

Human Resources for Health: Bangladesh Perspective

Health workforce

The Directorate General of Health Services (DGHS) has deployed over one lakh personnel and staffs throughout Bangladesh to deliver health services to the people, develop manpower and provide support services like maintenance of equipment, production of intravenous fluids, blood bags and reagents, etc.

The distribution of human resources across the health sector governed by the Ministry of Health and Family Welfare (MOHFW) oversees a dynamic process. Placement and transfer of work force are done at different levels, viz. MOHFW, DGHS and offices of the Divisional Directors of Health and of Civil Surgeons. Retirements, leaves or deaths are other events that influence number and distribution of health workforce. Therefore, the distribution of work force across health sector at any given point of time is not static or absolute number. Reminding the readers about this limitation, below is given a table on the distribution of human resources working under DGHS, which is based on information available during preparation of this Report.

Number of sanctioned, available and vacant posts of MOH&FW

Under DGHS (June 2008)

Class	Sanctioned	Available			Vacant
		Male	Female	Total	
Class 1	18653	7924	207	10431	8222
Class II	1352	341	697	1038	314
Class III	61130	31864	17346	49210	11920
Class IV	24903	16794	4877	21671	3232
Total	106038	56923	25427	82350	23688

Under DGFP (June 2008)

Class	Sanctioned	Post Felled Up	Post Vacant	Present Value
Class 1	1925	1270	755	39.2%
Class II	1023	588	435	42.5%
Class III	40430	34656	5774	14.3%
Class IV	8956	7671	1285	14.3%
Total	52334	44187	8249	15.8%

Under DNS (June 2008)

Class	Sanctioned	Post Felled Up	Post Vacant	Present Value
Class 1	58	11	47	81.0%
Class II	387	164	223	58.1%
Class III	15838	13879	1959	12.4%
Class IV				
Total	16283	10479	2229	13.7%

Number of sanctioned, available and vacant		posts of doctors under DGHS (June 2008)		
Post	Sanctioned	Available	Vacant	
Director, Principal or equivalent	47	21	26	
Deputy director or equivalent	79	70	9	
Assistant Director, Civil surgeon or equivalent	191	147	44	
Deputy civil surgeon or Upazila Health & Family Planning Officer	500	473	27	
Vice Principal	14	12	2	
Professor	402	231	171	
Associate Professor	552	223	329	
Assistant Professor	745	315	430	
Senior lecturer	8	8	0	
Junior lecturer	32	24	8	
Junior consultant (newly created)	1234	0	1234	
Senior consultant	350	230	120	
Junior consultant/ equivalent	2153	1372	781	
Assistant surgeon	11353	9309	2044	
Total=	17660	12435	5225	

Number of sanctioned, available and vacant posts of nurses under Directorate of Nursing Services (2008)

Class	Category	Sanctioned (No.)			Available (No.)			Vacant (No.)		
		Permanent	Temporary	Total	Permanent	Temporary	Total	Permanent	Temporary	Total
i.	Nursing	45	13	58	9	1	10	36	12	48
	Non-nursing	0	1	1	0	0	0	0	1	1
ii.	Nursing	231	156	387	160	0	160	71	156	227
	Non-Nursing	2	9	11	1	7	8	1	2	3
iii.	Nursing	6481	9552	16033	5859	7786	13645	622	1766	2388
	Non-nursing	184	79	263	152	76	228	32	3	35
iv.	Non-nursing	454	250	704	420	215	635	34	35	69
Total		7397	10060	1745	6601	8083	1468	796	1975	2771

Number of sanctioned, available and vacant posts of medical assistants under DGHS (2008)

Post	Sanctioned	Available	Vacant
Medical Assistant (permanent)	2075	1945	130
Medical Assistant (temporary)	3176	1784	1392
Total	5251	3729	1522

Note: recruitment done in temporary vacant posts 1460 in first phase and 324 in second phase (total 1784)

Number of sanctioned, available and vacant posts of medical technologists under DGHS (2008)

Post	Sanctioned	Available	Vacant
Pharmacist	2620	1952	668
Medical Technology (Lab)	1846	1504	342
Medical Technology (Dental)	492	397	95
Medical Technology (Radiography)	622	618	4

Post	Sanctioned	Available	Vacant
Medical Technology (Physiotherapy)	33	29	4
Medical Technology (Radiotherapy)	38	14	24
Total	5651	4514	1137

Note: Process for recruitment in vacant posts is ongoing

Medical technologists' newly created temporary posts (2008)

Post	Sanctioned	Available	Vacant
Medical Technology (Pharmacy)	24	0	24
Medical Technology (Lab)	177	0	177
Medical Technology (Physiotherapy)	153	0	153
Total	354	0	354

Note: Advertisement given for recruitment in the vacant posts

Number of sanctioned, available and vacant posts of domiciliary workers under DGHS (2008)

Post	Sanctioned	Available	Vacant
Health assistant	20518	14127	6391
Health Inspector	1398	1078	329
Assistant Health Inspector	4179	3713	466
Total	26095	18918	7186
Note: Requisition for recruitment of 6391 vacant posts is in process of MoEst			

Proposal for creation of posts for 5 trauma Centers (2008)

Post	Proposed	Approved
Junior consultant	3	25
Resident Medical Officer	1	
Medical officer	5	
Class III	28	
Class IV		
Total	37	25
Note : MoEst approved 25 posts and MOHFW for subsequent actions		

Current status of process of the proposals for creation of posts for different type of staffs

Processing stage	Doctors	Nurses	Others	Total
Ministry of Finance (approval of pay scale)	2015	1076	1778	4869
Ministry of Finance (approval)	645	246	715	1606
Ministry of Establishment	1366	751	1391	3508
MOHFW	516	25	682	1223
DGHS	79	48	111	238
Total	4621	2146	4677	11444

Alternative Medical Care

It may be mentioned here that the Ministry of Health and Family Welfare operates under DGHS one Government Unani and Ayurvedic Medical College and Hospital and one Homeopathic Medical College and Hospital. About six hundred personnel and staff of alternative medical care work there. These institutions also have manpower of allopathic medicine.

Personnel and staff of Alternative Medical Care working under DGHS (2008)

Post	No.
Medical officers (unani)	15
Medical officers (ayurvedic)	15
Medical officers (homeopathic)	15
Support staff	64
Gardeners	467
Total=	576

Source: Line Director, Alternative Medical Care, DGHS

Human Resource Development

Bangladesh is witnessing a sharp growth of all ranges of medical institutes, both in public as well as in private sector, to produce human resources for serving the country's overall need. The inspirations for this growth came from the projections that the country will need large number of physicians, nurses, medical technologists and other paramedical workforces currently and in future. The global increasing demands for health workforces are also working as stimulating factors. This section will give an overview of teaching/training institutes of human resources for health.

Postgraduate medical degree

There are over 30 institutes in Bangladesh, which offer postgraduate specialist degrees in medical fields. Of these institutes 22 are in public sector, 4 are non-profit organizations (these institutes receive financial grants from government to run the institutes or their affiliated hospitals) and others are in private and NGO sector. Of the public sector institutes, 19 are under Directorate General of Health Services (DGHS), one is autonomous medical university and another is under the Bangladesh Armed Forces. Of the 19 institutes under DGHS, 10 are postgraduate institutes offering only postgraduate medical degrees. Others are medical or dental colleges and offer both undergraduate and postgraduate medical degrees.

List of postgraduate medical institutes (total number: 11) under DGHS

1. Institute of Child and Mother Health (ICMH), Matuail, Dhaka
2. Institute of Nuclear Medicine and Hospital, Dhaka
3. National Institute of Cancer Research and Hospital (NICRH), Mohakhali, Dhaka
4. National Institute of Cardiovascular Diseases (NICVD), Sher-E-Bangla Nagar, Dhaka.
5. National Institute of Diseases of the Chest and Hospital (NIDCH), Mohakhali, Dhaka
6. National Institute of Kidney Diseases and Urology (NIKDU), Sher-e-Bangla Nagar, Dhaka
7. National Institute of Mental Health and Research (NIMHR), Sher-e-Bangla Nagar, Dhaka
8. National Institute of Ophthalmology (NIO), Sher-E-Bangla Nagar, Dhaka.
9. National Institute of Preventive and Social Medicine (NIPSOM), Mohakhali, Dhaka
10. National Institute of Traumatology, Orthopedics & Rehabilitation (NITOR), Sher-e-Bangla Nagar, Dhaka
11. Center for Medical Education, Dhaka

List of medical colleges under DGHS, which in addition to providing undergraduate degrees also offer postgraduate medical degrees (total number: 9)

1. Chittagong Medical College, Chittagong
2. Dhaka Dental College, Dhaka
3. Dhaka Medical College, Dhaka
4. MAG Osmani Medical College, Sylhet
5. Mymensingh Medical College, Mymensingh
6. Rajshahi Medical College, Rajshahi
7. Rangpur Medical College, Rangpur
8. Sher-e-Bangla Medical College, Barisal
9. Sir Salimullah Medical College, Dhaka Medical University under MOHFW (total number: 1)
1. Bangabandhu Sheikh Mujib Medical University (BSMMU), Dhaka

Postgraduate Institute under Bangladesh Armed Forces (total number: 1)

1. Armed Forces Medical Institute

List of non-profit institutes which offer postgraduate medical degrees (these institutes receive government grants for running their institute or affiliated hospital; total number: 4)

1. Bangladesh College of Physicians and Surgeons (BCPS), Mohakhali, Dhaka
2. Bangladesh Institute of Child Health, Sher-e-Bangla Nagar, Dhaka
3. Bangladesh Institute of Research and Rehabilitation in Diabetes, Endocrine and Metabolic Disorders (BIRDEM), Shahbagh, Dhaka
4. National Heart Foundation Hospital and Research Institute, Mirpur, Dhaka

List of other institutes in private and NGO sector which offer postgraduate medical degrees (total number: 7)

1. Chattagram Maa O Shishu and General Hospital, Chittagong
2. Institute of Child Health and Shishu Hospital, Shishu Sasthya Foundation, Bangladesh, Mirpur-2, Dhaka
3. Lions Eye Institute and Hospital, Lions Bhaban, Agragaon, Dhaka
4. MAI Institute of Ophthalmology and Islamia Hospital, Sher-e-Bangla Nagar, Dhaka
5. James P Grant School of Public Health, BRAC University, Mohakhali, Dhaka
6. State University of Bangladesh, Dhanmondi R/A, Dhaka
7. Gono Bisshobidhyaloya (People's University), Savar, Dhaka

Beside the above-mentioned institutions, several other institutions in private sector are known to conduct postgraduate public health courses.

