Public Health Services in Bangladesh with Special Reference to Systems and Trends of Vital Statistics

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Abstract

Health is one of the basic requirements for improvement in the quality of life. Since Bangladesh became independent, a policy for providing essential minimum health care to all has been actively pursued.

An overview of Public Health Services in Bangladesh is presented in terms of: (1) a profile of the country, (2) an overview of public health, (3) medical care, and (4) environmental health. Under each of these headings observations are included on recent trends based upon relevant data and information.

Finally the authors describe the importance of (1) promotion of health care and planning at the national, divisional, local, and community levels, (2) promotion of medical services at all levels, and (3) effective decentralization of health services to enhance the services of health facilities.

Key words: public health services, public health systems, health facilities, vital statistics in Bangladesh

Profile of the Country

1. Political and Administrative Structure

Bangladesh is a country at the southern edge of the Asian continent, covering an area of 142,300 km². The population in 1991 was 111.4 million with a population density of 780 persons per km². India and Myanmar are Bangladesh's neighbouring countries and in the south is the Bay of Bengal. Many rivers cross Bangladesh, such as the Padma, the Jamuna, the Surma, the Meghna, the Karnaphuli, and the Teesta. The total length of these rivers and their tributaries adds up to 24,140 km. Since the country is located in a tropical region, it has many hours of sunshine throughout the year but also abundant rainfall. The country is ethnically homogenous and unilingual. Illiteracy presents a major problem.

Parliament is the highest state organ and the sole law-making body. It consists of 330 members. Executive power is vested in the cabinet, which consists of the Prime Minister and Ministers of State and is collectively responsible to Parliament. The majority party leader is Prime Minister and the chief executive of

the country and is appointed by the President.

For administrative convenience the country is divided into six administrative divisions. Each division is placed under a Divisional Commissioner and is further divided into districts. The administration of each district is headed by a Deputy Commissioner who is assisted by other officials.

A district is subdivided into a number of Thanas, each headed by a Thana Nirbahi Officer. Finally, each Thana is subdivided into a number of Unions administered by a Union Council led by a Chairman who is elected by the local population. The local administration is contacted at the level of Division, District, Thana, and Union each with their respective assemblies. Administratively, in 1995 Bangladesh comprised six Divisions, 64 Districts, 460 Thanas, and 4,451 Unions.

2. Historical Overview

Bangladesh has a history of two thousand years as a part of the Indian subcontinent. The people of Bangladesh can trace their origins to Australasian, Dravidian and Aryans who settled in this area centuries ago. Next, there was an influx of Mongolian peoples from Tibet and Myanmar and of other races from the Middle East. By the eighth century, an Indo-Aryan culture and civilization had emerged in this land, known as "Gaur", and Dhaka had become the center of the Brahmin Kings. Bangladesh was under Muslim rule for over five and a half centuries from 1201 to 1757 A.D. and then under British rule for 190 years from 1757 to 1947 A.D. During the latter period Bangladesh was

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Table 1 Intercensal population increase rates and age group distribution (%)

Census year	Population	Intercensal increase rate	Age group (years)							
			0-4	5-9	10-14	15-24	25-34	35-44	45-59	60+
1951	44,165,740	5.16	14.6	14.9	12.6	18.3	14.8	10.8	9.6	4.4
1961	55,222,663	25.04	18.2	18.8	9.1	15.2	14.2	10.2	9.1	5.2
1974	76,398,000	38.35	16.9	18.3	12.8	15.1	12.5	10.0	8.7	5.7
1981	89,912,000	17.69	17.0	16.3	13.4	17.1	13.1	9.3	8.2	5.6
1991	111,455,185	23.96	16.7	16.5	12.0	16.9	14.6	9.7	7.9	5.4

Source : Census of Population 1991, Bangladesh Bureau of Statistics

a part of the British Indian provinces of Bengal and Assam. In 1947, it was made into the eastern wing of Pakistan and was known as East Pakistan. Finally, under the leadership of "Banga Bandhu (the friend of Bangladesh)" Sheik Mujibur Rahman, Bangladesh emerged as an independent country on 26 March, 1971, but this victory cost the lives of three million people and led to economic ruin.¹⁾

