DEPARTMENT OF THE ARMY
HEADQUARTERS, 12TH EVACUATION HOSPITAL (SMBL)
APO San Francisco 96353

AVBJ GD-EA

1 February 1970

SUBJECT: Operational Report - Lessons Learned 12th Evacuation Hospital (SMBL), Period Ending 31 January 1970, RCS CSFOR-65 (R2)

THRU: Commanding Officer
68th Medical Group
ATTN: AVBJ GD-PO
APO 96491

Commanding General
44th Medical Brigade
ATTN: AVBJ PO
APO 96384

TO: Assistant Chief of Staff for Force Development
Department of the Army
Washington, D. C. 20310

1. Section 1, Operations: Significant Activities.

a. Organization and Mission:

(1) During the period 1 November 1969 - 31 January 1970, the 12th Evacuation Hospital (SMBL) continued its mission of:

(a) Providing medical service support to United States and ARVN Armed Forces, Free World Military Assistance Forces, Civilian War Casualties, US and Vietnamese Civilians and Third Country Nationals. The Unit functioned in direct support of the 25th Infantry Division, 1st Air Cavalry Division, 1st Infantry Division, 3rd Brigade, 82nd Airborne Division, US Navy and their attached units in the vicinity of Cu Chi, Tay Ninh and Dau Tieng, RVN. In addition, patients were received by transfer from the 2nd Surgical Hospital, 45th Surgical Hospital, and Medical Companies of the 15th and 25th Medical Battalions for further care of an emergency or post-operative nature.

(b) Providing initial medical care for prisoners of war.

(c) Providing specialized treatment in designated specialties which include Anesthesiology, Cardiology, Internal Medicine, Ophthalmology,

Otorhinolaryngology, Radiology, General Surgery, Maxillofacial Surgery, Oral Surgery, Orthopedic Surgery, Thoracic Surgery, Urology, Dental Service, Physical Therapy, Pathology, and Clinical Laboratory Service.

(d) Providing Chaplain's activities and programs for patients and staff.

(e) Providing Red Cross assistance for patients and staff.

(f) Providing Special Services support for patients and staff.

(g) Providing for the administrative and logistical needs of personnel assigned and attached to the hospital.

(2) Partial logistical support was provided to:

(a) 561st Ambulance Company

(b) 4th Veterinary Detachment

(3) During the period 315 operating beds were maintained of which 260 beds were designated surgical, 55 beds were designated medical, and 85 beds were for holding. Additional statistics pertinent to bed usage are noted under section 1e (Operations and Activities).

b. Personnel and Administration:

(1) During the reporting period the 12th Evacuation Hospital continued to be staffed as follows:

| CATEGORY | AUTHORIZATION | PRESENT FOR DUTY | PERCENTAGE |
|---|---|---|---|
| Medical Corps | 30 | 31 | 103% |
| Army Nurse Corps | 63 | 60 | 95% |
| Dental Corps | 2 | 2 | 100% |
| Army Medical Specialist Corps | 1 | 1 | 100% |
| Chaplain Corps | 1 | 1 | 100% |
| Medical Service Corps | 8 | 9 | 112% |
| Warrant Officer - QM | 1 | 1 | 100% |

| CATEGORY | AUTHORIZATION | PRESENT FOR DUTY | PERCENTAGE |
|---|---|---|---|
| Enlisted Total | 199 | 238 | 120% |
| Medical Specialities | 131 | 160 | 122% |
| Administrative* | 68 | 78 | 114% |

*Clerical, maintenance, laundry, mess

(2) Personnel turnover during the period was approximately 5 percent for officer personnel and 12 percent for enlisted men.

(3) Personnel shortages in the following specialities were determined to be critical:

| | MOS | DESCRIPTION | AUTH/ASG |
|---|---|---|---|
| (a) | 3100 | General Medical Officer | 10/2 |

(4) Key personnel in the administration of the hospital during the reporting period were as follows:

(a) Commanding Officer:

Colonel Leon M. Dixon, MC.

(b) Executive Officer:

MAJ John B. Kelly, MSC.

(c) Chief, Professional Services:

LTC Franklin M. Soriano, MC.

(d) Chief Nurse:

(1) LTC Mary F. McLean, ANC, 1 - 24 November 1969.

(2) LTC Helene D. Carroll, ANC, 24 November 1969 - 31 January 1970.

(e) Chaplain:

CPT Patrick J. Adkins, CH.

(f) Command Sergeant Major:

CSM Fredrick Crauswell.

(5) The morale of the hospital staff continued to be outstanding. The following awards and decorations were approved and presented to assigned or attached personnel during the report period:

(a) Bronze Star - 9

(b) Army Commendation Medal - 46

(c) Purple Heart (patients) - 615

(d) Good Conduct Medal - 22

c. Improvements and Projects:

(1) All electrical distribution and signal wire in the approach to the hospital helipad were removed in December. Air safety was significantly improved as the result of this action.

