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a digest of timely information

Editor - Lt. Samuel Nesbitt, (MC), U.S.N.R.

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Resuscitation Methods for Asphyxia: Statistics on the relative effectiveness of the various methods of applying artificial respiration are very inadequate. A high percentage of successful resuscitations in a statistically adequate series is the only convincing basis for approval of any one method although this does not constitute evidence that such a method is superior to others for

which adequate data are lacking. There is great variability in the circumstances of anoxic and asphyxial accidents, and there are many factors which determine the success of the remedial procedure employed. For this reason, extensive data are required for comparison of different methods. Conclusions for approved practice in the Navy must be based upon available field data as well as the physiological evaluation of the method in the laboratory.

The relative merits of manual and mechanical methods of resuscitation have been discussed for many years. The most extensive survey to date, carried out by the American Medical Association, indicated that in approximately 3,000 cases there was no significant difference in the effectiveness of manual and mechanical technics. In considering specific procedures or mechanical devices, the degree to which they simulate normal respiratory phenomena is an important criterion. The most important single characteristic of any acceptable method is its immediate availability. When asphyxia exists, and may have existed for some time, a few seconds gained or lost may determine the outcome. Our purpose is to review the present status of available methods.

Great emphasis has been placed upon the value of training non-medical personnel in a single, simple, standardized procedure which can be carried out by one operator. This simplifies the problem of training large numbers of persons and establishes general acceptance of such a method by the public so that the immediate institution of resuscitative measures at the site of the accident is not interrupted by controversy as to the choice of method. The acceptance of a single method to avoid confusion among laymen does not, however, preclude either the teaching or the use of approved alternative methods by medical personnel.

Manual Methods: The Schaefer prone-pressure method is sponsored by the National Research Council, the American Red Cross, the Bureau of Mines, the American Gas Association and other scientific and rescue groups. Industries, such as American Telephone and Telegraph Company and the Consolidated Edison Company of New York, employ it as a standard technic.

The effectiveness of the Schaefer method has been demonstrated in the experience of the American Gas Association which reports 1,247 lives saved in a ten-year period due, "beyond all question", to the use of this prone pressure technic. Wills MacLachlan, whose survey was of cases of electric shock, also reports that 448 of 627 lives were saved by manual prone pressure. The relatively high percentage of successes in the MacLachlan series is especially significant because of the probability that it included a number of cases of ventricular fibrillation.

The Eve tilt-table method of resuscitation, which was originally described in 1932, has received attention and favorable comment and has been

adopted officially by the British Navy as an alternative method. While it cannot be classified strictly as a manual method because of the fact that it involves the use of equipment, the physiological principles involved are sound and experimental trials have been favorable. The equipment is minimal and can be constructed from items which are generally available. It should, however, be set up and ready if it is to be used in emergencies. There are no available records of resuscitation of a non-breathing victim by the Eve method, and there is no evidence to support the extreme view that the Schaefer method should be discontinued in favor of the Eve technic.

Other manual methods include the Sylvester, the Holger-Nielsen, and the Drinker-Combined methods, all of which have all been used to some extent. Although there are notssufficient clinical data to establish the effectiveness of these technics, laboratory tests have shown that adequate ventilation can be attained in both conscious and anesthetized subjects by their use.

The Sylvester method is performed by a single operator. In the expiratory phase the chest of the subject is compressed while he is supine with forearms crossed over the chest. In the inspiratory phase the subject's arms are extended laterally and cephalad, lifting and expanding the thoracic cage.

In the Holger-Nielsen method a single operator kneels at the head of the prone victim. Expiration is effected by exerting pressure on the scapulae of the subject, while inspiration is brought about by grasping his elbows and lifting the arms dorsad and cephalad.

The Drinker-Combined method utilizes the prone pressure of the Schaefer method and the arm lift of the Holger-Nielsen method, so that two operators are required.

Mechanical Methods: The use of mechanical resuscitative devices is appropriate only when circumstances preclude the use of manual methods. Such devices should be considered as supplementary to traditional manual methods and not as substitutes for them.

There is a clearly defined need for mechanical resuscitators in the Navy. In air-sea rescue boats, heavy seas and space limitation may impose severe restrictions on the use of manual methods. These restrictions may also apply in rescue operations at sea on lifeboats. Resuscitative measures employed on naval vessels may have to be applied to men in relatively inaccessible spaces or who are pinned beneath damaged structures. Space limitation in multitiered bunks in aircraft engaged in air-sea rescue or transportation of wounded also makes it necessary to use mechanical devices.

Requirements and Essential Equipment for Mechanical Resuscitation: The Committee on Industrial Medicine of the National Research Council has approved

employment of mechanical devices where manual methods are not feasible. The Committee specified that mechanical devices have the following general characteristics: "(1) Be as simple mechanically as possible; (2) be as small and light as possible; (3) provide only positive pressure with a limit of 10 mm. Hg.; (4) provide no negative pressure."

The Bureau of Medicine and Surgery concurs in these resolutions, except that final decision as to the maximal pressure at the mask be deferred pending further studies as to resistance to airflow. It recommends the addition of accessory equipment including a bellows for use when oxygen is not available, a hand-operated aspirator and airways.

Field tests and an evaluation of mechanical resuscitators which conform to these requirements are now in progress at various naval activities.

There is no adequate basis at present for selection of any one method, either manual or mechanical, except its immediate availability. Physiologically one method appears to be as effective as another. However, the circumstances of an accident may preclude the use of one or the other technic. For example, the Eve method, or certain mechanical methods, may have considerable advantage where prolonged application of artificial respiration is required for maintaining respiration. Similarly, if a victim is pinned beneath structural debris, it may not be possible to apply the prone pressure technic, whereas the arm lift of the Holger-Nielsen method could be used. In another situation the victim might be supine so that only the Sylvester method or mouth-to-mouth insufflation would be possible.

Thus it is apparent that if medical and hospital corps personnel are familiar with a number of procedures, it will greatly increase their resourcefulness and success in applying artificial respiration in difficult and unusual situations.

More information regarding the circumstances and effectiveness of resuscitative measures in the field is needed. To this end a multiple address letter to all ships and stations has been issued (N.D. Bull. of 15 Feb 1945, 45-146; Bumed News Letter, Vol. 5, No. 6) requiring reports on all cases receiving artificial respiration. From this source, data will become available on a subject which has been a center of controversy for over thirty-five years, and methods and equipment may be evaluated on the basis of accumulated facts rather than arbitrary opinions. (Nav. Med. Res. Inst., B. G. King; Res. Div., BuMed - J. N. Stannard)

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A number of manufacturers of equipment used in resuscitation are attempting to develop machines which will meet the above-mentioned requirements, and

some that appear to be satisfactory are ready for production. When they become available through the Medical Supply Depots, announcement to that effect will be made in the Bumed News Letter.

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Efficacy of Penicillin in the Treatment of Oral Fusospirochetosis: Studies which were started in March 1944, by Looby et al at the Dispensary, Philadelphia Navy Yard, indicate that penicillin is effective in the treatment of oral fusospirochetosis. The intramuscular administration of penicillin, which was employed in 52 cases, was slightly more effective than its use by topical application which was the method used in 53 cases.

Penicillin was given intramuscularly every three hours in doses of 20,000 Oxford units (5 injections) or 25,000 Oxford units (4 injections), the total dose being 100,000 units. Local application was carried out by spraying the gums with 10 c.c. of a solution containing 250 units of penicillin per c.c. in physiological saline. This was followed by swabbing the area with the same solution. A folded piece of sterile dental napkin gauze saturated with this solution was then placed directly on the lesions and held in place for 30 minutes. Each patient received such an application three times each day for a period of one to five days, each treatment utilizing 3,250 units.

Those patients with acute and subacute gingivitis improved promptly following penicillin therapy, but the chronic cases showed much less response. Spirilla and fusiform bacilli were absent or greatly reduced in number following such treatment in the great majority of cases. Follow-up studies made it clear that penicillin is not a cure for oral fusospirochetosis. The acute infection subsided promptly, but it was necessary to employ other measures subsequent to the penicillin therapy in order to obtain lasting results.

Investigations carried out at the Naval Medical Research Institute also showed that topical application of sodium penicillin (500 to 1,000 units per c.c.) in saline reduced or eliminated oral fusospirochetosis. These treatments were given twice daily for three or four days.

