

Medical Checks for Children

Medical Rapport Kenya Nairobi 2024



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Introduction



From March the 17th until March the 24th 2024 a Medical Checks for Children (MCC) team visited locations near Njeri and Nairobi. Free of cost, the MCC team checked and treated 960 children aged newborn until 17 years of age.

After a explorative mission in 2010, MCC visited Kenia West for the elevent time. Again, the medical checks were organized in close cooperation with the Sophia Foundation for Children (SFFC) (www.sophia-foundation.com).

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. Additional local medication was purchased from the main pharmacy in Nairobi and taken with us to Kenia West.

Our special thanks go to Nopi, Tazos and Marina for their direct support during our medical camp and their help in all the necessary preparations during the year. Special thanks go to the translators and teachers.

The aim of the mission is to provide basic healthcare on locations of underprivileged children in difficult circumstances with diagnosis and treatment and acute care on the spot and referral with hospital diagnostics and treatments if necessary for the future health of the children. We monitor the hospitals referrals and the treatment in close cooperation with the Sophia Foundation in the year ahead.

Medical Checks for Children on location:

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

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

Anthropometric measurements were recorded, and a finger prick sample was taken for determination of the haemoglobin (Hb) concentration. Each child was examined by a Medical Doctor. History of illnesses in the preceding four weeks was recorded. Specifically, caretakers were asked if the child had diarrhoea, 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. The data of the children were analysed through the MCC data base.

The medical checks were performed on six days at different locations in Nairobi and in the area around Njeri.

At the different locations we checked beside the schoolchildren some young non-schoolgoing children from the villages.

We analysed the data to make a comparison as a group but we did not make a computer analysis on individual basis (table 1).

During the years the ratio between girls and boys is stable.

Table 1: Total children per location

Rijlabels	18-03-24	19-03-24	20-03-24	21-03-24	22-03-24	23-03-24	24-03-24	Total
Amani school	100	0	0	0	0	0	0	100
St Clemens	0	194	0	0	0	0	0	194
St George	0	0	119	0	0	0	0	119
Jamii	0	0	62	0	0	0	0	62
Rescue Centre	0	0	0	69	0	0	0	69
Ndunduini	0	0	0	0	226	0	0	226
Makarios Home	0	0	0	0	0	132	0	132
Makarios School	0	0	0	0	0	103	0	103
Chaka School	0	0	0	0	0	0	19	19
Total	100	194	181	69	226	235	19	1024

Children and caretakers of multiple villages visited the medical camp, which were grouped into 7 locations (details on names of the villages and allocation in groups is given in Annex B).

In the announcement of the medical children of age below 12 years were invited to come with their caretakers. Of the 1024 children, 21% was below the age of 5 years, 68% of the children was between 5 and 10 years of age, and only 12% was above 10 years old. In this mission we always have a bit of older age group as well due to the children at the Makarios Home and the Rescue home. As these are both orphanages we check all the children in this location if possible without age limitations.

Children below 5 year of age are considered to benefit most from a medical camp, so we try to make an efferort that parents or caretakers come with their child (49% of the children was accompanied by a caretaker).





The following findings can be highlighted:

- High prevalence of anaemia (34% in general and 56% for all children and children < 5 years), compared to 43% in Kenya (< 5 years) and 15.5% in the Netherlands (< 5 years) (WHO, 2019).
- Prevalence of malnutrition was lower than previous years but almost 1/4 of all malnutrition was found in the agegroup < 5 year.
- Compared to the very low prevalence of preventive antiworm treatment in 2023, distribution of antiworm pills through the SFFC resulted in 69% of the children receiving one. The schools where there is no feeding program still have almost no coverage of antiworm pills. We urge the SFFC to investigate if it is possible to distribute anti worm pills to all schools and children that we visited in 2024. Even as a single intervention in the new schools this could make a huge difference for the wellbeing of the children in these locations.
- In 2024 we did have a dentist in our medical carousel who preventively checked the teeth and treated on location if necessary. This resulted in either only inspection or treatment (filling or extraction). Also a lot of effort was made in prevention and education.
- Other frequent diagnoses: pneumonia (21 children), caries (14%), caries with pain (9%), fluorosis (5%) and various skin diseases (tinea capitis (2%), dermatomycosis (4%), scabies (2%)).
- We also found a lot of children with heart murmurs (13 children). In 11 of these children we suspected serious heart disease (VSD, ASD) and these children are being sent to Coptic Hospital in Nairobi for a cardiac ultrasound. One of these children was already clinically decompensated with severe cyanosis and systemic complaints. Ultrasound revealed a large perimembranous VSD with inlet extension; coronary catheterisation was performed and he was eligible for cardiac surgery. At the moment he is still going for follow up visits to Nairobi but is doing well.

