medical checks for children

Medical Report Kenia, Nairobi 2015

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Introduction

From the 18th up to the 24th March 2014, a team of Medical Checks for Children (MCC) visited Nairobi, Naiwasha and Nyeri in Kenia by invitation of Cypriote non-profit organization Sophia Foundation for Children (SFFC, www.sophia-foundation.com). During the mission 1173 children got a free of cost medical check and treatment when needed.
In the last years MCC conducted an explorative mission in August 2008 to Nyeri and afterwards six missions to Nairobi and Nyeri.

The MCC mission KeNa15 team was headed by Karlien Bongers, medical-end-responsible and mission leader, general surgeon and Anne Vlietstra, organization-end-responsible, family doctor in daily life.
The four family doctors Adri van Mastrigt, Anneke Boekema, Ilonka Bruggeman and Toine van der Nooij; pediatric nurse Jankina Ligtvoet, manager Marie Jose van der Sandt; retired teacher Sonja Vlietstra and nurse Lissa van der Swaan completed the team.

Again, our host patron during the Kenia stay was Archbishop Makarios, head of the Orthodox Seminary in Riruta, Nairobi.
Technical equipment and some of the supplies were brought from Europe by the MCC team members.
Most of the medication was ordered through SFFC in Kenia.
The cooperation of the Sophia Foundation for Children and the Archbishop Makarios existed out of the following (amongst others):

- Transfer of data on demographics.
- Selection of primary schools and orphanages.
- Providing facilitating board and lodging of all MCC team members.
- Transportation of the MCC team from the airport and transportation to the check locations.
- Prior announcement of the medical camp in the locations.
- Ordering and delivery of medications.
- Giving all kinds of support to the MCC team during the medical camp.
- Managing facilitating and (pre)-payment of hospital in/out patient referrals to the Riruta Clinic and the Coptic Hospital in Nairobi.

The MCC team was delighted by the cooperation with Archbishop Makarios and the strong input of the Sophia Foundation for Children.
We like to thank Marina Shacola, Nopi Nicolaou Telemachou, Panyiota Panayiotou, Fani Loula, David Alimasi, Nelson Aderi, Hesbon Aderi, Gerasmus Mavisi and Gerald Mochirien for their hard work, their friendship and the sharing of dreams.

This medical report is a summery of the collected data during the medical camp and is focused on quantitative data. These quantitative data are only one way to look at results and it can not show all the huge improvements on individual and structural level we encountered this week

Medical Checks for Children on location:

The medical checks of the children were performed on seven days at different locations (see table 1).
St. Clemens school, St.George school in Kibera are supported by the Archbishop Makarios of the Greek Orthodox Church in Africa. At the St.George school, the Sophia Foundation for Children (SFFC) started a feeding program in 2009.
The Joy Spring school in Kibera is not structual supported by any organization, though they are involved in an deworming program of the World Health Organization (WHO).
Jamii Outreach is a small school In Kibera nearby St George and Joy spring which was visited for the first time in 2013.
In Navaisha we saw the vulnerable children of whom the local organization called Monica Memorial Development Centre for Needed Children (Mmemo) takes care for and depends on financial gifts of the local church and is supported through a feeding program by SFFC as well.
In Nyeri the MCC team checked the children from the Makarios Children Home supported by the Sophia Foundation for Children and children attending the local school also with a SFFC lunch program

	18-03-15	19-03-15	20-03-15	21-03-15	22-03-15	23-03-15	24-03-15	Total
Baraka	0	0	0	40	0	0	0	40
Jamii	0	0	0	0	0	0	86	86
Joyspring School	0	0	0	0	0	5	131	136
Kangaroo	0	163	0	0	0	0	0	163
Makarios	0	0	103	0	0	0	0	103
Monica	0	0	0	0	31	0	0	31
Naivasha	0	0	0	0	58	0	0	58
NLH	0	0	0	10	0	0	0	10
Nyeri	0	0	119	0	0	0	0	119
Rescue home	0	0	0	63	0	0	0	63
St Clemens	162	0	0	0	0	0	0	162
St George	0	0	0	0	0	202	0	202
Total	**162**	**163**	**222**	**113**	**89**	**207**	**217**	**1173**

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

After our first check in 2014 we visit again Kangaroo school, a small school for refugees from Uganda in the slums of Nairobi with no structural support of any organization.
In Nyeri, we visited three new locations: Baraka and Rescue Home are both small unsupported projects for street children and children from prison and New Life Trust Home (NHL), an orphanage were babies are taking care for before their adoption.
At the different locations we checked besides the schoolchildren some young non-school-going children from the neighborhood.

Since one of the main target of the MCC intervention is health education, it is important to see the children together with their care taker. On the different locations it is hard to have the care takers along with their children at the medical check and of cause we see children who don't have parents or where the parents are not around.
We are very happy at Kangaroo school 98%, Nyeri school 97% and St Clemens school 82% of the children came with a parent/caretaker(see table 2).

Table 2: Child with care taker at the day of the check?

	Total		**Baraka**		**Jamii**		**Joyspring School**		**Kangaroo**		**Makarios**		**Monica**		**Naivasha**		**NLH**		**Nyeri**		**Rescue home**		**St Clemens**		**St George**	
	1173		**40**		**86**		**136**		**163**		**103**		**31**		**58**		**10**		**119**		**63**		**162**		**202**	
No	35	3%	2	5%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	3	3%	1	2%	28	17%	0	0%
Yes	714	61%	38	95%	0	0%	3	2%	160	98%	103	100%	31	100%	57	98%	10	100%	116	97%	62	98%	133	82%	1	0%
Teacher	424	36%	0	0%	86	100%	133	98%	2	1%	0	0%	0	0%	1	2%	0	0%	0	0%	0	0%	1	1%	201	100%

Coming back on same locations as the years before, doesn't mean we check the same children. This year we checked 620 children (53%) for the first time(see table 3 for further details). In 2014 631 children (60%) were not been checked in the past.

