Medical Report Bangladesh BVDO 2012

Karlien Bongers & Anne Vlietstra
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Introduction:
From 12 until 18 Februari 2012 a team of Medical Checks for Children (MCC) visited the region of Chharbikpar, a small village in the Barisal Division of Bangladesh (Asia).
The MCC team checked and treated 914 children, aged eight years and below, free of cost. The medical camp was organized for seven days starting the 12th of February, at six different locations in the Barisal Division.
The MCC team consisted of ten members from The Netherlands: Karlien Bongers (medical-end-responsible, general surgeon and consultant), Anne Vlietstra (organization-end-responsible, family doctor), Olivia Liem (paediatrician in training), Eveline Resing (family doctor), Gabrielle Rutten (general doctor and consultant), Gijs Baaten (family doctor in training), Dini van der Worm (nurse and consultant), Dave Lemstra (nurse) and Karin Nes (dentist).

The medical checks were organized for the fourth time in close cooperation with the Barisal Village Development Organisation (BVDO). BVDO is a non-governmental organisation (NGO), founded in 1997 by Cecilia Parul Mondal. BVDO is located in Chhabikharpar, a small village in the Barisal Division of Bangladesh. BVDO is working with the aim of improving the socio-economic condition of the poor and the underprivileged, with main focus on the development of the poor women in rural and urban areas. BVDO has its working area in 16 villages of four municipalities and has initiated projects with regard to safe water and sanitation, education (e.g. building schools), micro-credits, handicraft, health programs, agriculture and pre-school programs (more information http://www.stichtingsako.nl/projecten/bangladesh/6-bvdo-pre-schoolprogramma.html)
The working area of BVDO in the south of Bangladesh is a poor area: approximately 50% of the population lives in poverty. Main income source is agriculture, however, due to annual floods, there is only one rice harvest per year. Additionally, hurricanes strike the area on a regularly basis (see for country and health statistics Bangladesh Appendix A).

The cooperation of BVDO existed out of the following (amongst others):
- Selection of translators/ health motivators.
- Providing board and lodging of all MCC team members.
- Arranging transport from Dhaka to Chhabikharpar and transport to the check locations (boat and vans).
- Selection of the check locations.
- Announcement of the medical camp in the villages.
- Making copies of all necessary papers.
- Giving all kinds of support to the MCC team during the medical camp.

Technical equipment and some of the supplies were brought from Europe by MCC team members. Medication was ordered by Joep Avezaat, the mission leader of the Bangladesh Aloshika Mission 2012, with the support of Mr. Benjamin Halder, director of the Maria Mother Health and Child Clinic in Aloshika.

Our special thanks go to Cecilia Parul Mondal and Linus Mondal, their hospitality, support and enthusiasm gave MCC the opportunity to work in the medical camp and examine and treat children in the rural area of Bangladesh.
We enjoyed working together with all helpers and translators, especially Martina Halder and Uttom Roy and we hope they will continue to inspire their communities in the same way they inspired us as they play a vital role in spreading awareness and knowledge about health and its importance for children in reaching their developmental potential.
We are grateful to all the parents, care takers and community people for bringing the children and helping to conduct the program. We are happy we got the opportunity to work with and to learn from all volunteers, translators and other supporting members who have helped directly or indirectly, despite their own obligations.

General background information and health issues of Nepal/Chitwan region:
Bangladesh (Bengali: : বাংলাদেশ, pronounced /bɑːŋgləˈdɛʃ/; Bangladesh), officially the People's Republic of Bangladesh (Bengali: গণপ্রজাতন্ত্রী বাংলাদেশ *Gônoprojatontri Banglādeśh*) is a country in South Asia. It is bordered by India on all sides except for a small border with Burma (Myanmar) to the far southeast and by the Bay of Bengal to the south. Together with the Indian state of West Bengal, it makes up the ethno-linguistic region of Bengal. The name *Bangladesh* means "Country of Bengal" in the official Bengali language.
The borders of present-day Bangladesh were established with the partition of Bengal and India in 1947, when the region became the eastern wing of the newly formed Pakistan. However, it was separated from the western wing by 1,600 km (994 mi) of Indian territory. Political and linguistic discrimination as well as economic neglect led to popular agitations against West Pakistan, which led to the war for independence in 1971 and the establishment of Bangladesh. After independence, the new state endured famines, natural disasters and widespread poverty, as well as political turmoil and military coups. The restoration of democracy in 1991 has been followed by relative calm and economic progress.
Bangladesh is the seventh most populous country and is among the most densely populated countries in the world with a high poverty rate. However, per-capita (inflation-adjusted) GDP has more than doubled since 1975, and the poverty rate has fallen by 20% since the early 1990s. The country is listed among the "Next Eleven" economies. Dhaka, the capital, and other urban centers have been the driving force behind this growth.
Geographically, the country straddles the fertile Ganges-Brahmaputra Delta and is subject to annual monsoon floods and cyclones. It has the longest unbroken sea beach in the world in the Cox's Bazaar. Bangladesh is a parliamentary democracy with an elected parliament and a member of the Commonwealth of Nations, the OIC, SAARC, BIMSTEC, and the D-8. As the World Bank notes in its July 2005 Country Brief, the country has made significant progress in human development in the areas of literacy, gender parity in schooling and reduction of population growth. However, Bangladesh continues to face a number of major challenges, including widespread political and bureaucratic corruption, economic competition relative to the world, serious overpopulation, widespread poverty and a vulnerability to natural disasters.
In 2000, Bangladesh was estimated to be one of the ten most highly populated countries with an estimated population of just under 130 million. This makes the population density of about 875 people per sq km higher than other countries. Most of the population is young with about 60 % under the age of 25, with only about 3% over the age of 65 (life expectancy is 61 years). Bangladesh's population is predominantly rural with only 20% of urban population.
Bengalis make up the majority of Bangladesh's population. They are descendants from immigrant Indo-Aryans who came from the west and intermarried with various Bengal groups. The minority in Bangladesh is comprised of several groups, the Chakma and Mogh (Mongoloid people who live in the Chittagong Hill Tracts District), the Santal (migrants from India) and the Biharis (Muslims who came from India).
See for more information about Bangladesh table 1: Facts in Numbers of Bangladesh.

