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1. PURPOSE: To provide information of interest and assistance to medical services of the US Armed Forces in RVN.

2. GENERAL: This headquarters does not necessarily endorse the professional views or opinions that may be expressed in this pamphlet apart from official notices. The contents of this pamphlet are not directive in force.

(AVHSU)

FOR THE COMMANDER:

GEORGE L. MABRY, JR.
Major General, US Army
Chief of Staff

JOHN A. O'BRIEN
Colonel, AGC
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FOREWORD

This is the second special issue of the USARV Medical Bulletin intended to serve as a compendium of data and references for the medical problems encountered in Vietnam.

LTC Ralph Wells, during his tenure as USARV Medical Consultant, compiled and produced a source book which appeared with some modification as the Jan - Feb 1969 USARV Medical Bulletin. The version now offered includes the further editorial modifications of LTC Andre J. Ognibene, USARV Medical Consultant during 1969.

It is hoped that this will serve as an introduction and as a ready reference for all medical officers arriving in country and facing the practice of medicine in a tropical combat zone.

INTRODUCTION

A number of questions regarding disease trends and basic medical policies have been raised by physicians newly arrived in-country. The purpose of this publication is to provide a concise, up-to-date background on those diseases which are of military importance or of particular medical interest. Secondly, it is designed to provide a ready reference to pertinent USARV Regulations and policy letters, TB Meds and selected articles in the current medical literature. Thirdly, it is designed as a guide book for those entering the practice of internal medicine in Vietnam. Knowledge of these standard operating procedures is necessitated by the need for maintaining continuity of care as the patient progresses through evacuation channels. Familiarity with the variety of illness seen here will also facilitate therapy at a local level and obviate the need in many cases, for multiple consultations and subsequent loss of duty time.

INTERNAL MEDICINE SOURCE BOOK

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MALARIA

Militarily, malaria has been the most important disease in Vietnam, accounting for the greatest number of man days lost and some of the most difficult diagnostic and therapeutic problems. This status was firmly established in 1965 when chloroquine-resistant strains of falciparum were first encountered. Its current distribution to some extent parallels the distribution of NVA troops. Vivax malaria is also widely distributed throughout South Vietnam. Despite the fact that chloroquine resistance has not been demonstrated in vivax malaria, it continues to account for 30 percent of the malaria cases reported each month. Mixed vivax and falciparum infections constitute 6 to 8 per cent of cases reported, and occasional cases of quartan malaria (P. malariae) have been seen. Details of the clinical picture and diagnostic methods are covered in the references cited. Of particular importance is proper timing of the malaria smear and correct preparation of thick and thin smears. Smears should be obtained every six hours regardless of the temperature curve, and carefully scanned for positive identification before initiating therapy. A single malaria smear will not establish the diagnosis in most cases. Extended evaluation of a febrile patient should be performed in a hospital where treatment will be performed. In severe cases (complicated falciparum) when evacuation to these installations cannot be expedited, and the diagnosis is established, initial therapy may be instituted at any installation. USARV Regulation 40-33 spells out in detail the treatment programs to be used once the diagnosis is established. Malaria due to P. vivax and P. malariae are to be treated with a standard three day course of chloroquine, 1 gm STAT then 500 mg in six hours, followed by 500 mg daily on day two and three, and a 14 day course of 15 mg of primaquine (base). A single chloroquine-primaquine tablet can abort the symptoms of vivax malaria but is not curative. A full eight week course of weekly chloroquine-primaquine is normally curative and is used on return to CONUS. Malaria due to P. falciparum is treated with a triple drug regimen consisting of quinine 650 mg q8h for 10 days, pyrimethamine (Daraprim) 25 mg bid for three days and dapsone (DDS) 25 mg for 28 days. Dapsone is not used in leukopenic individuals and careful follow-up of the white blood cell count (WBC) is recommended during therapy. Gantrisin is used if dapsone is not chosen (dose below). Chloroquine-primaquine prophylaxis should be resumed as soon as possible after the first week of therapy.

Treatment failures (relapses or recrudescence) on the initial triple drug program will be retreated with quinine and pyrimethamine, but with a five day course of sulfisoxazole 500 mg q6h for five days, substituted for

dapsone. This is the program used in the patient with leukopenia or allergy to dapsone or for any reason for which dapsone cannot be used. For further relapse retreatment using intravenous quinine should be considered for the full course of therapy.

In the face of double or triple infection, therapy should be first directed at the falciparum infection, although it may subsequently be necessary to use a course of chloroquine to prevent vivax breakthrough. Primaquine therapy should be delayed until the course of therapy for falciparum malaria is completed. Intravenous quinine should also be used in critically ill patients but should be administered slowly with careful monitoring of the cardiovascular status. Conversion to oral therapy is at the discretion of the treating physician. Likewise, great caution must be exercised in administering quinine to the oliguric patient. In patients with renal insufficiency the 24 hour dose should not exceed 600 mg.

Several special problem areas are worth mentioning. In 1967, there were eight deaths due to cerebral malaria; in 1968 there were six; in the first nine months of 1969 there were two deaths. It manifests as marked disorientation, delirium and coma. Aggregated parasite clumps are found at post mortem in small cerebral vessels. Intravenous quinine is life saving but must be given slowly (600 mg in 500 cc 5% D/W over eight hours). Dexamethasone eight mg intravenously and four to eight mg q6h is effective in the management of cerebral edema. Addition of heparinization is recommended in view of the frequent association of consumptive coagulopathy.

All patients require careful fluid intake and output charting. Urine color, mental status and parasite count should be noted. Hemoglobinuria predisposes to the development of renal failure. Hemolysis may also occur related to quinine therapy in the presence of a positive direct Coomb's test. The development of oliguria requires therapy with mannitol (20 gm, 20% sol). The use of Edecrin or Lasix should be considered early. Renal failure may require communication with the renal unit, 3d Field Hospital (923-2341).

Pulmonary involvement is rare (3%), but the onset of severe pulmonary edema in the hospital setting after treatment has begun, has been noted. A low central venous pressure, adequate circulatory system and urine output are generally present. Cardiac decompensation is not part of the syndrome. Oxygen saturations are quite low and therapy is directed at oxygenation and relief of pulmonary congestion. The role of histamine, kinins or immune phenomena have not been adequately explored. Therapy with large doses of corticosteriods should be attempted.

Disseminated intravascular coagulation occurs in those seriously ill with falciparum malaria. Thrombopenia, abnormal PTT tests and ethanol gelation are noted. When this syndrome is suspected heparin 0.5mg/kg IV q8h is indicated. Heparin is efficacious in the treatment of all severe cases of falciparum malaria. It has a direct effect on parasitemia and is directly effective against the basic pathologic change of small vessel occlusion.

The development of methemoglobinemia in primaquine or dapsone treated patients has been observed, but generally poses no special problem and is generally not a basis for profiling or evacuation.

The persistence of a syndrome of lethargy and hypotension in a number of patients with falciparum malaria and the association of anemia with slow resolution requires reconditioning of these individuals before returning to duty and most will be referred to the 6th Convalescent Center at Cam Ranh Bay after control of symptoms. Transfer cannot be effected until the patient has been afebrile for at least two days. Patients with vivax malaria generally can be returned directly to duty to complete their course of therapy. The requirement to remain hospitalized to complete this course is waived.

Individuals who have had splenectomy are capable of assignment in low risk areas for falciparum malaria. When the latter have developed malaria it has not been unusually severe and has responded well to conventional therapy. G6PD deficiency is now known to occur in over 100 million people. In its partial form it generally constitutes no problem. However, patients with severe hemolytic episodes are generally evacuated from Vietnam. The finding of G6PD deficiency per se does not require profiling or reassignment. The majority of patients will be handled in accordance with USARV Reg 40-4.

> "Plain chloroquine tablets may be substituted for chloroquine-primaquine tablets when it is determined by a physician that an individual is unable to tolerate chloroquine-primaquine because of undesirable side effects. In each case, the physician will annotate the individual's health record detailing medical reasons for the exception to this regulation. One chloroquine tablet will be taken each week by individuals authorized to do so by a physician and for eight weeks after departure. Each individual, who has taken plain chloroquine, will be given primaquine therapy, one tablet daily for 14 days upon departure.

This will be waivered by a physician if it is determined that the individual may have harmful side effects from primaquine" (in that dose).

Despite the emphasis on details of therapy, in this discussion it cannot be stressed too emphatically that malaria, expecially vivax malaria, indicates that malaria discipline is not being adequately enforced. The physician plays a critical role in advising the commander on the need for and the specific principles of adequate malaria prophylaxis. The use of the urine test for chloroquine in selected units has been of assistance in obtaining compliance with recommended prophylaxis. The appearance of agranulocytosis due to dapsone has resulted in a marked modification of the requirement for this drug in prophylaxis. USARV Reg 40-4 was modified to waive the requirement for dapsone prophylaxis in Vietnam except under conditions where combat operations must be carried out in known or suspected hyperendemic falciparum malaria areas authority is granted commanders of divisions, separate brigades and similar combat and combat support elements, upon advice of the command surgeon, to institute and/or maintain dapsone chemoprophylaxis. Dapsone (DDS) as an anti-malarial chemoprophylactic drug is indicated when potential exposure of US military personnel will result in unacceptable combat manpower losses due to P. falciparum malaria. Over 20/1000/year, per major unit, may be considered unacceptable.

References:

TB Med 164, Malaria, July 1967.
USARV Reg No 40-33, 15 Mar 1968, Change 1, 10 Apr 1969.
USARV Reg No 40-4, Change 1, 20 Oct 1969.
44th Med Bde Message Unclas AVHSU-M 45490, 5 Jul 1967.
Sheehy, T. W., Complications of Falciparum Malaria and Their Treatment, Ann. Int. Med. 66:807, 1967.
Sheehy, T. W., Treatment of Chloroquine Resistant Plasmodium Falciparum Infection in Vietnam, Ann. Int. Med. 66:616, 1967.
Blount, R. E., et al, Management of Chloroquine - Resistant Falciparum Malaria, Arch. Int. Med. 119:557, Jun 1967.
Conrad, M., et al, Coomb's Positive Hemolytic Disease in Malaria, Ann. Int. Med. 68:32, 1968.
Brooks, M. H., et al, Acute Pulmonary Edema in Falciparum Malaria, New England Journal of Medicine, 279:14, 3 Oct 1968.
Response to Steroids in Pulmonary Involvement in Falciparum Malaria by Newman and Hall in the Sep - Oct 1969 USARV Medical Bulletin.
Preventive Medicine Symposium, July - Aug 1969 USARV Medical Bulletin.

References:

Panel on Malaria, Ann. Intern Med. 70:127-154, Jan 1969.
Malloy, J. P., et al. Pathophysiology of Acute Falciparum Malaria, II. Fluid Compartmentalization, Am. J. Med. 43:745, 1967.
Dukes, D. C., et al. Oliguric Renal Failure in Blackwater Fever, Am. J. Med. 45:899, 1968.

NOTES:

HEPATITIS

This disease ranks next to malaria as a cause of noneffectiveness due to hospitalization for disease in this command. The average length of stay at the 6th Convalescent Center had been approximately 20 days. Clear cut epidemiologic patterns have evolved in only a few instances, the most consistent patterns stemming from consumption of non potable water and ice. The basic diagnostic and therapeutic principles are as outlined in most textbooks and TB Med 206. The backbone of treatment has been adequate diet and rest. Studies at the 6th Convalescent Center have strengthened Chalmer's report that bed rest is not essential in patients who have become asymptomatic. Generally these patients may have mess hall privileges and are permitted early ambulation. Isolation beyond hand washing is not enforced. The management of the patient requires that the prothrombin time be carefully scrutinized to separate early the severe patient likely to develop a stormy course. This patient should be held in an evacuation hospital until stable. Further, the differentiation from amebiasis or hemolytic disease is mandatory. Jaundice is not synonomous with hepatitis.

Gamma globulin prophylaxis is no longer used routinely but is prescribed in accordance with DA Circular 40-45. Special Forces personnel are presently the only troops in USARV authorized routine gamma globulin administrations. They receive two 5.0 ml injections, the first 30 days after arrival in RVN and the second five months after the first. Gamma globulin can continue to be used for the control of localized outbreaks of hepatitis and also may be used in individuals subjected to intimate exposure to known cases.

The incidence of serum hepatitis in RVN is unknown. Casualties requiring multiple transfusions have been evacuated out-of-country as soon as stable, and to date there has been no feed back from offshore hospitals indicating any significant problem. Gamma globulin has not been given routinely to patients receiving multiple transfusions.

NOTES:

References:

TB Med 206, Viral Hepatitis, 13 Mar 61.
DA Circular 40-45, 22 Mar 68.
USARV Reg 40-7, Change 1, 21 Jun 67.
Doff, R. S. and Isselbacher, K. J., Changing Concepts in the Epidemiology of Viral Hepatitis, NEJM, 278:1371, 1968.
Treatment of Acute Infectious Hepatitis, Chalmers et al, Journal of Clinical Investigation, 1955.
Bulletin of the New York Academy of Science, Symposium on Hepatitis in the Tropics, 1969.
Hillis, W. D., Viral Hepatitis, Military Medicine, 133:343, 1968.

NOTES:

DIARRHEAL DISEASE

Diarrheal disease is of major military importance because of the alarming speed with which epidemics may occur and because of the severe debilitating effects on the individual. In the majority of patients with diarrhea, no specific etiologic agent can be identified. Evaluation of these patients should include stool culture, microscopic examination of fresh fecal material, prostoscopic examination and, where applicable, rectal biopsy. Treatment usually includes bowel rest and the use of codeine or Lomotil for symptomatic relief. Parenteral fluids may be required. If diarrhea persists after 48 hours of symptomatic therapy, one of the diseases listed below is usually responsible. Antibiotic therapy is unnecessary outside the hospital for diarrheal disease.

1. Shigellosis:

Although shigellosis may occur in both epidemic and sporadic fashion throughout the year, the months of highest incidence are April, May and June. Patients usually present with fever, headache, nausea, and vomiting in addition to the usual severe abdominal cramping pain and diarrhea. Tenesmus is often prominent. Stools are watery green but may be grossly bloody. Protoscopic examination shows generalized acute inflammatory change with or without petechiae involving both the rectum and sigmoid colon. Extremely severe disease may mimic chronic ulcerative colitis in all respects. Protoscopic and radiographic findings revert to normal in 4 - 6 weeks.

Shigellosis is usually a self-limited disease, therefore, there is no absolute requirement for antibiotic therapy. Antibiotics may shorten the course and eliminate the convalescent carrier state, although in Salmonella enteritis, antibiotics are known to produce a carrier state. In addition, antibiotics definitely favor development of resistant strains. Appropriate antibiotic therapy can only be determined by the results of stool culture with sensitivities. In general, acceptable results have been obtained with ampicillin, neomycin or tetracycline.

References:

TB Med 119, Shigellosis, 2 Sep 64.
Heggers, J. P. and Smith, C. D., Sensitivity of Shigellae to Various Antibiotics, USARV Medical Bulletin, May - June 67, p 53.
Stone, G. D., Shigellosis in Saigon, Vietnam, USARV Medical Bulletin, Jan - Feb 68, p 57.
Aserkoff, B. and Bennett, J. V., Effect of Antibiotic Therapy in Acute Salmonellosis on the Fecal Excretion of Salmonella, 18 Sep 69, NEJM.

2. Amebiasis:

The most difficult problem faced in amebiasis is that of accurate diagnosis. Of key importance is the distinction between phagocytes engulfing red cells, as seen in shigellosis, and the classic motile trophozoite of endamoeba histolytica. The diagnosis may be further obscured by the frequency with which antibiotics are dispensed or are purchased on the local economy. Antibiotics no longer have a major place in the management of intestinal amebiasis. The spectrum of clinical syndromes varies from the totally asymptomatic cyst passer to fuliminant amebic colitis or extraintestinal amebiasis, i.e., acute amebic hepatitis or amebic liver abscess. A useful clinical feature has been bloody diarrhea in a relatively well individual. Facilities for liver scan are not available in Vietnam and when this study is required patients must be evacuated specifically to USAH Camp Zama. Persistence at diagnostic examination to includesigmoidoscopy, aspiration of mucous and roentgenographic study, when required, is essential.

Recent experience indicates that Flagyl, three tablets thrice daily for five days, is effective in intestinal disease. In hepatic disease a single dose of 2.5 grams initially is used. Therapy for the intestinal phase as noted above must follow. A triple drug program of chloroquine, 300 mg base twice daily for two days and then 300 mg daily for 12 days, tetracycline 250 mg four times daily concurrently and Diodoquin 650 mg thrice daily for 20 days had been a basic standard for moderate enteric disease and mild hepatic dysfunction. For severe intestinal or hepatic disease where oral medication cannot be used, emetine hydrochloride is advisable in one mg/Kg dose (up to 65 mg) total daily, until the patient can tolerate Flagyl. Emetine must be administered in a hospital, where monitoring of cardiovascular status can be accomplished. For relapse of intestinal amebiasis, retreatment is efficacious in ensuring overall cure. For review of results of liver scan in amebiasis in Vietnam, the reader is referred to USARV Medical Bulletin, May - June 1969.

References:

TB Med 159, Amebiasis, 21 May 59.
The Indian Practitioner, Volume XXI No. 10, October 68.
Levin, R., Amebic Liver Abscess, May - June 1969, USARV Medical Bulletin.
Carlin, A. and Martin, R., Flagyl in Amebiasis, Mar - Apr 1970, USARV Medical Bulletin.

3. Nonspecific Gastroenteritis:

As implied by the designation, no specific etiologic factor is identified in this group of diarrheal diseases. The role of pathogenic E. coli and various viruses is speculative. Twenty percent of stool cultures of soldiers evacuated to Japan uncovered pathogenic E. coli. These patients were not symptomatic.

