



Medical Checks for Children

Medical Report The Philippines, 2015



Introduction

From 23th until 30th October for the fourth time a Medical Checks for Children (MCC) team visited Barangay 105, Tondo in Manila, the Philippines, a poverty stricken low housing area. MCC checked and treated 1326 children between 0 and 12 years old free of cost.

The Barangay and its families live in an area with limited access to medical facilities. During 2013/2014 the dump sides around former Smokey Mountain had closed down and the slum dwellers were moved into Temporary Housing complexes. Around 50 to 100 families live in each building, there is no water point per building. The main source of income is scavenging and charcoal production. There are very little latrines, sanitation nor sewage, creating major health problems.

This fourth medical mission of MCC in the Philippines was organized in close collaboration with Bless the Children foundation, headed by Eunice Cheng Chua, Executive Director.

The Dutch team consisted of 11 members: the organizing leader Yvonne Verdonk (neonatal nurse), medical leaders Ines von Rosenstiel (pediatrician) and Roelof van Ewijk (pediatric resident), Miranda Dierselhuis (pediatric resident), Marc Jonkers (pediatrician), Anita Smith (child youth nurse), Arnoud Rijkers (former banker), Noor Rijkers (pediatric pulmonologist), Ans Winters (pulmonology nurse), Miguette Jadoul (strategic advisor) and Joost Ruigrok (film maker).

Technical equipment, toothbrushes and some of the supplies were brought from the Netherlands by MCC team members. The medication was ordered by Roelof van Ewijk at a local generic drug company. A container with medical supplies and children's clothes had arrived by sea in the month before the team arrival.

The five-story building Centro Salvador of the John DV Salvatore Foundation was again the location for the medical checks. The ground floor consists of a central hall, kitchen, an office for the nurses and doctor, and a fully equipped dentist office. At the second floor there is a big multifunctional room, and an administrative office. The third floor has a vocational skills room and several class rooms. The fourth floor with the 2014 colorfully painted dormitory was offered to the MCC team. The fifth floor is an open air space, covered with a roof, where several workshops are hosted to the people of Tondo together with vocational training programs.

From June 2013 onwards a structural major feeding program is in place to feed a huge group of malnourished children, in combination with multivitamins/iron and anti-worm treatment programs.

Support from the local team included the following (amongst others):

- Selection of patients and care givers in the nearby communities;
- Facilitating board and lodging for all MCC team members at check site;
- Prior announcement of the medical mission in the location;
- Guiding patients and facilitating transportation to local clinics/ hospital for further diagnostic examination and critically ill admittance;

- Making copies of all necessary paperwork and administrative support;
- Giving support in ordering and delivering extra medication during the medical mission;
- Giving support to the MCC team during the medical mission;
- Organizing specific focus workshops on pediatric asthma;
- Arranging the communication and collaboration with the local hospitals for medical follow up.

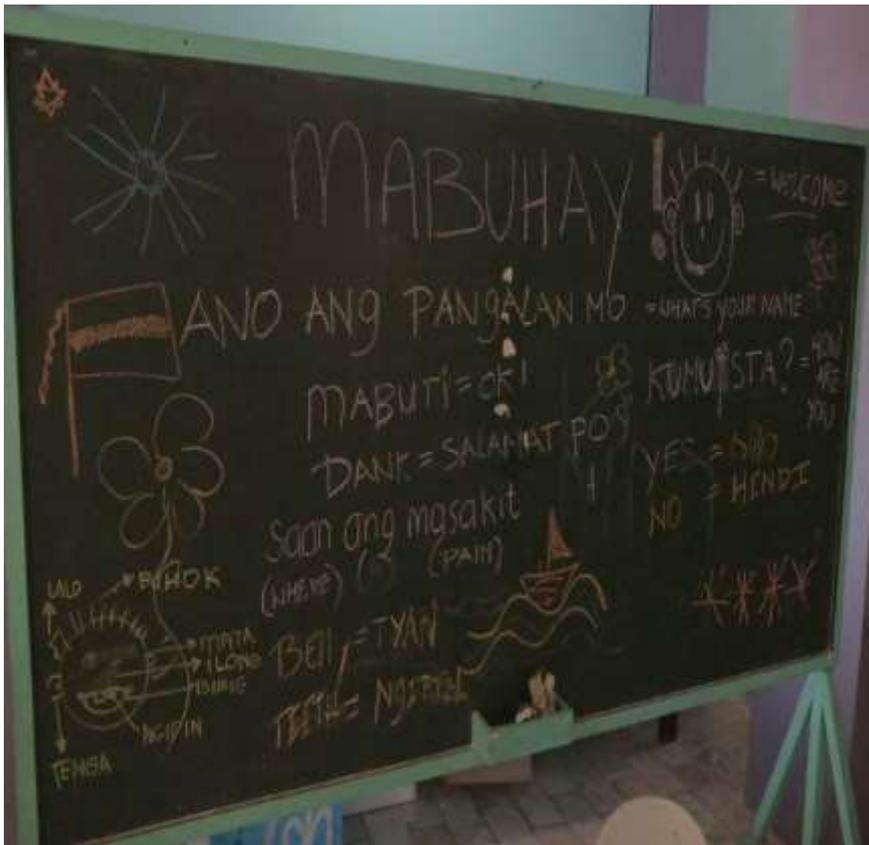
On the 24th of October, as a kickoff of this year's medical mission, the Philippine local team and the neurosurgeon Dr Kenny Seng delivered presentations to share the results of last year's medical mission and follow up of the more severe cases. A heartwarming highlight was the presence of the operated or rehabilitated children from the 2014 MCC mission entering the room with their caretakers to present themselves to the team. For all the MCC team members the extended new slum tour, headed by Nympha, provided the context of this year's medical mission and background of the documentary that team member Joost Ruigrok would shoot during the week. The tour again a unique experience, giving insights in the hard living and working conditions of the marginalized scavenger families.

