

## Activities & Achievements of Bangladesh Level II Hospital in UNMIL, Liberia: A Hospital Based Document Review Study

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### Abstract:

**Background:** Bangladesh Level-II Hospital (BANMED) is providing secondary level health care services to UNMIL since 2003. So far 9 Medical Contingents completed their one year tour of duty each. **Objective & Methods:** A document review study was carried out and cross checked to highlight the various activities of BANMED-9 by analyzing the medical records, patients' history sheets and other available administrative documents. **Results:** BANMED-9 treated 8406 outdoor cases, 482 indoor cases and 536 dental patients during one year of its tour of duty. The service recipients were all types of United Nations staffs, local Liberians and also people from bordering countries (Guinea, Sierra Leon etc) who suffered from various health problems. Total 8795 pathological tests, 776 X-rays, 89 ECG, 157 ultrasonography and 653 various types of surgical operations were carried out by this hospital. BANMED-9 also conducted different civil military co-operation and capacity building activities from the beginning of the mission. Health awareness program and regular sanitary inspection to the dependent units were also carried out by this hospital regularly. This hospital carried out a study to find out the disease pattern of the reported cases, which revealed that malaria was the most common disease and on an average 25.21% of the admitted

patients suffered from malaria though the prevalence of malaria in Liberia was 37%. Average hospital stay of the patients was about 6 days and hospital bed occupancy rate was about 7.76%. **Conclusion:** Providing an efficient Medicare services to the United Nations personnel and poor local Liberians in oneyear BANMED-9 played a praiseworthy role in UN environment and thereby uphold the glory and dignity of UN as well as Bangladesh.

**Key words:** Bangladesh Level-II Hospital, Document Review Study

## **Introduction:**

Liberia, emerged from a protracted civil war, is located in West Africa and is bounded by nearly 350 miles of Atlantic Ocean coastline at the southwest and by the neighboring countries of Sierra Leone (northwest), Guinea (north) and Côte d'Ivoire (east and southeast). It has a population of about 3.5 million. Living conditions remain extremely poor, with 68 percent of Liberians living below the poverty line—less than \$1 a day.



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Hospitals and medical facilities in Liberia are very poorly equipped and are incapable of providing many services. Upper respiratory tract infections and diarrhea were common, as well as more serious diseases such as typhoid and malaria. UN peacekeepers were deployed on 1<sup>st</sup> October 2003 in Liberia. Bangladesh was the first troop contributing Nation impregnated with a level-II hospital. This hospital was designed to provide second line health care facilities with the provisions of primary health care of all common illness and prevailing infectious diseases. Bangladesh got \$1,17,413.06 USD reimbursements per month from this Hospital.

### **Background History of Level-II Hospital:**

The first Bangladeshi medical contingent (BANMED-1) imprinted its first foot print in Liberia in November 2003 under the auspices of UNMIL. A 60 membered medical contingent was first established at Seminary Complex, Gbarnga and subsequently it was shifted to the present location at CARI Complex, Gbarnga in the ORBAT of Sector B<sub>2</sub>. In addition to outdoor and indoor patient care facilities, the hospital was equipped with a well-organized ICU, two operation theatres, a pathological laboratory, a department of radiology and an emergency and casualty department. Two ambulance cars with modern life saving equipment were 24 hours standby in the hospital premises for the transportation of emergency patients.

An expert team of well experienced health professionals comprising of three public health specialists, two medical specialists, two surgical specialists, one anesthesiologist, one radiologist, one pathologist, one dental surgeon, one logistic officer, two nurses and 46 others paramedics provided relentless health care to UNMIL.

### **Tasked Assigned to BANMED-9 by UN:**

BANMED was assigned to provide -

- Second line health care
- Emergency resuscitation
- Limb and lifesaving surgery
- Basic dental care
- Evacuation of patient to next higher level.

### **Methods and Materials:**

The main objective of the study was to highlight the activities of Bangladesh level-II hospital (BANMED-9) and also to find out the weaknesses for further improvement of health care delivery system. A document review study was conducted between May 2012 to June 2013 using medical records, patient's treatment sheets, different diagnostic test results and various reports/return of the hospital.

### **Result & discussion:**

Distribution of patients treated by BANMED-9 from May 2012 to May 2013 summarized in tables below.