Number of seats in the postgraduate medical courses provided under institutes and colleges under DGHS and BCPSa

Course	Students received degrees so far (Nos.)	No. of seats
MS	692	478
IviD	460	591
MPhil	536	278
MPhil (PH ^b)	108	
Diploma	2,959	585
iDiplomaTPH [^])	3,917	-
MPH	815	154
MMEd	0	15
FCPS	2203	Not fixed
MCPS	1595	Not fixed

a) Bangladesh College of Physicians and Surgeons; b) Public Health Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka; NIPSOM

Undergraduate medical degree

There are 50 medical colleges and 13 dental colleges in the country to offer bachelors' degree in medicine (MBBS) and dentistry (BDS). Of the 50 medical colleges, 14 are under the MOHFW, one under Bangladesh Armed Forces and 35 are in the private sector. Of the 14 dental colleges, 3 are under MOHFW and 10 are in the private sector. The medical colleges currently have capacity of annual admission of 4,620 students for MBBS course. These include 2,160 seats in medical colleges under MOHFW, 70 seats in Armed Forces Medical College and 2,390 seats in private medical colleges. Out of the seats in medical colleges under MOHFW, 40 seats are reserved for children of freedom fighters, 20 for tribal students and 80 for foreign students. Number of seats in the private medical colleges could be more by 100. Nevertheless, MOHFW has imposed embargo for admission in two private medical colleges, such as, Durra Samad Red Crescent Medical College, Sylhet (50 seats) and Northern International Medical College, Dhaka (50 seats).

Medical colleges under MOHFW and their number of seats

Name (alphabetical order)	No. of Seats
1. Begum Khaleda Zia Medical College, Sher-e-Bangla Nagar, Dhaka	126
2. Chittagong Medical College, Chittagong	178
3. Comilla Medical College, Comilla	107
4. Dhaka Medical College, Dhaka	178
5. Dinajpur Medical College, Dinajpur	132
6. Faridpur Medical College, Faridpur	107
7. Khulna Medical College, Khulna	132
8. MA G Osmani Medical College, Sylhet	178
9. Mymensingh Medical College, Mymensingh	178
10. Rajshahi Medical College, Rajshahi	178
11. Rangpur Medical College, Rangpur	178
12. Shahid Ziaur Rahman Medical College, Bogra	132
13. Sher-e-Bangla Medical College, Barisal	178
14. Sir Salimullah Medical College, Dhaka	178
15. Pabna Medical College, Pabna	50
Total	2210
Note: Out of these, 40 seats are reserved for children of freedom fighters, 20 seats for tribal students and 80 seats for foreign students (50 for SAARC and 30 for non-SAARC countries) Source: Director, Medical Education and Health Manpower	

Medical colleges under Bangladesh Armed Forces and its number of seats

Name	No. of Seats
Armed Forces Medical College, Dhaka Cantonment, Dhaka	70
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Private medical colleges and their number of seats

Name (alphabetical order)	No. of Seats
1. Bangladesh Medical College House #35, Road # 14/A I Dhanmondi R/A, Dhaka	130
2. BGC Trust Medical College Kanchan nagar, Chandanaish, Chittagong ¹	100
3. Central Medical College, Comilla	50
4. Chottogram, Ma O Shishu Medical College, Dhaka	60
5. Community Based Medical College, Mymensingh	100
6. Delta Medical College, Mirpur, Dhaka	50
7. Dhaka National Medical College 53/1, Johnson Road, Dhaka	100
8. Durra Samad Red Crescent Medical College Sylhet ³	50
9. East West Medical College, Uttara, Dhaka	50
10. Eastern Medical College, Comilla	50
11. Enam Medical College, Savar, Dhaka	60
12. Holy Family Red Crescent Medical College New Eskaton, Moghbazar, Dhaka	110
13. IBN Sina Medical College, Dhaka	50
14. Ibrahim Medical College, Shegun Bagicha, Dhaka	60
15. Institute of Applied Health Sciences, Chittagong ²	200
16. International Medical College, Tongi	50
17. Islami Bank Medical College, Bowalia, Rajshahi	50
18. Jahurul Islam Medical College Bajitpur, Kishoregonj	80
19. Jalalabad Ragib Rabeya Medical College Sunamgonj Road, Sylhet ¹	160
20. Khawja Yunus Medical College, Sirajganj	50
21. Kumudini Medical College, Mirzapur, Tangail	75
22. Medical College for Women and Hospital Road # 9, Sector # 1, Uttara, Dhaka	80
23. Moulana Bhashani Medical College Plot 26, Road # 10, Sector # 11, Uttara, Dhaka	50
24. Nightangel Medical College, Ashulia, Dhaka	50
25. North Bengal Medical College, Shirajgonj ¹	50
26. North East Medical College, Sylhet	100
27. Northern International Medical College Dhanmondi, Dhaka ³	50
28. Northern Medical College, Dhap, Rangpur ¹	30
29. Samaj Vittik Medical College, Savar, Dhaka ²	70
30. Shahabuddin Medical College, Gulshan, Dhaka	50
31. Southern Medical College, Chittagong ¹	50
32. Sylhet women Medical College, Sylhet	50
33. Tairunnesa Medical College, Tongi, Gazipur	50
34. Uttara Adhunik Medical College, Uttara, Dhaka	50
35. ZH Sikdar Women Medical College Monika Estate, West Dhanmondi, Dhaka	75
Total=	2490
Note: (1) College is now running under High Court Rule; (2) Private University; (3) MOHFW imposed embargo on admission; thus number of private medical colleges currently running and total number of seats will be 33 and 2390 respectively. Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka.	

Three dental colleges under MOHFW and 10 in private sector offer bachelor degree in dentistry (Bachelor of Dental Surgery). A total of 780 students can be admitted per year, 205 in government dental colleges and 575 in private dental colleges. Five seats in government dental colleges are reserved for children of freedom fighters.

Dental colleges under MOHFW and their number of seats

Name (alphabetical order)	No. of Seats
Dental Unit, Chittagong Medical College, Chittagong	50
Dental Unit, Rajshahi Medical College, Rajshahi	50
Dhaka Dental College, Dhaka	105
Total	205*
*5 seats are reserved for children of freedom fighters Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Private dental colleges and their number of seats

Name (alphabetical order)	No. of Seats
1. Bangladesh Dental College, House # 35, Road # 14/A, Dhanmondi R/A, Dhaka	50
2. Chittagong International Dental College, Chittagong	50
3. City Dental College, 1085/1, Malibag Chowdhury Para, Dhaka	75
4. Marks Dental College, A/3, Main Road, Section-14, Mirpur, Dhaka	50
5. Pioneer Dental College, 111 Malibag, DIT Road, Dhaka	85
6. Rangpur Dental College, Rangpur	60
7. Samaj Vittik Dental College, Mirzanagar, Savar, Dhaka	30
8. Saporro Dental College, Road # 1/B, Sector # 9, Uttara, Dhaka	50
9. University Dental College, 120 Shiddeswari Outer Circular Road, Century Orchid (4 th Floor), Moghbazar, Dhaka	75
10. Update Dental College, 162, Atish Dipankar Road, West Mugdha, Dhaka	50
Total=	775
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Graduation on alternative medicine

There are 3 medical colleges for producing graduates in alternative medicine under MOHFW. These medical colleges are (a) Homoeopathic Degree College, Dhaka; (b) Sylhet Tibbia College, Sylhet (offers diploma); and (c) Unani and Ayurved College, Dhaka. Total seat capacity is 125.

Medical colleges for alternative medicine

Name (alphabetical order)	No. of Seats
Homoeopathic Degree College, Dhaka	50
Sylhet Govt. Tibbia College, Sylhet ¹	25
Unani and Ayurved College, Dhaka	50
Total=	125
1 . Offers diploma Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

It is estimated that there are over nineteen thousand graduates and/or diploma holders of alternative medicines in the country. Their detail distribution is given in the table below.

