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AUTHORITY

AGO D/A ltr, 29 Apr 1980

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Subject: Operational Report - Lessons Learned, Headquarters, 24th Evacuation Hospital (Semimobile), Period Ending 31 Oct 68

SEE DISTRIBUTION

1. Subject report is forwarded for review and evaluation in accordance with paragraph 5b, AR 525-15. Evaluations and corrective actions should be reported to ACSFOR OT UT, Operational Reports Branch, within 90 days of receipt of covering letter.

2. Information contained in this report is provided to insure appropriate benefits in the future from lessons learned during current operations and may be adapted for use in developing training material.

BY ORDER OF THE SECRETARY OF THE ARMY:

Kenneth G. Wickham
Major General, USA
The Adjutant General

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UNCLASSIFIED REPORT
DISTRIBUTION NO FOREIGN WITHOUT APPROVAL OF ASSISTANT CHIEF OF STAFF FOR FORCE DEVELOPMENT (ARMY) ATTN FOR OT UT, WASHINGTON, D.C. 20310

During the entire ninety-two (92) day period, this hospital accomplished its mission of treating all classes of patients within the combat zone. The 24th Evacuation Hospital has given direct support to the 9th Infantry Division, 199th Infantry Brigade, 11th Armored Cavalry Regiment, 332d Medical Dispensary, 51st Medical Dispensary, the Royal Thai Regiment, and others of the Free World Forces. A total of 15,763 patients were treated during the report period. Three thousand seventy-five (3,075) were classified as "in-patients" and 12,688 were classified as "out-patients". Of this total, the designated clinics treated the following number of patients: Medical Clinic: 1,965, ENT Clinic: 3,077, Eye Clinic: 2,547, Orthopedic Clinic: 1,315, Dental Clinic: 877, Urology Clinic: 313, OB-GYN Clinic: 71, and Dermatology Clinic: 1,476. One hundred thirty-six (136) of the "in-patients" were evacuated to in-country medical facilities and 1,152 were evacuated to out of country areas. Admission of patients for treatment of injuries as a result of hostile action were as follows: Army 849, Navy/Marine 37, ARVN 142, Thai 60, PHILOG 3, Australian 2, CIDG 37 and CWCP 208. The total I H A patients admitted throughout the period was 1,310. During the months of August and September and October of 1968, the Commanding Officer awarded 881 Purple Hearts to combat casualties assigned to US Army, Vietnam units.

Inclosure

FOR CT UT
GE 4074
During the reporting period, the hospital lost 30 officers and gained 55. Among enlisted grades, the hospital experienced 93 losses and gained only 72. The total turnover of officers and enlisted men amounted to about 1/3 of the assigned strength. The notable losses and their replacements are as follows:

a. **Losses:**

   1. LTC Robert C. Leaver, Hospital Commander
   2. MAJ Charles K. Geffe, Chief of Professional Services
   3. CPT Robert E. Fraser, Detachment Commander
   4. CPT Robert L. Beyne, Chief of Medical Supply
   5. 1SG Ernest G. Davis, Detachment 1st Sergeant

b. **Replacements:**

   1. LTC Robert G. Stanek, Hospital Commander
   2. LTC William M. Harrison, Chief of Professional Services
   3. CPT Donald V. Bernott, Detachment Commander
   4. CPT Leroy J. Rosenborg, Chief of Medical Supply
   5. 1SG Harold H. McInroy, Detachment 1st Sergeant

During the three month period, there were 60 requests for Out-of-Country R&R, and all but 11 were approved. The number of disapproved requests is decreasing as shown by the fact that 9 requests were disapproved in August, 2 during September, and none were disapproved in October.

The following is a list of projects and improvements initiated by the Medical Detachment Commanding Officer and his staff during the reporting period.

a. Renovations for 80% of enlisted men's billeting area have been completed. The dayroom facility has been painted and its overall appearance has been improved.

b. Action has been initiated to place cement sidewalks in the officer's and enlisted men's billeting area. The project is 50% completed.

c. Training programs for the participation of all assigned and attached enlisted men have been expanded and improved. The Detachment Commander is stressing maximum participation for all enlisted men in an effort to better accomplish the Army Training Program.

d. Water Borne Sewage System is 85% complete.