3. Demography

The population of Bangladesh was 44.1 million in 1951, and increased to 111.4 million in 1991, for an average intercensal increase rate of 17.6% between 1974 and 1981 and of 23.6% between 1981 and 1991. Bangladesh is one of the most densely populated countries in the world with 780 persons per km². Table 1 shows the intercensal population growth rates and age group distribution.²⁾

4. Education

Under British rule, various educational establishments were developed to serve the needs of the various social classes. A modern national education system was introduced under British rule when the government set up elementary and secondary schools throughout the country. The present educational system comprises three stages, primary school (5 years), high school (5 years) and higher education (2 years for higher secondary school, 5 years for medical school and 4 years for other schools). Table 2 shows the participation in education by stage.²⁾

Overview of Public Health

1. A Historical Overview of Public Health

The history of health services in Bangladesh can be traced back to the early 17th century with the arrival of the East India Company. In 1672, the East India Company began trading in Bengal and in 1757, the area came under British rule. The administrative machinery was intended to function as a police state governed from England. The earliest efforts of health administration were directed at diminishing the suffering due to sickness mostly in urban areas. Subsequently, some facilities were extended to small towns in the form of hospitals with a few beds. In 1816, local bodies began to be established and in 1888, the duties of local bodies in the matter of sanitation were articulated, with the main emphasis continuing to be on the provision of hospitals and dispensaries. In 1904, the Plague Commission recommended the strengthening of public health services and the

establishment of laboratories for research and the preparation of vaccines and sera.³⁾

In 1946, a Health Survey and Development Committee was formed. This committee recommended the integration of curative and preventive services by means of the creation of "Basic Doctors" who graduated four years medical course (already abolished) and the establishment of rural health centers. A scheme for rural health centers was actually established in 1961 and provided for one rural health center with six maternity beds, and control over three sub-centers. Each rural health center was scheduled to provide comprehensive health care for 50,000 people. In 1967, the Thana Health Center scheme was approved to provide integrated and comprehensive health care for the rural population, as described in the following section. This scheme envisioned the establishment of a 31bed hospital in each Thana.³⁾

2. Health and Welfare Administration

The health services organization of Bangladesh follows the general administrative structure. The Ministry of Health and Welfare is responsible for the formulation and implementation of the national health and population policies. It controls the overall administration, co-ordination and management of health care and family planning services. There are two Directorates General under the minister, one for health and another for family planning. They are responsible for implementation of all programs and for providing technical guidance to the minister. The health and welfare administration is decentralized into six divisions at Dhaka, Chittagong, Khulna, Rajshahi, Barisal, and Sylhet and there are 64 districts under these divisions. Each district has a Civil Surgeon to supervise health activities and a Deputy Director of Family Planning to supervise family planning activities.³⁾

There are 460 Thana Health Centers (T.H.C). The Thana Health Administrator who is a medical doctor takes on the responsibility for all local health and family planning activities including home services. A Thana Health Center consists of four functional units:

- (1) General administration
- (2) Inpatient and outpatient services
- (3) Maternity and child health services
- (4) Home service.

The Union Sub-Center is the smallest unit of the health administration. The government aims to provide for a Union Sub-Center in every Union, but at present there are only 1,362 Union Sub-Centers for a total of 4,451 Unions. The Union Sub-Center is the first contact level for the rural population to obtain health and family planning services and it covers the following activities:

- (1) Home visits by field workers for counseling regarding health promotion and disease prevention
- (2) Immunization

Table 2 Participation in education by stage (%)

Stage (years)	1988-89	1990-91	1991-92	1992-93	1993-94
Primary school (5-9)	87.0	94.6	97.5	75.0	95.0
Secondary school (10-14)	23.0	27.6	30.3	32.1	n.a.
Higher education (15-24)	3.4	4.2	6.9	6.7	6.0