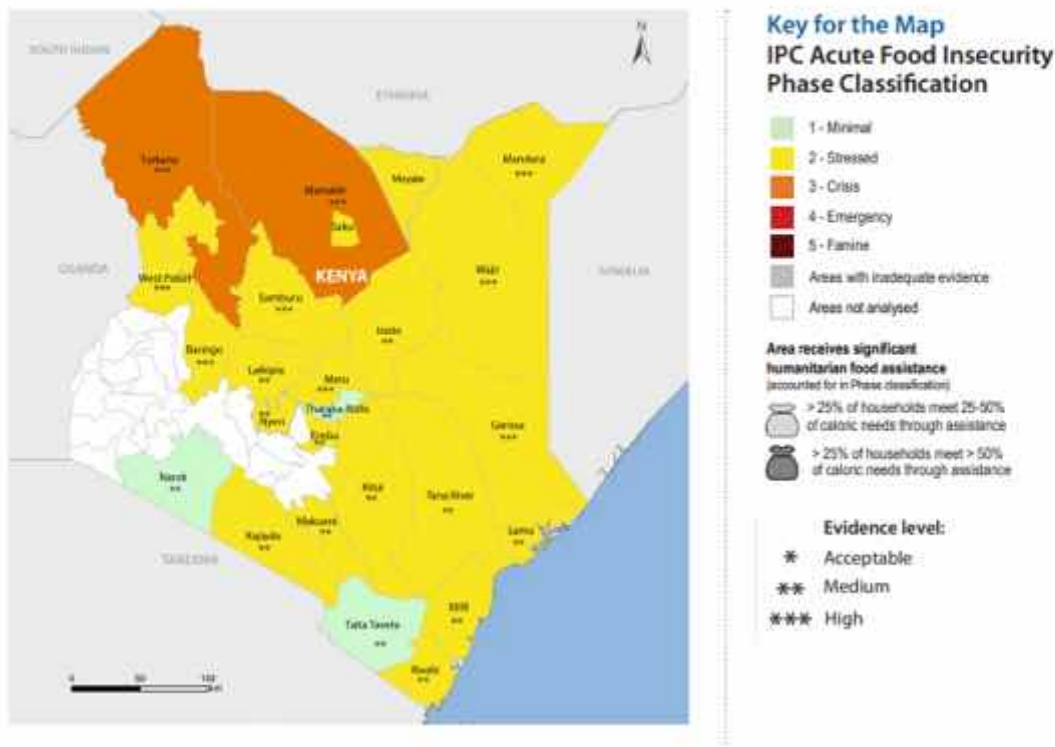


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- Because hospital referrals in general and cardiac referrals specific take up a lot of resources as they need to be accompanied to the hospital and results need follow up and monitoring we started a trial this year in performing POCUS cardiac ultrasound in children with murmurs who are stable and have normal vital signs to see if we can reduce the amount of referrals and follow up next year instead. We used the Clarius handheld ultrasound which Clarius Netherlands is providing us with for the duration of the medical camp and use international standard guidelines. This year all children will still undergo cardiac ultrasound in Nairobi as a quality control check. We hope next year we will only need to send the children with murmurs and clinical signs of disease and monitor the others the next year. See appendix for more information. Note the aim is not to identify structural heart disease but to assess normal cardiac function in low risk children with murmurs and focus the resources on the children that really need acute specialist cardiac evaluation.
- POCUS ultrasound also helped in excluding fractures in painful extremities and excluding abscesses in the children with infected wounds.
- Most frequent treatment given to the children was deworming (22%), iron (28% of the children), multivitamin (14%), antibiotics and various creams for skin diseases.
- During the medical camps we see a lot of children who are under the care of the Sophia Foundation and live in the home or are being supported in the more remote areas. A lot of these children do have a serious medical problem but we did not diagnose them in our system. This might be due to the fact that they are stable at the moment and the caretakers at the home do not see the need to mention it. Or that we as doctors think that it is not important to register because they are in the picture already. The serious neurological, cardiac and endocrinological kids we have seen in this medical camp are not represented in the numbers.

Kenya is one of the countries where international organisations gather data to predict food insecurity and malnutrition. Of course not all the regions provide adequate information but the Njeri region where half of our medical camp takes place is in these data. In Njeri we as a team see what the impact of extreme weather is like. We experienced heavy rainfalls which lasted only shortly but washed away on the arid grounds where the day after dust storms hinder our work. In the first half of 2024 the rains have had a significant positive impact on rangeland conditions across the region. As a result of the improved rangeland conditions, livestock body conditions have also seen a marked improvement, currently rated as good to very good. This has led to increased milk production, which not only boosts nutritional intake for households but also provides an additional source of income. So in general we see that if the rains occur it has a positive effect also immediately on the acute malnutrition rates in the rural areas.