Graduates and diploma holders in alternative medicine

Type alternative medicine manpower	Total No.
Unani Graduates	364
Ayurvedic Graduates	297
Unani Diploma holders	1025
Ayurvedic Diploma holders	491
Homeopathic Graduates	616
Homeopathic Diploma holders	16222
Total=	19015
Source Line Director, Alternative Medical Care, DGHS	

Nursing education

There are 8 nursing colleges and 55 nursing institutes in the country for production of nursing workforce. The post basic nursing colleges offer BSc nursing degree (see below in table) and the nursing institutes offer diploma in nursing. Of the 8 nursing colleges, 5 are under MOHFW and 3 under private sector.

Nursing colleges under MOHFW and their number of seats

Name (alphabetical order)	No. of Seat
1 . College of Nursing, Mohakhali, Dhaka (3 reserved seats for foreign students)	125
2. College of Nursing, Dhaka Medical College Hospital, Dhaka	100
3. College of Nursing, Mymensingh Medical College, Mymensingh	50
4. College of Nursing, Rajshahi Medical College, Rajshahi	50
5. College of Nursing, Chittagong Medical College, Chittagong	50
Total	375
Note: All offer basic nursing courses Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Nursing college under private sector and their number of seats

Name	No. of Seats
Kumudini Nursing College, Kurrudini Hospital Mirzapur, Tangai (post basic)	20
State College of Health Sciences, Dhanmondi, Dhaka (post basic)	20
9ate College of Health Sciences, Dhanmondi, Dhaka (basic)	20
International Medical College, Tongi, Gazipur (basic)	20
Total	80
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Of the 55 nursing institutes, 34 are under MOHFW, 1 under Bangladesh Armed Forces and 20 under private sector. Under the MOHFW, 6 nursing institutes are attached with medical college hospitals, 11 with general hospitals and 17 with district hospitals. The nursing institute under the Bangladesh Armed Forces is attached with the Armed Forces Medical Institute, Dhaka.

Nursing institutes attached with government medical college hospitals and their number of seats

Name of nursing institute	No. of seats
1. Nursing Institute attached with Shere Bangla Medical College Hospital, Barisal	50
2. Nursing Institute attached with SSMC Mitford Hospital, Dhaka	50
3. Nursing Institute attached with Comilla Medical College Hospital Comilla	50
4. Nursing Institute attached with Faridpur Medical College Hospital, Faridpur	50
5. Nursing Institute attached with Rangpur Medical College Hospital, Rangpur	50
6. Nursing Institute attached with MAG Osmani Medical College Hospital, Sylhet	50
Tota l=	300
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Nursing institutes attached with government general hospitals and their number of seats

Name of nursing institute	No. of seats
Nursing Institute attached with Bogra General Hospital	40
Nursing Institute attached with Dinajpur General Hospital	40
Nursing Institute attached with Jessore General Hospital	40
Nursing Institute attached with Khulna General Hospital	50
Nursing Institute attached with Kustia General Hospital	40
Nursing Institute attached with Noakhali General Hospital	40
Nursing Institute attached with Pabna General Hospital	40
Nursing Institute attached with Patuakhali General Hospital	40
Nursing Institute attached with Rangamati General Hospital	40
Nursing Institute attached with Sirajganj General Hospital	30
Nursing Institute attached with Tangail General Hospital	40
Total	440
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Nursing institutes attached with government district hospitals and their number of seats

Name of nursing institute	No. Of seats
Nursing Institute attached with Bagerhat District Hospital	30
Nursing Institute attached with Bhola District Hospital	30
Nursing Institute attached with Brahamonbaria District Hospital	30
Nursing Institute attached with Chapai Nawabganj District Hospital	30
Nursing Institute attached with Chuadanga District Hospital	30
Nursing Institute attached with Cox's Bazar District Hospital	30
Nursing Institute attached with Feni District Hospital	30
Nursing Institute attached with Jovorhat District Hosoiatal	30
Nursing Institute attached with Kurigram District Hospital	30
Nursing Institute attached with Magura District Hospital	30
Nursing Institute attached with Moulvi Bazar District Hospital	30
Nursing Institute attached with Munshiganj District Hospital	30
Nursing Institute attached with Netrokona District Hospital	30
Nursing Institute attached with Rajbari District Hospital	30
Nursing Institute attached with Satkhira District Hospital	30
Nursing Institute attached with Sherpur District Hospital	30
Nursing Institute attached with Thakurgaon District Hospital	30
Total	510
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Nursing institutes attached with combined military hospital and its number of seats

Name of nursing institute	No. of seats
Armed Forces Medical Institute	25
Total	25
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Nursing institutes in private sector and their number of seats

Name of nursing institute	No. of seats
Nursing Institute attached with Holy Family Red Crescent Hospital, Dhaka	40
Kumudini Nursing School, Mirzapur, Tangail	50
Nursing Institute attached with Rajshahi Missionary hospital	20
Nursing Institute attached with Chandraghona Missionary hospital	30
Nursing Institute attached with Zahurul Islam Medical College Hospital	20
Nursing Institute attached with BHPI, CRP, Savar, Dhaka	20
Nursing Institute attached with Diabetic Hospital, Faridpur	25
Nursing Institute attached with Khawja Yunus Medical College Hospital, Enayetpur, Sirajganj	50
Moulana Bhashani Nursing Institute, Uttara, Dhaka.	20
Fatima Nursing Institute, Moghbazar	20
Safina Nursing Institute, Kushtia	20
Ad-Din Nursing Institute, Jessore	20
Nursing Institute, Islami Bank Medical College Hospital, Rajshahi	40
North East Nursing Institute, Sylhet	25
Nursing Institute, Central Hospital, Dhaka	20
Nursing Institute, Uttara Women Medical College Hospital, Dhaka	25
Nursing Institute, Christian Health Project, Joy ramkura, Haluaghat, Mymensingh	20
Nursing Institute, Shishu Shayastha Foundation Hospital, Mirpur, Dhaka	20
Nursing Institute, Chottogram Ma O Shishu Hospital, Agrabad, Chittagong	25
TMMC Nursing Institute, Targas, Boardbazar, Gazipur	20
Total=	530
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Besides, 2 institutes produce specialized nurses. These are National Heart Foundation, Mirpur, Dhaka (20 seats; intensive care unit, coronary care unit,

Cardiac nursing) and Bangladesh Health Professionals Institute, Savar, Dhaka (20 seats; rehabilitation nursing).

Production of midwives

There are 8 junior midwifery institutes with total seat capacity of 140.

Junior midwifery institutes

Name of nursing institute	No. of seats
Junior Midwifery Institute, Holy Family Red Crescent Hospital, Dhaka	25
Kumudini Hospital, Mirzapur, Tangail	10
SMUR Maternity Hospital, Bangla bazar, Dhaka	20
Mamon Hospital, City Corporation, Chittagong	25
CR Maternity Hospital, Chandpur	20
Fatema Hospital Jessore	10
Ad-din Maternity Hospital, Jessore	20
Christian Hospital, Bogra	10
Total	140
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Production of community based skilled birth attendants

There are 28 government and 2 private training institutes to produce community based skilled birth attendants.

Training institutes for production of community based skilled birth attendants

Ownership	Location
Government (28 Nos.)	General or Sadar Hospital located at Narayanganj, Manikganj, Kishoreganj, Jamalpur, Habiganj, Gopalganj, Narshingdi, Nilphamari, Tangail, Barisal, Faridpur, Comilla, Kushtia, Khulna, Noakhali, Jessore, Satkhira, Thakurgaon, Feni, Joypurhat, Pabna, Brahmonbaria, Netrokona, Chuadanga, Cox's bazar, Patuakhali, Chapainawabganj, Sirajganj
Private (2 Nos.)	Kumudini Hospital, Mirzapur, Tangail Lamb Hospital, Parbatipur, Dinajpur
Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Production of medical assistants

Medical assistants as the name of their posts suggests work as the assistants to the doctors working at the upazila health complexes or union sub-centers. In a country like Bangladesh where there is shortage of graduate medical doctors, the medical assistants serve as the intermediate force to meet the extreme need of qualified doctors. Currently there are 7 medical assistant training schools in the country which together have seat capacity of 650 students. Medical assistant's course requires a student to complete a 3 years' course to obtain a medical diploma.

Medical assistant training schools (MATS) under DGHS and their number of seats

Name of MATH	No. of seats
Medical Assistant Training School, Bagerhat	150
Medical Assistant Training School, Comilla (non-functioning)	50
Medical Assistant Training School, Faridpur	50
Medical Assistant Training School, Kushtia	100
Medical Assistant Training School, Noakhali	100
Medical Assistant Training School, Sirajganj	100
Medical Assistant Training School, Tangai	100
Total	650

Note: A new MATS is being constructed in Jenidah district

Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka

Production of medical technologists

Medical technologists are technicians who perform the laboratory tests, take x-ray images provide physiotherapy or radiotherapy, help making artificial dentures, etc To produce medical technologists there are currently both graduate and diploma courses in the country.

Eleven institutes conduct BSc medical technology courses in laboratory medicine, physiotherapy, occupational therapy and dentistry. Total seat capacity is 545. Of the 11 institutes, 3 are under MOHFW and the rests are in private sector. Government has given approval to 2 institutes (Gonobisshobidhyaloya, Savar and BHPI, Savar: total 25 seats) to start also MSc course in medical technology in physiotherapy discipline.

