

## **Pokhara 2008**

### **Introduction**

At the end of October 2008 a Medical Checks for Children team lead by Kees Donkervoort head of the Bethesda Hospital of Hoogeveen and Thea Teertstra paediatrician/ Intensivist checked and treated 830 children, free of cost, at 7 different locations 1000 miles west of Kathmandu around Pokhara.

The medical checks are organised in close cooperation with Chandra Bahadur Gurung, an ex Gurka and co founder of the Pahar Trust in Nepal. Last year this mission was lead by Barbara Datson, she is the founder of this mission around Pokhara and because of health problems she could not join us!

Besides Kees Donkervoort en Thea Teertstra, the other doctors in the team were Christine van Ingen pediatrician, Petra Tjalsma, Joost Overgaauw and Florentien de Steenwinkel. The team was completed by Karin van Breemen and Janny Heeringa, both pediatric nurses and Juliet Overgaauw a teacher in the nursery class.

The first half of the medical checks were conducted in the mountains staying at Kharpani Eco Lodge with no electricity or gas.

On the first day we had a big problem, the Hemocue's did not work en we could not check the blood for anaemia, one of the biggest problems in Nepal. But at the end of the first evening, Kees en Joost were able to repair the Hemocue's with there headlights on and in candlelight!

In the eco lodge, kerosene gas lights created a cosy atmosphere each evening and kerosene cooking stoves provided the team with excellent meals prepared by the cooks. We arrived just before dark after trekking for 45 minutes after a bus could take the team no further. The following morning we were rewarded with the most stunning panorama of the mount Fishtail with the fast running Seti River far below,!

Like last year, word had gone around to villages within the vicinity that the MCC team would be arriving, and children with their families all converged to the lodge for a medical check. This year there were less children than before in this area, they all had to work on the land till the second week of November. This can be important information for the missions in this area in the following years. It seems to be better when we check three weeks later, at the end of November.

The following days we trekked to the Annapurna school, The Himalaya school and in Sayapatri, a small village. On all the places we received a wonderful welcome. The other venues were around the city of Pokhara and consisted of schools, orphanages and a slum area. These were the Navadeep School, a Lion's Club sponsored Government School, Kanya M.V. school, Hope for Himalayan Kids orphanage and Krishna tole the slum area near the airport of Pokhara.

The medical cases which we encountered and given attention were anaemia, lice and scabies, growth abnormalities, caries, eye, ear and skin infections and worm infections

On each location the children stood in line for medical care. They were given a numbered form and were admitted to the first station where name, age and school number were written on the form by a local helper or translator. This paper was then given to the child who had to keep it until his or her treatment had been completed. After their weight and height had been taken, pulse and oxygenation of the blood were measured and on the third station the blood was checked for haemoglobin as well as taking the blood pressure when necessary. A complete physical examination was done by one of the doctors who subscribed treatment where needed. Afterwards the child was sent to the last station where the clinical forms were kept after medication was dispensed by one of the doctors with the help of translators who made sure the dosage was understood for those taking the

medication. An anti worming programme was instigated where necessary, and a lot of children were given multi vitamins to help them through the winter months. Many children were anaemic, and given iron suspension for the younger children, or in tablet form for the older ones. Some Toothbrushes were handed out to the children along with a small gift or stickers.

As with most medical missions, we made efforts to include local medical workers in the care of the children. We greatly respected their vast knowledge and experience. Medical workers and teachers would like to especially thank our translators and medical helpers for their great support during the whole week.

Every evening an analysis of the charts and diagnosis were made and referrals for the children for extra diagnostic procedures were completed. We also evaluated each evening how the day had been for each member of the mission.

The medical checks were performed at the following locations:

#### 1. Annapurna School

Our second day after a one hour walk we medically checked 38 children in the Annapurna school of whom students and children from the villages. Less than last year at this location, because of the harvest. Again with the great help of Chandra and a few very kind and helpful local people.

#### 2. Sayapatri

Today we checked the children in the village of Sayapatri, in the youth club. This day was heavy we had to check with headlights, there was no electricity because of the rain. The children were all very poor and belonged to the lowest caste. Their parents were tailors or working very hard in the fields. On two different days we checked 57 children on this location.

#### 3. Himalaya School

After a one hour walk in and around the fields we arrive in this very remote area and the Himalaya School.

These children and their parents are so very poor (and really dirty) They have to work in very difficult circumstances on the fields and we have to see this very hard way of living.

#### 4. Navadeep School, Pokhara

As in 2007, we visited the Navadeep School, a governmental school with 400 children. We could check 156 children at this location.

#### 5. Kanya M.V school, Pokhar

This government school had over 500 students, we could medically check 167 children. The teachers took care of the medicines because there were no caregivers. All the medication was stored in the classrooms with etiquettes with their name, age and the times they had to take the medicines.

#### 6. Krishna Tole

One of the most impressive places for all of us, was the school in this slum area at the end of the airport. For us, one of the most poor places to work and almost impossible to teach and learn in the noise of coming and going airplanes every other 20 minutes!

#### 7. Nicki Holt's Hope for Himalayan kids and Rainbow village

At this location we checked 71 children, more than last year. They all looked very healthy and it was very special to see that these children lived in foster families right now.