Table 3 Birth rates and death rates by place of residence

Year	Crude birth rate ¹			Crude death rate ²			Infant mortality rate ³			Child death rate ⁴		
	Residence			Residence			Residence			Residence		
	All	Urban	Rural	All	Urban	Rural	All	Urban	Rural	All	Urban	Rural
1988	33.2	24.9	34.5	11.3	7.4	11.8	116	91	112	13.5	8.7	14.1
1989	33.0	24.4	34.3	11.4	7.3	12.0	98	84	105	13.6	8.6	14.3
1990	32.8	24.6	34.1	11.3	7.8	11.8	94	71	97	14.2	8.3	14.2
1991	31.6	23.9	32.9	11.2	7.3	11.5	92	69	94	13.6	8.3	14.4
1992	30.8	23.7	32.2	11.0	7.2	11.4	88	65	91	13.2	8.0	14.0
1993	28.8	21.0	30.0	10.0	7.2	10.4	84	61	88	12.6	8.1	12.9
1994	27.8	20.2	29.1	9.0	7.1	9.3	77	57	79	12.1	7.7	12.5
1995	27.0	20.0	28.9	8.6	6.9	9.0	75	53	78	12.0	7.6	12.3

¹Per 1000 population. ²Per 1000 population. ³Per 1000 live births. ⁴Per 1000 children aged 1-4 years.

Fig.1a Organization at the central of the Ministry of Health and Welfare(1995)

Fig.1b Organization at the local level of the Ministry of Health and Welfare(1995)

(3) Safe delivery at home

(4) Pre- and post-natal care

(5) Motivational work for family planning and distribution of contraceptives.

Fig 1. shows the organization of the Ministry of Health and Welfare.

3. Population Growth, Mortality, and Fertility

The intercensal increase rate is estimated at 23.9% between 1981 and 1991, which is a high increase rate even by standards of developing countries. Recent estimates by the Statistical Bureau of Bangladesh of the crude birth and crude death rates per 1,000 people were respectively, 27.0 and 8.6 in 1995. The infant mortality rate per 1,000 live births was 116 in 1988 and 75 in 1995, these showing a gradual decrease. However, there is still a significant difference in infant mortality rates between urban and rural areas. A similar trend can be observed in the difference in life expectancy as well. One reason for these differences in these health indicators is that there may be differences in the quantities of health resources between urban and rural areas. Generally, the life expectancy of females is greater than that of males. However, this trend in life expectancy is not observed in Table 4. One of the possible explanations for this is that the advantage in mortality of females is very slight or even non-existent in countries such as Bangladesh, Pakistan, and Iran⁴. Tables 3 and 4 show the birth and death rates by residence and estimates of life expectancy at birth.²

4. Primary Health Care

The government is trying to initiate and develop a national primary health care (PHC) network in Bangladesh on the basis of a policy of providing health care to the unserved or underserved population. The aims of this network are (1) to promote the health of the people through health education, (2) to encourage the people to consider local health problems, (3) to organize health and family planning committees, and (4) to train

Table 4 Life expectancy at birth by sex and place of residence (years)

Year	All	Sex		Residence	
		Male	Female	Urban	Rural
1988	55.1	55.9	54.4	60.2	55.3
1989	56.0	56.0	55.1	60.9	55.0
1990	56.0	56.4	55.4	59.5	55.0
1991	56.1	56.5	55.7	60.2	55.8
1992	56.3	56.8	55.9	60.5	56.0
1993	57.7	57.8	56.6	60.7	57.5
1994	58.0	58.2	57.9	60.8	57.7

volunteer village health workers. The focus of these efforts is on increasing local self reliance through community participation. Four or five villages organize a Ward which is identified as the lowest administrative level with a population of about 7,000-9,000. Each Ward has an elected representative and three Wards constitute a Union. The PHC network at the Ward level consists of two health workers, one male health assistant and one female family welfare assistant-who are government employees. They are selected from among the local people and their duties are identical. They visit a fixed number of homes per day in order to monitor infectious diseases, organize immunization activities and implement the family planning programs.