CURRENT ACUTE FOOD INSECURITY MAP AND POPULATION TABLE (JULY – SEPTEMBER 2024)



During the projection period (October 2024 to January 2025), the food security situation is likely to deteriorate further due

to the high likelihood of severe rainfall deficits during the OND (October-November-December) season in 2024, which may result in below-average harvests, especially across the northern and eastern Kenya (ASALs). As usual, households are expected to rely more on their food stocks and market purchases. About 1.7 million people (11percent) are classified in Crisis or worse (IPC Phase 3 and 4), including about 98,000 people classified in Emergency (IPC Phase 4) and 1.6 million classified in Crisis (IPC Phase 3).

Conclusions and recommendations

1. Deworming. Over the years the prevalence of the preventive antiworm treatment showed lots of fluctuations. In 2019 only 40 % of the checked children received antiworm treatment compared to 60 % in 2022. This year most children did not receive an antiworm pill. In Kenya governmental school based deworming programmes are available. Unfortunately local governments do not always give priority in providing them to the schools and the schools of the beaten track are most likely in being forgotten. Even wenn including the spillover benefits of treatment, the cost per additional year of school participation was US\$2.92, making deworming considerably more cost-effective than alternative methods of increasing school participation, such as school subsidies. At a cost of less than US\$0.60 per child per year, school-based deworming reduced serious worm infections by 61 percent and reduced school absenteeism by 25 percent. This year the distribution of antiworm pills to the schools were the SFFC has a feeding programme was successful; 69% of the children received it! We recommend to provide the antiworm tablet each 6 months to all the locations we visit in our medical camp. Children in the schools where there is not a SFFC feeding programme need also to benefit from this simple and very cost effective intervention. will start to distribute the pills in 2023 through the foodprogramme. We will monitor in 2024 the effects.
2. Hygiene and dental care. The prevalence of caries and skin diseases can be prevented by providing information about dental care and hygiene (clean blades when shaving the heads of the children). These topics should be on the agenda especially in the schools where the Sophia Foundation is running a foodprogramme. We still see a large number of children with tinea capitis in schools where most children have their heads shaved. Basic health education should be made just as important as the foodprogramme for the teachers and the schools. It still is hard to believe that in schools where there is water for example teachers seem unable to let their students drink even a few cups of water while in school. We stress the SFFC for children to also employ the adults that once lived in the home and are studying elsewhere now for these subjects. A lot of former SFFC home children are now following higher

- education also in healthcare. They can not only easily connect with the children in our medical camp but might also be a inspiration for them and empower them to follow their dreams and believe that they can.
3. Makarios home. At the home we saw a broad range of children with special needs who came into the care of the Sophia Foundation. From mood disorders to Marfan and all kinds of neglect and development disorders alongside with somatic problems. A lot of children receive special drugs for various diseases. A simple follow up system for the children should be in place. When we visited this year a new nurse just started. The nurse provided us with medical information and detailed knowledge about these kids. We talked about all the special cases with here and made follow up plans. We do believe that a reliable and skilled nurse or health care professional is essential in the home when it is also a place for children with very specific medical needs.
 4. Caretakers. As the Sophia Foundation has a focus on schoolchildren a big effort should be made to have caretakers present at the medical camp as an important part of the medical camp is the transfer and exchange of medical and healthcare information, from the parents to the doctors and vice versa. Health education to young children < 5 years is almost impossible if the parent is not there. Also we do question if parents really use the medication for their children if it is given to them by the teachers. This might mean that vulnerable children might get suboptimal treatment.
 5. Follow up. After the medical camp 16 children will need to go to specialist in the hospital, 13 will need a follow up bloodtest and for 40 children there is a dental need. For the hospital visits arrangements have been already made at the conclusion of the medical camps. In 2024 only half of the parents or caretakers were at the medical camp. Ofcourse the home is a confounder but still the need is evident.
 6. Nutrition. As stated above the foodsecurity in lots of areas in Kenya is in Danger. Ndudine and the rescue home are 2 locations who because of their geographical location prone to difficulty with drought, rains and food security. We do realize that the SFFC has also limited supplies but we would like them to consider ways in which they can structurally help the locations.
 7. Programm medical camps. For more caretakers to attend our medical camp (50% in 2024) it might be an option to provide the schools with more detailed information about what we do and why parents are so important. This year again we added a new location in Nairobi where the need is high and stopped going to a school where compliance was an issue. As MCC we do not only want to focus and prevention and cure in the acute situation and the weeks of our medical camp but we need to think about the long term aswell. Which skills are needed in the local situations to be effective? What kind of relationships can be formed with local structures in healthcare (eg local health post, outreach programs, microculture) and foodsecurity to invest in local capacity and focus more on the long-term of the projects? A few of these issues are being addressed in the foodprogram at the schools which are on the receiving end. But are there ways in which all locations of the medical camp can be helped with these issues? Are there ways in which the local community or the graduates from the SFFC in Kenya can help in partnering up to make the future more sustainable?

