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Circular Letters:

NOTICE

For administrative reasons, beginning with this issue, the name of this Letter is changed to "Medical News Letter."

The Epidemiology of Cancer: It has long been known that large and significant differences exist between the death rates from cancer not only in different countries but also between different geographical, occupational, and social groups within each country. In a new monograph, Dr. Percy Stocks, of the General Register Office, London, England, dissects these group differences to display their social and environmental correlations. In England and Wales these differences are most conspicuous in two main types of cancer, those of the stomach and of the lungs. The death rate from all types of cancer together shows a consistent rise with increasing urbanisation, a feature which appears quite strikingly in gastric and pulmonary cancer among both sexes in the age group of from 45 to 65. To this general rule there are, of course, exceptions; in the rural districts of North Wales the unusually high death rate from gastric cancer may be due to local divergence in diet or in methods of cookery such as "a deficiency in fresh milk and vegetables. . .or a predilection for the use of the frying pan." Certainly, although experimental evidence is as yet inconclusive, the possibility that the repeated use of cooking fats may produce carcinogenic agents needs further study.

Even within London itself, where the climatic conditions are largely the same throughout the city, and its diagnostic and therapeutic facilities are quite uniform throughout, local differences exist, and the excessive death rates from cancer of various parts of the body in the poorer districts suggest that social factors operate in their production. Mortality from gastric cancer is highest in areas where indices such as the number of persons per room and the death rates from tuberculosis and bronchitis suggest poor living conditions. Cancer of the uterus also shows this social gradient, but there is no such gradient in cancer of the lung, and the trend is reversed for cancer of breast and ovary, which bears more heavily on women between 45 and 65 in the less crowded and more affluent metropolitan boroughs. These social-class differences also hold for England and Wales as a whole, but social factors alone do not account for the disparities in cancer mortality between various parts of the country. It seems that climatic factors must be taken into account; death rates of pulmonary cancer are found to be inversely proportional to the number of hours of sunshine enjoyed in the locality concerned; and it follows, since this association remains after the effects of social differences have been taken into account in the statistical analysis, that either smokiness of the atmosphere must be important in the production of cancer of the lung, or, conversely, that sunshine may be equally important in its prevention. Again, Stocks shows that, even between socially equivalent groups of London boroughs, differences in cancer mortality are associated with differences in the source of their water-supply. Areas supplied from the Lea River (Bethnal Green, Hackney, Poplar, Shoreditch, and Stepney) have the high death rate from gastric cancer which social considerations might have led one to expect, but they also have unduly high death rates from pulmonary cancer, which usually has no close association with social factors. It may be doubted whether this relationship implies cause and effect--whether, for example, certain sources of water contain traces of carcinogenic material, or whether it is merely the result of some chance correspondence between local geography and dietetic or culinary habits. Statistical technics such as partial correlation do help to disentangle the circular patterns of causation

and correlation; but, as Stocks points out, further progress must await the following up by field surveys of the clues which he has uncovered. (Lancet, 13 Sept. '47 - Annotation)

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Study of Resistance of Mycobacterium Tuberculosis to Streptomycin: The phenomenon of bacterial resistance to drugs is not new. It has been manifest in all forms of chemotherapy and currently constitutes one of the chief limitations to the treatment of human tuberculosis with streptomycin.

The present report is part of a study to discover some of the factors which result in the production of streptomycin-resistant strains of Mycobacterium tuberculosis hominis. Cultures of M. tuberculosis hominis were recovered from the sputa of 8 patients with far-advanced pulmonary tuberculosis who were treated with streptomycin. In each case cultures were obtained before institution of treatment and at weekly intervals thereafter for a period of from 4 to 5 months. These patients were chosen for study because their sputa were highly positive and were expected to remain positive throughout the period of treatment and after it, thus providing maximum information concerning the occurrence and persistence of drug resistance.

The patients included in this study received streptomycin by intramuscular injection continuously for from 4 to 5 months. Except in one case, the daily dose was 1 Gm. divided into 4 doses given at 6-hour intervals. Each of the 8 patients reacted somewhat differently, not only in the clinical response but also in the findings pertaining to bacterial resistance to streptomycin.

In 7 of the 8 cases, a few relatively resistant organisms were found to be present in cultures of the patients' sputa before institution of chemotherapy. In each of these 7 cases a small number of colonies grew on plates of medium containing 5 and 10 micrograms of streptomycin per milliliter of medium, in marked contrast to heavy growth of the same culture on medium without streptomycin. Before exposure to streptomycin no colonies grew on medium containing 25 or more micrograms per milliliter of medium. The number of colonies on medium containing 5 micrograms per milliliter varied from 4 to 42; the number on medium containing 10 micrograms of streptomycin per milliliter varied from one to 8.

It was evident during this study that any large population of M. tuberculosis may be expected to contain organisms which are relatively resistant to streptomycin without having been exposed to the drug. In 4 of the 8 cases the original, predominantly sensitive strains of M. tuberculosis isolated from the patients were replaced during chemotherapy by predominantly resistant strains which were resistant to 1,000 or more micrograms of streptomycin per milliliter of medium In one case in which data are incomplete, the strain was resistant to 50 micrograms per milliliter at the end of 8 weeks of treatment. In two cases the strains

never lost their original sensitivity. In one case, only a minimal degree of resistance had occurred at the end of 4 and 1/2 months of treatment.

In the 4 cases in which the strains of M. tuberculosis eventually were predominantly resistant, weekly cultures of specimens of sputum showed a more or less gradual increase in the number of resistant organisms and of the degree of their resistance to streptomycin. This increase began within from one to 4 weeks after the initiation of chemotherapy, although the strains were not predominantly resistant for from 6 to 13 weeks.

Throughout this study it was observed that drug-resistant bacilli grow more slowly on medium containing streptomycin than do sensitive organisms on medium not containing any streptomycin. Colonies appear on mediums containing various concentrations of streptomycin from one to 4 weeks later than the growth on medium without streptomycin inoculated with the same specimen. Also, the resistant colonies are very small when they first appear, often scarcely visible, at a time when colonies on plain medium are well developed. In subsequent weeks of incubation the colonies on medium containing streptomycin gradually increase in size and numbers, and colonies may appear on mediums containing greater concentrations of streptomycin in the same set of cultures. This steplike process may continue for 8 weeks or longer. Hence it is necessary to establish a time limit for reading cultures in a comparative study.

It would seem that even though an organism is able to overcome the inhibiting effect of streptomycin, there is still considerable interference with its life processes, including multiplication.

It has been shown in the present study that a so-called strain of M. tuberculosis is a heterogeneous population, containing organisms of varying degrees of natural resistance to streptomycin. It is reasonable to suppose that the patient who is receiving streptomycin acts as a selective medium for the propagation of the relatively resistant organisms. These become dominant in the strain by a more or less gradual and orderly process. The resistance of M. tuberculosis to streptomycin has been shown to persist after subculture and after passage through animals. Therefore, it probably is an inherited characteristic, involving genetic changes. The mechanism of resistance is an important problem because of the clinical implications. When the mechanism is understood, methods of circumventing the occurrence of resistance may become apparent. (Proc. Staff. Meet., Mayo Clin., 15 Oct. '47 - M. M. Pyle)

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Concerning the Incidence of Peptic Ulcer in the Navy and Marine Corps: Although the overall incidence rates for peptic ulcers in Naval and Marine Corps personnel have been increasing in recent years, there have been significant variations noted among the rates for various groups distributed according to age, length of service, sex, occupation, and race. In line with civilian experience, the incidence rates, recurrences, and mortality rates for peptic ulcer in the Navy

increased sharply with age. However, there is an inverse relationship in regard to length of service in the Navy, the majority of the cases of peptic ulcer having occurred in personnel with less than two years of service.

When tabulated according to sex, the average incidence rates are widely divergent. The average rate for males was 222.1 per 100,000 strength, but the rate for females was 36.2, thus resulting in a ratio of 6 to 1 for peptic ulcers among males in the Navy and Marine Corps as compared with females. This compares with a relationship in civilian life of approximately 4 or 5 to 1.

There are also differences between the rates of occurrence of peptic ulcers in persons in the various types of service. The average annual rates for the years from 1942 through 1945 were higher for the Navy than for the Marine Corps in both officer and enlisted categories. Similarly, the rate for all officers was slightly higher than for all enlisted men, 224.0 per 100,000 strength as against 217.1.

