

Restricted



NAVY DEPARTMENT

BUMED NEWS LETTER

a digest of timely information

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No. 1

Service of Medical Information: It is planned that the Bumed News Letter will be, as the line in the masthead above indicates, a digest of timely medical information. Its makeup and distribution are so designed that officers of the Medical Department everywhere may be kept in closer and more intimate touch with their Bureau, with current medical literature, with research of Naval medical import and, professionally, with one another.

Abstracts of important articles in current medical and scientific periodicals will be selected, because of their general as well as their naval medical interest. Material which emanates from current research and which is of practical importance will be so edited that it may be issued under only a "Restricted" heading. This, it is hoped, will help in the effort to spread information, not of itself confidential, which has been unfortunately buried in the secret and confidential categories required by war conditions.

More or less informal comments on current or past Bureau directives may be introduced. These comments will, it is expected, be furnished to the editor of the "Letter", by any department in the Bureau.

It is planned also to reprint the current and important past Bureau Form Letters from the Navy Department semimonthly Bulletin of official circular letters.

The present Microfilm Letter reproduced from material supplied by the Committee on Medical Information of the National Research Council, Division

of Medical Sciences, will be incorporated with the Bumed News Letter.

Finally it is desired that each medical officer, as newsworthy material may opportunely come his way, cooperate by making contributions which may be considered for news items in the "Letter".

The Bumed News Letter will be distributed biweekly via regular and "V" mail to naval medical officers ashore and afloat.

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Suppressive treatment for Malaria - A summary of present opinion:

1. In areas where malaria is endemic, suppressive treatment is usually necessary to enable forces operating on land to accomplish their mission. This measure is essential and of utmost importance at the beginning of a campaign and in combat zones when conditions rarely permit mosquito control and other means of malaria prevention.

2. Drugs and Dosage: Either quinine or atabrine can be used for suppressive treatment. The dosage usually required and the method of administration are as follows:

(a) Atabrine, 0.1 gram after breakfast and supper, on any 2 days a week, with a 2- or 3-day interval.

(b) Quinine sulphate, 0.6 gram (grains X) daily after the evening meal.

(c) In hyper-endemic areas, the dose for quinine suppressive treatment may have to be increased to 1 gram (grains XV) daily in order to keep the incidence of clinical malaria at the lowest level. Similarly, an increase in the dose for atabrine suppressive treatment from 0.4 gram to 0.6 gram weekly may be desirable. Such increase is not recommended, however, until further data on the safety of such dose are available.

3. Mode of Action: These drugs do not destroy the sporozoites transmitted by the infected mosquitoes and apparently do not interfere with the pre-erythrocytic development of the parasite. Thus they do not prevent infection. They are effective only after the plasmodia have developed into the forms present in the blood, and then merely suppress the parasite to a sub-clinical level. They do not offer a "prophylaxis" but a "suppressive treatment."

4. Untoward Effects: The daily dose of 10 grains of quinine can usually not be taken without unpleasant effects, and some men will have enough discomfort to impair to a degree their physical fitness and ability to work and fight. These effects will be least disturbing if the quinine is given, as directed after the evening meal. There is no evidence of any organic injury from this dose even though it may be continued for a year or more.

Suppressive Treatment for Malaria:

4. Untoward Effects - continued: Atabrine is a gastro-intestinal irritant and will cause nausea, colicky pain, and mild diarrhea in some cases; rarely more severe symptoms, such as vomiting and bloody diarrhea. These undesirable effects can be minimized by giving the drug in divided doses and immediately after meals as directed above. This is of particular importance at the beginning of the treatment when these symptoms occur most frequently. After the third (3rd) or fourth (4th) dose, a tolerance usually develops and gastro-intestinal irritation then rarely prevents the continuation of atabrine suppressive treatment.

Toxic manifestations from long-continued use of atabrine suppressive treatment is a possibility, but observations made so far have not revealed any such unfavorable effects.

5. Choice of Drug: In this connection, reference is made to the Secretary of the Navy's basegram of November 30, 1942 which directs that, due to the necessity for the conservation of quinine, atabrine shall be used for suppressive treatment except when it becomes contraindicated by toxic manifestations.

Medical officers must be alert to the possibility of toxicity from the long-continued use of atabrine and should manifestations of intolerance develop, quinine should be used.

In changing from one drug to another, it is well to keep in mind that the necessary concentration of quinine is rapidly built up but also rapidly lost by quick elimination when the drug is discontinued. The concentration of atabrine, on the other hand, builds up very slowly. It may, therefore, happen that in changing the suppressive treatment from quinine to atabrine, clinical cases develop during the first week before the effective atabrine concentration is obtained. To forestall this, it is well to overlap with quinine for a few days.

6. When to Start the Suppressive Treatment: There is obviously no need for commencing the suppressive treatment prior to the arrival of troops in malarious areas since the drugs do not prevent infection and have no apparent suppressive effect until the end of the incubation period. Thus even though some men may be bitten by infected mosquitoes on the very first day, they will derive no benefit from atabrine or quinine until the eighth or tenth day when the parasite begins to appear in the blood. With few exceptions, clinical cases of malaria do not begin to appear among troops until the end of the second week after arrival in a malarious area. Taking into consideration, however, that some time is required for the atabrine to reach an effective blood concentration, it is well to begin the suppressive treatment on the fifth to seventh day after arrival in malarious areas.

Suppressive Treatment for Malaria:

7. When to Discontinue Suppressive Treatment: The time and method will vary greatly, and many factors will have to be considered before deciding on how to proceed.