**Table-I: Distribution of Patients**

Month	Malaria	Fever	PUD	RTI	Diarrhoea	Pain abdomen	Others	Total
May'12	14	235	54	47	26	21	256	653
Jun'12	22	262	55	39	40	22	461	901
Jul'12	24	248	34	53	21	21	432	833
Aug'12	14	175	50	36	18	5	291	589
Sep'12	21	230	55	57	22	11	264	660

N.D.Ambadkar, G.G.Patil- **Comparative Study of Wards of Employed & Unemployed Women with Respect to Their Mental Health**

Oct'12	57	319	99	72	32	19	521	1119
Nov'12	8	219	70	42	28	14	314	695
Dec'12	12	89	35	24	44	4	227	435
Jan'13	12	89	42	37	15	2	292	489
Feb'13	6	78	27	48	8	4	149	320
Mar'13	8	84	85	46	1	8	269	501
Apr'13	9	106	88	51	0	13	264	531
May'13	10	106	92	46	1	9	416	680
<b>Total</b>	<b>217</b>	<b>2240</b>	<b>786</b>	<b>598</b>	<b>256</b>	<b>153</b>	<b>4156</b>	<b>8406</b>

**Table-II: Disease Pattern of Patients**

Month	Malaria		Fever	Measles	Minor injuries	Others	Total
	PF	Clinical					
May'12	06	0	03	0	01	10	20
Jun'12	07	12	11	06	06	08	50
Jul'12	07	10	08	08	0	25	58
Aug'12	01	10	07	02	03	21	44
Sep'12	07	21	11	0	02	24	65
Oct'12	08	0	08	0	03	24	43
Nov'12	03	03	09	0	0	21	36
Dec'12	03	01	04	0	04	24	36
Jan'13	02	01	02	0	02	11	18
Feb'13	01	0	04	0	04	05	14
Mar'13	0	02	05	0	01	15	23
Apr'13	02	03	04	0	01	21	31
May'13	05	05	02	0	03	23	38
<b>Total</b>	<b>52(10.92%)</b>	<b>68 (14.29%)</b>	<b>78 (16.39%)</b>	<b>16 (3.36%)</b>	<b>30 (6.30%)</b>	<b>232 (48.74%)</b>	<b>476</b>

**Table-III: Distribution of Dental Cases**

Month	Gingivitis	Caries	Pulpitis	Gross Caries with Apical infection	Others	Total
May'12	0	6	0	0	1	7
Jun'12	3	7	2	2	25	39
Jul'12	4	16	5	2	23	50
Aug'12	4	11	3	1	18	37
May'12	6	12	1	1	7	27
Oct'12	7	24	7	8	15	61
Nov'12	1	3	0	1	4	9
Dec'12	11	18	4	5	11	49
Jan'13	15	19	7	3	16	60
Feb'13	7	20	3	5	15	50
Mar'13	6	9	2	6	40	63
Apr'13	5	6	9	2	14	36
May'13	8	19	4	3	14	48
<b>Total</b>	<b>77</b>	<b>170</b>	<b>47</b>	<b>39</b>	<b>203</b>	<b>536</b>

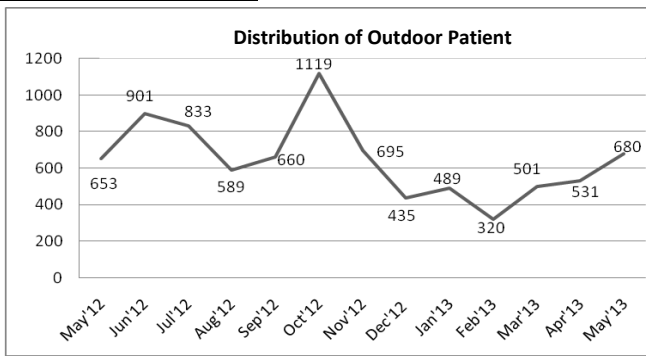
**Table-IV: Distribution of Monthly bed occupancy**

Month	Total bed	Total admitted patients	Percentage
May 2012	360	20	5.55
Jun 2012	600	50	8.33
Jul 2012	620	58	9.35
Aug 2012	620	44	7.10
Sep 2012	600	65	10.83
Oct 2012	620	43	6.94
Nov 2012	600	49	8.16
Dec 2012	620	51	8.22
Jan 2013	620	44	6.44
Feb 2013	560	53	9.46
Mar 2013	620	47	7.58
Apr 2013	600	42	7.00
May 2013	620	29	4.68
<b>Total</b>	<b>7660</b>	<b>595</b>	<b>7.76</b>