The Emergency Room has undergone many new changes since moving to their new location in July. The surgical clinic, which is located in the Emergency Room, was expanded with the addition of two minor surgery rooms. In October, a patient and staff bathroom was installed. A patient shower was included along with an apparatus to shower litter patients. A room for the surgeon on call was built near the Emergency Room, making it possible for the surgeon to be readily available at all hours.

2
The Physical Therapy Service has been very active during the reporting period. An orientation was presented to the doctors, most of whom had recently arrived at this installation, as to the equipment available in the Physical Therapy Clinic, the patient treatment programs currently in operation, and the medical/surgical conditions for which physical therapy is indicated.

One TRU-TRAC Portable Intermittent and Continuous Traction Machine was received in the Physical Therapy Clinic.

Air conditioning was installed, providing a much improved environment for the treatment of patients.

Work was also completed providing adequate water and drainage for the operation of two Arm Whirlpool Baths.

During the reporting period there was an increase in the work load of the pharmacy. To illustrate, the average daily number of prescriptions filled has increased from 45 to 75, manufacturing work units have increased by 1000 and the total work units for the pharmacy has increased by 5000 over what it was six months ago. There was a total of 36,347 work units for this quarter. The hospital formulary was also completed and was distributed to the wards, clinics and dispensaries.

During the reporting period, the Laboratory and Radiology Departments were extremely busy. The Laboratory completed 26,767 procedures, 6,280 cross-matches and utilized 3,082 units of blood. The Radiology Department saw 7,724 patients and took 22,341 exposures. One hundred ninety (190) fluoroscopic examinations were also completed by the Radiology Department.

The 104th Medical Detachment (KD Team) (Maxillofacial) at the 24th Evacuation Hospital treated 341 patients during the reporting period. In addition to the operating room work, the team also sees patients in the clinic on consult from all over South Vietnam.

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

   a. Personnel:

   b. Operations:

   (1) Pre-Operative Preparation of Surgical Patients:

       (a) OBSERVATIONS: No casualties were cleaned or shaved prior to being taken to the operating room. This practice increased the risk of surgical infection, raised the contamination potential of the operating room suite and delayed surgery while the prep was being done.

       (b) EVALUATIONS: The problem was discussed by the Chief, Department of Surgery and the Chief Nurse who felt that many casualties could be
bathed or showered in the emergency room area and shaved on the pre-operative ward. It was felt that this would lower the risk of surgical infection in many casualties, reduce the chance of contamination of the operating room suite and by shaving while awaiting development of x-ray film and availability of an operating room, decrease the operating room time per patient. Those casualties in severe pain or shock could continue to be prepped in the operating room under anesthesia.

(c) RECOMMENDATIONS: The shower in the new patient latrine in the emergency room is now utilized to clean ambulatory casualties requiring surgery. A spry nozzle was attached to the existing water pipes to allow bathing of litter casualties who were not in shock or severe pain. Equipment and personnel have been provided on the pre-operative ward to allow the showering of casualties prior to surgery whenever possible.

(2) Fresh Whole Blood:

(a) OBSERVATIONS: Fresh whole blood could previously be ordered for casualties only if laboratory coagulation tests become abnormal. Twenty minutes is required to run the tests and two hours is required from the time of ordering until the fresh blood is received. The fresh blood is obtained from newly arrived personnel at the 90th Replacement Battalion providing a relatively safe source of supply. A number of casualties requiring massive transfusions developed severe coagulopathies and lost additional large increments of blood while awaiting availability of fresh blood.