Tabel 1: Facts in Numbers of Bangladesh

Indicator	data	Year	Source
Total population (in million)	140	2005	11
Population density (persons per sq km)	948	2005	11
Sex ratio (males per 100 females)	106	2003	12
Population under 15 years (%)	38	2004	3
Population 60 years and above (%)	7	2004	3
Crude birth rate (per 1000 population)	20.9	2003	3
Crude death rate (per 1000 population)	5.9	2003	3
Natural (population) growth rate (%)	1.54	2001	2
Total fertility rate (per woman)	3.0	2004	3
Urban population (%)	31	2003	12
Gross national product per capita (US $)	444	2004	4
Number of hospital beds	51648	2005	11
Number of health centres	1385	2004	5
Number of physicians	42881	2005	11
Population per physician	3169	2005	11
Physicians per 10,000 population	3	2005	11
Population per nurses	6442	2005	11
Total Expenditure on health as % of Gross Domestic Product	3.4	2003	8
Private Expenditure on Health as % of Total Expenditure on Health	69	2003	8
Out-of-Pocket Spending on Health as % of Private Expenditure	85.9	2003	13
% Pregnant women attended by trained personnel	27.2	2004	3
Deliveries attended by trained personnel (%)	13.4	2004	3
Maternal mortality ratio per 100,000 live births	380	2002	2
Women of childbearing age using family planning (%)	58.1	2004	3
Tetanus toxoid immunized women during pregnancy (%)	29	2003	6
Prevalence of low birth weight (weight <2500 grams at birth) (%)	40	2005	13
Infant mortality rate per 1000 live births	53	2003	3
Under-five mortality rate per 1000 live births	88	2003	3
Prevalence of underweight (weight-for-age) <5 years of age (%)	47.7	1999	7
Proportion(%)of population below minimum level of dietary energy consumption	30	2005	15
One year olds immunized against measles (%)	77	2005	14
HIV prevalence in 15-49 years per 100,000 population	100	2004	13
Malaria incidence per 100,000	44	2004	11
Malaria death rate per 100,000 (all ages)	0.5	2003	5
Tuberculosis prevalence rate per 100,000	435	2004	17
Proportion (%) of Smear-Positive Pulmonary Tuberculosis cases detected cured under directly observed treatment (DOTS)	84	2003	5
Tuberculosis death (% of total deaths)	7	2002	16
% Population with access to improved water source rural urban	97.3 97 99	2004 2004 2004	3 3,13 3,13
Population with access to improved sanitation(%) urban	59 71	2004 2004	3 3,13
Life expectancy at birth (years): Total Male Female	64.9 64.5 65.4	2002	2
Life expectancy at birth ratio (females as a % of males)	101	2002	2
Seats held in parliament (% of women)	2.0	2004	9
Professional and technical workers (% women)	25	2001	9
Ratio of earned income (females as a % of males)	0.56	2001	9
Adult literacy ratio (females as a % of males)	78.1	2002	2
Primary school enrolment ratio (females as a % of males)	104	2003	10
Secondary school enrolment ratio (females as a % of males)	111	2003	10

Source:

1. Report on Vital Registration System 1999-2001 (June 2003)
2. Bangladesh Bureau of Statistics, Sample and Vital Registration System, 2002.
3. Ministry of Health, Bangladesh Demographic and Health Survey 2004 NIPORT&MA, September 2004
4. National Accounts Statistics (July 2004)
5. Country Health System Profile 2003, MIS, DGHS, Mohakhali Dhaka, Bangladesh, 2005
6. EPI Report, 2004
7. Ministry of Health, Bangladesh Demographic and Health Survey 1999-2000, Dhaka, May 2001.
8. The World Health Organization, World Health Report 2006.
9. UNDP, the Human Development Report 2004.
10. UNESCO. http://www.unesco.org, September 2004 Assessment.
11. Health Information Unit (MIS), Directorate General of Health Services, Mohakhali, Dhaka -1212

12. Bangladesh Bureau of Statistics, Sample Registration System, 2003 (SVRS2003) 13. Millennium Development Goals, Bangladesh Progress Report 2005, Government of Bangladesh, Dhaka
14. EPI –Evaluation 2005, Bangladesh
15. Sustainable Development Networking Project, Bangladesh
16. WHO Mortality Fact Sheet 2006
17. WHO Global Tuberculosis Report 2006

Medical Checks for Children on location:

The medical checks of the 914 children were performed in seven days at four different locations. During the free of costs medical checks, the children were checked following the MCC carrousel:

1: Registration of the child
2: Measuring height and weight (saturation occasionally)
3: Blood test (haemoglobin) (and urine check occasionally)
4: Physical examination
5: Giving medication (pharmacy)
6: Education on tooth brushing and a tooth brush, tooth paste and soap was given to each child. At each station, mainly at physical examination and pharmacy, education was given to the children and their care takers on good nutrition and hygiene.

MCC checked children near BVDO office at Chabikapar Computer Center at February 12 and 18; February 13 at a school in Madra, February 15 at a school in Bishar Kandi, February 16 at a school in Lebu Bari, February 17 at a school in Kalupar and at February 14 in the remote village of Bat Bari (see table2).

Table 2: Number of checked children per day and geographical location

	12-02-12	13-02-12	14-02-12	15-02-12	16-02-12	17-02-12	18-02-12	Total
Bat Bari	0	0	87	0	0	0	0	87
Bisharkandi	0	0	0	130	0	0	1	131
Chabikapar	155	0	0	0	0	0	143	298
Kalupar	0	0	0	0	0	138	0	138
Lebu Bari	0	0	0	0	106	0	0	106
Madra	0	154	0	0	0	0	0	154
Total	**155**	**154**	**87**	**130**	**106**	**138**	**144**	**914**

The data were analysed to compare groups but we did not make a computer analysis on individual basis.
For analysing purposes we had to combine certain village's to make data extraction possible (table 3).

Table 3: Pooling of locations for data analysis

Pool of locations:	**Chabikapar** (2 days)	**299**	**Madra**	**154**	**Bisharkandi**	**130**
Included villages:	Askar Bakal Chabikapar Ghorar Par Jolirpar/Jalepur Somirpar		Bil Gab Bari Karfa Madra Munsi Taluk		Bishar Kandi Kadom Bari Kala Vita	
Pool of locations:	**Lebu Bari**	**106**	**Kalupar**	**138**	**Bat Bari**	**87**
Included villages:	Kanya Kandi Kasari Vita Lebu Bari Naya Kandi		Kurulia Munsir Taluk Satla			

In 2010 we did a survey for the amount and quality of food and the use of sanitation facilities

(see table 4; Lebu Bari and Bat Bari were not included at that time).
This year we asked every mother who companied a child, her age, the amount of her living children and for more details when she had experienced the tragedy of a child loss (see table 5).

Table 4: survey for food and sanitation (2010):

LOCATION	Bisharkandi		Kalupar		Madra		Chaikapar		Total
2010	n	%	n	%	n	%	n	%	%
Meals a day									
1	13	6%	5	3%	7	4%	25	5%	5%
2	48	24%	32	20%	36	20%	145	29%	25%
≥3	144	70%	122	77%	133	76%	330	66%	70%
Eating Fish									
Never	14	7%	10	6%	10	6%	48	10%	8%
Once a month	34	18%	32	21%	29	16%	66	14%	16%
More than once a month	54	28%	42	26%	72	41%	191	40%	36%
More than once a week	89	47%	74	47%	64	37%	176	36%	40%
Eating meat									
Never	41	21%	25	16%	25	12%	94	19%	18%
Once a month	41	21%	31	20%	36	21%	113	23%	22%
More than once a month	69	37%	64	40%	86	49%	191	40%	40%
More than once a week	38	20%	38	24%	32	18%	87	18%	20%
Eating chicken/duck									
Never	27	14%	18	11%	20	11%	107	22%	17%
Once a month	40	21%	31	19%	46	26%	141	29%	25%
More than once a month	91	48%	90	57%	84	48%	184	37%	44%
More than once a week	33	17%	21	13%	26	15%	59	12%	14%
Drinking milk									
Never	84	44%	59	37%	89	51%	268	54%	49%
Once a month	36	19%	32	20%	30	18%	61	12%	15%
More than once a month	41	21%	50	31%	44	25%	110	22%	24%
More than once a week	30	16%	19	12%	13	7%	57	12%	12%
Using sanitation/toilet									
Never	31	16%	9	6%	11	6%	36	7%	9%
Sometimes	58	30%	55	35%	76	44%	243	51%	43%
Mostly	69	36%	69	44%	70	40%	152	31%	35%
Always	36	19%	24	15%	18	10%	55	11%	13%