For the years from 1942 through 1945, among Naval officers (no breakdown of Marine Corps personnel other than into officer and enlisted groups was possible), those of the Medical Corps had the highest incidence rate, 356.5 per 100,000. Officers of the Dental Corps ranked second, with an average annual rate of 298.5 and, as might be expected, midshipmen and aviation cadets, who are in the lower age groups, exhibited the lowest rates. During the latter part of the war, the incidence rates for several of the officer groups increased considerably, among these being the Medical Corps, the Chaplain Corps and the Civil Engineering Corps. The greatest increases were noted in the Chaplain Corps and in the Civil Engineering Corps. The rate for the Chaplain Corps rose from 0 in 1942 to 390.2 per 100,000 in 1945, and the rate for the Civil Engineering Corps increased from 68.8 in 1942 to 349.1 in 1945. Among the other officer groups, the rates were fairly constant during these years.

Among the enlisted men in the Navy, the occupation with the highest incidence rate for peptic ulcers was the carpenter category with an average annual rate for the war years of 481.0 per 100,000, which was higher than any in the officer groups. Closely following the carpenter group was the shipfitter class, with an incidence rate of 466.4. The high percentage of older men in construction battalions who held these ratings during the war years may account in part for the higher incidence rates in these groups. As might be expected, the apprentice seamen, most of whom are in the very young age groups, had the lowest rates. During the latter part of the war, downward trends in the incidence rates for peptic ulcers were noted in several of the enlisted men's categories. These trends were most marked in the rates for the carpenters, boatswain's mates, and musicians, but an upward trend was exhibited in the incidence rates for the clerical and culinary groups.

In considering the influence of race upon the incidence of peptic ulcer in the Navy, it was revealed that since 1939 there has been a steady upward trend in

incidence among white personnel. For Negroes, the incidence rates fluctuated considerably prior to the war years due to their small numbers in the Naval Service at that time. However, since the beginning of the war, there has been a steady increase in the rate for Negroes for peptic ulcer, until in 1945 it approximated that of white personnel. The average annual rate for white personnel for the years from 1936 through 1939 combined was 149.3 per 100,000, but for the period from 1942 through 1945, it was 220.2, an increase of 48 per cent. For the same two periods, the rates for Negro personnel were 65.6 and 185.7 respectively, an increase of 183 per cent.

In factors other than incidence there have been very small differences noted with respect to peptic ulcer between the major races. For both Negro and white personnel the rates of invalidings from the Service increased during the war years. Among white personnel, the rate rose from 81.0 per 100,000 in 1942 to 174.7 in 1945, while the rate for the Negroes increased from 37.6 in 1942 to 178.1 in 1945. Similarly, for white personnel for the period from 1936 through 1945 combined, 46 per cent of those returned to duty were subsequently readmitted, as against 48 per cent for Negro personnel. In the matter of sick days per case, the average number for the white race for the ten-year period from 1936 through 1945 was 83 as compared with 81 for Negroes. In regard to cases existing prior to entry into the Service, 36 per cent of cases in white personnel during the war years were those which had existed prior to the individual's entry into the Naval service, and 43 per cent of the cases in Negro personnel were those which had existed prior to entry. (From Statistics of Navy Medicine for November 1947)

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Incidence of Mental Conditions in the U. S. Navy During World War II: During the years from 1942 through 1945, because of the rapid mobilization of personnel to meet the emergency and the consequent impossibility of screening out all of those individuals who would be most likely to develop a mental disease under the unusual conditions to which Service personnel are subjected, incidence rates for diseases of the mind (Class XV) for personnel of the Navy and Marine Corps increased considerably over the prewar levels. For example, in the period from 1936 through 1940, the annual incidence rate for diseases of the mind varied between 3.3 and 5.5 per 1000 strength. In contrast to this, the average annual incidence rate for the war years amounted to 14.2 per 1000, with the highest rate in the 10-year period reached in 1945 when the rate was 16.5 per 1000. In view of this increased importance, both to the Navy and to individuals planning care for those invalided from the Service, detailed data have been compiled on the incidence of diseases of the mind among the various racial groups represented in the Navy. All of the data are based upon tabulations of the Fa card (Individual Statistical Report of Patient) and includes those cases taken up as A's (New Admissions), ACD's (Admitted Contributory Disability), AD's (Additional Diagnosis) and EPTE's (Existed prior to entry into the Service).

The total incidence rate for all diseases of the mind for Negroes in the Navy and Marine Corps is higher than the total rate for white personnel. However, in

distributing these rates by age group it is interesting to note that this high rate is apparently confined only to the younger Negroes, the rates for the older groups for mental diseases being considerably under that for white personnel. Up until age 39 there are much higher rates exhibited for the Negroes than for the white personnel, but after age 39 there is a reversal of this relationship with a sharp drop in the rates for the Negroes. For all other racial groups, the incidence rates are erratic, this fluctuation being due to the small numbers of such individuals in the Naval service.

Although the incidence rates for over-all mental diseases, and for the psychoses, the personality disorders, and the "all other" mental diseases (3 of the 4 major groups within the class of diseases of the mind) are higher among Negroes than among white personnel, the rates for the psychoneuroses (the other major group in the class of diseases of the mind) for Negroes are considerably lower than for whites in every age group. The rate for psychoses for Negroes is 2.8 per 1000 as against 1.5 for white personnel; for personality disorders the rate for Negroes is 6.7 as against 4.6 for whites, and for "all other" diseases of the mind the rate for Negroes is 4.9 as against 0.6 for white personnel. Included in this "all other" group are speech disorders, chronic alcoholism, enuresis, and mental deficiency.

It is interesting to observe the distribution of mental diseases by age group for both Negro and white personnel. The age group with the highest incidence rate for all diseases of the mind is the group from 35 to 39 years of age among Negroes and whites alike, with a decrease in the incidence rates for the older age groups. This condition holds true for both Negro and white personnel in the psychoneuroses and personality disorders. However, in the other groups of diseases of the mind, the psychoses and "all other" mental conditions, the distribution is quite different. In the pyschoses, the age group with the highest rate among Negroes (excluding the 60-64 year age group, in which the rate is based on 1 case only) is the 20-24 year age group. In contrast, the group with the highest rate among white personnel for psychoses is the 40-44 year group. Among the "all other" diseases of the mind, the highest rate for the Negroes is in the 25-29 year age group, and for white personnel the highest rate is in the youngest group, 16-19 years of age. (From Statistics of Navy Medicine for November 1947)

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Study of Treatment for Lactation Failure: Hertoghe in 1896 was the first to report that the administration of thyroid gland by mouth increased the flow of milk in cows and in nursing mothers. This has been confirmed for cows by Graham. In nursing mothers Robinson found that the increase in output produced by the administration of crude anterior-pituitary extract plus dried thyroid gland was about twice as great as the increase produced by the administration of crude anterior-pituitary extract alone.

The present investigation was begun in 1945 in the maternity department of St. Thomas's Hospital, London, England, and was extended, in 1946, to the maternity unit of University College Hospital.

In 500 untreated lactations in St. Thomas's Hospital the infants were test-fed each day during the puerperium and were then followed up for six months. It was found that failure of lactation before the infant was six months old was rare when the total milk yield on the fifth day of the puerperium had been at least 10 oz., and on the tenth day of the puerperium at least 16 oz. Therefore, an output of at least 10 oz. on the fifth day, or of at least 16 oz. on the tenth day, was taken as the standard for establishment of lactation.

Next, all infants were test-fed on the fifth and tenth days of the puerperium. If, according to the criteria given above, lactation had not been established on the fifth day, treatment was begun. If, however, according to the same criteria, failure to establish lactation was not present on the fifth day but was present on the tenth day, treatment was not begun until the eleventh day of the puerperium. On the average, treatment began on the seventh day and ended on the twelfth. Treatment was not continued after discharge from hospital, since it had been found previously that the results were the same whether the treatment with dried thyroid gland ceased on discharge from hospital or was continued after discharge from hospital.

A total of 332 patients with failure to establish lactation were investigated: 78 were used as controls, 194 were treated with dried thyroid gland, and 60 were treated with thyroxine.

The 78 controls were divided into four groups: 16 mothers were given daily injections of crude ox anterior-pituitary extract; 21 were given daily injections of crude ox anterior-pituitary extract plus 4 grains of dried thyroid gland daily; 20 were given daily injections of physiological saline; and 21 were left untreated.

The mothers who were given dried thyroid gland were divided into ten groups, each group being treated with a different dose of dried thyroid gland. One group, consisting of only 14 mothers, was treated with 2 grains of dried thyroid gland daily, given in four one-half grain doses after meals. In the nine other groups, containing 20 mothers each, the dosage of dried thyroid gland ranged from 4 to 12 grains daily, given in divided doses.

The mothers who were given thyroxine were divided into three groups of 20, with a different dose given in each group. The doses were 1·6 mg., 2·4 mg., and 3·2 mg. daily. Tablets of thyroxine 0·8 mg. were used. One tablet was given by mouth with water twice a day, three times a day, or four times a day, according to the daily dose prescribed.

It was shown that daily injections of crude ox anterior-pituitary extract cause no greater increase in the daily output of breast milk than do daily injections of physiological saline. Nor did either of these treatments give a better

immediate result than that obtained among the untreated controls.