(b) EVALUATIONS: The problem was discussed by the Chief, Department of Surgery and Chief Laboratory Officer. It was felt that the need for fresh blood could be anticipated in selected casualties with severe injuries likely to require massive transfusions and in casualties with a clinical bleeding problem. It was felt that earlier ordering of fresh blood in these casualties would allow more timely administration of fresh blood when indicated, reducing the risk of severe coagulopathies, the number of transfusions required, and the mortality rate in these cases.

(c) RECOMMENDATIONS: Policy was altered to allow ordering of fresh blood by the responsible surgeon in casualties anticipated to require massive transfusions or who exhibit a bleeding problem. Coagulation studies will be obtained for evaluation purposes. Procurement of fresh blood will not be delayed until the tests have been obtained or prevented by the test results.

(3) Surgical Infections:

(a) OBSERVATIONS: A number of serious infections due to pseudomonas were noted in post-operative casualties with indwelling tubes or drains, particularly on one ward where a large number of patients with tubes were concentrated.
(b) **EVALUATIONS:** The problem was discussed at the Hospital Commander's Conference. It was felt that while contamination of tubes and drains with pseudomonas is generally common, the number of serious clinical infections resulting recently, dictated that an attempt be made to effect pseudomonas from the problem ward and increased measures be employed to prevent contamination of tube and drain sites.

(c) **RECOMMENDATIONS:** The ward from which most infections arose was cleared of patients, thoroughly cleaned and painted. Increased emphasis was placed throughout the hospital on following strict nursing and surgical principles, such as the use of gloves for dressing changes, proper disposal of soiled dressings, etc. Proper care of urethral catheters with daily cleansing of the meatus and application of bacitracin ointment was initiated. Tracheostomy suction catheters were soaked in acetic acid solution and an SOP for tracheostomy care written and distributed. A form for reporting surgical infections was devised and will be reviewed monthly by the staff.

(4) **Blood Coils and Warmers:**

(a) **OBSERVATIONS:** Frequently, seriously ill patients were receiving whole blood prior to entry and more units in the Emergency Room, in the attempt to save lives and stabilize patients for Operating Room procedures. The blood received is refrigerated and when too many units are given, the body temperature decreases, counteracting the life saving measures.

(b) **EVALUATIONS:** The problem was brought to the attention of the Chief of Professional Services and the Hospital Commanding Officer. The present supply was maintained in the Operating Room, not a sufficient amount for their purposes, and none was available to give to the Emergency Room.

(c) **RECOMMENDATIONS:** Blood coils have been obtained. The warmers have not been received as yet. A warmer is borrowed from the Operating Room when needed in the Emergency Room, but much time and efficiency is lost. With the present system, the initial problem has improved.

(5) **Crossmatch Procedures:**

(a) **OBSERVATIONS:** One of the most important steps in crossmatch procedure is determining the patient's blood type. Normally this is accomplished by using Anti-A and Anti-B typing serum. This test can usually disclose a patient's blood type. However, this is not always the case with patients that have received multiple transfusions of "Universal Blood". If a patient is other than type O and has received 4 units or more of "Universal O", it has been observed that the reaction is somewhat weaker when tested with Anti-A and Anti-B typing serum, and in some cases, there is a complete lack of reaction. If not tested further, it might well be assumed that the patient is type
Therefore, it is imperative that not only the "Front Type" be completed, but also "Back Typing," using known A and B Cells.

(b) **EVALUATIONS:** Since known A and B cells are not obtained through commercial outlets in this area, these cells must be made from blood bank blood. It was noted that the life expectancy of these cells was much shorter than cells obtained commercially. Therefore, these cells must be frequently prepared. It was also noted that these cells were being maintained at refrigeration temperature in an open test tube. It was demonstrated that, by using a closed stopper bottle to store these cell suspensions, that these cells were reactive for a much longer period.