Scrivener, at the U. S. N. Training Center, San Diego, observed the changes that took place in the mouths of 15 men undergoing penicillin treatment for gonorrhea, these men receiving a total of 100,000 units. In all cases there was a definite decrease in the number of bacteria, particularly of cocci and spirilla, found in the saliva following treatment with penicillin. Not only was the number of Vincent's organisms reduced in every case, but also inflamed gums showed considerable improvement. Although the counts of L. acidophilus were slightly lowered, there were no changes in salivary acidity and no measurable effect upon susceptibility to dental caries.

Strock administered penicillin intramuscularly and locally in doses much larger than those used by Looby et al. In all cases there was prompt improvement of the gingival lesions, and the numbers of oral fusiforms and spirilla were sharply reduced. (J.A.D.A., Sept. '44)

A study of the efficacy of penicillin in the treatment of Vincent's stomatitis was also made at Lowry Field, Denver. Thirty-two patients were given local applications three times daily for from one to three days. The total dosage varied from 48,000 to 116,000 units. Before each treatment the mouth was sprayed with water to remove debris. The ulcerated areas were dried and drops of concentrated penicillin (100,000 units per c.c.) were applied. After two minutes the gums were sprayed with 6 c.c. of saline containing 300 units of penicillin per c.c. The results were, in general, comparable to those previously described. (Bull. U. S. Army M. Dept., Feb. '45)

Sweeney et al treated 43 patients with Vincent's stomatitis at Bushnell General Hospital. All were given penicillin intramuscularly in doses of 25,000 units every three hours; the average total dose was 721,000 units. After 48 hours of therapy, it was usually impossible to find fusiform bacilli and spirochetes except in those patients who had marked dental caries. (J. Lab. & Clin. Med., Feb. '45)

Successful treatment of ten cases of fusospirochetosis by the use of penicillin lozenges has been reported from the U. S. Naval Air Station Dispensary, Corpus Christi, Texas (Aviation Supplement to Bumed News Letter, Vol. 4, No. 6). The lozenges, each containing 2,500 units, were given at one to three hour intervals for one or two days.

The nature of fusospirochetosis and the relative merits of various methods of therapy have been discussed previously in the Bumed News Letter, (Vol. 2, No. 13 and Vol. 4, No. 10). Special reference has been made to the ineffectiveness of arsenicals, as shown by the development of Vincent's infections in patients who were receiving intensive arsenotherapy for syphilis. It has also been emphasized that fusiform bacilli and spirilla are common inhabitants of the normal mouth. Under certain conditions they may become pathogenic and act as secondary invaders. The factors (mechanical, nutritional, infective, etc.) which permit development of fusospirochetosis are numerous and often obscure, and they must be eradicated whenever possible in order to obtain optimal results. It is clear, however, that complicating infection with Vincent's organisms themselves may itself become serious and require separate treatment. For this purpose penicillin, given in several different ways, has proved to be of great value and can be expected to cause improvement within one to three days. (Res. Div., BuMed - L. E. Young)

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Hazards of External Use of Sulfonamide Compounds: During recent years numerous preparations containing sulfonamide compounds, usually sulfathiazole, have become available, and their use has been advocated for local treatment of minor lesions of the skin and orificial mucous membranes. Such preparations may have certain immediate advantages over the older and conventional measures in selected cases, but their indiscriminate use is to be deplored, not only because of the uncertain results, but also because of very definite potential hazards involved in such use.

The topical application of such sulfonamide compounds is generally effective against chancroid, ecthyma and superficial primary pyogenic infections, such as impetigo. Such treatment is of slight benefit in pyodermas complicating inflammatory eruptions and is of little or no value in other skin diseases. Despite these facts, sulfonamide preparations are being used to treat all types of dermatoses, lesions of the mucous membrane and traumatic injuries, perhaps without realization of the possible dangers involved.

The principal reaction which may occur as a result of the external use of a sulfonamide compound is the development of a dermatitis, which at first does not differ from an ordinary contact dermatitis caused by any other sensitizing agent. The earliest manifestation of this reaction is an eruption about the primary lesion which may be vesicular, bullous, erythematous or papular, later becoming moist, crusted and scaly. If the treatment is not discontinued, there will occur within a varying, but usually short period of time, a more diffuse eruption which may become generalized. This is a sensitization or an allergic type of reaction, and is most often of the eczematous type. Other types of reactions observed have been angioneurotic, urticarial, scarlatiniform, morbilliform, erythema multiforme-like and pemphigus-like. These manifestations will become more extensive and severe if the drug is continued. The eruption will usually disappear within a short period of time if the cause is recognized and removed and soothing applications employed. Occasionally the eruption may persist for a long period of time, may increase in severity and rarely death may occur.

Because of the sensitizing properties of the sulfonamides, it is possible that their topical use may preclude the internal administration of the drugs when this may become urgently indicated. The sulfonamide compounds have been shown to cause hemolysis in vitro, and when applied to open wounds, they may encourage bleeding. Delayed healing time of surgical wounds which are not infected has also been attributed to local application of sulfonamide drugs.

Reports indicate that reactions from the topical application of the sulfonamide drugs are increasing in occurrence and are more frequent than is recognized. The indiscriminate use of these preparations should be restricted and definite

precautionary measures should be employed. The topical administration of the sulfonamides should be limited to chancroidal and primary pyogenic infections of the skin. In the latter, perhaps, they should be used only after other measures have failed. The duration of the application should be limited to five days, as sensitization reactions frequently occur if the applications are continued beyond this period. Also, sensitization as a result of treating a minor ailment may contraindicate the internal administration of sulfonamides at a future time when its use would be of utmost importance. The use of these preparations, of course, should be abandoned promptly at the first evidence of any untoward reaction. (South. M. J., Feb. '45 - C. W. Lane; Arch. Dermat. & Syph., Nov. '44 - E. W. Abramowitz)

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Penicillin; Delayed Absorption Methods: When penicillin is injected intramuscularly or intravenously it is rapidly excreted in the urine, and an effective therapeutic level in the blood stream is rarely maintained for as long as two hours after injection. Recent experiments have indicated methods of prolonging an effective level of penicillin after injection. It has been suggested that the rate of renal excretion of penicillin may be retarded by the simultaneous injection of diodrast (1) or para-aminohippuric acid (2). Methods for delaying the absorption of penicillin have been studied which include prolonged chilling of the injected muscle (3), the addition of epinephrine to the penicillin dose (4) and combining the penicillin with a special vehicle. Armstrong et al (5) have suggested that when penicillin is injected intramuscularly in a 5 per cent dextrose solution, it is demonstrable in the blood for a significantly longer period than when the vehicle utilized is the usual physiological salt solution.

Of the delayed absorption methods the work of Romansky (6, 7) has given encouraging clinical results. He has found that high potency calcium penicillin (1,000 Oxford units per mgm.) can be suspended in a 6 per cent mixture of beeswax in highly refined peanut oil of low moisture content so that 1 c.c. of the mixture represents 300,000 Oxford units. For this purpose sodium penicillin is not suitable because of its hygroscopic qualities. Penicillin in this mixture has been found to be stable for a period of over six months at 37°C. The use of highly purified U.S.P. sun-bleached beeswax resulted in practically little or no irritation, a slight soreness being noted up to 24 hours at the site of the injection. The intramuscular injection in man of 300,000 Oxford units in 1 c.c. of this mixture provided detectable blood levels for 24 hours, and with 600,000 units the same effect was prolonged to 28 hours. In each case penicillin could be detected in the urine for about 72 hours after a single dose. Romansky has treated 222 patients with gonorrhea with a single injection of calcium penicillin given in this manner. In 100 patients given 100,000 Oxford units there were 7 failures, all of the latter being cured upon retreatment with a single dose of 150,000 units. In the remaining 122 patients of this group given a single dose of 150,000 Oxford units there were no failures.

Many patients with staphylococcal infections of varying severity have been treated with single or multiple injections without failure. The largest dose used in these cases was 200,000 units, which produced a persistent blood level for about 16 hours. Thirty patients with pneumococcus pneumonia have been treated successfully with 4 daily doses of 200,000 units each.

Twenty-five patients with early syphilis have been treated with 8 daily injections of 300,000 units each (total 2.4 million units). One patient with late syphilis received an injection daily for 20 days. There was no evidence of local or systemic reaction. In all of these patients a detectable level of penicillin was constantly present in the blood throughout treatment, and urine excretion of penicillin persisted for two to three days after the last injection. Twelve of these patients have been followed for over five months. All have become seronegative at the same rate as after comparable dosage of aqueous penicillin. No relapses have been observed.

No immediate allergic reactions were observed, but 4 of 350 patients developed hives and angioneurotic edema six to eight days following treatment. Seventy patients were skin-tested with oil, wax and penicillin before and after treatment with negative results.

