not least of course thank you to all of the children for their happiness and smile, and their care takers for the trust they put in us.

Medical Checks for Children on location

The medical checks were performed on 6 days at 7 different locations in Nairobi and Nyeri. Apart from the children at the schools the team checked children brought in from the community by their care takers.

The different schools & communities checked during this year's medical camp were:

- St George School and nearby community, Nairobi
- St Clemens School and nearby community, Nairobi
- Jamii School, Nairobi
- Makarios Orphanage and School and nearby community, Nyeri
- Ndunduini School and nearby community, Nyeri
- Jambo Rescue Center, Nyeri
- Kangaroo School and nearby community, Nairobi
- children brought in from the Congolese refugee community

During the medical camp the children were checked according to the MCC carousel:

1. Registration
2. Anthropometric measurements (height and weight)
3. Blood testing for anemia (hemoglobin), urine testing if needed, and malaria checkup when indicated
4. Health check by one of the medical doctors
5. Providing medication at the pharmacy (included explaining their mode of use their teachers & caretakers)
6. Education about nutritious food and water intake, tooth brushing (every child was given a toothbrush) and hand washing

At each station special attention is focused on hygiene, drinking water and good dietary habits, especially at the doctors and pharmacy. Furthermore attention focused on prevalence, treatment and prevention of anemia, growth abnormalities and infectious diseases. Children, caretakers and teachers were educated on good nutrition and hygiene measures.



Results medical camp

For data analysis purposes several data were pooled and subgroup analyses were performed. Statistical support for the observations in our report are not possible due to the small groups.

In total our MCC team checked 948 children (table 1).

	19-3	20-3	21-3	22-3	23-3	24-3	Total
St George				171	1		172
St Clemens	116					9	125
Jamii				2	119		121
Makarios home		86					86
Makarios school		136					136
Ndunduini			123				123
Jambo Rescue Center		29					29
Kangaroo						77	77
Congolese Refugee Community					26	53	79
Total	116	251	123	173	146	139	948

Table 1 Number of children checked at different locations

The St. George and St. Clemens schools in Kibera are supported by the Greek Orthodox Church in Africa. At St. George the Sophia Foundation for Children (SFFC) started a food program in 2009.

Makarios Children's Home is an orphanage founded and funded by SFFC, at which full board, clothing, health care, education and recreation is supplied.

Kangaroo School, a small school for refugees from Uganda in the slums of Nairobi, has been visited since 2014. It is not supported by any organization.

The Jambo Rescue Center nearby Nyeri is a small unsupported project where street children are taken care of. It is visited by MCC since 2015.

The unsupported Ndunduini School was checked for the third time this year. The Congolese Refugee Community visited our medical camp on two consecutive days during checks of Jamii and Kangaroo children.



	Total	≤ 1 year	1-5 years	<5 years	5-10 years	>10 years
St George	172	0	47 (27)	47 (27)	123 (72)	2 (1)
St Clemens	125	8 (6)	25 (20)	33 (26)	90 (72)	2 (2)
Jamii	121	0	34 (28)	34 (28)	85 (70)	2 (2)
Makarios home	86	0	5 (6)	5 (6)	26 (30)	55 (64)
Makarios school	136	1 (1)	14 (10)	15 (11)	76 (56)	45 (33)
Ndunduini	123	0	20 (16)	20 (16)	102 (83)	1 (1)
Jambo Rescue Center	29	0	1 (3)	1 (3)	11 (38)	17 (59)
Kangaroo	77	3 (4)	17 (22)	20 (26)	51 (66)	6 (8)
Congolese Refugee Community	79	16 (20)	19 (24)	35 (44)	39 (49)	5 (6)
	948	28 (3)	182 (19)	210 (22)	603 (64)	135 (14)

Table 2 Age distribution per location (% of total at location)

	Total	Boy	Girl
St George	172	82 (48)	90 (52)
St Clemens	125	61 (49)	64 (51)
Jamii	121	55 (45)	66 (55)
Makarios home	86	48 (56)	38 (44)
Makarios school	136	72 (53)	64 (47)
Ndunduini	123	63 (51)	60 (49)
Jambo Rescue Center	29	14 (48)	15 (52)
Kangaroo	77	44 (57)	33 (43)
Congolese Refugee Community	78	34 (43)	44 (56)
	947	473 (50)	474 (50)

Table 3 Gender distribution at location


Because we visit the schools for several consecutive years, we are able to follow-up on growth and development of part of these children. This year 446 (47%) of the checked children were also checked last year. (Table 4)

	Total	Yes (%)	No (%)
St George	172	91 (53)	81 (47)
St Clemens	123	55 (44)	68 (54)
Jamii	121	35 (29)	86 (71)
Makarios home	86	74 (86)	12 (14)
Makarios school	136	87 (64)	49 (36)
Ndunduini	123	79 (64)	44 (36)
Jambo Rescue Center	29	20 (69)	9 (31)
Kangaroo	77	5 (6)	72 (94)
Congolese Refugee Community	79	0	79 (100)
	946	446 (47)	500 (53)