Crude ox anterior-pituitary extract plus dried thyroid gland caused a greater increase in the mean daily output of breast milk. When, however, the dried thyroid gland was given without the injections of crude ox anterior-pituitary extract, the increase in output was equally good. Therefore it could be concluded that the dried thyroid gland and not the crude ox anterior-pituitary extract was the cause of the greater increase in output of breast milk in the mothers to whom both these substances were given.

The rate of increase in output was greatest among the patients given from 9 to 12 grains of dried thyroid gland daily. In each of the series in which the patients were given dried thyroid gland, several patients did not respond to treatment. As the dose of the dried thyroid gland was increased, the number of these resistant cases decreased. The rate of increase in output was more rapid among those patients who were given 10 grains or more of dried thyroid gland daily, but a tendency to a fall in output after ceasing treatment began to appear among them. This resistance to treatment, and inability to carry on when the treatment was stopped, led to the trial of thyroxine by mouth in various doses, and to a trial of Lugol's solution.

The increase in output from the administration of thyroxine by mouth was similar to that obtained with the larger doses of dried thyroid gland. The size of the dose of thyroxine did not appear to affect the results to any extent. Resistance to treatment and the falling off in output after cessation of treatment were seen. Folley and White had found that subcutaneous injections of thyroxine into cows increased the output of milk, which dropped when treatment ceased.

It appears from these investigations that failure to establish lactation in the puerperium is due to a deficiency in the production of thyroxine by the thyroid gland. None of the mothers showed any signs of thyroid deficiency. It was the extra load of lactation which brought to light the deficiency. The degree of the deficiency apparently varies from patient to patient, because, as the daily dose of dried thyroid gland was increased, the number of cases showing no improvement in output decreased. A few of the women needed even more than 12 grains daily.

A preliminary report by the author on the effect of iodine on failing lactation pointed out that the condition is due not to a defective thyroid gland but to a deficient intake of iodine. So far no cases treated with iodine have failed to respond with an increase in output of breast milk. With the iodine the rate of increase varied, as it did among those women who were taking dried thyroid

gland or thyroxine. It is too early yet to be sure that there will be no falling off in output when the iodine is stopped, since only a few of the infants in this experiment have so far reached the age of 1 month. (Lancet, 13 Sept. '47 - M. Robinson)

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Aerosporin - A Promising Antibiotic: Preliminary information concerning a new antibiotic, aerosporin, comes from the Wellcome Physiological Research Laboratories in England.

Aerosporin appears to satisfy most of the criteria which a substance must exhibit if it is to be of possible therapeutic value. This substance is the product of Bacillus aerosporus, a Gram-positive spore-forming rod, first isolated from the soil of a Surrey market-garden. It is secreted into the medium when the organism is grown for from 4 to 7 days at 28° C. in shallow layers of half-strength nutrient broth containing glucose or sucrose and a trace of manganese; it is a base, and can be relatively easily extracted by a charcoal adsorption process. It is selectively bactericidal to Gram-negative bacteria and has proved chemotherapeutic in experimental infections in animals against Hemophilus pertussis, Eberthella typhosa, Escherichia coli, Brucella bronchiseptica, and other organisms. Its potency is said to be comparable, on a weight-for-weight basis, with penicillin, and it is relatively stable. Attempts in vitro to make sensitive bacteria resistant were not successful.

The success of chemotherapeutic experiments on animals of course does not necessarily mean that the substance will be suitable for treatment of human whooping cough, typhoid, or other infections. What the toxicity of the substance is, whether it can be given by mouth, and how rapidly it is excreted are still to be known. Further work will be done on this drug. (Lancet, 13 Sept. '47 - Annotation)

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The Use of Pyridoxine Hydrochloride in the Treatment of Radiation Sickness: Radiation sickness as a complication of treatment has been the concern of radiologists since the advent of this type of treatment. It is difficult to explain the variations in the reactions of various patients, since one patient will show no evidence of radiation sickness but another patient with identical treatment may become violently ill. The area of the body treated and the body dose per field are of considerable importance, since treatment directed to the gland-bearing areas as well as to the extremities will cause little or no sickness, but treatment directed to the thorax or the abdomen, and occasionally the head, can cause a considerable reaction. The presence of malnutrition and avitaminosis seems to increase the lack of tolerance to radiation therapy. The symptoms of radiation sickness come on from a half hour to three hours after treatment. The reaction may be mild, moderate, or severe. The symptoms respectively are malaise, nausea, or nausea and vomiting and prostration.

Many hypotheses have been advanced concerning the cause of radiation sickness. Bean, Spies, and Vilter found a rough, but by no means exact, correlation between the severity of radiation sickness and the degree of vitamin deficiency. They suggested that the basic disorder in radiation sickness is a disturbance of respiratory enzyme systems.

Jenkinson and Brown have likened radiation sickness to shock. They have graphically illustrated the effect of roentgen rays on the capillary beds, with resultant anoxemia of cells, local capillary dilatation and, finally, loss of plasma into the tissues. They pointed out that radiation sickness is most likely to follow irradiation of those parts of the body possessing the largest capillary beds. To combat it, they recommended using a vasoconstrictor drug such as benzedrine sulfate. Their results are encouraging.

Recently Ellinger has found a correlation between the threshold dose of roentgen rays producing hepatic injury in the laboratory animal and sensitivity to histamine. He showed the close similarity of hepatic damage due to roentgen rays to that produced by injections of histamine. He expressed the belief that histamine is liberated in the tissues treated by roentgen rays and that it is to this effect of histamine on the capillaries and liver that radiation sickness is attributable.

Many therapeutic measures have been tried in the treatment of radiation sickness, none of which has proved entirely satisfactory. The vitamin B group has been used extensively, beginning with thiamine hydrochloride (B_1) with some questionable success. The use of vitamin B_6 by Willis and associates in the treatment of nausea and vomiting of pregnancy and the uniformly good results obtained by Maxfield, McIllwain, and Robertson with pyridoxine hydrochloride in the treatment of radiation sickness have been encouraging. Maxfield and his associates recommended that after the onset of radiation sickness 25 mg. of pyridoxine hydrochloride be given intravenously immediately and repeated at intervals of from 24 to 72 hours as needed throughout the remainder of the course of treatment. Their results were most gratifying in a series of more than 50 cases. Van Haltern in a series of 81 cases gave from 25 to 50 mg. of pyridoxine hydrochloride, in the form of hexabetalin, intravenously, beginning at the onset of symptoms. He obtained excellent results in 44 cases (54 per cent), and good results in 28 (35 per cent). In 9 cases (11 per cent) vomiting was not entirely relieved and some degree of nausea remained. Oppenheim and Lih in a series of 50 cases of radiation sickness gave vitamin B_6 by mouth. Best results were obtained when from 75 to 100 mg. doses were given a half hour before meals, from three to four times a day. In 30 cases (60 per cent) results were excellent, in 6 (12 per cent) good, in 8 (16 per cent) fair, but in 6 (12 per cent) poor.

Reeves, in a series of 100 cases, obtained good results by oral administration of 100 mg. per day given in divided doses.

Scott and Tarleton, by preventing the development of radiation sickness in about 35 cases, succeeded in reducing, by approximately a half, the treatment

time for various types of malignant growth. They gave 25 mg. of vitamin B_6 intravenously after each roentgen treatment and 50 mg. of niacin three times a day.

The authors became interested in the use of pyridoxine hydrochloride as the result of the work by Doctors Hall and Christensen. These doctors, while using pyridoxine hydrochloride to overcome leukopenia, found that some of the patients who were also receiving radiation therapy were less inclined to be ill than patients who were receiving radiation therapy without pyridoxine hydrochloride. On the strength of this observation, the authors undertook to treat a series of patients with pyridoxine hydrochloride, having in mind only the control of radiation sickness.

This is a preliminary report of the authors' experience in the intravenous use of vitamin B_6 (pyridoxine hydrochloride) in a series of 200 cases. The medication was given only to those patients who experienced nausea and vomiting during a course of treatment. Selected patients who had experienced radiation sickness during previous courses of treatment also were included.

Various amounts of pyridoxine hydrochloride were tried. It was found that the best results were obtained when from 100 to 200 mg. were given intravenously approximately a half hour before roentgen treatment. The larger doses were chosen when treatment was given to the abdomen, thorax, or pelvis; the smaller when treatment was directed to such areas as the axilla, neck, or groin. When the dose was maintained at 50 mg. per day, the maximal benefit was not often obtained. If the dose was increased to 100 mg. per day, then symptoms usually disappeared or were definitely relieved. In most instances it was found that 200 mg. administered intravenously would prevent or relieve radiation sickness most promptly. In a number of cases only one injection every second or third day was necessary when the larger dose was given.

