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Circular Letters:

Clinical Appraisal of Hexamethonium (C6) in Peripheral Vascular Diseases

Since Paton and Zaimis suggested the clinical potentialities and demonstrated the ganglion blocking properties of pentamethonium (C5) and hexamethonium (C6), much interest has centered on these compounds. Studies in Great Britain demonstrated that these agents are 5 times as potent as tetraethylammonium (TEA). Pentamethonium iodide in doses of 50 mg. given intravenously produced a rise of digital skin temperature with a simultaneous increase in digital blood flow and pulse volume lasting for 1 to 2 hours. Studies in the authors' laboratory confirmed the observations of British investigators and showed that the increase in skin temperature of the toes after 50 mg. of C6 ion (96 mg. of hexamethonium dibromide) exceeded that produced by the intravenous administration of 50 mg. of Priscoline and 400 mg. of TEA. In addition, doses of 50 to 100 mg. resulted in increases of foot blood flow that were not significantly different from those following epidural or intrathecal lumbar block.

Because of the marked ganglion-blocking action of C6 it seemed pertinent to investigate clinically the effects of the drug in the management of patients with various types of peripheral vascular disease.

In the present series there were 29 patients with vascular disease of the extremities. These included 2 patients with arterial embolism, 1 with primary arterial thrombosis, 3 with Buerger's disease, 2 with Raynaud's phenomenon, 1 with causalgia, 5 with arteriosclerosis obliterans and 16 with thrombophlebitis. All these patients were hospitalized during their course of treatment with C6. In these patients C6 appeared to be approximately as effective as paravertebral sympathetic block.

Schnaper, Johnson and Freis demonstrated that the increase in foot blood flow after administration of 50 to 100 mg. of C6 ion in normal subjects was not significantly different from that attained after epidural or intrathecal lumbar anesthesia. Hoobler and his co-workers demonstrated that the increase in foot blood flow after TEA, Priscoline, alcohol or body warming was usually less than half that following lumbar paravertebral block. Thus it seems apparent that hexamethonium has considerably greater potency than previously known peripheral vasodilator agents.

The advantage of C6 is that it may be given by hypodermic injection by the nursing staff around the clock to produce a more or less continuous increase of peripheral blood flow for prolonged periods of time. The disadvantage is the occurrence of hypotension, - particularly postural hypotension. However, with frequent doses given over long periods the postural hypotension becomes less prominent. In addition, although it was available only in small amounts at the time of this study, C6 in large doses appeared to be effective when given orally. One hour after a single oral dose of 1 Gm. of C6 ion in a normal subject exposed continuously to an environmental temperature of 68° F., the skin temperature of the toes rose to equal the umbilical temperature and remained at this high level

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for more than 8 hours. Thus the possibility of producing a prolonged "medical sympathectomy" in patients with peripheral vascular disease deserves further investigation.

Because of the marked hypotensive effects of C6, particularly after the initial dose, it is possible that dangerous collapse may be precipitated by injudicious administration of the drug. For this reason it is advisable in beginning treatment in all elderly, hypertensive or debilitated patients (who may be unusually susceptible to the hypotensive action of the drug) to determine the effect of C6 on the blood pressure prior to administering full blocking doses. This preliminary testing is accomplished by injecting the drug at a rate of 1 mg. of the ion per minute intravenously, with repeated determinations of the blood pressure in the opposite arm. The rate of injection may be increased slightly after 10 mg. has been given. The injection should be halted immediately if there is any marked fall in blood pressure. This reaction may be treated by elevating the foot of the bed on 6 or 8 inch blocks, elevating and passively exercising the lower extremities and administering vasoconstrictor agents such as phenylephrine hydrochloride (Neosynephrine), 2 to 4 mg. intravenously. Epinephrine should not be used. Severe collapse reactions of this type have been much more common in hypertensive patients than in those with peripheral vascular disease. Furthermore, because of postural hypotension the patient must remain supine in bed for 2 to 3 hours after each injection.

The acute, severe hypotensive reactions characteristically occur only after the initial injection of C6. With subsequent administration of the drug the hypotensive effect is less marked. In patients with coronary artery disease, the hypotension and compensatory tachycardia following administration of C6 may precipitate a bout of angina. It has also been reported that patients under anesthesia frequently develop extreme hypotension after this treatment. This reaction may be due to blood loss associated with operative procedures rather than to the anesthesia. The only other undesirable effect is the development of constipation, which can usually be managed with enemas and cathartics. Occasionally a condition resembling paralytic ileus develops, with distention, nausea and abdominal cramps. Preliminary evidence suggests that the constipation and ileus can be controlled by administering a parasympathomimetic agent such as urethane B-methylcholine chloride (Urocholine), 5 to 15 mg. orally twice or 3 times per day, in addition to laxatives.

C6 may be of value not only in the treatment of acute types of peripheral vascular disease, but in the selection of cases for sympathectomy. In the present series all patients who responded well to C6 also exhibited a good result after sympathectomy. The converse, however, does not follow, - that patients who do not respond to C6 will not be benefited by sympathectomy, - as in many cases good surgical results have followed poor responses to lumbar block.