Table 4 Children checked last year

Since health education and transfer of knowledge is one of the main goals of MCC, we believe attendance of care takers is of great importance. Therefore we are pleased to see that almost all children were accompanied by a parent or teacher. In that way we hope the knowledge will be used, transferred and thereby preserved. (Table 5)

	Total	Parent (%)	None (%)	Teacher (%)
St George	171	3 (2)	0	168 (98)
St Clemens	122	121 (97)	0	1 (1)
Jamii	121	0	0	121 (100)
Makarios home	86	86 (100)	0	0
Makarios school	136	107 (79)	27 (20)	2 (1)
Ndunduini	123	2 (2)	0	121 (98)
Jambo Rescue Center	29	29 (100)	0	0
Kangaroo	77	70 (91)	0	7 (9)
Congolese Refugee Community	79	77 (97)	1 (1)	1 (1)
	944	495 (52)	28 (3)	421 (44)

Table 5 Child accompanied by care taker at check

1. *Growth abnormality and malnutrition*

Growth retardation is correlated with poverty, malnutrition, poor living conditions, poor hygiene and the prevalence of chronic diseases. The major causes of malnutrition are lack of food, poor feeding habits and inadequate nutritional child care.

Malnutrition is related to poor cognitive and school performances. Also, there is strong evidence to suggest that malnutrition places children under the age of five years at increased risk of mortality. It is thought to account for one third of all deaths in children under five years of age (UN Millennium Developmental Goals).

Therefore school meals are provided, and educational programs for parents and teachers, addressing nutritious food and child care, are important activities during the checks. We assessed growth abnormalities, measuring weight and height in a standardized fashion, using the following criteria.



- *underweight*: weight for age at or under third percentile for the reference population (WHO growth curves, for children up to the age of 10 years). This is an indicator of malnutrition or weight loss due to disease.

- *stunting*: height for age at or under third percentile for the reference population (WHO growth curves, for children up to 19 years of age). This is an indicator of chronic malnutrition.

- *wasting*: weight for height at or under third percentile for the reference population (WHO growth curves, for children up to 120 cm in height). This is an indicator of acute malnutrition.

It also has to be noted that reference data are only available for certain heights, weights and ages, as specified above. This leads to the general prevalence of growth abnormalities as follows;

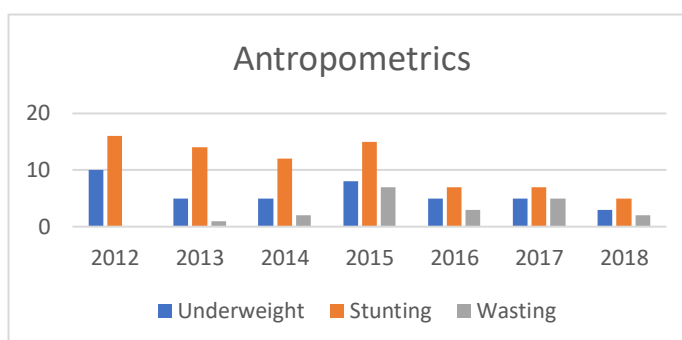


	Underweight	Stunting	Wasting
2018	3	5	2
2017	5	7	5
2016	5	7	3
2015	8	15	7
2014	5	12	2
2013	5	14	1
2012	10	16	

Percentages per year

A gradual decrement in percentages of all antropometric measurements, underweight, stunting and wasting, can be acknowledged over the checked years. Due to the relatively small numbers of children and low percentages at all locations decrements specified for different locations cannot be extracted.

Speculating on the possible explanation of these decrements, we hope it may at least in part be the result of our MCC efforts in educating on healthy nutritional habits and improved health of the children.



Nutritional status shows significant differences among the locations visited and between age groups (see also tables 5-11). The prevalence of HIV related underweight (wasting syndrome) is unknown and might be underestimated.

The higher prevalence of underweight and stunting at Makarios Home and School, and the Congolese Refugee Community, this year might be explained by the higher presence in these groupsof vulnerable children in (former) difficult living conditions.



Percentages of underweight, stunting as well as wasting declined at Jambo Rescue Home and Ndunduini in earlier years, and appear to be sustained or even improved a little in our 2018 check. It might, at least in part, be caused by raised attention to the importance of nutrition and feeding habits.

The abovementioned stresses the importance of adequate food intake and the impact of food programs like that provided by SFFC. We are confident that long term food programs at these locations will improve long term anthropometric data and physical wellbeing of these children.

During the medical checks we pay special attention to issues like hygiene and nutrition. We emphasize on

hand washing, and fruit & vegetable and water intake in order for the children to grow up healthy and strong. We noticed the habitude of mothers to feed their babies up to the age of one year, or even beyond, solely with breast milk.

For babies, we advised exclusive breastfeeding up to the age of six months, after which additional foods should be introduced. We are aware of the financial issues and scarcity of healthy foods because of drought. This is one of the most important reasons for MCC to link up and cooperate with organizations like SFFC, to facilitate and fund school lunches.