(4) RTV Silicone 382 Project:

(a) **OBSERVATIONS:** During the period 14 July 1968 to 1 October 1968, Maj John Salom, assigned with the US Army Research Unit, Oral and Maxillo-Facial Sciences Section, Presidio of San Francisco, was at this hospital on TDI to work in connection with the Oral Surgery Service, 24th Evacuation Hospital, on a research project in the use of room temperature vulcanizing (RTV) Silicone 382 for the early restoration of oral and facial wounds. Five patients were seen in this period of time that had oral or facial wounds that could not be closed primarily and RTV Silicone 382 was applied to the defects.

(b) **EVALUATIONS:** These five patients were evacuated to Letterman General Hospital for further evaluation and follow-up care of their wounds. Early reports returned here revealed that all five patients were received at Letterman General Hospital in good condition, and their wounds were ready for immediate grafting.

(c) **RECOMMENDATIONS:** In view of the apparent success with this method of restoration of oral and facial wounds, arrangements have been made to continue this research project by the Oral Surgery Service, 24th Evacuation Hospital for an indefinite period.

(7) Waterborne Latrines:

(a) **OBSERVATIONS:** Apparent deficiencies noted in the planning and construction of the waterborne latrines at the 24th Evacuation Hospital.

(b) **EVALUATIONS:** The following critical analysis of the deficiencies noted in the planning and construction of the waterborne latrines is not intended to depreciate the achievements of the former hospital staff, but rather to present constructive criticisms which may prove beneficial to those who plan and design latrine facilities in the future. One of the primary considerations which is inadvertently overlooked, is to determine if whether the water supply is sufficient and ancillary running and storage facilities are adequate to support a waterborne latrine system. While water distribution systems may be adequate for present needs, the increase in consumption when waterborne latrines are installed...
is not always promptly recognized. PME engineers have established a consumption rate of 100 gallons per man per day as a reasonable standard. While this standard may be adequate for the average household needs, the standard for hospitals is considerably higher. Prior to the installation of the waterborne sewage system, the daily consumption rate at this hospital was estimated to be 60,000 gallons per day, which is considerably higher than the PME standard, based on an assigned strength of 300 and an average daily patient census of 200. The PME standard does not take into consideration the increased demand by facilities such as CMS, X-Ray, Laundry and repetitive hand washing. With only 50% of the latrines in operation, the consumption rate increased significantly over the previous 60,000 gallons per day. The following observations deal mostly with the design of the present latrines. It is felt that these improvements in patient comfort would not appreciably increase the cost of the contract.

(i) The ventilation in the latrines is poor and the change in temperature from the air conditioned wards to the servid latrines may have a measurable effect on the hospitalized patients. There is at least a 20% change in temperature.

(ii) The placement of the clinical sinks in the female latrines is questionable. Although the sinks were installed in the female latrines under the assumption that each ward would have female ward attendants and custodial help, most of the detail cleaning and sanitizing of utensils will be accomplished by medical corpsmen.

(iii) Because of the lack of hand washing facilities on the wards, nursing personnel must leave the ward and go to the latrines.

(iv) The latrines adjoining the operating suites are too small to serve their primary purpose of providing dressing rooms for the Operating Room staff.

(v) Once a patient enters a latrine, the nursing staff loses all contact with that patient except by visual inspection. It is conceivable that a serious incident could take place in the latrine and the patient would be unable to signal for assistance.

(vi) No provisions have been made in the latrines for cleaning and storing urinals and bed pans.
(c) RECOMMENDATION:

(i) Prior to the installation of the waterborne sewage system, a survey should be taken to insure that the water supply is adequate to accommodate the increased demand.

(ii) An exhaust fan should be installed in each latrine to increase the circulation.

(iii) Clinical sinks should be installed in both male and female latrines.

(iv) In the placement of each patient latrine, a lavatory should be installed on the opposing wall in the ward area.

(v) The latrines adjoining the Operating Room suites should be large enough to be utilized as dressing rooms.

(vi) An alarm system should be installed in each latrine, preferably in the water closet, in order that the nursing staff can be alerted when a patient is in difficulty. Additionally, hand rails should be installed in the shower stall and water closets.

(vii) Provisions should be made in each latrine for urinals and bed pans to be sanitized and stored.