Table 3: Children checked last year versus new in the medical camp

	Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
	1173		40		86		136		163		103		31		58		10		119		63		162		202	
No	620	53%	40	100%	54	63%	79	58%	136	83%	16	16%	9	29%	31	53%	10	100%	34	29%	63	100%	69	43%	79	39%
Yes	553	47%	0	0%	32	37%	57	42%	27	17%	87	84%	22	71%	27	47%	0	0%	85	71%	0	0%	93	57%	123	61%

We analyzed the data to make a comparison as a group but we did not make a computer analysis on individual basis.

Due to the high risk of mortality and morbidity under five years of age, the focus of MCC is checking young children.
Off all checked children, 30% of the children had the age under five (2012: 27%, 2013 38% 2014 25%), 5% were babies, 58% had an age between five and ten years and 12% was older than 10 years of age.
The age of the checked children was different at the different locations due to the setting (Kindergarten, school age, supporting vulnerable children).This makes the data from the different locations less comparable.
The relatively large group of older then 10 years of age is composed by the children in a special program/special location (Makarios home, Nyeri School, Rescue Home, Baraka and Naivasha). The older children at St Clement were selected by the teachers because of a specific medical problem/complaints.

In total the amount of checked boys (52%) was slightly higher than the amount of checked girls (48%). The percentage's of checked boy's and girls were different at the different locations (see table 4).

Table 4: Summary of checked children per geographical location, age and gender

	Total		Baraka		Jamii		Joyspring		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue		St Clemens		St George	
	1173		40		86		136		163		103		31		58		10		119		63		162		202	
Age	**N**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
≤1 year	56	5%	2	5%	1	1%	5	4%	18	11%	1	1%	0	0%	0	0%	10	100%	8	7%	3	5%	7	4%	1	0%
>1- <5 years	295	25%	4	10%	27	31%	52	38%	47	29%	4	4%	6	19%	7	12%	0	0%	23	19%	17	27%	18	11%	90	45%
<5 years	351	30%	6	15%	28	33%	57	42%	65	40%	5	5%	6	19%	7	12%	10	100%	31	26%	20	32%	25	15%	91	45%
≥5 - ≤10 years	677	58%	21	53%	58	67%	79	58%	96	59%	39	38%	23	74%	37	64%	0	0%	57	48%	27	43%	129	80%	111	55%
>10 years	145	12%	13	33%	0	0%	0	0%	2	1%	59	57%	2	6%	14	24%	0	0%	31	26%	16	25%	8	5%	0	0%
Gender																										
Boy	611	52%	22	55%	45	52%	69	51%	87	53%	57	55%	16	52%	29	50%	5	50%	56	47%	32	51%	89	55%	104	51%
Girl	562	48%	18	45%	41	48%	67	49%	76	47%	46	45%	15	48%	29	50%	5	50%	63	53%	31	49%	73	45%	98	49%

On each location the children stood in line for the check up in the medical carrousel. They were given a numbered form and were admitted to the first station where their name, age and MCC number were written on the form by a local helper. This paper was than given to the child who kept it until his or her treatment had been completed. If checked by MCC in former years (47% of total), efforts were taken to collect the form(s) of earlier checks and compare the results on individual basis.



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 in the preceding four weeks was recorded. Specifically, caretakers were asked if the child had diarrhea, an upper respiratory infection, vomiting, eating soil (pica), decreased appetite and weight loss.
They were also asked if their child received treatment for any of these, and if so, from where.

Afterwards the child was sent to the station where the clinical forms were kept after medication was dispensed and information was given with the help of a local worker.
When indicated by the doctors, the child was referred to a local dentist or hospital.
At the end of the medical carrousel, every child got a toothbrush, tooth paste and soap together with instructions for the child and the care taker about how to brush their teeth, proper hand washing and healthy food.
Wherever in the medical carrousel we made efforts to include local volunteers (medical workers, teachers, students etc.) in the care of the children.

Diagnosis and categories of ailments:
During the week, the MCC team checked 1173 children in Nairobi, Naiwasha and Nyeri.
Most of the medical cases which received the attention of the MCC team were growth abnormalities (stunting 15%, underweight 8%, wasting 5%), anemia (22%), skin problems and worm infections.

Most of the ailments, (except the dental problems, since a dentist was not part of the medical; carrousel), could be treated on the spot.
For more detailed information on all diagnoses see table 5. For comparison of prevalence of selected diseases with the prevalence in former years see tables 6. For treatment given during the medical camp see table 7 and for information about referrals see table 8.

Table 5: Disaese prevalence among all children per geographical location

		Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
		1173		40		86		136		163		103		31		58		10		119		63		162		202	
		N	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
	Underweight	96	8%	2	5%	25	29%	4	3%	6	4%	4	4%	7	23%	7	12%	0	0%	9	8%	5	8%	25	15%	2	1%
	Stunting	172	15%	8	20%	23	27%	6	4%	30	18%	28	27%	12	39%	13	22%	5	50%	14	12%	6	10%	17	10%	10	5%
	Wasting	55	5%	2	5%	16	19%	4	3%	2	1%	0	0%	1	3%	1	2%	0	0%	2	2%	4	6%	20	12%	3	1%
	Anaemia	254	22%	9	23%	18	21%	22	16%	36	22%	39	38%	10	32%	4	7%	3	30%	32	27%	20	32%	34	21%	27	13%
1	HIV pos.	14	1%	0	0%	0	0%	1	1%	0	0%	10	10%	0	0%	1	2%	0	0%	0	0%	0	0%	1	1%	1	0%
2	AIDS	2	0%	0	0%	0	0%	0	0%	0	0%	2	2%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
3	Malaria (suspected)	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
5	Bilharzia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
9	syndrome n.o.s.	4	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	2	1%
10	pneumonia (clinical)	5	0%	1	3%	1	1%	1	1%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
11	pneumonia (X-ray confirmed)	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
12	tuberculosis (clinical)	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
13	tuberculosis (X-ray confirmed)	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
14	bronchitis	8	1%	0	0%	0	0%	0	0%	1	1%	2	2%	0	0%	0	0%	0	0%	2	2%	1	2%	0	0%	2	1%
15	BHR/asthma	19	2%	0	0%	0	0%	1	1%	2	1%	1	1%	0	0%	2	3%	0	0%	0	0%	1	2%	5	3%	7	3%
20	gardia (suspected)	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	1	0%
21	dysenteria	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	1	0%
22	dehydration : acute diarrhoea	6	1%	0	0%	0	0%	2	1%	2	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%	0	0%
23	dehydration : chronic diarrhoea	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
24	diarrhoea without dehydration	7	1%	0	0%	0	0%	0	0%	3	2%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	3	2%	1	0%
25	constipation	23	2%	0	0%	8	9%	4	3%	2	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	8	4%

		Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
26	active worm infection	10	1%	0	0%	1	1%	0	0%	4	2%	0	0%	1	3%	1	2%	0	0%	0	0%	1	2%	1	1%	1	0%
27	active lintworm	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
30	otitis media acuta	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	2%	0	0%	0	0%	1	2%	0	0%	0	0%
31	otitis media with effusion	1	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
32	otitis externa	2	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	1	10%	0	0%	0	0%	0	0%	0	0%
33	tympanic perforation	1	0%	1	3%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
34	mastoiditis	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
35	(adeno)tonsillitis	7	1%	1	3%	0	0%	2	1%	1	1%	0	0%	0	0%	0	0%	0	0%	1	1%	1	2%	1	1%	0	0%
36	candida stomatitis	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
37	sinusitis	3	0%	1	3%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
38	hearing impairment	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
39	other	4	0%	1	3%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	1	0%
40	cariës n.o.s.	142	12%	8	20%	5	6%	11	8%	11	7%	11	11%	6	19%	6	10%	0	0%	10	8%	16	25%	31	19%	27	13%
41	pain n.o.s	11	1%	0	0%	1	1%	1	1%	2	1%	1	1%	0	0%	1	2%	0	0%	2	2%	0	0%	0	0%	3	1%
42	fluorosis	27	2%	1	3%	1	1%	1	1%	3	2%	1	1%	0	0%	12	21%	0	0%	1	1%	0	0%	2	1%	5	2%
45	caries with pain	27	2%	2	5%	3	3%	5	4%	2	1%	1	1%	0	0%	3	5%	0	0%	3	3%	1	2%	3	2%	4	2%
50	wounds n.o.s.	3	0%	0	0%	0	0%	1	1%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%
51	eczema n.o.s.	5	0%	0	0%	0	0%	0	0%	0	0%	1	1%	1	3%	0	0%	0	0%	1	1%	0	0%	1	1%	1	0%
52	dermatomycosis	48	4%	0	0%	4	5%	2	1%	11	7%	6	6%	0	0%	1	2%	1	10%	14	12%	1	2%	4	2%	4	2%
53	Impetigo	8	1%	1	3%	1	1%	2	1%	1	1%	0	0%	0	0%	1	2%	0	0%	1	1%	0	0%	1	1%	0	0%
54	lice	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
55	scabies	11	1%	0	0%	2	2%	0	0%	3	2%	3	3%	0	0%	0	0%	0	0%	1	1%	0	0%	2	1%	0	0%
56	erysipelas	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	2%	0	0%	0	0%	1	2%	0	0%	0	0%
57	wounds infected,	5	0%	0	0%	0	0%	2	1%	0	0%	0	0%	0	0%	1	2%	0	0%	0	0%	1	2%	1	1%	0	0%
58	insect bite	2	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%
59	other (psoriasis etc)	7	1%	2	5%	0	0%	1	1%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%	1	0%
60	psychomotoric retardation	10	1%	4	10%	0	0%	0	0%	1	1%	3	3%	0	0%	0	0%	0	0%	0	0%	1	2%	0	0%	1	0%
61	hypertonia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
62	hypotonia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
63	epilepsy	2	0%	1	3%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
64	spina bifida	1	0%	1	3%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%

		Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
65	migraine/headach	4	0%	0	0%	0	0%	1	1%	1	1%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	1	0%
66	meningitis	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
67	leg kramps	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
70	physiological murmer	9	1%	0	0%	0	0%	2	1%	1	1%	0	0%	1	3%	2	3%	0	0%	1	1%	0	0%	0	0%	2	1%
71	pathological murmur (susp)	4	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	1	2%	0	0%	1	0%
74	refractory problem	3	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	1	2%	0	0%	0	0%	1	2%	0	0%	0	0%
75	strabismus	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
76	keratoconjunctivitis	18	2%	4	10%	2	2%	0	0%	4	2%	1	1%	0	0%	2	3%	0	0%	3	3%	1	2%	1	1%	0	0%
77	amblyopia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
80	thyroid dysfunction	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
81	diabetes	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
84	menorraghia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
85	amenorrhoea	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
86	pregnancy	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
90	epi/hypospadia	1	0%	1	3%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
91	cryptorchism	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
92	inguinal hernia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
93	urinary infection	7	1%	0	0%	0	0%	1	1%	0	0%	1	1%	0	0%	0	0%	0	0%	3	3%	0	0%	0	0%	2	1%
96	kidney path.	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
100	artralgia n.o.s.	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%
101	septic arthritis	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
102	hip dysplasia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
103	old fracture	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
104	new fracture	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
107	umbilical hernia	17	1%	0	0%	4	5%	8	6%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	4	2%