- (a) In Malarious Areas: When the incidence of malaria falls to a low point, due either to seasonal variation or to mosquito control and other anti-malarial measures, it is sometimes possible to discontinue suppressive treatment within malarious regions. A decision to stop suppressive treatment, although malaria is still present, should depend upon the consideration of the disadvantage of continuing the suppressive treatment as compared with the hazard, military and personal, of an increase in cases of clinical malaria.
- (b) When Leaving a Malarious Area: One of several procedures may be found practicable:
 - (1) If only a small unit is involved and the necessary medical facilities are available for the diagnosis and treatment of malaria, the suppressive treatment may be discontinued immediately, and the cases treated as they come down with the clinical symptoms or when found positive in smears.
 - (2) When a large number of men are evacuated, the vast majority of which can be expected to be infected, it may be necessary to institute mass treatment giving each man a therapeutic course. This procedure would save the men from the debilitating effect of malarial paroxysms and from cerebral malaria and other dangerous manifestations, and would prevent overcrowding of hospitals and sick bays.
 - (3) When a relatively low incidence of infection is expected among evacuated troops, mass treatment should not be necessary. If facilities for the treatment of the number expected to come down with malaria are not available, the discontinuance of suppressive treatment could be staggered.
 - (4) On transports enroute to the continental United States or intermediate stations, persistent efforts should obviously be made to cure as many men as possible, and for that purpose use all available facilities for clinical and laboratory diagnosis for effective therapy. (E.G.H.)

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Human Serum Albumin: Newhouser and Lozner, in an article in press, point out that misconceptions already have arisen concerning the use of human serum albumin. Inasmuch as it supplies only the protein mainly responsible for the maintenance of osmotic pressure and does not supply prothrombin, complement or antibodies to name a few of the constituents of the globulin fraction, it cannot be considered a substitute for plasma. Its value exists probably only in certain military situations where storage or transportation space is at a premium and its use in these situations should be mainly as an emergency measure. Since it is extremely hypertonic and draws upon tissue fluid to increase the blood volume, considerably greater clinical judgment than is required for the use of plasma must be exercised before albumin is administered. The precautions (included in every package of albumin) outlined by the Committee on Clinical Evaluation of Human Albumin should be borne constantly in mind.

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Intravenous Use of Plasma: Despite the large amount of experience acquired to date showing beyond all doubt that the intravenous use of properly prepared plasma is a safe and beneficial procedure, reports concerning the alleged toxicity of plasma spasmodically appear. Several of these have been published recently. Thalheimer (J.A.M.A., 120, 1263, 1942) after analyzing extensive clinical and laboratory evidence concludes that in pooled plasma the titer of agglutinins is so low that no danger to patients can result from even large doses. Newhouser and Lozner in a forthcoming article analyze the results of over one thousand administrations of plasma preserved in the liquid state. The reaction rate attributable to plasma was 1.1%. They have never observed a true hemolytic reaction. Localized or generalized urticaria was observed following approximately 1% of the administrations. This was easily controlled by adrenalin. The reaction recently reported in the Naval Medical Bulletin was of this type. Newhouser and Lozner cannot concur in the conclusion of the author reporting this reaction that it might have been prevented by preliminary crossmatching of the plasma with the patient. In their opinion, preliminary crossmatching of pooled plasma is never necessary.

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Burns: Hemoglobimuria and increased red blood cell fragility have been noted in a considerable number of severe burns.

Renal damage with amuria has also been frequently observed.

That hemoglobin precipitates and forms obstructing casts with kidney shutdown in acid (low pH) urine, but is soluble in alkaline urine has been demonstrated.

It thus would seem that in treating severe burns, efforts to maintain an alkaline urine are important.

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Burns - continued: The observation that a negative potassium balance accompanies negative nitrogen balance (protein and non-protein nitrogen), in severe burns, suggests rapid cellular destruction as the source of increased urinary nitrogen rather than leakage or breakdown of plasma.

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In connection with the above observation on potassium, the work of Rosenthal at the National Institute of Health (to be published - Public Health Reports) in which he finds Sodium Chloride by mouth a great aid in the prevention of Burn-Shock in mice is of marked interest.

Rosenthal has found that isotonic sodium chloride administered orally promptly after severe burns is of remarkable value in the prevention of fatal burn-shock in mice. He found physiological saline much better by mouth than when given parenterally.

Hypertonic saline by mouth or parenterally, plasma or serum parenterally appeared poor in comparison to the results secured by the use of physiological saline orally.

Whether this will be borne out in human cases, of course, remains to be seen. At least no harm will be done by such a measure as the administration of large quantities of physiological saline by mouth.

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As is well known, high blood potassium levels with loss of sodium are characteristic of or precipitate Addisonian crises.

Though the value of adrenal cortical products in the therapy of shock seems now to have been discredited, such an ion imbalance (Na-K) may yet be found to be of considerable importance in therapy.

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Chancroid - Prophylaxis: Canizares and Combs report that sulfathiazole ointment, petrolatum base, has proven the most satisfactory agent against chancroidal infection.

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Gonorrhoea: Sulfathiazole appears still to be the best sulfonamide in the treatment of gonococcus infections.

Effect of Chlorination of Water on Viability of Cysts of Endamoeba Histolytica: Results indicate that cysts cannot be killed by chlorine in any practical dose except by exposures of at least twenty minutes. The recommended dose of calcium hypochlorite now used, that is, about 3.77 mg. per liter, cannot be relied on to kill the cysts of E. histolytica in types of raw water. Doses of approximately 7.54 mg. per liter and more result in killing the majority of the cysts. (Brady et al, in forthcoming issue of War Medicine).

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Method for Removal of Bacterial Contaminants from Suspensions of Influenza Virus: The results quoted in this paper indicate that it is possible to free influenza virus contained in throat washings, egg fluid or ground mouse lung menstua from adventitious bacterial contaminants by treatment with 1:20,000 Zephiran for 20 minutes at 20°C. Under these conditions neither type A nor B influenza virus is inactivated. (Science, Dec. 11, 1942).

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The Inactivation of Influenza Virus by the Human Skin: Strains of type A and type B influenza viruses were tested for their ability to withstand desiccation on the human skin, on glass surfaces and on strips of cellophane or thin rubber sheeting adherent to the skin. After 10 minutes in the dried state on human skin, both types of virus were completely lacking in capacity to infect mice. The inactivation was shown to be a property of the skin rather than of the physical conditions attending drying since the preparations dried on glass, cellophane or rubber sheeting retained their capacity to infect animals. It would appear that the manual transmission of influenzal viruses is not of epidemiological significance. (Naval Medical Bulletin, October 1942).