Chow and McKee (8) have combined crystalline penicillin with human plasma protein to make a penicillin-protein complex. They have isolated this complex in a state of at least partial purity as a dry powder which appears to retain full antibiotic power. This colloid is apparently much more slowly absorbed from the site of injection and more slowly excreted by the kidneys than is free or unbound penicillin. Since the protein in this complex is normal human albumin, the penicillin-protein complex may be found to be nontoxic and nonantigenic in man. The therapeutic efficiency of this new colloidal penicillin is now under investigation.

Parkins et al (9) have combined sodium penicillin in a vehicle containing from 6 to 20 per cent ossein gelatin and a long-acting vasoconstrictor drug (Privine or Neo-synephrine) so that 1 c.c. contained 5,000 or 10,000 Oxford units. Following a single intramuscular injection in patients of 1,000 units per kilogram of body weight, blood concentrations of penicillin were maintained at measurable levels for from seven to eight hours.

Methods of prolonging the effective therapeutic level of penicillin in the blood stream have given encouraging clinical results and hold much promise for the future. It should be emphasized that these methods are still in the experimental stage and are not at present adaptable for general use.

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Penicillin; Methods for Oral Administration: It has been accepted generally that the various salts of penicillin in aqueous media cannot be administered orally because of their rapid inactivation by gastric acidity. Available data indicate that penicillin is absorbed from the small intestine. Recent investigations have been undertaken in an effort to devise a method whereby penicillin administered by mouth might be protected from gastric acidity and be available for absorption from the small intestine.

Libby (1), utilizing the fact that little if any fat-splitting takes place in the stomach, and that most of the digestion and breakdown of fats occurs in the small intestine, prepared suspensions of the sodium and calcium salts of penicillin (150 to 300 units per mgm.) in cottonseed oil dispensed in gelatin capsules containing 10,000, 25,000 or 50,000 units per capsule. Following the oral administration of a single dose of approximately 90,000 units of sodium penicillin in this manner to a man weighing 86 kilograms, maximal amounts of penicillin were found in the urine during the first two hours, decreasing to 1.8 units per c.c. eight hours after administration. Blood levels of approximately 0.05, 0.04, 0.04, 0.02 and zero units per c.c. were obtained at 1, 2, 4, 6 and 8 hours following administration. He suggests that such a dose may maintain a fairly uniform therapeutic blood level for a period of at least four hours, and that two, three or more intramuscular injections of 20,000 units in aqueous solution would be required to maintain a comparable blood concentration over the same period. Following the oral administration of 90,000 units of penicillin in oil, with two subsequent doses of 20,000 units at three-hour intervals, a therapeutic blood level was maintained for a period of at least seven hours. It appeared that some penicillin administered in oil was inactivated, probably by gastric acidity, and optimum blood levels were obtained when it was given with the subject fasting.

Little and Lumb (2) found that the maximum range of penicillin activity occurred between pH 4.6 and 8.0. When penicillin in various media was incubated at pH 2.5 at 37°C., its action was destroyed; penicillin in plasma and in milk was seriously affected and in raw egg was least affected. They concluded that some substance in egg protects penicillin against an acid medium. Taurocholate also had some protective effect. They believe that the bacteriostatic activity of the blood rose to satisfactory levels when human subjects were given

alkali by mouth followed by penicillin in egg, and they are making a further clinical study of this.

McDermott et al (3, 4) have investigated the oral administration of calcium penicillin in corn oil and in peanut oil containing four per cent beeswax; and of sodium penicillin in water either alone or preceded by magnesium trisilicate as a buffer. All subjects were kept in a fasting state throughout the period of observation. Following the oral administration of 315,000 units of penicillin in these various media the serum concentrations ranged from 0.312 to 1.25 units per c.c. at 30 or 60 minutes after ingestion, and it appeared that concentrations of approximately the same order of magnitude were attained regardless of the media. The highest concentration of 1.25 units per c.c., attained at two hours, followed the use of the oil and beeswax preparation. Only a fraction of the ingested penicillin appeared in the urine during the succeeding 12 hours. The total urinary excretion during this period ranged from 6 to 32 per cent, but in the majority of cases was approximately 12 per cent. Studies of the serum concentrations and urinary excretion of penicillin following simple oral doses of 100,000 and 50,000 units by the four methods yielded results similar to those observed after the 315,000 unit dose. It would appear that approximately five times as much penicillin administered orally is required to obtain a serum level comparable to that which is attained following intramuscular injection.

Five male patients with gonorrheal urethritis have been successfully treated by the oral administration of penicillin in corn oil, and there have been no known relapses. The first three received excessive doses. The next two received 45,000 units every three hours for six doses (270,000 units total). The clinical and bacteriological results were comparable to those following the use of penicillin injected intramuscularly. The sixth patient was given ordinary sodium penicillin powder in a gelatin capsule. The dosage was 50,000 units every three hours for six doses (300,000 units). The therapeutic result was as successful as that following the oral administration of penicillin in oil or the intramuscular injection of penicillin.

Nine cases of pneumococcal pneumonia due to organisms of several serological types have been treated. Although the severity of the illness varied, at least six patients were critically ill, and one was in severe diabetic ketosis. The amounts of penicillin administered orally in these cases were huge and, in retrospect, the dosages represented over-treatment with penicillin, but there was hesitancy in reducing too rapidly doses administered orally. The basic regimen used in about half the cases was the use of approximately six times the average necessary intramuscular dose. Therapeutic results in all nine cases were excellent. Seven of the nine cases defervesced by crisis within the first 12 to 14 hours. The other two patients recovered quickly but their temperatures lysed and were not normal for 60 and 96 hours respectively. In

no instance was a meal delayed or omitted, and no particular effort was made to regulate the dosage of penicillin in relation to meals. No gastric, intestinal or other complications were noted. No studies on gastric acidity were made.

Charney et al (5) found that less penicillin was excreted in the urine when the drug was administered orally in water two hours after breakfast than when given after an overnight fast. The administration of trisodium citrate or disodium phosphate with penicillin to the fasting subject slightly increased the urinary excretion of penicillin. The administration of these substances with penicillin when given two hours after breakfast, resulted in approximately 100 per cent increase in the urinary excretion of penicillin as compared to the urinary excretion following administration of penicillin in water alone under the same conditions. There were large individual differences in urinary excretion of penicillin following oral administration.

Gyorgy (6) has administered calcium penicillin orally in combination with trisodium citrate as a buffer. The drug was given in a dosage of from 20,000 to 30,000 units plus 1 to 5 Gm. trisodium citrate in from 200 to 400 c.c. of water. This method of treatment was found to be therapeutically effective in gonorrhea, there being a clinical cure in 23 cases after a total dosage ranging from 200,000 to 480,000 units which was given in three or four doses over a period of from 12 to 24 hours. This combination of penicillin and buffer by mouth produced higher and more prolonged blood levels of penicillin than when penicillin was given alone. The peak blood level attained following the oral administration of 40,000 units of calcium penicillin was 20.0 units per c.c., the average about eight units per c.c., and the average duration of a detectable blood level was from two to three hours.

These experiments are interesting and show considerable promise of developing a new method for the administration of penicillin. The present problem is analogous to that involved in intramuscular injection and would appear to be the finding of the ideal vehicle as well as other factors whereby the duration of the serum concentration of penicillin can be prolonged following its administration.

These preliminary studies indicate that approximately five times the amount of penicillin is required when administered orally than when by intramuscular injection. It is possible that this increased use of penicillin may be offset by several factors. The ease of administration from the viewpoint of the physician as well as the patient is evident. Also, for oral use a less highly refined penicillin should be entirely satisfactory, thus simplifying the present procedures for the production of a suitable material. At present the supply of penicillin is limited. It is important to indicate that studies concerning the oral administration of penicillin remain in an experimental stage, and these methods are not available for general use.

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Signs and Symptoms of Impending Cerebral Hemorrhage: The tragic abruptness with which cerebral hemorrhage ends the lives of comparatively young persons led to a search for methods whereby such deaths might be anticipated. An analysis has been made of the records of patients who died with, or of, essential hypertension in an attempt to determine whether or not there are enough points of similarity among those who had cerebral hemorrhage to define an antecedent syndrome that segregates this group from other patients with essential hypertension. Studies of the heart and kidney can provide with reasonable accuracy an estimate of the state of the coronary and renal vessels, but there are no means for a comparable analysis of the cerebral circulation. Clinical findings have been the only evidence as to the integrity of this important vascular bed.