Failure to respond to symptomatic therapy within 48 hours should result in moreaggressiveefforts to establish a specific cause. Of particular importance is the recognition of a cluster of cases which may indicate a break in mess sanitation in a given unit and call for prompt remedial action. The use of antispasmodics and bowel rest is usually effective. The use of cholestyramine remains investigational. Proctoscopic examination and obtaining of a direct rectal swab for amoebae is required. Direct stool culture taken simultaneously and immediately processed will enhance diagnostic yield.

4. Tropical Sprue:

This disease has been of unique military interest since WW II. The clinical picture was well defined by Steffanini based on a study of Italian POW's confined in India. Subsequently the United States Army has been keenly interested in the subject. The precise etiology remains obscure although an infectious basis is strongly suspected. Studies have shown that Special Forces troops are at a particularly high risk although sporadic cases have occurred throughout the command. Cases comparable in severity to those seen in WW II are seen infrequently, due perhaps to the widespread use of tetracycline. The onset is insidious and frequently the patient seeks medical care because of a severe superimposed bacterial or viral diarrhea that just does not stop. The hallmarks of steatorrhea with greasy, foaming, malodorous stool is not reported. Not infrequently the patient may appear depressed with multiple visits to various physicians who treat him symptomatically without avail. Weight loss has been the most consistent finding and at times the only finding. Other parasites to be considered in patients with malabsorption include Geardla lamblia, Trichuris trichuria and Strongyloidis stercarales. Two patients were found to have clinorchiasis and eosinophilia on evaluation of malabsorption. Facilities for performing d-xylose studies are available in-country. The definitive diagnosis rests on small bowel biopsy. Therapy consists of folic acid, five mg, three times a day indefinitely and tetracycline, 250 mg, four times a day for two to four weeks.

Vitamin B_{12} may be required in selected cases. At the present time tropical sprue does not preclude an individual from assignment to Vietnam. The therapy outlined above must be maintained. Long term antibiotic therapy is under study.

References:

Stefanini, M., Clinical Features and Pathogenesis of Tropical Sprue, Medicine, 27:379, 1948.
Sheehy, T. W., et al, Tropical Sprue in North Americans, JAMA, 194:1069, 1965.
Lindenbaum, V., et al, Malabsorption and Jejunitis in American Peace Corps Volunteers in Pakistan, Ann. Int. Med., 65:1201, 1966.
Klipstein, F. A., Tropical Sprue, Gastroenterology, 54:275, 1968.
French, A. B., Tropical Sprue - Specific Disease or Extreme of a Spectrum, Ann. Int. Med., 68:1362, 1968.

5. Trematode Infections:

Human schistosomiasis has not been demonstrated in South Vietnam. This is fortunate because, if it were present, operation in watery terrain would be seriously endangered. S. mansoni has been found in Americans but it has not been contracted in Vietnam.

Other tissue-flukes do occur in Vietnam. The liver-fluke, Clonorchis sinensis, and the lung-fluke, Paragonimus westermani, are present. They are transmitted to man by ingesting the encysted larvae in uncooked fresh water fish and crustaceans. The intestinal fluke, Fasciolopsis buski, also occurs and is contracted by eating raw aquatic plants, such as the water chestnut.

6. Filariasis:

Filariasis due to the tissue roundworms, Wuchereria Bancrofti and W. malayi, is endemic in some localities. The disease is transmitted when a mosquito bites an infected infividual who is circulating microfilariae in his blood. The microfilaria must undergo about two weeks maturation in the mosquito before it can be transmitted to man when the infected mosquito bites again. The initial presentation with recurring fever and lymphadenitis can be quite confusing, and diagnosis by demonstrating microfilariae in the peripheral blood may not be possible until

a year and a half after the infection is acquired. Retrograde lymphangitis is a clinical clue to the presence of infection. This disease could be seen among soldiers after return from Vietnam. There are a number of mosquito vectors (Culex, Aedes and Anopheles species) and primary prevention obviously centers upon not being bitten by these.

Reference:

TB Med 142, Filarial Infections of Man, 1962.

7. Cholera:

Cholera is a threat to the indigenous population but has not involved any US military personnel to date. Therapy consists of adequate parenteral fluid replacement and oral tetracycline. Introduction of the latter has dramatically reduced the morbidity and the requirement for parenteral fluid.

Reference:

TB Med 138, Cholera, 12 May 67.
Carpenter, C. C. J., et al, Clinical Studies in Asiatic Cholera I - VI, Bull Hopkins Hospital, 118:165, 1966.

8. Typhoid Fever:

Typhoid fever occurs in US troops in Vietnam. There were eight cases in 1969. Chloramphenicol remains a specific drug for treatment of the acute infectious process. Relapse is high even with two weeks of therapy. Intestinal perforation remains a most serious complication. Surgical intervention has been necessary. Attention to fluid balance is mandatory. Ampicillin has been effective in carrier states although cholecystectomy may be required.

Reference:

Management of Typhoid Fever and its Complication, Woodward, T. E., and Smadel, J. E., Annals of Internal Medicine, Volume 60 No. 1, 1964.

Venereal diseases have assumed new importance in Vietnam due to the poor response of gonococcal infections to the regimen outlined in TB Med 230, 1965. The situation is further complicated by the prevalence of other infections such as chancroid and lymphogranuloma venereum. Mixed infections are frequently encountered. Fortunately, syphilis is infrequent. Reasons for the poor response of Neisseria infections to conventional doses of penicillin remains obscure. The presence of true penicillin resistance still has not been demonstrated, however relative resistance is common. The basic TB Med remains an excellent outline for the diagnosis of all venereal infections.

Specific treatment programs have been implemented for use in-country. For acute gonococcal urethritis 2.4 million units aqueous procaine penicillin I. M. plus a priming dose of probenecid 1.0 gm, orally, followed by 0.5 gm probenecid 6 and 12 hours later. Treatment failures should be given 4.8 million units procaine penicillin I. M. in conjunction with the same dose schedule of probenecid. Individuals allergic to penicillin may be given tetracycline according to one of two schedules. Two doses of 2500 mg (10-250 mg tablets) given 12 hours apart has proven effective. Reactions are minimal and consist of transient nausea, light headedness, and occasional vomiting.

An alternate form of tetracycline therapy is a 1.5 gm priming dose followed by 0.5 gm every six hours for four days. The total dose is 8.5 gm. Because many patients cannot be relied upon to continue several days of treatment, this schedule should be used only after other methods have proven ineffective. A third alternative schedule that may be considered in penicillin sensitive or treatment failures is five to eight capsules of doxycycline monohydrate (50 mg) as a single dose.

Recent studies at 9th Medical Laboratory demonstrated that 50 of 100 bar girls at Vung Tau harbored N. gonorrhea. Sensitivity studies on these organisms showed that high dose penicillin remains effective. Cephalin resistance was noted. Chloramphenicol was ineffective. Tetracyclines remained effective.

There is insufficient data to indicate the efficacy of these forms of treatment in the eradication of coincidentally acquired syphilis. All patients treated for gonorrhea should have a serologic test for syphilis (STS) at a minimum of six weeks after treatment, particularly when tetracycline is used. Patients should be advised to report promptly to a physician at the development of any suspicious genital or extragenital lesions. It

must be remembered that dark fields are not positive if treponema are seen. They must be identified as T. pallidum. All "chancres" should be seen and treated at the Dermatology Centers when possible so that confirmation of diagnosis and registry is accomplished.

Chancroid has been encountered with increasing frequency in recent months. It has posed several problems including refractoriness to single drug therapy. Chancroid has a tendency to complicate such procedures as circumcisions or even eradication of venereal warts with podophyllin. In uncircumcised males it is associated with tears of the frenulum. Two independently conducted studies indicate that a combination of sulfisoxazole in a dose of 1.0 gm four times a day for two weeks and tetracycline 0.5 gm four times a day for the same time period is highly effective. This program is effective in therapy of LGV. These patients also require serologic tests for syphilis as indicated earlier and repeat titer for LGV. Retreatment may be required in LGV cases.

There are several important administrative implications of venereal disease. The keynote of the Army's present policy is that it will not be used as the basis for punitive action against an individual. This is spelled out in TB Med 230, paragraph 2(b). Loss of duty time or quarters status is not generally required. Referral of complicated cases should be made to the nearest medical service and generally not to a Urology Service. "Refractory" urethritis patients are generally reinfection, herrela, gleat or non-specific urethritis. One full course of therapy (PCN 2 courses with Benemid and tetracycline or doxycycline, 1 course) should be used before labeling the patient refractory. Therapy through a whole tour without loss duty time is possible, if the patient insists on reinfecting himself. Penile discharge alone should not be used as a reason for relieving an individual from duties. Reinfection should not be considered as a "refractory" case and treatment is the same as for a primary case.

A number of problems have arisen regarding personnel who wish to go on R&R while under treatment for a venereal infection or who develop a venereal infection at the time of DEROS. A policy letter published 10 February 1968, requests that all physicians inform venereal disease patients that they will not be allowed to proceed on R&R until non infectious. It is not required that they be cured. This same letter spells out the follow up policy. Under provisions of USARV Reg 40-13, physicians are authorized to withhold clearance for return to CONUS in an individual with an infectious disease until therapy has rendered the disease non infectious or up to 72 hours. Contact reporting is conducted in accordance with USARV Reg 40-6.

References:

TB Med 230, Treatment and Management of Venereal Disease, 9 Jul 65.
TB Med 243, Interviewer's Aid for VD Contact Reporting, Jun 54.
USARV Message 53283, AVHSU-M, 3 Jun 68.
USARV Letter, Venereal Disease at Offshore R&R Sites, 10 Feb 68.
USARV Reg 40-6, Prevention and Control of Venereal Disease, 15 Mar 68.
USARV Reg 40-13, Medical Clearance, 19 May 68.
Public Health Report, Volume 84, No. 2, Feb 69.

NOTES:

The terms "dengue fever" or "dengue—like disease" have been used for almost a century to describe a syndrome of acute onset characterized by fever, prostration, myalgia, arthralgia, examthema, lymphadenopathy, and leukopenia lasting five to seven days. With the recovery of dengue viruses from patients with hemorrhagic disease in the Philippines and Bangkok, the scope of diseases associated with those viruses has been expanded. This broadened definition has been facilitated by the development of modern virological techniques. These techniques have demonstrated three groups of arthropod borne viruses (arboviruses)-- Group A, B, and C. Classic dengue, which is Group B arbovirus, has been further subdivided into four antigenic types. Chikungunya, which has many clinical syndromes associated, is a group A arbovirus. Detailed descriptions of the clinical picture of dengue and variants are presented in TB Med 272. Generally fever is less than 104°, in contrast to malaria, and frontal headache with ocular pain is prominent. Tender adenopathy is a frequent presenting complaint. Leukopenia is the rule. Therapy of uncomplicated dengue is symptomatic. Recovery within five days is expected. In the hemorrhagic syndromes symptomatic therapy must be supplemented with plasma, plasma expanders, and parenteral fluids with correction of both hemoconcentration and metabolic acidosis. The mortality rate in dengue is low, although in children with hemorrhagic syndromes it has varied from five percent to as high as 60 percent. Hemorrhagic syndrome has not been seen in US troops.

Encephalitis has been a problem in May through August in the Long Binh area. In 1968, 25 cases occurred and in 1969, more than 80 cases with one death. HI titers rise equally to Jap B and dengue. Supportive therapy is required. Steroids have been effective in some cases.

References:

Bennet, I. L. and Wagner, R. R., Harrison's "Principles of Internal Medicine", 5th E., Chapter 370, p 1759, McGraw-Hill, New York, 1966.

TB Med 272, Dengue Fever.

World Health Organization, Arboviruses and Human Disease, WHO Chronicle, 21:460, 1967.

SCRUB TYPHUS

This entity has an appeal to physicians not only because of its tongue twisting synonym (tsutsugamushi disease) but also because of the interesting clinical picture which it presents. It has been of particular concern in Vietnam as a possible cause of FUO, as commented on by Deller et al, and also as a concurrent disease in malaria patients (6%). The clinical picture and diagnostic methods are well outlined in TB Med 31. One significant variation is that it is difficult to find the classic eschar at the site of the infected mite bite. Due to perspiration and maceration a crust may never form or may slough, and the "eschar" may consist only of a denuded papule. Fever is generally to 104 and 105°. Backache and muscle pain are prominent. The conjunctiva may be suffused and a blotchy macular torsal rash may be apparent. Prior to the development of generalized tender adenopathy by the fifth day a careful physical examination will reveal local tender inquinal adenopathy early in a large number of cases. Tetracycline is a specific therapeutic agent for scrub typhus and provides prompt control of the disease. A five gram total dose consisting of a loading dose of up to three grams (25 mg per kg) and 0.5 gram every six hours is usually adequate. Both chloramphenicol and tetracycline are rickettsiostatic therefore the suppressive effect may be relatively short lived. Relapses may occur if the disease is treated early, i.e., before immunity develops. Such relapses respond promptly to retreatment and can be prevented by routine retreatment six days from the end of the first course of therapy or delaying initial therapy for 72 hours while under hospital observation.

References:

TB Med 31, Scrub Typhus (Mite-borne Typhus Fever, Tsutsugamushi Disease), 28 Jun 1962.

Deller, J. J. and Russell, P. K., An Analysis of Fever of Undetermined Origin in American Soldiers in Vietnam, Ann. Int. Med., 66:1129, 1967.

Elisberg, B. L., Typhus Fevers, Current Therapy, 1967 (H. F. Conn, ed.), Philadelphia: W. B. Saunders Co., 1967.

MURINE TYPHUS

Murine typhus due to R. typhi (mooseri) and transmitted by bite of infected rat fleas, is similar in presentation to scrub typhus with the exception that the disease is generally milder, no eschar or regional adenopathy is noted. The rash is much less apparent. Treatment is the same as for scrub typhus. Serological studies to confirm the diagnosis is mandatory. This disease is quite common in US troops.

PLAGUE

In contrast to world wide decline in the number of plague cases reported in the last decade, the incidence has shown a steady and alarming increase in Vietnam since 1960. From a few hundred cases in the early 1960's there was an increase to over 8000 cases. Although techniques of reporting have improved, this reflects a real and significant increase. Plague is primarily a problem of the civilian populace but has had a secondary impact on US military operations due to the involvement of CIDG personnel and their dependents, as well as third country nationals. An epidemic in late February and early March 1967 brought port operations at Cam Ranh Bay to a halt for 14 days. In addition to the classic reservoir, two new rodents have been implicated. These are the oriental rat, rattus exulans, and the common house shrew, suncus murinus. The vector continues to be the infected rat flea, Xenopsylla cheopis. Pneumonic plague can, however, be transmitted from man to man through the respiratory tract by means of infected droplets or aerosols.

Bubonic plague is the most frequently encountered, although the spectrum runs the gamut from pneumonic to "asymptomatic" pharyngeal plague. The diagnosis may be established by bubo aspiration. There will be inguinal or axillary adenopathy in the majority of cases. The aspirate should be stained with methylene blue to demonstrate Pasteurella pestis and should also be cultured. Pasteurella pestis appears as a pleomorphic "safety pin" when stained with carbol fuchsin. When available, guinea pig innoculation is also desirable. Diagnostic serologic procedures have been evolved by the WRAIR team in conjunction with the Pasteur Institute in Saigon. Streptomycin remains an effective mode of therapy, although tetracycline and chloramphenicol in doses of 2 - 4 gm per day are equally effective. Again, the ready availability of antibiotics in RVN often obscures the cultural confirmation of the disease.

An intelligent understanding of preventive measures is critical. Environmental sanitation is the biggest problem. The proper sequence of control measures during an epidemic (real or suspected) warrants emphasis. While rodenticides are used routinely, at the time the rat flea index climbs and an epidemic appears imminent, flea control (dusting) should be accomplished first. An increased rodenticide program will kill the rats and drive the fleas to new (human) hosts compounding the problem. The isolation of contacts is of minor importance in bubonic plague but is of major significance in outbreaks of pneumonic plague in order to limit respiratory transmission of disease from man to man.

U. S. personnel are routinely immunized using a vaccine derived from dead P. pestis organisms. Immunization programs for the civilian populace have been implemented in scattered areas of the country. These should not be done without proper clearance and approval of the province medicine chief. The Pasteur Institutes have developed a one dose vaccine using live attenuated organisms. This vaccine must be kept refrigerated, and there is a marked variation in potency between lots. The serological assessment of the latter shows an immune response in as few as 50 percent in some studies.

References:

TB Med 124, Plague, 13 May 60.
Hunter, D. W. and Dangerfield, H. A., Plague in Vietnam, USARV Medical Bulletin, Jan - Feb 1967, p 34.
Marshall, J. D., et al Ecology of Plague in Vietnam, Military Medicine, 132:896, 1967.
Courad, F. G., et al A Recent Epidemic of Plague in Vietnam, Arch. Int. Med., 122:193, 1968.

NOTES:

LEPTOSPIROSIS

In Southeast Asia leptospirosis is a relatively mild disease. Smith and Metzger have reported serological differences between those cases seen in RVN and those seen in CONUS. The disease is characterized by prominant headache, myalgia, and some degree of photophobia and is generally self-limited. The most prominent signs are conjunctival suffusion and hepatic tenderness. Leptospiral pneumonia has been seen. Weil's disease is infrequently seen, although a few patients with both hepatic and renal involvement associated with severe oliguria were hospitalized during 1969. Although a spontaneous and brisk diuresis occurred in some patients a requirement for either hemo - or peritoneal dialysis does occur. Isolation of the causative agent is not practical under field conditions so the diagnosis must be established by a rise in antibody titre of paired (acute and convalescent) sera. Identification in the urine has been possible. Innoculation of guinea pigs can be performed at the 9th Medical Laboratory. Treatment is symptomatic. Penicillin and tetracycline therapy has been used but the precise relation of this drug to clinical improvement is hard to assess.

References:

Smith, C. W. and Metzger, J. F., Leptospirosis, A Serological Study of RVN Patients, Geographic Pathology Division, AFIP, Washington, D. C. and 406th Medical Laboratory, US Army Medical Command, Japan.