This year's medical mission had an extra focus on asthma, the most common chronic disease affecting the children in this landfill, where the garbage of the city of Manila is dumped. Noor and Ans as pulmonology experts addressed the challenges in treating pediatric asthma in developing countries. They initiated interactive, lively workshops with the local volunteers and nurses on several issues like asthma diagnosis, environmental issues, asthma management, access and affordability of asthma therapy, socioeconomic factors and the need of good education of parents and patients.

The Philippine team consisted of 27 volunteers/translators making the mission a great success.

The MCC team was again very happy with the sublime organization of the local team. Great compliments and special thanks go to Luisa, Conny and Eunice for the excellent follow up of the 2014 malnourished and huge number of special cases, who are followed-up with great care, precision and detailed reports via internet contacts all through the year.

We hope the volunteers 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 child health and hygiene. And last but not least, we would like to thank the children and their caregivers who came to the check for their friendly, warm presence.



Medical Checks for Children on location

Table 1: Number of checked children per day

Date	Number of children	
24-10-2014	223	
25-10-2014	192	
27-10-2014	190	
28-10-2014	289	
29-10-2014	262	
30-10-2014	170	
Total	1326	

The children were seen free of cost, at the MCC carousel as follows:

1. Registration
2. Height and weight
3. Blood test (hemoglobin)
4. Physical examination and saturation
5. Distribution of medication (pharmacy)
6. Food station.
7. Education on hygiene, tooth brushing (a tooth brush was given to each child) and hand washing.

Data collection

Each child was accompanied by a caretaker. Anthropometric measurements were recorded, and a finger prick sample was taken to determine the hemoglobin (Hb) concentration. Each child was thoroughly examined by a medical doctor. Prior treatment of deworming and actual medication, including iron and multivitamin intake, were noted. An extended patient history was recorded, with specific attention to respiratory, cardiologic, gastrointestinal, infectious, and developmental/neurologic problems. Caretakers were asked to bring medical reports of known diseases. Local nurses and volunteers, which spoke English fluently, were assigned as translators and often were co-running the different medical carousel stations with the Dutch team members.

At the end of the MCC carousel, the data of the checked children were put in the MCC database, added on by a specific file for follow-up patients.

Diagnosis and categories of ailments

During the week, MCC checked 1326 children, of whom 219 children (17%) were checked on last year's medical mission and 1107 new presentations. The high-risk group of young children under the age of 5 years was strongly represented, as well as a high percentage of vulnerable children with birth defects, malformations, handicaps and disabilities. Disabilities included emotional, developmental and physical impairments.

Aside from the more basic healthcare needs catered for by the MCC community health program, the team's effort was focused on the children with special needs and on children with asthma.

The main alleged causes were respiratory diseases (162, 12%), such as obstructive asthma (N=70, 5.2%), bronchitis (N=35, 2.6%), pneumonia (N=44, 3.3%), and tuberculosis (N=12, 0.9%). Other common diseases diagnosed were active worm infection (N=154, 12%), otitis media with effusion (N=21, 1.5%), otitis media acute (N=26, 2%), and diarrhea (N=27, 3%) of which four children with dehydration.