The availability of an agent producing more or less complete autonomic blockade for long periods of time suggests a trial of C6 in a wide variety of conditions, including such diverse diseases as causalgia, Parkinsonian tremor, anterior poliomyelitis and chronic ulcerative colitis, as well as other diarrheal diseases and pancreatitis. Final evaluation of hexamethonium in the treatment

of such conditions as well as in peripheral vascular diseases must await long-term studies in large series of patients. (New England J. Med., 30 Aug., 1951, F. A. Finnerty, Jr. & E. D. Freis)

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Effect of Large Doses of Aureomycin on Human Liver

Aureomycin has received extensive clinical trial for 3 1/2 years and has exhibited a minimum of toxic reactions. The reports of toxicity have been limited almost exclusively to gastrointestinal symptoms after oral medication and chemical thrombophlebitis after intravenous administration. Rarely, chills, malaise, nausea, dizziness and lower-back pain have been observed in patients during and immediately after rapid intravenous injections. Local pain has accompanied intramuscular or subcutaneous administration. An occasional allergic-type reaction has also been reported.

The authors have administered aureomycin intravenously to a number of seriously ill patients. Because of the severity of their illnesses, they were given large intravenous doses of aureomycin, occasionally for a long period and, in many cases, oral doses of aureomycin in addition. The great majority of the patients who received aureomycin intravenously showed no evidence of toxic or side reactions other than those mentioned above. A few patients, however, who were given what are now considered to be excessive doses of aureomycin intravenously, showed clinical and/or laboratory evidence of injury to the liver. In this paper are presented clinical data on these patients and, where available, the results of the pathologic examinations.

Large doses of aureomycin were given to 103 patients in treatment of serious infections; 14 of them received both oral and intravenous aureomycin therapy. Among these 14 patients, 7 showed clinical evidences of liver dysfunction. Necropsy examinations on 5 and a biopsy specimen from 1 of these patients showed pathologic changes in the liver cells.

Two subjects were given aureomycin intravenously and were studied by means of serial liver-function tests. These showed diminution of liver function. The pathologic changes in the liver appeared to be reversible when the condition was recognized early and aureomycin therapy was promptly discontinued.

Intravenous doses of aureomycin totalling less than 2 Gm. a day in adults were not accompanied with evidence of liver dysfunction or injury, nor have these conditions been observed in more than 1,300 patients to whom aureomycin has been administered orally.

The doses of aureomycin which caused these changes in the liver are now considered to be excessive. It is recommended, until further evidence is accumulated, that aureomycin should not be given intravenously in large doses. It is suggested that when aureomycin is administered orally in addition no more than 1 Gm. of aureomycin a day should be given by the intravenous route. When adjuvant oral therapy is not employed, 2 Gm. of aureomycin intravenously a day would seem to be the maximum dose. For children a maximum intravenous

dose of 40 mg. per Kg. of body weight is recommended. (AMA Arch. Int. Med., Sept. 1951, M. H. Lepper, C. K. Wolfe, H. J. Zimmerman, E. R. Caldwell Jr., H. W. Spies & H. F. Dowling)

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Surgical Aspects of Acute Head Injuries

From 85 to 90 percent of patients with acute head injury require no major neurosurgical procedure, apart from the primary debridement and closure without drainage of scalp lacerations at the time of, or within a few hours of admission. In the great majority of these cases, the burden of the post-traumatic treatment is that of good nursing care and frequent scrutiny of the patient to be certain no urgent surgical emergency is developing, particularly in the first few days after trauma. Coleman has stated that surgery for cranial trauma has 3 main objectives: (1) prevention of infection; (2) removal of a localized intracranial hematoma and (3) elevation of depressed fractures. Rarely is operation needed for edema of the brain per se, unless it is accompanied by intracranial hemorrhage. The low incidence of shock in acute head injuries is emphasized. In a 1937 series of 1,078 cases, it was nearly always due to (1) severe associated injuries of the chest, long bones, spine or injury to the abdominal viscera, (2) severe blood loss from scalp or internally, (3) the occasional severe basilar type of brain injury with blood pouring from the cranial orifices, dilated fixed pupils, et cetera. The low incidence of shock (6 to 7 percent) makes possible the transportation of the vast majority of these patients for considerable distances if need be soon after trauma.

Surgical Procedures Utilized in Intracranial Hemorrhage of Surgical Significance. These are chiefly diagnostic burr openings, usually in the superior temporal region, subtemporal decompression for the removal of large extradural or subdural hematomas and the elevation of depressed skull fractures, simple or compound. Rarely today is subtemporal decompression performed for cerebral edema alone, except in the unusual case with persistently high cerebrospinal fluid pressure not relieved by intravenous 50 percent sucrose or 25 percent magnesium sulfate rectally. A ventriculogram is occasionally helpful in the patient who continues to deteriorate after diagnostic burr openings have revealed no meningeal clot and whose brain is "tight"; such a patient may have a large intracerebral clot demonstrable only by ventriculography. The diagnostic burr openings with nicking of the dura are resorted to frequently to be certain in the critical case as to the presence or absence of a large extradural or subdural clot. Occasionally 4 or more of these openings are made before the surgeon is satisfied about the individual patient.