Main diagnosis in percentage on the different locations

	<b>Annapurna school</b>	<b>Sayapatri</b>	<b>Himalaya school</b>	<b>Navadeep School</b>	<b>KMV</b>	<b>Krishna Tole</b>	<b>HVHK /rainbow</b>
<b>underweight</b>	29%	26%	34%	7%	16%	28%	3%
<b>stunting</b>	32%	30%	57%	18%	34%	52%	16%
<b>Wasting</b>	8%	18%	14%	11%	1,5%	12%	3%

	<b>Annapurna school</b>	<b>Sayapatri</b>	<b>Himalaya school</b>	<b>Navadeep School</b>	<b>KMV</b>	<b>Krishna Tole</b>	<b>HVHK /rainbow</b>
<b>anaemia</b>	37%	26%	3%	22%	29%	34%	20%

	<b>Annapurna school</b>	<b>Sayapatri</b>	<b>Himalaya school</b>	<b>Navadeep School</b>	<b>KMV</b>	<b>Krishna Tole</b>	<b>HVHK /rainbow</b>
<b>Skin infections</b>	10%	30%	5%	-	6%	10%	6%
<b>Cariès</b>	53%	33%	40%	52%	49%	54%	23%

**\*NB: Interpretation drawn from percentages need to be correlated with the different age-patterns at the different locations**

There were only 10 referrals and no serious illnesses were detected.

One child was already diagnosed with a VSD and seen by a specialist. They had no money for the operation that had to be done.

#### 1: Anaemia

Anaemia is the most prevalent micronutrient disorder; it is not a diagnosis, but a symptom of an underlying nutritional problem or disease. In Nepal no national policy has been implemented to provide iron supplements to pregnant women or young children. 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 integrative interventions, addresses the various factors that play a significant role in producing anaemia in a given community. In addition to iron deficiency, infectious diseases such as worm infections, other chronic infections, particularly HIV-AIDS and tuberculosis, malaria, as well as other nutritional deficiencies, are especially important.

We treated the children with anaemia with iron supplements, including folate and vitamin B12 for three months (3 mg elemental iron/kg/day).

Children whose hemoglobin value was only slightly (less than 0.5 mmol/l) below the normal range for age were treated with a three months course of multivitamins.

#### 2: Worm treatment

Due to the relationship between helminth, *Ascaris lumbricoides*, *T. trichiura* and anaemia the children were simultaneously treated with Albendazol. In the last years a de-worming program was established in Nepal where there is a high prevalence of *A. Lumbric*, helminth, Hookworm and *T. Trichiura* in school-aged children. We treated children who were not in the de-worming program on the spot with Albendazol and left medication for repeating the treatment after six months. Health education was aimed at increasing awareness of worm transmission, the disabilities caused by intestinal helminth and the importance of the de-worming program every half year.

age children, adolescent girls and women of childbearing age.

### 3: Growth abnormality and malnutrition

Of the children we checked 161 were underweight and another 243 showed the prevalence of stunting. Diagnostics in evaluating children with stunting included specific urine analysis with stick method on glucose and albumen where performed.

Percentages of stunting indicating moderate to severe growth retardation is correlated with living conditions, showing higher prevalence in poor squatters and street children versus rural and urban children in middle class schoolchildren.

During clinical assessment of the children checked by MCC main parameters of malnutrition were skin, hair, nails, mouth, subcutaneous tissue, muscle bulk and abdomen. All the stunted children were managed by correcting possible nutritional deficiencies by a three months multivitamin treatment, next to counseling of the care giver regarding child nutrition parasite infections.

Due to high food prices, Nepal has the highest levels of malnutrition in South-East Asia. A study conducted in 2006 by the Ministry of Health and Population shows that 49 percent of children under the age of five are stunted, reflecting chronic malnutrition. A recent report of the World Bank shows that one percent decrease in adult height due to childhood stunting correlates with 1.4 percent loss of productivity. The report shows furthermore the fact that stunting in general is associated with as much as eleven points decrease in Intelligence Quotient (IQ). According to UNCCA the two major causes of malnutrition are poor feeding practices and inadequate childcare. Adequate food intake and education programs addressing nutritious food need to be provided nationwide.

### 4. Pneumonia

The few children with a severe acute respiratory infection (ARI) were treated with appropriate antimicrobials and home treatment advice.

"Pneumonia", "sannipat", "fast/difficult breathing", "chest indrawing" and "inability to suck milk" are the key words used by care-takers indicating a (severe) ARI.

### 5: Cardiac Murmurs

The MCC carrousel includes a cardial examination. We referred two children suspected of having a heart disease to the hospital in Pokhara for evaluation by a cardiologist.

In Nepal the prevalence among school age children in Kathmandu of rheumatic heart disease is 1.2/1000 and 1.3/1000 for congenital heart disease. Mitral regurgitation and atrial septal defects being the most common heart problems (Indian Heart J 2003;55:615-618). MCC is planning a special.

