ACT Malaria EB Meeting 2006

Danang, Vietnam
21-22 March 2006

COUNTRY PROFILE: BANGLADESH

INTRODUCTION

Bangladesh lies between $20^0$34' and $26^0$38' north latitude and 88^0 01' and $92^0$41' east longitude. From the east to the north and the west, Bangladesh has its borders with the Indian states of Mizuram, Tripura, Assam, Meghalaya and West Bengal. It has a small inter-country border with Myanmar in the east. The southern deltaic region faces the Bay of Bengal.The area of the country is 147,570 square kilometers and it has a population of 143.8 million.

Administratively the country is divided into 6 Divisions, 64 Districts, 460 Upazila (Sub-districts) and 4500 Unions. Bangladesh has a comprehensive network of health infrastructures stretched up to the union level. The three tiers health services delivery system in the country (Primary, Secondary and Tertiary) follow the decentralized administrative system.

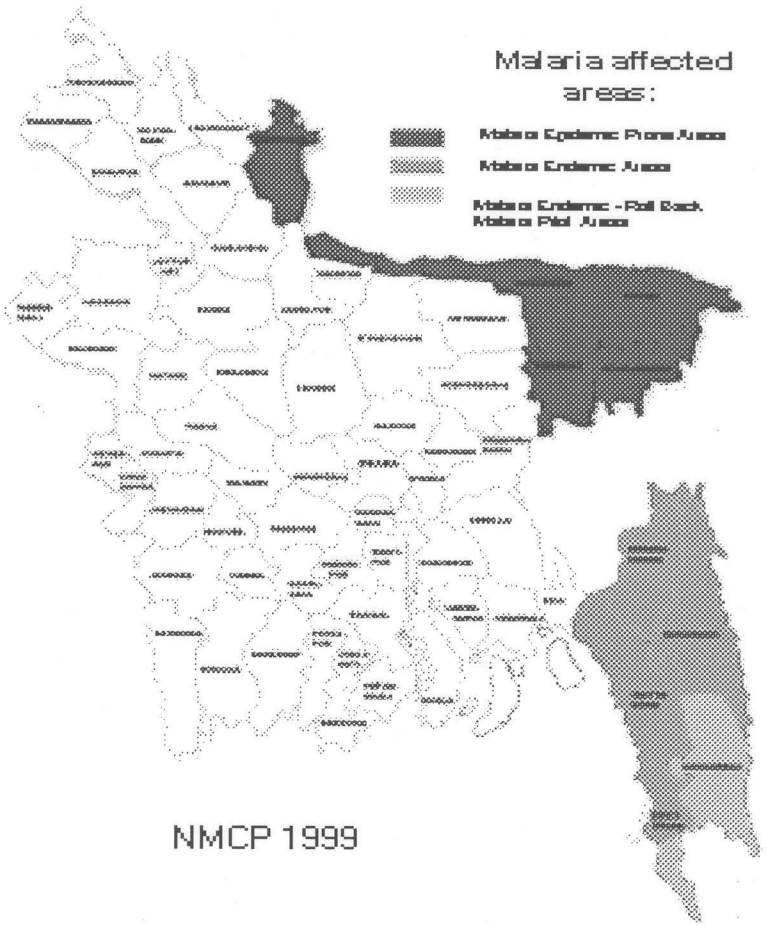
ORGANIZATIONAL SET-UP

The Malaria and Parasitic Disease Control Unit (M&PDC) under the director of disease control in the Directorate General of Health Services (DGHS) is responsible for malaria related activities at national level. All disease control activities including that of malaria are implemented through the district health system. Each district is divided into several upazilas (sub-districts), each upazila has 6-10 unions, and each union is divided into 9 wards (Blocks). In each upazila there is a 31-bed hospital (Lowest level inpatient facility) and a contingent of field staff up to ward level. At the community level multipurpose health workers are responsible to provide the services that include field staff (health assistant, assistant health inspector and health inspector). In each upazila there are union health centers (Static outpatient facilities) to serve 25,000 to 30,000 populations.