Table 6: Treatment among all children per geographical location

		Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
		1173		40		86		136		163		103		31		58		10		119		63		162		202	
1	ferro	151	13%	4	10%	9	10%	16	12%	19	12%	28	27%	3	10%	1	2%	0	0%	23	19%	10	16%	21	13%	17	8%
88	mother iron	9	1%	1	3%	0	0%	1	1%	3	2%	0	0%	0	0%	0	0%	0	0%	3	3%	0	0%	1	1%	0	0%
2	multivitamins	234	20%	9	23%	36	42%	9	7%	39	24%	22	21%	13	42%	16	28%	0	0%	24	20%	16	25%	34	21%	16	8%
3	anti-worm	748	64%	34	85%	84	98%	3	2%	147	90%	3	3%	1	3%	6	10%	1	10%	84	71%	55	87%	130	80%	200	99%
6	acute worm	21	2%	1	3%	1	1%	0	0%	4	2%	0	0%	2	6%	1	2%	0	0%	1	1%	6	10%	4	2%	1	0%
5	anti-scabies	8	1%	0	0%	2	2%	0	0%	1	1%	2	2%	0	0%	0	0%	0	0%	0	0%	1	2%	2	1%	0	0%
7	niclosamide	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
10	amoxicillin	31	3%	2	5%	1	1%	5	4%	4	2%	0	0%	0	0%	1	2%	0	0%	4	3%	3	5%	5	3%	6	3%
11	augmentin	3	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	1	2%	0	0%	0	0%	0	0%	1	1%	0	0%
12	2e line antibiotics	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
20	metranidazol	2	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	1	0%
21	co-trimoxazol	7	1%	0	0%	0	0%	0	0%	1	1%	3	3%	0	0%	0	0%	0	0%	2	2%	0	0%	0	0%	1	0%
22	ORS	9	1%	0	0%	0	0%	1	1%	5	3%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	3	2%	0	0%
32	eardrops	1	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
36	nystatine	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
50	mupirocine	2	0%	0	0%	0	0%	0	0%	2	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
51	hydrocortison crem	10	1%	0	0%	1	1%	0	0%	1	1%	3	3%	0	0%	0	0%	0	0%	1	1%	0	0%	4	2%	0	0%
52	dactarin cream	36	3%	0	0%	3	3%	0	0%	10	6%	4	4%	0	0%	0	0%	1	10%	12	10%	0	0%	5	3%	1	0%
53	dactacort cream	6	1%	1	3%	1	1%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	2	1%
57	fusidin cream	11	1%	0	0%	1	1%	2	1%	0	0%	1	1%	0	0%	2	3%	0	0%	1	1%	1	2%	3	2%	0	0%
59	neutral cream	14	1%	0	0%	1	1%	0	0%	1	1%	1	1%	1	3%	1	2%	0	0%	0	0%	0	0%	7	4%	2	0%
56	iodine	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	2%	0	0%	0	0%
60	griseofulvin	5	0%	0	0%	0	0%	0	0%	2	1%	1	1%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	1	0%
76	eyedrops	14	1%	3	8%	2	2%	0	0%	3	2%	0	0%	0	0%	2	3%	0	0%	2	2%	1	2%	1	1%	0	0%





Table7 : (Selected) Disease prevalence among all children per geographical location in 2015, 2014, 2013 and 2012

2015	Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
	1173		40		86		136		163		103		31		58		10		119		63		162		202	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Underweight	96	8%	2	5%	25	29%	4	3%	6	4%	4	4%	7	23%	7	12%	0	0%	9	8%	5	8%	25	15%	2	1%
Stunting	172	15%	8	20%	23	27%	6	4%	30	18%	28	27%	12	39%	13	22%	5	50%	14	12%	6	10%	17	10%	10	5%
Wasting	55	5%	2	5%	16	19%	4	3%	2	1%	0	0%	1	3%	1	2%	0	0%	2	2%	4	6%	20	12%	3	1%
Anaemia	254	22%	9	23%	18	21%	22	16%	36	22%	39	38%	10	32%	4	7%	3	30%	32	27%	20	32%	34	21%	27	13%
Pneumonia (clin)	5	0%	1	3%	1	1%	1	1%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
2014	**1057**					**46**		**178**		**79**		**106**				**69**				**99**				**147**		**154**
Underweight	53	5%			5	11%	6	3%	4	5%	5	5%			10	14%			3	3%			7	5%	4	3%
Stunting	132	12%			6	13%	9	5%	13	16%	32	3%			19	28%			8	8%			9	6%	4	3%
Wasting	18	2%			1	2%	1	1%	1	1%	2	2%			0	0%			2	2%			5	3%	1	1%
Anaemia	354	33%			11	24%	38	21%	48	61%	58	55%			14	20%			45	45%			27	18%	61	40%
Pneumonia (clin)	20	2%			0	0%	6	3%	1	1%	3	3%			0	0%			2	2%			5	3%	1	1%
2013	**1042**					**48**		**128**				**61**				**72**				**90**				**147**		**105**
Underweight	53	5%			4	8%	1	1%			3	5%			14	19%			6	7%			5	3%	7	3%
Stunting	151	14%			12	25%	4	3%			20	33%			19	26%			9	10%			14	10%	10	5%
Wasting	12	1%			1	2%	0	0%			1	2%			1	1%			2	2%			3	2%	1	1%
Anaemia	275	26%			12	25%	21	16%			24	39%			9	13%			43	48%			36	24%	48	22%
Pneumonia (clin)	42	4%			2	4%	5	4%			2	3%			0	0%			3	3%			6	4%	11	5%
2012	**1032**							**224**				**64**				**95**				**89**				**142**		**125**
Underweight	100	10%					5	2%			3	5%			13	14%			6	7%			5	4%	5	4%
Stunting	166	16%					5	2%			14	22%			22	23%			5	6%			11	8%	12	1%
Wasting	43	4%					4	2%			1	2%			6	6%			3	3%			6	4%	2	2%
Anaemia	251	24%					53	24%			15	23%			16	17%			25	28%			45	32%	19	15%
Pneumonia (clin)	32	3%					6	3%			2	3%			5	5%			0	0%			7	5%	4	3%




Table 8: Follow-up of all children per geographical location

		Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
		1173		40		86		136		163		103		31		58		10		119		63		162		202	
		N	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
1	Dentist	11	1%	1	3%	0	0%	0	0%	1	1%	0	0%	0	0%	2	3%	0	0%	3	3%	0	0%	1	1%	3	1%
2	Specialist in hospital	13	1%	3	8%	0	0%	1	1%	1	1%	2	2%	1	3%	0	0%	0	0%	1	1%	1	2%	2	1%	1	0%
3	Revisit	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
4	X-thorax	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	0%
5	ECG	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
6	Kidney function	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
7	Bloodtest 3 months	2	0%	0	0%	1	1%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
8	International organisation	6	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	2%	0	0%	1	1%	1	2%	2	1%	1	0%
9	Other	3	0%	2	5%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	2%	0	0%	0	0%

1: Growth abnormality and malnutrition:

Malnutrition has been related to poor cognitive and school performance. There is strong evidence to suggest that malnutrition places children under the age of five at increased risk for mortality. Malnutrition is thought to account for one third of all deaths of children under five years of age (UN Millennium Developmental Goals).