Allen, G. L. and Weber, D. R., Leptospirosis in South Vietnam, USARV Medical Bulletin, Jan - Feb 1967, p 23.

Allen, G. L. et al The Clinical Picture of Leptospirosis in American Soldiers in Vietnam, Military Medicine, 133:275, 1968.

NOTES:

MELIOIDOSIS

Probably no other infectious disease encountered in Vietnam has captured the medical imagination in quite the same fashion as meliodosis. Found throughout RVN, there has been a striking aggregation of cases in the III Corps tactical zone. Preliminary serologic surveys reveal a 5 to 8% positive hemagglutination titre in troops returning from this area to CONUS. Pseudomonas pseudomallei, the etiologic agent, has been isolated from surface water, rivers, and rice paddies. There is also good evidence for soil contamination. Contamination of wounds, abrasions and aspiration all represent likely portals of entry. The clinical spectrum is broad. The most commonly encountered form is an acute pneumonic process although both a fulminant, septicemic form and less dramatic pulmonary forms exist. Typical of the latter are relatively asymptomatic pulmonary infiltrations and a more chronic granulomatous process. A number of patients with normal chest x-ray have been seen. These patients present as FUO. The acute pneumonic and septicemic forms present a picture of high fever, prostration, and shock. This picture may carry a fatal outcome within hours to a few days despite heroic antibiotic therapy. Inapparent infection is noted in surveys of normal population utilizing complement fixation and hemagglutinating antibody. Asymptomatic pulmonary infiltration is a common presentation and may be confused with tuberculosis because of its upper lobe predilection. Therapy with tetracycline alone is efficacious. A definitive bacteriologic diagnosis can be made on isolates from sputum, blood, or pus. Cultures should be held for 72 hours to distinguish from other Pseudomonas strains. Specific antiserum for identification is available. Serologic testing with a four fold rise in serum titer by hemagglutination is a useful adjunct. This test should be requested on all cases of fever of undetermined etiology. The prognosis remains guarded in septicemic forms, with a 90% mortality rate in the acute untreated case and only slightly improved by aggressive antibiotic therapy. There is no concrete evidence that mutiple drugs such as kanamycin, novobiocin, Keflin or Colimycin offer an advantage over tetracycline in doses of three grams a day. Gantrisin and chloramphenicol also show in vitro effectiveness. Most experts indorse an extended period of treatment in subacute and granulomatous cases. Treatment should be continued three to four weeks after clinical response. Relapses may occur and a several month treatment program may be required.

Recent in vitro studies at the NIH confirm the efficacy of tetracycline as the drug of choice in treatment of this disease. Combinations of kanamycin and chloramphenicol are less effective than chloramphenicol used alone. Because of the toxicity of kanamycin in doses required to be effective it is not used in this disease.

Melioidosis centers have been established at Fitzsimmons and Valley Forge General Hospitals for patients who are evacuated from Vietnam. Most patients with melioidosis are returned to duty in country.

References:

Blohm, R. W., Melioidosis, USARV Medical Bulletin, Aug - Sep 1966, p 39.

Conte, N. F., Human Melioidosis, USARV Medical Bulletin, Sep - Oct 1967, p 45.

Krebs, R. A., Diverse Manifestations of Melioidosis, USARV Medical Bulletin, Nov - Dec 1967, p 41.

Copper, E. B., Melioidosis, JAMA 200:452, 1967.

Spotnitz, M., An Analysis of Nine Cases of Benign Melioidosis Pneumonitis, JAMA 202:950, 1967.

TB Med 278, Melioidosis, 29 Oct 1968.

Cooper, E. B., Treatment of Melioidosis, JAMA (Letter to the Editor) 204:176, 1968.

Spotnitz, Treatment of Melioidosis, JAMA (Letter to the Editor) 204:176, 1968.

Consultants Corner, USARV Medical Bulletin, Mar Apr 1969, p 23.

Weber, et al, Acute Varities of Melioidosis Occurring in US Soldiers in Vietnam, Amer. J. of Med., Feb 1969.

NOTES:

RABIES

Whereas in CONUS the number of deaths due to rabies has been reduced to a near minimum and the reservoir has shifted from domestic to wild animals, the dog remains a major problem in Vietnam. Approximately 25% of the dog heads examined by the 9th Medical Laboratory have been positive. Therapy of dog bite in RVN should be based on an acute awareness of this figure. Annex A of USARV Reg 40-15 is reproduced on page 24. USARV Reg 40-15 spells out the details of pet control, reporting of animal bites, and rabies prophylaxis. The question of anti-rabies therapy after rat bites is frequently raised. No positive rats have been found in RVN and the use of rabies vaccine for rat bite is not endorsed. The relatively low frequency of reactions to duck embryo vaccine has made it practical to offer pre-exposure immunization to high risk personnel such as veterinarians, animal handlers, and certain laboratory workers. This is covered in Technical Bulletin 8-21 published 15 October 1967.

References:

USARV Reg 40-15, 1 Sep 67.
DA Technical Bulletin 8-21, p 10, 15 Oct 67.
USARV Medical Bulletin, Sep - Oct 69.

NOTES:

GUIDE FOR POST-EXPOSURE ANTI-RABIES TREATMENT

The following recommendations are intended only as a guide. Every exposure to possible rabies infection must be individually evaluated. It must be borne in mind, however, that rabies is hyperendemic in RVN.

Biting Animal		Treatment		
		Exposure		
Species	Status at Time of Bite	No lesion	Mild*	Severe*
Domestic dog or cat	Healthy	None	None[1]	S[1]
	Signs of rabies	None	V[2]	S&V
	Escaped or unknown	None	V	S&V
Wild animals or bats	Regard as rabid in unprovoked attack	None	S&V	S&V

V = Rabies Vaccine

S = Antirabies Serum

1 = Begin vaccine at first sign of rabies during quarantine period.

2 = Discontinue vaccine if animal is healthy 5 days after exposure, or if brain is negative in animal killed at time of attack. If quarantined animal dies after 5 days and brain is positive, resume treatment.

*Definition of Exposures:

SEVERE: Multiple or deep puncture wounds, and any bites on the head, face, neck, hands or fingers.

MILD: Lacerations or single bites on other areas of body than the head, face, neck, hands or fingers. Open wounds, such as abrasions, which are suspected of being contaminated with saliva also belong in this category.

Pre-exposure immunization - 1 cc duck embryo vaccine subcutaneous 1 month apart, 3d dose 6 months after the 2d dose.

Annex to Appendix IV, USARV Reg 40-15

CLOSTRIDIA

There are three major categories of clostridia related disease: tetanus, gas gangrene, and botulism. The latter has been no problem in RVN, but both tetanus and gas gangrene have been encountered. Adequate immunization has prevented tetanus in US military personnel, but a number of cases have been seen in Vietnamese including several neonates. Meticulous supportive care is the foundation of treatment. Mortality remains high even in the best university centers. Antitoxin is of unquestionable value. Human tetanus immune globulin is preferable, in dosage of 50-150 units per kg of body weight. Equine or bovine antitoxin may be given, in dosage of 300-500 units per kilogram. Higher doses of heterologous serum are not more effective. Excellent results have been achieved by supplementing with muscle relaxants such as methocarbamol (Robaxin). The use of curare and supportive Emerson respirator through adequate tracheostomy is effective when adequately trained personnel are available for management. Active immunization should be initiated concurrently with treatment of the disease, in the event that the infection is not totally eradicated and additional toxin is produced. Convalescence from tetanus may be extremely slow.

"Gas gangrene," a myonecrosis principally caused by clostridium perfringens, should be considered a surgical disease. US personnel are not spared, and sound basic surgical management is the best prevention. Perfringens antitoxin is valueless except as a medico-legal token measure in civilian practice; it was dropped from the Army medical stock list years ago. Penicillin is the systemic antibiotic of choice, in massive doses--20 gm* or more per day. Topical Sulfamylon solution will control local progression and often spare the patient mutilative excision. Hyperbaric oxygen has not been proved to add much to the regimen. If it is readily available (next door) it probably will not hurt, but a critically ill patient is better off under uninterrupted care right where he is. If the patient is not critically ill, he probably does not have true gas gangrene.

*1 gram penicillin = 1.6 million units

NOTES:

TUBERCULOSIS

Tuberculosis remains a major problem among the Vietnamese. Treatment of Vietnamese civilians outside the framework of projects designed by the Ministry of Health and in conjunction with the province chief are to be condemned. These are generally haphazard and self-limited attempts which serve only to develop resistant strains in the population. They provide no follow up or lasting benefit.

Maximum effective utilization must be made of such basic tools as the history, physical examination, skin test and chest film. Bacteriologic study should be restricted to acid fast stain of the sputum. Many tuberculosis suspects are evacuated from country before results of cultures can be made available. The 9th Medical Laboratory has therefore requested that AFB culture requests be kept to a minimum. Therapy will not be initiated in RVN except in circumstances where it is considered lifesaving. Early evacuation of suspected tuberculosis patients is mandatory.

References:

TB Med 236, Tuberculosis.
Sproul, J., Antituberculosis Chemotherapy in Developing Countries; and Approach, USARV Medical Bulletin Sep - Oct 1969.

NOTES:

PARASITIC INFESTATIONS

Parasitic infestations are common in southeast Asia. Careful examination of warm stool specimens in suspect individuals generally results in high yield of positives. Careful attention to rapid processing of stool specimens is required if positives are to be achieved.

Ascariasis is world-wide in distribution and is capable of producing intestinal obstruction and maldigestion. Antepar (150 mg/Kg of hexahydrate equivalent) is effective as a single dose. Fasting or purgation is not required. Mintezol 10 mg/lb twice daily for two to three days is efficacious in combined hookworm and ascariasis infections and is used widely in Vietnam. The clinical picture of hookworm infection includes weakness, fatigue, anemia and epigastric discomfort. Bephenium (Alcopara) is effective in a single five gram dose. In hospitalized patients up to 15 grams can be administered in a single day. Tetrachlorethylene is the historical favorite in therapy of uncomplicated hookworm in a dose of 0.1 cc/Kg of weight up to five cc, but toxicity limits its use. Repeated treatment is generally required.

Strongyloidiasis is responsive to Mintezol 10 mg/lb twice a day for two to three days. It is associated with rather marked eosinophilia. Cutaneous larva migrans responds to oral Mintezol. Local therapy is unnecessary.

References:

TB Med 277, Human Infections Caused by Common Intestinal Worms, 9 Jan 1962.

Spencer, F. M. and Monroe, L. S., The Color Atlas of Intestinal Parasites, Charles C. Thomas, Springfield, IL 1966.

Hunter, Frye and Swartzwalder, A Manual of Tropical Medicine, 4th E., W. B. Saunders, Philadelphia, PA 1966.

NOTES:

IMMUNIZATION

The Army's basic immunization policy is covered in AR 40-562. Specific requirement for RVN are outlined in USARV Reg 40-7 revised 27 June 1968. An individual on duty in RVN will not be evacuated because he is unable to comply with the immunization requirements for this area. This applies particularly to cholera and plague vaccines. The requirement for yellow fever and typhus boosters has been dropped. By and large these individuals should not regularly participate in MILPHAP, MEDCAP or other activities that demand maximum protection against these diseases and are related to maximum contact with the local population. Reassignment within Vietnam is not indicated unless very special circumstances exist.

References:

AR 40-562.
USARV Reg 40-7, Immunization Requirements and Procedures, 27 Jun 68.
USARV Surgeon's Letter, AVHSU-M, Subject: Assignment Limitations and Fitness for Duties in RVN for Individuals with Serious Allergic Reactions or Other Medical Contraindications to Immunizing Agents, 2 Feb 68.
DA Message, OTSG, MEDPS-SX, No. 177050, Subj: Medical Fitness for Service in Vietnam, 032100Z Oct 69.

NOTES:

DERMATOLOGIC PROBLEMS

Several problems that are common but not unique to RVN warrant comment. Trichophyton infections are widespread but are particularly frequent in the Mekong Delta. The causative agent there is largely T. mentagrophytes while in central Vietnam T. Rubrum is encountered with equal frequency. Involvement may be widespread, but is most frequent in the inguinal area, the feet and legs. It presents as reddish lesions, but can produce vesicles on the feet. Sometimes so-called "id", or allergic, reactions in the form of vesicles are found concurrently on the hands. Treatment includes frequent bucket soaks with plain water if there is oozing or secondary infection; griseofulvin-V, 500 mg once or twice daily with meals; erythromycin, 250 mg every six hours for secondary infection; and topical medication such as hydrocortisone-Vioform cream, Desenex, whitfield's ointment, Tinactin solution or cream. The same is applicable for the hands. Resistant cases are being encountered and require persistent, prolonged treatment or evaluation at a dermatology center for addition of steroids if indicated.

Tinea versicolor appears in the caucasian individual as multiple light pink lesions located mainly on the trunk. In the negro the lesions are whitish to silvery in color and pruritic. Treatment is with Selsun and the following directions should be given to the patient.

1. Get in the shower and start working lather in your scalp, neck, chest and arms. Scrub well with small towel.

2. Rinse off.

3. Apply thin film of shampoo at bed time and leave over night.

4. Rinse off in the morning.

5. Do the same procedure once a week for four weeks.

6. There will be white marks left and these will take several months to re-color.

If showers are unavailable, topical Tinactin rubbed into the lesions is simple and acceptable. Verdefam solution applied twice daily is also recommended.

Moniliasis occurs mainly in the inguinal and axillary areas. It is deeply red, has an exudate, and satellite lesions outside the large area of involvement. It is treated with Mycostatin cream, Fungizone lotion, Mycolog cream, hydrocortisone-Vioform cream, or Sporotacin cream or lotion. (CAUTION: An ointment base will lead to further maceration; Tinactin will worsen the eruption; and griseofulvin is contraindicated for this.) Sitzbaths several times daily are also helpful for scrotal involvement, when available. Medication should be applied twice daily and applications can be continued for weeks after clearing has occurred to prevent recurrence.

Pyodermas occur mainly on the lower legs and do not respond favorably to topical antibiotics. Oral broad spectrum antibiotics are required (tetracycline, erthromycin, lincocin). Use of anti-bacterial soap is routinely recommended. Local therapy in the form of pHisoHex scrubs are helpful.

Miliaria rubra (heat rash) presents as multiple red papules on the trunk, arms and thighs and is pruritic. Topical therapy, while not entirely curative, includes hydrocortisone lotion (60 gm hydorcortisone 1% cream (2 oz tube) and 60 cc water), frequent showers and dousing the arms and trunk with water randomly. Vitamin C 500 mg b. i. d. may be beneficial in mild cases and some have found the tetracycline effect on sebum (1 tablet t. i. d.) helpful. A simple effective lotion that can be utilized in addition as a coolant is as follows:

Prickly Heat Lotion

Menthol and Camphor	0.5
Salicylic Acid	4.0
Glycerin	10.0
Alcohol 70%	qs 100.

Pseudofolliculitis barbae presents as multiple small nodules of papules with pustular formation. This is quite common in negroes. Findings are confined to the beard and chin. Soaking the beard area for five minutes before shaving and shaving only in the direction the hair grows is helpful. Depilatory cream or powder such as Magic Shave, Nair, or Surgex (Ciba) is recommended for this. It can be used every two to three days in place of razor shaving, since razor shaving may propagate the eruption. Tetracycline in low dose (250 mg b. i. d.) and topical steroids to reduce inflammatory reactions are useful. Profiles to grow beards are not awarded for this problem or any other dermatologic condition.

"Blisterbug" dermatitis (Paederus family) produces burn-like lesions that can be up to five inches in diameter. Center is gray with vesicles and has a surrounding erythema. It takes two to three weeks to heal. A topical antibiotic-steroid preparation is helpful.

"Moth" dermatitis is produced by elements of the moths egg. Intensely pruritic papules are produced on exposed areas. It is seasonal and epidemic. Topical steroids are helpful.

Acute vulgaris causes much discomfort and pain. Cystic degeneration as well as pustules are encountered on the back, chest, shoulders, face, neck, arms, and even the buttocks and thighs. Tetracycline, starting with four tablets daily and lowering to one daily will often control the disease if given as long term therapy. Its effect is to lower the total sebum content and free fatty acid content of the sebum, rather than functioning as an antibiotic. Topical treatment includes Fostex soap, a lotion containing up to eight percent sulfur, and thorough washing.

Tropical ulcers are caused by a mixed bacterial flora. Treatment consists of frequent compresses, oral antibiotics and hydrocortisone-Vioform cream or bacitracin ointment. Several weeks of treatment are usually necessary, in order that the lesions may reepithelialize.

Contact dermatitis presents with erythema, vesiculation or dry eczematous changes at particular locations. Treatment includes compresses, topical hydrocortisone cream, hydrocortisone-Vioform cream. Oral prednisone (short-term course) may be required if the reaction is severe.

Urticaria is caused primarily by drugs or foods. Various antihistamines should be tried before systemic steroids are employed.

Alopecia areata is not uncommon in our troops. Tension and stress (military personnel) is often elicited in the history. Advice to the patient concerning regrowth of hair, and reassurance are necessary.

Warts are caused by infection with a DNA virus. Treatment of choice depends on the location of the lesions. Plantar warts should be treated weekly by paring down with a #15 blade, and the application of a strip of 40% salicylic acid plaster held in place by tape. An alternate method is the daily application, by the patient, of 20% salicylic acid in collodion (with applicator). Treatment may last several months but will avoid scarring or infection of the soles. These methods can also be used for warts elsewhere on the body. At a dermatology center, certain lesions may be desiccated and curetted, or treated by freezing with liquid oxygen.

Warts are not an emergency skin problem and may wait for definitive care. Exceptions include warts in critical areas (trigger finger) or those causing pain.

Herpes progenitales is characterized by small vesicles on a swollen erythematous base. The lesion is tender and the patient describes burning. It may occur on any part of the penis and lasts two to three weeks. At times there may be secondary infection. It is best treated by cooling soaks using a glass of cold water twice daily followed by application of topical antibiotic.

