



Medical Checks for Children

# Medical Report The Philippines, 2012



## Introduction

From October 6<sup>th</sup> to October 12<sup>th</sup>, a Medical Checks for Children (MCC) team visited Barangay 105, Tondo in Manila, the Philippines, a low housing area near a huge dumpsite. MCC checked and treated 998 children between 0 and 12 years old free of cost.

The Barangay and its families is an area with limited access to medical facilities. The dump covers an area of at least 10 hectares with major environmental problems, as congestion, air pollution, sanitation and recurrent flooding (disaster-prone). Most parents work as scavengers on the dump, where slum poverty goes hand in hand with high health risks and environmental hazards.

This first free medical campaign of MCC in the Philippines was organised in cooperation with the Dutch development organisation Filibata in collaboration with the philippino-based Bahay at Yaman nu SanMartin de Porres Foundation, led by Father Boyet.

The international team consisted of Miguette Jadoul (lobbyist, journalist), heading the team, Ines von Rosenstiel (paediatrician), David Kopsky (general physician), Danielle van der Kaay (paediatric resident), Richard Schol (paediatric resident), Yvonne Verdonk (neonatology nurse), Jankees de Ridder (family physician), Marjan Bolt (medical technical assistant), Niels von Rosenstiel (family physician), Birgit von Rosenstiel (director of a primary school).

Technical equipment, toothbrushes and some of the supplies were brought from the Netherlands and Germany by MCC team members. Most of the medication was ordered by Dieter Breuckner in collaboration with a local generic drug company .

Support from the local organizer committee included the following (amongst others):

- Selection of patients and care givers
- Facilitating board and lodging for all MCC team members
- Transportation of the MCC team to the check location
- Prior announcement of the medical campaign in the location
- Making copies of all necessary papers
- Giving support in ordering and delivering the medication
- Giving support to the MCC team during the medical campaign
- Arranging the cooperation with the local hospital and Dr Ferrer for medical follow up

On the first day the team was given a cultural lecture in the Barangay hall, Mangino Street, about the imprint of historical experiences on the Philippine people, religion, political and societal thought. A comparison of the Philippino and Dutch norms, values and experiences were shared and provided the context of our collaboration.

Also the organised slum tour provided the context of our medical mission and was a unique experience for the team, giving a (sur)realistic insight in the hard and desperative living and working conditions of the scavenger families in their familiar setting.

In Tondo our group consisted of one driver and 16 volunteers/translators who worked in Tagalog and English. In total the multidisciplinary group consisted of 25 team members who performed the children's medical health campaign.

The MCC team was very happy with the cooperation with the local organizers, and the active, direct support and enthusiasm of the local volunteers who gave MCC the opportunity to work in Manila and to facilitate all aspects of the medical campaign. Special thanks go to the core local organizers. 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 date.

Date	Number of Children
7/10	127
8/10	151
9/10	171
10/10	136
11/10	191
12/10	222
Total	998 Children

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

1. Registration
2. Height and weight (saturation occasionally)
3. Blood test (haemoglobin)
4. Physical examination
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

Anthropometric measurements were recorded, and a finger prick sample was taken to determine the haemoglobin (Hb) concentration. Each child was examined by a clinical officer. History of illnesses in the preceding weeks was recorded. Specifically, caregivers were asked if the child had fever, respiratory infection, diarrhoea, vomiting, eating soil (pica), decreased appetite, weight loss and pain. They were also asked if their child had received prior treatment, especially deworming within the last half year, iron or multivitamin supplementation and antibiotics.

At the end of the MCC carousel, the data of the checked children were put in the MCC data base which made it possible to make a quick scan of children's health every evening, which was communicated on the spot.

### Diagnosis and categories of ailments:

During the week, MCC checked 998 children.

The main alleged causes were respiratory infections (10%), asthma (2%), active worm infection (17%), otitis media (5%), and diarrhea (3%).

Skin disease was a common clinical finding (19%), with the more specific clinical diagnoses: infected wounds (4%) dermatomycosis (3%), wounds (3%) impetigo (2%), scabies (2%) and burns (0.7%).

Finally, among the children examined 55% were free of clinically detectable disease, 39% suffered from mild to moderate symptoms and 6% from more severe illness, requiring prompt medical treatment.