Also skin disease was a common clinical finding (N=182, 14%). Specific clinical diagnoses included infected wounds (N=32, 2.4%), dermatomycosis (N=25, 2%), impetigo (N=50, 4.5%), scabies (N=23, 2%) and eczema (N=27, 2%).

Caries was present in N=374, 28% of the children, of which 117 (9.1%) suffered caries with pain.

Finally, among the children examined 16% were free of clinically detectable disease.

The overall health and nutritional status of the children was moderately poor, with **50% (N=664) stunting**, **43% underweight (N=567)**, and **22% anemia (N=292)** of which seven children had a deep anemia (<5 Hb mmol/l).

Due to the high risk of mortality and morbidity of children under five, the focus of MCC is on checking vulnerable young children. Compared to earlier years this goal of selecting young children was reached with 55% (N=730) of the children being five years or younger, including 277 babies.

Table 2: Age and gender distribution of checked children

Age in years	N	%
Total	1326	100%
≤ 1	277	21%
> 1 - ≤ 5	453	34%
> 5 - ≤ 10	501	38%
> 10 - < 18	95	7%
boys	649	49%
girls	677	51%

Table 3: Prevalence of main diagnoses

Diagnosis	N	%
Anemia	292	22%
Underweight (w/a)	567	43%
Wasting (w/h)	196	15%
Stunting (h/a)	664	50%
Caries without pain	257	19%
Caries with pain	117	9%
Active worm infection	228	17%
Pneumonia	44	3%
Asthma	70	5%
Clinical vitamin deficit	12	1%
Otitis media	47	4%
Otitis externa	21	2%
Dermatomycosis	25	2%
Scabies	23	2%
Infected wounds	30	2%
Impetigo	50	4%

W/a: weight/age, w/h: weight/height, h/a: height/age

Further diagnostic evaluation

In total 7 X-rays were ordered on the spot. As far as all the results are known already in 4 children tuberculosis was confirmed.

Treatments

Most of the ailments could be treated on the spot and consisted mainly of multivitamins, iron, mebendazol (anti-worm), and antibiotics and creams.

Table 4: Given treatments

Treatment	N	%
Multivitamins	738	56%
Iron	55	4%
Mother iron	66	5%
Preventive anti-worm treatment	546	41%
Acute anti-worm treatment	228	17%
Amoxicilline	69	5%
Clarithromycine	52	4%
Ivermectine (scabiës treatment)	26	2%
Ventolin	70	5%
Prednison	24	2%
Anti-bacterial cream	47	4%
Anti-fungal cream	19	1%
Hydrocortison cream	31	2%

Collaboration with local hospitals and health centers

MCC referred 84 acute and more chronically ill children to the medical specialists in metro Manila for further diagnostics or treatment and 43 children for local follow-up, for which six for revisits, and 23 children for full blood count re-checks after 3 months.

Acute situations

One critically ill child presented itself in a lifethreatening situation and was admitted to the local hospital after stabilization at Centre Salvatore. The girl of 10 months suffered from a severe pulmonary stenosis with low saturations around 63 %. She was successfully operated by the cardiac surgeon. This initial heart operation was sponsored by the Emile Nieuwendijk Foundation in the Netherlands. The baby will need a secondary heart operation in time, for which an additional fund needs to be found.

An eight year old schoolgirl presented herself to us with neurological signs and symptoms of raised intracranial pressure. A CT-scan, made on the same day of presentation, showed a large tumor in the brain. After consent with her father, at work in the Middle East and applying for a travel visa to be present at the week of

surgery, treatment was started with dexamethasone. After admittance the child was cleared to have neurosurgery on the last day of our stay in Tondo. The biopsy showed a huge tuberculoma with a good prognosis, and tb-treatment was started, together with anti-epileptic drugs.

She recovered remarkably quickly from the operation, with neurological improved function of her eyesight and walking ability.

A four year old ex-premature presented herself with many severe medical conditions, such as recurrent seizures, severe delayed growth and development (4 years, 6 kg), marasmus and intellectual disability, just to name the most prominent. The recurrent seizures were treated with keppra on the spot, and continuous phenobarbital medication was started after referral to the neurologist/neonatologist.

Follow-up

During our week of checks team member Roelof completed a file of follow-up patients, who will need additional care, be it in further diagnostics or treatment. A total of 98 children got a short description of their problem and suggestions in writing for first steps to take in the follow-up effort. To further prioritize the urgency of the different problems/cases, the list was coded in 3 different colours for triage. The triage was based on the severity of their condition, as resources are insufficient for all to be treated (immediately).