(a) SOD Room:

(a) OBSERVATIONS: During the night hours, the surgeon on call was at least ten to fifteen minutes away from the Emergency Room. Each time he was needed, a corpsman had to go to his sleeping quarters. This usage of Emergency Room or A & D staff took away from the efficiency of the night work.

(b) EVALUATIONS: The problem was evaluated by the Hospital Commander and various physicians. It was decided that a separate room, close to the Emergency Room was needed to provide the SOD with a private place to rest between cases and during his long hours on call.

(c) RECOMMENDATIONS: A small but comfortable room was constructed between the Emergency Room and X-Ray, making it possible for the SOD to see patients immediately upon their arrival. All personnel on duty are now able to perform their direct duties, and thus increase the efficiency of patient care in the Emergency Room.
c. **Training:**

(1) **Post Operative Pulmonary Complications:**

(e) **Observations:** To reduce the number of post-operative pulmonary complications associated with trauma and surgery, intensive inhalation therapy is frequently indicated. Many surgeons routinely request inhalation therapy for their patients following abdominal and thoracic procedures.

(b) **Evaluations:** An inhalation therapy section, under the direction of the Chief of Anesthesiology has been established at the 24th Evacuation Hospital. The section was initially run by two partially civilian trained therapists. Because there is no MOS for these specialists, it became apparent that DZROS replacements would have to come from local resources.

(c) **Recommendations:** An inhalation therapy training program has been established at the 24th Evacuation Hospital. The course consists of 4 weeks of intensive training in the utilization and proper maintenance of inhalation therapy equipment. To date, seven medical corpsmen, of which five were from other hospitals, have completed the course and are now working as inhalation therapists. It is felt that these skilled corpsmen will not only significantly improve patient care, but will improve the care and maintenance of this highly technical equipment. This training program is offered to any hospital desiring to train inhalation therapists.

d. **Intelligence:** None

e. **Logistics:** None

f. **Organization:** None

g. **Other:** None

\[ ROBERT G. STANK \]
Organizational Structure

ROBERT G. STANK
LTC, MC
Commanding
Subject: Operational Report of 24th Evacuation Hospital for Period Ending 31 October 1968, RCS CAMFU-50 (R1)

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

13 November 1968

TO: Commanding General, 66th Medical Group, APO 96491

1. The contents of this report have been reviewed.

2. The following comments concerning section two of the report are submitted:

   a. Reference paragraph 2b (1), (2), (3), (4), (5) and (6). These recommendations concern technical professional matters and should be considered by appropriate consultants.

   b. Reference paragraph 2b (7). The planning and construction of waterborne latrines has been a significant problem at the 24th Evacuation Hospital. However, this problem is inappropriate for inclusion in an ORR. The deficiencies noted were the result of faulty initial planning and design, and the recommendations are not necessarily applicable to other hospitals. Planning and design of construction projects must be tailored to the mission, capabilities and physical plant of the individual hospital, and requirements will vary.

   c. Reference paragraph 2b (8). Concur. Although this is an accepted policy in hospitals where personnel reside some distance from the facility as in COMUS, it has not been implemented in most hospitals in Vietnam because personnel reside in the hospital area. This recommendation when implemented will save valuable time and insure immediate medical attention to the patient.

   d. Reference paragraph 2c (1). Concur. Information concerning the availability of this course will be disseminated to other group hospitals.