The records of 40 patients (average age 46.8 years) who died with essential hypertension were examined to determine whether or not the clinical courses of those who died of cerebral hemorrhage were similar enough to allow an accurate prediction of apoplexy. The data indicated that a clinical study of individuals with essential hypertension may indicate a picture peculiar to those patients who are likely to have apoplexy. Patients in this series who died of cerebral hemorrhage presented concurrent findings that were uncommon among other patients with essential hypertension. An investigation of individual medical histories revealed that the average duration of the disease among those who died of apoplexy was 20 per cent shorter than those dying of other causes. Of this group 19 had fatal cerebral hemorrhages. Five signs and symptoms were consistently observed. These were: (1) severe occipital or nuchal headaches, (2) vertigo or syncope, (3) motor or sensory neurologic disturbances, (4) nosebleeds and (5) retinal hemorrhages in the absence of papilledema or retinal exudates. These findings were negligible or absent among those patients who died of other causes. It was concluded that the demonstration of any four of these manifestations in persons with essential hypertension warrants the assumption that death from cerebral hemorrhage will occur within 0.8 to 5 years (average 2.1 years). (J.A.M.A., Feb. 17, '45 - R. D. Taylor)

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Effect of Prolonged Physical Inactivity on Sugar Tolerance: The effect of exercise on the utilization of dextrose is well known, and exercise in addition to diet and insulin has been accorded a prominent place in the treatment of diabetes mellitus. The fact that exercise increases carbohydrate metabolism does not necessarily mean that inactivity will do the opposite. Since the problem may arise of interpreting values for sugar tolerance in patients confined to bed for considerable periods, Blotner has investigated the effect of prolonged physical inactivity on the carbohydrate metabolism in non-diabetic individuals.

A study was made of the effect of prolonged physical inactivity on the dextrose tolerance of 86 non-diabetic patients - 70 adults and 16 children - who had been confined to bed for periods of one month to thirteen years because of various pathologic conditions. A comparison was made between the dextrose tolerance of these patients and that of active adults and children.

It was found, in general, that the sugar tolerance was diminished in those patients who had been confined to bed for considerable periods. The fasting blood sugar in these cases ranged from 70 to 130 mg. per hundred cubic centimeters, and the fasting urine was free from sugar. After the ingestion of dextrose the concentration of blood sugar rose to abnormal levels, the maximum being 365 mg. per 100 c.c., and varying amounts of sugar were found in the urine at different times. In many of the adults there was a high renal threshold for dextrose. In some patients, who later became ambulatory for several months, the sugar tolerance returned to normal. Age did not appear to have a definite relation to the diminished sugar tolerance. Hypertension, vascular disease, obesity and infection in themselves did not appear to be significant as causative factors.

The arteriovenous differences in the blood sugar of a group of inactive persons after the ingestion of dextrose ranged from 15 to 50 mg. per 100 c.c., which is normal or greater than normal. These results indicate that the muscles of the physically inactive patients are capable of utilizing sugar normally.

It is suggested that during prolonged physical inactivity the pancreas is at rest, because in this state there is not the demand for rapid storage and utilization of sugar that there is in active persons. Consequently, there may ensue diabetic-like reactions during dextrose tolerance tests even though the fasting levels of blood sugar are normal. (Arch. Int. Med., Jan. '45 - H. Blotner)

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The Rh Blood Factors: In the course of the recent rapid developments in the field of the Rh blood factors, it has become necessary to invent a special vocabulary to express the new ideas and to describe the new facts which have been discovered. This vocabulary has been tested by actual usage and has the

approval of other workers to whom it was sent for opinion. The purpose of this communication is to publicize the vocabulary more widely for the sake of uniformity in the use of nomenclature by all interested in the subject.

Anti-rhesus sera: Immune sera prepared in rabbits, guinea pigs, goats and other animals by injecting them with the blood of rhesus monkeys. The term applies to sera like the original experimental sera of Landsteiner and Wiener, which agglutinate the bloods of 85 per cent of all white persons.

Anti-Rh_o human sera: Human sera (usually obtained from mothers of erythroblastic infants) which give reactions paralleling the anti-rhesus sera; also known as standard anti-Rh sera.

Rh testing: Examination of blood for the Rh factor, using either anti-rhesus sera or anti-Rh_o sera alone.

Rh reaction: Result of the Rh test, namely either Rh positive or Rh negative. When the terms, Rh negative and Rh positive, are used as adjectives, they should be hyphenated; e.g., Rh-positive blood, Rh-negative individuals, but "the blood is Rh positive."

Rh sensitization: The act of becoming sensitive to the Rh factor. This may occur in one of two ways: namely, as a result of a transfusion of Rh-positive blood or as a result of pregnancy with an Rh-positive fetus. Natural sensitivity to the Rh factor does not occur; and only 1 in 25 to 50 Rh-negative persons exposed to the Rh antigen by transfusion or pregnancy becomes sensitized.

Rh factors are three in number, designated as Rh_o, Rh' and Rh" respectively.

Rh agglutinins: The animal anti-rhesus agglutinins are all of the same specificity (85 per cent positive in white persons). The anti-Rh agglutinins of human sera have three different specificities corresponding to the three Rh factors, namely anti-Rh_o (85 per cent positive in white persons), anti-Rh' (70 per cent positive) and anti-Rh" (30 per cent positive).

Rh agglutinogens; Rh antigens: These are five in number: Rh_1 (or Rh_o'), Rh_2 (or Rh_o"), Rh', Rh" and Rh_o.

Rh antisera: Antisera reacting with one or more of the Rh factors. Among human beings, in addition to sera containing only one sort of Rh agglutinin, there are some with two Rh agglutinins. Five common varieties of human Rh antisera are anti-Rh_o, anti-Rh', anti-Rh", Anti-Rh_o' (containing two agglutinins, anti-Rh_o and anti-Rh') and anti-Rh_o".

Rh genes: The series of allelic genes which determine the various sorts of Rh agglutinogens and Rh blood types. The most common (the standard) genes are six in number: rh, Rh', Rh", Rho, Rh_1 and Rh_2. When discussing only the results of tests with the standard anti-Rho sera, dividing persons into two types, Rh positive and Rh negative, only a pair of genes need be considered, Rh and rh. Obviously, Rh-positive persons may be either homozygous (genotype RhRh) or heterozygous (Rhrh), while Rh-negative persons are always homozygous (rhrh).

Rh blood types: Tests with anti-Rho, anti-Rh' and anti-Rh" yield eight standard types. The names of these types and their approximate frequencies among white persons in New York City are as follows: type Rh_1Rh_2, 13 per cent; Rh_1, 54.5 per cent; Rh_2, 15 per cent; Rho, 2.5 per cent; Rh'Rh", one in about 10,000; Rh', 1.2 per cent; Rh", 0.3 per cent; and Rh-, 13.5 per cent. There are striking differences in the distribution among different races; for example, in Negroes type Rho exceeds 40 per cent; in Mongolian races Rh- is virtually absent, and so on.

Rh typing: Classification of individuals within one of the eight Rh types with the aid of anti-Rho, anti-Rh' and anti-Rh" sera. Note the distinction between "Rh typing" and "Rh testing."

Rh genotypes: The six standard genes pair to yield twenty-one different genotypes. These twenty-one genotypes in turn fall into eight phenotypes identical with the eight Rh blood types, because only eight distinct types of blood can be distinguished with the anti-Rho, anti-Rh' and anti-Rh" sera.

Rh classes: For convenience in analyzing genetic results, the classification of persons according to their reactions only with anti-Rh' and anti-Rh" is convenient. This yields four classes, W, U, V and UV, analogous to the four common blood groups. Each class includes a pair of Rh types as follows: class W, Rho and Rh-; class U, types Rh_1 and Rh'; class V, types Rh" and Rh_2; class UV, types Rh'Rh" and Rh_1Rh_2.

Hr factor: The factor present in the agglutinogens determined by genes rh, Rho, Rh" and Rh_2. Hence only persons belonging to type Rh_1 (provided they belong to genotype Rh_1Rh_1 or Rh_1Rh') or type Rh' (rare genotype Rh'Rh') can possibly be Hr negative. Persons belonging to any of the other six Rh blood types are uniformly Hr positive. The common idea that infants with hemolytic disease due to the Hr factor are always Rh negative is wrong; such infants must in fact always be Rh positive.

Anti-Hr serum: Serum capable of reacting with blood containing the Hr factor.

Hr tests: Tests with anti-Hr serum.

Hr reaction: Results of the Hr tests, namely either Hr positive or Hr negative.

Rh incompatibility: Incompatibility based on difference with respect to one or more of the Rh factors.

Hr incompatibility: Incompatibility with respect to the Hr factor.