The patients are categorized in different specialty fields:

Neurology, 14 children

Cardiology, 19 children

Physiotherapy, 14 children

Speech therapy, 4 children

Eye doctor, 9 children

Surgery, 12 children

Urology, 3 children

Orthopaedics, 5 children

Others, 18 children

As in former years of our collaboration, Bless the Children will assist these families with children in the follow-up in terms of medical and surgical assessments and interventions.

Bless the Children and MCC will both make efforts to look for additional funds for the high priority cases in the short term, and possible structural funding opportunities for long term support of the after care.

Dental referrals

In total 147 children (11%) were referred to the Filipino voluntary dentist, all visitations and treatments free of costs.

The criteria for referral to the dentist were:

- primarily children under seven and caries with pain accompanied with wasting, stunting and/or underweight, or
- children above seven years old with caries with pain, or
- children with abscess.

Asthma (see also page 16)

Childhood asthma is often under-diagnosed and under-treated in settings in which other illnesses such as pulmonary tuberculosis or viral lower respiratory tract infections may result in wheezing. Apart from atopic wheezing nonatopic wheezing may even be the most predominant forms of asthma in children in low income countries. A number of negative environmental factors in Tondo have severe impact on asthma control. Children in general, and children with asthma in particular, are sensitive to the adverse effects of indoor and outdoor air pollutants, including ozone, nitrogen, oxides and respirable particular matter. A growing number of studies also show that children living in environments near heavy traffic, dumpsites and landfills have increased risks of new-onset asthma, asthma symptoms, exacerbations, school absences and asthma-related hospitalizations.

There are a number of challenges to providing optimal management of childhood asthma in such settings. These include access to care, ability of healthcare workers to manage asthma, availability and affordability of inhaled therapy, environmental control of potential triggers, education of healthcare providers, the parents and the public, and cultural or language issues.

This year's medical mission particularly focused on the education of asthma of health workers and patients/parents. Educational intervention was delivered to 42 children and their parents in an inspiring interactive way by Luisa, Ans and Noor. Spacer devices for the effective use of medication were also provided free of costs, as was the medication.

Apart from the workshop on asthma management 10 selected children with severe asthma joined a clinical program at Centro Salvador that provided free asthma medication, including the costly inhaled corticosteroids (ICS) for a 12 month period. Regular scheduled clinical visits including peak flow measurements were set up with Luisa, the first one being in January 2016.

Although the WHO essential drug list includes inhaled corticosteroids (ICS) and bronchodilators, spacers are not listed. ICS are very expensive and almost unaffordable for the parents. There is a need to look into strategies with respect to the affordability of first line controller therapy with ICS in the future.

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 5 at increased risk of death.

Literature from the Philippines shows that 4 million children are chronically malnourished. The main factors contributing to malnutrition in Manila are urban slum poverty, lack of sanitation, poor living conditions (overcrowding), child labor and child abuse, lack of protein intake, iron and multivitamins. Apart from the above mentioned factors leading to malnutrition, the prevalence of stunting is also correlated with chronic exposure to chemicals such as lead and cadmium on the dumpsites. Clinically many children and their care givers mentioned loss of appetite in their children, which, apart from being related to pinworms and caries with pain, is also one of the leading symptom of possible lead pollution. The lead exposure in the Barangay 105 zone, although exact data are missing, is mainly caused by the deplorable housing conditions near the Marcos highway with heavy traffic and air pollution of diesel trucks, busses and jeepneys. Also charcoal burning, carbonmonoxide, heat, and waste adds to the cumulative exposure of the children to chemical pollutants.

Malnutrition is thought to account for one third of all deaths of children under five (UN Millennium Developmental Goals). 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.
- 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.
- 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.

It should be noted that reference data were only available for certain heights, weights and ages (as specified above), leading to the following general prevalence of growth abnormalities in the communities we visited.



Doctors without Borders, Amsterdam donated MUAC bands for this year's medical mission. MUAC, which stands for mid-upper arm circumference, is a paper band to detect severe malnutrition. The band is color-coded in green, yellow, orange and red. The orange code indicates the patient is moderately malnourished, whereas the red color of the band indicates that the patient is severely malnourished and at risk of death.

A measurement that falls in the yellow part of the band indicates that the patient may be at risk of malnutrition. MUAC

is a very helpful tool, but not foolproof and the accuracy diminishes as the child ages. We (therefore) used the MUAC side by side in a pilot group of 6 to 60 month old infants and children additional to the routine weight for height cut off.