### 6. Stomach ache and other gastrointestinal complaints

During our health checks we encounter a rising percentage of (older) schoolchildren with complaints of stomach pain and gastric pain. In the absence of weight loss, bloating or fever these pains could be stress induced. Pressure on adolescents to succeed academically is well known in Nepal, along side with problems at home. Data on milk products sensitivity, gastritis or peptic ulcers are currently lacking, as well as the prevalence of Helicobacter pylori bacteria. One study done in Nepal reported an overall higher rate of infection with H. pylori in an urban population compared with a rural population (25.8 % versus 10.2 %) (Eur J Gastroenterology 1998;10:47-49). MCC will expand their medication list with omeprazol treatment in 2009, with triple therapy for H. Pylori. Acute diarrheas disease tends to be self limiting. We treated 6 children with antibiotics, bloody gastro-enteritis; we didn't find a critically ill child with severe dehydration edema.

### 7: Ear-Nose-Throat (ENT)

The prevalence of acute ear infections and tonsillitis was comparable with the prevalence in the Netherlands. Chronic or recurrent ear infections are a common condition encountered

by the ENT surgeons in Nepal. Effective initiatives for better hygiene and nutrition will play a part in diminishing chronic ear infections and their complications. Treatment of middle ear infections with antibiotics have a big impact in preventing deafness as well. Itching, pain and discharge was often seen with otitis externa and treated with antibiotic / steroid eardrops. Recurrent nose bleeds were associated with chronic rhino-sinusitis.

#### 8: Skin diseases

Among the skin diseases the following disorders are the most common in children in Nepal: impetigo, tinea capitis, scabies, viral skin disorders (mainly molluscum contagiosum) pediculosis capitis, dermatitis and reactions due to insect bites.

A peak of prevalence for pyoderma was observed among 5-9 year olds and in the orphanage children in the Triple Gem School. The superficial mycosis showed a peak in older children, Pyoderma, scabies and tinea capitis are more common in overcrowded households, orphanages or refugee camps. The role of traumatic sores as a predisposing factor for pyoderma is also common. Especially legs and less commonly ears (because of septic ear piercing in girls) were common of posttraumatic pyoderma. The children were treated with Fusidic crème and/or macrolides for pyoderma. Antifungal cream (eventually in combination with hydrocortison) was given for fungal infections and hydrocortison crème was given for different forms of dermatitis. We did not treat the children with tinea capitis with griseofulvine as there were limited supplies and the great majority heals spontaneously when in puberty. We also saw depigmentation of the face in a lot of children around Pokhara.

Apart from post inflammatory hypo-pigmentation following healing and especially certain inflammatory disorders such as dermatitis, burns and skin infection, pityriasis versicolor and/or alba could be reason for de-pigmentation. Another cause is a lack of Vitamin A, Zinc or Vitamin B 12.

Treatment with multivitamins for three months was given for the children with hypo/hyper pigmentation.

#### 9: Eye problems

Especially in the group of children above five years of age a rather common complaint was dry and/or painful eyes. Xerophthalmia can be attributed to Vitamin A deficiency. Vitamin A deficiency effect 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 insuring that children's diets include adequate amounts of carotene containing cereals, tubers, vegetables and fruits.

#### 10. Urinary tract infections

We performed an urine screening test in the children with fever and in some of the children with underweight and stunting to exclude a kidney disease. Some protein will appear in the urine if the level of protein in blood becomes high (infections) even when the kidney is functioning properly. Antibiotics, severe emotional stress and strenuous exercise can interfere with the test. We only found 4 children with signs of an urinary tract infection, they were treated with antibiotics

#### 11. Neurological disorders

In a few children, other wise well, there was a positive history suspicious of epilepsy; they were referred for EEG, neuron imaging and possible treatment.

## 12. Dental

This Medical Check for Children mission to Nepal did not include a dentist.

The number of cases mentioned probably even underestimate the prevalence of dental disease in the children we checked with severe toothaches and caries. We gave out toothbrushes and we educated the parents, teachers and children on brushing the teeth.

### **Education the health workers and caretakers**

One of the important tasks of MCC is to encourage the continuation of education of the caretakers and older children. During our week we had teaching sessions on common diagnoses of frequent illnesses and medication. We especially focused on anaemia and malnutrition, on balanced diet, infection, parasites and failure to thrive. Our information mainly consisted of knowledge and practical advice about nutritious food and vitamin supplements, as well as hygienic and health promotion issues.

We really want to work with local healthworkers and nurses next year, maybe Chandra can help us with this and the other thing is that we have to work with the local hospital and doctors in Pokhara!

### **Future medical needs**

On all the locations visited, there is a strong need for comprehensive and systematic health promotion and preventive measures. Special emphasis needs to be put on personal hygiene, dental care, good eating habits and nutritious food.

It is important to stress, over and over again, the importance of regular (half yearly) de-worming off all children up to fourteen year of age.

In the villages around Pokhara dentists can really do a lot of work, maybe dental camps are a very good idea as Karlien mentioned before.

This time around Pokhara was a wonderful experience. The first time working in the villages and schools in this area showed us again how fantastic this work is. Volunteers and doctors working together as a good medical team in a carousel, giving every child special care and attention. We want to return in 2009 to this children and there family's.

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