EPIDEMIOLOGICAL SITUATION

During the last five years, malaria situation has remained stable with little fluctuation in total number of cases and reported deaths. Out of the total 64 districts in the country, 13 are in the high-endemic area (accounting for 98% of the reported cases and more than 95% of the reported deaths in the country) for malaria transmission which includes three Chittagong Hill Tract (CHT) districts: Bandarban, Khagrachari and Rangamati. About 80% of the cases of malaria in Bangladesh are reported from the CHT districts with a total population of about 1.4 million. The total population at high risk of malaria areas in these 13 districts is approximately 14.2 million. Due to the hilly and forested terrain, climate, rainfall, humidity and temperature mosquito vectors e.g. An. dirus and An. minimus causes intense perennial transmission in these districts.

The malaria cases reported annually are an under estimate of the total disease burden because of shortcomings in surveillance and information management. Deaths are thus also grossly under reported. According to the expert opinion the estimated burden of malaria may be five times higher than that of current reported cases.



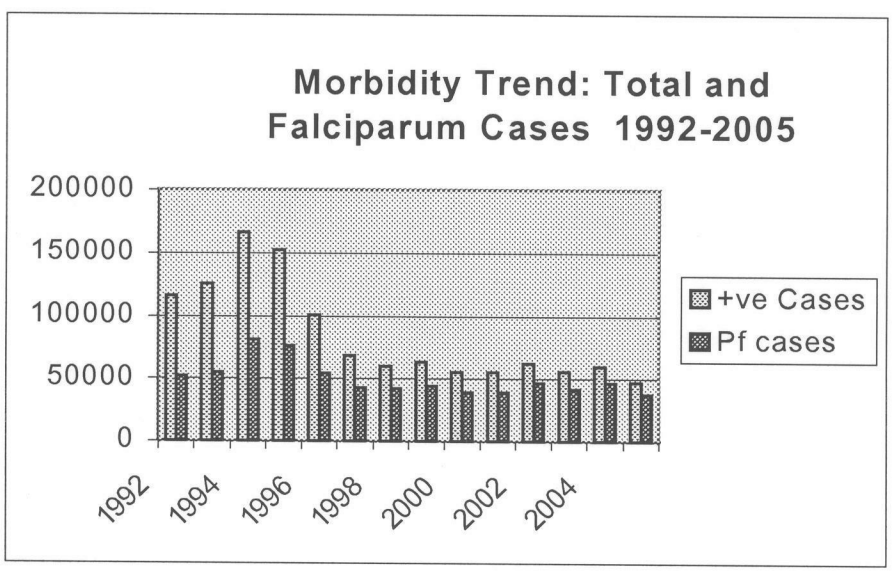
Map of BANGLADESH
Showing malaria areas

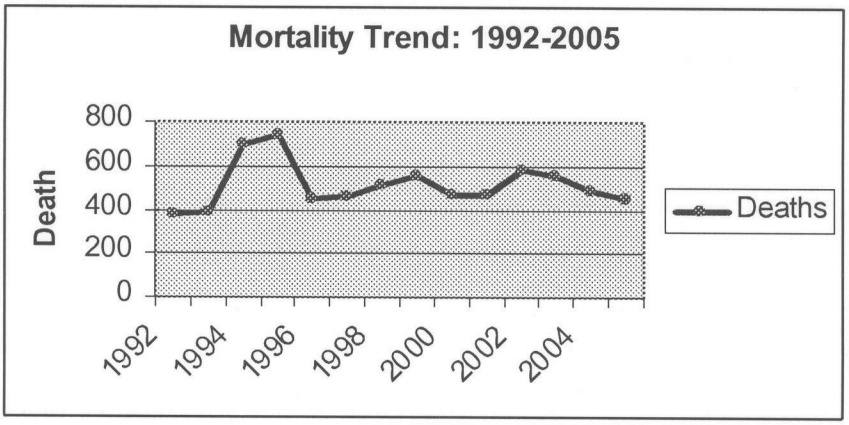
MALARIA EPIDEMIOLOGICAL DATA (1992-2005)