In order to eliminate the possibility of a psychic effect 12 unselected patients were given placebos of sterile water. All of these patients were under treatment for serious conditions and had shown symptoms of radiation sickness. In 6 cases the placebo was substituted for the vitamin B_6 after symptoms developed. After the substitution the symptoms were not controlled until pyridoxine hydrochloride was again administered. In 6 other cases the placebo was given after symptoms had been alleviated by the drug. Symptoms recurred in each instance but were again controlled with the resumption of administration of the vitamin.

The results, which are shown in the accompanying table, were graded as excellent (no symptoms), good (no nausea or vomiting, but some malaise), fair (occasional nausea), and poor (no relief of symptoms).

Results	Number	Per cent
Excellent	18	9.0
Good	111	55.5
Fair	52	26.0
Poor	19	9.5

With the control of radiation sickness, the average patient was able to receive rather heavy daily treatment. The period of time for a course of treatment was thus shortened.

In the entire series no toxic reactions or complications due to the administration of the drug were noted.

A comparable series of patients will be treated with pyridoxine hydrochloride using combined intravenous and oral administration. (Proc. Staff Meet., Mayo Clin., 15 Oct. '47 - J. J. Wells and W. C. Popp)

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A Warning Regarding the Use of Folic Acid: An alarming incidence of neurologic relapse or progression of pre-existing neurologic lesions has been reported in cases of pernicious anemia treated with folic acid (synthetic pteroylglutamic acid). Sargent's review, presented in this same issue of the New England Journal of Medicine places the incidence of such neurologic lesions at about 20 per cent during a period of one year or less of therapy. More recent studies show an even higher rate. Ross observed an incidence of over 50 per cent in 21 cases. In Wagley's series of 10 cases, neurologic lesions or progression of pre-existing lesions developed in 8 within from 8 days to 12 months after the institution of folic acid therapy. Two cases of sprue have been noted in which neurologic lesions are reported to have occurred during folic acid therapy

In most of the cases treated with folic acid the patients were subjectively in good health, and the red-cell count and hemoglobin had returned to normal levels at the time that the neurologic signs appeared. Increasing the dosage of folic acid nevertheless failed to prevent progress of the neurologic lesions. These have occurred in patients receiving as much as 500 mg. daily, or about twenty-five times the average amount required for the relief of the hematologic abnormalities. It appears, therefore, that the neurologic changes cannot be ascribed to inadequate folic acid dosage.

Three possible relations of folic acid to the neurologic disturbances exist. First, folic acid may merely be allowing the disease to run its natural course so far as the nervous system is concerned. This may actually have happened in some of the reported cases. In contrast to the neurologic signs in combined system disease, however, few cases have shown unequivocal evidence of lateral column involvement, despite severe and extensive posterior column disturbance. Secondly, Heinle and Welch have suggested that folic acid in relieving one deficiency accentuates another, which is in turn responsible for the neurologic changes, as occurs occasionally with other members of the vitamin B complex. Thus, cure of pellagra by niacin may result in manifest thiamine deficiency. The third explanation is that folic acid may actually exert a positively deleterious influence on the nervous system. Thus, by some close chemical relation to substances required to maintain the integrity of the nervous system, folic acid may competitively interfere with the nutrition of the spinal cord just

as certain vitamin deficiencies in experimental animals may be caused by closely related chemicals. Thiamine deficiency, for example, may be induced by the administration of pyrithiamine, and pantothenic acid deficiency by pantoyltaurine. Ross has recently suggested that pteroylglutamic acid may interfere with the metabolism of glutamic acid by the central nervous system; this, according to a preliminary observation by Pearson, it appears to do, at least in vitro.

A positively injurious effect of folic acid therapy is consistent with the following features of the neurologic disturbance: in many cases an explosive onset and spread of the neurologic lesion has been noted. On the other hand, whereas combined system disease may start acutely, it does so only rarely. Several cases have been reported in which liver extract had been taken sporadically and in amounts inadequate to maintain normal blood levels for periods as long as 10 years, without the development of nerve lesions. Yet, on changing to folic acid therapy the sudden onset of severe neurologic manifestations occurred within a few weeks. Ross observed 1 case in which the addition of liver-extract therapy produced little, if any, improvement in the neurologic picture until folic acid administration was stopped. Indeed, the usual improvement in neurologic function occurring on withdrawal of folic acid and the institution of liver-extract therapy may be ascribed as much to the removal of the causative factor as to a response to the liver extract. Thus, giving liver extract with folic acid may not guarantee that neurologic disturbances will not develop. A further suggestion of a toxic action of folic acid is that the incidence of neurologic changes during folic acid therapy appears to parallel to some extent the dosage and frequency of administration. In persons treated with large daily doses of from 25 to 50 mg. the incidence has been highest, whereas in a series receiving only 75 mg. once a week, the incidence was but 1 out of 11 cases. A possible explanation is that a large portion of a single dose is lost in the urine within 24 hours and that consequently, with weekly administration, the nervous system is exposed to very little folic acid in the intervening six days.

The inadequacy of folic acid in the treatment of pernicious anemia is also noted in the incidence of glossitis with such therapy. In Hall's series 7 patients showed glossitis before commencement of therapy. Three improved temporarily and then relapsed, and 1 became worse. In Wagley's series, 2 patients developed glossitis for the first time while on folic acid therapy, and another showed marked increase in the soreness of the tongue and developed glossal petechiae. Such developments are virtually unknown with adequate therapy by liver or stomach preparations.

Pteroylglutamic acid is the first hematopoietic substance in pernicious anemia to be chemically identified. When it became available in pure synthetic form about two years ago, it appeared likely to replace the older empirical but highly effective preparations of liver or stomach. Now, however, sufficient evidence has accumulated to justify a warning that synthetic pteroylglutamic acid (folic acid) should not be used in the treatment of pernicious anemia. In view of the reports of folic-acid-induced neurologic lesions in sprue, this restriction should probably apply also to other nutritional macrocytic anemias. Folic acid has

failed to be effective in other conditions in which liver or stomach preparations have also failed to benefit the patient. Consequently, the use of folic acid as a therapeutic agent appears to offer no new benefit but only risk to the patient. (New England J. Med., 6 Nov. '47 - Editorial)

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Tri-Service Board of Preventive Medicine: Because preventive medicine is now recognized as a medical specialty by the Army, Navy, and the U. S. Public Health Service, and because an American Board of Preventive Medicine has not yet been established, the Army, Navy, and U. S. Public Health Service have organized a tri-Service board of preventive medicine for the purpose of selecting from medical officers of the three Services those qualified as specialists in preventive medicine. This board will cooperate with a committee of the Health Officers Section of the American Public Health Association in an effort to establish an American Board of Preventive Medicine. At such time as an American Board of Preventive Medicine becomes established this tri-Service board will be dissolved. For this reason, this board has been designated as the Tri-Service Interim Board of Preventive Medicine. The tri-Service board is made up of (1) six non-Service physicians, nationally known in the field of preventive medicine, selected by the Surgeons General of the three Services, (2) the chiefs of the preventive medicine divisions of the Medical Departments of the Army and the Navy, and (3) a medical officer of the U. S. Public Health Service.

The functions of the board are (1) to specify the qualifications which must be met by applicants for examination for certification as specialists in preventive medicine, (2) to determine the qualifications of the individual Army, Navy, and Public Health Service candidate for examination by the tri-Service board, (3) to examine eligible candidates from any of the three Services for certification as specialists in preventive medicine, in accordance with standards established by the Board, and (4) to issue certificates of competency in the specialty of preventive medicine to successful candidates.

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Course in Photofluorographic Interpretation Now Available: The Navy needs additional medical officers trained in Photofluorographic Interpretation. Applications are therefore desired for this course which is given at the U. S. Naval Medical School, National Naval Medical Center, Bethesda, Maryland, and is of six weeks' duration. The course includes both technical and professional instruction in mass photofluorographic and roentgenographic examinations of the chest and is considered an excellent introduction to roentgenology and internal medicine. Medical officers who demonstrate aptitude in this field will be in a favorable position for requesting further instruction in roentgenology, internal medicine, surgery, clinical pathology, or other specialties, and particularly those that deal with pulmonary diseases. (Professional Div., BuMed)

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Opportunity for Hospital Corpsmen: BuMed Circular Letter 47-148, which appears in full, page 20 of this issue, calls attention to the opportunity now afforded hospital corpsmen through the recent passage of Public Law 337 (Army-Navy Medical Services Corps Act of 1947) and indicates the facilities which are available to hospital corpsmen to employ as aids in preparing themselves for achieving the benefits made possible by the new law. Through Public Law 337, enlisted hospital corpsmen who qualify may continue their advancement within the Service with possible appointment to permanent commissioned officer status and subsequent promotion to and including the rank of captain.