Table 5: Survey death of children (2012)

	Amount of mothers	**Mean Age Mother**	**Total amount of still living children**	**Mean still living children /mother**	**Died during pregnancy = %/mother**	**Died in first 3 month = %/mother**	**Died between 3 months and 1 year**	**Died between 1 year and 5 years**
Bat Bari	71	27.9	149	2.1	1= 1%	13 = 18%	1	1
Bishar Kandi	75	28.6	195	2.6	11 = 15%	3 = 15%	0	6
Chabikapar:								
Jalepur	60	26.9	114	1.9	5 = 8%	8 = 13%	1	3
Bakal	75	29	168	2.2	4 = 5%	8 = 11%	1	2
Chaikapar	117	26.9	262	2.24	5 = 4%	6 = 4%	2	3
Kurulia	120	27.8	346	2.9	4 = 3%	8 = 3%	8	5
Lebu Bari	97	29.7	317	3.27	5 = 5%	13 = 13%	2	9
Madra	142	28.5	350	2.5	22 =15%	10 = 7%	5	3

Diagnosis and categories of ailments:
During the week, 914 children were checked.
Due to the high risk of mortality and morbidity under five years of age, the focus of MCC is checking young children.

Off all checked children 500 children (55%) had the age of five or even older and 54 children (6%) had the age of one or younger (see table 6). In total 360 children (39%) were under five years of age and there for, in the focus group of MCC.

Table 6: Summary of checked children per geographical location, age and gender

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
Age	**N**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
<=1 year	54	6%	8	9%	2	2%	21	7%	6	4%	2	2%	15	10%
>1 and <5 years	360	39%	34	39%	42	32%	138	46%	53	38%	37	35%	56	36%
<5 years	414	45%	42	48%	44	34%	159	53%	59	43%	39	37%	71	46%
>=5 and <=10 years	500	55%	45	52%	87	66%	139	47%	79	57%	67	63%	83	54%
>10 years	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
Gender														
Boy	475	52%	50	57%	73	56%	151	51%	67	49%	53	50%	81	53%
Girl	439	48%	37	43%	58	44%	147	49%	71	51%	53	50%	73	47%

The age distribution of the checked children in 2010, 2011and 2012 are almost equal, which make the data of these years comparable.

Except of the children with a growth disturbance and the 424 children with anaemia, 737 other diseases were diagnosed (see table 7 and to compare with 2010 and 2011 see table 8).

Table 7: Disease prevalence among all children per geographical location

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total = 87		Total = 131		Total = 298		Total = 138		Tota= = 106		Total =154	
	N	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**	**n**	**%**
Underweight	415	45%	42	48%	43	33%	139	47%	68	49%	69	65%	54	35%
Stunting	326	36%	28	32%	47	36%	108	36%	64	46%	33	31%	46	30%
Wasting	227	25%	24	28%	13	10%	65	22%	34	25%	69	65%	22	14%
Anaemia	424	46%	41	47%	68	52%	106	36%	78	57%	64	60%	67	44%
vitamin deficit (clinical signs)	16	2%	1	1%	1	1%	4	1%	3	2%	1	1%	6	4%
syndrome n.o.s.	1	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%
pneumonia (clinical)	22	2%	3	3%	4	3%	5	2%	3	2%	3	3%	4	3%
tuberculosis (clinical)	1	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
bronchitis	4	0%	0	0%	0	0%	1	0%	2	1%	1	1%	0	0%
BHR/asthma	6	1%	1	1%	2	2%	0	0%	1	1%	1	1%	1	1%
gardia (suspected)	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%
dysenteria	2	0%	0	0%	0	0%	1	0%	0	0%	0	0%	1	1%
diarrhoea without dehydration	2	0%	1	1%	0	0%	1	0%	0	0%	0	0%	0	0%
constipation	57	6%	6	7%	10	8%	18	6%	8	6%	8	8%	7	5%
active worm infection	58	6%	3	3%	15	11%	20	7%	5	4%	8	8%	7	5%
otitis media acuta	10	1%	0	0%	0	0%	5	2%	0	0%	2	2%	3	2%
otitis media with effusion	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
otitis externa	4	0%	0	0%	0	0%	1	0%	1	1%	1	1%	1	1%
(adeno)tonsillitis	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
hearing impairment	1	0%	0	0%	0	0%	0	0%	1	1%	0	0%	0	0%
cariës n.o.s.	250	27%	15	17%	47	36%	92	31%	32	23%	25	24%	39	25%
caries with pain	117	13%	18	21%	14	11%	34	11%	16	12%	19	18%	16	10%
wounds n.o.s.	3	0%	0	0%	1	1%	0	0%	2	1%	0	0%	0	0%
eczema n.o.s.	9	1%	0	0%	0	0%	4	1%	3	2%	1	1%	1	1%
dermatomycosis	22	2%	2	2%	7	5%	2	1%	5	4%	3	3%	3	2%

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total = 87		Total = 131		Total = 298		Total = 138		Total = 106		Total = 154	
impetigo/furunculosis	7	1%	0	0%	1	1%	3	1%	1	1%	1	1%	1	1%
scabies	17	2%	4	5%	1	1%	1	0%	8	6%	1	1%	2	1%
erysipelas / cellulites	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
wounds infected,	5	1%	0	0%	0	0%	2	1%	1	1%	1	1%	1	1%
other (psoriasis etc)	5	1%	2	2%	1	1%	0	0%	0	0%	1	1%	1	1%
psychomotoric retardation	3	0%	0	0%	1	1%	1	0%	1	1%	0	0%	0	0%
hypertonia	1	0%	0	0%	0	0%	0	0%	0	0%	0	0%	1	1%
hypotonia	1	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%
epilepsy	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
spina bifida	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
migraine/headache	11	1%	2	2%	2	2%	3	1%	2	1%	0	0%	2	1%
leg kramps	18	2%	5	6%	4	3%	3	1%	3	2%	1	1%	2	1%
physiological murmer	25	3%	1	1%	5	4%	2	1%	6	4%	3	3%	8	5%
pathological murmur (suspected)	10	1%	2	2%	2	2%	3	1%	1	1%	0	0%	2	1%
refractory problem	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
strabismus	4	0%	0	0%	1	1%	1	0%	0	0%	0	0%	2	1%
keratoconjunctivitis	4	0%	1	1%	1	1%	0	0%	2	1%	0	0%	0	0%
amblyopia	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
thyroid dysfunction (suspected)	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
diabetes	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
cryptorchism	1	0%	0	0%	0	0%	0	0%	0	0%	1	1%	0	0%
inguinal hernia	3	0%	0	0%	0	0%	1	0%	1	1%	1	1%	0	0%
urinary infection	14	2%	2	2%	3	2%	3	1%	3	2%	2	2%	1	1%
hernia(umbilical etc)	4	0%	0	0%	0	0%	2	1%	0	0%	1	1%	1	1%