Rh blocking serum (antibody): A serum capable of reacting with blood containing the Rh factor but without producing agglutination, although blocking the action of subsequently added anti-Rh sera; i.e., Rh-positive blood treated with Rh blocking sera can no longer be agglutinated by anti-Rh sera. To date, blocking antibodies of only one specificity have been found, namely, anti-Rho. (J.A.M.A., Feb. 3, '45 - A. S. Wiener)

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The Value of Gastroscopic Examination in the Diagnosis of Gastric Disease: Since the invention of the flexible gastroscope in 1932 by Wolf and Schindler, gastroscopy has become a practical and valuable aid in diagnosis.

It should be pointed out that complete examination of the stomach by use of the gastroscope is impossible. For mechanical reasons, adequate visualization of certain regions of the stomach, especially the posterior wall and the lesser curvature below the angle, may be difficult. Lesions of the mid-portion of the stomach near the angle are most easily seen; lesions near the cardiac orifice are less readily visualized. Excessive gastric secretion and gastric spasm may increase the difficulties of performing this procedure.

Certain limitations of the procedure should be pointed out. Marked obesity, severe cardiac or respiratory disease, esophageal lesions and deformities of the vertebral column are contraindications to gastroscopic examination. Considerable discretion should be used in advising gastroscopy in patients who are of advanced age or who are unstable either from a nervous or emotional standpoint. Complications seldom occur after passage of the flexible gastroscope, especially when the examination is performed by an experienced gastroscopist. Although the risk is slight, this factor should be considered in the selection of patients.

Gastroscopic examination is most commonly indicated when the results of roentgenographic study of the stomach have been negative and yet the clinical history is suggestive of organic disease. Occasionally the gastroscopist may demonstrate a gastric ulcer or neoplasm that was not seen on roentgenographic examination. Gastritis, which the roentgenologist would not be able to discern, is the usual finding. However, in the great majority of cases in which the results

of roentgenographic examination are negative, the gastroscopist likewise finds a normal stomach.

In many instances, the roentgenologist requests gastroscopic examination in order to confirm either positive or doubtful roentgenographic findings. The gastroscopist may be able to assist in differentiating benign from malignant ulcers of the stomach. Caution must be exercised, however, by both the roentgenologist and the gastroscopist in attempting to make this differentiation as there is no substitute for microscopic examination of tissues involved. The gastroscopist also can be helpful in the differentiation of scirrhous carcinoma from hypertrophic gastritis. Again, differential diagnosis may prove to be difficult.

Gastroscopic examination may be of great value in following the progress of a gastric ulcer treated medically. By this means the ulcer frequently may be seen in the healing stages after all roentgenologic evidences have disappeared. Thus, repeated gastroscopic examinations may be of assistance in directing treatment.

Gastroscopic examination of the stomach which has been subjected to operative procedures also may prove to be valuable. In fact, this procedure probably has its greatest usefulness in the evaluation of postoperative syndromes. Gastritis or ulceration at the anastomotic junction of the stomach and intestine may be demonstrated by this means.

When adequate visualization is obtained, the appearance of gastric ulcer, gastric tumor and the well-developed forms of acute, hypertrophic, atrophic, ulcerative and erosive gastritis is striking and unmistakable. However, differentiation between normal gastric mucosa and the mucosa of milder forms of gastritis is often difficult. It is perhaps wise for the examiner to report only significant degrees of gastritis, that is, definite changes in the mucosa rather than mere variations in normal appearance. In the postoperative stomach it is particularly difficult to distinguish between postoperative mucosal changes and actual gastritis.

The importance of this procedure should not be exaggerated nor should it be underrated. Gastroscopic examination should be considered as an added tool in the methods of diagnosis of gastric disease or for following the course of such disease rather than being utilized to the exclusion of other means, particularly roentgenographic examination. (Proc. Staff Meet. Mayo Clinic, Feb. 21, '45)

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American Board of Internal Medicine: The next written examination of the American Board of Internal Medicine will be held on October 15, 1945.

The final date for acceptance of applications is August 1, 1945. Candidates in the Armed Forces may take the written examination at their station of duty with the permission of their senior medical officer. Further information may be obtained from the office of the Assistant Secretary-Treasurer, 1301 University Avenue, Madison 5, Wisconsin.

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Course of Instruction in Dental Repair and Maintenance: A four months' course of instruction in the repair and maintenance of dental equipment has been established at the U. S. Naval Training Center, Bainbridge, Maryland. The first class, which began on February 24, 1945, was composed of ten students selected on the basis of previous experience in the repair of dental equipment. A new course will start every four months.

Applicants with marked mechanical aptitude, a basic knowledge of electricity, and preferably with a background of experience in the repair of dental equipment, are encouraged to submit official requests to district commandants for this course of instruction. It is desirable that such requests be supplemented by suitable endorsements and recommendations by dental officers in the field who have had the opportunity to observe the candidate's fitness for such work. District commandants will be assigned a quota of Hospital Corps ratings of students eligible for future classes. (Dentistry Div., BuMed - R. S. Davis)

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Roentgenographic Examinations: Certain misapprehensions have been reported concerning the intent of BuMed Ltr BUMED-Y-DFS, P3-33P3-1(054-40) dated 4 Jan 1945 which was published in the Navy Department Semi-monthly Bulletin dated 31 Jan 1945 and reprinted in the Bumed News Letter, Vol. 5, No. 5.

The text of paragraph 3 of this letter indicated that roentgenographic examinations of the chest shall be made, "at the earliest opportunity", and, "if practicable." This is interpreted to mean that when photofluorographic equipment is available, the routine chest examinations shall be made. In this connection, photofluorographic units have been placed in naval activities in most continental ports, and in Navy #128, so that examination of the personnel of naval vessels may be obtained.

It is the policy of the Bureau to establish stationary photofluorographic units only in locations where approximately 10,000 examinations may be made each month. (Prev. Med. Div., BuMed - T. J. Carter)

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Ineffectiveness of Ingested Sulphur as a Mosquito Repellent: Sulphur dust or ointment was recommended as a chigger and tick repellent until the effectiveness of dimethyl- and dibutylphthalates was demonstrated. Recently it has been reported that the ingestion of sulphur or water with a high sulphur content afforded protection against chiggers, mosquitoes and other biting insects.

The effectiveness of ingested sulphur as a mosquito repellent has been investigated. One volunteer subject consumed 1,540 mg. of powdered sulphur in 385 mg. capsules daily for ten days and another subject 770 mg. daily for 15 days. The bare arms of the test subjects as well as those of two control subjects were exposed daily in a cage containing 400 to 500 mosquitoes (Aedes aegypti) and the average number of bites in three half-minute intervals was determined. There was no significant difference in the number of bites received by the two groups. However, the subjects who ingested sulphur believed that the irritation and wheal formation produced by the bites were less severe than in the control subjects, and this fact is being further investigated. It may be concluded that the ingestion of sulphur within the dosage range studied is ineffective as a repellent measure against mosquitoes. (Nav. Med. Res. Inst., Proj. 106 - L. Jachowski, Jr.)

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The Norton Medical Award of $3,500 which is offered to encourage the writing of books on medicine and the medical profession for the layman for publication in 1946 has been announced. Further information may be obtained from W. W. Norton & Company, Inc., 70 Fifth Avenue, New York 11, New York.

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To: All Ships and Stations. Op13-lD-psp
Serial 135213

Subj: U. S. Naval Hospital, Dublin, Georgia - Establishment of. 8 Feb 1945

1. The medical-department facilities at Dublin, Georgia, are established as of 22 January 1945, and designated:

U. S. Naval Hospital,
Dublin, Georgia.

This is an activity of the Sixth Naval District.

2. Bureaus and offices concerned take necessary action.

--SecNav. James Forrestal.

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To: All Ships and Stations. Op13-lD-psp
Serial 141613

Subj: U. S. Naval Military Government Hospital No. 202, Saipan, M. I. 2 12 67
26 Feb 1945

1. The G-4 functional component of the Military Government at Saipan is hereby established under a Medical Officer in Command and designated:

U. S. Naval Military Government Hospital No. 202, Saipan, M. I.

2. Bureaus and offices concerned take necessary action.

--SecNav. Ralph A. Bard.

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To: All Ships and Stations. BuMed-D-HM
P5-2

Subj: Dental Operations and Treatments, Recording of. 24 Feb 1945.

Ref: (a) Manual of the Medical Department, ch. 14, sec. VI.

1. Improper or inadequate recording of dental treatment and dental charting is hampering this Bureau in cooperating with other Government agencies requiring such records for substantiation or verification of claimants' statements in adjudicating claims of persons separated from the naval service. The dental entries on NavMed H-4, NavMed Y, and NavMed 566 are often required by the Veterans' Administration in determining veterans' rights to further dental treatment.