	Total	Yes (%)	No (%)	Unknown (%*)
St George	172	2 (1)	169 (99)	1 (1)
St Clemens	125	2 (2)	122 (98)	1 (1)
Jamii	121	2 (2)	119 (98)	0
Makarios home	86	8 (9)	78 (91)	0
Makarios school	135	7 (5)	127 (95)	1 (1)
Ndunduini	123	4 (3)	118 (97)	1 (1)
Jambo Rescue Center	29	1 (3)	28 (97)	0
Kangaroo	77	0	71 (100)	6 (8)
Congolese Refugee Community	79	4 (5)	70 (95)	5 (6)
	948	30	902	16

Table 6 Prevalence of underweight (weight/age <P3) (* % of total)

	Total	≤ 1 year (%)*	1-5 years (%)*	<5 years (%)*	5-10 years (%)*	>10 years (%)*
St George	172	0	1 (2)	1 (2)	1 (1)	0
St Clemens	125	0	1 (4)	1 (3)	1 (1)	0
Jamii	121	0	0	0	2 (2)	0
Makarios home	86	0	0	0	2 (8)	6 (11)
Makarios school	136	0	1 (7)	1 (7)	3 (4)	3 (7)
Ndunduini	123	0	1 (5)	1 (5)	3 (3)	0
Jambo Rescue Center	29	0	0	0	0	1 (6)
Kangaroo	77	0	0	0	0	0
Congolese Refugee Community	79	3 (19)	1 (5)	4 (11)	0	0§
	948	3 (11)	5 (3)	8 (4)	12 (2)	10 (8)

Table 7 Prevalence of underweight (weight/age <P3) by age

* Percentages presented of total children in age group at location

	Total	Yes (%)	No (%)	Unknown (%)
St George	172	6 (4)	165 (96)	1 (1)
St Clemens	125	2 (2)	123 (98)	0
Jamii	121	4 (3)	117 (97)	0
Makarios home	86	7 (8)	79 (92)	0
Makarios school	136	8 (6)	127 (94)	1 (1)
Ndunduini	123	7 (6)	116 (94)	0
Jambo Rescue Center	29	1 (3)	28 (97)	0
Kangaroo	77	3 (4)	74 (96)	0
Congolese Refugee Community	79	6 (8)	73 (92)	0
	948	44 (5)	902 (95)	2 (0)

Table 8 Prevalence of stunting (length/age <P3)

	Total	≤ 1 year (%)*	1-5 years (%)*	<5 95)years (%)*	5-10 years (%)*	>10 years (%)*
St George	172	0	0	0	6 (5)	0
St Clemens	125	0	0	0	1 (1)	1 (50)
Jamii	121	0	2 (6)	2 (6)	2 (2)	0
Makarios home	86	0	0	0	2 (8)	5 (9)
Makarios school	136	0	0	0	4 (5)	4 (9)
Ndunduini	123	0	0	0	6 (6)	1 (100)
Jambo Rescue Center	29	0	0	0	0	1 (6)
Kangaroo	77	1 (33)	2 (12)	3 (15)	0	0
Congolese Refugee Community	79	2 (13)	3 (16)	5 (14)	0	1 (20)
	948	3 (11)	7 (4)	10 (5)	21 (3)	13 (10)

Table 9 Prevalence of stunting (length/age <P3) by age

* Percentages presented of total children in age group at location



	Total	Yes (%)	No (%)	Unknown (%)
St George	172	2 (2)	114 (99)	56 (33)
St Clemens	125	0	118 (100)	7 (6)
Jamii	121	0	73 (100)	48 (40)
Makarios home	86	1 (1)	83 (99)	2 (2)
Makarios school	136	1 (1)	83 (99)	2 (2)
Ndunduini	123	1 (1)	134 (100)	1 (1)
Jambo Rescue Center	29	2 (2)	121 (98)	0
Kangaroo	77	2 (6)	32 (94)	43 (56)
Congolese Refugee Community	79	7 (14)	44 (86)	28 (35)
	948	16 (2)	748 (98)	187 (19)

Table 10 Prevalence of wasting (weight/length <P3)

	Total	≤ 1 year (%)*	1-5 years (%)*	<5 years (%)*	5-10 years (%)*	>10 years (%)*
St George	172	0	2 (4)	2 (4)	0	0
St Clemens	125	0	0	0	0	0
Jamii	121	0	0	0	0	0
Makarios home	86	0	0	0	0	1 (2)
Makarios school	136	0	0	0	0	1 (2)
Ndunduini	123	0	1 (5)	1 (5)	1 (1)	0
Jambo Rescue Center	29	0	0	0	0	0
Kangaroo	77	0	0	0	2 (14)	0
Congolese Refugee Community	79	3 (20)	2 (11)	5 (15)	2 (13)	0
	948	3 (11)	5 (3)	8 (4)	5 (1)	2 (2)

Table 11 Prevalence of wasting (weight/length <P3) by age

* Percentages presented of total children in age group at location