We are very grateful for all the hard work performed by the members of the Sophia Foundation in Cyprus and in Kenya in making sure this medical camp was a success.



Annex A- Detailed results

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

	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
Underweight	49	5%	12	12%	5	3%	0	0%	4	6%
No underweight	853	83%	85	85%	185	95%	118	99%	58	94%
Unknown	122	12%	3	3%	4	2%	1	1%	0	0%
Underweight children per age										
<=1 year	2	4%	0	0%	0	0%	0	0%	0	0%
>1 en <5 years	8	5%	1	4%	2	6%	0	0%	0	0%
<5 years	10	5%	2	6%	2	5%	0	0%	0	0%
>=5 en <=10 years	39	6%	10	16%	3	2%	0	0%	4	6%
>10 years	0	0%	0	0%	0	0%	0	0%	0	0%
Underweight children per gender										
Boy	35	71%	7	58%	4	80%	0	0%	3	75%
Girl	14	29%	5	42%	1	20%	0	0%	1	25%

	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
Underweight	1	1%	7	4%	14	13%	5	7%	1	5%

Boy	26	54%	6	86%	9	64%	1	25%	3	60%
Girl	22	46%	1	14%	5	36%	3	75%	2	40%

	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
Wasting	2	3%	5	5%	4	5%	6	16%	1	6%
No wasting	26	38%	97	95%	69	95%	31	84%	16	94%
Unknown	41	59%	124	55%	59	45%	66	64%	2	11%
Wasting children per age										
<=1 year	0	0%	0	0%	0	0%	1	25%	0	0%
>1 en <5 years	1	11%	1	3%	0	0%	1	6%	0	0%
<5 years	1	11%	1	2%	0	0%	2	11%	0	0%
>=5 en <=10 years	0	0%	4	7%	4	7%	4	22%	1	8%
>10 years	1	50%	0	0%	0	0%	0	0%	0	0%
Wasting children per gender										
Boy	1	50%	1	20%	2	5%	2	17%	1	14%
Girl	1	50%	4	80%	2	6%	4	16%	0	0%

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

	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
Anaemia	349	34%	49	49%	74	38%	43	36%	26	42%
No anaemia	668	65%	46	46%	119	61%	76	64%	36	58%
Unknown	6	1%	5	5%	1	1%	0	0%	0	0%
Hb <5,0 mmol	7	1%	1	1%	1	1%	2	2%	1	2%
Anaemia per age										
<=1 year	17	37%	1	100%	4	50%	5	45%	0	0%
>1 en <5 years	100	58%	17	71%	27	73%	20	56%	0	0%
<5 years	119	56%	25	74%	31	69%	21	53%	0	0%
>=5 en <=10 years	196	28%	24	38%	43	29%	22	28%	26	42%
>10 years	34	29%	0	0%	0	0%	0	0%	0	0%
Anaemia per gender										
Boy	180	53%	23	47%	45	61%	23	53%	13	50%
Girl	168	49%	26	53%	29	39%	20	47%	12	46%

	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
Anaemia	26	38%	49	22%	33	25%	42	41%	0	0%
No anaemia	43	62%	177	78%	98	74%	61	59%	0	0%
Unknown	0	0%	0	0%	0	0%	0	0%	0	0%
Hb <5,0 mmol	1	1%	1	0%	0	0%	0	0%	0	0%
Anaemia per age										
<=1 year	0	0%	3	25%	3	33%	1	25%	0	0%
>1 en <5 years	7	70%	13	37%	3	27%	11	69%	2	67%
<5 years	7	70%	16	38%	6	32%	11	61%	2	50%
>=5 en <=10 years	6	22%	28	18%	17	19%	25	43%	5	33%
>10 years	13	41%	5	18%	10	40%	6	22%	0	0%
Anaemia per gender										
Boy	16	62%	20	41%	17	28%	18	38%	5	56%
Girl	10	38%	29	59%	16	23%	24	43%	2	20%