Year	+ve Cases	Pf cases	Pf%	Deaths
1992	115660	51775	45	378
1993	125402	54973	44	383
1994	166565	81015	49	696
1995	152729	75860	50	742
1996	100864	54307	54	447
1997	68541	42342	62	457
1998	60023	42222	70	507
1999	63738	44306	70	551
2000	55599	39536	71	468
2001	55646	39555	71	470
2002	62269	46418	75	588
2003	55909	41521	74	556
2004	59853	46637	78	485
2005	47313	37684	80	446

TREND IN MORBIDITY AND MORTALITY

Number of confirmed cases has not been reduced significantly over last few years. Total cases reported in 1998 were 60,023, which were 59,863 in 2004. However, the p. falciparum proportion is gradually increasing which was 70% in 1998 and increased to 80% in 2005. Approximately over 500 deaths are reported every year, which is a gross under reporting.





MALARIA OUTBREAKS

Eight districts and 34 upazilla having 7.5 million population in the east and north-east borders report focal outbreaks of malaria almost every year. During the 2004-2005 biennium, with WHO support, Rapid Response Team (RRT) has been set up in each of these epidemic prone districts. However response capacity at district and Upazila level needs to be strengthened and modern technology e.g GIS needs to be introduced for effective operations.

MALARIA CONTROL PROGRAMME AND ITS POLICY

Programme Objectives

- To reduce by 2010, malaria specific mortality rate by 50% as compared to 2000;
- To provide early diagnosis and prompt treatment (EDPT)
- To plan and implement selective and sustainable vector control: promote Insecticide Treated Mosquito Nets (ITMN)/ Long Lasting Insecticidal Net (LLIN) and selective IRS to contain outbreaks
- To develop and strengthen epidemiological and entomological surveillance.

Programme Implementation Strategies

- Increasing access to diagnosis and effective treatment to cover 90% of the population at risk; and creating mass awareness for prevention and control of malaria;

- Improving management of severe and complicated malaria in hospitals and establishing an effective referral system;

- Human resource development for malaria control;

- Ensuring un-interrupted supply of drugs, diagnostics and logistics;

- Strengthening disease and vector surveillance;
- Establishing a community based ITMN programme and promoting ITN/LLIN;
- Strengthening laboratory services; monitoring of therapeutic efficacy of antimalarial drugs; and resistance status of vector population;
- Building capacity for epidemic preparedness and response at the national, district and sub-district (Upazila) levels; and
- Fostering partnership with NGOs, Private sector and the civil society organizations in support of effective malaria control;
- Promoting healthy public policy and creating enabling environment for malaria control; and
- Operations research.

MALARIA ECO-TYPES AND DISTRIBUTION

The malaria risk areas of the country are distributed mainly in the border belt territories of the country. However there are several eco-types of malaria with defined epidemiological characteristics and vector distribution. Five major epidemiological types of malaria have been defined which are:

Malaria of Forested hills: These areas include bordering hilly and forested zones of three hill tract districts and report a perennial transmission of malaria. As these areas are hard to reach and inhabited by the different tribal population these pose a major problem in effective interventions for malaria control. However malaria situation is relatively stable in those areas and 90% of the cases are P. falciparum.

Malaria of Forest Fringe: These areas include the foothills areas stretching towards the plain. Majority of the new settlers and aggregation of labour forces in the development works presents as a special feature for malaria transmission in this area. Here the malaria situation is unstable and there is risk of focal outbreaks almost every year.

Malaria of Plain Border Belt areas: About 10 km areas from the international border constitute these plain border belt areas, which bears significant risk of malaria transmission. The malaria situation is unstable.