The overall health and nutritional status of the children was moderately poor, with **47 % stunting** and **45,5 % anaemia**. Due to the high risk of mortality and morbidity of children under five, the focus of MCC is on checking vulnerable young children. Of all checked children, 67 % was five or younger.

Table 2: Age and gender distribution of checked children. Figures represent absolute numbers with percentage of children.

	N	%
<b>Total</b>	998	100 %
<b>Age</b>		
>=0 and <1	178	18 %
>=1 and <5	499	50 %
>=5 and <10	270	27 %
>=10 and <18	50	5 %
<b>Boy</b>	446	50 %
<b>Girl</b>	447	50 %

Table 3: Prevalence of selected diagnosis

Diagnosis	Total	
	N	%
<b>Total number</b>	998	
<b>Anaemia</b>	394	45 %
<b>Underweight (W/a)</b>	292	33 %
<b>Wasting (w/h)</b>	112	13 %
<b>Stunting (h/a)</b>	426	48 %
<b>Caries</b>	170	20 %
<b>Caries with pain</b>	142	16 %
<b>Active worm infection</b>	153	18 %
<b>Pneumonia</b>	60	7 %
<b>Astma</b>	23	3 %
<b>Dysentery</b>	3	0 %
<b>Dermatomycosis</b>	32	4 %
<b>Scabies</b>	16	2 %
<b>Infected wounds</b>	32	4 %

Most of the ailments could be treated on the spot. Three children, two with severe asthma and one child with severe dehydration were admitted to the local hospital for further treatment. They were released after 1 or 2 days in good conditions and without costs.

MCC referred 66 acute and chronically ill children to the medical specialists Dr Ferrer in the Barangay for further diagnoses, compliance of treatment and Hemoglobin recheck (18 children) after 3 months in the cases of deep anaemia.

#### 1: Growth abnormality and malnutrition:

(underweight: **33 %**, wasting: **13 %**, stunting: **48 %**)

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 show 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 labour and child abuse, lack of protein intake, iron and multivitamines.

The prevalence of stunting, wasting and underweight in our high risk population was very high 47.1 %, 12.5 % and 32.7 % respectively.

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, is a leading symptom of 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 e-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:

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 .

The Scavenger s children showed a high levels of all 3 types of malnutrition, with 44 % suffering from anaemia, and were enrolled in an iron and/or multivitamin program.

We treated all children with growth abnormalities with multivitamines for 3 months, and spread the knowledge to the care takers about the necessity of fruit and green vegetables in their child s dieets. 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 tomatosauce, donated by Mrs Marie Young and topped with a fruit (apple/mango), so none of the children left with an empty stomach.

During the medical check-ups, we paid special attention to issues of hygiene and nutritional advice. We emphasised hand-washing, vitamin C, 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. Philippino data shows that 73 % of all children are breast fed up to 6 months, and up to an average of 20 months.

## 2: Anaemia (45 %)

Anaemia is the most prevalent micronutrient disorder. To date, no research figures exist on the number of children in the Philippines with anaemia as a result of poor health and nutrition as well as poor environment.

The prevalence of anaemia in the Barangay checked was high (45%) and largely attributable to poor dietary quality (diets low in key nutrients) and high disease loads. To date, 95% of the anaemia is due to iron deficiency. There is no data on lead intoxications in our children checked.

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 anaemia, it is important to recognise that the control of anaemia requires a multi-faceted approach which, through integral interventions, addresses the various factors that play a significant role in producing anaemia 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 anaemia (and their mothers if they were breastfeeding) with iron supplements for three months. 13 children showed a haemoglobin level below 5.0 mmol/l and will need a recheck after 3 months. To combat anaemia, vitamin C intake is important because vitamin C facilitates the uptake of iron in the gut (just as milk and tea counteracts it).

## 3: Worm treatment (64% prophylactic, or therapeutic 18%)

In the locations checked, the prevalence of serious worm infestations was moderately high. Pinworm infections and other helminths are widespread in the Philippines and most common amongst children, especially those who play in soil containing mature eggs and who do not have good hygiene habits. Severe infections in young children can result in *trichuris dysentery syndrome*: bloody mucoid diarrhoea, anaemia and retarded growth.

If whipworm infection is serious, it causes intestinal lower or epigastric pain, lack of concentration, and fatigue. In severe and prolonged infections impaired physical or mental development in children results, most likely to be multifactorial, incorporating vitamin deficiencies and malnutrition caused by the abnormal functioning of the intestine.