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

Age	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
Anti-worm	710	69%	1	1%	169	87%	92	77%	3	5%
No anti-worm	314	31%	99	99%	25	13%	27	23%	59	95%
Anti-worm per age										
>1 en <5 years	76	44%	0	0%	22	59%	19	53%	0	0%
<5 years	79	37%	0	0%	22	49%	22	55%	0	0%
>=5 en <=10 years	530	76%	1	2%	145	99%	70	90%	3	5%
>10 years	101	86%	0	0%	2	100%	0	0%	0	0%

Age	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
Anti-worm	40	58%	206	91%	111	84%	88	85%	0	0%
No anti-worm	29	42%	20	9%	21	16%	15	15%	19	100%
Anti-worm per age										
>1 en <5 years	1	10%	23	66%	6	55%	5	31%	0	0%
<5 years	1	10%	23	55%	6	32%	5	28%	0	0%
>=5 en <=10 years	18	67%	155	99%	81	92%	57	98%	0	0%
>10 years	21	66%	28	100%	24	96%	26	96%	0	0%

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

Age	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
No	2	0%	0	0%	0	0%	0	0%	0	0%
Yes	506	49%	49	49%	64	33%	76	64%	0	0%
Teacher	516	50%	51	51%	130	67%	43	36%	62	100%

Age	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
No	0	0%	1	0%	0	0%	1	1%	0	0
Yes	52	75%	40	18%	118	89%	100	97%	7	0
Teacher	0	0%	1	0%	0	0%	0	0%	0	0

Table 9: Children checked last year?

Age	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
No	564	55%	100	100%	115	59%	64	54%	45	73%
Yes	460	45%	0	0%	79	41%	55	46%	17	27%

Age	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
No	29	42%	95	42%	56	42%	41	40%	19	100%
Yes	40	58%	131	58%	76	58%	62	60%	0	0%

Table 10: Disease prevalence among all children per geographical location

	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
Underweight	49	5%	12	12%	5	3%	0	0%	4	6%
Stunting	84	8%	12	12%	12	6%	0	0%	2	3%
Wasting	48	5%	7	7%	14	7%	4	3%	5	8%
Anaemia	342	33%	49	49%	74	38%	43	36%	26	42%
HIV pos.	8	1%	0	0%	0	0%	4	3%	0	0%
AIDS	3	0%	1	1%	1	1%	0	0%	0	0%
Malaria (suspected)	1	0%	0	0%	0	0%	0	0%	0	0%
vitamin deficit (clinical signs)	1	0%	1	1%	0	0%	0	0%	0	0%
syndrome n.o.s.	4	0%	0	0%	0	0%	2	2%	0	0%
pneumonia (clinical)	21	2%	9	9%	6	3%	4	3%	0	0%
bronchitis	2	0%	0	0%	1	1%	0	0%	0	0%
BHR/asthma	2	0%	0	0%	0	0%	1	1%	0	0%
gardia (suspected)	2	0%	0	0%	2	1%	0	0%	0	0%
diarrhoea without dehydration	1	0%	0	0%	0	0%	0	0%	1	2%
constipation	3	0%	1	1%	0	0%	1	1%	0	0%
active worm infection	11	1%	3	3%	2	1%	1	1%	0	0%
GI other	1	0%	0	0%	1	1%	0	0%	0	0%
otitis media acuta	1	0%	0	0%	0	0%	1	1%	0	0%
otitis media with effusion	2	0%	0	0%	0	0%	1	1%	0	0%
otitis externa	1	0%	0	0%	0	0%	0	0%	0	0%
(adeno)tonsillitis	1	0%	0	0%	0	0%	0	0%	0	0%
candida stomatitis	2	0%	1	1%	0	0%	0	0%	0	0%
hearing impairment	1	0%	0	0%	0	0%	0	0%	0	0%
other	1	0%	0	0%	0	0%	0	0%	0	0%
cariës n.o.s.	144	14%	10	10%	19	10%	17	14%	12	19%
pain n.o.s	15	1%	0	0%	0	0%	0	0%	0	0%
fluorosis	51	5%	6	6%	13	7%	2	2%	0	0%
filling temporary teeth	91	9%	4	4%	21	11%	14	12%	8	13%
Teeth inspection	62	6%	5	5%	11	6%	9	8%	7	11%
caries with pain	92	9%	5	5%	19	10%	13	11%	7	11%
Extraction temporary teeth	1	0%	1	1%	0	0%	0	0%	0	0%
Cleaning teeth	1	0%	0	0%	0	0%	0	0%	0	0%
eczema n.o.s.	4	0%	1	1%	1	1%	1	1%	0	0%
dermatomycosis	38	4%	3	3%	6	3%	6	5%	5	8%
Impetigo/furunculosis	1	0%	0	0%	0	0%	0	0%	0	0%
lice	1	0%	0	0%	0	0%	0	0%	1	2%
scabies	3	0%	1	1%	0	0%	0	0%	0	0%
Tinea Capitis	12	1%	0	0%	2	1%	0	0%	2	3%
wounds infected,	3	0%	1	1%	0	0%	0	0%	0	0%
Burn wound fresh	0	0%	0	0%	0	0%	0	0%	0	0%
Skin other (psoriasis etc)	9	1%	0	0%	2	1%	2	2%	0	0%
psychomotoric retardation	6	1%	1	1%	0	0%	1	1%	0	0%
hypotonia	1	0%	0	0%	0	0%	0	0%	0	0%
epilepsy / convulsions	2	0%	0	0%	0	0%	0	0%	0	0%
migraine/headache	13	1%	2	2%	3	2%	2	2%	0	0%
physiological murmur	2	0%	0	0%	0	0%	1	1%	0	0%