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List of Naval and National Cemeteries Available for Deceased of Navy and Marine Corps: Circular Letter 47-151 on page 24 contains (1) a list of naval and national cemeteries available for the burial of the remains of Naval and Marine Corps personnel and (2) information concerning burial in these cemeteries.

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Naval Immunization Requirements for Overseas Travel: The Bureau of Medicine and Surgery has received complaints that civilians, mainly dependents, have arrived at ports of embarkation without the proper immunizations required for their travels or destination. It cannot be too strongly emphasized that this results in great hardship in many cases and reflects upon the efficiency of the service provided. The Manual of the Medical Department, Change 2, Part III, Chapter 5B delineates Naval immunization requirements, and must be followed.

The following is a summary of the immunization requirements but the Manual of the Medical Department should be consulted for details:

Routine Immunizations: Naval immunization requirements for military personnel and civilians traveling outside of the continental limits of the United

States, regardless of destination, under the cognizance of the Navy Department are:

(a) Smallpox - Within the past 12 months; for each individual regardless of age.

(b) Typhoid, Combined Triple - Within the past 12 months; for each individual 1 year of age or over.

(c) Tetanus - Within the past 12 months; for each individual 1 year of age or over. Tetanus immunization of dependents and civilian personnel shall be started prior to arrival at port of embarkation. Completion is recommended prior to embarkation but is not mandatory until arrival at destination.

(d) Diphtheria - Within the past 3 years; for each individual between the ages of 6 months and 10 years (evidence of immunity may be accepted in lieu of immunization although immunization is felt to offer the greater protection.)

Special Immunizations: In addition to the routine immunizations, the following special immunizations are required for certain areas (See check list in MMD):

(a) Yellow fever - Within the past 4 years; for each individual 6 months of age or over, destined for or traveling through yellow fever endemic zones.

(b) Epidemic Typhus - Within the past 6 months; for each individual, 1 year of age or over, if bound for areas where epidemic typhus is prevalent.

(c) Cholera - Within the past 6 months; for each individual, 6 months of age or over, destined for, or traveling in, an area where cholera is prevalent. In addition to those areas indicated in the check list, ALNAV 209-47 requires cholera immunization for travel to Egypt. (Note that cholera immunization is required for travel to Japan.)

(d) Diphtheria.- Persons between 10 years and 35 years of age who are Schick positive must be immunized against diphtheria prior to departure for Europe and/or the Mediterranean region. The latter is construed to include the North African ports.

(e) Plague - Plague immunization required prior to travel only by special order of the Navy Department. May be required after arrival in areas where, in the opinion of the area command, a definite danger of exposure exists.

Immunization requirements will be modified or changed from time to time, by official directives from the Navy Department, to meet new conditions as they arise. (Preventive Medicine Div., BuMed)

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The American Society for the Study of Arteriosclerosis: On 9 June 1947 the American Society for the Study of Arteriosclerosis was created. Some of the aims and plans of the Society included in the opening address by Dr. O. J. Pollak, secretary-treasurer, are as follows:

The chief goal of the Society is the study of arteriosclerosis, from which it is hoped to develop knowledge that will make possible early clinical and laboratory diagnosis, and prevention and cure. The Society does not wish to separate theoretical and practical investigators, but rather to coordinate laboratory and clinical observations. It is believed that anatomists, biochemists, pharmacologists, physicists, nutritionists, endocrinologists, geneticists, and psychiatrists should be able to make as valuable contributions to the solution of the problem of arteriosclerosis as the cardiologists or the pathologists; an active exchange of thoughts and knowledge is desired. There is to be equal representation of experimentalists and clinicians, and only two delegates from any state may serve at one time on the Board of Directors and on the Research Correlating Committee. The exchange of reprints and unpublished material are part of the program of the Society for the stimulation of investigations. The proper evaluation of available material, and the suggestion of projects worthy of investigation by the Research Correlating Committee of the Society are planned. Any applicant who is interested in the subject should be eligible for associate membership, and active research in arteriosclerosis or related disorders should make an applicant eligible for active membership.

The following were elected as officers of the Society:

W. C. Hueper, M.D., President, New York City
W. B. Kountz, M.D., Vice-President, St. Louis, Mo.
O. J. Pollak, M.D., Secretary-Treasurer, Wilmington, Dela.

Board of Directors:

E. Cowles Andrus, M.D., Baltimore, Md.
G. Lyman Duff, M.D., Montreal, Quebec, Can.
Harry Goldblatt, M.D., Los Angeles, Calif.
George R. Herrmann, M.D., Galveston, Texas
Louis N. Katz, M.D., Chicago, Ill.
Irvine H. Page, M.D., Cleveland, Ohio

The second meeting of the Society was held on 2 and 3 November 1947 at Chicago, Ill. About 30 scientific papers were presented. (Geriatrics, Sept.-Oct., '47)

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ALNAV 238 4 November 1947

Subj: Transfer to Regular Navy

Reference BuPers Circular Letter 288-45. Having completed the selection of candidates for transfer to regular Navy the transfer program under Public Law 347 - 79th Congress is terminated except for those applying for appointment in Medical, Dental, Medical Service or Nurse Corps.

Applications for appointment in Medical Service Corps limited to those from individuals who are graduates of accredited schools of pharmacy or optometry and those possessing a degree in a science allied to medicine. Permanent chief pharmacists and pharmacists appointed pursuant Public Law 347 - 79th Congress not eligible reapply for appointment in Medical Service Corps.

--SecNav.

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Circular Letter 47-147 4 November 1947

To: MedOfsCom, NavHosps

Subj: Roadways, Named for Medical Department Personnel

1. Many naval hospitals have streets and roadways named for medical department personnel. The Marine Corps too, has honored many members of the medical department on various posts, by naming streets for them. There probably are some other shore establishments, where roads are named for medical department personnel.

2. The Bureau's plat books do not adequately show the roadways and streets so named; most attention in the past has been paid to identifying specific locations within hospital compounds, by means of building numbers.

3. The History Branch of the Bureau desires to collect information that will permit a listing of all medical department personnel who have had streets or roadways named for them. Then whenever new streets are constructed, in any activity, they can be named for personnel not already honored in this manner thus avoiding duplication.

4. It is requested that all addressees have prepared, at the earliest practicable date, a rough sketch of their respective compounds, showing all roadways, streets, circles and/or avenues, on durable paper (and preferably in India ink) including proposed roadways. The names (if any) of the roadways should be clearly indicated. If practicable, the paper used should be approximately 11 by 18 inches.

5. This information should be addressed to BUMED, Code-355.

--BuMed. C. A. Swanson

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Circular Letter 47-148 5 November 1947

To: All Ships and Stations

Subj: Training and Education of Hospital Corpsmen

1. The Bureau of Medicine and Surgery has noted that the percentage of Hospital Corpsmen in the regular Navy at the present time who have completed high school education or who have one or more years of college credit is less than the relative percentage which obtained during the pre-war era. This is undoubtedly the result of the pressing need for personnel during the war years and the patriotic response of many young men which caused them to leave school and join the armed forces of the United States.

2. It is desired to bring to the attention of all Hospital Corps personnel the opportunity afforded by the recent passage of Public Law 337 (Army-Navy Medical Services Corps Act of 1947). Under this law enlisted Hospital Corpsmen who qualify may continue their advancement within the service with possible appointment to permanent commissioned officer status and subsequent promotion to and including the rank of captain. Every Hospital Corpsmen should commence to prepare himself to partake of these benefits and opportunities at his earliest convenience and should continue this preparation through a planned system of education and training. At no time in the history of the Corps has greater possibility of a successful career existed. Individual initiative and ability will be rewarded by promotion as the years progress.

3. During the war the Navy Department recognized the need and the advantages of providing its personnel with a means of continuing education through the employment of extension courses. To this end numerous courses were offered by the United States Armed Forces Institute (USAFI) through the auspices of the Educational Services Section of the Bureau of Naval Personnel. This source of educational material is still available and should be utilized to the fullest extent possible. In addition, many of the various courses of training provided by the Navy, both technical and on-the-job type training, have been recognized for accreditation by the educational departments of practically all states. In some instances, submission of an official statement of service, including the type training, name of course, etc., will suffice; in other instances it is necessary for the candidate who feels that he has acquired the equivalent of a high school education to subject himself to examination by the so-called GED test battery for evaluation, receiving his high school diploma if successful. Much of the prerequisite work both on the high school and collegiate level may be obtained through the employment of the USAFI extension courses cited

above. In addition, the Bureau of Medicine and Surgery is now in a position to authorize postgraduate courses in various schools and universities for furthering the education of Hospital Corpsmen in practically any subject which will be of value in the performance of their duties, provided such courses do not interfere with the performance of duty.