Skull Fracture: Types, Operative and Nonoperative. Before repairing simple depressed skull fractures, the author waits, usually for 2 or 3 days, provided no signs of localized cerebral compression, such as aphasia or hemiparesis, develop in the first few hours or days after trauma. In the compound depressed skull fracture, however, immediate operation is usually done if the patient's

general condition permits, and he is not in shock. This decision is made primarily to prevent infection, for one never knows in which patient the dura has been lacerated. In all compound skull fractures, or in cerebrospinal fluid leaks through the cranial orifices and in any case in which there is danger of infection from the scalp inward, large daily doses of penicillin, often combined with sulfadiazine, are given for at least the first few days after admission to the hospital.

Compound linear fractures of the skull require no surgical treatment except suture of the overlying scalp laceration, unless infected material such as hair, pieces of clothing and the like have been caught in the bone fracture line. The immediate line of the fracture in such cases should be excised with appropriate rongeurs. Fractures of the skull base are never of surgical importance per se, as bony depression is not a factor in such types of injuries. A basilar fracture is not demonstrable as a rule on the ordinary skull x-ray films but is diagnosed, rather, by cranial nerve palsies, cerebrospinal fluid leaks through the nose or ears and the development of late discoloration about the eyes or mastoid (Battle's sign). In the simple depressed fractures of the vault, it is usually best to replace the bone in the form of a mosaic over the intact or sutured dura before scalp closure and thereby eliminate the necessity for tantalum plate insertion at a later date, but in the compound depressed skull fractures the already contaminated depressed bone fragments are usually discarded because of the danger of infection, and a tantalum plate to cover the cranial defect is inserted a few weeks later. One of the prime reasons for operating in depressed skull fracture is to accomplish a watertight closure of the dura if it has been lacerated at the time of trauma. This type of wound is almost never drained subdurally, as any advantages ascribable to a drain are outweighed by the disadvantages, particularly the possibility of a postoperative cerebral fungus or herniation.

Cerebrospinal Fluid Leaks From the Anterior and Middle Fossae. Posttraumatic cerebrospinal fluid otorrhea usually closes spontaneously, but rhinorrhea occasionally must be operated upon and the fistula obliterated. If an active leak of fluid through the nose continues even with the head of the bed elevated and fluids restricted, for 10 days or more after trauma, operation should probably be carried out without delay through a frontal craniotomy. Operative attack must be planned carefully for each case individually.

Bullet, Knife, and Other Head Wounds Due to Missiles. The mortality from these wounds has been greatly reduced during and after World War II. This is attributable to the use of antibiotics and large supplies of blood and blood substitutes, together with improved technic, with particular emphasis on adequate powerful suction and electrosurgical apparatus for coagulation of deep cerebral vessels in the forward hospitals. The most important single technical point about wounds due to small metallic missiles is that debridement and thorough irrigation with large quantities of warm saline solution of the wound of entrance (and also the wound of exit, if present) is, in many cases, more important than removal of the actual missile itself, particularly if removal of the missile would require a fresh cerebral incision through important functional areas of the brain.

Retained bone fragments should always be removed and accounted for. A posttraumatic cerebral abscess is much more likely to result from retained bone fragments in the brain than from a metallic missile. Large doses of antibiotics are given. Closure of the wound of entrance (and exit, if present) is invariably made without drainage, particular attention being given to a watertight approximation of the dura, galea and scalp by interrupted silk sutures.

Cerebral Edema: Its Surgical Treatment, Cerebral Contusion, Brain Stem Injury. Occasionally an individual will react to a blow on the head by developing an inordinate degree of cerebral edema without significant or gross intracranial hemorrhage. These patients develop a high spinal fluid and therefore high intracranial pressure. If the spinal fluid pressure remains high (in excess of 200 mm. water) in spite of intravenous 50 percent sucrose in doses of 100 cc. once a day for 2 or 3 days, and particularly if the patient remains drowsy or has severe headaches with or without vomiting and bradycardia, a subtemporal decompression may be indicated although this operation, for such a purpose, is rarely required today. It is occasionally impossible to determine preoperatively whether the patient has, principally, a cerebral contusion of one hemisphere or a subdural or extradural hematoma, both types of lesions being accompanied typically by greater or lesser degrees of hemiplegia or aphasia and varying degrees of stupor. It is in this type of case, seen almost daily in clinics dealing with large numbers of head injuries, that diagnostic burr openings are so valuable. In the cerebral contusion case particularly, as in those patients who have had depressed skull fractures, with laceration of the underlying cortex, it is important for the patient to take adequate doses of phenobarbital for several weeks or even months postoperatively to reduce the likelihood of posttraumatic convulsions to a minimum. The brain stem injury case with the alternating powerful flexion and extension of the extemities and immediate and prolonged profound unconsciousness is readily recognized by the trained observer and is improved by no surgical procedure. It is usually due to gross hemorrhage and (or) contusion in the pons or medulla.