BSc Institutes of Health Technology under DGHS and their number of seats

Name	Total
NITOR, Sher-e-Bangla Nagar, Dhaka	25
Institute of Health Technology, Dhaka	60
Institute of Health Technology, Rajshahi	60
Total=	145

Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka

BSc Institutes of Health Technology in private sector and their number of seats

Name	Total
1. State University, Mohammadpur Dhaka	80
2. Institute of Medical Technology, Mirpur, Dhaka	60
3. BHPI, Savar, Dhaka	46
4. Saik Institute of technology	25
5. Institute of Health Technology, Rajshahi	25
6. Prime Institute of Health Technology, Talaimari, Rajshahi	100
7. The People's University, Dhanmondi, Dhaka	25
8. Gonobisshobidhyaloya, Savar, Dhaka	20
Total=	381

To produce diploma medical technologists, the DGHS has 3 institutes of health technology (IHT) in the government sector. They altogether have 1, 010 seats. Construction of 7 new IHTs (one in each of 6 Divisions and one in Rangpur) is progressing rapidly. There are 39 private IHTs which have total seat

Capacities of 4,400. These IHTs offer 3 years diploma in medical technology in 7 disciplines, viz. laboratory, radiography, physiotherapy, SIT, dental technology, radiotherapy and pharmacy.

Currently 42 institutes in both government and private sector have total seat capacity of 5,410. The current annual production capacity is 1,000 medical technologists, which will rise to 2,500 to 3,000 per year by 2009.

Institutes of Health Technology under DGHS and their number of seats

Name of nursing institute	No. of seats
1. Institute of Health Technology, Dhaka	327
2. Institute of Health Technology, Rajshahi	326
3. Institute of Health Technology, Bogra	357
Total=	1010
Note: Another 7 Institutes of Health Technologies are being established. Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka	

Institutes of Health Technology in private sector offering diploma in medical technology and their number of seats

Name of institute	Total
1. Bangladesh Institute of Medical and Dental Technology, 23/10, Khilzi Road, Mohammadpur, Dhaka	170
2. Bangladesh Institute of Medical Technology, Haji Mohsin Road, Dilalpur, Pabna	120
3. Bangladesh Medical College, Dhanmondi, Dhaka	25
4. Centre for Rehabilitation of the Paralyzed (CRP), Chapain, Savar, Dhaka	160
5. Chittagong Institute of Medical Technology, Halishahar, Chittagong	150
6. Elah College of Medical Technology, Nahar Kutir, East Bank of Ranir Dighi, Comilla	50
7. Fortune Institute of Medical Technology, H #03, R# 13, Sector # 01, Jasim Uddin Road, Uttara, Dhaka-1230	175
8. Gonoshasthya Institute of Health Sciences, Tengra, Shripur, Gazipur	100

Name of institute	Total
9. Green view Institute of medical technology, 25/3, Section # 14, Mirpur, Dhaka	105
10. Health Wage Institute of Medical Technology, Sewgari, Carmichael Road, Bogra	90
11. Institute of Community Health Bangladesh, 190/1 Bara Maghbazar, Dhaka	75
12. Institute of Health Technology, 180, Firinghee Bazar (City Corporation Chittagong), Chittagong	150
13. Institute of Medical Technology, H # 68, R # 4, Block # B, Section # 12 Mirpur, Dhaka	150
14. Institute of Medical Technology, Tamizuddin Khan Road, Jheeltuli, Faridpur	100
15. International Institute of Health Sciences, House #71/1, Road #15/A, Shankar Bus Stand, Dhaka	140
16. Islami Bank Institute of Health Technology, Rajshahi	150
17. Janata Institute of Medical Technology, North PTI lane, Jaleshwari tala, Bogra	115
18. Marks Institute of Medical Technology, A/3, Section # 14, Mirpur, Dhaka	150
19. Millennium Institute of Medical Technology, 61 Bhecharam Dewri Road, Armanitola, Dhaka	75
20. National Institute of Medical & Dental Technology, 19/10 Babar Road, Mohammadpur, Dhaka	65
21. National Institute of Medical Technology, H#3 Garib Newaz Avenue, Sector # 13, Model Town, Dhaka	150
22. New lab Institute of Medical Technology, 1/2 Asadgate, Mohammadpur, Dhaka	110
23. Prime Institute of Medical Technology, 213/A, Talaimari, Rajshahi.	150
24. Professor Shohrab Uddin Institute of Medical Technology, Sablia, Tangail	165
25. Psyche Institute of Medical Technology, Mirpur-6, Road # 2, Block # B, Dhaka	120
26. Radiant College of Medical Technology, 69/E, Ara Plaza,	100

Name of institute	Total
27. Rajshahi Institute of Medical Technology, Tuni Bhaban, House # 342, Para Medical Road. Lakshmipur, Rajshahi	150
28. Shahid S. A. Memorial IHT, Uttara, Dhaka	75
29. Sumona Institute of Medical technology, 2/2, 2/3, Chittaranjan Avenue, Sadarghat	130
30. Comilla Institute of Medical Technology, Laksam Road, Comilla	100
31. Comilla Institute of Medical Technology, Thakurpara, Comilla	75
32. Prime Institute of Science and Technology (PRISMET), Rangpur	75
33. Rumdo Institute of Health Technology, Mymensingh	50
34. Ad-deen Women's Institute of Health Technology, Jessore	100
35. Ahsania Mission Institute of Health Technology, Mirpur, Dhaka	75
36. TMSS Medical Technology Institute, Thengamara, Bogra	150
37. Institute of Medical and Dental Technology, Tangail	105
38. Trauma Institute of Medical Technology, 22/8/A, Block -B, Shaymoli, Dhaka	100
39. Dhaka Institute of Health Technology, Humayun Road, College Gate, Dhaka	100
Total=	4400

Source: Director, Medical Education and Health Manpower Development, Mohakhali, Dhaka

In-service Training

The Directorate General of Health Services (DGHS) has provision of giving the personnel and staffs on the job training, both local and foreign. In 2007-2008, a total number of 12,371 personnel and staffs were given local training and 129 personnel were given foreign training. The Technical Training Unit (TTU) under the Line Director of In-service Training is responsible for providing local training to the personnel and staffs under DGHS.

Personnel and staffs given local and foreign training by Line Director, In-Service Training of DGHS in 2007-2008

Type of training	No. of participants
Local Training	12,371
Foreign Training	129
Total	12,500

Local training organized by Technical Training Unit of DGHS in 2007-2008

Name of Local Training	No. Of participants
6 days ESP orientation for auxiliary service providers. Including curriculum Review	150
6 days ESP refresher training for field service providers including curriculum development	2000
Curriculum development/Review for Nurses and Paramedics on advanced ESP clinical skills from district, upazila and below on reproductive health (10 days)	Done
Curriculum development for Nurses and Paramedics on advanced ESP clinical skills from district, upazila and below on Child health care (6 days)	Done
Training for Nurses and Paramedics on advanced ESP clinical skills from district, upazila and below on Reproductive health (10 days)	58
Breast feeding counseling for health care providers (Doctors and Nurses) (6 days) including curriculum Review	148
5 days training on Asthma prevention and management for Medical graduates. Including curriculum Review	126
5 days training on Cancer awareness, screening and primary detection for doctors including curriculum development	20
1 day orientation on cervical and breast cancer awareness for opinion leaders including curriculum and teaching aids development	200
6 days training on nutrition for field service providers	1750
2 days Workshop on Medical Biotechnology	50
Breast feeding counseling training for health care providers (HAs /Field service providers.) (3 days)	275
2 weeks training on intensive coronary care for junior doctors working in the CCU / cardiology department of medical colleges including curriculum review	37

Name of the Local Training	No. of Participants
2 weeks training on intensive coronary care for staff nurses working in the CCU/cardiology department of medical colleges including curriculum review	18
5 days Training on awareness of primary health care doctors on biochemical parameters for prevention and control of cardiovascular diseases	47
3 days Training of health technologists on biochemical tests for diagnosis of cardiovascular risks and diseases	-
3 days training program on primary health care physicians on mental health including curriculum development	60
2 days training program on primary health workers on mental health	90
Training on primary management & (prevention of kidney & urological diseases I for primary health care physicians (6 days)	60
(Training on kidney & urological diseases for nurses working at primary health care level (6 days)	60
Training on Kidney & urological diseases for I health workers working at primary health [care level (6 days)	120
16 days training for doctors on violence jagainst women and girls	188
6 days training for nurses on violence against women and girls	215
16 days training on management & prevention of substance abuse including alcohol for doctors, (including curriculum development)	25
6 days training on management & prevention of substance abuse including alcohol for nurses and medical assistants, (including curriculum development)	50
2 days orientation on medico-legal jactivities for CS, DCs, RMO etc	150
6 days training on Applied forensic Medicine including post mortem for MOs , RMOs and UH&FPO (including curriculum development)	200
(One year Training Course on Diploma in [Anesthesia (DA) and Diploma in Obstetric land Gynecology (DGO) for Doctors	-
6 days training on improved financial management for personnel working at (Division, District, Upazila and Specialized Institutions, TTU and Others including curriculum Review	275
15 days Basic Service management Training for doctor	60