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Blood Substitutes and Shock: There are two groups, one working on human and the other on bovine albumin. Human albumin has been recommended to the Armed Forces as a blood substitute of limited usefulness. It is not a substitute of choice but may have to be used in places where plasma can not be distributed or administered. Six biological houses are planning to manufacture human albumin, and some of these are scheduled to be in production this month.

Bovine albumin appears less promising at this time than during the early phases of the investigation. Bovine albumin is antigenic. In a series of 170 injections followed by some 80 reinjections "serum sickness" developed in 25%. The symptoms were very severe and were due mostly to myocardial damage and hemorrhage.

Blood Substitutes and Shock: - continued

A study of other blood substitutes suggested from time to time is being made, and among these are (1) gelatin preparations; (2) glutamic acid polypeptide which is produced by bacterial activity; (3) pectin.

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Plasma: Recent observations indicate that malaria may be transmitted by fresh (unfrozen and undesiccated) plasma. Danger of transmission increases proportionately the shorter the time between bleeding and plasma transfusion.

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Antiseptic Suitable for Universal Use in the U.S.A.: It is believed that a 1-1000 solution in water or in 15% alcohol, of proflavine monohydrochloride, dispensed in a brown bottle to make it stable to light, will meet the requirements of a readily procured antiseptic for the home, and that no other substance on the market is superior to it. It is not patented, and all are free to make and use it. (Committee on Surgery, N.R.C., Dec. 17, 1942).

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Cellophane Dressing: The Medical Officer at the African Hospital, Lagos, Nigeria, reports that the use of cellophane as a covering dressing for tropical ulcer has proven very helpful. The cellophane was obtained from new packages of cigarettes, smoothed and sterilized by boiling. The ulcers were occasionally debrided, then sulfonilamide was dusted in and the cellophane sheet laid on. A light absorbent compress dressing was applied which absorbed the exudate which escaped around the edges.

He summarizes his results as follows:

- (1) The dressing is non-irritant and simple to apply.
- (2) The wound can be inspected without uncovering at any time.
- (3) The amount of discharge is much reduced - a possible corollary to this is that the smell in the ulcer wards is very much reduced now.
- (4) A tremendous saving of dressing material.
- (5) We believe that the rate of healing is increased by this dressing.

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Seawater Enemas do not Alleviate Dehydration: Previous work has suggested that seawater enemas might combat dehydration in ship wrecked personnel. The findings and opinions of several investigators now lead to the conclusion that this procedure does not aid in preventing or curing the dehydration produced by deprivation of water, and, further, that such enemas actually increase this dehydration. (Contact, Nov. 1, 1942).

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Night Visual Efficiency Under Sulfa Drugs: None of the subjects tested (14) showed any significant decrease in visual efficiency of the dark adapted eye. It is concluded that sulfathiazole or sulfadiazine as administered in routine treatment of gonorrhoeal urethritis does not have any deleterious effect on visual efficiency in low illumination. (Rept. Sch. Av. Med., Randolph Field, Dec. 22, 1942).

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Bends in Altitude Flying: Current research indicates that preoxygenation helps prevent bends which may come on during rapid ascent. Exercise at altitude appears to precipitate bends.

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Tetanus Antitoxin: Antitoxin is not administered in the U.S. Army for prophylaxis unless there is reason to doubt that the individual in question had previously received at least the initial series of toxoid injections. (Amer. J. Pub. Health, Jan. 1943.)

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Pan American Postgraduate Medical Education: Speaking at the Commencement exercises at Marquette University Medical School on February 13th, Rear Admiral Ross T. McIntire, Surgeon General of the Navy, proposed the post war establishment of a postgraduate university under Pan American supervision. The teaching staff and students would come from all countries and nationalities.

Such an institution would strengthen and aid medical education in every institution in our nation, said Admiral McIntire.

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Burns: The Bureau's form letter on burns is printed elsewhere in this issue. This is most timely information on a highly important subject and should be reviewed carefully by all medical officers.

The methods of treatment set forth were largely those recommended by the Subcommittee on Burns of the National Research Council and were based in part on studies of the extensive clinical material afforded by the casualties of the Coconut Grove Fire Disaster at Boston, Massachusetts. It may be of interest to note briefly some of the underlying reasons for certain of the recommendations of the Subcommittee.

The use of tannic acid jelly for first aid treatment is discarded for the reason that the eschar tends to lock in infection, to devitalize surviving islands of epithelium in third degree burns, and to preclude the definitive use of any other method of treatment. Serious toxic reactions, liver principally, have been reported where delayed or incomplete tanning permitted absorption of much tannic acid. For these reasons,

Burns - continued:

simple boric acid or vaseline dressings are advised, with a smooth even compression bandage.

For definitive treatment, the Subcommittee approves the compression bandage method with simple boric acid ointment or vaseline dressing, and, with certain reservations, the eschar procedure. The imperative need of plasma is emphasized; also of whole blood in the stage of anemia. Sulfa-diazine and sulfanilamide by mouth or intravenously, with adequate fluid intake to protect the kidneys, is re-emphasized.

Recent studies have shown that with adequate intake, the sulfa drug concentration of blister fluid closely approximates that of the blood. There is evidence that with combined systemic and local sulfa drug therapy, an excess blood level may result.

Tetanus toxoid, booster dose, in immunized men, tetanus antitoxin in the unvaccinated, as well as gas antitoxin in certain cases, must not be neglected.

A special point of emphasis is the critical judgement required regarding the administration of morphine in cases presenting symptoms of anoxia, hot fume lung injuries especially. Under these circumstances, it is probable that the dose of morphine should not exceed one-quarter of one grain.

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Army-Navy Typhus Commission: Rear Admiral Charles S. Stephenson (MC) USN, is chairman of the Army-Navy Commission for the study of the problems that typhus presents to our armed forces. With members of our armed forces stationed in certain parts of the world where typhus may be prevalent, the commission was created for the purpose of developing information that will serve as the basis for specific recommendations for the protection of American military personnel in those places where this disease may be expected.