Condylomata acuminata in the anal region or on the penis should carefully be treated with 25% podophyllin in tincture of benzoin, and washed off by patient in eight hours. (CAUTION: Divide treatment of large encircling lesion) Treat once or twice weekly until lesions have regressed.

Molluscum contagiosum presents as multiple small nodules in areas adjacent to the pubis, and on the penis. They resolve completely after removal with a currette.

Cutaneous larva migrans should be treated with oral Mintezol.

Generally, the preceding skin problems do not need immediate referral to a dermatologist, except in cases of treatment failure. The following problems should be referred to a Dermatology Clinic; psoriasis, vitiligo, dermatitis herpetiformes, and recurrent urticaria.

NOTES:

HEAT INJURY

Heat injuries are a recurring problem despite years of medical and command interest. Adequate acclimatization combined with proper water replacement will prevent most if not all problems. Under some circumstances the tactical situation precludes adequate water supply and heat casualties will occur. The spectrum of clinical syndromes and their management are well outlined in TB Med 175. Every medical officer should thoroughly familiarize himself with its contents. Simple heat cramps and heat exhaustion are the most frequently encountered syndromes. Oral intake of 0.1 percent saline will adequately handle most cases; intravenous administration of normal saline can be used in more severe cases. It is easy to overload people with salt in a hot environment. Salt loading leads to serious potassium depletion associated with weakness, lethargy and cardiac arrhythmia. There may well be a distinct relationship between potassium depletion and heatstroke. Potassium can be added to intravenous fluids if urine output is maintained. The management of true heat stroke is more critical and includes lowering the body temperature, extremely judicious fluid replacement and treatment of associated consumptive coagulopathy. Acute renal failure associated with heat stroke has occurred in recruit populations in CONUS. If encountered in RVN such patients should be promptly evacuated to the Renal Unit, 3d Field Hospital (call 923-2341).

References:

TB Med 175, The Etiology, Prevention, Diagnosis and Treatment of Adverse Effects of Heat, 26 Nov 57.

Schrier, et al, Nephropathy Associated with Heat Stress and Exercise, Ann. Int. Med., 67:356, 1967.

Knockel, J. P., and Vertel, R. M., Salt loading as a Possible Factor in the Production of Potassium Depletion, Rhabdomyolysis and Heat Injury, Lancet I:659, 25 Mar 67.

Boaz, Colonel T., Jr., Some Comments on Water and Salt, Military Medicine, June 69.

NOTES:

SNAKE BITES

The magnitude of the snakebite problem in Vietnam has been overplayed. Nevertheless, correct management of even the occasional bite is crucial. Common poisonous snakes include the cobra, king cobra, bamboo viper, Malayan pit viper and the banded krait. Extremely rare are sea snakes and Russell's viper. As a rough rule of thumb, the most common bites in I Corps are bamboo viper, in the central highlands banded kraits (the vipers and cobras are also found), in III Corps bamboo viper. In the jungle any snake can be found. Viper bites cause severe local pain, swelling and hemorrhage followed by systemic hemorrhagic phenomenon. Bites of cobras and kraits will be followed in minutes by pain and numbness at the site and within a short while signs of neurotoxicity appear. Radical, incisional treatment is not indicated. Transporting a patient with a tourniquet may be hazardous.

Treatment has two goals; reassurance and inactivation of the venom. For this reason Haffkine polyvalent cobra, krait antiserum is available for use at all medical treatment facilities. It must never be used except for krait or cobra bites. It is not to be used unless neurotoxicity is noted (ptosis, glossopharyngeal paralysis). Evacuation to a snakebite center is indicated early. The polyvalent crotalid antivenom made by Wyeth has shown effectiveness against bamboo viper poisoning. Poisoning is a result of a hematoxin causing abnormal clotting and is reversed by antiserum. Cryotherapy does not appear to be effective nor have prednisone, epsilon-amino caproic acid or fibrinogen been helpful in managing the coagulation defect associated with viper bites. Close observation and careful nursing support are essential. Because of the low order of toxicity from viper bites there is time to evacuate the patient to a snakebite center for therapy and stocks of antiserum are kept at these centers.

References:

Travis, L. L., and Blohm, R. W., Snakebite in Vietnam, USARV Medical Bulletin, Mar - Apr 1967, p 14.

Poisonous Snakes in Vietnam, Animal Kingdom, Volume LXIX: 34, 1966.

Reed, A., Snakebites in the Tropics, British Medical Journal, August 1968.

Frazier, C. A., Diagnosis and Treatment of Insect Bites, CIBA Clinical Symposia 20, Jul - Sep 1968.

NOTES:

Three substances have caused serious problems due to their unusual character or frequency. Appropriate preventive measures and troop education have been implemented but it is anticipated occasional cases may still be encountered.

a. Ingestion of Composition C-4 Plastic Explosive. This syndrome was first encountered in early 1968 and presently C-4 intoxication has been one of the most prevalent causes of convulsions in US troops. The primary constituent of C-4 is RDX which is insoluble in water but which undergoes rapid hydrolysis in ethanol and is reduced to its constituents methylamine, nitrous acid, ammonia and formaldehyde. Manifestations include gastrointestinal irritation with nausea, vomiting and abdominal pain. Associated symptoms include hyperirritability, convulsions, coma and transient hematuria, oliguria and hepatic damage. The SGOT is generally always markedly elevated. These all reverse spontaneously although mental confusion and amnesia for events during the acute phase are significant. To date patients have recovered within 10 days to two weeks and have been returned to duty. EEG's have normalized prior to return to duty. Therapy is symptomatic consisting of anti-convulsants, hydration and careful nursing care. Careful attention to renal function is required.

References:

Medical Consultants Report, Jan 1968.
Merrill, J. L., Ingestion of an Explosive Material Composition C-4, USARV Medical Bulletin, Mar - Apr 1968, p 5.
Hollander, A. I. and Colbach, E. M., Composition C-4 Induced Seizures, USARV Medical Bulletin, Mar - Apr 1969.

b. Methyl Alcohol. This syndrome differs in no way from that encountered in CONUS. The usual source is bootleg of adulterated liquor although some clever label forgeries as well as forged tax stamps have made careful detective work essential. Correction of the profound metabolic acidosis pathognomonic of methanol ingestion is the primary therapeutic goal and will invariably require intravenous bicarbonate. Treatment of shock, convulsions and secondary pulmonary problems are all managed in a conventional fashion. Severe pancreatitis is frequently seen.

c. Barbiturate Poisoning. Both accidental and purposeful overdosage of barbiturates have been frequently encountered. Barbiturates are readily available in civilian pharmacies and have been a mainstay in suicide attempts. When drug ingestion is suspected both gastric lavage and administration of a cathartic are indicated. Lavage is contraindicated when a caustic is ingested. In the absence of a gag reflex, lavage should not be attempted in the field. Support of respiration, vasopressors as needed and induced diuresis with mannitol are the most important measures. The use of analeptic agents is controversial. When mannitol is administered and diuresis ensues, sodium replacement is important. Both peritoneal and hemodialysis are of limited value, the former because of poor diffusion, the latter because of the delay before it can be instituted. The prognosis is largely dose-related. It is adversely affected by secondary complications such as aspiration pneumonia.

NOTES:

TRAUMA - EARLY TREATMENT OF WOUNDS AND INJURIES

Although not specifically within the province of a review of the medical specialties certain principles require emphasis for all physicians serving in Vietnam.

Military medical care is provided in echelons. Standardized methods of managing wounds and injuries not only prevent the patient from suffering because of ill-conceived procedures, but also provide successive medical officers with the assurance that previous treatment has been sound. The DOD publication "Emergency War Surgery, NATO Handbook" provides clear guidance on the early treatment of trauma in a military environment. The local ground rules are further spelled out in USARV Reg 40-21 which has been revised on the basis of recent experience in RVN and was published 30 May 1968. Both the NATO Handbook and this regulation should be required reading for all medical officers.

The primary mission of battalion, brigade and division medical units is to provide the majority of patients only with sufficient treatment and resuscitation to permit their safe evacuation to a hospital. Treatment by these medical units should not go beyond the immediate necessities except for those patients whose wounds are minor enough to permit their retention and return to duty from these medical units. Strict adherence to this primary mission is essential if WIA patients are to receive optimal care. (NATO Handbook, Emergency War Surgery, pages 2 and 3). In the prevention of death due to trauma it must be recognized that almost half the death's (KIA) are due to brain wounds.

Most of the wounds to the brain are due to fragments and the steel helmet is capable of deflecting most of these fragments. If penetration does occur, the velocity of the missile has been markedly reduced and thus many more are then stopped by the skull and do not enter the brain. It cannot be stressed too greatly that the wearing of the steel helmet in <u>all</u> situations of combat or attack is of tremendous value towards the preservation of life and brain function, in all individuals, in all circumstances, and without regard to rank or pride.

In the management of the expectant head injured patient early evacuation is not indicated. This type of patient is best described as being deeply comatose, having fixed dilated or fixed constricted pupils, corneal anesthesia, irregular respirations not due to airway obstruction, no reaction to intense painful stimulation or decerebrate or decorticate posturing. This type of patient will receive expectant care at the neurosurgical center as well and emergency transfer is not indicated and in fact is

contraindicated during inclement flying weather or at times of dangerous visibility. If this patient's condition improves over a several hour period and neurosurgical consultation is felt indicated, then transfer should be reconsidered.

References:

Emergency War Surgery, NATO Handbook.
USARV Reg 40-21, Early Treatment of Wounds and Injuries, 30 May 1968.
Current Problems in Surgery, Heaton, et al, November 1966.
CINCPAC Conferences on War Surgery 1967, 1968, 1969.

NOTES:

DUODENAL ULCER

Duodenal ulcer disease has not been a major problem in Vietnam and is in keeping with previous findings that ulcer disease is not enhanced in a war zone. In USARV these patients are expected to perform, eat in mess halls and consume combat rations. Patient food selection advice should be provided by his physician. Unit physicians provide first line support and encouragement. When hospitalization is required it is generally brief and results in return to duty in all cases except for severe bleeding episodes, organic obstruction or perforation.

CARDIAC DISEASE

Patients on anticoagulants cannot be maintained in USARV except in special positions in areas with a dependable laboratory. Cardiac dysrhythmia should not be treated outside of hospitals except under due emergency. Patients in USARV hospitals with myocardial infarction are always evacuated by litter and not prior to 30 days hospitalization. All departments of medicine are required to have monitoring equipment. The 3d Field Hospital has a fully equipped coronary care unit. A transvenous pacemaker is available in USARV.

ALLERGIES AND ASTHMA

In general, patients with allergies are fit for duty in USARV. Individuals undergoing desensitization need only provide their serum to their supporting medical unit and administration will be effected. If the individual has received serum from an Army allergy clinic the patients unit physician may request re-supply through military channels. Primary allergy evaluations are deferred to return to CONUS.

Asthmatics are fit for duty in USARV unless there is a requirement for repeated hospitalization and failure to respond to therapy. Decision for evacuation will be based on the findings of the consulting internist at the supporting hospital in conjunction with documented information provided by the unit physician.

Insect allergy does not preclude Vietnam duty.

LABORATORY SERVICE

Laboratory support in RVN is provided by the 9th Medical Laboratory at Long Binh and four Mobile Laboratories (Phu Bai, Qui Nhon, Nha Trang, Long Binh) plus hospital and dispensary laboratories differ depending upon location, facilities served, requirements, access to other laboratories, TOE, etc.

Availability of service, proper submission of specimens, normal values and other information pertaining to laboratory service may be obtained from the Laboratory Officer and/or Lab NCOIC. Further information may be obtained from SOP's and manuals which are available in the laboratories.

The Department of Infectious Disease, 9th Medical Laboratory, provides sero-diagnostic facilities for the assistance of the military physicians in RVN. A patient data form (AVBJ-ML Form 3) should be submitted with each sera and Chiefs of Medicine should insure that sufficient data sheets are included in the make-up of their medical charts. The SF 514-M request slip will also be submitted and special request for specific titers (amebiasis and melioidosis) so indicated. These specific requests will be handled with priority. The failure to submit a convalescent specimen invalidates most results. It is mandatory that one be forwarded as soon as convenient although 10 days is preferable.

Surgical specimens are processed and interpreted at the 9th Medical Laboratory. As with other specimens submitted to the 9th Medical Laboratory, rapid service should not be expected due to the unpredictable courier service. Autopsies on hospital deaths are performed at a few locations where facilities and a pathologist are available. Most forensic autopsies are performed at the Tan Son Nhut Mortuary.

Most specimens for toxicology, endocrinology and various special tests are currently forwarded to Japan which delays results several weeks. During 1969, the 9th Medical Laboratory expanded its capabilities to perform procedures available to Army medical facilities in CONUS.

SPECIAL REQUIREMENTS:

1. Specimens for Mycological study:

a. Skin and Nail Scrapings: Sponge the area with 70% alcohol and scrape the edge of the lesion or the top of the vesicle with a sterile scalpel. Collect the scales or scrapings and place in sterile 9 ml screw capped vials (FSN 6640-408-2200), or force into surface of Mycosel and Sabouraud's Agar, if available.

b. Hair: Examine the follicles with an ultraviolet (Wood's) light, if available. Epilate the suspected hairs with sterile forceps from clinically suspicious area. Force into surface of Mycosel and Sabouraud's Agar or place in sterile 9 ml screw capped vials.

c. Sputum: Collect in wide-mouthed screw capped bottles. Preferred specimens are those brought up after the patient awakens in the morning. Single specimens should be forwarded without preservatives after insuring that sputum (not saliva) has been produced. Label to indicate pathogenic fungi is suspected. Submit to the 9th Medical Laboratory as soon as possible.

d. Exudates, body fluids and tissues: Collect in sterile containers without preservative and ship as soon as possible. Indicate suspected mycologic agent on label and request form.

2. Specimens for Tuberculosis study: (These should be kept to a minimum. If collected, the following procedures are mandatory.)

a. Sputum:

(1) Since the responsibility of producing sputum is that of the patient, some instruction should be given him to insure that saliva or nasopharyngeal secretions are not collected. He should be made to understand that the material brought up from the lungs after a productive cough is sputum. Further, specimens obtained immediately after using a mouth wash or palliative medication may be unsatisfactory. As the container may be contaminated by the patient, ward and laboratory personnel may protect themselves by handling it with a piece of paper towel or tissue. Wrapping the container in paper towel secured with a rubber band before placing it in a shipping box will afford some protection and the specimen labelled "For AFB" will alert receiving sections.

(2) Single specimens of approximately 10 ml collected on three successive days are preferrable to 24 hour collections. When available (now on order) the commercially available sputum collection unit should be used. (The unit consists of a 50 ml disposable centrifuge tube inside a funnel apparatus and affords protection for ward and laboratory personnel). Unless an immediate emergency exists, specimens collected should be held in the refrigerator until the series is complete. Fifty (50) mg of powdered sodium carbonate should be added to each specimen to retard overgrowth by contaminants. Early morning specimens are preferred since many patients have productive coughing episodes on arising.

(3) When sputum is difficult to obtain, 24 - 48 hour pooled specimens may be necessary but should be limited to 10 - 20 ml in a container to avoid dilution, contamination and antibacterial action of saliva. If possible, the pool should be refrigerated between productions.

(4) Bronchial washings at bronchoscopy are useful and patients sometimes produce large quantities of sputum for the following several days.

b. Gastric Washings:

(1) For patients who cannot produce sputum, the gastric lavage may be necessary. Twenty to 50 ml sterile distilled water passed through a Levin tube or disposable plastic tubing in the fasting patient and removed by syringe may be placed in the sterile plastic 50 ml centrifuge tube. As mycobacteria are destroyed rapidly, the specimen should be processed as soon as possible. For shipment, an equal volume of 10% sodium carbonate solution or 10% trisodium phosphate (05 23% solution of trisodium phosphate. 12 H_2O) should be added. An indicator such as Brom Thymol Blue to show color at pH 7 - 8 will show when the acid has been neutralized. If the 50 ml container is used limit the amount to 20 - 25 ml to accommodate the neutralizing agent and use a second tube if necessary. (Gastric washings may contain acid-fast artifacts and are not suitable for making smears.

c. Urine:

(1) Early morning voided, single mid-stream specimens are preferred. Pooled 12 - 24 hour samples refrigerated between collections are acceptable. Kidney catheterization samples should be small, collected in sterile tubes, and submitted without treatment.

(2) To avoid shipping large amounts of urine, 24 hour specimens may be concentrated by the following method:

(a) Allow to settle overnight, in refrigerator, if possible.

(b) Add 2 - 3 ml of 30% Acetic Acid per liter.

(c) Add 2 ml of 5% Tannic Acid per liter.

(d) Flocculation will occur.

(e) Siphon or carefully decant supernatant into a discard container containing Wescodyne or other effective disinfectant, leaving sediment.

(f) Either:

1 Transfer flocculum to 50 ml tubes, centrifuge, pool.

2 Transfer flocculum to suitable container for shipment.

d. Other specimens:

(1) Cerebrospinal fluid, pleural fluid, joint fluid, pus, bronchial washings, bone marrow aspirates, endometrial scrapings and tissue should be submitted in sterile containers. Sterile heparin or other anti-coagulant may be used to keep material fluid.

(2) To prevent putrefaction of tissue, the specimen should be kept cold by packing in wet ice.

3. Specimens for Serological Study:

Sterile serum, not whole blood, will be submitted to the laboratory. Serum should be separated from the clot promptly and the sample refrigerated until shipment. A minimum of 5 ml serum is required.