Miscellaneous Considerations. All patients with cerebral concussion must be admitted at least for an overnight stay in the hospital and the patient or his relatives must sign a release if he insists on going home from the emergency room without being admitted to the hospital. The question of alcoholic intoxication in patients with acute head injury should be given little consideration and usually it is best to ignore it entirely or a surgical emergency may easily be overlooked. Also x-ray films are insisted on in every case of concussion, not necessarily at the time of admission to the hospital, but at least before the patient is discharged.

Excessive mucus is combatted by placing the patient in the posttonsillectomy (prone) position with the foot of the bed elevated several inches for approximately an hour, and the head turned to either side, atropine is given hypodermically, and the mucus is aspirated frequently with a suction apparatus attached to a metal tip. Tracheotomy may be occasionally resorted to in the intractable case of excessive mucus.

The best position generally for a patient with head injury, provided he is not in shock and does not have excessive mucus in his tracheobronchial tree, is in the head elevated position, as this position reduces the cerebral edema and the patients seem to have less disabling symptoms, such as headache. It is important to remember that in the unconscious patient, particularly, following a head injury, who also has a shoulder girdle injury (clavicle, upper humerus or scapula), there may also very possibly be a bony injury to the cervical spine between these two regions. The surgeon should not be misled into attributing a rigid spastic neck in such a case to subarachnoid bleeding from the head injury; it may also very possibly be due to a cervical spine dislocation. This is so likely a possibility that cervical spine films are made, including oblique views of the laminae, in all cases of this combined type of head and shoulder girdle injury.

With regard to extreme restlessness in head injury patients opiates such as morphine and codeine are avoided, except postoperatively, at which time small doses may be given judiciously and often prove to be the best means of sedation available. Chloral hydrate and bromide in moderate doses given together by rectal tube seem to be particularly helpful in these cases. In the extremely restless patient, paraldehyde by rectum, intramuscularly or intravenously, is occasionally of distinct value in inducing sleep. Sodium phenobarbital is helpful only in the mildly restless patient. Acetosalicylic acid, phenacetin and other mild nonnarcotic sedatives are utilized for the relief of headache.

Concerning the advisability of dehydration in acute head injury - a controversial problem for many years - the author conforms to a middle-of-the-road policy of giving these patients, on the average, approximately 2,000 cc. of fluids every 24 hours by mouth, intravenously, or by hypodermoclysis. High caloric nasal tube feedings are resorted to rather frequently in semiconscious or unconscious patients, in order to prevent the likelihood of "aspiration pneumonia" if the patient receives fluids by mouth when he is unable to swallow properly.

Early ambulation (2 to 3 days after trauma) is encouraged in patients following acute head injury, just as it is today in those who have undergone abdominal or other major surgery. Such management may avoid the all too frequent headache or vertigo seen in many simple postconcussion cases and, strangely enough, often conspicuous by its absence in the patient who was unconscious for days or weeks following a severe brain injury, but who eventually recovered.

It may be seen from this discussion that in the vast majority of cases of acute head injury, intelligent and expert nursing care, combined with the watchful eye of the surgeon, is the real key to successful management. (Surg., Gynec. & Obstet., Sept., 1951, J. M. Meredith)

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Treatment of Cardiac Emergencies With K-Strophanthoside and Lanatoside C

Because of acute and fatal cardiac emergencies, hospitals and physicians should always have readily available an "emergency cardiac tray". Rapidly acting cardiotonics should be available to treat emergency cases of acute failure with or without pulmonary edema.

The active principles of digitalis are glycosides and the recent therapeutic trend has been to use these standardized stable glycosides rather than the unstable whole leaf preparations. The glycosides digitoxin, gitoxin and gitalin are obtained from Digitalis purpurea. The glycosides Lanatoside A, Lanatoside B and Lanatoside C are obtained from Digitalis lanata. The glycosides Strophanthin K and Strophanthoside K are obtained from Strophanthus kombe. Ouabain is obtained from the seeds of Strophanthus gratus.

Each of these glycosides possesses digitalis properties differing in speed of action, degree of absorption and rate of dissipation. The author reviews 2 of the glycosides, Strophanthoside and Lanatoside, as being best suited for handling certain cardiac emergencies.

The main indications for using strophanthin are: (1) primarily in acute failure with pulmonary edema and cyanosis; (2) as therapy for angina pectoris; (3) as an aid in differentiating between the presence and absence of early heart failure. The greatest advantage of this drug is its extremely rapid rate of action. The disadvantages are: 1. It must not be administered rapidly. 2. It should not be given to previously digitalized patients, since it will mobilize all the digitalis in the body and this may result in digitalis poisoning. An exception, however, can be made in extremely acute failure. 3. Doses in excess of 0.25mg. should not be used and should always be given in 10 cc. of distilled water, aminophyllin or 5 percent glucose. 4. Strophanthin is very toxic to the myocardium. 5. Should extra systoles develop during administration, the drug should be immediately discontinued.