Percentages of growth retardation is correlated with poverty, malnutrition, living conditions, hygiene and the prevalence of chronic diseases.

The major causes of malnutrition are poor feeding practices and or lack of food inadequate childcare. Adequate food intake and education programs addressing nutrious food need to be provided.

Therefore, we assessed growth abnormalities, measuring and weighing all children in a standardized fashion, using the following criteria:

- 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.

It has to be noted that reference data are only available for certain heights, weights and ages (as specified above), leading to the general prevalence's of growth abnormalities of being underweight 8% (5% in 2014; 5% in 2013; 10% in 2012), stunting 15% (12% in 2014;14 % in 2013; 16 % in 2012) and wasting Analysis of the nutritional status shows significant differences among the locations visited.

Within the children assessed, it is unknown how many children exactly have HIV related weight loss (wasting syndrome) since in only 14 children (1%) HIV positivity/AIDS was reported which seems an underestimation.

The higher percentage of growth abnormalities in Naiwasha/Monica (underweight 112%; 14% in 2014; 19% in 2013; 15% in 2012), stunting 22%; 28% in 2014; 26% in 2013; 23% in 2012 is partly a reflection of the selection of the vulnerable children by the local organization Monica Memorial Development Centre for Needed Children (Mmemo) and partly biased by age selection, although we are concerned that maybe not all sponsored food reaches the children. The fact that SFFC took immediately action when we shared our doubts make us confident if there is a problem it will be solved.

At Makarios Home we found more stunting in the children older than ten years of age. This seems a reflection of the selection of children living in Nyeri orphanage (orphans, street children, children from prison, children with AIDS etcetera) which were not well taken care for at a younger age.
Striking is the fact that although the background of the younger children is the same as the older children, since the children younger than 10 years of age did have less growth disturbance seems to reflect the enormous importance of a well designed supporting plan for children at a young age including a good and balanced diet.

The difference in growth disturbances between the children of Jamii Outreach and St George is striking since the schools are almost next to each other. The food support program of St George by SFFC seems to have a huge impact on the children of this school. For more details about growth problems at the different locations, see table 9, 10 and 11.

During the medical check-ups, we paid again attention to issues of hygiene and nutritional advise. We emphasized on hand-washing, vitamin C, fruit and vegetable intake, so the children may grow healthy and strong. We noticed the policy of mothers to feed their babies up to the age of one year or even more, sourly only with breast milk. For babies, we advised exclusive breastfeeding up to six months and then start with the introduction of additional foods. We are aware of the financial problems and, because of draught, scarcity of healthy food for many families. This is one the strongest arguments of MCC to link up and cooperate with other organizations, like SFFC, facilitating/paying for school lunches.

Table 9: Prevalence of weight/age at or under P3 (underweight) per geographical location by age and gender *(measurable up to10 years of age)*

	Total		**Baraka**		**Jamii**		**Joyspring School**		**Kangaroo**		**Makarios**		**Monica**		**Naivasha**		**NLH**		**Nyeri**		**Rescue home**		**St Clemens**		**St George**	
	1173		**40**		**86**		**136**		**163**		**103**		**31**		**58**		**10**		**119**		**63**		**162**		**202**	
Underweight	96	9%	2	7%	25	29%	4	3%	6	4%	4	9%	7	24%	7	16%	0	0%	9	10%	5	11%	25	16%	2	1%
No underweight	928	91%	25	93%	61	71%	132	97%	154	96%	39	91%	22	76%	36	84%	10	100%	80	90%	42	89%	129	84%	198	99%
Unknown	149	13%	13	33%	0	0%	0	0%	3	2%	60	58%	2	6%	15	26%	0	0%	30	25%	16	25%	8	5%	2	1%
Underweight per age																										
<=1 year	2	4%	0	0%	0	0%	0	0%	1	6%	0	0%	0	n.p.	0	n.p.	0	0%	1	13%	0	0%	0	0%	0	0%
>1- <5 years	21	7%	0	0%	8	30%	2	4%	1	2%	0	0%	2	33%	0	0%	0	n.p.	3	13%	2	12%	3	17%	0	0%
<5 years	23	7%	0	0%	8	29%	2	4%	2	3%	0	0%	2	33%	0	0%	0	0%	4	13%	2	10%	3	12%	0	0%
>=5 and <=10 years	72	11%	2	10%	17	29%	2	3%	4	4%	3	8%	5	22%	7	19%	0	n.p.	5	9%	3	11%	22	17%	2	2%
>10 years	1	50%	0	n.p.	0	n.p.	0	n.p.	0	n.p.	1	100%	0	n.p.	0	n.p.	0	n.p.	0	0%	0	n.p.	0	n.p.	0	n.p.
Underweight per gender																										
Boy	51	10%	2	13%	13	29%	3	4%	2	2%	3	12%	6	38%	6	30%	0	0%	5	12%	0	0%	9	11%	2	2%
Girl	45	9%	0	0%	12	29%	1	1%	4	5%	1	6%	1	8%	1	4%	0	0%	4	9%	5	20%	16	23%	0	0%

Table 10: Prevalence of length/age at or under P3 (stunting) per geographical location by age and gender *(measurable up to19 years of age)*

	Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
	1173		40		86		136		163		103		31		58		10		119		63		162		202	
Stunting	172	15%	8	20%	23	27%	6	4%	30	19%	28	27%	12	39%	13	22%	5	50%	14	12%	6	10%	17	10%	10	5%
No stunting	998	85%	32	80%	63	73%	130	96%	132	81%	75	73%	19	61%	45	78%	5	50%	105	88%	57	90%	145	90%	190	95%
Unknown	3	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	2	1%
Stunting per age																										
<=1 year	18	33%	1	50%	0	0%	0	0%	8	47%	0	0%	0	n.p.	0	n.p.	5	50%	1	13%	0	0%	3	43%	0	0%
>1- <5 years	37	13%	0	0%	8	30%	2	4%	6	13%	0	0%	3	50%	1	14%	0	n.p.	3	13%	4	24%	3	17%	7	8%
<5 years	55	16%	1	17%	8	29%	2	4%	14	22%	0	0%	3	50%	1	14%	5	50%	4	13%	4	20%	6	24%	7	8%
>=5 - <=10 years	73	11%	3	14%	15	26%	4	5%	15	16%	5	13%	7	30%	7	19%	0	n.p.	4	7%	1	4%	9	7%	3	3%
>10 years	44	30%	4	31%	0	n.p.	0	n.p.	1	50%	23	39%	2	100%	5	36%	0	n.p.	6	19%	1	6%	2	25%	0	n.p.
Stunting per gender																										
Boy	97	16%	4	18%	11	24%	5	7%	16	18%	19	33%	6	38%	10	34%	2	40%	9	16%	2	6%	9	10%	4	4%
Girl	75	13%	4	22%	12	29%	1	1%	14	19%	9	20%	6	40%	3	10%	3	60%	5	8%	4	13%	8	11%	6	6%

Table 11: Prevalence of weight/length at or under P3 (wasting) per geographical location by age and gender *(measurable up to 1.20m)*

	Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
	1173		40		86		136		163		103		31		58		10		119		63		162		202	
Wasting	55	7%	2	11%	16	21%	4	4%	2	2%	0	0%	1	4%	1	5%	0	0%	2	3%	4	11%	20	23%	3	2%
No wasting	687	93%	16	89%	59	79%	108	96%	120	98%	21	100%	26	96%	18	95%	10	100%	56	97%	31	89%	67	77%	155	98%
Unknown	431	37%	22	55%	11	13%	24	18%	41	25%	82	80%	4	13%	39	67%	0	0%	61	51%	28	44%	75	46%	44	22%
Wasting per age																										
<=1 year	2	4%	1	50%	0	0%	0	0%	0	0%	0	0%	0	n.p.	0	n.p.	0	0%	1	13%	0	0%	0	0%	0	0%
>1- <5 years	14	5%	0	0%	5	19%	0	0%	1	2%	0	0%	0	0%	0	0%	0	n.p.	1	4%	2	12%	4	22%	1	1%
<5 years	16	5%	1	17%	5	18%	0	0%	1	2%	0	0%	0	0%	0	0%	0	0%	2	6%	2	10%	4	16%	1	1%
>=5 - <=10 years	39	10%	1	9%	11	23%	4	7%	1	2%	0	0%	1	5%	1	8%	0	n.p.	0	0%	2	13%	16	26%	2	3%
>10 years	0	0%	0	0%	0	n.p.	0	n.p.	0	n.p.	0	0%	0	n.p.	0	0%	0	n.p.	0	n.p.	0	n.p.	0	n.p.	0	n.p.
Wasting per gender																										
Boy	21	5%	2	22%	7	18%	0	0%	1	2%	0	0%	1	7%	1	11%	0	0%	1	3%	0	0%	7	15%	1	1%
Girl	34	10%	0	0%	9	26%	4	7%	1	2%	0	0%	0	0%	0	0%	0	0%	1	4%	4	21%	13	32%	2	3%

2: Anemia and deworming:

Anemia is the most prevalent micronutrient disorder in the world.
In Kenia 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 anemia, it is important to recognize that the control of anemia requires a multi-faceted approach which, through integrative interventions, addresses the various factors that play a significant role in producing anemia in a given community. 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, and as side effects of ART medication in HIV positive children.
It is unknown how many children with abdominal problems have iron deficiency anemia and a coexisting H. pylori infection. From the literature it is known that one should suspect an infection with H. pylori when the iron deficiency anemia is refractory to iron administration.
To differentiate between iron depletion and other reasons for anemia such as Sickle cell anemia, Thalassemia and lead, mercury and arsenic intoxication we should measure ferritin during the medical camp, which is not possible at the moment.

In studies Ascaris prevalence percentage in Kenia is around 19% and hookworm 8%. The incidence/prevalence of Taenia Saginata (tape worm) is not known. A strong relationship exists between a Helminth, an Ascaris Lumbricoides, a Hookworm, a Taenia Trichiura or Saginata (tapeworm) infection and anemia, growth disturbances and school attendance and results. From studies done world wide, deworming is by far the most cost-effective way to increase school participation with 25%. As a result, the gain in literacy from de-worming is 2.1 years and the gain in income is estimated at 4- just by giving two tablets a year. Overall, the benefits of deworming can be up to 60 times higher than the costs. (estimated costs: $0,15 deworming at schools, $0,25 at community level). A study done in Kenia, with community drug distributers going twice a year from door to door to deliver the anti worm pills in the mouth of the children showed a reduction of anemia with 4% (meaning prevention of anemia in1260 children out of 30.000).

Anemia was diagnosed in 22% of all checked children, which is lower then the number found in 2014 (33%), 2013 (26%) or 2012 (24%).
The prevalence differs in the different populations. Since the prevalence of anemia is normally higher in children younger than five years of age, partly the difference of anemia is due to age differences in the different groups with more younger children at St George, Kangaroo and Jamii Outreach.