On some occasions a whipworm may be noticed when it crawls up into the throat, and exits through the nose or mouth, as described by several caregivers in Tondo.

A strong relationship exists between *Ascaris Lumbricoides*, or *T. Trichiura* infection and anaemia. We treated children prophylactically on the spot with one tablet of Mebendazol 100 mg. Some children were already enrolled in a local bi-annual anti-worm campaign.

On the spot health education was aimed at increasing awareness of worm transmission, the different problems caused by intestinal helminth and the importance of de-worming every six months.

Ways of improving personal hygiene and sanitation through hand washing, nail trimming, wearing of shoes/boots and use of a latrine and clean water supplies were encouraged, with realisation 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.

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#### 4: Respiratory problems (13 %)

A high percentage (60 children, 7 %) of the children were seen with an acute respiratory infection (ARI) and treated with appropriate antimicrobials and home treatment advice. Evidence from literature supports our findings that living near or on a hazardous waste site with persistent organic pollutants increases the risk of respiratory disease in children. POPs 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 function 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 result in increased risk of recurrent middle ear infections, (24 children with acute middle ear infection and 10 children with otitis externa and shortness of breath with wheeze).

A high number of children were diagnosed with asthma or severe asthma (a total of 23 children, 3 %). Two children needed acute hospitalizations with oxygen supplementation and frequent nebulizing. On the spot we could treat several children with salbutamol nebulizing treatment and monitoring of MCC portable saturation device.

For severe asthma patients the peak was from 1 to 2 years, whereas for the infectious respiratory disease the distribution was more widespread. In summary, home environmental factors are particularly important for the development of respiratory morbidity among children.

Although we cannot change the cumulative exposure of the children living on the dumpsite on such a large scale with the high amount of outside and inside air pollution, knowledge transfer is essential to the caregivers how to manage the asthma effectively. Easy access of asthma medication and delivery devices need to be encouraged and supported in the barangay health centre.

#### 5: Cardiac problems

The MCC carousel also includes a cardiac examination. We were consulted about one child, earlier diagnosed with rheumatic heart disease, who had been referred to a specialist in the Hospital. The mother of the child reported that an operation would be possible, but unaffordable for her family. We presume that the operation would be a repair of the mitral regurgitation. We advised the mother to send MCC all the details by the cardiologist and the estimated costs (around 6000 euro). The importance of brushing teeth was specifically highlighted together with the advice to give their child antibiotics when going to a dentist to have a tooth extracted (endocarditis prophylaxis). This case will be followed up and sponsoring requested within MCC (Nieuwendijk foundation).

#### 6: Skin diseases (19%)

With respect to skin diseases we saw many children with infected wounds, pyoderma, tinea capitis, pediculosis capitis, dermatitis reactions due to insect bites, and scabies with or without secondary infections.

Antifungal cream (sometimes in combination with hydrocortisone) was given for fungal infections (dermatomycosis) and hydrocortisone cream was given for different forms of dermatitis, infected wounds were treated with Fusidine cream from the Netherlands. Three children were severely burned and treated with wound debris, dressings and painkillers on a daily basis.

In the Philippines benzyl benzoate lotion is the first line scabies treatment, which was given out to the caregivers of young children. Older children with a weight above 15 kg were treated with a pill ivermectin. 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 3 days in the sun about the importance of diet,

#### 7: Eye problems

Some children above five years of age complain about dry and/or painful eyes. Xerophthalmia can be attributed to Vitamin A deficiency. Vitamin A deficiency affects growth, the differentiation of epithelial tissues and immune competence. The most dramatic impact, however, is on the eye and includes night blindness, xerosis of the conjunctiva and cornea and ultimately corneal ulceration and necrosis of the cornea. Vitamin A deficiency occurs

when body stores are exhausted and supply fails to meet the body's requirements, either because there is a dietary insufficiency, requirements are increased, or intestinal absorption, transport and metabolism are impaired as a result of conditions such as diarrhoea. The most important step in preventing Vitamin A deficiency is ensuring that children's diets include adequate amounts of carotene containing cereals, tubers, vegetables and fruits. We treated children with painful eyes with extra vitamin supplements.

One teenage girl was seen with low eyesight and left the medical checks very happy with new glasses with the right eyecorrection glasses. the glasses were a donation of a nurse in the Slotervaart hospital, Amsterdam.