In addition to Admiral Stephenson, the membership of the Typhus Commission is composed of Lieut. Col. Harry Plotz (MC) USA; Senior Surgeon Adolph Rumreich, U.S. Public Health Service; and Major John C. Snyder (MC) USA. (Army & Navy Register, Jan. 30, 1943) A second echelon of the Commission is headed by Captain E.H. Cushing (MC) USNR.

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Protein by Subcutaneous Injection: Protein, in partially digested assimilable form can be given, by subcutaneous injection, to patients who cannot digest nor retain ingested protein. (continued to p-11)

A.T. Shohl et al (J. Clin. Inv., in press) have demonstrated that, in treating infants suffering from acute nutritional disturbances, the subcutaneous injection of 5 to 10% solutions of casein-hydrolysate satisfactorily maintained the nitrogen metabolism of severely ill, even moribund, patients.

Dr. Shohl's report comes from Children's Hospital, Harvard Medical School, Department of Pediatrics, Boston.

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Third of Doctors in Service Will Stay in Uniform: In speaking on "Medicine and the War" at a council on Medical Education and Hospitals, sponsored by the American Medical Association, Admiral Ross T. McIntire said, "We might say that when this war is over a great number of doctors will return from the service. That is true, but not nearly as many as you might think, for certainly we will not be able to reduce the Army and Navy below a certain point, and my own opinion is that if we are able to return two-thirds of those we take we will do well."

Admiral McIntire elaborated this at a press conference when he declared "We, for our own protection, will have to send our doctors and our health officials into foreign areas which are the sources of many of the epidemics affecting the whole world." (A.P., Feb. 16, 1943)

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Adrenal Cortical Extract: Recent reports on adrenal cortical extract by Committees (N.R.C.), are to the effect that adrenal cortical extract has no discernable effect on traumatic or burn shock in man. This opinion is based on the use of the best extracts now available. That the adrenal may be involved in the shock picture is not denied. Subsequent work with new and different extracts may alter the present opinion.

The feeling is, therefore, that for the present at least, adrenal cortical extracts offer nothing in shock therapy and should be dropped.

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ALNAV #25 - 5 February 1943 reads: In every instance where overseas shipment will be necessary, activities requiring medical stores shall submit seven copies nan mike sugar form four to issuing medical supply depots and medical storehouses.

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Virus of "Pneumonitis" or "Primary Atypical Pneumonia" Isolated:

Comdr. T.M. Rivers (MC) USNR reports the isolation of a mongoose transmissible virus from cases of this disease by members of the Naval Research Unit at the Hospital of The Rockefeller Institute for Medical Research. "Pneumonitis" has borne a number of names. This very multiplicity of names indicates that none has been quite satisfactory. Primary atypical pneumonia, acute benign atypical pneumonia, acute interstitial pneumonitis, virus pneumonia are some of the terms which have been offered.

Pathologists at the Army Medical Museum have demonstrated that the pathological lesion is typical, i.e., an interstitial infiltrative lesion of characteristic cytology. They also seem to have evidence that the disease may be not at all new. Specimens from as far back as the Civil War show the characteristic pathology.

Roentgenologists have wished to call it "Pneumonitis," though all pneumonias, as well as numerous other pulmonary lesions, are inflammation of the lung and so each is a pneumonitis of one etiology or another. The term "Virus pneumonia," is one which appeals to many clinicians, as it is a lesion which produces many of the physical signs of pneumonia (i.e., pulmonary consolidation); is regularly unaccompanied by bacterial agents, does not respond to the sulfa drugs, and has a characteristic picture by X-ray. The terms "Virus pneumonia" and "Pneumonitis" were, of course, a diagnosis by exclusion or more often by frustration. The term "Virus pneumonia" now has better ground for acceptance.

It should be emphasized that this virus has just now been isolated and reported directly by Rivers to the Research Section of the Bureau of Medicine and Surgery. This note is made in advance of formal announcement which will come later from Lieutenant Commander Frank L. Horsfall, Jr., (MC) USNR, and his associates who, working under Comdr. Rivers, made the discovery.

Attention is directed to Bumed Letter of December 9, 1942, on the nomenclature of this condition, which is reprinted elsewhere in this issue. Paragraph #5 is quoted:

"5. It is appreciated that any diagnosis using "atypical" and "etiology unknown" is subject to criticism, but the new listing provides at least a more specific diagnosis than that of influenza or acute catarrhal fever."

It should, therefore, be emphasized in the present discussion that the diagnosis under which this disease is to be reported in the Navy is "Pneumonia, Primary, Atypical, Etiology Unknown, #826."

Not until research and experience are fully evaluated can nomenclature be made final and exact.

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Education and War - the Annual Congress on Medical Education and Licensure, Chicago, February 15 and 16: President Edward C. Elliott of Purdue University, speaking on the work of the War Manpower Commission in which he is chief of Professional and Technical Training, described the organization of the War Manpower Commission as it affects physicians. He called attention particularly to the fact that: "All able bodied male students are destined for the armed forces. The responsibility for determining the specific training for such students is a function of the Army and Navy."

Brigadier General Joe N. Dalton, Assistant Chief of Staff for Personnel, Services of Supply, outlined the plans of the Army for the training of premedical and medical students. Soldiers assigned to the Army specialized training program will be on active duty as members of a unit located at a college or university. They will be in uniform and will receive the pay and allowances of enlisted men. Housing, feeding, instruction and other services will be provided by contract between the institution and the Army. The selection of the institutions which will provide the training will be made by a joint board consisting of three representatives of the Army, three of the Navy and three of the War Manpower Commission. The premedical program will include five terms or sixty-four weeks of elapsed time, as compared with the three-term basic technical program for other phases of education. The premedical students will be housed in the same manner as other soldiers in the basic training program, will be subject to the same discipline and will undergo the same amount of military training and physical conditioning. The medical curriculums are unchanged. Each school will establish its own curriculum. Medical men assigned to this program will be selected as medical students have been selected previously, that is, from the premedical group. School authorities will do the selection job under the general supervision of the Army. Military training will be reduced to one hour a week for the medical students, and physical conditioning will be left largely to the men to work out for themselves. When it is impossible to house the men as are others assigned to the Army specialized training program, commutation allowances will be granted and the men will make their own arrangements for board and room. On graduation the medical men will be commissioned as first lieutenants and then placed on inactive status so that they may complete a year of internship or residency. Throughout the program there will be constant screening of men.