(2) Installation of the Hospital Special Services Library was completed except for installation of carpeting. The Library is open.

(3) A 30 gallon water heater was installed on one of the surgical wards. This heater has been required to provide an adequate supply of hot water for treatment requiring soaking.

(4) A general rennovation of the hospital drainage system was begun during this period. All improvements are being effected under a self-help program.

(5) The Cu Chi Base Camp Post Exchange Officer requested permission to install a "Portacamp" snack bar on the outer edge of the hospital. It is expected that this addition will provide an improvement in the overall morale of patients and staff.

(6) The overall security plan for the hospital was reviewed and revised during January. Special training in anti-sapper measures, weapons familiarization and gas mask testing was accomplished.

d. Significant Events:

The hospital was visited by many well known persons during the Christmas season. These visitors, military and civilian, entertained the patients and conducted bedside visits. Of special interest were the visits by local Vietnamese people. The Province Chief and Assistant Division Commander, 25th ARVN Division bestowed gifts in the name of the Vietnamese people on all patients.

c. Operations and Activities:

(1) Statistical Indicators:

| | NOV | DEC | JAN | TOTAL |
|---|---|---|---|---|
| Total Admissions | 1074 | 1281 | 866 | 3221 |
| WIA | 507 | 612 | 362 | 1481 |
| US Military | 297 | 273 | 127 | 697 |
| ARVN | 34 | 137 | 127 | 298 |
| Other | 176 | 202 | 108 | 486 |
| Other Injuries | 135 | 187 | 155 | 477 |
| Disease | 432 | 482 | 349 | 1263 |
| Outpatient Visits | 1977 | 2048 | 1763 | 5788 |
| Emergency Room Visits | 1276 | 1444 | 1069 | 3789 |
| Surgical Procedures (Total) | 727 | 819 | 651 | 2197 |
| Major | 453 | 533 | 417 | 1403 |
| Minor | 274 | 286 | 234 | 794 |
| Pharmacy Prescriptions | 12071 | 12548 | 1683* | 26302 |
| X-Ray Exposures | 8189 | 10177 | 7648 | 26014 |
| Laboratory Procedures | 16398 | 18714 | 14486 | 49598 |
| Dental Procedures | 422 | 515 | 528 | 1465 |
| Meals Served | 46534 | 46442 | 41223 | 134199 |
| Physiotherapy | 916 | 698 | 562 | 2176 |
| EKG | 83 | 97 | 92 | 272 |
| Immunizations | 115 | 116 | 259 | 490 |
| Av Daily Beds Occupied | 218 | 219 | 160 | 199 |
| Av Percent Beds Occupied | 69.2 | 69.5 | 50.8 | 63.2 |
| Dispositions | 1055 | 1274 | 779 | 3108 |
| Total Evacuations | 521 | 532 | 323 | 1376 |
| Out-of-Country | 219 | 247 | 140 | 606 |
| In-country | 302 | 285 | 183 | 770 |
| Discharged to Duty | 508 | 704 | 437 | 1649 |
| Total Deaths | 26 | 38 | 19 | 83 |
| WIA | 18 | 30 | 13 | 61 |
| Other Injury | 3 | 4 | 5 | 12 |
| Disease | 5 | 4 | 1 | 10 |
| Av Patient Stay (Days) | 5.2 | 5.3 | 5.8 | 5.4 |

(2) MEDCAP visits to Cu Chi subsector continue on a weekly basis. A statistical presentation of this activity shows the following:

| | NOV | DEC | JAN | TOTAL |
|---|---|---|---|---|
| Number of patients seen | 386 | 257 | 433 | 1076 |

* New procedure being used to tabulate Pharmacy Procedures as of 1 Jan 70 per provisions of AR 40-419, para 17 b(3).

(3) Comment:

To cope with the increase in admissions and surgical operations, two wards were restored to operation. Ward C-2 was opened with 30 beds to accommodate overflow patients from the medical service and from the ambulatory surgical wards. Ward B-8 was opened and was arbitrarily subdivided for purposes of specialized patient care into a Burn Unit of 4 adult beds (expandable to 6 adult beds and 1 crib), and into a Vascular-critical orthopedic unit of 10 beds (expandable to 14 beds). On the average 2-4 burn beds, 4-6 vascular beds and 3-5 critical orthopedic beds were occupied. This patient category consisted of burns, vascular injuries and severe orthopedic injuries such as those associated with chest or abdominal injuries and bilateral major amputations. This arrangement was felt to be orderly and to best meet the demands of specialized treatment and nursing care and laid the foundation of the development of proficiency and mastery of this particular field of endeavor by the nursing and corpsmen personnel.