Table 8: Total prevalence of growth disturbances, anaemia and handing out preventive anti-worm treatment per area (2011 and 2012))

LOCATION	Chabikapar				Madra				Bisharkandi			
	2011		2012		2011		2012		2011		2012	
	n	%	**n**	**%**	n	%	**n**	**%**	n	%	**n**	**%**
Underweight	123	35%	139	47%	72	42%	54	35%	61	35%	43	33%
Stunting	153	44%	108	36%	70	41%	46	30%	61	35%	47	36%
Wasting	38	11%	65	22%	39	23%	22	14%	22	13%	13	10%
anaemia	162	47%	106	36%	87	51%	67	44%	97	56%	68	52%
de-worming	134	**39%**	13	15%	102	60%	19	15%	130	75%	88	30%

LOCATION	Lebu Bari				Kalupar				Bat Bari				Total			
	2011		2012		2011		2012		2011		2012		2011		2012	
	n	%	**n**	**%**	n	%	**n**	**%**	n	%	**n**	**%**	N	%	**N**	**%**
Underweight	140	31%	69	65%	62	42%	68	49%	42	45%	42	48%	400	**38%**	415	45%
Stunting	41	32%	33	31%	66	45%	64	46%	42	45%	28	32%	433	**41%**	326	36%
Wasting	13	10%	69	65%	17	13%	34	25%	19	23%	24	28%	148	**14%**	227	25%
anaemia	64	50%	64	60%	85	57%	78	57%	48	51%	41	47%	543	**51%**	424	46%
de-worming	65	50%	35	25%	89	60%	55	52%	31	**33%**	45	29%	551	**52%**	255	28%

Table 9: Diseases categories prevalence among all children in 2010, 2011 and 2012

	2010		2011		2012	
	1103 children		1061 children		914 children	
Underweight	436	40%	400	38%	415	45%
Stunting	404	37%	433	41%	326	36%
Wasting	209	20%	148	14%	227	25%
Anaemia	557	51%	543	51%	424	46%
Active worm infection	228	21%	111	10%	58	6%
Pneumonia	57	5%	39	4%	22	2%
HIV/AIDS	1	<1%	3	<1%	-	-
Tuberculosis	1	<1%	-	-	1	0%
Gastro-intestinal	20	2%	31	3%	62	7%

Pathological cardiac murmurs	10	1%	7	1%	10	1%
Ear-nose-throat	79	7%	28	3%	17	2%
Skin diseases	137	12%	113	11%	68	7%
Eye problems	12	1%	11	1%	8	1%
Urinary tract infection	12	1%	11	1%	14	2%
Neuromuscular	13	1%	10	1%	5	<1%
Painful caries	60	6%	141	13%	117	13%

Most of the ailments could be treated on the spot (see table 10 for the handed out treatment and table 11 for comparing these numbers with 2011).

Table 10: Treatment among all children per geographical location

	Total		**Bat Bari**		**Bisharkandi**		**Chabikapar**		**Kalupar**		**Lebu Bari**		**Madra**	
	914		**Total= 87**		**Total= 131**		**Total= 298**		**Total= 138**		**Total= 106**		**Total= 154**	
iron	205	22%	17	20%	38	29%	52	17%	39	28%	26	25%	33	21%
mother iron	9	1%	4	5%	1	1%	3	1%	0	0%	0	0%	1	1%
multivitamins	475	52%	45	52%	62	47%	153	51%	80	58%	66	62%	69	45%
anti-worm	255	28%	13	15%	19	15%	88	30%	35	25%	55	52%	45	29%
acute worm	59	6%	5	6%	15	11%	17	6%	5	4%	9	8%	8	5%
anti-scabies	3	0%	0	0%	0	0%	0	0%	1	1%	1	1%	1	1%
amoxicillin	39	4%	6	7%	5	4%	10	3%	6	4%	5	5%	7	5%
augmentin	3	0%	0	0%	0	0%	2	1%	1	1%	0	0%	0	0%
second line antibiotics	5	1%	0	0%	2	2%	1	0%	0	0%	1	1%	1	1%
metranidazol	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%	0	0%
co-trimoxazol	4	0%	0	0%	0	0%	3	1%	0	0%	0	0%	1	1%
ORS	1	0%	1	1%	0	0%	0	0%	0	0%	0	0%	0	0%
eardrops	5	1%	0	0%	0	0%	2	1%	1	1%	1	1%	1	1%
bactroban	4	0%	0	0%	0	0%	2	1%	1	1%	0	0%	1	1%
hydrocortisone cream	10	1%	1	1%	0	0%	3	1%	4	3%	1	1%	1	1%
dactarin cream	14	2%	1	1%	3	2%	1	0%	4	3%	3	3%	2	1%
dactacort cream	10	1%	0	0%	5	4%	2	1%	1	1%	1	1%	1	1%
fusidin cream	3	0%	0	0%	0	0%	2	1%	0	0%	1	1%	0	0%
iodine	3	0%	0	0%	0	0%	0	0%	2	1%	1	1%	0	0%
eyedrops	2	0%	0	0%	1	1%	0	0%	1	1%	0	0%	0	0%

Table 11: Total treatment of 1061 children in 2011 and 914 children in 2012

	Treatment	**2011**		**2012**	
		N	%	**N**	%
1	Iron	208	21%	205	22%
88	Mother iron	37	3.5%	9	1%
2	Multivitamins	586	59%	475	52%
3	Preventive antiworm treatment	551	52%	255	28%
6	Acute worm treatment	111	10%	59	6%
5	Ivermectine (scabies treatment)	16	2%	3	0%
10	Amoxicilline	45	5%	39	4%
11	Augmentin	10	1%	3	0%
12	Claritromycine/erythromycine	18	2%	5	1%
20	Metronidazol	0	0 %	0	0%
21	Co-trimoxazol	1	≤1%	4	0%
22	ORS	0	0%	1	0%
32	Eardrops	7	0,7%	5	1%
51	Hydrocortison cream	14	1.4%	10	1%
52	Dactarin cream	17	1.7%	14	2%
53	Dactacort cream	6	0.6%	10	1%
57	Fusidin cream	33	3.1%	3	0%
58	Flammazine	0	0%	3	0%
76	Eyedrops	8	0,8%	2	0%

Compared to last year, the dental problems of 169 children (18%) could not be solved on the spot by the MCC dentist from the Netherlands(see table 12).

Like last year, 10 (1%) children were referred to a medical specialist in the local hospitals for further examination and/or treatment(see table 12).