5. Maternity and Child Health Care

Bangladesh has one of the highest maternal mortality rates in Asia. The very low status of women is reflected in their high illiteracy rate. Until the late 1950s, maternity and child health care (MCH) services were only given at urban hospitals and a few private maternity centers. Subsequently, the East Pakistan Government initiated an MCH program through the establishment of Maternal and Child Welfare Centers run by co-medical staffs. In 1976, MCH care was transferred from Health Services to Population Control after the government adopted a policy of functional integration of health and family planning services at the Thana level. The following centers are included in MCH: (1) Maternity and Child Welfare Centers, (2) MCH Units at Thana Health Centers, and (3) Union Health and Family Welfare Centers.³⁾

6. Expanded Program for Immunization

The first Expanded Program for Immunization (EPI) was initiated in Bangladesh in April 1979, but the coverage rate for immunization of infants was still very low in 1984, when less than 2% of infants were fully immunized with vaccines for bacillus Calmette Guérin (BCG), for diphtheria, pertussis, and tetanus (DPT), for polio (OPV), and for measles. The plan of action to expand immunization started in July 1985 and will continue through June 2000. The key elements of this plan are (1) intensive mobilization techniques to generate support and (2) involvement of health centers to facilitate immunization. Children up to one year of age will be provided with immunization and this age group has the first priority within the target population.³⁾

Medical Care

1. Medical Care Delivery System

Medical care in Bangladesh is provided at the various medical facilities listed below. These facilities are linked by a referral system. The entire health care system is based on a regional health care model and supported by a referral system in which special health establishments at the district and urban levels serve the rural population as referral institutions. While District Hospitals are being provided with a variety of specialists and more beds, the Thana Health Center remains the first contact facility for villagers.³⁾

- (1) Union Sub-Center (U.S.C.)
(First health facility at the reporting level)
- (2) Thana Health Center (T.H.C.)
(First referral level)
- (3) District Hospital

(Secondary referral level)

- (4) Medical colleges, hospitals and specialized hospitals at the national level of health care

(Tertiary referral level)

2. School Health Clinics

There are 25 school health clinics in Bangladesh, each with one Medical Officer and one Pharmacist. The Medical Officer examines students at the school regularly once a month, observes their health and treats minor ailments and physical problems. Complicated cases involving eye, ear, nose, and throat or major surgical and medical problems are referred to the higher level medical facilities. The Medical Officer also implements the immunization program for students. A committee consisting of teachers, parents, senior students, and the Medical Officer, meets to discuss and try to solve school health problems such as sanitation, cleanliness and water supply.

3. Overview of Medical Educational Facilities and Health Personnel

In 1978, there were 8 medical colleges, 3 postgraduate institutes, 2 co-medical institutes of health technology, and 8 medical assistant training schools in Bangladesh. In 1994, these numbers had increased to include 13 medical colleges and 5 postgraduate institutes. Health personnel in 1978 consisted of 7,000 registered doctors, 2,012 registered nurses and 1,041 registered midwives. In 1994, these numbers had also increased to 24,099 registered doctors, 9,630 registered nurses and 7,713 registered midwives. The government has plans to increase the health personnel in proportion to population growth through appropriate education, training, and continuing programs for doctors, nurses, and other co-medical professionals. There were 919 hospitals with 35,880 beds in 1994. Tables 5 and 6 show data on the medical facilities and health personnel.³⁾

4. Nursing Services

In 1977, the Nursing Administration (NA) was established under the Health Branch of the Ministry of Health and Welfare. The Nursing Administration is responsible for the planning, administration, organization, implementation, supervision, coordination, and evaluation of nursing education programs and nursing services in health facilities. The Nursing Administration maintains liaison with international nursing organizations.³⁾

Environmental Health

1. Industrial Hygiene

Industrial hygiene focuses on the health, safety, welfare, and rights of the people who make up the civilian labor force.