4. It is requested that this letter be brought to the attention of every Hospital Corpsmen under your cognizance in an endeavor to stimulate greater interest by all Hospital Corpsmen in improving their academic and technical educations.

--BuMed. C. A. Swanson

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Circular Letter 47-149 6 November 1947

To: All Ships and Stations

Subj: Early Syphilis Treatment Failure Rates, Submission of Data with Reference to

Ref: (a) Par. 2222.1 MMD.

1. Evaluation of different treatment schedules is based upon the cumulative failure rate in which clinical failure is defined to include, (a) obvious relapse or apparent reinfection, (b) serologic relapse - which includes patients who were originally seronegative or who were rendered seronegative by treatment and subsequently became seropositive, (c) patients who were seropositive in low titer and subsequently developed high titer tests, (d) seroresistance - those cases remaining seropositive for twelve months or longer after treatment.

2. Beginning on 1 January 1948, for each case of syphilis taken up as RA (Readmission) which comes within the above definitions, there shall be submitted by letter report to BuMed a brief case history covering the initial infection and present manifestations with particular reference to the previous treatment received. As accurately as possible indicate:

(a) Full name, rate or rank, file or service number, age and color.
(b) If treatment was with penicillin alone, the date of treatment, total dose, number and amount of each individual dose, and time interval between individual doses. Total time under treatment, kind of penicillin used, method of administration.
(c) If with penicillin plus chemotherapy, the same information with reference to all drugs used.
(d) If chemotherapy only, the same information with reference to all drugs used.

3. Since it is rarely possible to establish definitely whether a debatable instance is an actual relapse or a reinfection, the same information shall be submitted for each case of syphilis taken up as A (New admission) on or after 1 January 1948, in which, from the patient's history or health record, it is indicated that he has had previous treatment for syphilis.

4. Compliance with Ref. (a) which states that, "All personnel having infections of a venereal nature shall be admitted to the sick list if only for the record," will assure reporting of all indicated cases.

5. Submission of requested data is to begin on cases as of 1 January 1948.

--BuMed. C. A. Swanson

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Circular Letter 47-150 7 November 1947

To: All Ships and Stations

Subj: Immunizations, Annual Report of

Ref: (a) Manual of the Medical Department, Par. 35D9 and 35D12

Encl: 1. (HW) Form for subject report.

1. The provisions of ref. (a) as they pertain to the reporting of immunization data in Quarterly and Annual Sanitary Reports are hereby modified. Such data hereafter shall not be included in these reports. Appropriate changes to the Manual will be made in page Change 3.

2. All Navy and Marine Corps activities having Medical Department personnel attached shall prepare a separate Annual Report of Immunizations to be forwarded to the Bureau by January 15 of each year covering immunization data for the previous calendar year. The report shall be prepared in duplicate. The original shall be forwarded to the Bureau, and the copy shall be retained by the preparing activity.

3. The form of this report shall conform to that of enclosure 1. In the column for "Immunizations Completed," entries shall be made only by the activity giving the booster or the final inoculation in the series when more than one is required for complete immunization. Uncompleted series are not to be included. Entries in the columns for "Reactions" shall include all reactions even though the standard course of immunization was not completed.

4. Under remarks shall be included (1) descriptions and comments on any unusual or severe reactions; (2) recommendations with respect to immunization procedures; (3) number of cases and immunizing agent used in which immunization was not completed due to severity of reaction, and (4) other pertinent comments.

5. The first report shall cover the calendar year 1947.

--BuMed. C. A. Swanson

ANNUAL REPORT OF IMMUNIZATIONS - 1947

Immunizing Agent	Immunizations Completed	REACTIONS Admitted to Sick List		
		Mild	Moderate	Severe
		(Not admitted to to sick list)	(To duty within 48 hours of admission)	(Other admissions to sick list)
1. Cholera Vaccine				
1a. Booster				
2. Cowpox Virus (Smallpox)				
2a. Revaccination				
3. Diphtheria Toxoid				
4. Measles Immune Globulin				
5. Plague Vaccine				
5a. Booster				
6. Rabies Vaccine				
7. Rocky Mt. Spotted Fever Vaccine				
7a. Booster				
8. Tetanus Toxoid				
8a. Booster				
9. Typhoid-Paratyphoid Vaccine				
9a. Booster				
10. Typhus Vaccine				
10a. Booster				
11. Yellow Fever Vaccine				
11a. Booster				
Other (Specify)				

Remarks: 1. On any deaths, especially severe or frequent reactions, recommendations, etc.
2. Number of cases and immunizing agent used in which immunization was not completed due to severity of reaction.

Circular Letter 47-151 7 November 1947

To: Commandants, NavDists (Continental)
NavHosps (Continental)
SubBase, New London, Conn.
NAS (Atlanta, Ga.; Dallas, Tex.; Glenview, Ill.; Grosse Isle, Mich.; Lambert Field, St. Louis, Mo.; Miami, Fla.; Olathe, Kans.; Patuxent River, Md.; Seattle, Wash.)
NavSta (New Orleans, La.; Orange, Tex.; Tongue Point, Ore.)
NavOrdPlant, Pocatello, Idaho.

Subj: Naval and National Cemeteries; List of

Ref: BuMed CirLtr 46-94, 13 Jun 1946.

Encl: (HW) List of Naval and National Cemeteries.

1. Enclosure lists Naval and National Cemeteries available for burial of the remains of those who die while on the active or retired list of the Navy and Marine Corps, who have had honorable service therein. Reference is hereby superseded.

2. Except at Arlington National Cemetery, the National Cemeteries have limited facilities for receiving and caring for remains, the services usually being limited to the opening and closing of the grave. Naval honors may be provided only at those National Cemeteries in the immediate vicinity of a Naval activity. Relatives should be apprized of these limitations and informed that they must make all funeral arrangements with the Superintendent of the National Cemetery.

--BuMed. C. A. Swanson

NAVAL AND NATIONAL CEMETERIES

NOTE: Except where instructions to the contrary appear, remains shipped to a National Cemetery for burial should be consigned to the Superintendent.

ALABAMA

Mobile National Cemetery
Mobile, Alabama

ALASKA

Sitka National Cemetery
Sitka, Alaska

ARKANSAS

Fayetteville National Cemetery
Fayetteville, Arkansas

Little Rock National Cemetery
Little Rock, Arkansas

Fort Smith National Cemetery
Garland Ave. and So. 6th St.
Fort Smith, Arkansas

CALIFORNIA

Golden Gate National Cemetery
San Bruno, California
(Additional telegram to Commandant 12th Naval District, requesting naval honors).

CONNECTICUT

Navy Plot, Cedar Grove Cemetery
New London, Connecticut

DISTRICT OF COLUMBIA

Soldiers Home National Cemetery
Washington, D. C.

FLORIDA

Navy Plot, City Cemetery
Key West, Florida

Barrancas National Cemetery
Fort Barrancas, Florida

GEORGIA

Andersonville National Cemetery
Andersonville, Georgia

Marietta National Cemetery
Marietta, Georgia

ILLINOIS

Naval Cemetery
Great Lakes, Illinois

Rock Island National Cemetery
Rock Island, Illinois

INDIANA

New Albany National Cemetery
Jay Street & Elkin Avenue
New Albany, Indiana

IOWA

Keokuk National Cemetery
18th and Carroll Streets
Keokuk, Iowa

KANSAS

Fort Leavenworth National Cemetery
Fort Leavenworth, Kansas

Fort Scott National Cemetery
Fort Scott, Kansas

KENTUCKY

Camp Nelson National Cemetery
Starr Route
Nicholasville, Kentucky

Lebanon National Cemetery
Lebanon, Kentucky

Mills Springs National Cemetery
West Somerset, Kentucky

Zachary Taylor National Cemetery
R. F. D. #6, Box 24,
Louisville, Kentucky

LOUISIANA

Alexandria National Cemetery
Pineville, Louisiana

Port Hudson National Cemetery
R. F. D. #1
Zachary, Louisiana

MARYLAND

Naval Cemetery, Naval Academy
Annapolis, Maryland (Restricted)

Antietam National Cemetery
Sharpsburg, Maryland

MARYLAND

Baltimore National Cemetery
5501 Frederick Avenue
Baltimore, Maryland

MASSACHUSETTS

Navy Plot, Woodlawn Cemetery
Everett, Massachusetts

MINNESOTA

Fort Snelling National Cemetery
Fort Snelling, Minnesota

MISSISSIPPI

Corinth National Cemetery
Corinth, Mississippi

Natchez National Cemetery
Natchez, Mississippi

MISSOURI

Jefferson Barracks National Cemetery
Jefferson Barracks, Missouri

Springfield National Cemetery
Springfield, Missouri

MONTANA

Custer Battlefield National Cemetery
Crow Agency, Montana

NEBRASKA

Fort McPherson National Cemetery
Maxwell, Nebraska

NEW HAMPSHIRE

Naval Cemetery
Portsmouth, New Hampshire

NEW MEXICO

Santa Fe National Cemetery
Santa Fe, New Mexico

NEW YORK

Long Island National Cemetery
Farmingdale, New York
(Consign remains to either
U. S. Naval Hospital, Brooklyn,
N. Y., or U. S. Naval Hospital,
St. Albans, L. I., N. Y.)