Lanatoside C is effective in treating (1) arrhythmias, particularly supraventricular tachycardia and (2) heart failure, especially when rapid digitalization is desired. The author in his experience has not witnessed any toxic manifestation of Lanatoside C, which is rapidly dissipated and does not accumulate in the body. (J. M. Soc. New Jersey, Aug., 1951, M. C. Ritota)

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The Longevity and Behavior of Pathogenic Bacteria in Frozen Foods: The Influence of Plating Media

Certain pathogens when frozen on beef or on peas will survive for many months at -9° and -17.8°C. The cells seem to have had their metabolic requirements markedly altered, since a highly nutritive medium, YE-VI agar, will recover much larger numbers than the selective media, MacConkey agar, desoxycholate agar or violet red bile agar. The inhibitory effects of these selective

media increase as the storage of the infected food is continued at subfreezing temperatures.

Greater destruction of cells on frozen beef or peas was observed at -9° C. than at -17.8° C. Species variation was noted in the resistance of the pathogens to these temperatures. The cultures, in order of greatest to least resistance when stored on frozen beef or peas, were M. aureus, S. oranienburg, S. typhosa and S. dysenteriae.

The enrichment media - Selenite F broth, tetrathionate broth and modified Leifson's medium - were of little value when recovering the pathogens from frozen peas because of marked inhibitory effects.

These findings are in agreement with those of Gunderson and Rose, who have suggested that bacterial standards of quality, when established, must take into account the inhibitory effects of plating media, especially if the standard relates to the enumeration of pathogens. Apparently the freezing process, in common with the application of heat to foods, alters the nutritional requirements of bacteria - at least, more viable cells can be detected if they are given a booster dose of needed metabolites. YE-VI agar accomplished this purpose very well in the author's experimentation. Without such a medium, the pathogen may not be detected and false confidence regarding its significance in a food may result. The impressive longevity of the pathogens on the frozen beef, observed in this study, should be recalled in this connection. (Am. J. Pub. Health, Sept., 1951, S. E. Hartsell)

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Influence of Alumina Gels on Prevention of Urinary Calculi

The origin of urinary calculi has been extensively studied but remains largely obscure. Obstruction, infection, hyperexcretion of crystalloids and subepithelial plaque formation are frequently associated but no single etiologic agent is common to all cases; probably multiple factors are involved. Renal stone may occur with hyperparathyroidism, oxaluria, cystinuria, milkman syndrome and other metabolic disorders, but in the majority of patients chemical studies fail to establish the presence of an underlying disturbance in metabolism. Except for the small group in whom stone formation results from metabolic abnormality (and for whom surgical removal of the cause, as of hyperfunctioning parathyroid tissue, is usually curative), renal stones are prone to recur after excision and to increase in size despite all known preventive measures. The treatment most commonly employed has attempted to reduce urinary phosphate precipitation by continuous acidification of the urine. For this purpose it has been customary to utilize acid-ash diets, usually supplemented by acidifying agents. However, this treatment is too often limited in effectiveness by the presence of ammonia-forming organisms in the urinary tract, and impairment of renal function. Under such circumstances a highly acidifying regimen is hazardous because of the danger of acidosis. In many patients with urinary infection no amount of acidification will reduce the urinary pH to the desired acid

range. The urine will remain acid until it reaches the kidney pelvis, where it will become alkaline through bacterial production of ammonia from urea. Hence, the serious hazards of secondary operations of the kidney for many patients have been inescapable.

The present study was undertaken (1) to confirm the value of certain alumina gels in preventing formation and enlargement of renal stone; and (2) to determine the metabolic role of magnesium in the development of urinary calculi.

Administration of alumina gel causes reduction in urinary inorganic phosphorus and increases excretion of phosphate in the stool of both normal and calculous subjects.

Amphojel with magnesium trisilicate was administered, in doses of 30 to 45 cc. 4 times daily, for 2 1/2 years to 34 patients for prophylaxis of urinary calculi. In 30 (88.2 percent) the treatment was successful, with no evidence of recurrence or of enlargement of existing stone.

Of 3 patients who did not adhere to the prescribed regimen, one showed stone growth and the other passed a stone through a nephrostomy tube. In a third, stones formed proximal to a ureteral stricture. In a fourth patient, with idiopathic hypercalcinuria, recurrence was attributed to a high urinary calcium. There was no evidence of decalcification of the skeleton or other ill effects in any of the patients studied.

Observations on 2 uremic patients suggest that diversion of the phosphate through the gut, thus partially relieving the kidney of the necessity to excrete phosphorus, may be of therapeutic value in uremia by facilitating excretion of urea, with reduction of serum urea nitrogen.

Ten patients who had received amphojel with magnesium trisilicate previously were treated with basaljel, an aluminum carbonate gel, in the same dosage. It reduced urinary phosphorus excretion to lower levels than did plain amphojel or amphojel with magnesium trisilicate, and is more palatable. Basaljel, therefore, appears to be the drug of choice for prophylaxis of calculi in the urinary tract.