The Industrial Hygiene Unit was established under the Department of Preventive Health Services in 1965 to provide preventive health services for industrial workers. However, it is difficult to carry out such activities because of shortage of personnel trained for occupational health.³⁾

2. Safe Water Supply and Sanitation

It is estimated that the majority of all diseases in Bangladesh is directly or indirectly linked to poor hygiene due to inadequate use of safe water and unhygienic disposal of human excreta. Children form the group most vulnerable to infection. The Government of Bangladesh as well as international organizations

Table 5 Number of medical educational institutions and health personnel

Year	Medical educational institutions				Health personnel		
	Medical colleges	Postgraduate medical institutes	Paramedical institutes	Medical assistant training schools	Registered doctors	Registered nurses	Registered midwives
1978	8	3	2	8	7,000	2,012	1,041
1983	8	5	2	8	11,496	5,164	3,424
1988	8	5	2	8	17,475	7,390	6,556
1993	13	5	2	8	22,400	9,455	10,104
1994	13	5	2	8	24,099	9,630	7,713

Table 6 Number of health facilities

Health Facilities	1988	1990	1992	1993	1994
Hospitals					
District Hospitals ¹	59	59	59	59	59
Post Graduate Hospitals	2	4	5	5	5
Teaching Hospitals ²	13	13	13	13	13
Thana Health Centers ³	352	352	400	372	380
Specialized Hospitals					
TB Hospitals	4	4	4	4	4
TB Segregation Hospitals	8	8	8	8	8
Leprosy Hospitals	3	3	3	3	3
Infectious Disease Hospitals	5	5	5	5	5
Mental Hospitals	1	1	1	1	1
Other Hospitals					
Rural Health Centers	12	12	12	12	12
Maternity and Child Welfare Centers	96	96	96	96	96
Railway Hospitals	39	39	39	39	39
Prison Hospitals	19	19	19	19	19
Police Hospitals	20	20	20	20	20
Volunteer Agencies	267	280	312	312	280
Total Number of Hospitals	900	915	996	968	944
Total Number of Beds	35,423	35,577	35,740	36,385	36,974
Other Public Health Facilities					
Tuberculosis Clinics	44	44	44	44	44
School Health Clinics	25	25	25	25	25
Urban Dispensaries	35	35	35	35	35
Union Sub-Centers	1,275	1,275	1,275	1,362	1,362

¹ New district hospitals have 50-100 beds and old district hospitals have 100-250 beds.

² Teaching hospitals have 500-1500 beds.

³ One Thana Health Center has 31 beds.

have continued to express great concern about this situation, and especially the Ministry of Local Government and the Department of Public Health Engineering continue to execute programs for the improvement of water supply and sanitation.³⁾

Problems and Challenges for the Nation's Health Programs

The health picture of Bangladesh, which is characterized by a high death rate, high incidence of communicable diseases, malnutrition, and low life expectancy is similar to that in other developing countries. These problems are caused by poor water supply, an unsanitary environment, poor nutrition, a high population growth rate and inadequate health facilities. This situation can not be changed only by medical care provided by medical facilities. Hospitals and sophisticated medical equipment in urban areas undoubtedly save some lives. However, they do not serve to improve the health status of the whole population, especially those who can not reach a hospital. Moreover, hospital

treatment is very expensive for the average person. For these reasons it is essential to promote the community-based program, in order to improve the health conditions. These programs should include sub-programs related to health education, immunization, nutrition, maternity and child care, sanitation, and pure water supply, etc. The problem of inequitable geographic distribution of health resources can also be solved by effective decentralization of the health care systems. Local administrative bodies should be allowed to plan the medical delivery system by themselves thus replacing the present central administration. Health programs must also be supported by relevant laws.

"An ounce of prevention is worth a pound of cure" would be a useful motto for all economically developing countries. Bangladesh is burdened with her 120 million population and a density of 780 per km². We believe that health programs, if planned and executed properly in accordance with the guidelines discussed in this report will prove helpful for improving the health status of the people of Bangladesh.

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