The prevalence of stunting, wasting and underweight in our high-risk population was high: 50%, 15% and 43% respectively. A 2014 Philippines statistic refers to overall underweight in children of 20.2%, illustrating the inequalities of these vulnerable children living in barangay 105 and nearby barangays.

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

	Total	
	1326	
	N	%
Underweight	567	45%
No underweight	700	55%
Unknown	59	4%
Underweight children per age		
<=1 year	104	38%
>1 en <5 years	217	48%
<5 years	321	44%
>=5 en <=10 years	229	46%
>10 years	17	39%
Underweight children per gender		
Boy	306	49%
Girl	261	41%

Table 6: Prevalence of height/age at or under P3 (stunting) per geographical location by age and gender

	Total	
	1326	
	N	%
Stunting	664	51%
No stunting	645	49%
Unknown	17	1%
Stunting children per age		
<=1 year	115	42%
>1 en <5 years	288	64%
<5 years	403	55%
>=5 en <=10 years	229	46%
>10 years	32	38%
Stunting children per gender		
Boy	343	54%
Girl	321	48%

Table 7: Prevalence of weight/height at or under P3 (wasting) per geographical location by age and gender.

	Total	
	1326	
	N	%
Wasting	196	17%
No wasting	949	83%
Unknown	181	14%
Wasting children per age		
<=1 year	47	17%
>1 en <5 years	77	17%
<5 years	124	17%
>=5 en <=10 years	70	17%
>10 years	2	14%
Wasting children per gender		
Boy	103	18%
Girl	93	16%

On the location checked, the typical diet is rich in carbohydrates, mainly rice and street food, but deficient in proteins and other food categories. In 2000, the World Food Program released figures that 60% of urban slum households in the Philippines were unable to fulfil basic nutritional requirements.

On the other hand overweight is also on the rise, and should be monitored. Obesity in childhood in preschool age ranges at 3.3% in the Philippines and is a perennial problem of highly urbanized cities with fast-food chains and loss of national, rational diet. Ironically, nutritional stunting in early life has been associated with obesity in later years. Particular longitudinal studies from the Philippines provide support for this hypothesis. The risk for obesity should be addressed by promoting: exclusively breastfeeding, avoid added sugars and starches to formula when used in feeding, promotion of adequate micronutrient intake, fruit and vegetable intake, restriction of energy dense food and soft drinks intake, promotion of active life style and limiting TV/Computer viewing.

The children showed high prevalence of all three types of malnutrition. Bless the Children offers an effective feeding program with healthy foods supplemented with multivitamins and iron. In comparison to the former cohort there was a moderate increase in children with wasting and stunting. These numbers might be biased due to the selection of a high percentage of children with syndromes and/or severe neurological/developmental problems.

To date, Bless the Children has served 133050 meals since 2013, or on average 220 meals served per day. Children with parents who comply with bringing them to the

center daily showed very good improvements in term of growth in height and weight, as well in hemoglobin levels with the addition of iron in their diet.

We treated all children with growth abnormalities with multivitamins for 3 months, and spread the knowledge to the caretakers about the necessity of fruit and green vegetables in their child's diet. Advices were customized to the availability and costs of local fruits highlighting pineapple, papaya and mango rich in vitamin A and C. During the check days all children were provided a warm meal with spaghetti and tomato sauce, donated by Bless the Children accompanied with a fruit (apple/orange/pear), so none of the children left with an empty stomach.

During the medical checks, we paid special attention to issues of hygiene and nutritional advice. We emphasized handwashing, fruit and dark green vegetable intake. We noticed that a lot of mothers fed their babies up to the age of one year or more, exclusively with breast milk. For babies, we advised exclusive breastfeeding up to six months and then to start with the introduction of additional foods. Philippine data show that 73 % of all children are breast fed up to the age of 6 months, and up to an average of 20 months. Most probably the children are breast fed long time, since this is a way of birth control.

2: Anemia

Anemia is the most prevalent micronutrient disorder. A study in 2006 by A. Kreissl showed a prevalence of iron deficient anemia in Filipino children, aged 6 months to less than a year, of 56.5 %. For children of all ages the prevalence was around 31.8 %.

The prevalence of anemia in the group of children we checked this year in Tondo was only 22%, and twice as low as the first year's check in 2012 (45% at the time). One of the main reasons could be the fact that a considerable amount of children we checked are or were already enrolled in the local feeding program, which includes vitamin supplementation, iron enriched diet and anti-worm treatment. Other possible attributable effects of environmental changes, dietary changes and other changes in the communities cannot be excluded. Especially the selected children under 5 years of age, 164 children in number, make up the 56 percentage of the 292 children detected with anemia.