(4) Summary of Medical Services:

During November, December and January there were 811 US military personnel admitted to the Medical Service; 276 patients had malaria, of which 202 were falciparum infection, 70 vivax and 4 mixed; 29 hepatitis patients were treated, as were 2 cases of melioidosis and 2 of amebiasis. Fifty-nine patients had an illness characterized by high sustained fever, skin rash, and responsiveness to tetracycline. Titers that were obtained were positive for scrub typhus. Two deaths occurred. One death was secondary to apparent dapsone agranulocytosis, and the other an anaphylactic reaction to hypague given for an intravenouspyelogram.

There were no major problems encountered which were not solved by the end of the report period.

(5) Summary of Surgical Service:

There has been an increase in the number of operations for thoracic injuries. Approximately 175 thoracotomies were performed, of which about 32 were open thoracotomies and about 138 were closed thoracostomies. The approach of the surgical staff to the problem of high velocity chest wounds has shifted from the more conservative to the more aggressive on a promise that this type of injury is better treated by open thoracotomy and primary resection than by chest tube drainage. There had been at least 4 such cases treated conservatively who later died from continued intraparenchymal, intrabronchial or intrapleural bleeding; hypoxemia from "wet lung syndrome" or intrapulmonary vascular shunting; bilateral pneumonia; and local infection or generalized sepsis.

In combined large artery and vein injuries or where the main venous return is interrupted, a policy of repairing both the artery and the vein, either by end-to-end anstomosis or by saphenous vein graft interposition, complemented by adequate fasciotomies, was followed in the treatment of all

such cases. In the majority of instances, postoperative venograms revealed patency of the repaired vein. It is felt that in the few cases where venous thrombosis occured 24-48 hours after repair, at least there was time to form collateral pathways for venous return, thereby decreasing the incidence and the severity of distal edema which might otherwise compromise venous outflow from and arterial inflow to the injured limb. There were approximately 55 vascular injuries and in about two-thirds of these, the criteria existed and the treatment policy was applied.

There were many interesting cases of liver injuries. In 3 cases where simple suturing of the laceration was felt adequate, fatal secondary hemorrhage from either the hepatic wound site (2 occurred during the first several hours after the liver laceration was sutured) or from the area of hepatic necrosis (1 case occurred on the 26th postoperative day). As a consequence, a more aggresive approach to liver injuries was adopted. Significant liver wounds or those with extensive hepatic tissue destruction were treated by adequate primary resection T-tube drainage of the common bile duct, and multiple Penrose and Sump drainage of the supra and infrahepatic spaces.

The vigilance over the occurrence of even the slightest trace of respiratory embarrasment and the prompt performance of tracheostomy and institution of assisted or controlled ventilation with respirators is largely responsible for a decrease in the incidence of "wet lung" syndrome in the severely traumatized or burned patients during the past quarter. It is also due in part to the awareness of the staff of the necessity for judicious reduction of intravenous fluid volume and rate of administration after the volume or fluid deficit has been adequately replaced.

Gram negative sepsis, pseudomonas pneumonia, intra-abdominal abscesses and hemorrhage from upper gastrointestinal stress ulcers accounted for many of the postoperative deaths. The early use of intravenous gentamycin improved 1 or 2 patients with pseudomonas pneumonia, but in most instances the fatal course of this disease was not altered. Only a few cases of bleeding from stress ulcers responded permanently to conservative management. Bleeding invariably occurred and the condition of these patients became so poor that it precluded operation or that operation was undertaken as a last resort to oversew the bleeding point to perform vagotomy and pyloroplasty or to perform vagotomy and distal gastric resection. Almost uniformly these patients either pursued a protracted complicated postoperative course or eventually succumbed from sepsis. In view of this observation, the surgical staff now feels that early surgical intervention is warranted except in rare instances when stress ulcer bleeding is minimal and ceases within 6-12 hours. Any increased bleeding during this period which requires replacement of 6 units of blood or more to maintain adequate blood pressure or any re-bleeding is an indication for prompt surgical intervention. The recurrence of bleeding in 2 patients after oversewing the bleeding point and/or vagotomy and pyloroplasty, strongly suggests that vagotomy and distal gastric resection may be the treatment of choice for bleeding stress ulcers of the stomach or duodenum.

Lectures in "Respirators", "Vascular Injuries", "Orthopedic Injuries", "Thoracic Injuries" and "Head Injuries" were given by the Surgical Professional Staff to the nurses and corpsmen as part of the in-hospital training of these personnel. These lectures were well received and it is recommended that as the workload decreases with the decrease of combat casualties, this program should be revitalized and organized as a continuing didactic course to include all surgical as well as medical specialties.