In the balance study urinary magnesium paralleled urinary calcium in the 3 subjects and the control. Urinary calcium increased slightly on amphojel with magnesium trisilicate but not with plain amphojel. Positive balances in phosphorus and magnesium metabolism were maintained during alumina gel therapy.

Since earlier experiments suggest that a high urinary magnesium may increase solubility of the calcium oxalate and maintain all calcium in solution, an attempt to confirm these findings would be desirable.

It appears advisable, for stone-forming patients, to provide a diet adequate in magnesium to reduce endogenous oxalic acid excretion to a minimum. (J. Urol., Sept., 1951, G. S. Barrett). (See also Medical News Letter, Vol. 17, No. 2, 26 January, 1951)

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Treatment of Barbiturate Poisoning

Deaths from acute barbiturate poisoning have for some years been increasing; and in America these are estimated at over 400 a year. In Great Britain the manufacture of barbiturates has greatly increased in the last 12 years; in 1950 the output of these drugs was double that in 1946, and 4 times that in 1938. Deaths from barbiturate poisoning have increased proportionately. Clinically, the value of the usual remedies is difficult to assess, since even in untreated patients the course is capricious and the issue uncertain. Furthermore, direct comparison of results is almost impossible since there is little uniformity in the classification of cases and assessment of mortality rates. Some workers have estimated severity by the duration of unconsciousness, some by the amount of drug taken and some by the estimated depth of anesthesia; and many have not classified their cases at all. Most clinicians believe, however, that the analeptic drugs are of undoubted value; and in Great Britain and the U. S. A. picrotoxin is regarded as the most useful member of the series. Even with the use of the analeptics, however, the mortality rate in most series of serious cases has remained between 15 percent and 71 percent. It comes as a surprise, therefore, to learn of 176 cases treated in Sweden by Nilsson without any analeptic drug, in which the over-all mortality rate was 1.7 percent and the mortality rate in the 87 serious cases 3.4 percent. A case was classed as serious when the patient remained unconscious for more than 24 hours, had total areflexia on admission, was shocked or had pronounced hypothermia. Allyl-isopropyl barbiturate (Aprobarbital), with an action of medium duration, accounted for 93 cases (52 serious); phenobarbitone, (phenobarbital), the next commonest drug, had been taken in 26 cases (8 serious). The largest amounts taken by patients who recovered were: barbitone (barbital) 25 Gm. (gr. 388), phenobarbitone 9 Gm. (gr. 140), allobarbitone 3.2 Gm. (gr. 49.5), allyl-isopropyl barbiturate 5 Gm. (gr. 77.5), iso-amethyl barbituric acid ('Amytal') 4 Gm. (gr. 62)(this patient had also taken morphine) and hexobarbitone ('Evipan') 10 Gm. (gr. 155). Of the 3 fatal cases, 1 had taken 2 Gm. (gr. 30.8) of allyl-isopropyl barbiturate, 1 had taken 20 Gm. (gr. 308.6) of phenobarbitone and 1 had taken an unknown amount of an unknown barbiturate.

Nilsson likens this poisoning to prolonged anesthesia; and in treatment he tries to maintain the bodily functions as near normal as possible by assuring a free airway, a plentiful supply of oxygen and an adequate circulation. He criticizes the established methods in which "stimulation of the cerebrum with so-called analeptics has always played a leading part in the therapeutic program. A free airway has at most been taken to mean a free airway above the vocal cords." It cannot be physiological, he says, to stimulate with analeptics a cerebrum, depressed with barbiturates, so intensively that the patient is constantly poised on the border of a convulsion, when it has been shown that repeated doses of these drugs may produce side-effects which add to the cerebral and medullary depression. In some cases, he asserts, administration of analeptics may have directly contributed to the patient's death. Nilsson also objects to the practice of washing out the stomach with large quantities of fluid; and he quotes Harstad et al., who showed that 4 hours after the drug was taken the lavage fluid only

exceptionally contained an appreciable amount of barbiturate; thus the theoretical advantages of the method are more than outweighed by the danger of the comatose patient aspirating fluid into his lungs.