Dr. Harold S. Diehl described the work of the Procurement and Assignment Service, emphasizing particularly the manner in which that service is selecting interns and residents for the period 1943. The number of residents, in general, is to be 50 per cent of the number which the hospital may have had before the war. (J.A.M.A., Feb. 27, 1943).

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Kidney Damage in Alkalosis: Drs. J.B. Kirsner, W.L. Palmer and Eleanor Humphreys have made a survey of changes in the human kidney following the administration of alkali. This they report in the Archives of Pathology, Feb. 1943, page 207. Some of the patients had had alkalosis during alkali therapy, some had alkalosis at the time of death, and four had never had alkalosis

Kidney Damage in Alkalosis - continued:

although they had taken large amounts of alkali during life. Histologic changes were not found in the glomeruli of the kidneys. The epithelium of the collecting tubes showed degenerative and regenerative changes. There was precipitation of calcium in the lumen of these tubules.

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Sulfadiazine Chewing Gum: Investigators in Philadelphia and at the University of Minnesota, including Drs. John H. Arnett, Wesley W. Spink, Ruth Boynton and Suzanne Agnew, have found that the chewing of a mixture of 0.325 grams of sulfadiazine in 1.5 grams of paraffin brings about a high concentration of free sulfadiazine in the saliva. Such a procedure, they say, may favorably affect the course of acute hemolytic streptococcal infections such as pharyngitis and tonsillitis without recourse to large systemic doses. (Proc. Soc. for Exp. Biol. and Med., Jan. 1943).

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Oral Surgery: In the American Journal of Orthodontics and Oral Surgery for February 1943 appear seven papers on the care of military and civilian injuries in oral surgery, covering fractures of the facial bones, the use of remote flaps in repairing defects of the face and mouth, internal wire fixation for fractures of the jaw, aviation dentistry and three other papers on fractures of the jaw. The articles are profusely illustrated.

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Research in the Naval Medical Corps: It is the desire of the Bureau to encourage submission of original ideas for research.

In outlining plans for research, these points may be kept in mind. Vigorous and productive research activity on Medical Department problems depends to a great extent upon the ideas of Officers "in the field," afloat and ashore. It is, of course, important that any research undertaking give promise of being profitable, be properly planned to yield results, and that it be expedient.

Development of ideas which seem worthy of adoption but require research prior to application in the Service will be supported by the Bureau, locally or elsewhere as circumstances may dictate.

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A9-6/P2-2(121)

Y-ems

December 9, 1942.

BUREAU OF MEDICINE AND SURGERY

From: The Chief of the Bureau of Medicine and Surgery.
To: All Ships and Stations.

Subject: PNEUMONIA, PRIMARY, ATYPICAL, Etiology Unknown, #826.

References: (a) Diagnostic Nomenclature for the Medical Department of the United States Navy.
(b) BuMed Form Ltr. No. 17, A9-6/P2-2(121), dated Dec. 3, 1941.
(c) BuMed Form Ltr. A9-6/P2-2(121), dated March 9, 1942.
(d) Par. 2695, Manual of the Medical Department, United States Navy, 1938.

1. The diagnosis "Pneumonia, Primary, Atypical, etiology unknown, #826," has been added to reference (a), under Class VIII (A), Communicable diseases transmissible by oral and nasal discharges. It shall be reported weekly by stations in the continental United States in accordance with references (b) and (c) and monthly by all ships and stations in accordance with reference (d).

2. The diagnosis of atypical pneumonia depends upon the peculiar chest radiograph findings. It is recommended therefore that radiographs be made of all respiratory infections with a temperature of 102°F. or over or with ill-defined clinical pictures, wherever X-ray facilities are available.

3. From several viewpoints it is most desirable to have a complete and accurate diagnosis of all primary pneumonias:

(a) Broncho and lobar pneumonias respond to the sulfa drugs, while atypical pneumonia does not.

(b) Atypical pneumonia is considered much more contagious than broncho and lobar pneumonia.

(c) Atypical pneumonia is difficult to differentiate from "vague" respiratory disorders and without special diagnostic procedures many cases are erroneously listed.

4. The advantages to be derived from early diagnosis of atypical primary pneumonia by chest radiograph are:

(a) Early isolation will be instituted thus aiding in prevention of spread.

(b) Treatment will be symptomatic and supportive rather than with sulfonamides, thus sparing the patient the unnecessary leukopenic and other hazards of sulfonamide therapy.

(c) Convalescence can be more logically directed with visualization of the pathological lesion.

5. It is appreciated that any diagnosis using "atypical" and "etiology unknown" is subject to criticism, but the new listing provides at least a more specific diagnosis than that of influenza or acute catarrhal fever.

6. This listing is authorized herewith in advance of a forthcoming change in the Manual of the Medical Department.

ROSS T. McINTIRE

BUREAU OF MEDICINE AND SURGERY

From: The Chief of the Bureau of Medicine
and Surgery.
To: All Ships and Stations.

Y:hs
S36-5/FS(013)
January 21, 1943

Subject: DISINSECTIZATION OF SURFACE CRAFT.

Reference: (a) BuM&S Form Letter No. 28, dated February 25, 1942.

Enclosure: (A) Malaria-Free Area.