	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
pathological murmur (suspected)	11	1%	0	0%	2	1%	4	3%	0	0%
refractory problem	4	0%	0	0%	1	1%	0	0%	0	0%
strabismus	1	0%	0	0%	0	0%	0	0%	0	0%
keratoconjunctivitis	4	0%	0	0%	0	0%	1	1%	2	3%
amblyopia	1	0%	0	0%	0	0%	0	0%	0	0%
eye other	6	1%	1	1%	1	1%	1	1%	0	0%
gyn other	1	0%	0	0%	0	0%	0	0%	0	0%
urinary infection	2	0%	1	1%	1	1%	0	0%	0	0%
urogen other	2	0%	0	0%	0	0%	0	0%	0	0%
skeletal other	3	0%	0	0%	0	0%	0	0%	0	0%
hernia(umbilical etc)	2	0%	1	1%	0	0%	1	1%	0	0%

	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
Underweight	1	1%	7	3%	14	11%	5	5%	1	5%
Stunting	7	10%	22	10%	16	12%	13	13%	0	0%
Wasting	2	3%	5	2%	4	3%	6	6%	1	5%
Anaemia	26	38%	49	22%	33	25%	42	41%	0	0%
HIV pos.	0	0%	0	0%	2	2%	2	2%	0	0%
AIDS	0	0%	0	0%	1	1%	0	0%	0	0%
Malaria (suspected)	0	0%	0	0%	0	0%	0	0%	1	5%
vitamin deficit (clinical signs)	0	0%	0	0%	0	0%	0	0%	0	0%
syndrome n.o.s.	0	0%	2	1%	0	0%	0	0%	0	0%
pneumonia (clinical)	1	1%	0	0%	1	1%	0	0%	0	0%
bronchitis	0	0%	1	0%	0	0%	0	0%	0	0%
BHR/asthma	0	0%	1	0%	0	0%	0	0%	0	0%
gardia (suspected)	0	0%	0	0%	0	0%	0	0%	0	0%
diarrhoea without dehydration	0	0%	0	0%	0	0%	0	0%	0	0%
constipation	1	1%	0	0%	0	0%	0	0%	0	0%
active worm infection	0	0%	3	1%	0	0%	0	0%	2	11%
GI other										
otitis media acuta	0	0%	0	0%	0	0%	0	0%	0	0%
otitis media with effusion	0	0%	1	0%	0	0%	0	0%	0	0%
otitis externa	1	1%	0	0%	0	0%	0	0%	0	0%
(adeno)tonsillitis	0	0%	0	0%	0	0%	1	1%	0	0%
candida stomatitis	0	0%	1	0%	0	0%	0	0%	0	0%
hearing impairment	0	0%	0	0%	0	0%	1	1%	0	0%
other	0	0%	0	0%	0	0%	0	0%	1	5%
cariës n.o.s.	2	3%	43	19%	17	13%	16	16%	8	42%
pain n.o.s	2	3%	5	2%	4	3%	3	3%	1	5%
fluorosis	4	6%	11	5%	8	6%	6	6%	1	5%
filling temporary teeth	4	6%	28	12%	8	6%	4	4%	0	0%
Teeth inspection	1	1%	16	7%	8	6%	5	5%	0	0%
caries with pain	2	3%	21	9%	14	11%	11	11%	0	0%
Extraction temporary teeth	0	0%	0	0%	0	0%	0	0%	0	0%
Cleaning teeth	1	1%	0	0%	0	0%	0	0%	0	0%