Table 8: Percentage of anemic children per age category

	N	%
Anemia	(total: 292) (of total children per age group: see table 2)	
≤ 1 year	72	26%
> 1 year - ≤ 5 years	92	20%
> 5 years - ≤ 10 years	110	22%
> 10 years	18	19%

Anemia is largely attributable to poor dietary quality (diets low in key nutrients) and high disease loads. To date, 95% of the anemia is due to iron deficiency.

In the Philippines there is no national policy to provide iron supplements to pregnant women and young children up to 5 years of age. 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 integral interventions, addresses the various factors that play a significant role in producing anemia in a given community. In addition to iron deficiency, other nutritional deficiencies, infectious diseases, such as worm infections, and other chronic infections, particularly tuberculosis, play a significant role.

We treated the children with anemia (and their mothers if they were breast feeding) with multivitamins if they were underweight, stunting or wasting or with possible underlying infections.

If there was only anemia, iron supplements were given for three months. Seven children showed a hemoglobin level below 5.0 mmol/l and will need a recheck after 3 months.

To combat anemia, vitamin C intake is important because vitamin C facilitates the uptake of iron in the gut (just as milk and tea counteracts it). Iron from animal foods, such as meat, is usually better absorbed than from vegetable origin foods such as rice. A settlement would be a mixture of both sources of food to reduce the differences.

3: Worm treatment

In the location checked, the prevalence of worm infestations was moderate. 154 children (12%) were treated during two consecutive days therapeutically because caretakers actually saw worms in the stool with their own eyes or because of clinical signs. Prophylactically we treated 332 children (25%) with one tablet of Mebendazol 100 mg, because they did not have a deworming treatment within 6 months. A remarkable high group of children (74%) were already enrolled in a local bi-annual anti-worm campaign by either Bless the Children or school programs. These numbers differ from last year, showing the success of the local implemented anti-worm programs.

Soil-transmitted worms, including roundworms, hookworms, and whipworms, are common in tropical and subtropical areas, and particularly affect children in low-income areas where there is inadequate sanitation. Heavy worm infection is associated with malnutrition, poor growth, and anemia in children.

Since May 2015 there is a lively discussion within the academic world about the benefits of deworming of whole countries and communities.

The World Health Organization currently recommends that school children in endemic areas are regularly treated with drugs which kill these worms. The

recommended drugs are effective at eliminating or greatly reducing worm infections, but the question remains whether doing so will reduce anemia and improve growth, and consequently improve school attendance, school performance, and economic development, as has been claimed.

In a recent Cochrane Review, researchers examined the effects of deworming children in areas where intestinal worm infection is common. After searching for relevant trials up to April 2015, they included 44 trials with a total of 67,672 participants, and an additional trial of one million children. Their research shows:

- In trials that treat only children known to be infected, deworming drugs may increase weight gain (*low quality evidence*), but we do not know if there is an effect on cognitive functioning or physical well-being (*very low quality evidence*);
- In trials treating all children living in an endemic area, deworming drugs have little or no effect on average weight gain (*moderate quality evidence*), haemoglobin (*low quality evidence*), or cognition (*moderate quality evidence*).

For now, MCC holds on to its worldwide protocol of advising and implementing the bi-annual deworming program in endemic populations, as we have no sound information how many children are actually infected. Ways of improving personal hygiene and sanitation through handwashing, nail trimming, wearing of shoes/boots and use of a latrine and clean water supplies were encouraged, with realization of the deplorable housing conditions of many families and the environmental hazards of the dumpsite.

Although all members of a population can be infected by intestinal parasites, those who are at most risk and would benefit most from preventive interventions such as the deworming campaign are the pre-school and school children.

4: Respiratory diseases

In total 121 children suffered from respiratory diseases such as bronchitis N=35 and asthma N=70 and pneumonia N=40.

Diffuse wheeze suggests bronchospasm, and is most commonly caused by viral illness (upper respiratory infection with reactive airways, viral pneumonia, or in children under 2 years of age, bronchiolitis.) Obstructive lung disease such as asthma may be associated with prolonged expiratory phase, hyper resonance on percussion, and hyper inflated chest.

Evidence from literature supports our findings that living near or on a hazardous waste site with persistent organic pollutants (POP) increases the risk of respiratory disease in children. POP include dioxins, furans, polychlorinated biphenyls and chlorinated pesticides.