1. The Navy Department is greatly perturbed over the possibility of introducing the vector of malaria into areas (enclosure (A)) which have up to this time been free of that disease.
2. It is the opinion that the introduction of the anopheline species of mosquito in certain areas might be as disastrous as a major naval defeat.
3. I It is recommended that all surface cargo craft, or any other ships that are or may come under the authority of the Navy Department, departing from a known endemic malaria area, be disinfected prior to arrival at a malaria-free port (see enclosure (A)). Vessels departing from North or South America are exempt from this procedure except when in the opinion of the commanding officer it is deemed advisable.
4. It is believed the greatest benefit will be derived by emphasizing the disinfection of cargo holds, living spaces, and other confined spaces. It is urged that water be drained from lifeboats and replaced with fresh water every 5 days, and that a few drops of kerosene or Diesel oil be added.
5. The standard insecticides for disinfection shall be the spray described in reference (a) or the aerosol Pyrethrum-Freon-Insecticide.
6. The Pyrethrum-Freon-Insecticide has many advantages over the spray. For instance:
 - (a) Three gallons of the ordinary standard spray equals 1 pound of aerosol solution.
 - (b) It occupies only about 1/4 the stowage space.
 - (c) It is nonflammable; in fact it is a fire extinguisher.
 - (d) It requires little or no equipment to operate.
 - (e) All ingredients are nontoxic.

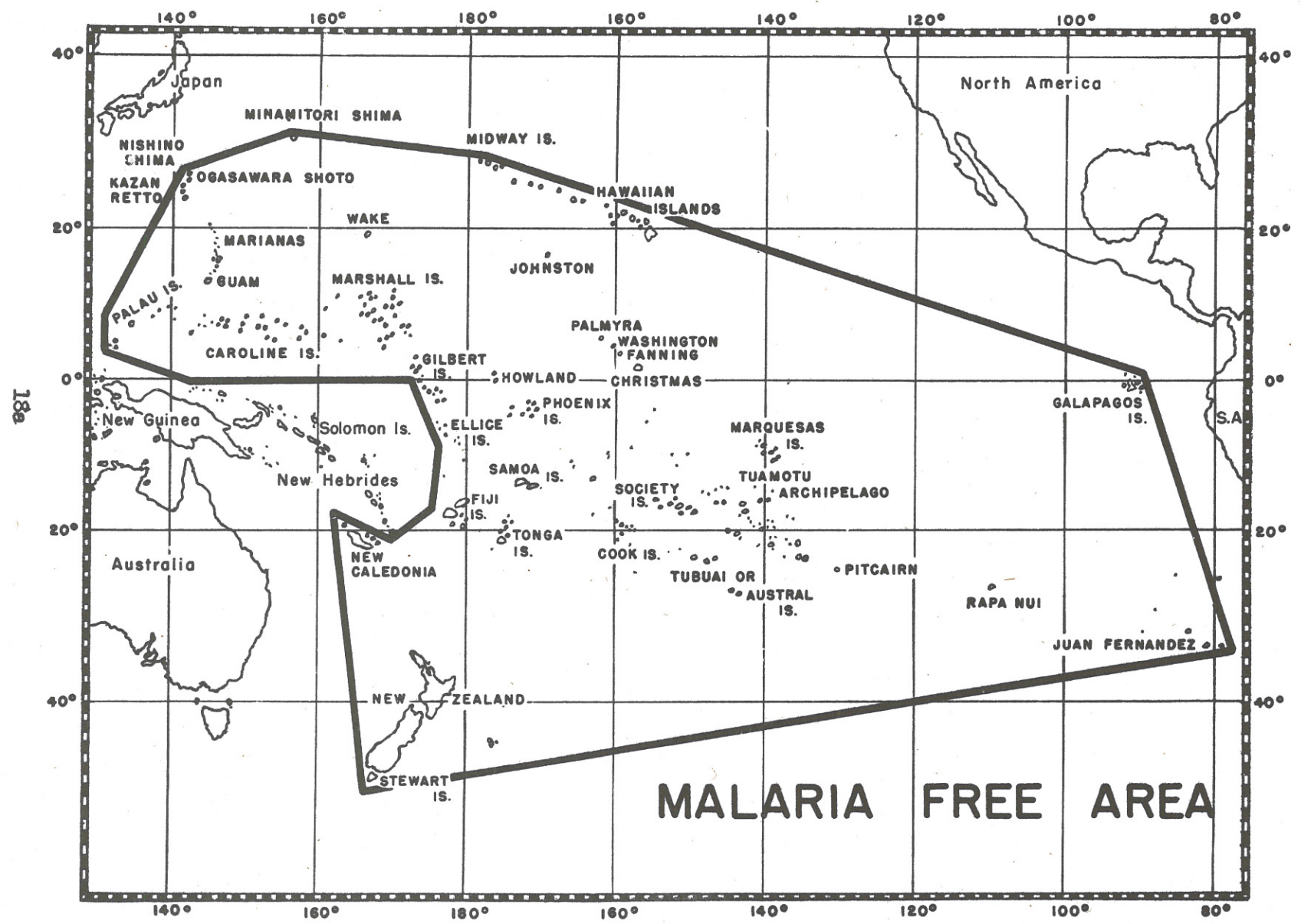
(f) It remains suspended 10 to 20 times longer than sprays.

(g) One pound will treat 150,000 cubic feet more efficiently than 1 gallon of spray will treat 50,000 cubic feet.

(h) Much greater penetration into protected places.

7. The approved aerosol Pyrethrum-Freon-Insecticide may be obtained from the local supply officer or quartermaster.

ROSS T. McINTIRE



MALARIA FREE AREA

BUREAU OF MEDICINE AND SURGERY

P3-2/P3-1 (024)

Y:hs

January 21, 1943

From: The Chief of the Bureau of Medicine and Surgery.
To: All Ships and Stations.

Subject: TREATMENT OF BURNS.

1. This will replace the instructions contained in the pamphlet of the Bureau of April 1942, entitled "Notes on Recent Advances in the Treatment of Wounds and Burns," pages 5 to 11, which are canceled herewith.

2. The following material is largely based on recent recommendations submitted to the Surgeon General by the Subcommittee on Burns of the Committee on Surgery of the Division of Medical Sciences, National Research Council. It is presented as a suggested method of treatment to be followed whenever practicable.

I. FIRST AID TREATMENT

A. Primary Objectives:

- (1) To protect the burned area, which is an open wound, from further contamination.
- (2) To prevent and combat shock as promptly as possible by plasma transfusion, if available.
- (3) To relieve pain.
- (4) To minimize fluid loss.