4. Specific diseases to be found in Southeast Asia. (Culture requests should follow the outline on the following page.)

DISEASE	SPECIMENS TO BE EXAMINED
Actinomycosis	Chronic abscesses, sputum, sinus tracts (Thioglycolate and Carey Blair)
Chancroid	Exudates from edge of lesion, pus from buboes
Cholera	Feces or rectal swabs (flecks of blood in feces)
Clostridial Infections	Blood, debrided tissue, exudates
Cryptococcosis	CSF or pus, possibly sputum
Histoplasmosis	Sputum, exudates from ulcers, blood or bone marrow
Listeriosis	Blood, CSF, exudates from lesions, throat
Melioidosis	Sputum, sinus discharges (DO NOT REFRIGERATE)
Meningococcal meningitis	Blood, CSF, petechial fluid
Plague	Bubo fluid, blood, sputum (DO NOT PROPAGARE)
Rat Bite Fever (Spirillum minus disease)	Lesions, lymph nodes, blood, joint fluid, pus
Shigellosis/Salmonellosis	Feces or rectal swabs
Tuberculosis	Sputum, gastric lavage, urine, exudates
Typhoid fever	Blood (1st week), urine, feces
Fungus disease	Scrapings, scales, exudates (in Carey Blair transport medium)

NOTES:

The number and type of psychiatric problems encountered in Vietnam vary to some degree from those encountered in WW II and Korea. Factors contributing to this change are a reasonably well defined tour and the different nature of the conflict. Nevertheless, there has been more than ample opportunity to assess the effect of combat on individuals. In addition, there has been a definite requirement for psychiatric support to personnel in non-combat situations. Finally, psychiatric evaluations must be included as part of the overall evaluations of many patients under consideration for administrative or disciplinary action.

Several basic principles have evolved and will be briefly summarized here. It has been the general experience in combat units that rest, sedation and supportive psychotherapy have been highly effective. In all circumstances it is desirable to conduct treatment as close to the unit as possible. The battalion surgeon is therefore an essential member of the forward team. Another observation has been the effectiveness of paramedical personnel. These include in particular the social worker and clinical specialist. In many instances their treatment has made actual assessment by the psychiatrist unnecessary.

Hospitalization is to be avoided except when patients are potentially dangerous to themselves or others, because they are mentally ill. It is not to be used when personnel, who for administrative reasons or convenience, need only to remain overnight or await some administrative action. With rare exception sociopathic individuals (character and behavior disorders) are not to be admitted to the hospital. Under no circumstances is simple drunkenness considered a medical problem. If a man has a toxic psychosis (alcohol, marijuana, barbiturate, etc) he should be discharged to duty immediately on recovery. Medical facilities and channels must never be used to solve administrative problems.

Patients with neurological disorders should be evaluated by an in-country neurologist prior to consideration for offshore evacuation if the medical neurological disorder is the primary reason for evacuation.

Patients who present neuropsychiatric problems with drug or alcohol abuse should never be considered for evacuation without due consultation and concurrence by a psychiatrist.

Familiarity with procedures governing administrative separation contained in AR 635-89, AR 635-105, AR 635-206 and AR 635-212 is essential. Requests for psychiatric evaluation of individuals by unit commanders or responsible agencies may be made by using the format in Appendix I, USARV Reg 40-34 as a guide.

References:

USARV Reg 40-24, Mental Health and Neuropsychiatry, 8 Sep 67.
USARV Reg 40-24, Command Health Report, 20 Jul 67.
USARV Reg 40-10, Aeromedical Evacuation, 15 Jan 68.
USARV Reg 40-13, Medical Clearance, 19 May 68.
AR 40-50, Final Type Medical Examinations for Separations, Retirement, Resignation and Relief from Active Duty, Chapter 10.
44th Med Bde Reg 40-350, AVBJ, Medical Attendant, 16 Sep 67.
USARV Surgeon's Office Letter, 30 Apr 68.

NOTES:

DIAGNOSIS AND MANAGEMENT OF ACUTE RENAL INSUFFICIENCY

Our definition of acute renal insufficiency (ARI) is a sudden daily rise in blood urea nitrogen and serum creatinine in the absence of glomerulonephritis, volume depletion and urinary tract obstruction, following an acute illness in patients with previously normal renal function. Oliguria (a urine volume less than 500 ml per 24 hours) is usually present. This condition has been referred to as acute tubular necrosis, lower nephron nephrosis, shock kidney, post-traumatic renal failure, acute renal failure, and ischemic anuria.

Roentgenographic Studies:

Chest x-ray and KUB should be routine.

Intravenous pyelography rarely visualizes the kidneys, therefore its diagnostic value is no greater than a KUB.

Cystoscopy and retrograde pyelography are seldom indicated. In the absence of an obvious or proven diagnosis in the severely oliguric or anuric patient, retrograde pyelography may be helpful in excluding a surgically curable obstructive lesion. Unilateral pyelography with gentle injection of dye is all that is necessary.

Renal arteriography is indicated only when there is a history or findings to suggest renovascular occlusion.

Prevention:

Prevention of ARI entails maintaining a normal central circulation and blood pressure, careful blood bank procedures to avoid transfusion reactions and employing potentially nephrotoxic drugs only when necessary in appropriate dosages. On surgical services contributing factors to the development of acute renal insufficiency include inadequate drainage of contaminated areas, failure to re-explore when intra-abdominal infection was suspected, placement of colostomy sites near incisions and drains, prolonged use and poor care of plastic cannulae and improper care of indwelling urethral catheters.

In patients prone to the development of ARI, hourly urine volumes should be considered a vital sign. When oliguria (20 ml or less per hour) is first detected, a test dose of mannitol should be administered. The method as outlined by Barry and associates (3) is as follows:

1. When detected, oliguria should be treated promptly by immediate infusion of 20 gm of hypertonic mannitol during a 5 to 10 minute interval.

2. If urine flow increases to 40 ml/hr or more during the two hours following mannitol infusion, sustained hydration should be established and intermittent 20 gm infusions of mannitol used only as needed to maintain urine flow at 100 ml/hr. Mannitol usually must be considered a temporizing measure to protect the kidneys while the basic cause of depressed renal function (e.g., dehydration, hypotension) is being corrected.

3. If urine flow increases, but to less than 40 ml/hr, the patient should be re-evaluated and, if practical, an acute 500 ml infusion of isotonic saline or dextrose should be administered, followed by a second dose of mannitol.

4. If urine flow does not increase despite these measures, the organic renal failure regimen of fluid restriction must be applied.

An alternative approach to the prevention of ARI is to administer mannitol simultaneously with either ethacrynic acid or furosemide. The latter two drugs should be given intravenously in a dosage of 50 - 100 mg and 40 - 80 mg, respectively (4). This approach is gaining wide acceptance in Vietnam.

Metabolic Derangements Due to ARI and Their Management:

Azotemia is the consequence of a decrease in glomerular filtration. The rate of rise in BUN depends on the degree of tissue catabolism and generally varies from 10 - 50 mg% per 24 hours. Factors which produce a disproportionate rise in BUN when compared to the serum creatinine are: (1) excessive protein intake; (2) corticosteroids; (3) dehydration; (4) congestive heart failure; (5) upper gastrointestinal bleeding; and (6) tetracycline and its derivatives.

When the diagnosis of ARI with azotemia is established, dietary protein should be restricted or eliminated from the diet. A minimum of 100 gm of carbohydrate should be given either orally or parenterally to prevent excessive protein catabolism. Whenever circumstances permit, a minimum of 25 gm of high biologic value protein (2-3 eggs) should also be provided. This will restore positive nitrogen balance in some patients.

The development of uremic manifestations is usually associated with severe azotemia with a BUN and serum creatinine of at least 150 mg% and 15 mg%, respectively. However, this is an imperfect correlation, for symptoms of uremia can accompany lesser degrees of azotemia.

Water Balance:

Water balance is critical in the patient with ARI. Forced hydration is to be avoided once ARI is established because diuresis will not ensue. Instead water intoxication and/or pulmonary edema may result. A very simple rule may be followed to maintain fluid balance:

Amount of water = 5cc water/kg body weight + measured fluid losses.
to administer
daily

Potassium:

The major route of excretion for potassium is via the kidney. Consequently, patients with ARI are prone to develop hyperkalemia. Other factors which contribute to elevated serum potassium levels are: sudden development of respiratory or metabolic acidosis; extensive tissue trauma, hyponatremia; and exogenous administration of potassium. Common sources of exogenous potassium are: salt substitutes (KCL); old bank blood; potassium-penicillin (1.5 mEq K/1 million units); and Ringer's lactate solution (4 mEq K/liter).

Depending on the severity of hyperkalemia, various methods for reducing the level are available. These can be divided into three groups based on their rapidity and duration of action:

1. Immediate (minutes + lasting 2 hours)

a. Calcium gluconate, 10%, 10-100 ml. i.v.

b. Sodium bicarbonate, 50-100 mEq. i.v.

2. Moderately rapid (30 minutes - lasting six hours longer)

a. Glucose and insulin (2 gms/unit); e.g. 200 ml of 50% glucose plus 60 units regular insulin.

b. Dialysis.

3. Slow (hours)

a. Exchange resins - 15 gm (4 heaping Tsp) Kayexalate every 1 - 8 hours p. o. or per retention enema. 3 mEq of K are exchanged per gram Kayexalate.

b. Nasogastric suction.

c. Potassium intake restriction.

Sodium:

In the presence of anuria or oliguria, sodium losses are nil. Therefore, sodium intake must be severely restricted.

Indications for Hemodialysis in ARI:

1. Uremic manifestations.

2. Hyperkalemia uncontrolled by simpler measures.

3. Dangerous fluid overload.

4. Removal of drugs believed to have accumulated in excess in the presence of renal failure

5. Recently a program of prophylactic hemodialysis has been instituted for a BUN of 100 mg% or greater and/or a serum creatinine of 10 mg% or greater. A definite improvement in the mortality of both medical and surgical cases has been seen.

NOTE: Peritoneal dialysis is used rarely in this renal unit and then only to temporize until hemodialysis can be employed or to lavage an infected peritoneal cavity. Peritoneal dialysis is available to all medical services for selected usage. All cases should be discussed with Chief Renal Unit, 3d Field Hospital.

Method to Arrange for Transfer:

1. The importance of communication is to be stressed. Forewarned is forearmed. If we are notified as soon as possible by the physician in charge of a patient to be transferred, we in turn can alter the dialysis schedule for present in-patients and alert the surgical team.

Telephone: MACV 2341 (Saigon)

2. The patient should be transferred early rather than late. Again physician to physician communication can best determine the time to do so.

References:

Teschan, P. E. et al, Post - Traumatic Renal Insufficiency in Military Casualities, Amer. J. Med 18:172-86, 1955.

Rosenbaum, J. L., Differential Diagnosis of Acute Renal Failure, In: Renal Failure, edited by Brest, A. N. and Moyer, J. H.; J. B. Lippincott Company, Philadelphia, PA 1967, p 253-58.

Barry, K. G. et al, The Prevention of Acute Renal Failure. In: Renal Failure, edited by Brest, A. N. and Moyer, J. H.; J. B. Lippincott Company, Philadelphia 1967, p 259-71.

Swartz, C., et al, Ethacrynic Acid in Acute Renal Failure, Abstracts Amer. Soc, of Nephrology, 1968, p 66.

Knepshield, J.; Stone, W., Post - Traumatic ARI in Vietnam 62 cases, Abstract USARV Medical Bulletin Sep - Oct 1969.

NOTES:

USE OF BLOOD AND BLOOD PRODUCTS IN VIETNAM

The most desirable blood for transfusion is as fresh as possible, group and type specific and completely cross-matched. Availability of this desirable situation requires about 40 minutes. Group specific blood with an immediate spin saline cross-match requires 15 minutes. Low titer O positive blood may be obtained immediately. During periods of increased need for blood, care should be taken to request no more than immediate contingencies dictate so that the cross-matching capacity of the laboratory is concerned and utilization of available units is maximized. A cross-matched unit on the shelf is usually not available to another patient. Group AB patients should be transfused with one of the following blood groups in order of decreasing preference AB, A, O (without reverting to a "more preferable" group as blood supplies again become available).

Low titer O positive (universal donor) blood is indicated for patients with acute severe hemorrhage, in mass casualty situations, and at small medical units where grouping and cross-matching are impractical. Because of its limited supply O negative blood is given only in group specific transfusions. No complications have been observed in-country to result from this practice, and sensitization of males to RH factors should not lead to clinical disease given the standard blood banking practices in CONUS. As a rule of thumb, all patients receiving four or more units of group O blood should continue to be transfused with group O blood unless a minimum of two weeks has elapsed since the last transfusion and the new cross-match is compatible.

Recent radioactive tracer studies have shown that whole blood stored in plastic bags has an acceptable shelf life of up to 31 days. Blood 21 days or less is ordinarily used. Blood between 21 and 31 days of age is retained as a back-up in mass casualty situations.

In the treatment of burns plasma from bank blood, aged plasma and/or Plasmonate are optimal. Fresh frozen plasma (FFP) should not be used.

In a patient with uncontrollable oozing following massive transfusion a coagulation work-up should be carried out prior to, or simultaneously with, treatment and should consist of at least an examination of a peripheral blood smear, platelets, a prothrombin time (PT) and a partial thromboplastin time (PTT). Generally, a simple dilution of coagulation factors is characterized by a prolonged PT and PTT with normal platelet and fibrinogen levels. There is a rapid response to 2 - 3 units of FFP.

In some instances platelets may also be depressed and fresh blood (FB) would be indicated. Hemorrhage due to disseminated intravascular coagulation is characterized by depressed platelet and fibrinogen levels and a lengthened PT and PTT. There is little or no response to FB and FFP. Heparin is the treatment of choice.

Hemorrhage due to fibrinolysis is indicated by a prolonged PT and PTT and a diminished euglobulin lysis time, shows little or no response to FB and FFB and is treated with epsilon amino caproic acid. In hemorrhage due to combinations of the above, the laboratory results may be inconclusive. In that case a trial with FB and/or FFP may well be indicated. The prophylactic use of FB and/or FFP in massively transfused patients is at best a waste of FB and FFP and at worst a potentiating factor in disseminated intravascular coagulation. FB and FFP should be given only to patients who are actually oozing and/or show abnormal coagulation studies.

NOTES:

FINIS

The information in this medical compendium will be invaluable to all members of the Medical Corps serving in the Republic of Vietnam. A great deal of time and effort has been spent in reaching the knowledge that has been aptly summarized in this compendium. It is not the final word, but is intended as a guideline to assist you in the practice of medicine and the problems common to this country. Future editions will attempt to keep the January - February issue as a review of the new experiences gained.

THOMAS A. VERDON
LTC, MC
Medical Consultant

NEW ARRIVALS

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Abraham, George A.	1LT	MSC	9 Nov 69	67th Med Gp
Ackermann, Robert F.	CPT	MSC	3 Sep 69	43d Med Gp
Affuso, Philip S.	CPT	MC	20 Sep 69	101st Abn Div
Alexander, Bernardo G.	MAJ	MC	31 Oct 69	935th Med Det
Allan, Muriel E.	MAJ	ANC	19 Sep 69	2d Surg Hosp
Anderschat, John F.	CPT	MC	5 Nov 69	165th Avn Gp
Anderson, Trent D.	1LT	ANC	7 Nov 69	71st Evac Hosp
Andre, David J.	1LT	MSC	11 Sep 69	68th Med Gp
Andrews, Harry B.	CPT	MC	31 Oct 69	23d Arty Gp
Anneken, Howard A., Jr.	CPT	MC	11 Oct 69	Americal Div
Anziger, Robert K.	CPT	MC	11 Oct 69	1st Inf Div
Arango, James F.	CPT	MC	11 Oct 69	4th Inf Div
Artabane, Thomas A.	CPT	MC	5 Nov 69	12th Avn Gp
Asch, Herbert A.	CPT	DC	4 Sep 69	1st Inf Div
Aswad, Madeline	2LT	ANC	28 Oct 69	24th Evac Hosp
Atallah, Paul	CPT	MC	3 Nov 69	43d Med Gp
Aussem, John N.	CPT	MC	21 Sep 69	9th Med Lab
Austin, Eva S.	2LT	ANC	18 Oct 69	6th Conv Cen
Aycock, Erline T.	MAJ	ANC	23 Oct 69	67th Evac Hosp
Badgett, Arthur L.	CPT	MSC	4 Oct 69	68th Med Gp
Bagwell, John M.	2LT	MSC	5 Nov 69	43d Med Gp
Baig, Muhammed S.	MAJ	MC	31 Oct 69	17th Fld Hosp
Baird, Linda C.	1LT	ANC	9 Nov 69	27th Surg Hosp
Balis, Gene A.	CPT	MC	11 Oct 69	68th Med Gp
Ballweg, Elke	CPT	ANC	15 Nov 69	3d Fld Hosp
Banker, Franklin L.	CPT	MC	14 Sep 69	199th Lt Inf Bde
Banks, Margaret A.	CPT	ANC	28 Oct 69	27th Surg Hosp
Barge, Ed M., Jr.	2LT	MSC	29 Oct 69	4th Inf Div
Barney, Robert C.	CPT	MSC	11 Sep 69	9th Med Lab
Barry, Jonathan F.	CPT	MC	6 Sep 69	67th Evac Hosp
Barta, Frank R., Jr.	CPT	MC	27 Sep 69	4th Inf Div
Beck, Gary F.	CPT	VC	7 Sep 69	5th SF
Beeghly, Charles M., Jr.	2LT	MSC	19 Oct 69	25th Inf Div
Beekey, Cyrus E., Jr.	CPT	MC	11 Oct 69	Americal Div
Bercier, Maurice L.	CPT	MC	8 Oct 69	101st Abn Div
Berkowitz, Wallace P.	CPT	MC	28 Sep 69	85th Evac Hosp
Berman, Nolan S.	CPT	MC	31 Oct 69	1st Bde, 5th Inf Div
Bernhardt, Norval E.	CPT	MC	27 Sep 69	20th Engr Bde
Bethencourt, Anthony	CPT	MC	31 Oct 69	3d Bde, 9th Inf Div
Bird, Gustavus C., IV	CPT	MC	11 Oct 69	1st Inf Div
Blackwood, Larry A.	1LT	MSC	4 Oct 69	101st Abn Div
Blakely, Richard W.	CPT	MC	11 Oct 69	4th Inf Div