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

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Dentist	169	18%	27	31%	16	12%	61	20%	13	9%	21	20%	31	20%
Specialist in hospital	10	1%	0	0%	0	0%	4	1%	1	1%	3	3%	2	1%

1: Growth abnormality and malnutrition:
(underweight: 415 (45%), stunting: 326 (36%), wasting: 227 (26%))
The World Health Statistics of Bangladesh (see table 1) show a prevalence of 47.7% of underweight in children less than five years of age a reflecting chronic malnutrition. In Bangladesh 30% of the people lives below the "food poverty line".
A lot of the families live on just one or two meals a day and the typical household's diet is very low in diversity of food products. A recent report of the World Bank shows that one percent decrease in adult height due to childhood stunting correlates with 1.4% 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).
Percentages of growth retardation is correlated with poverty, malnutrition, living conditions, hygiene and the prevalence of chronic diseases.
According to UNCCA the two major causes of malnutrition are poor feeding practices and inadequate childcare. Adequate food intake and education programs addressing nutrious food need to be provided.
Malnutrition is thought to account for one third of all deaths of children under five years of age (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.

Incidence of underweight and wasting in 2012 was slightly increased compared to the incidence in 2011, while stunting incidence was slightly decreased in 2012, a trend we see more often in MCC data. However, estimation of age is sometimes troublesome without official documents stating date of birth and children or even parents not knowing children's age, making the stunting data less reliable than wasting data.
It has to be noted that reference data were only available for certain heights, weights and ages (as specified above), leading to the following general overall prevalence's of growth abnormalities in the villages seen:

Table 13: Prevalence of weight/age at or under P3 (underweight) per geographical location by age and gender

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Underweight	415	45%	42	48%	43	33%	139	47%	68	49%	69	65%	54	35%
No underweight	498	55%	45	52%	88	67%	158	53%	70	51%	37	35%	100	65%
Unknown	1	0%	0	0%	0	0%	1	0%	0	0%	0	0%	0	0%
Underweight per age														
<=1 year	23	43%	4	50%	1	50%	8	40%	3	50%	2	100%	5	33%
>1 en <5 years	162	45%	17	50%	12	29%	67	49%	27	51%	24	65%	15	27%
<5 years	185	45%	21	50%	13	30%	75	47%	30	51%	26	67%	20	28%
>=5 en <=10 years	230	46%	21	47%	30	34%	64	46%	38	48%	43	64%	34	41%
Underweight per gender														
Boy	185	39%	20	40%	21	29%	58	39%	30	45%	32	60%	24	30%
Girl	230	52%	22	59%	22	38%	81	55%	38	54%	37	70%	30	41%

Table 14: Prevalence of length/age at or under P3 (stunting) per geographical location by age and gender

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Stunting	326	36%	28	32%	47	36%	108	36%	64	47%	33	31%	46	30%
No stunting	586	64%	59	68%	84	64%	189	64%	73	53%	73	69%	108	70%
Unknown	2	0%	0	0%	0	0%	1	0%	1	1%	0	0%	0	0%
Stunting per age														
<=1 year	21	40%	4	50%	1	50%	5	25%	4	67%	2	100%	5	33%
>1 en <5 years	154	43%	14	41%	21	50%	58	42%	26	49%	17	46%	18	32%
<5 years	175	42%	18	43%	22	50%	63	40%	30	51%	19	49%	23	32%
>=5 en <=10 years	151	30%	10	22%	25	29%	45	32%	34	44%	14	21%	23	28%
Stunting per gender														
Boy	154	33%	14	28%	22	30%	54	36%	24	36%	17	32%	23	28%
Girl	172	39%	14	38%	25	43%	54	37%	40	56%	16	30%	23	32%

Table 15: Prevalence of weight/length at or under P3 (wasting) per geographical location by age and gender

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Wasting	227	26%	24	29%	13	11%	65	22%	34	25%	69	68%	22	14%
No wasting	660	74%	59	71%	109	89%	225	78%	102	75%	33	32%	132	86%
Unknown	27	3%	4	5%	9	7%	8	3%	2	1%	4	4%	0	0%
Wasting per age														
<=1 year	11	22%	3	43%	0	0%	3	16%	0	0%	2	100%	3	20%
>1 en <5 years	86	24%	9	26%	8	19%	32	23%	12	23%	19	53%	6	11%
<5 years	97	24%	12	29%	8	18%	35	22%	12	20%	21	55%	9	13%
>=5 en <=10 years	130	27%	12	29%	5	6%	30	23%	22	29%	48	75%	13	16%
Wasting per gender														
Boy	101	22%	13	28%	7	11%	22	15%	15	23%	32	64%	12	15%
Girl	126	29%	11	31%	6	11%	43	30%	19	27%	37	71%	10	14%

Table 16: Indices for growth abnormalities and malnutrition for all children in 2010 and 2011

	2010 1103 children		**2011** 1061 children		**2012** 914 children	
	N	*%*	*N*	*%*	*N*	*%*
Underweight (= weight for age)	436	**40%**	400	**38%**	415	**45%**
No underweight	661	60%	661	62%	498	55%
Not possible to assess	6	1%	0	0%	1	0%
Stunting (= height for age)	404	**37%**	433	**41%**	326	**36%**
No stunting	690	63%	628	59%	586	64%
Not possible to assess	9	1%	1	0%	2	0%
Wasting (= weight for height)	209	**20%**	148	**14%**	227	**26%**
No wasting	842	80%	876	86%	660	74%
Not possible to assess	52	5%	37	4%	27	3%

Table 17: Indices for growth abnormalities in total numbers and percentages per area visited in 2010, 2011 and 2012

LOCATION	Bisharkandi		Kalupar		Madra		Chabikapar		Total 2010	
2010	n	%	n	%	n	%	n	%	N	%
Underweight	109	45%	59	36%	62	34%	205	41%	436	**40%**
Stunting	93	38%	65	40%	42	23%	203	41%	404	**37%**
Wasting	52	22%	17	11%	52	30%	88	18%	209	**20%**
LOCATION	Bisharkandi		Kalupar		Madra		Chabikapar		Total 2011	
2011	n	%	n	%	n	%	n	%	N	%
Underweight	61	35%	62	42%	72	42%	123	35%	400	**38%**
Stunting	61	35%	66	45%	70	41%	153	44%	433	**41%**
Wasting	22	13%	17	13%	39	23%	38	11%	148	**14%**
LOCATION	Bisharkandi		Kalupar		Madra		Chabikapar		Total 2012	
2012	n	%	n	%	n	%	n	%	N	%
Underweight	43	33%	68	49%	54	35%	140	47%	415	45%
Stunting	47	36%	64	47%	46	30%	109	37%	326	36%
Wasting	13	11%	34	25%	39	23%	66	22%	227	26%

Multivitamins were given to 475 (52%) children with stunting/malnutrition/ clinical signs for vitamin deficit (in 2011 to 586 children; 59%).
During the medical check-ups, we gave all children and their guardians hygiene and nutritional advise, with emphasis on hand-washing, vitamin C and vegetable intake, so their children may grow healthy and strong. We noticed the policy of a lot of mothers to feed their babies up to the age of one year or even more, almost only with breast milk. For babies, we advised exclusive breastfeeding up to six months and then start with the introduction of normal food. For babies without a mother or a mother without enough milk we discussed the possibilities of breastfeeding by another mother.