Signed: Maj. Heune, 24th Evacuation Hospital

Richard B. Austin, III
Colonel, Medical Corps
Commanding
SUBJECT: Operational Report—Lessons Learned for Quarterly Period Ending
31 October 1968 (RCS USFOR-65)(HL)(24th Evacuation Hospital)

DA, Headquarters, 41st Medical Brigade, APO 96384 1b Nov 68

TO: Commanding General, United States Army Vietnam, ATTN: AVHUC-DST,
APO 96375

1. The contents of the basic report and first indorsement have been reviewed.

2. The following comments pertaining to observations, evaluations and
recommendations in Section 2 of the basic report are submitted:

a. Reference paragraph 2b(1), (2), (3), (4), (5), and (6). These
items concern technical professional matters and should be evaluated by
consultants to the USARV Surgeon and The Surgeon General.

b. Reference paragraph 2b(7). Concur with paragraph 2b, first
indorsement.

c. Reference paragraph 2b(8). Concur. Although this action will
provide assistance to this unit, publication as a lesson learned of
general interest is not indicated.

d. Reference paragraph 2c(1). This item concerns a professional
matter and should be evaluated by consultants to the USARV Surgeon and The
Surgeon General.

FOR THE COMMANDER:

TEL: LBh 2909/2494

Cy Turn:
CO, 68th Med Gp
CO, 24th Evac Hosp

ROBERT D. PILLSBURY
Colonel, MC
Deputy Commander
TO: Commander in Chief, United States Army, Pacific, ATTN: GPOP-DT, APO 96558

1. This headquarters has reviewed the Operational Report-Lessons Learned for the quarterly period ending 31 October 1968 from Headquarters, 24th Evacuation Hospital.

2. Comments follow:

   a. Reference item concerning Pre-Operative Preparation of Surgical Patients, paragraph 2b(1); and 2d Indorsement, paragraph 2a: Concur. This practice, or a variation producing the same result, is being accomplished in appropriate medical treatment facilities within the command.

   b. Reference item concerning Fresh Whole Blood, paragraph 2b(2), and 2d Indorsement, paragraph 2a: Concur. These procedures are constantly monitored by the USARV Surgeon's consultants on liaison visits for the purpose of better patient management.

   c. Reference item concerning Surgical Infections, paragraph 2b(3), and 2d Indorsement, paragraph 2a: Concur. This information will be disseminated by the Surgical Consultant.

   d. Reference item concerning Crossmatch Procedures, paragraph 2b(5); and 2d Indorsement, paragraph 2a: Concur. However, the practice of using low titer type O blood is common in all hospitals, particularly in emergent cases or mass casualty situations. Many patients are not retained in-country long enough to perform "Back Typing." Information as to the use of type O should be clearly noted in clinical records so that "Front" and/or "Back Typing" may be performed at the next echelon of treatment. This information will be disseminated.

   e. Reference item concerning RTV Silicone 382 Project, paragraph 2b(6); and 2d Indorsement, paragraph 2a: Concur. This research project will continue to be monitored by the USARV Surgical Consultant.
AVHGC-DST (3 Nov 68) 3d Ind

SUBJECT: Operational Report of the 24th Evacuation Hospital for Period Ending 31 October 1968, RCS CSFOR-65 (R1)

f. Reference item concerning Post Operative Pulmonary Complications, paragraph 2c(1); and 2d Indorsement, paragraph 2d: Concur. However, this requirement only exists at the 24th Evacuation Hospital and the 93d Evacuation Hospital.

FOR THE COMMANDER:

Cy furn:
HQ 44th Med Bde
HQ 24th Evac Hosp

A.R. GUENTHER
CPT. AGC
ASST. ADJUTANT GENERAL
SUBJECT: Operational Report of HQ, 24th Evac Hosp (SMRL) for Period Ending 31 October 1968, RCS CSFOR-65 (R)

HQ, US Army, Pacific, APO San Francisco 96558

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

This headquarters has evaluated subject report and forwarding indorsements and concurs in the report as indorsed.

FOR THE COMMANDER IN CHIEF:

[Signature]

C. L. Short

CT AG

AM AG
OPERATIONAL REPORT - LESSONS LEARNED, HQ, 24TH EVACUATION HOSPITAL (SEMIMOBILE)

EXPERIENCES OF UNIT ENGAGED IN COUNTERINSURGENCY OPERATIONS, AUG - 31 OCT 1968

CO, 24th Evacuation Hospital (Semimobile)

Report Date: 1 November 1968

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