Name of the Local Training	No. of Participants
2 days training on monitoring and supportive supervision for supervisors at upazila level and below (HI, AMI, SI, EPI Technician, MA, etc) including curriculum	720
Hardware training on computer operation for officer and staff	30
Computer programming on MS access and SPSS for officer and staff (including Curriculum review)	39
Computer programming on Graphics Design and webpage design for officer and staff	30
28 days basic computer training on operating system, installation, internet etc for the persons of MOHFW, DGHS and autonomous institute	89
14 days refresher computer training on operating system, installation, internet etc. for the persons of MOHFW, DGHS and autonomous institute	900
2 days PMIS training for PMIS recording & reporting tools	301
2 days training for service statistics related MIS recording & reporting tools	301
5 days training on standard operating procedures (SOP) regarding IPD, OPD, OT emergency, house keeping, record keeping, nursing services, diagnostic services, etc. for service providers of primary, secondary and tertiary Hospitals including monitoring land supervision including curriculum review	180
3 days Training on SOP for MLSS, aya, attendant, sweeper, cleaner, security, guard, etc. from primary, secondary and tertiary level hospitals including monitoring and supervision, And development/review of hand out	180
15 Days Computer Training on DMIS fo: Health Personnel from district and Upazila	120
3 days Women's professional development program for personnel from district/ directorate/ Secretariat level managers	60
5 days Mid level management [development program for personnel from idistrict level Health managers and UH&FPO	75
3 days training on technique of developing I training media and maintenance of jaudiovisual equipment for audiovisual j operator, audiovisual projectionist, [audiovisual helper and audiovisual (technician including curriculum [development	64
Reporting and Dissemination of Different activities under In-service training and up date training facility and resource inventory of district /Upazila	Done
Maintenance and Further Development of Training Management Information System (TMIS)	Done

Management Information System (TMIS)

Name of Local Training	No. of participants
21 days advanced computer training on District management Information System (DMIS)	253
Need assessment of different categories of training	done
Evaluation of different categories of training activities	done
28 days English language course for health personnel	125
Training on updating media and messages in support on HEP for HEO/HE/Other related officers	100
Training on gender issue and poverty alleviation for HEO/HE/Other related officers	25
1 day training for doctors , medical assistant, MA, Paramedical Health/ Field Staff, Nurses, RMP, Drug distributor, formal and informal leaders etc on filariasis elimination & morbidity control to be held at divisional / district / upazila level with field implementation of HH registration, Mass drug administration and coverage survey	200
Organization of 2 days joint simulation exercise with BDRCS at most cyclone prone districts. (Multi-sectoral approach) on EPR	50
Conduct vulnerability and Capacity Assessment at 10 (ten) selected hazard prone areas on EPR	100
2 days training for field staff on Disaster Mitigation	90
two days orientation course for Disaster Focal Points on EPR	
Training course on Mass casualty management for hospital level staffs	40
2 days Orientation on service statistics of MO, MA, MT, HI, AHI and HA	150
HEP Training for the mid-level managers (5 days) Health Education officers/ Health Educator	28
Program/ Administrative Management Training for the HEP Focal Points. (Do) Health Education officers/ Health Educator	38
TOT Program	199
Orientation Training program of Participants	404
Attachment of Participants at different Department at different Institution	186

Workshop, Semmar, etc.	
Workshop on Accreditation and assessment Procedure, Dissertation writing, information technology & Communication Skill development, Curriculum development, Research methodology, OSPE & OSCE, Examination and assessment procedure for 40 subject	141
Training on Outbreak Investigation for One Week	176
Training on Laboratory Diagnosis of emerging and reemerging diseases for one week	112
Certificate Course on Clinical Epidemiology for three months	15
Microbiological Lab Training of the Lab Personnel	304
TOT for Doctors on advanced ESD clinical skills training course on Reproductive Health	27
TOT for Doctors on advanced ESD clinical skills training course on Child Health care	23
Training on Complementary Feeding	27
Breastfeeding counseling for health care providers	12
TOT on Nutrition Program, Planning and Management	12
Breastfeeding counseling for health care providers	11
Continuation of ongoing Training on Epidemiology and Bio-Statistics using SPSS with Cambridge University (Data analysis) and linkage with NIPSOM	2
Total participants in local training	12371
Source: Line Director, 1ST, DGHS, Mohakhali, Dhaka	

No. of admissions in different medical and dental colleges (2003-2007)

Medical or Dental College	2003			2004			2005			2006			2007			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
Dhaka Medical College	84	66	150	82	79	161	94	69	163	111	73	184	94	93	187	465	380	845
Sir Salimullah Medical College	78	79	157	80	78	158	93	68	161	104	82	186	86	91	178	441	398	840
Rajshahi Medical College	102	60	162	82	76	158	85	70	155	112	67	179	107	71	178	488	344	832
Rangpur Medical College	96	57	153	68	85	153	67	89	156	91	87	178	88	90	178	410	408	818
Mymensingh Medical College	79	74	153	71	89	160	89	70	159	97	85	182	110	68	178	446	386	832
Chittagong Medical College	96	58	154	80	77	157	96	62	158	100	86	186	101	82	183	473	335	838
MAG Osmani Medical College	93	69	162	93	61	154	89	66	155	104	84	188	87	92	179	466	372	838
Shere Bangla Medical College	86	70	156	90	63	153	84	70	154	105	79	184	110	68	178	475	350	825
Faridpur Medical College	29	22	51	25	24	49	28	21	49	51	51	102	53	50	103	186	168	354
Begum Khaleida Zia Medical College	33	23	56	20	37	57	56	45	101	65	45	110	51	51	102	225	201	426
Dinajpur Medical College	26	24	50	23	28	51	21	33	54	56	53	109	66	57	123	192	195	387
Khulna Medical College	32	18	50	27	29	56	26	30	56	66	42	108	69	63	132	220	182	402
Comilla Medical College	27	28	55	36	21	57	44	63	107	44	63	107	48	59	107	199	234	433
Dhaka Dental College	26	39	65	35	33	68	58	40	98	61	83	144	55	83	138	235	278	513
Chittagong Dental College	8	11	19	5	13	18	19	23	42	-	-	-	-	-	-	32	47	79
Rajshahi Dental College	7	12	19	7	10	17	18	23	41	-	-	-	-	-	-	32	45	77

Source: Director, Medical Education, DGHS

No. of students passed from in different medical and dental colleges (2003-2007)

Medical or Dental College	2003			2004			2005			2006			2007			Total		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	M	f	T
Dhaka Medical College	105	70	175	58	50	108	75	83	158	69	63	132	98	72	170	405	338	743
Sir Salimullah Medical College	58	46	104	109	88	197	72	76	148	102	72	174	69	73	142	410	355	765
Rajshahi Medical College	102	70	172	181	103	284	97	79	176	102	58	160	91	59	130	573	369	922
Rangpur Medical College	89	65	154	176	70	246	115	77	192	72	79	151	82	76	158	534	367	901
Mymensingh Medical College	179	63	242	102	95	197	102	79	181	88	62	150	71	78	149	542	377	919
Chittagong Medical College	104	85	189	140	68	208	171	108	279	116	82	198	100	74	174	631	417	1048
MAG Osmani Medical College	105	69	174	79	69	148	88	77	165	136	160	296	112	85	197	520	460	980
Shere Bangla Medical College	134	90	224	157	96	253	112	76	188	96	74	170	71	78	149	570	414	984
Faridpur Medical College	44	31	75	37	31	68	22	16	38	39	39	78	19	21	40	161	138	299
Begum Khaleida Zia Medical College	28	22	50	34	34	68	35	32	67	21	38	59	39	39	78	157	165	322
Dinajpur Medical College	23	15	38	23	24	47	21	18	39	23	26	49	35	27	62	125	110	235
Khulna Medical College	25	20	45	35	26	61	29	25	54	31	17	48	24	19	43	144	107	251
Comilla Medical College	40	47	87	31	37	68	16	36	52	24	33	57	28	26	54	139	179	318
Dhaka Dental College	75	52	127	50	31	81	157	150	307	158	151	309	160	166	326	600	550	1150
Chittagong Dental College	16	10	26	12	1	13	6	3	9	-	-	-	-	-	-	34	14	48
Rajshahi Dental College	0	0	0	9	4	13	9	6	15	-	-	-	-	-	-	18	10	28

Source: Director, Medical Education, DGHS

Projected Population by Sex and Urban and Rural Residence on the assumption that TFR= 2.1 by 2011