2: Anaemia: (543, 51%) (See table 18 and 19)
Anaemia is the most prevalent micronutrient disorder. In Bangladesh no national policy has been implemented to provide iron supplements to pregnant women or young children. And if so, only 27.2% of the pregnant women are attended by trained personnel (source WHO)
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. We know a lot of families live on just one or two meals a day and the typical diet is very low in diversity of food products, fat and sources of vitamin C. Rice and some green leafy vegetables dominate the menu on a daily basis. Part is due to poverty and part is due to lack of knowledge.
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 in causing anaemia.

Table 18: Prevalence of anaemia per geographical location by age and gender

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Anaemia	424	46%	41	47%	68	52%	106	36%	78	57%	64	60%	67	44%
No anaemia	487	53%	46	53%	63	48%	190	64%	59	43%	42	40%	87	56%
Unknown	3	0%	0	0%	0	0%	2	1%	1	1%	0	0%	0	0%
Hb <5,0 mmol	9	1%	0	0%	0	0%	3	1%	4	3%	1	1%	1	1%
Anaemia per age														
<=1 year	28	52%	5	63%	1	50%	8	38%	4	67%	2	100%	8	53%
>1 en <5 years	156	43%	19	56%	17	40%	50	36%	30	57%	18	49%	22	39%
<5 years	184	44%	24	57%	18	41%	58	36%	34	58%	20	51%	30	42%
>=5 en <=10 years	240	48%	17	38%	50	57%	48	35%	44	56%	44	66%	37	45%
Anaemia per gender														
Boy	228	48%	25	50%	38	52%	56	37%	39	58%	32	60%	38	47%
Girl	196	45%	16	43%	30	52%	50	34%	39	55%	32	60%	29	40%

Table 19: Total Prevalence of anaemia of all children in total numbers and percentages per area which were visited in 2010, 2011 and 2012

LOCATION	Bisharkandi			Kalupar			Madra			Chabikapar			Total		
	n		%	n		%	n		%	n		%	n		%
Anaemia **2010**	137	/ 244	56%	80	/ 163	49%	105	/ 186	56%	233	/ 500	47%	557	/ 1098	51%
Anaemia **2011**	97	/ 173	56%	85	/ 148	57%	87	/ 170	51%	162	/ 347	47%	543	/ 1061	51%
Anaemia **2012**	68	/ 131	52%	78	/ 138	57%	67	/ 154	44%	106	/ 298	36%	424	/ 914	46%

In 2009 44% of all children had anaemia. In 2010 we noticed a slight increase of anaemia in the overall numbers (51%) (see table 19). In 2010 and 2011 in 51% children anaemia was diagnosed and 2012 we noticed a slight decrease of anaemic children (246%).

Unfortunately we could only identify 341 (37%) children which were checked in the previous year (see table 20). This number is considered too low to draw conclusions. Still we are happy we could indentify more children which were checked in the previous year (in 2011 267children (25%)) since when available, we can used the old Case Report Forms to individualize diagnostics and treatment in a more optimal way.

Table 20: Children checked last year?

	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Yes	341	37%	35	40%	46	35%	119	40%	51	37%	24	23%	66	43%

We treated 205 children for anaemia (22%) and 9 mothers if the anaemic children were breast fed, with iron supplements for three months. The other 219 children with anaemia were treated with multivitamins because there were stunted or had a serious infection as well.

Because of emotional problems, we did not take blood from three children. These children were treated as if they were anaemic.

In nine children the haemoglobin level was less than 5.0 mmol/l. These children were referred to the nearest hospital for further diagnostic procedures. We asked for a re-check of the haemoglobin level, HIV test, malaria test and exclusion of sickle cell anaemia (an inborn malformation of the red blood cells). We are not informed about the test results.

As pointed out in the paragraph of growth abnormalities, we gave during the medical check-ups all children and their guardians nutritional advise with emphasis on vegetable intake and vitamin C. When it comes to the prevention of anaemia, the vitamin C intake is important because vitamin C facilitates the uptake of iron in the gut (as milk counterparts it). A cheap and available sources for vitamin C in Bangladesh is lemon.
For babies, we advised exclusive breastfeeding up to six months, then start with the introduction of normal food and we discussed the possibilities of donation of breast milk by another woman when the normal supply is lacking.

3: Anti worm treatment (612 (67%) prophylactic and 58 (6%) therapeutic)
A strong relationship exists between a T. Trichiura, Helminth, Ascaris Lumbricoides or an Hookworm infection and anaemia.
There is a national de-worming program in Bangladesh but it is unclear how this program is regulated. Of all checked children, 67% didn't got any anti-worm treatment during the last 6 months. So it is clear this de-worming program doesn't have a 100% coverage. Although MCC stressed on the importance of a de-worming program at schools, this program is still not established at the BVDO schools.

Table 21: Prevalence preventive anti-worm treatment in the last half-year per geographical location by age and gender

2012	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	914		Total= 87		Total= 131		Total= 298		Total= 138		Total= 106		Total= 154	
	N	%	n	%	n	%	n	%	n	%	n	%	n	%
Anti-worm	612	67%	64	74%	104	79%	209	70%	105	76%	45	42%	85	55%
No anti-worm	297	32%	22	25%	26	20%	89	30%	32	23%	60	57%	68	44%
Anti-worm per age														
<5 years	266	64%	28	67%	37	84%	108	68%	41	69%	16	41%	36	51%
>=5 and <=10 years	346	69%	36	80%	67	77%	101	73%	64	81%	29	43%	49	59%

Table 22: Frequency of handing out preventive de-worm treatment per geographical location by age and gender (2011)

2011	Total		Bat Bari		Bisharkandi		Chabikapar		Kalupar		Lebu Bari		Madra	
	1061		Total= 94		Total= 173		Total= 347		Total= 148		Total= 129		Total= 170	
Anti-worm	551	52%	31	33%	130	75%	134	39%	89	60%	65	50%	102	60%
Anti-worm per age														
>=1 and <5	188	47%	15	38%	36	77%	49	34%	28	62%	25	45%	35	54%
>=5 and <10	363	56%	16	32%	94	75%	85	44%	61	62%	40	55%	67	65%

Table 23: Frequency of handing out preventive de-worm treatment and treatment for suspected acute worm infection for all children in total numbers and percentages in 2010, 2011and 2012

	2010		2011		2012	
	1103 children		1061 children		914children	
Preventive anti worm treatment	849	77%	552	52%	612	67%
Active worm infection	228	21%	111	9%	58	6%

We treated 612 (67%) who were not in a de-worming program on the spot with Albendazol. An active worm infection was suspected in 58 children (6%).
Health education on the spot was aimed at increasing awareness of worm transmission, the disabilities caused by intestinal helminth and the importance of a de-worming program every half year. Simple ways of improving personal hygiene and sanitation through hand washing, nail trimming, wearing of shoes and use of a latrine and clear water supplies were encouraged.
Although all members of a population can be infected by worms, those who are at most risk and would benefit most from preventive interventions are the pre-school (2-5 years), school age children, adolescent girls and women of childbearing age.