Malaria of Plain Rural areas: Vast part of the country comprises this area and except focal high endemicity in few areas the rest remain under low endemicity.

Malaria of urban areas: Till today malaria transmission in urban areas has not been reported in Bangladesh. However imported cases particularly by the short-term travelers to the high endemic area have been reported in different cities including Dhaka.

ENTOMOLOGICAL INFORMATION

Out of 34 Anopheles species (Spp.) recorded in Bangladesh, 7 (seven) Spp. have been incriminated as malaria vector, these are: (1) *An.dirus, (2) An.minimus, (3) An.Philipinensis, (4) An. sundaicus, (5) An.aconitus, (6) An.anularis and (7) An. vagus.* From recent entomological observation *An.maculatus* group is strongly suspected to be a new vector in certain areas of northern border districts.

VECTOR CONTROL ACTIVITIES

DDT had been used for nearly 30 years as the only insecticide for residual indoor spraying. Now the use of DDT is banned for house spraying due to its environmental and pollution effect on food staff through its indiscriminate use in food preservation and crops etc. However, it had been used (since 1994) in kala-azar vector control program till 2004, as the programme had some stocks of DDT. Since 1994, two insecticides; Malathion 57% EC for IRS and Deltamethrin 2.5% EC and 1% SC for treatment of bed-nets have been used for malaria vector control in the country. Recently a small-scale trial with deltamethrine 5% WP has been conducted in Srimongol, which showed encouraging result.

The vector control interventions in practice include: (i) Selective IRS with Malathion for containment of outbreaks and (ii) Treatment of mosquito net with Deltamethrine 1% SC in the high endemic areas.

REVISED TREATMENT REGIMEN (2004)

Recently (during November 2004) the revised Malaria treatment regimen has been endorsed by the Ministry of Health and Family Welfare and thereby the control programme introduced Artimesinin based Combination Therapy (ACT-Coartem) as the first line of treatment in the traetment of falciparum malaria.

OF IMPLEMENTATION OF PROJECTS OF ALUMNI OF THE FOLLOWING COURSES IN 2004-2005

MMFO 2004

No participant from Bangladesh attended the course

TTT 2005

Two participants from Bangladesh attended the course and have just implemented their project. 19 medical officers (graduate doctors) working in malaria endemic districts were trained on management of severe and complicated malaria in hospital.

Status of implementation of action plan presented during the Drug Policy Workshop in China

Implementation is under process

Major accomplishments in capacity building (both training and operations research) in the last 3 years:

Facilitating Factors

The participants in the TTT course implemented their project with their existing experience and knowledge obtained from the course. The course had taught them how to organize and conduct an effective training from need assessment to evaluation. This helped them organize and conduct the training more methodically and effectively from need assessment to evaluation. They are also utilizing their knowledge in training nurses, medical assistants and field staff as well as village doctors on malaria.

Restraining Factors

The of the ACT malaria courses had to implement their proposal in the field of training/ orientation in order to build up capacities of the programme in country due to financial constraints.

Gaps in the Programme that can be addressed by training and other building strategies

Surveillance:

Currently the malaria surveillance system in the country is weak. As a result malaria remains under reported every year and we do not know the actual malaria situation in the country. We can only guestimate the number of cases and deaths from the reporting. In our existing mechanism only the static government health facilities in district and upazila (sub district) level are reporting malaria cases and deaths. There is no malaria reporting of malaria from tertiary level hospitals and private sectors. That's why experts are required for developing an effective surveillance mechanism.

Drug Distribution system:

Bangladesh has recently changed its drug policy form chloroquin based treatment regimen to ACT based treatment regimen for the treatment of falciparum malaria cases. As it is a costly drug a well-organized distribution system is required to ensure the effective use of the ACT by the end users. A uniform anti malarial drug distribution system should be developed for implementation in the member countries with ACT based treatment regimen.