B. Asepsis:

The medical officer and assistants should be masked, if practicable; otherwise, mouths must be kept closed as far as possible since the hazard of infection from organisms in the nose and throat is greater than from any other source.

C. Chemotherapy:

Administer 4 gms. (60 grains) of sulfadiazine by mouth. This is contained in the first-aid pouch.

D. Plasma:

Administer plasma promptly, if available, or the equivalent number of units of human serum albumin, as this is an important element in the treatment of shock.

E. Morphine:

Pain should be relieved by adequate doses of morphine. Pain resulting from an extensive burn can ordinarily be relieved by a dose of $\frac{1}{2}$ grain of morphine. If lung damage or pronounced anoxia from any other cause is present, large doses of morphine are dangerous. Under these conditions the dose should be limited to $\frac{1}{4}$ grain.

F. Burned Area:

Do not use tanning or other eschar treatment. Remove rings from fingers of burned hands. Irrespective of location, apply boric acid ointment over the burned surface, or, if this is not available, use vaseline. Lay one or two layers of sterile fine mesh gauze (44 mesh gauze bandage is satisfactory) smoothly over the ointment-covered burn. Place over this a smooth thick layer of sterile gauze dressing, large or small first-aid dressings being especially suitable for this purpose. Finally, apply a gauze or muslin bandage firmly over the dressing. When an extremity is involved, a splint is advised as a final step in the dressing.

G. Prophylaxis Against Tetanus and Gas Bacillus Infection:

All personnel with burns of the second and third degree shall be given an emergency injection of 0.5 ($\frac{1}{2}$) c.c. of tetanus toxoid injected intramuscularly, providing they have received initial immunization. The prophylactic dose of gas bacillus antitoxin may be given at the discretion of the medical officer.

H. Eyes:

A single instillation of 2% butyn ophthalmic ointment may be given for burns of the eyeball. Caution against rubbing the eyes in view of the hazard of injury to the anesthetized cornea.

II. DEFINITIVE TREATMENT**A. Primary Objectives:**

- (1) To combat shock by adequate, prompt, and rapid plasma or human serum albumin administration. Quantities up to 12 units of plasma may be required in the first 24 hours in patients with severe burns. Plasma must be given rapidly (500 c.c. in 5 minutes) to the patient in critical condition; if possible, not being allowed to flow drop by drop. Syringe injection may be used.
- (2) To minimize contamination of the burned area, which is an open wound.
- (3) To remove first-aid dressing for definitive treatment.
- (4) To minimize fluid loss. Parenteral fluid replacement, other than that supplied in the form of plasma or whole blood transfusion, should be obtained by means of 5% glucose in sterile distilled water. The intravenous injection of sodium chloride solution should be reserved for those burn cases in which mineral depletion is marked, as when great loss of electrolytes results from persistent vomiting.
- (5) To continue chemotherapy with special regard to fluid intake and output and renal damage. Sulfadiazine, subsequent to the initial first-aid dose, should be given only under the direction of a medical officer. While sulfadiazine is the drug of choice, sulfanilamide may be substituted. It is emphasized that although sulfonamide therapy may prevent infection, caution must be exercised in administering such treatment in burn cases. The danger of renal complications is materially increased by the extensive fluid loss and possible kidney damage so common in burn cases. Maintenance doses of sulfadiazine should be given in 0.5 gm. ($7\frac{1}{2}$ grains) doses every 4 hours until such time as adequate renal function can be assured, when the dosage may be increased to 1 gm. (15 grains) every 4 hours.

B. "Open" Treatment:

- (1) Asepsis: Surgeons and assistants are masked and gowned. The patient is also masked.
- (2) Cleansing: If contaminated with oil use the detergent supplied for the purpose by the Naval Medical Supply Depot. In the event that this may not be available, sterile lard or mineral oil are suitable. Follow the detergent application by white soap (Ivory or similar) and sterile water. Cleanse separately and carefully the surrounding skin with white soap and water. Do not use brushes in the cleansing of the burn, and avoid applying tincture of green soap.
- (3) Debridement: All blisters and loose shreds of epidermis are carefully removed with sterile forceps and scissors. Cleanse with plain white soap, soft cotton, and sterile water: the area around the burn being cleansed as gently but as thoroughly as possible. If the burned surface is washed, it must be done with minimum trauma. It is not always necessary to wash the burned surface. Evidence of irreparable damage to deeper layers of skin may not be apparent for several days and excision in such cases should be done as a secondary procedure. The resulting wound should be handled like any other open surgical wound, primary grafting of skin being carried out if conditions permit. General anesthesia, preferably obtained by intravenous injection, should be utilized for painful surgical procedures or dressings. Local anesthesia is contraindicated.
- (4) Pain: In most instances, morphine sedation is all that is necessary.
- (5) Dressing of the Burned Area: Apply fine mesh sterile gauze (44 mesh gauze bandage is satisfactory), impregnated with boric acid ointment or vaseline over the prepared surface. A smooth thick layer of sterile dressing is now added over this; this may consist of gauze, absorbent cotton, cotton waste, or cellulose. The dressings are to be held in place with smooth, even compression by an evenly and firmly applied bandage. Stockinette or some form of elastic bandage is more effective than the roller bandage. Unless complications develop, the dressing should not be disturbed for 10 days, with merely occasional tightening of the bandage. Firm pressure is especially important in the case of burns of the hands and face. If an extremity is involved, the dressing starts near the tips of the digits, the latter being separated. Uninvolved tips are left exposed to check for circulation. A splint is added as a final step in the dressing when an extremity is involved.
- (6) Skin Grafting: At the end of 10 days, areas of part thickness loss, that is, second-degree burns, should be largely healed. Areas of whole thickness loss, that is third-degree burns, may be prepared for grafting by excision of the dead tissue. If suppuration is present, wet dressings may be advisable. However, skin grafting at the earliest opportunity is mandatory if the whole thickness of the skin has been destroyed. Transfusion of fresh whole blood is required to combat the rapidly developing severe anemia complicating severe burns. When such anemia occurs, whole-blood transfusion is particularly indicated as a preliminary to skin grafting.