4: Pneumonia

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

Table 24: respiratory problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Pneumonia (clinical diagnosis)	57	5%	39	4%	22	2%
Tuberculosis (clinical diagnosis)	1	0%	0	0%	1	0%
Bronchitis	2	0%	12	1%	10	9%

The 22 children with a severe acute respiratory infection (ARI) were treated with appropriate antimicrobials and home treatment advice.
For a doctor normally working in Europe it is amazing how few children have asthma in Bangladesh. We saw only 10 children with symptoms of bronch(iol)tis/asthma.
The principles of the Integrated Management of Childhood Illness (IMCI, see www.who.int/child-adolescent-health/integr.htm) (respiratory rate of 50 breaths per minute or more in a baby of 2 months up to 12 months, and 40 breaths per minute or more in a child of 12 months up to 5 years, lower chest wall indrawing and stridor which is a harsh noise made when the child inhales) for recognition and treatment of a pneumonia were transferred to the local workers and care takers.

5: Suspected pathological Cardiac Murmurs

The MCC carrousel includes a cardial examination. We suspected seven children of having a pathological heart murmur, mainly due to a septal defect. Mitral regurgitation and atrial septal defects being the most common heart problems in the third world. For this condition no treatment is available although a good dental situation is essential for a healthy live.

Table 25: clinic findings for heart conditions

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Physiological murmur	35	3%	22	2%	25	3%
Pathologicalmurmur (suspected)	10	1%	7	1%	10	1%

The children and their care takers with the suspected pathological heart murmurs were stressed on teeth brushing procedures. Besides this, they were told and got a written explanation to give their child antibiotics when going to a dentist for a teeth extraction.

6: Gastrointestinal complaints

During our health checks we encounter a lot of (older) schoolchildren with complaints of stomach pain. In the absence of weight loss, bloating or fever, these pains could due to constipation (many children drink only 2 cups of water a day), lack of fat in their food or stress induced. Pressure on children to succeed academically is well known, alongside with problems at home.

Table 26: clinic findings for gastrointestinal problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Gardia (suspected)	0	0%	0	0%-	1	0%
Dysenteria	3	0%	1	0%	2	0%
Acute diarrhoea	0	0%	1	0%	2	0%
Constipation	17	2%	27	3%	57	6%
Active worm infection	228	21%	110	10%	58	6%
Active tapeworm(suspected)	0	0%	1	0%	0	0%
Bilharzia (suspected)	0	0%	1	0%	0	0%
Candida stomatitis	2	0%	0	0%	0	0%

Data on milk products sensitivity, gastritis or peptic ulcers are currently lacking as well as the prevalence of Helicobacter pylori bacteria.

7: Ear-Nose-Throat (ENT)

The prevalence of acute ear infections (OMA, OME and otitis externa) were comparable with the prevalence in the Netherlands.

Chronic or recurrent ear infections are a common condition encountered by the ENT surgeons in "the third world". 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 in the non-western world.

Table 27 : Indices for ENT problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Otitis media acuta / n.o.s.	47	4%	8	1%	10	1%
Otitis media with effusion	16	1%	8	1%	1	0%
Otitis externa	7	1%	9	1%	4	0%
Tympanic perforation	5	0%	1	0%		
Adenotonsillitis / tonsillitis	2	0%	2	0%	1	0%
Hearing impairment					1	0%

8: Skin diseases

Among the skin diseases pyoderma, tinea capitis, scabies, viral skin disorders (mainly moluscum contagiosum) pedicolosis capitis, dermatitis and reactions due to insect bites are the most common in children in Asia.

Table 28 : Indices for skin problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Wounds n.o.s.	8	1%	11	1%	3	0%
Eczema n.o.s.	32	3%	10	1%	9	1%
Dermatomycosis			21	2%	22	2%
Impetigo / furunculosis	18	2%	7	1%	7	1%
Scabies	65	6%	20	2%	17	2%
Erysipelas / cellulites	1	0%	2	0%	0	0%
Wounds infected	13	1%	21	2%	5	1%
Burnwound (fresh)			3	0%	0	0%
other skin			13	1%	5	1%

A peak of prevalence for pyoderma is observed among 5-9 year olds, with a progressive constant decrease over three years of age.

Pyoderma, scabies and tinea capitis are more common in overcrowded households. The role of traumatic sores as a predisposing factor for pyoderma is well known. Especially legs and less commonly ears (because of septic ear piercing) is common of posttraumatic pyoderma. The children with a skin infection were treated with macrolides cream. Antifungal cream in combination with hydrocortison was given for fungal infections (dermatomycosis) and hydrocortison crème was given for different forms of dermatitis. The severe cases of Scabies were treated with Ivermectin.

9: Eye problems

Table 29 : Indices for eye problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Strabismus	9	1%	2	0%	4	0%
Keratoconjunctivitis	3	0%	3	0%	4	0%
Amblyopia			2	0%	0	0%
other eye			4	0%	0	0%

Dry and/or painful eyes (Xerophtalmia), a common complain, can be, especially in the group of children above five years of age, 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 problems

We performed urine screening test in the children with urination related complaints. 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. The 12 children (1%) with an urine infection were treated with antibiotics. The two children with the surgical problem were referred to a local hospital.

Table 30 : Indices for urinary tract problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Epi/hypospadia			1	0%	0	0%
Cryptorchism					1	0%
Inguinal hernia			1	0%	3	0%
Urinary tract infection	12	1%	11	1%	14	2%

11: Dental

The Medical Check for Children mission to BVDO in 2012 included a dentist so we could handle dental problems on the spot.

Table 31 : Indices for dental problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Caries n.o.s.	189	17%	255	24%	250	27%
Caries with pain	141	13%	60	6%	117	13%

We had the impression that the more wealthier the people were, the more painful caries we saw. Maybe this is due to the more buying of sweets and cookies when there is more money available.
We stressed the care takers of the children with painful caries to take their child to a dentist.
After the check a local volunteer handed out toothbrushes and educate the children, care takers and teachers in teeth brushing.

12: Neuromusculair and Skeletal problems

In the population of 1161 children we found only two children with a psychomotoric retardation. We expect in this kind of population more children with neurologic problems. We didn't count all children with headache, but given the habit of drinking only small amounts, a lot of children suffer for headache's and leg cramps.

Table 32 : Indices for neuromuscular and skeletal problems

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
Syndrome n.o.s.			9	1%	1	0%
Psychomotoric retardation	6	1%	2	0%	3	0%
Hypertonia	3	0%	1	0%	1	0%
Hypotonia	1	0%			1	0%
Epilepsy			2	0%	0	0%
Spina bifida					0	0%
Artralgia n.o.s.	1	0%				
Hip dysplasia	1	0%				
Fracture (old)	1	0%				

13: HIV (1), AIDS (2), Tuberculosis (0) and malaria (1)

The diagnosis "suspected HIV/Aids", "possible malaria" and "TB" were either children who told us spontaneously or on request they were on treatment for the mentioned disease.

One child told us that he was HIV positive and two they were suffering from AIDS. One child told us about a recent bloodsmear which had been tested positive for malaria parasites. No children mentioned having tuberculosis (treatment).

Table 20 : *Indices for HIV, AIDS, Tuberculosis and malaria*

Major diagnoses	Total 2010		Total 2011		Total 2012	
	1103		1061		914	
HIV pos.	1	0%	1	0%	0	0%
AIDS	0	0%	2	0%	0	0%
Tuberculosis	1	0%	0	0%	1	0%

Education health workers, caretakers and other local helpers:

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.