**Table-V: Distribution of Average hospital stay**

Months	Total admitted patients	Days stayed in hospital	Average days
May 2012	20	162	8.10
Jun 2012	50	299	5.98
Jul 2012	58	350	6.03
Aug 2012	44	299	6.79
Sep 2012	65	299	4.60
Oct 2012	43	301	7.00
Nov 2012	49	297	6.06
Dec 2012	51	308	6.04
Jan 2013	44	289	6.57
Feb 2013	53	303	5.72
Mar 2013	47	298	6.34
Apr 2013	42	248	5.90
May 2013	29	139	4.79
<b>Total</b>	<b>595</b>	<b>3592</b>	<b>6.04</b>

a. Clinical Performance.

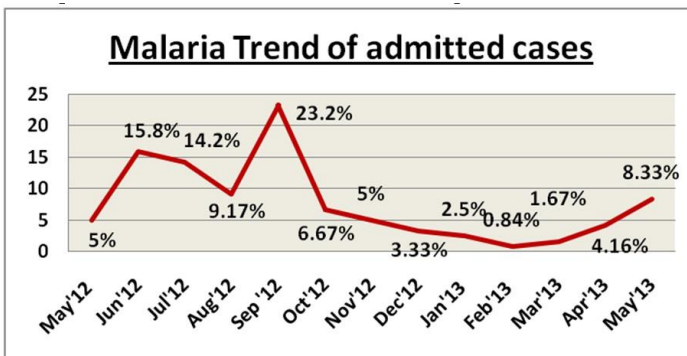


**Fig: Distribution of Patient treated by BANMED-9**

In 13 months of TOD they had treated 8406 outdoor cases of various illness and 482 patients were admitted in the hospital. Out of those 482 admitted cases only 28 patients were evacuated to the higher level hospitals. Those were mainly for further diagnostic purpose like CT scan, MRI, endoscopy etc. This indicates the dedicated performance and commitment of our health professionals towards service.

b. Health survey.

A health survey was carried out to observe the disease pattern of the admitted cases. Study revealed that Malaria was the most prevalent disease (25.21%) in UNMIL personnel.



**Fig: Proportion of malaria cases reported in BANMED-9.**

Out of 476 admitted cases total 120 patients (25.21%) suffered from malaria. Out of those cases 10.92% were falciparum malaria and rest 14.29% were clinical malaria. The 2009 malaria indicator survey (MIS) showed that malaria prevalence, determined using rapid diagnostic tests (RDTs) was 37%.<sup>1</sup>The overall Plasmodium falciparum prevalence was estimated at over 40% in the two first surveys and 68.9% in the third survey.<sup>2</sup> The observed lowered number of malaria was probably due to category of patients admitted in BANMED. In

BANMED only UN personnel were entitled to get indoor treatment who usually adopted personal protective measures against malaria. Nonspecific fever also contributed major portion (16.39%). 16 measles cases were found in the month of June, July and August which is the rainy season in the country. Study also revealed that hospital bed occupancy rate of BANMED-9 was about 7.76% and average hospital stay of the patient was about 6 days in BANMED-9.

c. CIMIC (Civil Military cooperation) Activities:

Besides providing health care services to the UNMIL personnel BANMEDs were also providing humanitarian assistance to the poor and distress local Liberians. From the very beginning Level-II hospitals were conducting medical outreach program in the name of “Free Friday Clinic” on each Friday for the treatment of local people. Every week about 150-200 patients received treatment from “Free Friday Clinic”. BANMED/9 conducted extensive CIMIC activities and treated 7132 local civilian patients during the TOD. This was highly appreciated by all in UNMIL officials and local Liberians.

d. Medical Outreach and Blood Donation Program:

A medical outreach with voluntary blood donation program was conducted by BANMED-9 on 24 October 2012, on the occasion of UN day. 537 local Liberians received outdoor treatment from this medical outreach. Besides 07 Bangladeshi soldiers donated their blood for the local Liberian sick and wounded patients. Collected blood bags were handed over to Febee hospital authority for further transfusion.

e. Appreciation of Chief of Staff (COS) and Force commander from Force HQ:

USBRIG GEN HUGH COLLETT VAN-ROOSEN COS, Force HQ, UNMIL Visited BANMED-9 on 21 March 2013. He presented a medal of excellent to the unit as he was very



satisfied with the performances of the hospital. Kenyan MAJOR GENERAL LEONARD MURIUKI NGONDI, Force commander also visited this hospital twice and expressed his utmost satisfaction with the performances of BANMED-9.

f. Capacity Building Activities carried out by BANMED:

BANMEDs are conducting First Aid and Medicare Course twice in a year for last 03 years with the help of SIDA. So far total 165 Liberian students were trained on first aid. BANMED-9 conducted three First Aid and Medicare Courses during its tour of duty and trained total 48 Liberian students.