Table 12: Prevalence of anaemia per geographical location by age and gender

	Total		**Baraka**		**Jamii**		**Joyspring School**		**Kangaroo**		**Makarios**		**Monica**		**Naivasha**		**NLH**		**Nyeri**		**Rescue home**		**St Clemens**		**St George**	
	1173		**40**		**86**		**136**		**163**		**103**		**31**		**58**		**10**		**119**		**63**		**162**		**202**	
Anaemia	254	22%	9	23%	18	21%	22	16%	36	22%	39	38%	10	32%	4	7%	3	30%	32	27%	20	32%	34	21%	27	13%
No anaemia	911	78%	31	78%	67	78%	111	82%	126	77%	64	62%	21	68%	54	93%	7	70%	87	73%	43	68%	128	79%	172	85%
Unknown	8	1%	0	0%	1	1%	3	2%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	3	1%
Hb <5,0 mmol	6	1%	0	0%	1	1%	1	1%	0	0%	0	0%	1	3%	0	0%	0	0%	1	1%	0	0%	1	1%	1	0%
Anaemia per age																										
<=1 year	18	32%	1	50%	1	100%	1	20%	5	28%	0	0%	0	n.p.	0	n.p.	3	30%	3	38%	1	33%	2	29%	1	100%
>1- <5 years	48	16%	0	0%	4	15%	7	13%	10	21%	1	25%	2	33%	0	0%	0	n.p.	6	26%	7	41%	7	39%	4	4%
<5 years	66	19%	1	17%	5	18%	8	14%	15	23%	1	20%	2	33%	0	0%	3	30%	9	29%	8	40%	9	36%	5	5%
>=5 - <=10 years	138	20%	5	24%	13	22%	14	18%	21	22%	12	31%	8	35%	1	3%	0	n.p.	10	18%	8	30%	24	19%	22	20%
>10 years	50	34%	3	23%	0	n.p.	0	n.p.	0	0%	26	44%	0	0%	3	21%	0	n.p.	13	42%	4	25%	1	13%	0	n.p.

Anaemia per gender																										
Boy	146	24%	6	27%	10	22%	8	12%	23	26%	25	44%	6	38%	2	7%	1	20%	19	34%	11	34%	22	25%	13	13%
Girl	108	19%	3	17%	8	20%	14	21%	13	17%	14	30%	4	27%	2	7%	2	40%	13	21%	9	29%	12	16%	14	14%

Table 13 : Anemia prevalence among children per(selecte)d geographical location in 2015, 2014, 2013 and 2012

	Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
2015	**1173**		**40**		**86**		**136**		**163**		**103**		**31**		**58**		**10**		**119**		**63**		**162**		**202**	
Anaemia	254	22%	9	23%	18	21%	22	16%	36	22%	39	38%	10	32%	4	7%	3	30%	32	27%	20	32%	34	21%	27	13%
2014	**1057**					**46**		**178**		**79**		**106**				**69**				**99**				**147**		**154**
Anaemia	354	33%			11	24%	38	21%	48	61%	58	55%			14	20%			45	45%			27	18%	61	40%
2013	**1042**					**48**		**128**				**61**				**72**				**90**				**147**		**105**
Anaemia	275	26%			12	25%	21	16%			24	39%			9	13%			43	48%			36	24%	48	22%
2012	**1032**							**224**				**64**				**95**				**89**				**142**		**125**
Anaemia	251	24%					53	24%			15	23%			16	17%			25	28%			45	32%	19	15%

In Makarios Home, Nyeri school and St George, the trend of deterioration of the last years (see table 13) seems to have stopped. At this locations the food program is sponsored by SFFC and due to the financial crisis world wide which has, unfortunately, impact on the funding of SFFC and therefore on the availability of food.
In 2011 St George school the food program was very effective treating protein-energy malnutrition, but less successful to iron deficient anemia (anemia in 2011 in St George was 56%). We discussed our findings with SFFC, the sponsor of the food program and in 2012 and the program was changed. In 2012 only 15% of the children was anemic (far less than at other locations). Again we had a close evaluation of the food-based strategy, especially dietary diversification, vitamin C containing food and not giving milk together with the food. In 2014 SFFC to started a home gardening project at Makarios Home to cut down the expenses on vegetables and fruits. (Besides this, it is a great opportunity to teach children in a play-full way about nature, food and taking responsibility.)
We discussed with SFFC the importance of a bi-annual deworming program and we left the deworming pills. This year six months after our check in March de-worming pills were given by SFFC to the children at Makarios Home, Nyeri school, Kangaroo school, Naivasha and St. George. Joyspring school received deworming pill through a WHO program.
All interventions together showed their impact by reducing the amount of children with anemia.

We treated the children with anemia (and their mothers if they were there and breast fed) with supplements for three months. If we suspected a vitamin deficit and/or an infection we gave multivitamins instead of iron supplements.
In six children the hemoglobin level was less than 5.0 mmol/l. The all were referred to a hospital for further diagnostics (paid by SFFC). In 2014, ten children were referred with a hemoglobin below 5 mmol/l. No one was diagnosed with Sickle cell or Thalassemia.

When it comes to the prevention of anemia, besides bi-annual deworming, vitamin C intake is important because vitamin C facilitates the uptake of iron in the gut (as milk counterparts it). Cheap and available sources for vitamin C in Kenia are lemon and passion fruit.
For babies, we advised exclusive breastfeeding up to six months, then start with the introduction of additional foods.

3: Cardial problems:
Mitral regurgitation or ventricular atrial septal defects being the most common heart problems in the third world. For this condition no treatment is available although a good dental situation is essential for a healthy live.
The MCC carrousel includes a cardial examination. We suspected four children of having a pathological heart murmur.

		Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
70	physiological murmer	9	1%	0	0%	0	0%	2	1%	1	1%	0	0%	1	3%	2	3%	0	0%	1	1%	0	0%	0	0%	2	1%
71	pathological murmur (susp)	4	0%	0	0%	0	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%	1	2%	0	0%	1	0%

The children and their care takers with the suspected pathological heart murmurs were stressed on teeth brushing procedures. Besides this, they were told to give their child antibiotics when going to a dentist for a teeth extraction.
Two children, a five month old girl from the surroundings of Nyeri School and a 4 years old girl from St George needed a referral for further investigation (at Outspan Hospital in Nyeri and Coptic Hospital in Nairobi) which were arranged by SFFC.
The two children with a suspected pathogical heartmurmer in 2014 (one from Joy Springs and one at Naiwasha) who needed a referral for further investigation (at Coptic Hospital in Nairobi) did not need any further treatment or follow up.

4: Dental:
In general, a high caries prevalence was found (reporting data is an underestimation). This year we didn't have a dentist as part of the MCC carrousel.
After the medical check local volunteers gave out toothbrushes and educated the people in teeth brushing.
In Naiwasha, as in former years, a striking higher prevalence of fluorosis was found suggesting a contamination of water sources with fluor.