	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
eczema n.o.s.	0	0%	0	0%	0	0%	0	0%	1	5%
dermatomycosis	0	0%	6	3%	6	5%	5	5%	1	5%
Impetigo/furunculosis	0	0%	0	0%	0	0%	0	0%	1	5%
lice	0	0%	0	0%	0	0%	0	0%	0	0%
scabies	0	0%	0	0%	1	1%	1	1%	0	0%
Tinea Capitis	0	0%	6	3%	1	1%	1	1%	0	0%
wounds infected,	1	1%	0	0%	1	1%	0	0%	0	0%
Burn wound fresh	0	0%	0	0%	0	0%	0	0%	0	0%
Skin other (psoriasis etc)	1	1%	2	1%	2	2%	0	0%	0	0%
psychomotoric retardation	1	1%	0	0%	2	2%	1	1%	0	0%
hypotonia	0	0%	0	0%	0	0%	1	1%	0	0%
epilepsy / convulsions	0	0%	0	0%	2	2%	0	0%	0	0%
migraine/headache	1	1%	3	1%	1	1%	0	0%	1	5%
physiological murmur	0	0%	0	0%	0	0%	1	1%	0	0%
pathological murmur (suspected)	0	0%	4	2%	0	0%	1	1%	0	0%
refractory problem	0	0%	2	1%	1	1%	0	0%	0	0%
strabismus	0	0%	1	0%	0	0%	0	0%	0	0%
keratoconjunctivitis	0	0%	1	0%	0	0%	0	0%	0	0%
amblyopia	0	0%	1	0%	0	0%	0	0%	0	0%
eye other	0	0%	0	0%	3	2%	0	0%	0	0%
gyn other	0	0%	0	0%	1	1%	0	0%	0	0%
urinary infection	0	0%	0	0%	0	0%	0	0%	0	0%
urogen other	1	1%	1	0%	0	0%	0	0%	0	0%
skeletal other	1	1%	1	0%	1	1%	0	0%	0	0%
hernia(umbilical etc)	0	0%	0	0%	0	0%	0	0%	0	0%

Table 11: Treatment among all children per geographical location

	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
ferro	284	28%	35	35%	64	33%	36	30%	23	37%
mother iron	13	1%	2	2%	4	2%	4	3%	0	0%
multivitamins	142	14%	20	20%	24	12%	8	7%	7	11%
anti-worm	225	22%	86	86%	20	10%	13	11%	47	76%
acute worm	8	1%	2	2%	0	0%	2	2%	0	0%
scabies soap	2	0%	0	0%	0	0%	0	0%	0	0%
amoxicillin	18	2%	6	6%	6	3%	3	3%	0	0%
augmentin	1	0%	0	0%	0	0%	1	1%	0	0%
2e lijns antibiotica	5	0%	2	2%	2	1%	1	1%	0	0%
paracetamol	2	0%	0	0%	0	0%	1	1%	0	0%
co-trimoxazol	1	0%	0	0%	1	1%	0	0%	0	0%
AB urine infection	1	0%	1	1%	0	0%	0	0%	0	0%
eardrops	3	0%	0	0%	0	0%	1	1%	0	0%
nystatine	1	0%	0	0%	0	0%	0	0%	0	0%
hydrocortisone cream	1	0%	1	1%	0	0%	0	0%	0	0%
dactarin cream	9	1%	0	0%	3	2%	4	3%	0	0%
dactacort cream	6	1%	0	0%	1	1%	1	1%	0	0%
fusidin cream	2	0%	1	1%	0	0%	0	0%	0	0%
neutral cream	2	0%	0	0%	0	0%	1	1%	0	0%
griseofulvine	1	0%	0	0%	0	0%	0	0%	0	0%
eyedrops	4	0%	0	0%	1	1%	2	2%	1	2%
AB urine infection	1	0%	1	1%	0	0%	0	0%	0	0%

	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
ferro	19	28%	40	18%	26	20%	34	33%	7	37%
mother iron	0	0%	1	0%	2	2%	0	0%	0	0%
multivitamins	8	12%	28	12%	26	20%	18	17%	3	16%
anti-worm	27	39%	7	3%	4	3%	5	5%	16	84%
acute worm	0	0%	3	1%	0	0%	0	0%	1	5%
scabies soap	0	0%	0	0%	1	1%	1	1%	0	0%
amoxicillin	1	1%	1	0%	1	1%	0	0%	0	0%
augmentin	0	0%	0	0%	0	0%	0	0%	0	0%
2e lijns antibiotica	0	0%	0	0%	0	0%	0	0%	0	0%
paracetamol	0	0%	1	0%	0	0%	0	0%	0	0%
co-trimoxazol	0	0%	0	0%	0	0%	0	0%	0	0%
AB urine infection	0	0%	0	0%	0	0%	0	0%	0	0%
eardrops	1	1%	1	0%	0	0%	0	0%	0	0%
nystatine	0	0%	1	0%	0	0%	0	0%	0	0%
hydrocortisone cream	0	0%	0	0%	0	0%	0	0%	0	0%
dactarin cream	0	0%	1	0%	0	0%	1	1%	0	0%
dactacort cream	1	1%	1	0%	2	2%	0	0%	0	0%
fusidin cream	0	0%	0	0%	1	1%	0	0%	0	0%
neutral cream	0	0%	0	0%	0	0%	0	0%	1	5%
griseofulvine	0	0%	0	0%	0	0%	1	1%	0	0%
eyedrops	0	0%	0	0%	0	0%	0	0%	0	0%
AB urine infection	0	0%	0	0%	0	0%	0	0%	0	0%