These substances are very persistent in both the environment and in the human body. They also have adverse health effects on several different organ systems, including the immune function. A depressed immune system is expected to increase the

incidence of infectious diseases. Several studies demonstrate elevations in respiratory infections, matching the high prevalence of symptoms such as reported chronic cough and cold in our population.

Exposure of (semi)volatile compounds in air pollution also results in increased risk of recurrent middle ear infections, (39 children, 5% infection.)

A high number of children was diagnosed with asthma (a total of 70 children, 5%). On the spot we treated them by administration of salbutamol by metered-dose-inhaler with spacer or by nebulizer, while monitoring them clinically with Nellcor portable saturation devices, donated by Covidien, the Netherlands. For the more severe cases we started a three day rescue treatment with oral corticosteroids (prednisone 1-2 mg/kg.day) additive to the Salbutamol oral reliever treatment.

Ten selected children with severe conditions joined an asthma management protocol with free of costs ICS for a year's period. (see chapter on asthma above, page 9).

5: Skin diseases

Skin disease was a common clinical finding (21%), with the more specific clinical diagnoses: wounds (5%, n=46) dermatomycosis (3 %, N=26), impetigo (4%, N=35), scabies (1%, N=13) and eczema (3%, n=26). Antifungal cream (sometimes in combination with hydrocortisone) was given for fungal infections (dermatomycosis) and hydrocortisone cream was given for different forms of dermatitis and eczema. Infected wounds were treated with Fusidin cream from the Netherlands. The numbers of fungal skin infections were lower this year than last year.

Children with scabies with a weight above 15 kg were treated with tablets of ivermectine. Preferably, soaps are needed to wash clothes and bed linen at high temperature (60°C) to kill off the scabies mites. A good alternative is to put infected clothes and bedding into a sealed plastic bag for three days in the sun.

6: Neurological problems

Neurological and developmental disorders were quite common in the children checked with diagnosis of psychomotor retardation (N=20), hypertonia (N =7), hypotonic (N =4), epilepsy (N = 8) and one child with spina bifida (N=1).

Bless the Children has (unlike many community care centers) put a lot of attention to children with developmental and neurological disorders. Tuberculous meningitis still is a common problem in the Philippines with often long-term disabilities. Other children with disabilities are the ones after difficult births (poor quality of perinatal care) and victims of accidental injury. Various factors such as poverty and malnutrition due to Vitamin A, iron or iodine deficiency magnify the often devastating effects on these children. Long term sequelae such as hydrocephalus need to be addressed by surgical interventions with VP drains, and revisions due to

(possible) infection and/or growth. Congenital or non-infectious disease such as epilepsy warrant a treatment with ongoing medication.

A growing group of children with cerebral palsy has benefitted from local and voluntary physiotherapy interventions this year. Eunice strongly engages in building up community rehabilitation services and social inclusion of the children with disabilities. Together with case finding of MCC, attention can be given to early detection, referral, therapy and monitoring during the year.

7: Dental problems

In general, high caries prevalence was found: 374 children of which pain was accompanied in 117 (31%) of the children. This percentage is still high, but also lower than in the previous years, which shows a positive development. Most probably the positive oral health status reflects the cooperation within the barangay with the local dentist and oral health promotion efforts.

Fluor is not added in the drinking water in Manila. The prevalence of caries was mainly due to either deplorable dental care and/or the intake of sweets and sugary beverages.

MCC was grateful to the local Philippine dentist, who was working with us side by side. We could directly refer the children to her after the medical check, supplying additional painkillers in 56 cases after extraction procedures.

We stressed the importance of proper dental hygiene and the banning/limitation of sugary products, beverages and fast food to the children, their caregivers and their teachers. We are aware of the fact that sweets are (globally) the main tactic for the care givers to please the children in their harsh situation. Therefore, many small changes need to be made, starting with structured oral health promotion activities within the Barangays.

On the medical check days volunteers had prepared several age-specific health promotion activities teaching proper oral and hand hygiene and handing out colorful toothbrushes.

Education health workers, caregivers and other local helpers

One of the most important tasks of MCC is to encourage the reaching out of health education to the caregivers and children.

Based on WHO estimates, 25% of the global burden of disease is due to preventable environmental exposures, with the greatest burden to children in low-income and developing countries. Health care and social welfare providers in Tondo are at the front of observing adverse environmental impacts on children. Training and specialty expertise on environmental health and in particular pediatric asthma in the dumpsite pediatric community is largely desired.