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Blanchard, James A.	MAJ	ANC	12 Oct 69	67th Evac Hosp
Blanton, Helen I	2LT	ANC	9 Sep 69	12th Evac Hosp
Blevins, Byron C.	MAJ	DC	2 Sep 69	934th Med Det
Boldt, Donald E.	CPT	MC	8 Oct 69	1st Cav Div
Bond, Roger C.	CPT	MC	11 Oct 69	43d Med Gp
Bonetzky, Paul V.	CPT	MC	31 Oct 69	5th SF
Bonilla, Eduardo	MAJ	MC	30 Oct 69	93d Evac Hosp
Bonnefil, William A.	CPT	MC	28 Oct 69	1st Inf Div
Boushell, Bonnie M.	2LT	ANC	2 Sep 69	68th Med Gp
Bradshaw, Hershal W.	MAJ	ANC	9 Sep 69	95th Evac Hosp
Brenner, Martin A.	CPT	MC	11 Oct 69	1st Bn, 83d Arty
Briddell, Dennis M.	CPT	MC	8 Oct 69	101st Abn Div
Bridges, James F.	2LT	MSC	3 Sep 69	Americal Div
Brimmer, Elaine E.	2LT	ANC	1 Oct 69	93d Evac Hosp
Brisbin, Michael E.	CPT	DC	15 Sep 69	437th Med Det
Briscoe, Robert K.	2LT	MSC	12 Nov 69	11th Armd Cav
Brito, Rafael A.	MAJ	MC	2 Nov 69	24th Evac Hosp
Brooke, Paul P., Jr.	CPT	MSC	7 Nov 69	1st Inf Div
Brott, Walter N.	LTC	MC	3 Nov 69	3d Surg Hosp
Brown, Kathleen T.	2LT	ANC	5 Nov 69	24th Evac Hosp
Brown, Raymond L., Jr.	MAJ	MC	12 Oct 69	95th Evac Hosp
Bryant, Marjorie M.	CPT	ANC	13 Sep 69	24th Evac Hosp
Bryan, William A	CPT	MC	11 Oct 69	25th Inf Div
Buckles, Beth M.	1LT	ANC	26 Sep 69	95th Evac Hosp
Budrow, Judith A.	1LT	ANC	10 Nov 69	71st Evac Hosp
Burak, George P.	CPT	MC	11 Oct 69	101st Abn Div
Burns, Darlene G.	MAJ	ANC	20 Oct 69	27th Surg Hosp
Burry, Kenneth A.	CPT	MC	10 Oct 69	4th Inf Div
Burston, William A.	CPT	DC	1 Sep 69	Americal Div
Burton, Cora L.	MAJ	ANC	29 Sep 69	91st Evac Hosp
Bush, Richard E.	CPT	MC	4 Nov 69	68th Med Gp
Butcher, Dewayne F.	CPT	MC	10 Oct 69	17th Cbt Avn Gp
Butler, Joan M.	2LT	ANC	21 Sep 69	12th Evac Hosp
Butler, Stephen A.	CPT	MC	27 Sep 69	3d Bde, 9th Inf Div
Buurma, Patrica	2LT	ANC	11 Nov 69	3d Surg Hosp
Byrd, John W.	CPT	MC	11 Oct 69	11th Armd Cav
Bzik, Karl D.	LTC	MC	5 Sep 69	67th Med Gp
Cabin, Glenn I.	CPT	MC	14 Sep 69	23d Arty Gp
Calderone, Joseph	MAJ	MC	7 Oct 69	8th Fld Hosp
Cali, Thomas	LTC	DC	27 Oct 69	3d Fld Hosp
Camak, James N., Jr.	CPT	MC	11 Oct 69	1st Inf Div
Cameron, Richard D.	MAJ	MC	31 Oct 69	98th Med Det
Camp, Gregory V. S.	2LT	MSC	6 Oct 69	575th Med Det
Camp, John C.	CPT	MC	3 Nov 69	12th Avn Gp
Cantrell. Frank L.	CPT	MC	11 Oct 69	4th Inf Div

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Carmody, Eugene G.	MAJ	MC	22 Sep 69	9th Med Lab
Castles, Robert G.	CPT	MSC	25 Sep 69	199th Lt Inf Bde
Chandler, Eddie R.	CPT	MC	11 Oct 69	1st Cav Div
Chase, Jeffrey S.	CPT	MC	5 Nov 69	12th Avn Gp
Chimone, Samuel M.	CPT	MC	31 Oct 69	3d Bde, 9th Inf Div
Chitwood, Jack W.	CPT	MC	27 Sep 69	1st Inf Div
Chollak, Joseph P., Jr.	CPT	MC	24 Sep 69	17th Avn Gp
Christensen, Evonne M.	1LT	ANC	6 Oct 69	95th Evac Hosp
Christian, Clara J.	2LT	ANC	20 Oct 69	91st Evac Hosp
Clarke, Edward H.	CPT	MC	11 Oct 69	25th Inf Div
Cleveland, Kenneth M.	CPT	DC	1 Oct 69	56th Med Det
Coats, Stephen H.	CPT	MC	22 Sep 69	Americal Div
Cohen, William B.	MAJ	MC	27 Sep 69	8th Fld Hosp
Collins, Harold T.	CPT	MC	8 Oct 69	11th Armd Cav
Cook, Judith A.	2LT	ANC	2 Nov 69	95th Evac Hosp
Corredor, Juan S.	MAJ	MC	21 Oct 69	17th Fld Hosp
Cozak, Elisabeth C.	1LT	ANC	6 Oct 69	95th Evac Hosp
Crane, Edward D.	2LT	MSC	11 Sep 69	3d Bde, 9th Inf Div
Crosier, Joseph L.	MAJ	MC	12 Oct 69	17th Fld Hosp
Crymes, William B.	CPT	MC	22 Sep 69	9th Med Lab
Cullen, Thomas F.	MAJ	MC	1 Oct 69	67th Evac Hosp
Culuko, Gayle D.	2LT	ANC	6 Oct 69	93d Evac Hosp
Cummings, James M.	CPT	MC	31 Oct 69	54th Arty Gp
Dahl, Raymond E.	CPT	MC	31 Oct 69	101st Abn Div
Daino, Gerald A.	CPT	MSC	18 Sep 69	32d Med Depot
Dalrymple, Wesley D.	2LT	ANC	31 Oct 69	71st Evac Hosp
Davis, Richard H.	CPT	MC	11 Oct 69	4th Inf Div
Deaderick, Robert D.	1LT	MSC	16 Oct 69	68th Med Gp
Deane, William M.	CPT	MC	27 Sep 69	25th Inf Div
Deardourff, Steven L.	CPT	MC	4 Oct 69	1st Inf Div
Deatherage, Olaf G.	2LT	MSC	3 Sep 69	67th Med Gp
Debros, James A.	CPT	MC	31 Oct 69	1st Bde, 5th Inf Div
DeCovich, Carole A.	2LT	ANC	2 Nov 69	17th Fld Hosp
DeGross, Joseph M.	CPT	MC	8 Oct 69	1st Cav Div
DelCarlo, Marrianne	LTC	ANC	21 Oct 69	17th Fld Hosp
Desimone, Patsy	CPT	MC	27 Sep 69	4th Inf Div
Diamond, Howard M.	CPT	MC	31 Oct 69	108th Arty Gp
Dickerson, Marcia F.	2LT	ANC	5 Nov 69	95th Evac Hosp
Diemer, Louis M.	CPT	MC	31 Oct 69	4th Inf Div
Dize, Nancy S.	2LT	ANC	20 Oct 69	71st Evac Hosp
Dizon, Rustico	MAJ	MC	5 Oct 69	24th Evac Hosp
Doner, Ivan A.	CPT	MC	31 Oct 69	4th Inf Div
Dorr, John P.	2LT	MSC	13 Oct 69	522d Med Det
Dowling, James E.	CPT	MC	31 Oct 69	25th Inf Div
Downie, David B.	CPT	MC	27 Sep 69	43d Med Gp

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Dreessen, Philip R.	CPT	MC	19 Sep 69	1st Inf Div
Drohan, Paul S.	CPT	MC	27 Sep 69	25th Inf Div
Dunavant, Michael L.	CPT	VC	22 Sep 69	176th Med Det
Duncan, Lynnette M.	1LT	ANC	10 Nov 69	3d Fld Hosp
Dunlap, Ivan L.	CPT	ANC	15 Oct 69	24th Evac Hosp
Dunlevy, Bernard J.	CPT	MSC	13 Sep 69	68th Med Gp
Dwan, Diana L.	1LT	ANC	9 Sep 69	67th Evac Hosp
Dwyer, Maureen L.	1LT	ANC	2 Nov 69	67th Evac Hosp
Dylla, Rebecca A.	2LT	ANC	21 Sep 69	91st Evac Hosp
Echle, Victoria A.	2LT	ANC	2 Nov 69	91st Evac Hosp
Ehlers, William A.	CPT	MC	8 Oct 69	101st Abn Div
Eliason, Orland D.	MAJ	MC	7 Oct 69	67th Evac Hosp
Elkims, William N., Jr.	CPT	MC	11 Oct 69	4th Inf Div
Ellender, Willard A., Jr.	CPT	MC	8 Oct 69	Americal Div
Elliot, Alvin J.	CPT	MC	16 Oct 69	68th Med Gp
Ellisweig, Ronald W.	CPT	DC	1 Oct 69	518th Med Det
Erickson, John E., Jr.	1LT	ANC	31 Oct 69	12th Evac Hosp
Ertz, Mary H.	1LT	ANC	2 Nov 69	91st Evac Hosp
Eubanks, Lonnie H., Jr.	CPT	ANC	18 Oct 69	24th Evac Hosp
Eubank, William P.	2LT	MSC	1 Sep 69	1st Cav Div
Evans, David W.	CPT	MSC	29 Sep 69	1st Inf Div
Evans, Francis C.	MAJ	MC	5 Sep 69	67th Med Gp
Evans, James B.	CPT	MC	30 Oct 69	1st Bde, 5th Inf Div
Everette, Kirby L.	1LT	MSC	2 Oct 69	6th Conv Cen
Ewing, Donna M.	CPT	ANC	5 Oct 69	12th Evac Hosp
Faller, Nancy A.	1LT	ANC	2 Nov 69	67th Evac Hosp
Fancher, Donald	CPT	MC	1 Nov 69	1st Inf Div
Farlow, Joseph E.	CPT	MSC	3 Nov 69	3d Med Det
Fechner, Martin A.	MAJ	MC	20 Oct 69	17th Fld Hosp
Ferebee, Constance L.	MAJ	ANC	21 Sep 69	95th Evac Hosp
Ferrigno, Carmen J., Jr.	CPT	MC	11 Oct 69	4th Inf Div
Fertig, Joseph	CPT	DC	3 Sep 69	934th Med Det
Fillingim, Charles H.	2LT	MSC	23 Sep 69	68th Med Gp
Fineran, Donna K.	2LT	ANC	22 Sep 69	95th Evac Hosp
Finkelstein, Frank B.	CPT	MC	11 Sep 69	98th Med Det
Finney, Robert N.	CPT	DC	1 Oct 69	518th Med Det
Fitz, Robert J.	CPT	MSC	4 Oct 69	1st Cav Div'
Flanery, Colbert L.	LTC	MSC	6 Sep 69	68th Med Gp
Foote, Roberta J.	2LT	ANC	12 Oct 69	93d Evac Hosp
Fore, Steven R.	CPT	MC	31 Oct 69	173d Abn Bde
Freidhoff, Terrance	CPT	ANC	29 Sep 69	24th Evac Hosp
Frimmer, Daniel	CPT	MC	18 Sep 69	67th Evac Hosp
Fringeli, Dennis J.	2LT	MSC	4 Sep 69	4th Inf Div
Galen, Malcolm A.	CPT	MC	8 Oct 69	1st Inf Div
Gallagher, Phillip T.	CPT	MSC	3 Sep 69	43d Med Gp

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Gallivan, Thomas A.	CPT	DC	17 Sep 69	541st Med Det
Garcia, Miguel A.	MAJ	MC	17 Oct 69	93d Evac Hosp
Gau, Frederick C.	MAJ	MC	31 Oct 69	2d Surg Hosp
Geschke, Dietrich W.	MAJ	MC	2 Oct 69	27th Surg Hosp
Giffin, Kenneth S.	CPT	ANC	23 Sep 69	6th Conv Cen
Giglio, Susan A.	CPT	MC	2 Nov 69	17th Fld Hosp
Gilliam, Frank H., Jr.	MAJ	MSC	24 Oct 69	67th Med Gp
Gillogly, Alan N.	CPT	MSC	5 Nov 69	172d Prev Med Unit
Gilmer, John M.	CPT	DC	5 Sep 69	499th Med Det
Goodhart, Linda J.	2LT	ANC	5 Oct 69	91st Evac Hosp
Gooding, Barbara A.	2LT	ANC	29 Sep 69	95th Evac Hosp
Goodson, Charles T., Jr.	MAJ	MC	27 Sep 69	93d Evac Hosp
Goodwin, Patricia F.	1LT	ANC	18 Sep 69	85th Evac Hosp
Gora, Robert R.	1LT	MSC	25 Sep 69	4th Inf Div
Gorbunoff, William	CPT	MC	31 Oct 69	68th Med Gp
Gorelick, Melvin P.	CPT	MC	31 Oct 69	Americal Div
Gorman, Arthur A.	CPT	MC	31 Oct 69	4th Inf Div
Gornwall, Thomas L.	CPT	MC	11 Oct 69	Americal Div
Goss, Seymour A.	CPT	MC	11 Oct 69	27th Surg Hosp
Gowan, Paul M.	COL	DC	3 Nov 69	HHD, 44th Med Bde
Graham, Roberta A.	1LT	ANC	9 Sep 69	6th Conv Cen
Graul, Louise D.	1LT	ANC	2 Nov 69	91st Evac Hosp
Graumlich, David C.	CPT	MC	7 Nov 69	Americal Div
Graumlich, Diana J.	1LT	ANC	7 Nov 69	91st Evac Hosp
Green, Daniel P., Jr.	CPT	MC	11 Oct 69	25th Inf Div
Greenberg, Gary	CPT	MC	31 Oct 69	2d Bn, 138th Arty
Gunderson, Paul L.	CPT	MC	5 Nov 69	17th Avn Gp
Gunton, Gary E.	2LT	MSC	4 Sep 69	3d Bde, 82d Abn Div
Gustavel, Terry L.	CPT	DC	1 Oct 69	101st Abn Div
Guter, Karl A.	CPT	MC	31 Oct 69	3d Bde, 9th Inf Div
Hagerty, Michael L.	CPT	MSC	21 Oct 69	1st Cav Div
Hall, Augustus A., Jr.	MAJ	MC	30 Oct 69	93d Evac Hosp
Hamer, Lawrence A.	1LT	ANC	20 Oct 69	6th Conv Cen
Handmaker, Hirsch	CPT	MC	31 Oct 69	27th Surg Hosp
Haney, Glenda F.	2LT	ANC	2 Nov 69	93d Evac Hosp
Hanna, Howard M., Jr.	CPT	MC	11 Oct 69	25th Inf Div
Hansen, Robert E.	MAJ	MC	2 Oct 69	93d Evac Hosp
Harlow, John T.	2LT	MSC	6 Sep 69	4th Inf Div
Harrell, John C.	CPT	MSC	3 Sep 69	Americal Div
Harris, Charles H.	MAJ	MC	18 Oct 69	3d Fld Hosp
Harris, Murray T.	CPT	MC	11 Oct 69	101st Abn Div
Hart, George E.	CPT	MC	11 Oct 69	11th Armd Cav
Hartline, Judy M.	CPT	ANC	1 Oct 69	95th Evac Hosp
Harwell, Elsie R.	1LT	ANC	28 Oct 69	93d Evac Hosp
Hassell, Dayne D., Jr.	CPT	MC	3 Sep 69	68th Med Gp
Hawkins, Charles E.	1LT	MSC	25 Oct 69	9th Med Lab

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Haydel, Richard M.	CPT	MC	8 Oct 69	101st Abn Div
Hayes, Julian N.	2LT	MSC	6 Oct 69	67th Med Gp
Heard, Wilbur D.	CPT	MC	8 Oct 69	173d Abn Bde
Hecht, Manfred H.	MAJ	MC	1 Oct 69	67th Evac Hosp
Hensley, Gladys M.	MAJ	ANC	5 Oct 69	95th Evac Hosp
Hernandez, Gustavo E.	MAJ	MC	27 Sep 69	12th Evac Hosp
Hill, Gerald G.	2LT	MSC	18 Sep 69	44th Med Gp
Hill, John R.	CPT	MSC	9 Nov 69	67th Med Gp
Hoefler, Mary M.	2LT	ANC	4 Oct 69	91st Evac Hosp
Hohett, Steven L.	1LT	MSC	20 Sep 69	43d Med Gp
Holm, Peter J.	CPT	MC	31 Oct 69	4th Inf Div
Hooper, William R., Jr.	CPT	ANC	27 Oct 69	18th Surg Hosp
Horwitx, Lance N.	CPT	VC	13 Sep 69	9th Med Lab
Hotaling, Elizabeth E.	2LT	ANC	11 Nov 69	67th Evac Hosp
Hoth, James J.	CPT	MC	8 Oct 69	1st Bde, 5th Inf Div
Howell, John B., III	CPT	MC	11 Oct 69	199th Lt Inf Bde
Howell, Mary J.	2LT	ANC	6 Oct 69	91st Evac Hosp
Hubner, Jay W.	CPT	MC	30 Oct 69	1st Bde, 5th Inf Div
Humphries, Dennis V.	CPT	MC	8 Oct 69	1st Cav Div
Hyman, Bruce A.	CPT	MC	11 Oct 69	18th Engr Bde
Ichiho, Henry M.	CPT	MC	31 Oct 69	41st Arty Gp
Indihar, Frank J.	CPT	MC	31 Oct 69	43d Med Gp
Ionata, Vincent J.	CPT	MC	7 Sep 69	43d Med Gp
Jackson, Jabez F.	CPT	MC	31 Oct 69	23d Arty Gp
Jacobs, Harold S.	MAJ	MC	2 Oct 69	71st Evac Hosp
Jacobs, James R.	1LT	MSC	3 Oct 69	68th Med Gp
Jacobs, Roger A.	CPT	MC	31 Oct 69	1st Cav Div
Jacobs, Susan J.	1LT	ANC	1 Sep 69	68th Med Gp
Jacobson, Sayre K.	MAJ	MC	3 Sep 69	68th Med Gp
Jagielski, Bonnie J.	2LT	ANC	5 Oct 69	91st Evac Hosp
Jankowski, Dennis A.	CPT	MC	30 Oct 69	4th Inf Div
Johnson, Harry D.	MAJ	MSC	27 Sep 69	101st Abn Div
Johnson, James S.	1LT	MSC	15 Sep 69	68th Med Gp
Johnson, Susan G.	2LT	ANC	2 Nov 69	12th Evac Hosp
Johnson, Timothy M.	MAJ	DC	16 Sep 69	40th Med Det
Jones, Billy E.	CPT	MC	14 Sep 69	935th Med Det (KO)
Kahn, Donald L.	CPT	MC	5 Nov 69	164th Avn Gp
Kahner, Steven	CPT	MC	31 Oct 69	224th Avn Bn
Kaminski, Karen L.	1LT	ANC	6 Oct 69	24th Evac Hosp
Karamanian, Agop	MAJ	MC	9 Sep 69	93d Evac Hosp
Katra, Ross E.	CPT	DC	15 Sep 69	1st Cav Div
Kawakami, Myron E.	CPT	DC	19 Sep 69	137th Med Det
Keller, La Rue S.	MAJ	ANC	6 Nov 69	95th Evac Hosp
Kelley, Randall R.	CPT	MSC	12 Sep 69	67th Med Gp
Kestner, Joseph F., Jr.	CPT	MC	5 Nov 69	17th Avn Gp