- 1<sup>st</sup> course - 27 August 2012 to 31 August 2012.
- 2<sup>nd</sup> course - 14 April 2013 to 20 April 2013.
- 3<sup>rd</sup> Course - 05 May 2013 to 11 May 2013.

g. Disease Prevention Program and Sanitary Inspection:

BANMEDs-9 also conducted disease prevention and awareness developing program on malaria, water borne diseases and HIV infection at regular interval for the UN personnel and also for the local people. Preventive health specialists of this hospital carried out sanitary inspection to the dependent UNMIL contingents regularly.

h. No Death Case in Hospital:

During tenure no patient died in BANMED-9. Only 2 patients died after being evacuated to Level 3 & 4 hospital. It was only possible due to our efficient assessment & prompt evacuated of patient to higher level hospital.

i. No Motor Traffic Accident.

Within 13 months of TOD 2x Jeep, 2x Pickup, 3 x 3 Ton and 2x Ambulance had a run of 74338 km without any accident. This was possible due to high level of care, motivation and professionalism of all concerned.

j. Observations on Country Owned Equipment(COE) by UN Inspectors:

As all the items, equipment and instruments were operational, there was no observation COE by UN inspection team. We ensured 100% reimbursement for our country.

**Challenges faced by BANMED-9:**

a. Shortage of Manpower: 78 persons were authorized in the TO&E of Pakistan Level-II hospital (PAKMED) whereas in BANMED we had only 60. Maintaining internal security duties it was really challenging to provide optimum level of health care to the clients.

b. Shortage of Vehicle: BANMED had only 2 x Jeep (very old) for 14 officers, Which was very meager for this unit. Throughout the time we suffered for this scarcity.

c. Shortage of Medicine and Other Medical Appliances: medicine and other resources were limited, so health care could not be provided to the local people up to their desired level.

d. Shortage of Specialist Doctors: there was no Eye Specialist, ENT Specialist, Skin Specialist and Psychiatrist in the organogram of BANMED, so health care could not be provided in those fields up to full extent. Necessity of a Gynecologist and a Child Specialist was also felt while providing health care service to the female UN peacekeepers as well as local women and children.

e. Inadequate Investigation Facilities: From the beginning of its journey this hospital is running with only some basic lab equipment, which do not work properly as those are very old.

f. Faulty UNOE & COE power generator: BANMED was supported by 2x 125 KVA UNOE & 1x 20 KVA COE power generators which all were very old &

usually faulty. We faced great difficulties due to often power failure.

g. Hospital Waste and Sewage Disposal: There were two small size incinerators in hospital premises which were not enough to fulfill the requirement of hospital.

### **Conclusion:**

The duties and responsibilities of medical profession are altogether different from others services. BANMED-9 always put forward its relentless and dedicated efforts to fulfill its assigned tasks. Limitations and short-comings never suppress the enthusiasm and morale of the unit. We always made ourselves available with spirit and zeal whenever we were called for. By the grace of the Almighty Allah during our stay in UNMIL we could do our best and thereby uphold the glory and dignity of UN as well as Bangladesh.

### **Recommendations:**

- a. For the treatment of the locals more medicine may be arranged in coordination with the Liberian civil authority and other NGOs.
- b. Some more specialists like ophthalmologist, otolaryngologist, Psychiatrist, Gynecologist and child specialist may be incorporated in TO&E of BANMED.
- c. In all specialties tech personnel should be at least 2, So that if one is absent, sick or on leave, other can continue the services.
- d. Maximum electro medical equipment of BANMED-9 laboratory was very old and many are unserviceable. The laboratory should be equipped with modern Lab equipment.
- e. A distilled water plant may be incorporated in Laboratory department of the Level-II hospital.

f. Minimum one Anesthesiologist, one Radiographer, one Lab Tech, one Cook, one NC(E) and one Mess waiter should be included in the TO&E of Level-II hospital for smooth functioning of the hospital.

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