Woodlawn National Cemetery
Davis Street
Elmira, New York

NORTH CAROLINA

New Bern National Cemetery
New Bern, North Carolina

Raleigh National Cemetery
East Davie & So. Pettigrew Sts.,
Raleigh, North Carolina

Salisbury National Cemetery
Salisbury, North Carolina

Wilmington National Cemetery
201 Market St.
Wilmington, North Carolina

OKLAHOMA

Fort Gibson National Cemetery
Fort Gibson, Oklahoma

RHODE ISLAND

Navy Plot, Island Cemetery
Newport, Rhode Island

SOUTH CAROLINA

Beaufort National Cemetery
Beaufort, South Carolina

Florence National Cemetery
Florence, South Carolina

TENNESSEE

Chattanooga National Cemetery
Chattanooga, Tennessee

Knoxville National Cemetery
Tyson Street
Knoxville, Tennessee

Fort Donelson National Cemetery
Dover, Tennessee

Memphis National Cemetery
3569 Jackson Avenue
Memphis, Tennessee

Nashville National Cemetery
Madison, Tennessee

Shilch National Cemetery
Pittsburg Landing, Tennessee

Stones River National Cemetery
Murfreesboro, Tennessee

TEXAS

Fort Bliss National Cemetery
Fort Bliss, Texas

Fort Sam Houston National Cemetery
Fort Sam Houston, Texas

VIRGINIA

Navy Plot, Evergreen Memorial Park
Norfolk, Virginia

City Point National Cemetery
Hopewell, Virginia

Alexandria National Cemetery
Alexandria, Virginia

Arlington National Cemetery
Fort Myer, Virginia
(Consign remains to Officer in Charge, Arlington National Cemetery, Fort Myer, Virginia, See Paragraph 3430, M. M. D.)

[illegible]peper National Cemetery
[illegible]lpeper, Virginia

Danville National Cemetery
721 Lee Street
Danville, Virginia

Fort Harrison National Cemetery
Variana Road
Richmond, Virginia

Glendale National Cemetery
R. F. D. #5
Richmond, Virginia

Hampton National Cemetery
Hampton, Virginia

Richmond National Cemetery
Station B, Carrier
Richmond, Virginia

Winchester National Cemetery
401 National Avenue
Winchester, Virginia

WASHINGTON

Navy Plot, Ivy Green Cemetery
Bremerton, Washington

Navy Plot, Washelli Cemetery
King County, Washington

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Circular Letter 47-152

7 November 1947

To: MedOfsCom, NavHosps

Subj: Reports, Cancellation of

Refs: (a) NavMed HF-1, Admission or Discharge of Officer, Para 519 MMD.
(b) Pension Claims Outstanding, Report of, Para 5141, MMD;
(c) Conservation of Fuel, Circular Letter 45-71.
(d) Red Cross Report, Camp and Hospital Monthly Station Strength Report, ARC Form 1287, Supplement 1.

1. References (a) through (d) are hereby cancelled.

2. Report forms on hand shall be disposed of locally.

3. Appropriate changes will be incorporated in the next page change of the Manual of the Medical Department.

--BuMed. C. A. Swanson

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Circular Letter 47-153

10 November 1947

To: Medical Officers in Command, U. S. Naval Hospitals.

Subj: Officers Hospitalized While Under Orders to Inactive Duty

1. The Officer Performance Division of the Bureau of Naval Personnel advises that all officers of the Reserve Component, who, as of 7 Aug 1947, were under orders releasing them from active duty, were not placed on the Lineal List of Officers. The temporary appointments of such officers were not affirmed under the Officer Personnel Act of 1947 (Public Law 381 - 80th Congress). Their temporary appointments under any other law will cease on 1 Dec 1947 and such officers will revert to their permanent ranks.

2. In view of the foregoing it would be desirable that steps be taken to effect appropriate disposition of officers in the above category in whose cases studies and treatment have been completed prior to 1 Dec 1947.

--BuMed. C. A. Swanson

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Circular Letter 47-154 12 November 1947

To: NavHosps (Continental Limits)

Subj: Activity Civil Readjustment Report, Cancellation of

Ref: (a) BuMed Circular Letter No. 45-244.

1. Reference (a) directed submission of a monthly report of civil readjustment processing to the Bureau of Medicine and Surgery. In order to further reduce administrative paper work it is directed that submission of this report be discontinued following submission of the report for December 1947.

2. Cancellation of this report should in no way be construed as meaning that this Bureau has a lessening interest in this vital phase of preparing and returning dischargees to civilian life, or that Commanding Officers should not continue in every possible way to promote an active or effective program. Continuing emphasis will be directed to the component phases of the program during the course of the inspections by the District Medical Officer, and effective civil readjustment processing procedures will be expected in all phases of the program.

--BuMed. C. A. Swanson

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Circular Letter 47-155 12 November 1947

To: All Ships and Stations

Subj: Physical Requirements for Transfer of Women Officers of the U. S. Naval Reserve and U. S. Marine Corps Reserve to the Regular Service.

Encl: (A) Physical Requirements for Transfer of Women Officers of the U. S. Naval Reserve and U. S. Marine Corps Reserve to the Regular Service.

1. Legislation is pending to provide authorization for the transfer of women officers of the Reserve components of the Armed Forces to the regular components.

2. In the event such legislation is effected, the physical requirements listed in enclosure (A) shall apply to women applicants for transfer from the U. S. Naval Reserve and U. S. Marine Corps Reserve to the regular service.

3. Inasmuch as applications are being requested from the field prior to the passage of necessary legislation, the requirements listed shall also apply to such interim applicants.

--BuMed. H. L. Pugh

ENCLOSURE A

Physical Requirements for Transfer of Women Officers of the U. S. Naval Reserve and U. S. Marine Corps Reserve to the Regular Service.

1. The Manual of the Medical Department does not provide physical standards for transfer of women officers from the reserve components to the regular Navy and regular Marine Corps. Since the officers requesting transfer have had much previous service, they are required to meet the physical requirements for promotion, rather than the requirements for original appointment, where age and rank warrant, except as noted below.

2. Standards for promotion allow the medical examiners a wide margin in determining whether or not women officers of the Naval and Marine Corps reserve are physically qualified for transfer to the regular service components. In view of this, the medical officers must carefully consider each applicant's (a) medical history, prior to her entry into the service, (b) medical history during active duty, (c) interim history since active duty, if released therefrom, and (d) present physical condition and ability to adjust to the service. The applicant's age, rank, ability to perform satisfactorily the duties of her rank, and probable ability to perform active duty to the statutory age or length of service for retirement will be evaluated by the medical examiners.

3. The examiners should carefully evaluate all defects in a given case before making a recommendation. Many of the causes for rejection for commission or enlistment in Part 2, of the Manual of the Medical Department remain valid and would ordinarily disqualify for transfer. Moreover, some women reserve officers have been able to perform their duties in a satisfactory manner with physical defects which will disqualify them for the regular service because their defects are either progressive or recurrent in nature. Examples of such disqualifying physical conditions are: Peptic ulcer; arterial hypertension; asthma; psychoneurosis; rheumatic fever; migraine; fungus infection of the skin; menstrual disorders; cystic or tumorous involvement of the internal genitalia or of the breasts; and etc. Pregnancy at any stage is also disqualifying.

4. However, some officers will request transfer and present ample evidence that a minor defect does not interfere with satisfactory performance of duty. For example, an officer may be recommended for transfer with 8/20 vision in either eye, provided her visual acuity is corrected to 20/20 and provided she is free from organic disease and has been able to perform all assigned duties without difficulty. A woman officer may be recommended for transfer with absence acquired teeth, provided she has satisfactory replacements and can perform her duties.

(a) Minimum acceptable visual requirements for transfer will be 8/20 vision in either eye, fully correctable to 20/20.

5. Therefore, it is suggested that the medical officers review the picture as a whole and consider the question of motivation in each case.

6. For transfer of women officers of the reserve components of the Naval service to the regular components of the U. S. Navy, a report of physical examination on NavMed Y, in duplicate, is required. A recent chest x-ray examination (within six months) and a current blood Kahn is required for all women officers transferring to the regular service, and it is essential that these reports be incorporated on the NavMed Y. These examinations will not be repeated during final physical examination just prior to the delivery of the commission to the regular Navy, unless it is deemed necessary by the medical examiner because of a recent illness, loss of weight, etc.