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Kitchens, Claire L.	2LT	ANC	29 Sep 69	95th Evac Hosp
Knight, Glenfield S.	CPT	MC	24 Oct 69	25th Inf Div
Knox, Edith V.	LTC	ANC	27 Sep 69	67th Evac Hosp
Kochmaruk, Mary	2LT	ANC	18 Sep 69	3d Fld Hosp
Kolbjornsen, Edward A.	CPT	DC	15 Sep 69	36th Med Det
Kolman, Benet S.	CPT	MC	11 Oct 69	67th Med Gp
Koopman, Patricia C.	1LT	ANC	18 Sep 69	36th Evac Hosp
Korte, Thomas H.	MAJ	MSC	2 Sep 69	67th Med Gp
Kosik, Stephanie R.	2LT	ANC	4 Nov 69	3d Fld Hosp
Kral, Thomas E.	MAJ	ANC	29 Sep 69	6th Conv Cen
Kulow, Keith R.	CPT	MC	11 Oct 69	101st Abn Div
Kurokawa, Jacqueline	1LT	ANC	31 Oct 69	17th Fld Hosp
La Chey, Terrence L.	1LT	MSC	2 Oct 69	67th Med Gp
La Piana, Francis G.	MAJ	MC	12 Oct 69	3d Fld Hosp
Larusso, Anthony J.	1LT	MSC	3 Sep 69	1st Avn Bde
Laskoff, Jeffrey M.	CPT	MC	27 Sep 69	199th Lt Inf Bde
Laubengayer, Richard F.	CPT	MC	13 Oct 69	1st Cav Div
Lavigne, Richard E.	CPT	MC	14 Sep 69	18th Engr Bde
Lavoie, Dennis M.	CPT	MSC	23 Sep 69	67th Med Gp
Lawler, William R.	CPT	MC	5 Nov 69	164th Avn Gp
Ledrick, James W.	CPT	MC	31 Oct 69	4th Inf Div
Lee, Jack C.	MAJ	MC	3 Nov 69	2d Surg Hosp
Lee, Lily J.	2LT	ANC	2 Nov 69	12th Evac Hosp
Lensing, William A.	CPT	ANC	7 Nov 69	2d Surg Hosp
Letson, Austin K., Jr.	CPT	MSC	7 Nov 69	93d Evac Hosp
Levi, George A.	CPT	MC	11 Oct 69	67th Med Gp
Lewis, Larry R.	CPT	DC	17 Sep 69	40th Med Det
Lewis, Margaret A.	MAJ	ANC	14 Oct 69	24th Evac Hosp
Libbey, Edward C.	CPT	DC	6 Sep 69	40th Med Det
Light, Jimmy A.	MAJ	MC	27 Sep 69	71st Evac Hosp
Lippert, Roberta L.	2LT	ANC	27 Sep 69	67th Evac Hosp
Lischke, Jon H.	CPT	MC	12 Oct 69	12th Cbt Avn Gp
Loftman, Bertil A.	CPT	MC	3 Sep 69	68th Med Gp
Long, Wendell M.	MAJ	MC	24 Oct 69	3d Fld Hosp
Longo, Charles A.	CPT	MC	27 Sep 69	Americal Div
Louis, Eugene S.	CPT	MC	1 Nov 69	4th Inf Div
Lovett, James H.	COL	MSC	12 Nov 69	HQ, USARV (Surg)
Lowry, Helen L.	2LT	ANC	12 Nov 69	27 Surg Hosp
Lund, Robert H.	CPT	MC	14 Sep 69	25th Inf Div
Lundquist, Jon E.	CPT	MC	8 Oct 69	1st Cav Div
Lyday, James M.	LTC	VC	3 Nov 69	522d Med Det
Lynn, Charles A.	CPT	MC	1 Nov 69	17th Avn Gp
Lyford, Charles L.	CPT	MC	14 Sep 69	18th Engr Bde
Lynn, David E.	2LT	MSC	4 Sep 69	43d Med Gp
Lyons, Thomas A.	CPT	MC	11 Oct 69	68th Med Gp

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Madden, John P.	CPT	DC	1 Oct 69	36th Med Det
Mandelstam, Robert W.	CPT	MSC	25 Oct 69	12th Evac Hosp
Manley, Robert E.	CPT	MC	7 Oct 69	12th Avn Gp
Markusen, Bruce R.	2LT	MSC	7 Nov 69	4th Inf Div
Marshall, Robert W.	CPT	MSC	20 Oct 69	Americal Div
Martin, Clarence A., Jr.	MAJ	MC	17 Oct 69	71st Evac Hosp
Masson, Don W.	CPT	MC	15 Oct 69	67th Med Gp
Master, Franklin D.	MAJ	MC	13 Oct 69	67th Evac Hosp
Master, Robert J.	CPT	MC	28 Oct 69	101st Abn Div
Matheny, Glenn S.	CPT	MSC	18 Sep 69	218th Med Det
Matheson, William A.	CPT	MSC	14 Nov 69	25th Inf Div
May, Charles B.	CPT	MC	1 Nov 69	41st CA Co
May, Robert H., Jr.	CPT	MC	3 Nov 69	25th Inf Div
May, Russell T.	CPT	MC	2 Nov 69	Americal Div
Mayer, Phyllis J.	1LT	ANC	6 Sep 69	68th Med Gp
McArthur, Kathleen R.	CPT	ANC	29 Sep 69	93d Evac Hosp
McConnell, Donald B.	CPT	MC	8 Oct 69	101st Abn Div
McCormick, John	CPT	MSC	12 Oct 69	17th Fld Hosp
McCorry, Particia M.	2LT	ANC	21 Sep 69	95th Evac Hosp
McGaughey, John W., Jr.	CPT	DC	1 Sep 69	137th Med Det
McKelvey, Kent D.	CPT	MC	3 Sep 69	68th Med Gp
McKinley, Edmund R.	CPT	VC	24 Sep 69	176th Med Det
McLeod, Alva J.	LTC	ANC	9 Sep 69	8th Fld Hosp
McLeod, Darlene J.	MAJ	ANC	19 Sep 69	12th Evac Hosp
McMahan, Robert L.	1LT	ANC	19 Sep 69	17th Fld Hosp
McMartim, Daniel E.	CPT	MC	11 Oct 69	91st Evac Hosp
McNabney, Warren K.	MAJ	MC	13 Sep 69	45th Surg Hosp
McNamara, Thomas E.	CPT	MC	27 Sep 69	1st Inf Div
McTague, Patricia	1LT	ANC	5 Oct 69	93d Evac Hosp
Meares, Ben M.	MAJ	MC	2 Sep 69	43d Med Gp
Mehegan, Charles M.	CPT	MC	8 Oct 69	1st Avn Bde
Meril, Allen J.	LTC	MC	3 Nov 69	24th Evac Hosp
Merwin, Grier H.	CPT	MC	27 Sep 69	101st Abn Div
Mestrich, Richard	CPT	MC	1 Nov 69	101st Abn Div
Meulemans, Marie L.	1LT	ANC	6 Oct 69	93d Evac Hosp
Meyer, Linda L.	1LT	ANC	2 Nov 69	24th Evac Hosp
Meyer, Roger V.	CPT	MC	1 Nov 69	67th Med Gp
Meyer, Sandra L.	1LT	ANC	2 Nov 69	24th Evac Hosp
Mies, Cheryl A.	1LT	ANC	4 Nov 69	3d Fld Hosp
Miller, Boniva H.	2LT	ANC	7 Nov 69	18th Surg Hosp
Miller, William S.	CPT	MC	7 Nov 69	1st Bde, 5th Inf Div
Minahan, Sue R.	CPT	ANC	31 Oct 69	12th Evac Hosp
Mirable, Joseph C.	CPT	MC	27 Sep 69	1st Inf Div
Mitchell, Wayne H.	CPT	DC	13 Nov 69	101st Abn Div
Modica, Stephen F.	1LT	MSC	1 Sep 69	1st Cav Div

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Monack, Allan A.	CPT	DC	6 Sep 69	40th Med Det
Monen, David M.	CPT	DC	29 Sep 69	518th Med Det
Moraski, Roger E.	CPT	MC	21 Sep 69	95th Evac Hosp
Morris, Harold B.	CPT	MSC	1 Oct 69	HHD, 44th Med Bde
Morse, Stephen R.	CPT	MC	13 Sep 69	91st Evac Hosp
Moody, Edward L.	CPT	DC	2 Nov 69	56th Med Det
Moore, Freeman M.	CPT	MC	1 Nov 69	4th Inf Div
Mott, Joseph D.	CPT	MC	30 Oct 69	Americal Div
Mueller, Roger A.	CPT	MC	6 Sep 69	199th Lt Inf Bde
Muhm, Harvard Y.	MAJ	MC	27 Sep 69	91st Evac Hosp
Myers, David P.	2LT	MSC	22 Oct 69	4th Inf Div
Nacht, Larry E.	CPT	MC	6 Sep 69	1st Bde, 5th Inf Div
Nakama, Shizuko	MAJ	ANC	4 Nov 69	8th Fld Hosp
Nalepa, Thomas F.	CPT	MSC	7 Sep 69	68th Med Gp
Napoli, Sam P.	CPT	DC	17 Sep 69	11th Armd Cav
Nations, Harry L.	CW2	MSC	7 Oct 69	32d Med Depot
Nauen, Richard E.	CPT	MSC	8 Oct 69	932d Med Det
Nelsen, Wayne M.	CPT	MSC	3 Nov 69	4th Inf Div
Nelson, John D.	CPT	MC	14 Sep 69	12th Evac Hosp
Nelson, Kenneth E.	MAJ	MC	8 Oct 69	935th Med Det
Nelson, Margaret S.	MAJ	ANC	9 Sep 69	12th Evac Hosp
Nelson, Thayer E.	CPT	MC	11 Oct 69	101st Abn Div
Nemetz, Jacqualine	1LT	ANC	1 Sep 69	43d Med Gp
Nicol, Sheldon S.	CPT	MC	1 Nov 69	1st Inf Div
Noftsger, Gayle T.	2LT	ANC	2 Nov 69	12th Evac Hosp
Nonnemacher, Jean M.	2LT	ANC	3 Nov 69	3d Fld Hosp
Nord, Donald G.	1LT	MSC	4 Oct 69	43d Med Gp
Nuncio, Lydia S.	1LT	ANC	6 Oct 69	12th Evac Hosp
O'Brien, Mary R.	LTC	ANC	19 Oct 69	17th Fld Hosp
O'Connor, Theresa A.	1LT	ANC	5 Oct 69	67th Evac Hosp
Oertle, Jayne S.	2LT	ANC	6 Sep 69	67th Med Gp
O'Hara, James M.	MAJ	MC	8 Sep 69	9th Med Lab
Ohmart, David L.	CPT	MC	27 Sep 69	20th Engr Bde
Oliver, Luis A.	CPT	MC	1 Nov 69	Americal Div
Opland, Ronald L.	CPT	MSC	11 Nov 69	25th Inf Div
Otis, James M.	2LT	MSC	3 Nov 69	1st Inf Div
Ottone, Riga C.	2LT	ANC	27 Sep 69	91st Evac Hosp
Owens, Harold B.	CPT	MC	18 Sep 69	68th Med Gp
Page, Patrick B.	CPT	MC	11 Oct 69	101st Abn Div
Paine, Gordon T., Jr.	CPT	MC	11 Oct 69	199th Lt Inf Bde
Palmer, Richard A., Jr.	1LT	MSC	6 Oct 69	43d Med Gp
Park, Charles R.	1LT	MSC	20 Oct 69	Americal Div
Parker, Beadie M.	MAJ A	ANC	4 Nov 69	71st Evac Hosp
Parkey, Paul L.	CPT	MC	3 Sep 69	1st Cav Div
Paster, Barrie	CPT	MC	11 Oct 69	18th Engr Bde

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Pawling, Helen N.	MAJ	ANC	6 Sep 69	43d Med Gp
Paxton, Sharon E.	2LT	ANC	18 Sep 69	12th Evac Hosp
Payne, John C.	MAJ	MSC	7 Sep 69	43d Med Gp
Peach, Michael J., III	CPT	MSC	6 Nov 69	20th Prev Med Unit
Peacock, Jack B.	MAJ	MC	12 Oct 69	45th Surg Hosp
Pederson, Robert A.	CPT	MSC	19 Oct 69	222d PSC
Perer, Howard B.	CPT	MC	22 Sep 69	Americal Div
Perkins, David G.	CPT	MC	27 Sep 69	20th Engr Bde
Peters, Benjamin F.	CPT	MC	11 Oct 69	20th Engr Bde
Peterson, Hugh D.	LTC	MC	12 Oct 69	24th Evac Hosp
Peterson, Jay T.	CPT	MC	8 Oct 69	1st Cav Div
Peterson, Wesley H.	CPT	MC	1 Sep 69	525th MI Gp
Petty, William C.	MAJ	MC	12 Oct 69	24th Evac Hosp
Peyton, John C.	CPT	MC	1 Nov 69	1st Inf Div
Pezzulli, Frank	LTC	MSC	29 Oct 69	3d Fld Hosp
Phelps, Preston V., Jr.	CPT	MC	11 Oct 69	4th Bn, 60th Arty
Pienowski, Walter E.	CPT	DC	1 Oct 69	137th Med Det
Pierson, Charles B.	CPT	MC	8 Oct 69	1st Inf Div
Pierson, Rogers B.	CPT	MC	27 Sep 69	101st Abn Div
Piotrowski, Stanley L.	1LT	MSC	4 Oct 69	67th Med Gp
Plemmons, Patrick F.	2LT	MSC	3 Sep 69	67th Med Gp
Polauf, Helen	1LT	ANC	6 Oct 69	67th Evac Hosp
Porter, Sharon S.	2LT	ANC	2 Nov 69	71st Evac Hosp
Potruch, Theodore	MAJ	MC	3 Nov 69	67th Evac Hosp
Powell, George K.	MAJ	MC	22 Sep 69	24th Evac Hosp
Powers, Judity A.	2LT	ANC	20 Oct 69	17th Fld Hosp
Price, William J.	2LT	MSC	17 Sep 69	1st Cav Div
Prim, Harry S., Jr.	CPT	MC	1 Nov 69	Americal Div
Purcell, Thomas W., II	CPT	MC	11 Oct 69	52d Arty Gp
Quereau, Charles H.	2LT	MSC	3 Sep 69	1st Cav Div
Rakow, Virginia A.	2LT	ANC	1 Sep 69	68th Med Gp
Ramsdell, Joan	2LT	ANC	10 Nov 69	93d Evac Hosp
Ramsey, Clifton E.	2LT	MSC	3 Sep 69	67th Med Gp
Ratnofsky, Steven F.	CPT	MC	30 Oct 69	23d Arty Gp
Raulerson, James D.	CPT	MC	2 Nov 69	108th Arty Gp
Reed, George H.	CPT	MC	11 Oct 69	43d Med Gp
Reedy, Donna L.	2LT	ANC	21 Sep 69	91st Evac Hosp
Regan, John J.	CPT	MC	1 Nov 69	101st Abn Div
Reicert, John R.	CPT	MC	11 Oct 69	5th Bn, 2d Arty
Reichert, David A.	CPT	MC	1 Nov 69	1st Cav Div
Reidenbaugh, John R.	2LT	MSC	3 Nov 69	1st Inf Div
Reilly, Desmond	CPT	MC	15 Sep 69	71st Evac Hosp
Rexinger, Elwyn L.	CPT	MC	1 Nov 69	11th Armd Cav
Rhodes, Jerry L.	CPT	MSC	6 Nov 69	1st Cav Div
Richard, Thomas A.	CPT	MC	11 Oct 69	HQ, XXIV Corps