Year	Both (Population in Million)			Urban (Population in Million)			Rural (Population in Million)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
2001	67.08	62.94	130.02	16.44	14.02	30.47	50.63	48.92	99.55
2002	68.39	64.21	132.6	16.86	14.39	31.25	51.53	49.82	101.35
2003	69.67	65.45	135.12	17.37	14.83	32.2	52.3	50.62	102.92
2004	70.89	66.65	137.54	17.96	15.36	33.33	52.93	51.28	104.21
2005	72.01	67.75	139.76	18.65	15.97	34.62	53.36	51.78	105.14
2006	73.03	68.77	141.8	19.43	16.67	36.11	53.6	52.1	105.69
2007	74.09	69.81	143.91	20.25	17.4	37.65	53.84	52.41	106.26
2008	75.11	70.82	145.93	21.08	18.14	39.22	54.03	52.68	106.71
2009	76.08	71.78	147.86	21.92	18.89	40.82	54.15	52.89	107.04
2010	76.99	72.69	149.69	22.77	19.66	42.43	54.22	53.04	107.26
2011	77.85	73.56	151.41	23.63	20.43	44.06	54.22	53.13	107.35
2012	78.75	74.46	153.2	24.52	21.23	45.75	54.23	53.22	107.45
2013	79.68	75.38	155.06	25.44	22.07	47.51	54.23	53.32	107.55
2014	80.64	76.34	156.98	26.4	22.93	49.33	54.24	53.41	107.65
2015	81.63	77.33	158.96	27.39	23.83	51.22	54.24	53.5	107.74
2016	82.65	78.34	160.99	28.42	24.76	53.18	54.24	53.58	107.81
2017	83.7	79.38	163.08	29.48	25.73	55.21	54.22	53.65	107.87
2018	84.77	80.43	165.21	30.57	26.72	57.3	54.2	53.71	107.91
2019	85.86	81.51	167.37	31.7	27.75	59.45	54.16	53.76	107.92
2020	86.96	82.58	169.54	32.86	28.8	61.66	54.1	53.78	107.88
2021	88.05	83.66	171.71	34.04	29.88	63.92	54.01	53.78	107.79
2022	89.13	84.73	173.86	35.24	30.99	66.23	53.89	53.74	107.64
2023	90.21	85.79	176	36.47	32.11	68.58	53.75	53.68	107.43
2024	91.28	86.84	178.12	37.71	33.26	70.97	53.56	53.58	107.15
2025	92.33	87.88	180.2	38.98	34.43	73.4	53.35	53.45	106.8
2026	93.35	88.89	182.24	40.26	35.61	75.87	53.1	53.28	106.38
2027	94.35	89.88	184.23	41.55	36.81	78.36	52.81	53.07	105.88
2028	95.33	90.84	186.17	42.85	38.02	80.87	52.48	52.82	105.3
2029	96.27	91.77	188.04	44.16	39.24	83.4	52.11	52.53	104.65
2030	97.18	92.67	189.85	45.48	40.47	85.94	51.71	52.21	103.91
2031	98.06	93.54	191.61	46.8	41.7	88.5	51.27	51.84	103.11
2032	98.91	94.38	193.29	48.12	42.94	91.06	50.79	51.44	102.23
2033	99.73	95.19	194.92	49.45	44.19	93.64	50.29	51	101.29
2034	100.53	95.97	196.5	50.78	45.44	96.22	49.75	50.53	100.28
2035	101.3	96.73	198.03	52.11	46.7	98.81	49.19	50.03	99.22
2036	102.05	97.47	199.52	53.45	47.96	101.41	48.6	49.51	98.11
2037	102.78	98.19	200.97	54.79	49.23	104.02	48	48.96	96.95
2038	103.5	98.89	202.38	56.13	50.5	106.63	47.37	48.38	95.75
2039	104.2	99.56	203.77	57.47	51.78	109.25	46.73	47.79	94.51
2040	104.9	100.23	205.12	58.82	53.06	111.88	46.07	47.17	93.24

2041	105.58	100.88	206.46	60.18	54.34	114.52	45.4	46.54	91.94
2042	106.26	101.52	207.78	61.54	55.63	117.16	44.72	45.89	90.62
2043	106.93	102.15	209.08	62.9	56.91	119.81	44.03	45.23	89.26
2044	107.59	102.76	210.35	64.26	58.2	122.46	43.33	44.56	87.89
2045	108.25	103.36	211.61	65.62	59.49	125.11	42.62	43.87	86.49
2046	108.9	103.95	212.85	66.99	60.78	127.76	41.91	43.17	85.08
2047	109.54	104.52	214.06	68.35	62.06	130.41	41.19	42.46	83.65
2048	110.17	105.08	215.25	69.71	63.34	133.05	40.46	41.74	82.2
2049	110.79	105.62	216.41	71.07	64.61	135.67	39.73	41.01	80.74
2050	111.4	106.14	217.55	72.41	65.87	138.28	38.99	40.27	79.26
2051	112.0	106.65	218.64	73.75	67.12	140.87	38.25	39.53	77.77

Source: Professor M. Kabir, Department of Statistics, Jahangirnagar University (projected for BBS)

Organization of Health Care Delivery in Bangladesh

The health care delivery in Bangladesh is managed by 3 (three) parties. They are government, private entrepreneurs and the non-government organizations. In addition, a number of bilateral and international agencies are heavily involved in the sector through their support to and influence on the government and the Non-government organizations (NGOs). Non-government organizations are mostly involved in the provision of primary health care in both rural and urban areas. Grameen Bank, BRAC, ASA, BWHC, NSDP, Proshika and Gonoshastha Kendra are some of the large NGOs that operate community level health clinics in the country. A significant number of tertiary hospitals are also run by the NGOs e.g. BIRDEM, Cholera hospital (ICDDR,B), Holy Family Red Crescent Medical College Hospital, Eye hospitals run by the BNSB and Lions Club, Leprosy Hospital, Gonoshastha hospital and Christian Missionary hospitals.

In the private sector, there are two types of enterprises, those that are for-profit and **those** that are not-for-profit. The majority of them are for-profit organizations. Examples of private not-for-profit organizations are Kumudini hospital, Dhaka **community** hospital, Heart foundation hospital etc. The private sector not only **provides** health services, it also provides educational and other services such as laboratories and private medical colleges.

The largest service provider in the health sector is the government of Bangladesh. The Ministry of Health and Family Welfare (MOHFW) is the main public authority responsible for providing health care to the entire population and as such MOHFW has established country wide network of physical and organizational infrastructure to plan, manage and deliver health services.

Physical Facilities available for Delivery of Health Care Services in Bangladesh: The government of Bangladesh operates a large number of health facilities in every administrative level of government which stretches from grass root level villages to the highest level, the national head quarters. In addition, a number of NGOs are

operating at almost every level throughout the country. Unfortunately, the exact number of NGOs operating health facilities is unknown to us. In addition, the private entrepreneurs also operate a significant number of health facilities in the country of which pertinent data are not available. An inventory of health care facilities providing health care services in the country along with the nature of services provided by them in the table below:

Inventory of health care services providing health care services in the country

List of health care facilities under the director general of health services (DGHS) of Ministry of Health and Family Welfare, government of Bangladesh

1) Upazilla and below

Name and type of facilities	Total number	Principal activities
Community clinics (CC)	Planned 13500 Functional 3300	Preventive, promotive and limited curative care
Health and family welfare centres (HFWC)	Union Sub centre 1362 HFWC 2938	EP1, FP and limited curative care
Rural health centre (10 bed)	14	Outdoor and indoor services, limited curative
	-----	care (I XT)
Upazilla health complex (31 bed)	400	Outdoor and indoor, LCC, MCH, routine pathology, safe delivery
Health complex (31 bed)	2	Above

2) Distinct and above

Name and type of facilities	Total number	Principal activities
a) General hospitals (250 bed)	1	Outdoor and indoor, preventive, curative, surgery, MCH, pathology, safe delivery, intervention, consultancy, referral service etc.
b) General hospital (200 bed)	1	Same as above
c) General hospital (150 bed)	2	Same as above
d) General hospital (100 bed)	26	Same as above
e) General hospital (50 bed)	30	Same as above
f) Shahid Suharwardi Hospital, Dhaka (375 bed)	1	Same as above
g) Sarkari Kannachan hospital (100 bed)	1	Same as above
h) Sarkari Karmachari hospital (50 bed)	1	Same as above
i) Labour hospitals (50 bed)	2	Same as above
j) Medical College Hospital (1 000-250 bed)	13	Same as above
k) Specialized hospital		

i)BSMMU(600bed)	1	Tertiary health care and post graduate degree and diploma in different subjects of medical science also research on basic applied and operational aspect
2) 1CVD (250 bed)	1	Same as above
3) RIHD (500 bed)	1	Same as above
4) N 10 (100 bed)	1	Same as above
5) 1DCH (600 bed)	1	Same as above
6) Leprosy hospital (20-80 bed)	3	Same as above
7) Infectious disease hospitals (20-100 bed)	5	Diagnosis and treatment of leprosy
8) Chest clinics and chest hospitals (20 bed)	4	Diagnosis and treatment of Tuberculosis
9) Cancer hospitals (100 bed)	1	Curative, preventive, rehabilitative services, research and training
10) Mental hospital (400)	1	Diagnosis and management of mental disorders
11) Institute of mental health (50 bed)	1	Diagnosis and management of mental disorders
12) Renal hospital (bed?)	1	Diagnosis and management of kidney disorders
QBKT hospitals and health facilities		
liDcwa! hospital (20 bed)	1	Outdoor and indoor dental patients and training of the dental surgeon
•) Homeopathic Degree college and	1	Diagnosis and management of diseases by homeopathic practice and training
•1} Lnam and Ayurvedic degree orikgc and hospital	1	Diagnosis and management of Unani and Ayurvedic training
ir) Airport health (Dhaka and Onnagong) if	2	Health checkup of passengers of aircrafts coining in and out
v) Port health (Chittagong and Khuina)	2	Health checkup of passengers of port and ship coining in and out
] vi) Secretariat clinic (Dhaka)	1	Outdoor service, treatment of minor ailments
vii) Model family planning clinic : attached with 8 old medical colleges	8	FP services and distribution of birth control pills
viii) Sher e Bangla nagar Health clinic	1	Outddor service
j in) Skin and VD clinic	1	Curative and preventive management of skin disease and STDs

x) School health clinic	23	Outdoor service and health education
l) Urban dispensaries	35	OPD services including EP1 and MCH
xii) Chest clinics and chest hospitals	44	Diagnosis and management of Tuberculosis patients

ii) List of hospitals under the Director general of Family Planning (DGFP) of Ministry of Health and Family Welfare