(6) Summary of Religious Services and Programs:

Under the guidance of the assigned Chaplain, the Hospital Religious Center provided Catholic, General Protestant, Seventh Day Adventist, and Pentecostal services; various Bible studies were also held. Attendance at these services was approximately 2,561 personnel. The Chaplain has been involved in the "Amnesty" program by way of counseling drug users. A new program for Catholics - the Pre-Cana Marriage Preparation Course - is directed by the Chaplain.

2. Section 2, Lessons Learned: Commander's Observations, Evaluations and Recommendations:

a. Personnel

R & R Briefings and Transportation:

(a) OBSERVATION: Under current directives, personnel departing on R & R must be briefed on several points. These briefings tend to be quite time consuming. Further, in those cases where a medical unit is located some distance from the RVN R & R departure point, transportation to that point can be a problem area due to the limited capability of medical units to transport personnel.

(b) EVALUATION: The number of personnel departing a unit the size of an evacuation hospital on a daily basis is quite small. Eight to ten personnel a week depart on R & R.

(c) RECOMMENDATION: Medical units are frequently tenants on Base Camps operated by large units (division size). The number of personnel departing on R & R from such a unit is quite large and as a result, centralized briefing and transportation agencies have been created. Coordination on a local basis with such an agency can provide a medical unit with assistance in making the R & R trip more enjoyable and at the same time assuring that all briefing requirements are met.

b. Intelligence: None

c. Operations:

(1) Use of Color Coded Refuse Cans:

(a) OBSERVATION: The amount of refuse generated each day in an evacuation hospital is beyond the capacity of locally available incinerators.

(b) EVALUATION: Certain refuse, i.e. infectious waste, cannot be disposed of through a pick-up system operated by PA&E. This refuse must be segregated in order to allow incineration.

(c) RECOMMENDATION: That infectious waste containers be painted a bright color in order for rapid identification of the proper receptacle. This tends to remind personnel of the need to segregate refuse and at the same time provides a convenient point of disposal.

(2) Compressed Ambient Air, Medically Safe:

(a) OBSERVATION: Ventilatory assistance with pressure and volume controlled respirators such as the Bird, Bennett and Emerson respirators has been a tremendous aid in the management and eventual salvage of severely injured or acutely ill patients whose ventilatory effort and endurance is depressed or limited. Ordinarily, 100% pure oxygen is used to drive these respirators and is delivered to the patient's lungs either in full concentration or as an admixture with atmospheric air admitted through calibrated inlet valves attaining a maximum dilution possible of 70% oxygen to 30% atmospheric air.

(b) EVALUATION: High concentration of oxygen delivered by positive pressure for prolonged periods of time result in "oxygen toxicity". In one or two instances, otherwise unexplained by the nature of the patients' injuries, death possibly from "oxygen toxicity" was incriminated. As so often happens, the terminal event in these cases is "wet lung" syndrome and/or pulmonary edema and the determination of the cause is at best conjectural.

(c) RECOMMENDATION: In November 1969, the first delivery of medically safe compressed ambient air in black painted steel cylinders was received at the 12th Evacuation Hospital and has since then been used exclusively with respirators on patients requiring prolonged ventilatory assistance thus avoiding the "toxicity" of 100% pure oxygen formerly used. Patients subjected to this consisted of those with extensive chest and/or abdominal injuries, those under prolonged anaesthetic effect and those under the effect of drug overdose.

(3) Carlins Endotracheobronchial Tube:

(a) OBSERVATION: Occasional deaths from fragmentation wound of the lung were attributed to intrabronchial bleeding and aspiration of the blood into the opposite or dependent lung while the patients underwent thoracotomy in the lateral decubitus position.

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(b) EVALUATION: Carlins tube has the unique feature of selective ventilation to one or the other lung and by virtue of its inflatable cuff around each of the two arms that fits into and abutts each of the two main stem bronchi, prevents spillage of blood from one lung into the other.

(c) RECOMMENDATION: It is felt that the early and proper use of the carlins tube could possibly have avoided such "spill-over" and blood aspiration. It is recommended that Carlins tube be used routinely in operations for lung injuries with endobronchial bleeding.

d. Organization - None

e. Training - None

f. Logistics - None

LEON M. DIXON
COL, MC
Commanding

1 Incl
ATTACHED UNITS

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ATTACHED UNITS:

a. 4th MEDICAL DETACHMENT:

b. MISSION: To provide Veterinary Care for the 38th and 44th Infantry Platoons, Scout Dogs, 25th Infantry Division.

c. DETACHMENT COMMANDER: CAPTAIN GARY L. GOSNEY, VC

d. STRENGTH:

(1) 2 Officers, VC

(2) 2 Enlisted

e. Purpose of attachment: Rations, Quarters and Logistics.

f. Effective date of attachment: 1 October 1969

Incl 1