Table 12: Follow-up of all children per geographical location

	Total		Amani school		St Clemens		St George		Jamii	
	1024		Total= 100		Total= 194		Total= 119		Total= 62	
	N	%	n	%	n	%	n	%	n	%
Dentist	176	17%	13	13%	45	23%	22	18%	12	19%
Specialist in hospital	16	2%	0	0%	2	1%	3	3%	0	0%
Revisit	6	1%	1	1%	0	0%	1	1%	0	0%
Bloodtest after 3 months	4	0%	0	0%	0	0%	1	1%	0	0%
International organisation	3	0%	0	0%	0	0%	1	1%	0	0%

	Rescue Centre		Ndunduini		Makarios Home		Makarios School		Chaka School	
	Total= 69		Total= 226		Total= 132		Total= 103		Total= 19	
	n	%	n	%	n	%	n	%	n	%
Dentist	7	10%	44	19%	17	13%	15	15%	1	5%
Specialist in hospital	0	0%	6	3%	4	3%	1	1%	0	0%
Revisit	0	0%	1	0%	0	0%	3	3%	0	0%
Bloodtest after 3 months	1	1%	2	1%	0	0%	0	0%	0	0%
International organisation	0	0%	1	0%	1	1%	0	0%	0	0%

POCUS ULTRASOUND

ADVIESDOCUMENT

Point-of-care ultrasonography (POCUS)
binnen de kindergeneeskunde

"Regardless of who does it and where it is done, let's do it well!"



Adviesgroep POCUS
september 2020

Ultrasound is a non-invasive, safe (no radiation exposure), and rapidly available diagnostic tool whose indications and use within medicine are expanding. POCUS (Point-of-Care Ultrasound) is performed by the treating clinician. During physical examination, POCUS can play a role alongside inspection, palpation, percussion, and auscultation. Targeted yes/no questions are used to detect, suggest, or rule out acute conditions, thereby initiating (life-saving) treatment and monitoring its effects. Thus, POCUS is complementary to patient history and physical examination. It is also used to facilitate ultrasound-guided interventions and/or procedures, thereby improving the effectiveness and quality of patient care.

POCUS performed by clinicians should not be confused with diagnostic advanced ultrasound performed by a (pediatric) radiologist or (pediatric) cardiologist (van Rijn et al., 2021). Findings during a POCUS examination may prompt further specialist investigation by a (pediatric) radiologist or (pediatric) cardiologist.

A number of benefits of POCUS for the clinician:

Immediately accessible at the bedside

Improvement of procedures (increasing success rates, more efficient, and less burdensome for the patient)

Added value in quickly recognizing (life-threatening) conditions

Monitoring clinical management through repeated POCUS examinations

No ionizing radiation

Enhanced accuracy of clinical assessment, with POCUS showing high sensitivity and specificity

Portable, making it usable in various locations within the hospital and during transfers

POCUS HEART

Background

Bedside echocardiography of the heart is indicated for y ill children and aims to answer specific questions regarding the patient's hemodynamics to guide and/or adjust targeted treatment.

Note 1: This is NOT a complete echocardiogram as performed by a pediatric cardiologist; the ultrasound is purely functional and does not examine the structural aspects of the heart.

Note 2: If a congenital heart defect is high on the differential diagnosis list based on clinical grounds, POCUS heart does not have a role in the initial imaging of the patient (Singh et al., 2020).

Indications

NICU / PICU / EMERGENCY PEDIATRICS:

Pericardial fluid;

Systolic heart function;

Signs of right-sided heart strain;

Signs of (extreme) under- or overloading.

Images to Obtain

Parasternal Long Axis (PLAX): pericardial fluid, systolic heart function;

Parasternal Short Axis at the level of the papillary muscles (PSAX): pericardial fluid, septal flattening yes/no;

Apical 4-Chamber View (AP4CH): size of both ventricles and function;

Subcostal (SC): size and variation of the inferior vena cava (IVC) with inspiration.

Equipment

Probe: phased array, microconvex

Scan frequency range: 3-12 MHz depending on the size of the patient