2. Instructions contained in reference (a) shall be carried out to insure accurate and complete recording of all dental treatment and the correct charting of teeth. --BuMed. W. J. C. Agnew.

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To: All Ships and Stations. BuMed-B-VMB A10-3/EW(121)

Subj: Army Publications, Supplemental List of. 15 Feb 1945

Refs: (a) BuMed ltr B-DLS, A10-3/EW(121), of 12 Apr 1944, par. 2; AS&SL Jan-Jun 1944, 44-490, p. 367.
(b) EXOS ltr AO(Pub)FMK:mfp, of 25 Feb 1944.

1. In accordance with reference (a), a supplemental list of U. S. Army publications treating medico-military subjects available to date for limited distribution is as follows:

LIST OF PUBLICATIONS FOR TRAINING

No.	Title	Date
TB QM 20	Prevention of Mildew - Enemy of all Equipment in the Tropics	15 Jul 44
SB 8-15	Replacement for, Disposition of and Recapture of Medical Department Unserviceable Property and Excess Serviceable Property	20 Oct 44
TB MED 18	Medical and Sanitary Data on Dutch New Guinea	10 Mar 44
TB MED 30	Medical and Sanitary Data on Formosa	8 Apr 44
TB MED 31	Scrub Typhus Fever (Tsutsugamushi Disease)	11 Apr 44
TB MED 52	Medical and Sanitary Data on Denmark	
TB MED 57	Medical and Sanitary Data on Guam	23 Jun 44
TB MED 75	Medical and Sanitary Data on the Lesser Sunda and Southwestern Islands	14 Oct 44
TB MED 83	Medical and Sanitary Data on the Izu, Bonin, Kazan, and Marcus Islands	7 Aug 44
TB MED 88	Medical and Sanitary Data on Khabarovsk Krai and Maritime Krai (Far Eastern Territory) U.S.S.R. (Excluding Kamchatka Oblast)	29 Aug 44
TB MED 93	Medical and Sanitary Data on the Dodecanese Islands	16 Sep 44
TB MED 98	Medical and Sanitary Data on Tunisia	3 Oct 44
TB MED 101	Use of Bal in Oil and Bal Ointment in Treatment of Systemic Poisoning Caused by Lewisite and Other Arsenical Blister Gases	4 Oct 44
TB MED 102	Medical and Sanitary Data on Java	10 Oct 44
TB MED 104	Use of Bal in Oil for Treatment of Certain Severe Mapharsen Reactions	12 Oct 44

TB MED 105	Medical and Sanitary Data on the Andman and Nicobar Islands	11 Oct 44
TB MED 107	Medical and Sanitary Data on Czechoslovakia	23 Oct 44
TB MED 108	Medical and Sanitary Data on the Ryukyu Islands	24 Oct 44
TB MED 109	Medical and Sanitary Data on Ceylon	28 Oct 44
TB MED 111	Medical and Sanitary Data on the Marshall Islands	3 Nov 44
TB MED 113	Medical and Sanitary Data on Borneo	7 Nov 44
TB MED 114	Immunization	9 Nov 44
TB MED 116	Use of War Wound Moulages in Teaching Emergency Medical Care and First Aid	18 Nov 44
TB MED 118	Medical and Sanitary Data on Hainan	Nov 44
TB MED 119	Bacillary Dysentery	Nov 44
TB MED 120	Medical and Sanitary Data on Sumatra	Dec 44
TB MED 123	Medical and Sanitary Data on the Azores	Dec 44
TB MED 125	Medical and Sanitary Data on Corsica	Dec 44

2. Medical Department activities may obtain copies of any of these listed Army publications by letter request directed to BuMed. These letter requests should give the catalog number, title and date of publication, and number of copies needed for a 6-month period as of 1 January and 1 July.

--BuMed. W. J. C. Agnew.

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To: All Ships and Stations Concerned With Aircraft. BuMed-Q-BHL P2-1/A21

Subj: Quarantine with Reference to Aircraft and Passengers. 10 Feb 1945

Ref: (a) BuMed ltr P2-1/A21(024) of 9 Aug 1944; N.D. Bul. of 31 Aug 1944, 44-991, last par. of app. II.

1. Foreign Quarantine Division Circular Number 71, Revised 27 Nov 1944, includes the Territory of Hawaii in the list of places from which passengers may fly into the continental United States, its Territories, and possessions without application of quarantine restrictions, in the absence of quarantinable diseases or epidemic conditions.

2. Therefore, this area (Territory of Hawaii) is hereby added to the list of places contained in the last paragraph of app. II of the above reference. Passengers embarking from the Territory of Hawaii, if they fulfill the conditions of the above reference, will not obtain medical certificates, but their names will be entered in the "Quarantine Declaration - Aircraft."

--BuMed. W. J. C. Agnew.

Approved:
--Aubrey W. Fitch,
Deputy Chief of Naval Operations (Air)

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To: All Ships and Stations. BuMed-WM-CM L8-2/JJ57(042-43)

Subj: Penicillin Therapy, Report of Results of. 17 Feb 1945

Ref: (a) BuMed ltr BuMed-WM-CM, L8-2/JJ57(042-43) of 13 Feb 1945; N.D. Bul. of 15 Feb 1945, 45-148.

Encl: (A) BuMed ltr BuMed-WM-ERT, L8-2/JJ57(042-43) of 28 Oct 1944.

1. Routine reporting of penicillin therapy in all diseases except syphilis was discontinued by enclosure (A). However, reports of unusual diseases treated by penicillin and reports of unusual results or reactions shall be submitted to BuMed.

2. Cases of syphilis treated by penicillin shall be reported as outlined in reference (a). --BuMed. W. J. C. Agnew.

Enclosure (A)

BUMED-WM-ERT
L8-2/JJ57(042-43)

28 Oct 1944

To: MedOfCom, NavHosps (Continental Limits).

Subj: Penicillin Therapy; Report of results of.

Refs: (a) BuMed ltr BuMed-X-FEW-III, L8-2/JJ57(042-43), 7 Jan 1944, in Bumed News Ltr, 21 Jan 1944, Vol. 3, No. 2, p. 15.
(b) BuMed ltr BuMed-X-FEW-III, L8-2/JJ57(042-43), 31 May 1944, in Bumed News Ltr, 9 Jun 1944, Vol. 3, No. 12, p. 32.

1. More than five thousand reports on the use of penicillin in conditions other than gonorrhea and syphilis have been received. This is considered adequate information regarding the effectiveness of penicillin therapy, except in several conditions listed below. Routine reports, therefore, in all other cases as required by paragraph 12 of ref (a), including reports from those hospitals indicated in ref (b), shall be discontinued.

2. If any of the below listed diseases are treated with penicillin, reports shall be made on penicillin therapy report form, NavMed 140:

A. Hemolytic Streptococcus Pneumonia
B. Mycoses
C. Arthritis (specify type)
D. Meningitis (specify type)
E. Gas Gangrene
F. All Eye Conditions
G. Infectious Mononucleosis
H. Yaws
I. Subacute Bacterial Endocarditis

--Ross T. McIntire.

To: All Ships and Stations. BuMed-W-SCW
P16-3/P3-2
Subj: Transfer of Hospital Patients within the Continental Limits. BuPers P3-2
MarCorps-1865-90
21 Feb 1945

Ref: (a) Art. D-7017(3), BuPers Manual.
(b) BuNav 312-SP, P3-5(80), of 18 Mar 1942.
(c) CMC 1865-90, AN-322-ed, of 6 Jul 1942.
(d) CMC 1865-90, AN-322-js, of 7 Jul 1942.
(e) BuPers-630-ND16, of 5 Mar 1943.
(f) BuPers-630-ND1, of 30 Jun 1943.
(g) BuPers-66-MSW, of 4 May 1944.
(h) CMC 2445/70-5780, DFB-532-hcm, of 2 May 1944.
(i) CMC 1865-80-40, serial DFA-415-gc, of 4 Jul 1944.
(j) BuPers-P3-2, 319-HBS, of 13 Jul 1944.
(k) BuPers-6303-DW, of 25 Sep 1943.
(l) BuMed-WH-ERT, P16-3/P3-2(082), of 12 Oct 1944.
(m) BuPers-6303-DW-1, P3-2, of 2 Dec 1944.
(n) BuPers Circ Ltr 296-44; N.D. Bul. of 30 Sep 1944, 44-1144.
(o) CMC Letter of Instruction 865.
(p) BuPers Circ Ltr 367-44; N.D. Bul. of 15 Dec 1944, 44-1398.
(q) Joint ltr BuMed-BuPers, Pers-66-ELM, P3-5, BuMed-RP-OIM, of 12 Jan 1945.