The regime adopted by Nilsson was as follows. If the patient was admitted to hospital within a few hours after having taken the poison, and if the pharyngeal and laryngeal reflexes were present, the stomach was aspirated; and in some cases a suspension of 20 Gm. of medicinal charcoal in water was left in the stomach. Nothing was given to stimulate peristalsis. Moistened oxygen was given continuously by a tracheal tube, and the trachea and bronchi were kept clear by repeated suction through a fine catheter. The patient was turned every 2 hours, and his thorax was thumped hard to loosen any mucus adhering to the bronchi. In all cases penicillin or sulfonamides were given, either separately or together, and in some cases streptomycin was also used. The hemoglobin was estimated every 4 hours, and the blood non-protein nitrogen, the plasma-bicarbonate and the serum-chloride every 24 hours. Where indicated by these estimations, 2-3 liters of fluid were infused intravenously; and an effort was made to keep the plasma-bicarbonate at about 25 millimols, and the plasma-chloride at about 100 m.Eq. A slight alkalosis was aimed at, since Fischer and Salzer have shown that animals poisoned with barbitone and treated with alkalis excrete 20-25 percent more of the drug, and wake sooner than controls. Patients who were comatose for a long time were given injections of vitamin C in order to decrease vascular permeability. Nilsson suggests that it might be reasonable to try adrenal cortical hormone or use ACTH. In patients with threatening pulmonary edema, hypertonic 50 percent glucose was given intravenously; and if there was established circulatory collapse a 6 percent solution of dextran containing 9 Gm. of sodium chloride per liter was infused, or in some cases whole blood. At the same time failing cardiac activity was countered by strophanthin, 1/4-1/2 mg. intravenously. In some cases a single injection of amphetamine 25-50 mg. was given to raise the blood pressure quickly; Nilsson does not consider that this is contrary to his precept about non-stimulating treatment. In 3 cases "blood lavage" was carried out by giving large quantities of fluid parenterally together with mercurial diuretics; but he suggests that this method should be regarded with very great reserve and perhaps confined to young patients poisoned with barbitone. In patients with acute renal injury, due to renal anoxia and ischemia, fluids were restricted to 1 liter of glucose solution per 24 hours. Hyperthermia was treated with cold packs. The main complication of Nilsson's treatment was damage to the larynx by prolonged intubation, but no patient sustained very serious damage, and he believes that with even greater care such injury could be avoided.

Nilsson's results suggest that his method of treatment deserves close and immediate attention; for if its superiority is confirmed it must inevitably replace other technics.(Lancet, 18 Aug., 1951)

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Tracheotomy in Tetanus

Typical figures from the recent literature show that the mortality in tetanus varies from 35 percent to 63 percent. Experimental physiological and histopathological studies reveal the primary factor to be respiratory failure. In addition, the use of central-nervous-system depressants may contribute to respiratory decompensation.

These facts on mortality, pathogenesis and causation of death promoted the present inquiry into the rationale of the current treatment of tetanus. In this review 6 cases of tetanus are presented in which, during the clinical course, tracheotomy was required for the patients' survival.

The indications for tracheotomy in tetanus depend upon neuromuscular dysfunction and mechanical obstruction. They are (1) prolonged spasm of the muscles of respiration, (2) absent cough reflex, (3) absent swallowing reflex, (4) laryngeal obstruction, (5) secretion in the tracheobronchial tree, (6) tongue trauma and (7) coma. Tracheotomy should be done before irreversible respiratory decompensation occurs owing to any or all of these factors. Trismus, in addition, precludes the advantage of tracheotomy over the bronchoscope. However, it is often necessary later in order to remove secretions to bronchoscope the patient through the tracheal stoma. In this respect, routine tracheotomy should not be done merely because of the presence of trismus and dysphagia. It is well known that some cases of tetanus are mild and do not approach respiratory decompensation.

Surgical excision of the wound in an attempt to eradicate the source of toxin production is still carried out by numerous authors. It has been shown by animal experimentation and in human beings that amputation in no way changed the progress of the disease compared with no amputation in the controls. Administration of tetanus antitoxin neutralizes any toxin which may be discharged from the wound site. Only the adherence to good surgical principles should guide one in the care of the local wound, and deforming excisions are unwarranted. Thus, removal of foreign bodies and drainage of abscesses, if present, must be done.

Curare is commonly used to block the transmission of nerve impulses at the myoneural junction by counteracting acetylcholine. The chief danger in the use of this drug is the narrow margin of safety between the desired muscular relaxation and paralysis of the muscles of respiration. If curare is used, neostigmine should be at the bedside and one should be prepared to administer artificial respiration.

Sedation with tribromoethanol and the barbiturates, which is necessary for the control of increased nerve irritability and tetanic convulsive seizures, impairs respiratory function. The optimum dose is one that controls spasms and seizures without dangerously depressing the rate and depth of respiration. One must avoid apnea resulting from the effect of excessive sedation on the respiratory center. Moreover, barbiturate action combined with stimulation of the vocal cords by the pharyngeal catheter may produce a fatal laryngospasm. This laryngospasm may be averted by tracheotomy. Deep sedation prevents the

patient from coughing and emptying his bronchioles and also prevents the use of the accessory muscles of respiration. This further emphasizes the need for tracheal stoma aspiration.

The after care of the tracheotomized patient with tetanus deserves comment. The authors' routine is to elevate the foot of the bed to 25 degrees from the horizontal. Since measuring the angle of elevation with a giant protractor is impractical, they utilize the fact that the value of the trigonometric function of the sine angle 25 degrees is equal to 0.4226. This factor, when multiplied by the length of the bed, accurately gives the desired elevation. For example, a 6 foot bed should be elevated 2.4 ft. They secure the patient's feet to the foot of the bed with a roller bandage in the form of a Collin's hitch, making sure first to wrap each ankle with a towel. An excellent diagram of Collin's hitch may be found in Magnuson's book (Fractures, 1942). Nutrition is maintained by adequate fluid administered parenterally during the period of generalized tonic spasms. This may be supplemented or replaced by Levine-tube feedings. It is important to lower the bed to the horizontal for an hour after each feeding to prevent gravitational regurgitation of the feeding. With the patient in the postural-drainage position, aspiration through the cannula should be done whenever secretions are present. If this is inadequate, bronchoscopic aspiration through the stoma should be done. Moreover, the secretions should be kept thin by a humid atmosphere and, if necessary, by irrigation with 4 cc. of 3 percent warmed sodium bicarbonate solution followed by 4 cc. of isotonic sodium chloride solution. Decannulation should not be carried out until the patient can swallow and speak and has had no spasms for 24 hours without sedation. (AMA Arch. Otolaryng., Aug., 1951, E. Herzon, E. Killian & S. J. Pearlman)