Future medical needs:

- People need clean water for drinking and hygiene purposes. Though officially 97.3% of the Bengali population has access to save water, the potential threat of an arsenical intoxication cannot be neglected. A British Geological Survey in 1998 shows Arsenicum in drinking water in 59 of the 64 districts in Bangladesh, within a dangerous level ($\geq$0.05 mg/l) in 41 districts. A lot of the boreholes for drinking water were put on a depth of 70 meters instead of the safe 300 meters. After five to ten years of Arsenicum intoxication people will suffer of diseases like melanoma and other cancers, neurological problems, eye problems and gangrene. Raw data suggest 3000 people a year die because of arsenicosis.
- We strongly advise BVDO to check water supplies, especially nearby schools, on Arsenicum. If these water supplies are not Arsenicum safe, effort should be made to drill new, deeper boreholes. Providing a source of clean and Arsenicum free drinking water at the schools is especially important for lessons in hygiene and for giving the children a source of save drinking water when they are at school.
- It is important to stress, over and over again, the importance of regular (half yearly) de-worming off all children up to 12 year of age. BVDO can help to organize up such an anti-worm program.
- Like all the locations we visited, there is a strong need for comprehensive and systematic health promotion and preventive measures. Special emphasis needs to be put on personal hygiene (starting with the importance of hand washing with soap), dental care, good eating habits and nutrious food.
- Maybe BVDO can help to start a health education program for pregnant woman and young mothers with special attention for breastfeeding and good motherhood. (BVDO starts in 2010

with a training for birth assistants, in close cooperation with SAKO and with individual MCC team members)
- There is a need to find a method for keeping relevant information with the child (like the need of antibiotics before dental extraction in children with a cardial septal defect). The personal health book for all children in which the data of the medical checks were included which was made in 2009 didn't work out.
- We strongly recommend an English language course for increasing the possibilities to share knowledge between the volunteers of BVDO and MCC.

Last words

Our fourth trip together to Bangladesh has been again one of the wonderful experiences in our live and in the lives of the other team members.
Over the last years we have participated in several medical missions at different places in Asia, Africa and South America and witnessed the evolution of several programs and the development of local expertise. It is stimulating to work with team members from different background, exchanging ideas and to learn from each other. Both medical and non-medical volunteer work is fantastic and we are proud to work with such kind and generous individuals. We enjoy learning from the local cultures and experiencing the beauty of people at the different destinations. We are inspired by the efforts of our hosts facing the vast medical demands with limited supplies.
We hope we will be able to return to Bangladesh next year to work together again with all the people who put their time and energy in creating a better world for all of us.

Karlien Bongers, MD, Surgeon, medical end responsible and Anne Vlietstra, MD, Family Doctor, organisational endresponsible of the Medical Checks for Children Mission Bangladesh-BVDO 2011
Amsterdam, 23th of May 2012

Appendix A: Overview of Medication

Medication	In stock from 2011	start mission	Total In stock	end of mission	used	Back to wholesaler	in stock for 2012	contains	exp. date
1=Iron sirop , 200 ml (Zivit-i)(Alco pharma)		288	288	75	213	75	0	Per 5 ml: Iron III Hydroxide; olymaltose complex INN 200 mg; Thiamine Hydrocloride BP 5 mg; Riboflavin 5-Phosphate Sodium BP 2.74 mg; Pyridoxine Hydrochloride BP 2 mg; Nicotinamide BP 20 mg; Zinc Sulfate USP 27.45 mg (5 ml equals 50 mg elementary iron).	sept-13
1=Iron tablets: Ferocit		28840	28840	16740	12100	*donated to Martina for pregnant women		Each tablet contains ferrous fumarate BP 200 mg; Ferrous Fumarate BP 200 mcg. 100 tabl per container	
2=Multivitamin syrup (Vitcod with cod liver oil) 100ml		684	1272	85	1187	85	0	Per 5 ml: vit A 2000IU; Vit B1 0.70mg; Vit B6 0.35mg; Vit E 1.80 MG; Vit D 210 IU; Vit B2 0.65 mg; VitC 17.50 mg; Nicotamide 9.10mg; cod liver oil 0.10 gm	oct-13
2=Multivitamins (Stanovit) tab		29520	28500	17160	11340	17160	0	VitA 1.5; Vit D 10 mg; Vit B1 1.5 mg; vitB2 1.7mg; vitB6 2 g; sodiam ascorbet 68.48 mg; nitonamid 20 mg	nov-13
3/6=Albendazol (Chuben) 400 mg	321	1576	1897	1292	605	0	1292	Albendazole USP 400 mg	nov-13
5=Ivermectine (Ivactin) tab 3mg		59	59	58	1	0	0		
5=Permetrine 5% 30gr		19	19	3	16	0	3		?
10=Amoxicilline susp. 125mg/5ml, Sapox 100ml		70	70	0	70	0	0	125mg/5 ml, 100 ml	febr-14
10=Amoxicilline 250 mg	181	488	669	649	20	200	449	250 mg	sept-14
10=Amoxicilline 500 mg	2	200	202	140	62	0	140	500 mg	nov-13
11=Augmentin 125/31.25 per 5 ml (Moxaclav) 100ml		67	67	26	41	1	25	125/31.25 per 5 ml, 100 ml	
11=Augmentin 250/125, Moxaclav tab		120	90	90	0	90	0	250/125	nov-13
12=Azitromycine (Zinex) 200 mg/5ml,15ml		27	27	27	0	0	27	200 mg/5ml,15ml	

12=Azitromycine (Zinex) 200mg/5ml, 30ml		18	18	13	5	13	0	200mg/5ml, 30ml	
20=Metronidazol tab 400 mg (Menilet)		93	93	93	0	0	93	400 mg	july -14
21=Co-trimoxazole (Actrim) Sirop		28	28	22	6	0	22	trimeth. 40 mg / sulphametazole 200 mg per 5 ml, 60 ml	dec-13
21=Cotrimoxazole 400/80mg, tab.		20	20	20	0	0	20	400/80mg, tab.	sept-13
21= Co-trimoxazole 800/160, tab.		300	300	300	0	0	300	800/160, tab.	sept-14
32/76= Chlormamphenicol , Opsophenicol 10ml		48	48	34	14	0	34		apr-14
50= Mupirocine Mupi 10gr (bactroban)		136	136	121	15	0	**121**		dec-12
51=Hydrocortison 1% 10gr		61	61	46	15	46	0		dec-12
53=Econazole nitrate 1% TCA 0.1%, tricoderma 10gr		97	97	73	24	0	73		dec-14
56=Iodium Viadon 10% 100ml		12	12	7	5	0	7		nov-13
Zilversulfadiazine 1%, burmacream 25gr		4	4	4	0	4	0		
Soap		1067	1067	144	923		144		
Toothpaste		1225	1225	311	914		288		
Teethbrushes		1200	1200	268	932		268		
Medication	**In stock from 2011**	**Received at start mission**	**Total In stock**	**end of mission**	**used**	**Back to wholesaler**	**Left in stock for 2012**	**contains**	**exp. date**