		Total		Baraka		Jamii		Joyspring School		Kangaroo		Makarios		Monica		Naivasha		NLH		Nyeri		Rescue home		St Clemens		St George	
40	cariës n.o.s.	142	12%	8	20%	5	6%	11	8%	11	7%	11	11%	6	19%	6	10%	0	0%	10	8%	16	25%	31	19%	27	13%
41	pain n.o.s	11	1%	0	0%	1	1%	1	1%	2	1%	1	1%	0	0%	1	2%	0	0%	2	2%	0	0%	0	0%	3	1%
42	fluorosis	27	2%	1	3%	1	1%	1	1%	3	2%	1	1%	0	0%	12	21%	0	0%	1	1%	0	0%	2	1%	5	2%
45	caries with pain	27	2%	2	5%	3	3%	5	4%	2	1%	1	1%	0	0%	3	5%	0	0%	3	3%	1	2%	3	2%	4	2%

Education health workers, caretakers and other local helpers:
One of the important tasks of MCC is to encourage the continuation of health education of the caretakers and older children. During our week we talked about common diagnoses of frequent illnesses and medication. We especially focused on anemia and malnutrition, balanced diet, infection, parasites and failure to thrive. We focused on nutritious food and vitamins, as well as hygienic and health promotion issues like the fact that the under five years of age mortality can be reduced by hand washing with soap due to the reduction of the prevalence of diarrhea and upper airway infection. Hand washing with soap will also reduce severe skin infection.

Future medical needs:

- The children in most of the locations visited need more clean water for drinking and hygiene purposes. Especially providing a source of clean drinking water at the schools is important for lessons in hygiene and for giving the children a source of save drinking water when they are at school.
- It is important to stress the importance of regular (six monthly) de-worming of all children up to fourteen year of age.
- To fight the growth abnormalities children need good food with enough (green) vegetables and fruits.

Since these are expensive it still is a struggle to provide healthy food on a regular base. We are impressed by the effect of the Home based agriculture project with the children at Makarios Home.

-T o improve the quality of the food we suggest to add some lemon at the food because it will help to digest the food in a proper way and to take iron from the food.

- Although we know fat is expensive, we strongly advice suggest to add more fat to the food since our hormones and body cells (especially the nervous and immune system) need fat for good functioning.
- We do not recommend milk and bread as breakfast even for small children especially when they have behavioral/attention problems. We hope alternative snacks for example made of sweet potato can be served as breakfast.
- We warned against cooking on open fire when children are around. Not only because of the danger of burning wounds but also of the impact of small particles of the smoke on the health of children (for example: lung problems and auto immune diseases)
- In all locations visited, there is a strong need for comprehensive and systematic health promotion and preventive measures. Special emphasis needs to be put on personal hygiene (starting with the importance of hand washing with soap), dental care, good eating habits and nutritious food.
- We strongly advice to start school programs to promote the drinking of water.
- Attention to birth control should be at any place where boys and girls live together and especially when the are above the age of twelve and disabled/mentally retarded. We suggest to discuss this subject with the parents and make a priority in putting the girls on contraceptives.
- There is a need to transfer information about health promotion and preventive measures to the mothers/caretakers of the children as well as knowledge of the alarming medical symptoms in children so they can find medical help in time.
- There is a need to find a method for keeping relevant medical information with the child (like the need of antibiotics before dental extraction in children with a cardial septal defect).
- Children at school should be save. Therefore it is important to find ways to prevent any hitting or what's so ever at schools.

Last words:

Once Africa gets into your heart she will never let you go. It has been a memorable mission in the lives of all team members.

We will not forget the happy children playing in their beautiful new Makarios children home in Nyeri. We will not forget Caleb, who was in formal years making everyone crazy with his attention deficit now much better after he quits eating bread and milk. Of course we will not forget Rachel who was given away during the medical camp in 2013 to the Makarios Home by her grand mother without shedding a tear. We hope she will overcome her health problems from which she is suffering. Nor will we forget the baby boy twins ad their brave mother, who were so afraid and nowadays so trustful.

It seems so easy to notice what can be done better that we forget to see what we have accomplished in the last years. Seeing a young mother with a small baby in het arms who used to be one of the checked children who comes to ask advice for taking care for her baby in the best way can help to celebrate the successes of the last years.

Special thanks also go to the local translators, teachers and helpers. We enjoyed working together and hope they will continue to inspire their communities in the same way they inspired us as they play a vital role in spreading awareness and knowledge about children's health and hygiene.

We are grateful to all the care takers, teachers and community people for bringing the children and helping to conduct the program.
We are happy we got the opportunity to work with and to learn from all volunteers, translators and other supporting members who have helped directly or indirectly, despite their own obligations and personal worries.
We would like to thank the children and their care-takers who came to the checks for their inspiring presence.

Our special thanks go to Nelson Aderi, David Alimasi, Gerasmus Mavisi, Gerald Muchiri, Hesbon Aderi, Panyiota Panayiotou, Fani Loula Nopi Nicolaou Telemachou and Marina Shacola for their joyful company and their hard work. Their pro-active, direct support and enthusiasm gave MCC the opportunity to work in Kenia and they facilitated all aspects of the medical camp. Again, we were impressed by the work the Sofia Foundation for Children did at Makarios Home and inspired how people from different backgrounds and with different goals in life can form a close unit when the common goal is to help children. Working together with the members of the SFFC team during the last five years makes us confident we can make, at least a part of the world, a better place when we overcome differences and share our dreams.
Therefore, we hope we will work together to conduct medical camps for many more years!

In between the time we conducted the medical camp and wrote the medical report, lot of things happened in the private lives of all people involved. Some were happy some were very sad. Therefore this report is dedicated to the remembrance of Faith.

Amsterdam, 22 October 2015
Anne Vlietstra, organization-end-responsible MCC mission Nairobi, Kenia 2015
Karlien Bongers, medical-end-responsible MCC mission Nairobi, Kenia 2015