1. References a, b, c, d, e, f, g, h, i, j, k, l, and m are canceled and all instructions in conflict with this directive are modified accordingly.

2. The following instructions shall govern the transfer of patients between naval and/or naval convalescent hospitals within the continental limits for purposes of (a) special treatment, (b) transferring overseas casualties to hospitals nearer home, and (c) relieving crowded conditions in hospitals.

3. The interhospital transfer of all patients must have prior approval of the Bureau of Medicine and Surgery except transfers within the same naval district which require only the approval of the commandant of that naval district. Reference (p) modified accordingly.

4. In order to expedite the movement of patients, action by board of medical survey is dispensed with except for transfers outlined in paragraphs 5 and 6, and medical officers in command are authorized to issue travel orders incident to such transfers upon receipt of approval from the Bureau of Medicine and Surgery or the district commandant, as appropriate, reference (p). Mode of travel will be a matter of local decision in each case.

5. Action by a board of medical survey is required prior to the transfer of psychotic patients. In accordance with authorization in reference (q), medical officers in command of U. S. naval hospitals and naval convalescent hospitals

(continental U. S.) may take final action on reports of medical survey that recommend transfer of psychotic patients to another naval hospital or to the U. S. Public Health Service Hospital, Fort Worth, Texas. The original and one copy of the report should be forwarded to the Bureau of Medicine and Surgery for record purposes only.

6. BuMed and BuPers or MarCorps approval of medical survey is required for transfer of patients to non-naval hospitals such as Army and Navy General Hospital at Hot Springs, Arkansas, and the Georgia Warm Springs Foundation.

7. All requests to BuMed for transfer shall state the reference under which transfer is requested, the number, type (medical, surgical, NP), condition (stretcher, ambulant, convalescent), and whether officer or enlisted personnel. BuMed will approve or modify requests according to availability of beds, and will furnish information copy of action taken to naval hospitals concerned. Requests for transfer to a hospital nearer home, of other than overseas casualties, will be approved only in unusual circumstances.

8. The transferring activity shall advise the receiving activities in each instance of transfers with respect to scheduled time of arrival, number of stretcher cases, number of cases requiring special handling, and other information considered relative to an orderly and efficient handling of patients at point of reception.

9. The movement of overseas casualties from ports of entry upon arrival will be under the operational control of the district commandant concerned and will be made as outlined in paragraphs 3 and 4.

10. When effecting transfers under this authority appropriate travel orders will be issued and a copy of orders issued to officers will be forwarded immediately to BuPers or MarCorps as appropriate. Forward copy of page 9 of service record to BuPers in the cases of enlisted naval personnel and, in addition, NavMed HC-3 in cases of enlisted members of the Hospital Corps to BuMed. Notify Marine Corps activity at which staff returns of Marine enlisted personnel are carried as to hospital to which transferred. The commanding officer of the Marine Corps activity concerned will, upon receipt of such notification, transfer enlisted personnel by staff returns to the Marine Corps activity nearest the new hospital.

--BuMed. W. J. C. Agnew

--MarCorps. A. A. Vandegrift.

--BuPers. Randall Jacobs.

Approved: 21 Feb 1945

--Ralph A. Bard,
Acting Secretary of the Navy.

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To: All Ships and Stations. BUMED-T
P2-3(061)

Subj: Spectacles for Navy, Marine Corps, and Coast Guard Personnel on Active Duty. 12 Feb 1945

Encl: (A) Initial List of Optical Dispensing Agencies.

1. Personnel of the Navy, Marine Corps, or Coast Guard on active duty will be provided with new spectacles when required, or with lenses and/or frames as replacements for damage or loss in the performance of duty. This program will be entirely at Government expense.

2. Applicants for spectacles or optical repair service should apply in person, when practicable, at a designated hospital or dispensary, either with a prescription for correction lenses or a request for refraction or repair service signed by a naval medical officer except as provided in pars. 13 and 14.

3. The naval medical officer signing the prescription or the request for repair or replacement service must determine the need for the spectacles or service on the basis of the applicant's use of them in the performance of his or her official duties. Special cases requiring unusually close work for which bifocals are not adapted will be issued the number of pairs of spectacles determined necessary by the refractionist. The refractionist will not prescribe lenses in 1/8 diopter variations but will prescribe to the nearest 1/4 diopter.

4. In the case of each applicant the result of the examination shall be entered in Health Record under Special Duty Abstract H-3, Refractions. The prescription for spectacles with additional data concerning frame measurements shall be entered in detail on a Medical History Sheet H-8. In case spectacles are found to be not required an entry to this effect shall be made.

5. Repairs and replacements will be made only by materials described in Specifications, see par. 12. If this would result in right and left lenses or frames being unmatched in size, shape, or color, new spectacles will be provided.

6. Through the medium of optical service units, base and mobile types, spectacles repair and replacement facilities are available in various theaters of operation. The optical repair facilities are attached to certain fleet and base hospitals and hospital ships and shall be used by naval, Marine and Coast Guard organizations operating abroad in areas served by these facilities. Naval, Marine and Coast Guard organizations located beyond the continental limits, in areas which are not served by optical service units, may request that arrangements be made for service by mail through designated hospitals and dispensaries in parts of the continental United States nearest to the areas for which service is desired, such requests being made through the nearest district medical officer.

7. When personnel requiring service present a properly signed request or prescription at one of the designated hospitals or dispensaries, personnel of the dispensing unit will take facial measurements, prepare an order form listing all the information necessary as to the type of optical service needed, and forward the order to the contractor optical shop. Spectacles will be returned to the dispensing unit, after completion, by the contractor optical shop, and delivery of the spectacles will be made.

8. Personnel from visiting ships in port shall be permitted to obtain optical service from the designated hospital or dispensary nearest the port.

9. Designated activities for optical dispensing units will start this program when informed by their respective naval districts that applicable contracts have been awarded.

10. The designated optical dispensing activities will initiate purchase orders through regular channels, and all payment and accounting procedures will follow the same routine as other sundry purchase of supplies under contracts. At naval hospitals, glasses and incidental services procured for in-patients will, upon issue, be charged to General Ledger Account 10, Operating Expense and Expense Analysis Account E102, Wards. When furnished to staff personnel and personnel from other commands, the cost thereof will be charged to General Ledger Account 13, Navy as a Whole, and Expense Analysis Account E302, Out-Patient Services. At other activities the cost of all glasses and incidental services procured will be expended under the caption "Miscellaneous Medical Department Supplies" and reported on line 34 of Statement of Receipts and Expenditures of Medical Department, NavMed E.

11. The designated optical dispensing activities should request increase in allotments, under the subheads applicable to orthopedic and prosthetic appliances, to the extent that the funds available in the total quarterly apportionments of existing allotments are not sufficient to cover the additional expenditures arising under this program.

12. Specifications: Spectacles to be issued, either as new eyeglasses or as replacements, shall conform to the following specifications:

(a) Frame: Shall be of plain bridge design, wrap-around or semi-wrap-around, ful-vue construction, rocking zylonite pads, riding bow comfort cable temples, double screw split joint end pieces, and of 1/10 12K yellow-gold-filled material in either smooth, channel, beaded, or lightly engraved finish.

(b) Lenses: Shall be of white toric and/or meniscus form, single vision or Kryptok, ground and polished from high-quality ophthalmic lens blanks manufactured to the quality standards of first quality Balcor, Centex, or Rontor lenses or their equal. Tolerances for surface quality, power, centering, and thickness shall be those regularly accepted for lenses of that type in good commercial practice.

13. When on duty where refraction by a naval medical officer cannot be obtained, the services of a qualified medical officer of the Army or of the Public Health Service should be utilized if available. Request for this service should be signed by a naval medical officer, if practicable, otherwise by the commanding officer or officer in charge, and the procedure for obtaining spectacles shall be as provided in paragraph 14.

14. Personnel on independent duty and unable to avail themselves of Navy, Army or Public Health Service facilities should request authority for civilian refraction from the Bureau via official channels, stating the need and giving the estimated cost. If approved, the prescription with the proper facial measurements together with the Bureau's authorization shall be sent to the optical dispensing unit designated. On receipt, the spectacles should be properly checked and fitted. Bill in duplicate covering cost of refraction should be submitted to the Bureau for payment bearing the following certificate and acknowledgement: "Certified correct and just; payment not received" (signed by person rendering the service); "Receipt of services as above acknowledged" (signed by person receiving the services). --BuMed. W. J. C. Agnew.