#### 8: Dental (>30 %)

In general high caries prevalence was found. We are unsure whether fluor is added to the drinking water in Manila. A high correlation was found with deplorable dental care and the intake of sweets and sugary beverages.

This MCC mission to the Philippines did not include dentists. Clinically the doctors diagnosed a lot of abscesses, root remnants and caries profunda.

The referrals of the MCC doctors to local dentists were limited to the most severe cases: profound caries with severe toothaches and in need of extraction. We stressed the importance of proper dental hygiene and the banning of sugary products, beverages and fast food to the children, their caregivers and their teachers.

The results show that despite a certain level of knowledge and culture of preventing oral/dental disease in the general philippino population dental disease is rampant in slum residents. Therefore, many changes need to be made, starting with health promotion activities within the Barangays.

On the check days many volunteers lived the health promotion activities with teaching proper hygiene and handing out toothbrushes and toothpaste to the children .

#### **Education health workers, caregivers and other local helpers:**

One of the most important tasks of MCC is to encourage the continuation of health education of the caregivers and older 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 in the dumpsite paediatric community is largely desired.

During the week the mixed Philippino-Dutch team shared knowledge about common diagnoses of frequent illnesses and treatments. We especially focused on anaemia and malnutrition, balanced diet, infections, parasites, helminths and asthma. Nutritious food, deworming, iron and vitamin supplements, as well as hygiene should be key components of local health promotion.

**Future medical needs and conclusions:**

The results above show the strong need for preventive medical help for the children in Tondo. Investing in capacity building and knowledge transfer about the circle of malnutrition, parasitosis and anaemia is essential. This can be done by joint ventures of workshops and anti-worm programmes by the local community and preventive annual activities in child health by MCC. MCC will also make an inventory of the possibilities of close cooperation with the local Hospital and with the local contacts doctor Ferrer, Cherry and Fee. The medical report Philippines 2012 could (by efforts of STMartin) possibly be translated into Tagalog, so that our partners in the communities and local health workers will have access to the results and follow-up in years to come.

**General recommendations :**

- Preventing leading causes of disease: HELMITHS  
It is important to stress the importance of regular (6-monthly) de-worming of all children above 2 years up to fourteen year of age. Maybe the health centre can help to organise an structural anti-worm program for the whole Barangay area. The children who were dewormed by MCC will need a second anti-worm pill in 6 months from now (March 2013).
- Preventing leading cause of disease: UNHEALTHY NUTRITION  
Good eating habits, with discouragement of fast food and sugary beverages with emphasis on nutritious food, fruits rich in iron and vitamins. Health promotion classes for mothers could be started in the local Barangay hall, maybe extended by a health education program for pregnant mothers with special attention to breast feeding and good motherhood.
- Preventing leading causes of disease: CARIES  
Special emphasis needs to be put on health promotion family classes directed to personal hygiene in every day life, the importance of hand washing with soap) and dental care. We were impressed by the fact that the caregivers and their children maintained so much basic hygiene, as no child was presented dirty, or with filthy clothes.
- Influencing health-related behaviours: knowledge, beliefs, skills, attitudes, values and support .
- Information gatherings within the community about air pollution and its risks for asthma and respiratory infections. Targeted information on how to manage asthma effectively, with the local health centre being the spill for asthma medication and spacers or nebulizers.
- 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 and poor schools. Due to their cumulative high health risks they need better access to medical treatment.

**Final remarks:**

Our first trip to the Philippines was a rewarding experience touching the hearts of all the team members. Cooperation and collaboration with the local and Dutch organisations and implementing mutual programs is exciting. The scavenger population taught us much about life: living in appalling conditions yet welcoming us with warm smiles on their faces and being responsible, child loving parents .

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

We are inspired by the efforts of our host country facing the vast medical demands with limited supplies.

The team hopes to return to Tondo, Manila next year to see the children once again and work together with all the wonderful people who put their time and energy into creating a better world for all of us.

Special thanks go to the core team: Cherry, Jonah, Eunice and Juliette, and the rest of the local team with whom the MCC team would love to work together again next year. We hope to see fruitful cooperation with the local community and Barangay health centre in the coming years in order to achieve the future goals.

On behalf of the MCC team Philippines 2012:

Ines von Rosenstiel, *medical mission leader*

Richard Schol, *paediatric resident*

Miguette Jadoul, *head of the mission*