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Rifkin, Jess R.	CPT	DC	3 Nov 69	38th Med Det
Risech, Heriberto	CPT	MC	26 Oct 69	67th Med Gp
Robert, Barbara S.	2LT	ANC	6 Oct 69	8th Fld Hosp
Robertson, Edward H., III	2LT	MSC	2 Nov 69	Americal Div
Robinson, Stewart L.	2LT	MSC	11 Sep 69	68th Med Gp
Rodebauch, Jon H.	1LT	MSC	3 Sep 69	68th Med Gp
Rodgers, Jerry W.	CPT	MC	11 Oct 69	Americal Div
Rodzewicz, Paul J.	CPT	MC	11 Oct 69	108th Arty Gp
Roemer, Robert H., Jr.	1LT	MSC	20 Oct 69	4th Inf Div
Roger, Irvin S.	CPT	MC	1 Nov 69	20th Engr Bde
Rogers, Gene L.	CPT	MC	8 Oct 69	4th Inf Div
Rose, James E.	CPT	MC	5 Nov 69	17th Avn Gp
Ross, John W.	MAJ	MC	26 Sep 69	9th Med Lab
Rountree, Glen A.	CPT	MC	11 Oct 69	25th Inf Div
Rude, Robert K.	CPT	MC	8 Oct 69	4th Inf Div
Ruggieri, Michael J.	CPT	DC	16 Sep 69	199th Lt Inf Bde
Rutherford, Robert E.	CPT	MC	5 Nov 69	12th Avn Gp
Ryba, James H.	CPT	MC	1 Nov 69	68th Med Gp
Rybak, James J.	CPT	MC	27 Sep 69	25th Inf Div
Sabiston, Walter R.	CPT	MC	27 Sep 69	1st Cav Div
Sacks, Richard P.	MAJ	MC	1 Oct 69	67th Evac Hosp
Saldana, Guido F.	MAJ	MC	5 Oct 69	67th Med Gp
Salgar, Alberto	LTC	MC	13 Sep 69	9th Med Lab
Salvatore, Mary J.	2LT	ANC	2 Nov 69	95th Evac Hosp
Sandrok, Robert E.	CPT	MC	8 Oct 69	11th Armd Cav
Sauer, John B.	CPT	MC	1 Nov 69	1st Cav Div
Schachtsick, Mary M.	1LT	ANC	21 Sep 69	67th Evac Hosp
Schade, Harold C.	CPT	MSC	9 Sep 69	44th Med Bde
Schaefer, Ken M.	CPT	MSC	27 Oct 69	Americal Div
Schechter, John S.	CPT	MC	11 Oct 69	Americal Div
Scheftner, William A.	CPT	MC	11 Oct 69	4th Inf Div
Schilling, Robinson, Jr.	CPT	MC	4 Oct 69	6th Conv Cen
Schlesinger, Ronald A.	1LT	MSC	24 Sep 69	68th Med Gp
Schneider, Henry C.	CPT	MC	25 Sep 69	Americal Div
Schuessler, James P.	2LT	MSC	4 Oct 69	4th Inf Div
Schumacher, Carol S.	2LT	ANC	15 Sep 69	93d Evac Hosp
Schwarz, Paul R.	CPT	MC	11 Oct 69	52d Arty Gp
Scott, Susan V.	1LT	ANC	2 Nov 69	71st Evac Hosp
Sedor, Gloria A.	2LT	ANC	27 Sep 69	12th Evac Hosp
Sellers, Kenneth D.	CPT	MC	11 Oct 69	3d Bde, 9th Inf Div
Severance, James M.	CPT	MC	12 Sep 69	3d Bde, 9th Inf Div
Shaw, Richard C.	LTC	MC	8 Oct 69	95th Evac Hosp
Shepherd, Linda S.	2LT	ANC	27 Sep 69	95th Evac Hosp
Shiveley, Charles J.	COL	MSC	25 Oct 69	HQ, USARV (Surg)
Shulman, David M.	CPT	DC	1 Sep 69	137th Med Det

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Shulman, Joel B.	CPT	MC	5 Sep 69	68th Med Gp
Sidney, David T.	CPT	MC	12 Oct 69	1st Cav Div
Sigafoos, David H.	CPT	MC	7 Nov 69	18th Engr Bde
Simmons, Rulon R.	CPT	MC	11 Oct 69	3d Bde, 9th Inf Div
Skripol, James N.	2LT	MSC	1 Oct 69	173d Abn Bde
Small, Norma R.	MAJ	ANC	26 Sep 69	18th Surg Hosp
Smith, Burke W.	CPT	MC	8 Oct 69	25th Inf Div
Smith, Frank H., Jr.	2LT	MSC	3 Sep 69	222d PSC
Smith, John W.	CPT	MC	14 Sep 69	173d Abn Bde
Smith, Mary L.	2LT	ANC	27 Sep 69	12th Evac Hosp
Smith, Robert A.	MAJ	MC	3 Sep 69	67th Med Gp
Smith, Sidney D.	CPT	MC	27 Sep 69	98th Med Det (KO)
Spar, Ira L.	CPT	MC	11 Oct 69	3d Bde, 9th Inf Div
Speedy, Harry	CPT	MC	11 Oct 69	43d Med Gp
Spencer, Joseph T.	CPT	MC	14 Sep 69	52d Arty Gp
Spencer, Randall B.	CPT	MC	11 Oct 69	1st Cav Div
Sperber, Alan B.	CPT	MC	11 Oct 69	67th Med Gp
Spero, Gary N.	MAJ	MC	27 Sep 69	91st Evac Hosp
Spieske, Douglas C.	CPT	MC	17 Oct 69	1st Cav Div
Spinelli, James A.	CPT	DC	8 Sep 69	67th Med Gp
Spraque, Dale E.	2LT	ANC	12 Nov 69	93d Evac Hosp
Sprott, William T., Jr.	2LT	MSC	18 Sep 69	Americal Div
Spurgeon, Lincoln	CPT	MC	1 Nov 69	68th Med Gp
Stack, John M., Jr.	CPT	MC	1 Nov 69	I FFORCEV
Starkey, Thomas A.	CPT	MC	12 Nov 69	27th Surg Hosp
Steckel, Donald G.	CPT	MC	14 Sep 69	20th Engr Bde
Steinberg, Arthur F.	1LT	MSC	13 Oct 69	173d Abn Bde
Stepanik, Gerald V.	2LT	ANC	5 Oct 69	12th Evac Hosp
Stevenson, James R.	MAJ	MC	12 Nov 69	12th Evac Hosp
Stitt, Michael W.	CPT	MC	11 Oct 69	1st Inf Div
Stodghill, William J.	CPT	MC	1 Nov 69	68th Med Gp
Stoltze, Robert E.	2LT	MSC	6 Oct 69	3d Fld Hosp
Stone, Samuel E.	1LT	MSC	9 Nov 69	43d Med Gp
StOnge, Susan G.	CPT	ANC	5 Oct 69	67th Evac Hosp
Storey, Gary A.	MAJ	MC	17 Oct 69	93d Evac Hosp
Stossel, Geraldine L.	2LT	ANC	2 Nov 69	27th Surg Hosp
Stouder, Albert E., Jr.	CPT	MC	14 Sep 69	52d Arty Gp
Stucky, Robert C.	CPT	MC	1 Nov 69	43d Med Gp
Sunderman, Joyce J.	1LT	ANC	2 Nov 69	93d Evac Hosp
Sweeny, Dennis P.	CPT	DC	1 Oct 69	3d Surg Hosp
Tabor, Harry D.	CPT	MC	11 Oct 69	27th Surg Hosp
Tarantino, Ernest E.	CPT	DC	1 Oct 69	18th Surg Hosp
Tesh, Donald W.	CPT	MC	24 Sep 69	212th Avn Bn
Thomas, Anna B.	CPT	ANC	29 Sep 69	12th Evac Hosp
Thomas, Arthur H.	CPT	MC	5 Nov 69	17th Avn Gp

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Thomas, Craig W.	CPT	MC	10 Oct 69	1st Cav Div
Thomas, Thomas J.	CPT	MC	11 Oct 69	Americal Div
Thrasher, John E.	CPT	MSC	16 Sep 69	4th Inf Div
Tibbs, Melinda A.	1LT	ANC	27 Sep 69	95th Evac Hosp
Toledo, Tony M.	MAJ	MC	9 Sep 69	91st Evac Hosp
Tompkins, Jimmy G.	CPT	DC	29 Sep 69	934th Med Det
Trew, Kathleen J.	2LT	ANC	12 Oct 69	93d Evac Hosp
Troniar, Mary F.	MAJ	ANC	22 Sep 69	24th Evac Hosp
Tsou, Edward	CPT	MC	22 Sep 69	101st Abn Div
Turek, Raymond E.	CPT	MC	27 Sep 69	3d Fld Hosp
Turner, Stephen G.	CPT	MC	5 Nov 69	101st Abn Div
Twigg, Mary L.	1LT	ANC	7 Nov 69	93d Evac Hosp
Tyson, Gary M.	2LT	MSC	20 Sep 69	Americal Div
Urbauer, Craig L.	CPT	MC	10 Oct 69	12th Cbt Avn Gp
Usher, Bruce W.	MAJ	MC	23 Sep 69	Americal Div
Utterback, Henry C.	LTC	ANC	27 Oct 69	91st Evac Hosp
Valko, Robert J.	CPT	MC	8 Oct 69	25th Inf Div
Van Beek, Allen L.	CPT	MC	3 Nov 69	1st Cav Div
Veleanu, Mircea	MAJ	MC	13 Oct 69	43d Med Gp
Vermillion, James G.	MAJ	MSC	12 Oct 69	HHD, 44th Med Bde
Viani, Harry M.	CPT	DC	16 Sep 69	437th Med Det
Vollrath, Richard C.	CPT	MC	11 Oct 69	3d Bde, 9th Inf Div
Vose, Paul C.	MAJ	MC	4 Oct 69	91st Evac Hosp
Wade, Patricia H.	CPT	ANC	7 Nov 69	93d Evac Hosp
Waiwat, Patricia A.	2LT	ANC	20 Oct 69	17th Fld Hosp
Walker, Flourney C., III	2LT	MSC	1 Oct 69	Americal Div
Walker, Robert J., III	CPT	MC	1 Nov 69	25th Inf Div
Wanebo, Harold J.	MAJ	MC	14 Sep 69	36th Evac Hosp
Ward, Gwendolyn K.	1LT	ANC	2 Nov 69	95th Evac Hosp
Warneke, John F.	1LT	ANC	11 Nov 69	27th Surg Hosp
Wass, Justin L.	CPT	MC	11 Oct 69	Americal Div
Watrins, William W.	CPT	MSC	23 Oct 69	43d Med Gp
Watson, Dennis S.	CPT	DC	1 Oct 69	39th Med Det
Watson, Janice M.	CPT	ANC	6 Sep 69	68th Med Gp
Watson, Randy C.	CPT	MC	4 Oct 69	43d Med Gp
Watson, Thomas M.	2LT	MSC	7 Sep 69	43d Med Gp
Weatherby, Theron K.	CPT	MC	3 Sep 69	1st Inf Div
Weber, Peter J.	1LT	MSC	4 Oct 69	101st Abn Div
Weddle, Charles O.	CPT	MC	16 Sep 69	Americal Div
Wehba, Kathleen A.	CPT	ANC	31 Oct 69	2d Surg Hosp
White, Gene A.	MAJ	MC	2 Nov 69	101st Abn Div
White, Linda E.	2LT	ANC	20 Oct 69	3d Fld Hosp
Whitley, John C., Jr.	MAJ	MC	27 Sep 69	95th Evac Hosp
Williams, Reginald D.	MAJ	MC	12 Oct 69	68th Med Gp
Wilson, Deise L.	2LT	ANC	12 Nov 69	24th Evac Hosp

NAME	GRADE	BRANCH	ARRIVED	ASSIGNED
Wilson, Jack R., II	MAJ	MSC	22 Sep 69	68th Med Gp
Wingate, Charles E., Jr.	CPT	MC	27 Sep 69	23d Arty Gp
Wise, Mary J.	MAJ	ANC	22 Sep 69	93d Evac Hosp
Wise, Norman E.	1LT	ANC	31 Oct 69	27th Surg Hosp
Wit, Lawrence C.	1LT	MSC	22 Sep 69	68th Med Gp
Wite, Douglas R.	CPT	MC	11 Oct 69	68th Med Gp
Wong, James	CPT	MC	31 Oct 69	67th Med Gp
Workman, Richard A.	CPT	DC	15 Sep 69	934th Med Det
Worth, Lawrence	CPT	MC	27 Sep 69	41st Arty Gp
Wright, Robert A.	2LT	MSC	14 Nov 69	101st Abn Div
Yeagle, Kathleen A.	CPT	ANC	4 Oct 69	91st Evac Hosp
Young, James L., Jr.	CPT	MC	14 Sep 69	18th Engr Bde
Zage, George R., Jr.	CPT	DC	13 Nov 69	39th Med Det
Zamierowski, David S.	CPT	MC	27 Sep 69	52d Arty Gp
Aeringe, Curtis J.	CPT	DC	1 Oct 69	39th Med Det
Zimpher, Sharon K.	2LT	ANC	5 Nov 69	95th Evac Hosp
Zsoldos, Frank J.	CPT	MC	14 Sep 69	8th Fld Hosp
Zuffoletto, James M.	2LT	ANC	18 Sep 69	2d Surg Hosp
Zurek, John F.	CPT	MC	10 Oct 69	164th Cbt Avn Gp

USARV MEDICAL BULLETIN

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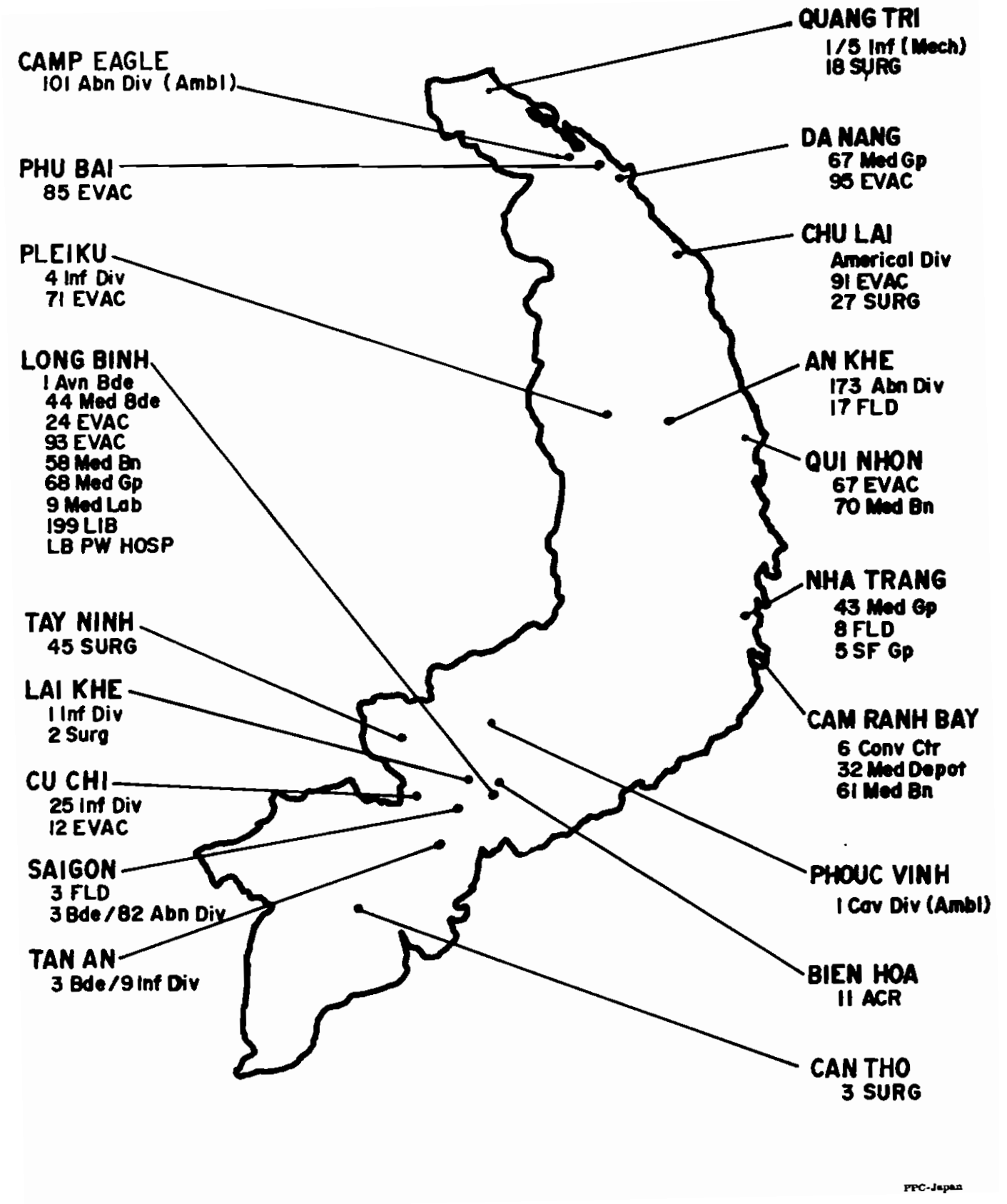
QUANG TRI
1/5 Inf (Mech)
18 SURG
CAMP EAGLE
101 Abn Div (Ambl)
DA NANG
67 Med Gp
95 EVAC
PHU BAI
85 EVAC
CHU LAI
Americal Div
91 EVAC
27 SURG
PLEIKU
4 Inf Div
71 EVAC
LONG BINH
1 Avn Bde
44 Med Bde
24 EVAC
93 EVAC
58 Med Bn
68 Med Gp
9 Med Lab
199 LIB
LB PW HOSP
AN KHE
173 Abn Div
17 FLD
QUI NHON
67 EVAC
70 Med Bn
NHA TRANG
43 Med Gp
8 FLD
5 SF Gp
TAY NINH
45 SURG
LAI KHE
1 Inf Div
2 Surg
CAM RANH BAY
6 Conv Ctr
32 Med Depot
61 Med Bn
CU CHI
25 Inf Div
12 EVAC
SAIGON
3 FLD
3 Bde/82 Abn Div
PHOUC VINH
1 Cav Div (Ambl)
TAN AN
3 Bde/9 Inf Div
BIEN HOA
11 ACR
CAN THO
3 SURG