ENCLOSURE (A)

INITIAL LIST OF OPTICAL DISPENSING AGENCIES

FIRST NAVAL DISTRICT
- U. S. Naval Hospital, Chelsea, Mass.
- U. S. Naval Dispensary, Davisville, R. I.
- U. S. Naval Hospital, Newport, R. I.
- U. S. Naval Hospital, Portsmouth, N. H.

THIRD NAVAL DISTRICT
- U. S. Naval Hospital, Brooklyn, N. Y.
- U. S. Naval Hospital, Sampson, N. Y.
- U. S. Naval Hospital, St. Albans, N. Y.

FOURTH NAVAL DISTRICT
- U. S. Naval Hospital, Philadelphia, Pa.

SEVERN RIVER NAVAL COMMAND
- U. S. Naval Hospital, Annapolis, Md.

POTOMAC RIVER NAVAL COMMAND
- U. S. Naval Hospital, Bethesda, Md.
- U. S. Naval Dispensary, Washington, D. C.

FIFTH NAVAL DISTRICT
- U. S. Naval Hospital, Bainbridge, Md.
- U. S. Naval Dispensary, Little Creek, Va.
- U. S. Naval Hospital, New River, N. C.
- U. S. Naval Hospital, Portsmouth, Va.
- U. S. Naval Hospital, Quantico, Va.

SIXTH NAVAL DISTRICT
- U. S. Naval Dispensary, Nav. Air Station, Atlanta, Ga.
- U. S. Naval Hospital, Charleston, S. C.
- U. S. Naval Hospital, Parris Island, S. C.

SEVENTH NAVAL DISTRICT
U. S. Naval Hospital, Jacksonville, Fla.
U. S. Naval Hospital, Key West, Fla.
U. S. Naval Hospital, Pensacola, Fla.
EIGHTH NAVAL DISTRICT
U. S. Naval Hospital, Corpus Christi, Texas
U. S. Naval Dispensary, Adv. Base Depot, Gulfport, Miss.
U. S. Naval Hospital, Houston, Texas
U. S. Naval Hospital, Memphis, Tenn.
U. S. Naval Hospital, New Orleans, La.
U. S. Naval Hospital, Norman, Oklahoma
NINTH NAVAL DISTRICT
U. S. Naval Dispensary N.T.S. (Armed Guard) Randolph Street and Lake Front, Chicago, Ill.
U. S. Naval Hospital, Great Lakes, Ill.
U. S. Naval Dispensary, Navy Pier, Chicago, Ill.
U. S. Naval Dispensary, Naval Air Sta., Glenview, Ill.
ELEVENTH NAVAL DISTRICT
U. S. Naval Hospital, Camp Pendleton, Calif.
U. S. Naval Dispensary, Long Beach, Calif.
U. S. Naval Hospital, Long Beach Calif.
U. S. Naval Hospital, San Diego, Calif.
U. S. Naval Disp., Marine Corps Base, San Diego, Calif.
U. S. Naval Disp., Naval Air Station, San Diego, Calif.
U. S. Naval Disp., Naval Repair Base, San Diego, Calif.
U. S. Naval Disp., Naval Training Sta., San Diego, Calif.
TWELFTH NAVAL DISTRICT
U. S. Naval Hospital, Mare Island, Calif.
U. S. Naval Hospital, Oakland, Calif.
U. S. Naval Hospital, Shoemaker, Calif.
U. S. Naval Dispensary, Nav. Adv. Base Dep., San Bruno, Calif.
U. S. Naval Dispensary, Nav. Tr. & Dist. Cen., Shoemaker, Calif.
U. S. Naval Hospital, Treasure Island, Calif.
U. S. Naval Hospital, San Leandro, Calif.
THIRTEENTH NAVAL DISTRICT
U. S. Naval Hospital, Astoria, Oregon
U. S. Naval Hospital, Bremerton, Wash.
U. S. Naval Hospital, Farragut, Idaho
U. S. Naval Hospital, Seattle, Wash.

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To: All Ships and Stations. Pers-6303-DW P3-2

Subj: Physical Examination of Enlisted Personnel to Prevent Physically Unqualified from Being Sent Overseas. BuMed-RP-IMB 28 Feb 1945

Ref: (a) BuPers conf. ltr Pers-63-MJB(1), P16-3/MM, of 13 Oct 1944.

1. Numerous reports of receipt of men in the overseas areas who are not physically qualified to perform all of their duties have been received by the Bureau of Naval Personnel. In reference (a) corrective measures were prescribed by BuPers to certain addressees. Reference (a) is hereby canceled inasmuch as the instructions are incorporated herein.

2. In view of the transportation involved, the unwarranted burden on medical facilities in advanced areas and the present congestion of men awaiting medical or dental treatment in those areas, it is extremely urgent that steps be taken to prevent transferring such men overseas.

3. The primary responsibility for the correction of the physical defects is vested in the commanders of the naval training centers at which recruits receive their first training.

4. The final responsibility for the correction of the physical defects is the activity having control of such personnel at the port of embarkation, under instructions prescribed by the appropriate district commandant to whom such activity is responsible. A careful physical examination of overseas drafts will be made at embarkation ports and the physically unfit eliminated.

5. It is expected that activities through which personnel pass, between the two responsible commands above mentioned, will conduct necessary examinations to correct, within reasonable limits, such original defects as may have passed inadvertently at an earlier command. Men who have minor correctible defects other than of a communicable or contagious nature, and for which treatment has been instituted, may be considered fit for transfer if the ship or station to which they are being transferred has proper facilities for their further care, should it be necessary. A note giving the pertinent clinical facts should be entered in the man's health record, and in addition, a letter should be forwarded to the medical officer of the ship or station to which transfer is being made, showing that the man is under treatment for the minor disability. Personnel should be considered not physically qualified for such transfer if they present conditions of more serious import which require hospitalization or prolonged treatment. Thus, individuals requiring essential dental treatment, or presenting a large hydrocele or varicocele, or a hernia, or extensive skin disease are usually to be considered unfit for overseas duty.

6. In order to remedy major dental defects for subject personnel, dental officers are directed to render adequate dental service, insofar as the facilities of their stations permit, and to make certifications on the H-4's of such individuals as follows:

"Station. . . . . Date. . . . . .
Essential dental treatment, operative and prosthetic, completed this date.
. . . . . .
Signature"

--BuPers. Randall Jacobs. --BuMed. W. J. C. Agnew.

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To: All Ships and Stations. BuMed-X-BLW:II P2-3/JJ51(074)

Subj: Chlorinated Solvents, Methyl Chloride and Methyl Bromide - Health Hazards of. 21 Oct 1944

Refs: (a) BuMed ltr P2-3/JJ51(074), X-ARP, of 28 Jul 1944, par. 2, A(1); N.D. Bul. of 15 Aug 1944, 44-992.
(b) Same ltr, par. 2, C(1).

1. Reference (a) is hereby modified to read as follows:

"The chlorinated solvents commonly issued to the naval service are as follows:

(a) Dichlorethane (ethylene dichloride)
(b) Tetrachlormethane
(c) Trichlorethylene
(d) Tetrachlorethylene
(e) Tetrachlorethane."

2. It was stated in reference (a) that the above listing represented the order of increasing toxicity of the compounds on inhalation. This has been found to be erroneous as a result of subsequent review of available data. The exact sequence of toxicity is very difficult, if not impossible, to determine with some of the substances listed.

3. Reference (b) is hereby modified to read as follows:

"These chlorinated solvents are colorless, not unpleasant smelling liquids which evaporate forming poisonous fumes. On contact with heated metal or open flames these compounds decompose into phosgene and hydrochloric acid gas which may be recognized by their odor."

4. This will correct a possible erroneous impression from reference (b) that this heating effect is limited to carbon tetrachloride and trichlorethylene.

--BuMed. Ross T. McIntire.

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Public Health Foreign Reports:

Disease	Place	Date	Number of Cases
Plague	Algeria	Dec. 11-20, '44	4
		Jan. '45	7 (suspected, 4 fatal)
	British East Africa, Kenya	Jan. '45	2 (fatal)
	Morocco (French)	Jan. 1-10, '45	21
	Senegal	Jan. 1-10, '45	14
Typhus Fever	Algeria	Dec. 11-20, '44	89
	Morocco (French)	Jan. 1-10, '45	99
	Turkey	Jan. 13-20, '45	100
Yellow Fever	Colombia	Dec. '44-Jan. '45	4 (fatal)

(Pub. Health Reps., Feb. 16, '45.)