C. "Closed" Treatment (Tanning or Eschar Treatment):

(1) **Indications:** This procedure is particularly indicated in extensive flash or second-degree burns of the trunk. It is recommended only under the following conditions:

- (a) If not more than 12 hours have elapsed since the casualty occurred.
- (b) If the burned area has not been grossly contaminated by contact with soiled clothing or immersion in sewage-contaminated water.
- (c) If strict surgical asepsis is employed in the preparation of the burned surface.
- (d) Only if coagulation is rapidly accomplished, as with tannic acid spray and silver nitrate. Slow methods of tanning, such as with tannic acid jelly or tannic acid without silver nitrate, permit absorption of tannic acid with the possibility of serious toxic effects, particularly on the liver.

(2) **The Tanning or Eschar Technic:** Burns of all surfaces, except those of the hands, feet, perineum, and genitalia, and those involving the circumference of an extremity, may be treated with tannic acid and silver nitrate. A freshly prepared 10% aqueous tannic acid is sprayed over the burned area. This is followed immediately by spraying the area with a fresh mixture of equal parts of 10% tannic acid and 10% silver nitrate solution. The latter mixture is then sprayed on the burn every one-half hour for a total of 4 applications, or until a satisfactory eschar has been formed. Care should be taken to avoid spraying normal skin about the wound. While drying, the burned area may be kept exposed to the air in a heated cradle. The hands, face, feet, perineum, and genitalia should not be tanned.

After the eschar is dry, it may be covered with a dry sterile dressing, and, in the absence of infection, should be allowed to separate spontaneously. If infection develops, the eschar must be removed from the entire infected area and the latter then managed like any other infected wound with the appropriate systemic and local therapy.

D. Alternate Treatment with Physiological Saline Solution:

Physiological saline solution has been found useful in the treatment of burns involving the face, feet, hands, and especially fingers; also the genitalia flexures and the perineum. It may also be applied in the therapy of surface infections following the removal of eschars produced by tannic acid or other coagulants. The saline solution may be employed in the form of packs or baths.

ROSS T. McINTIRE

BUREAU OF MEDICINE AND SURGERY
Navy Department, Washington, D.C.

February 19, 1943.

From: The Chief of the Bureau of Medicine and Surgery.
To : Commanding Officers, U.S. Naval Hospitals;
Senior Medical Officers, major U.S. Navy and U.S. Marine
Corps activities.
Subject: Post-graduate instruction in certain medical department
specialties.

1. The rapid expansion of the U.S. Navy and of the U.S. Marine Corps makes it necessary to place under training immediately medical officer personnel in the specialties listed below. Medical officers interested are urged to submit without delay requests for this training, which should contain full information concerning previous experience or background in the specialty desired, and should be forwarded to the Bureau of Medicine and Surgery with an endorsement by the Commanding Officer. Reliefs for medical officers selected will be provided if required.

Epidemiology and Malarial Control: Course for 28 medical officers begins April 15 at Naval Medical School, National Naval Medical Center; duration 6 months. Orders to personnel selected will be issued about March 20.

Tropical Medicine: Courses for units of 20 medical officers will convene at Naval Medical School, National Naval Medical Center, Bethesda, Maryland, on or about April 1 and each third month thereafter. If applications exceed the capacity of the Medical School, arrangements will be made to provide this training at the Medical School of Tulane University, New Orleans, Louisiana, and at the Medical School of the University of California, Berkeley, California.

Psychiatry: Classes of from 10 to 20 medical officers will be assembled at the Naval Hospital, National Naval Medical Center, Bethesda, Maryland, and at the Naval Hospital, Philadelphia, Pennsylvania, as applications are received. Duration of courses from 4 months to 8 months, depending upon individual's previous experience in this specialty.

X-Ray and Radiology: Applicants will be assigned to 6 months training in this specialty at the Naval Hospital, National Naval Medical Center, Bethesda, Maryland; Norfolk Naval Hospital, Portsmouth, Virginia; Naval Hospital, Philadelphia, Pennsylvania; Naval Hospital, San Diego, California; Naval Hospital, Great Lakes, Illinois; and Naval Hospital, Oakland, California.

M-DK

-2-

February 19, 1943.

Subject: Post-graduate instruction in certain medical department specialties.

2. Commanding officers of Naval Hospitals and Senior Medical Officers of Navy and Marine Corps activities are requested to bring this notice to the attention of all medical officers attached to their commands or assigned duty at the activities concerned.

ROSS T. McINTIRE,
Chief of Bureau.

W. J. C. AGNEW,
By direction.

NOTE: Epidemiology and Malarial Control quota has been filled. (February 25, 1943.)

BUREAU OF MEDICINE AND SURGERY
NAVY DEPARTMENT
WASHINGTON, D.C.

P11-1/MM(074)

February 23, 1943

From: The Chief of the Bureau of Medicine and Surgery.
To: Commanding Officers, All Naval Hospitals and Naval Air Stations, Commandants, Navy Yards, Commandants and Commanding Officers, Naval Training Stations.
Subject: Recommendations for course of instruction in Epidemiology.

1. Several Malariology and Epidemiological and Sanitary Units are soon to be formed at the Naval Medical School, National Naval Medical Center, Bethesda, Md.

2. Due to the highly technical character of the work these units will perform in the field, it is requested that a careful survey be made of the hospital corpsmen attached to your command, and the names of those recommended for a course of instruction in epidemiology together with a resume of their qualifications be forwarded to the Bureau at the earliest practicable date but not later than March 15, 1943.

3. The men for this instruction should be carefully selected. It is preferable to have men who have had college training, principally in the basic sciences such as mathematics, chemistry, zoology, etc. Those who have had training in bacteriology are especially desirable.

4. The names of hospital corpsmen holding Bureau of Medicine and Surgery certificates of special instruction as laboratory technicians, X-ray technicians and pharmacy and chemistry technicians are not desired.

ROSS T. McINTIRE

Distribution List:
7(a), (d) partial,
and (i), and 8(c).