During the week the mixed Filipino-Dutch team shared knowledge about common diagnoses of frequent illnesses and treatments. We especially focused on anemia and malnutrition, balanced diet, infections, parasites, helminthes, and asthma.

Nutritious food, deworming, iron and vitamin supplements, as well as hygiene and control of asthma triggers should be key components of local public health promotion. The implementation of the clinical asthma program with first line controller medication of ICS in 10 selected children will be evaluated in the coming months.

Conclusions

The results above show the success of the efficient implementation of health services for the children in Tondo by Bless the Children. MCC is positively impressed by the steep learning curve of the nurses in charge of the multitude of community health projects and the upscaling of the offered medical services and food programs. During the week the volunteer staff impressed us with their knowledge, skills and ownership of the medical carrousel and sound interpretation of the medical findings.

MCC also takes note of some shifts in time during the four-year period we have been checking in Tondo (2012-2015):

- The total number of children checked in six days has almost doubled from 2012 till 2015;
- With every new medical mission in time, the cohort of children changed in terms of complex medical conditions – with an exceptional high percentage of children to be followed-up in 2014 and also this year; and
- In addition to the basic health checks, more emphasis was put on the prevailing chronic condition asthma, both in the medical carrousel as well as by knowledge transfer and treatment modalities.

These three changing conditions, in combination with Bless the Children's steep learning curve and the fact that, apart from their outstanding work in acute child care, Bless the Children has vindictively decided to target children with disabilities and chronic diseases, make that MCC will in the coming months work out a couple of scenarios to identify the best way to stay involved in Bless the Children's activities in 2016. An element that should be looked at as well, in interaction with Bless the Children, is the expansion of the current outreach and enrollment assistance activities to other Barangays. Commitment of these Barangays, transport of and for the families and children, and (possible) show up percentages are elements to take into account in this, since this years' experience with involving two other Barangays.

General recommendations/future needs

1. Continuation of the community health services already in place at Bless the Children, such as the sponsorship program (more than 800 children already), nutritional program (more than 220 meals a day), health program (has already

served 11033 children in Tondo) and the special medical and surgical interventions (more than 250 children already).

2. Preventing leading causes of disease by health promotion activities around caries, malnutrition, and specific medical conditions.
3. Influencing health-related behaviors: knowledge, beliefs, skills, attitudes, values and support.
4. Information gatherings within the community about air pollution and its risks for asthma and respiratory infections.
5. Ongoing support and advocacy. Scavenger children are affected by severe environmental risks, such as air pollution, inadequate sanitation, disease vectors, chemical waste and injuries, additional to poor nutrition, stress, domestic violence and poor schools. Due to their cumulative high health risks they need all the support and advocacy they can get.

Capacity building and expansion of local health care staff

After the 2013 medical mission, a private sponsor in the team funded the expenses of a year's salary of a second nurse, catering to the needs of to the growing number of children making use of the health care facility at Bless the Children. The team enjoyed getting to know and working together with the hard working, very sympathetic and knowledgeable nurse Connie. Promise was made for a second year's salary donation by this sponsor, until the end of 2016. Additional opportunities to sustain the womanpower on location will need to be found with salaries taken over by the local organization in 2017.

Final remarks

The 2015 medical mission in the Philippines was another rewarding experience touching the hearts of all the team members. Both the Dutch and the Philippine group learned from last years, which made the logistics even more smoothly and effective. Easy access to partnering laboratory and radiology facilities made the diagnostics on the spot site very efficient and effective.

Cooperation and collaboration with the local and Dutch team remains exiting, and inspiring with manifestation of a novel asthma management program.

Joost Ruigrok's documentary, first run on the 13 th of December at the 10 years anniversary of MCC touched all those present and has gone viral on you tube. With this film we can recrute even more volunteers for our work in low and middle income countries and raise additional sponsor money. A big thanks goes to all the participants in the film, especially to Luisa, Wilma and Miguette. MCC is very grateful to Joost for all the time and expenses and effort he put into making this beautiful documentary.

It is stimulating to work with team members from different cultural backgrounds, exchanging ideas and learning from each other in such a friendly, warm and respectful way.

The positive energy, sense of belonging and forming ONE caring team for the children in need touched everybody's heart. After four years we have not only become partners in health care, but solidified our relationship into lasting friendships. Special thanks go again to the dream team: Ms. Eunice Cheng-Chua and Ms. Luisa Celis, with whom MCC stays in regular contact throughout the year.

On behalf of the MCC team Philippines 2015,

Ines von Rosenstiel and Miguette Jadoul
December 2015