Name and type of facilities	Total number	Principal activities
1) Azim pur maternity Hospital	1	MCH and FP
2) District maternity and Child Welfare Centre (MCWC) 5-10 bed	96	Same as above

iii) ii) List of hospitals under the ministries of government of Bangladesh other than Ministry of Health and Family Welfare

Name and type of facilities	Total number	Principal activities
ii) Railway hospital (20-50 bed)	9	Outdoor and indoor, preventive, curative, surgery, MCH, pathology, safe delivery, intervention, consultancy, referral service etc.
ii) jail hospitals (20-50 bed)	19	Same as above
iii) Police hospitals (20-100 bed)	20	Same as above
iv) Madoka Shakti (Addiction treatment centre) 50 bed	1	Management of addicted patients
v) Combined Military hospital (CMH) 50-200	8	Outdoor and indoor, preventive, curative, surgery, MCH, pathology, safe delivery, intervention, consultancy, referral service etc.

xiv) List of hospitals under the ministries of government of Bangladesh other than Ministry of Health and Family Welfare

Name and type of facilities	Total number	Principal activities
i) Primary health clinic operated by NSDP	318	Primary health care, EP1, FP, MCH and LCC
ii) Primary health clinic operated by Marie Slopes	36	Same as above
iii) Primary health clinic operated by BWHC	36	Same as above
iv) Primary health clinic operated by BRAG	118	Same as above, DOTS programme for control of TB
v) General hospital: Holy family Red Crescent Hospital	1	Outdoor and indoor, both preventive and curative and surgery, MCH and FP

vi) Missionary hospital	8	Outdoor and indoor, both preventive and curative and surgery , MCH and FP
vii) Ad Din Hospitals	2	Outdoor and indoor, both preventive and curative and surgery , MCH and FP
Specialized hospital		
BIRDEM	1	Outdoor and indoor, both preventive and curative and surgery ,
Dhaka Shishu Hospital	1	
Chittagong Shishu hospital	1	
ICMH	1	
Lion Eye hospital	1	
Heart Foundation Hospital	1	
BNSB Eye Hospital, Chittagong	1	

v) Health Care Facilities operated by the private entrepreneurs

Name and type of facilities	Total number	Principal activities
Hospital attached with private medical colleges	24	All of above, health manpower development serves as tertiary level referral centres
Dhaka shishu hospital	1	Outdoor and indoor services
Private hospitals and clinics approved by DGHS	483	Outdoor and indoor services

Year wise total number and cumulative total number of graduates receiving BMDC registration along with their gender distribution from 1972 to 2006

Year	Male	Female	Total	Cumulative total
1972	650	81	731	731
1973	2608	324	2932	3663
1974	643	82	725	4388
1975	653	62	715	5103
1976	544	76	620	5723
1977	631	154	785	6508
1978	646	63	709	7217
1979	774	100	874	8091
1980	1110	169	1279	9370
1981	745	132	877	10247
1982	238	30	268	10515
1983	966	197	1163	11678
1984	1157	201	1358	13036
1985	1044	256	1300	14336
1986	1146	290	1436	15772
1987	694	142	836	16608
1988	787	259	1046	17654
1989	659	198	857	18511
1990	791	273	1064	19575

1991	707	267	974	20549
1992	771	267	1038	21587
1993	674	177	851	22438
1994	751	278	1029	23467
1995	793	349	1142	24609
1996	932	243	1175	25784
1997	797	218	1015	26799
1998	806	371	1177	27976
1999	799	388	1187	29163
2000	943	501	1444	30607
2001	1178	684	1862	32469
2002	1163	686	1849	34318
2003	1512	584	2096	36414
2004	1874	761	2635	39049
2005	1994	872	2866	41915
2006	1633	931	2564	44479
Total	33813	10666	44479	

Assumption of physician production in the country: To estimate the total number of new graduates that will be added to the physician workforce each year up to 2025, we assumed three different levels high, medium and low of outputs from the

government and private sector medical colleges. The high level is based on somewhat

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high expectation that all medical colleges of both public and private sector will produce medical graduates more or less along the line of some stated assumptions, i.e. government will enhance investment for physical space, students' accommodation, teaching staff and other facilities will enhance significantly to augment the output of medical graduates from the existing 15 medical colleges. The private sector medical colleges, will also improve significantly and their production capacity will tremendously improve particularly from the year 2012 and onward.

Year wise expected output of graduates 2006 -2025

Year	High output			Medium output			Low output			use Data
	Govt	Pvt.	Total	Govt.	Pvt.	Total	Govt.	Pvt.	Total	
2006	1,500	1,000	2,500	1,200	800	2,000	1,200	700	1,900	2,685s
2007	1,500	1,000	2,500	1,200	800	2,000	1,200	700	1,900	2,685
2008	1,500	1,000	2,500	1,200	800	2,000	1,200	700	1,900	2,685
2009	1,500	1,000	2,500	1,200	800	2,000	1,200	700	1,900	2,685
2010	1,500	1,000	2,500	1,200	800	2,000	1,200	700	1,900	2,685
2011	1,500	1,000	2,500	1,400	1,000	2,400	1,350	800	2,150	2,685
2012	2,000	1,500	3,500	1,400	1,000	2,400	1,350	800	2,150	2,685
2013	2,000	1,500	3,500	1,400	1,000	2,400	1,350	800	2,150	2,685

2014	2,000	1,500	3,500	1,400	1,000	2,400	1,350	800	2,150	2,685
2015	2,000	1,500	3,500	1,400	1,000	2,400	1,350	800	2,150	2,685
2016	3,000	2,000	5,000	1,800	1,200	3,000	1,450	900	2,350	2,685
2017	3,000	2,000	5,000	1,800	1,200	3,000	1,450	900	2,350	2,685
2018	3,000	2,000	5,000	1,800	1,200	3,000	1,450	900	2,350	2,685
2019	3,000	2,000	5,000	1,800	1,200	3,000	1,450	900	2,350	2,685
2020	3,000	2,000	5,000	1,800	1,200	3,000	1,450	900	2,350	2,685
2021	4,000	3,000	7,000	2,000	1,500	3,500	1,600	1,000	2,600	2,685
2022	4,000	3,000	7,000	2,000	1,500	3,500	1,600	1,000	2,600	2,685
2023	4,000	3,000	7,000	2,000	1,500	3,500	1,600	1,000	2,600	2,685
2024	4,000	3,000	7,000	2,000	1,500	3,500	1,600	1,000	2,600	2,685
2025	4,000	3,000	7,000	2,000	1,500	3,500	1,600	1,000	2,600	2,685

Projected supply of graduates up to 2025 under same production as of base year 2006 and high survival assumption (average working life 45 years

and average annual retention rate 0.975)

Year	Mid year population	Total Production	Projected graduates	Projected Doctor Population ratio
2006	141,800,000	2,500	44,479	3,188
2007	143,910,000	2,500	45,902	3,135
2008	145,930,000	2,500	47,290	3,086
2009	147,860,000	2,500	48,645	3,040
2010	149,690,000	2,500	49,966	2,996
2011	151,410,000	2,500	51,256	2,954
2012	153,200,000	3,500	53,515	2,863
2013	155,060,000	3,500	55,719	2,783
2014	156,980,000	3,500	57,869	2,713
2015	158,960,000	3,500	59,968	2,651
2016	160,990,000	5,000	63,515	2,535
2017	163,080,000	5,000	66,977	2,435
2018	165,210,000	5,000	70,355	2,348
2019	167,370,000	5,000	73,651	2,272
2020	169,540,000	5,000	76,867	2,206
2021	171,710,000	7,000	82,005	2,094

2022	173,860,000	7,000	87,019	1,998
2023	176,000,000	7,000	91,911	1,915
2024	178,120,000	7,000	96,685	1,842
2025	180,200,000	7,000	101344	1,778

Physician Requirement projection

To determine the physician requirement of the country there are four **basic** approaches, these are i) population-to-personnel ratio method, ii) health service **target** method, iii) health need method and iv) health service demand method depend on different questions in hand. In the present analysis, we used the population to physician ratio method.