7. Particular attention should be focused upon the existence of any disqualifying defect peculiar to the female. Menstrual history shall be taken and recorded in each case. A bi-manual pelvic examination (by rectal means, if appropriate) and visualization of the cervix and vaginal tract by speculum (unless rectal bimanual examination is appropriate), shall be obtained on all officers applying for transfer.

8. There must in every case be appended to the report of physical examination a certificate sworn to by the candidate as follows:

"I certify that I have informed the Medical Examiners of all bodily or mental ailments which I have suffered, and that, to the best of my knowledge and belief, I am at present free from any bodily or mental ailments (except____ _____).

Name _____

Rank _____

Sworn to and subscribed before me this _____ day of _____ 19__.

Name _____

Rank _____."

Upon the completion of the NavMed Y, the following statement is required:

"We certify that the candidate is (is not) physically qualified for transfer to the U. S. Navy or Marine Corps as _____."
(Rank) (Corps)

9. The report of physical examination is to be forwarded with the application to the Chief of Naval Personnel (or Commandant, Marine Corps, if applicable). The form of report described in Chapter 12 of Naval Courts and Boards is neither required nor desired. Such preliminary examination does not take the place of a later demonstration of physical fitness prior to acceptance of an appointment if the applicant is selected for transfer.

10. Physical examinations for transfer of women officers in the Naval and Marine Corps Reserve will be accomplished at an Office of Naval Officer

Procurement, at a U. S. Naval Hospital, or at any Naval Medical Activity properly staffed and equipped for physical examination of females, whichever is most accessible to the applicant.

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Circular Letter 47-156 12 November 1947

To: All Ships and Stations

Subj: Physical Standards for Enlistment of Women in the U.S. Navy and U.S. Marine Corps.

Encl: (A) Standards for Enlistment of Women in the U. S. Navy and U. S. Marine Corps.

1. Legislation is pending to provide authorization for the enlistment of women in the U. S. Navy and U. S. Marine Corps.

2. In the event such legislation is effected, the physical standards listed in enclosure (A) shall apply to women applicants for enlistment.

--BuMed. H. L. Pugh

ENCLOSURE A

Physical Standards for Enlistment of Women in the U.S. Navy and U.S. Marine Corps.

1. The standards for enlistment as outlined in Part 2, Manual of the Medical Department shall apply to the enlistment of women in the regular service of the U. S. Navy or U. S. Marine Corps, where applicable.

2. A copy of the accompanying medical history sheet is to be filled out by each applicant and shall be reviewed by the medical examiners. The medical examiners shall investigate further the importance of any significant findings.

ANSWER ALL QUESTIONS BY YES OR NO. IF ANSWER TO ANY QUESTION IS YES MAKE DETAILED STATEMENT ON BACK OF THIS SHEET.

Date _____

1. Have you ever been previously examined physically by a Navy Medical Officer for entrance into the U. S. Naval Service? _____

2. Were you passed by that examination? _____

3. Have you ever been under treatment at a hospital? _____

4. Have you had symptoms of motion sickness? ____

5. Do you have any difficulty in distinguishing all colors? ____

6. Have you ever had a sprain or dislocation of a joint? ____

7. Have you ever had a broken bone, a fractured skull, or been "knocked out"? ____

8. Have you ever had an injury to your back? ____

9. Have you ever had hay fever or asthma? ____

10. Have you ever had a surgical operation? ____

11. Have you ever lisped, stuttered or stammered? ____

12. Have you ever had an operation for sinus disease or repeated attacks of the disease? ____

13. Have you ever been injured in athletics? ____

14. Have you ever worn glasses; had an eye disease; crossed eyes or double vision? ____

15. Have you ever had a venereal disease? ____

16. Have you ever been denied life insurance because of a physical defect? ____

17. Have you ever had fits or convulsions, or fainted? ____

18. Have you ever walked in your sleep? ____

19. Have you ever had any difficulty with your feet? ____

20. Have you wet the bed at any time since childhood? ____

21. Is there any history of insanity in your family or blood relatives? ____

22. Have you ever raised or spat up blood? ____

23. Have you ever had, or been treated for any female condition? ____

24. Have you ever been pregnant? ____

25. Do you, at the present time, have any physical disability, disease, or condition that might prevent you from fully participating in all activities of the Naval service? _____

26. Do you consider that you are not sound or not well? _____

I certify that I understand the foregoing questions and my answers, that I have recorded all bodily or mental ailments which I have suffered, and that to the best of my knowledge and belief, I am at present free from any bodily or mental ailments, (except _____).

_____
(Signature of the Candidate in full)

PREPARE IN DUPLICATE. FORWARD ORIGINAL TO BUMED, WASHINGTON, D. C.

3. The height and weight table in Paragraph 2197.1, Manual of the Medical Department will apply. A minimum height of 60 inches and the minimum weight of 100 pounds is required. Weight must be in proportion to general body build.

4. X-ray of the chest and a blood Kahn test shall be obtained on each applicant as a part of the enlistment examination, if possible. Otherwise such reports shall be forwarded to the Bureau of Medicine and Surgery immediately when the candidate reports at the first duty station, together with recommendation for discharge in the event the chest X-ray or Kahn examination show the applicant to be disqualified.

5. The menstrual history, to include age at onset; regularity, duration of flow, and length of cycle, abnormalities and presence of associated symptoms, date of onset of the last normal period, and all pregnancies and sequelae shall be recorded.

6. A bi-manual pelvic examination (by rectal means, if appropriate) and visualization of the cervix and vaginal tract by speculum (unless rectal bi-manual examination is appropriate) shall be obtained on all applicants for enlistment.

7. In addition to the causes for rejection common to both men and women as set forth in Part 2, Manual of the Medical Department, the following conditions peculiar to women are disqualifying:

(a) Pregnancy, or generalized enlargement of the uterus due to any cause.
(b) Endocervicitis, more than mild.
(c) Cervical polyps, cervical ulcer, or marked cervical erosion.
(d) Bartholinitis.
(e) Vaginitis, acute or chronic.

(f) Salpingitis, acute or chronic.
(g) Oophoritis, acute or chronic.
(h) Ovarian cysts.
(i) New growths of the genitalia except uterine fibroid, single, subserous, asymptomatic, less than 3 centimeters in diameter with no general enlargement of the uterus.
(j) Congenital abnormalities or lacerations of the birth canal if symptomatic or which, in the opinion of the medical examiner, are of such a degree as to cause incapacity.
(k) Tuberculosis of pelvic organs or breasts, or confirmed history thereof.
(l) Dysmenorrhea, incapacitating to a degree which necessitates recurrent absence of more than a few hours from routine activities.
(m) Irregularities of the menstrual cycle including menorrhagia if excessive; metrorrhagia; polymenorrhea; amenorrhea, except as noted below.
(n) Menopausal syndrome, either physiologic or artificial, if manifested by more than mild constitutional or mental symptoms. Artificial menopause if less than 12 months has elapsed since cessation of menses. In all cases of artificial menopause, the clinical diagnosis will be recorded; if an operation was performed, the pathologic report will be obtained and recorded.
(o) New growth of the breast; history of mastectomy.
(p) Acute mastitis; chronic cystic mastitis if more than mild.
(q) Endometriosis or confirmed history of.
(r) Malposition of uterus if more than mildly symptomatic.

8. Physical examinations will be conducted at the nearest Office of Naval Officer Procurement, at a U. S. Naval Hospital, or at any Naval Medical Activity properly staffed and equipped for physical examination of females, whichever is most accessible to the applicant.

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ALNAV 241 10 November 1947

Subj: Reserve Medical Officers with Obligated Service under AlNav 281-46.

This AlNav applies only to Reserve medical officers on active duty serving in the Navy, Marine Corps, Veterans Administration, and Public Health Service who are retained under AlNav 281-46 and whose terms of obligated service expire in March or April 1948. In order to establish eligibility for extra one hundred dollars monthly benefit under Public Law 365 - 80th Congress for this group at as early a date as practicable and at the same time to obtain the maximum number of applications for voluntary extensions on active duty it is planned to terminate the obligated service of those medical officers who volunteer and are accepted for extended active duty of one year or longer from 1 January 1948. Such officers should submit request for extension to reach BuPers, Attention

Pers 311F by 1 December 1947 by despatch if necessary. Those not desiring to voluntarily extend nor to transfer to the regular Navy may submit application for release from active duty such release to be effective as soon as practicable and not later than 31 December 1947. Such applications for early release must reach BuPers, Attention Pers 311F by 1 December 1947 and will be considered in the light of the needs of the Service. Individuals who do not apply for transfer to USN, voluntary retention, or early release, and those whose applications for early release are not approved must serve entire period of obligated service without extra one hundred dollars monthly benefit of the aforementioned public law.

--SecNav.

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