Projected supply of graduates up to 2025 and their comparative analysis of different survival assumptions

Year	Production assumption			Assumption based on production base year		
	High survival	Medium Survival	Low Survival	High survival	Medium Survival	Low Survival
2006	44,479	44,479	44,479	44,479	44,479	44,479
2007	45,902	45,278	45,019	46,087	45,963	45,804
2008	47,290	46,056	45,543	47,655	47,407	47,089
2009	48,645	46,812	46,051	49,186	48,812	48,335
2010	49,966	47,548	46,543	50,680	50,179	49,542
2011	51,256	48,664	47,270	52,138	51,509	50,712
2012	53,515	49,750	47,975	53,560	52,804	51,847
2013	55,719	50,807	48,659	54,948	54,063	52,947
2014	57,869	51,835	49,321	56,302	55,288	54,014
2015	59,968	52,836	49,963	57,623	56,480	55,047
2016	63,515	54,409	50,786	58,912	57,640	56,050
2017	66,977	55,940	51,583	60,171	58,769	57,021
2018	70,355	57,430	52,356	61,398	59,867	57,963
2019	73,651	58,879	53,106	62,596	60,936	58,876
2020	76,867	60,289	53,833	63,765	61,976	59,761
2021	82,005	62,162	54,787	64,906	62,987	60,619
2022	87,019	63,983	55,712	66,019	63,972	61,451
2023	91,911	65,756	56,609	67,105	64,929	62,258

2024	96,685	67,480	57,478	68,164	65,861	63,039
2025	101,344	69,158	58,321	69,199	66,768	63,797

Year wise male and female registered nurses from 1972 to 2006

Year	Male	Female	Total	Cumulative Total
1972	26	68	94	94
1973	15	77	92	186
1974	18	279	297	483
1975	43	107	150	633
1976	20	187	207	840
1977	7	307	314	1,154
1978	66	206	272	1,426
1979	24	428	452	1,878
1980	80	521	601	2,479
1981	118	600	718	3,197
1982	14	354	368	3,565
1983	116	547	663	4,228
1984	20	486	506	4,734
1985	3	624	627	5,361
1986	3	620	623	5,984
1987	1	560	561	6,545
1988	-	798	798	7,343
1989	-	472	472	7,815
1990	-	700	700	8,515
1991	10	935	945	9,460
1992	39	821	860	10,320
1993	47	981	1,028	11,348
1994	61	795	856	12,204
1995	82	713	795	12,999
1996	89	870	959	13,958
1997	88	806	894	14,852
1998	114	788	902	15,754
1999	60	600	660	16,414
2000	46	346	392	16,806
2001	85	634	719	17,525
2002	70	798	868	18,393
2003	93	838	931	19,324
2004	84	926	1,010	20,334
2005	37	364	401	20,735
2006	85	713	798	21,533
Total	1,664	19,869	21,533	

Source: Bangladesh Nursing Council (BNC), 2006

Assumption of Nurse production in the country

To estimate the total number of new diploma nurses that will be added to the nurses workforce each year up to 2025, we assumed three different levels high, medium and low of outputs from the government and private sector nursing institutes. The high level is based on somewhat high expectation that all nursing institutes both public and private sector will produce nurses more or less along the line of some stated assumptions, i.e. government will enhance investment for physical space, students' accommodation, teaching staff and other facilities will enhance significantly to augment the output of nurses from the existing 46 nursing institutes. The private sector nursing institutes will also improve significantly and their production capacity will tremendously improve particularly from the year 2010 and onward.

Year wise expected nurse production from 2006 to 2025 under high, medium and low production assumption

Year	High output			Medium output			Low output			Base Data
	Govt.	Pvt.	Total	Govt.	Pvt.	Total	Govt.	Pvt.	Total	
2006	1,000	125	1,125	1,000	125	1,125	800	120	920	798
2007	1,000	125	1,125	1,000	125	1,125	800	120	920	798
2008	1,000	125	1,125	1,000	125	1,125	800	120	920	798
2009	1,000	125	1,125	1,000	125	1,125	800	120	920	798
2010	1,000	125	1,125	1,000	125	1,125	800	120	920	798
2011	1,500	500	2,000	1,300	300	1,600	1,000	150	1,150	798
2012	1,500	500	2,000	1,300	300	1,600	1,000	150	1,150	798
2013	1,500	500	2,000	1,300	300	1,600	1,000	150	1,150	798
2014	1,500	500	2,000	1,300	300	1,600	1,000	150	1,150	798
2015	1,500	500	2,000	1,300	300	1,600	1,000	150	1,150	798
2016	3,000	1,500	4,500	2,000	700	2,700	1,200	250	1,450	798
2017	3,000	1,500	4,500	2,000	700	2,700	1,200	250	1,450	798
2018	3,000	1,500	4,500	2,000	700	2,700	1,200	250	1,450	798
2019	3,000	1,500	4,500	2,000	700	2,700	1,200	250	1,450	798
2020	3,000	1,500	4,500	2,000	700	2,700	1,200	250	1,450	798
2021	3,500	2,500	6,000	2,500	1,000	3,500	1,500	500	2,000	798
2022	3,500	2,500	6,000	2,500	1,000	3,500	1,500	500	2,000	798
2023	3,500	2,500	6,000	2,500	1,000	3,500	1,500	500	2,000	798
2024	3,500	2,500	6,000	2,500	1,000	3,500	1,500	500	2,000	798
2025	3,500	2,500	6,000	2,500	1,000	3,500	1,500	500	2,000	798

Assumption of paramedics production in the country

To estimate the total number of paramedics that will be added to the workforce each year up to 2025. We assumed three different levels high, medium and low of outputs from the government and private sector's Institute of Health technology

(IHT). The high level is based on somewhat high expectation that all institute both public and private sector will produce paramedics more or less along the line of some stated assumptions, i.e. government will enhance investment for physical space, students' accommodation, teaching staff and other facilities will enhance significantly to augment the output of paramedics from the existing Institute of Health Technology. The private sector institute will also improve significantly and their production capacity will tremendously improve particularly from the year 2011 and onward.

Year wise expected paramedics production from 2006 to 2025 under high, medium and low production assumption

Year	High output	Medium output	Low output	Base Data
	Govt Pvt. Total	Govt. Pvt. Total	Govt. Pvt. Total	
2006	1,000 150 1,150	1,000 100 1,100	750 50 800	753
2007	1,000 150 1,150	1,000 100 1,100	750 50 800	753
2008	1,000 150 1,150	1,000 100 1,100	750 50 800	753
2009	1,000 150 1,150	1,000 100 1,100	750 50 800	753
2010	1,000 150 1,150	1,000 100 1,100	750 50 800	753
2011	1,500 500 2,000	1,300 200 1,500	900 100 1,000	753
2012	1,500 500 2,000	1,300 200 1,500	900 100 1,000	753
2013	1,500 500 2,000	1,300 200 1,500	900 100 1,000	753
2014	1,500 500 2,000	1,300 200 1,500	900 100 1,000	753
2015	1,500 500 2,000	UOO 200 1,500	900 100 1,000	753
2016	2,500 1,500 4,000	1,500 500 2,000	1,100 200 1,300	753
2017	2,500 1,500 4,000	1,500 500 2,000	1,100 200 1,300	753
2018	2,500 1,500 4,000	1,500 500 2,000	1,100 200 1,300	753
2019	2,500 1,500 4,000	1,500 500 2,000	1,100 200 1,300	753
2020	2,500 1,500 4,000	1,500 500 2,000	1,100 200 1,300	753
2021	3,000 2,000 5,000	1,800 1,000 2,800	1,400 400 1,800	753
2022	3,000 2,000 5,000	1,800 1,000 2,800	1,400 400 1,800	753
2023	3,000 2,000 5,000	1,800 1,000 2,800	1,400 400 1,800	753
2024	3,000 2,000 5,000	1,800 1,000 2,800	1,400 400 1,800	753
2025	3,000 2,000 5,000	1,800 1,000 2,800	1,400 400 1,800	753

Projected supply of paramedics up to 2025 under high production and high survival assumption (average working life 45 years and average annual retention rate 0.975)

Year	Mid year Production	Total population	Projected paramedics	Projected Paramedics Population ratio	Projected Physicians	Doctor Paramedic ratio
2006	141,800,000	1,150	10,653	13,311	44,479	0.24
2007	143,910,000	1,150	11,545	12,465	45,902	0.25
2008	145,930,000	1,150	12,415	11,754	47,290	0.26
2009	147,860,000	1,150	13,265	11,147	48,645	0.27
2010	149,690,000	1,150	14,093	10,621	49,966	0.28
2011	151,410,000	2,000	15,752	9,612	51,256	0.31
2012	153,200,000	2,000	17,371	8,820	53,515	0.32
2013	155,060,000	2,000	18,950	8,183	55,719	0.34
2014	156,980,000	2,000	20,491	7,661	57,869	0.35
2015	158,960,000	2,000	21,995	7,227	59,968	0.37
2016	160,990,000	4,000	25,462	6,323	63,515	0.40
2017	163,080,000	4,000	28,845	5,654	66,977	0.43
2018	165,210,000	4,000	32,147	5,139	70,355	0.46
2019	167,370,000	4,000	35,368	4,732	73,651	0.48
2020	169,540,000	4,000	38,511	4,402	76,867	0.50
2021	171,710,000	5,000	42,579	4,033	82,005	0.52
2022	173,860,000	5,000	46,547	3,735	87,019	0.53
2023	176,000,000	5,000	50,420	3,491	91,911	0.55
2024	178,120,000	5,000	54,199	3,286	96,685	0.56
2025	180,200,000	5,000	57,886	3,113	101,344	0.57

the supply of paramedics was calculated on the basis of the net number of paramedics available at the base year (2006) as 10,653, the production of new paramedic was assumed to be at high production rate and survival rate for the nurses was assumed to be at high rate (0.975, average working life 45 years).