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Late Results of Surgery in Perforated Duodenal Ulcer

The permanence of cure following the surgical treatment of perforated duodenal ulcers has long been the subject of much speculation. Throughout the literature there seems to be a note of extreme optimism, which suggests that the majority of persons who have had a perforation can look forward to a future free from ulcer distress. In one series published in 1936 the author states that 95 percent of the patients who underwent simple closure of a perforated ulcer remained well in the ensuing follow-up which extended over a 26 year period.

In 1944 a group at the Toronto General Hospital (Canada) published a communication presenting the details of the immediate management of 114 cases. The patients in this series have been followed for a period which ranges from a maximum of 20 to a minimum of 5 years. Details of this follow-up, as well as figures on the permanence of cure, are presented.

The group has always maintained, rightly or wrongly, that the surgeon's sole responsibility in the treatment of perforated duodenal ulcers is to save the patient's life and to do this with the simplest and quickest procedure at his disposal. Having accepted this premise, they have practiced simple closure of the

ulcer only and have seldom been faced with the necessity of performing any other type of operation, such as gastrectomy or gastroenterostomy. It is what may be called a conservative approach to the problem, for excellent results have been obtained by some in the treatment of this lesion by immediate gastric resection.

In this group of 114 patients, the operative mortality was 6.3 percent. One third of the 78 patients who were personally interviewed have little or no trouble with their digestive apparatus now. One third have typical or severe symptoms of ulcer characterized by pain, nausea and vomiting, or bleeding episodes. One third have undergone further operative procedures, consisting of gastrectomy, gastroenterostomy or closure of another perforation.

Although theoretically there should be a medical plan for the postoperative management of these patients, in a large percentage of cases it is not carried through by the patient. Apparently, a certain number of patients can remain absolutely symptom-free after perforation and yet not follow any dietary rules or restrictions in smoking or drinking.

The group plans to teach and practice simple closure of perforated duodenal ulcers until they can be convinced that a better method of treatment is available. (AMA Arch. Surg., Sept., 1951, E. B. Tovee)

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ACTH and Cortisone in Diseases of the Skin

More than 70 patients with cutaneous diseases have been treated in the Boston area with ACTH or cortisone. A preliminary evaluation of the results obtained is given.

ACTH and cortisone are capable of suppressing both allergic hypersensitivity reactions and inflammatory reactions not solely due to allergy. For this discussion, the cutaneous diseases are divided into 4 groups:

(1) Serious, frequently fatal dermatoses in which ACTH and cortisone represent the best treatment available and in which their use is definitely indicated. To this group belong acute systemic lupus erythematosus, dermatomyositis, pemphigus and chronic idiopathic generalized exfoliative dermatitis. The sooner treatment is started, the better the results obtained.

(2) Acute, self-limited inflammatory dermatoses in which ACTH and cortisone are effective and a short course is indicated if the symptoms are severe enough to warrant such treatment. To this group belong drug eruptions, erythema multiforme, anaphylactoid purpura and contact dermatitis.

(3) Chronic, usually not serious dermatoses in which ACTH or cortisone is indicated only in exceptional cases. To this group belong psoriasis, chronic eczema as atopic eczema, chronic discoid lupus erythematosus, dermatitis herpetiformis and sarcoidosis. Although ACTH and cortisone produce considerable improvement, these diseases recur quickly on termination of therapy, thus requiring prolonged treatment, with its possible complications.

(4) Chronic, serious dermatoses in which ACTH or cortisone is of little

value, as the degree of improvement is usually slight and followed by relapse within a short time. This group includes scleroderma and mycosis fungoides.

Either ACTH or cortisone may be administered in the cutaneous diseases just mentioned, because in all these conditions the adrenal glands are capable of responding adequately. For economic reasons the intravenous administration of ACTH is being used with increasing frequency. In general, ACTH given intramuscularly is about 2 1/2 times as effective, milligram for milligram, as cortisone given either intramuscularly or orally, and intravenous administration of ACTH is 5 to 10 times as effective as its intramuscular administration. Most dosages in this presentation are expressed in terms of intramuscularly administered ACTH. The amount should be multiplied by 2 1/2 for oral or intramuscular doses of cortisone and divided by 7 for the corresponding intravenous dose of ACTH.

ACTH, intramuscularly, and cortisone, orally are given in 4 equally divided doses every 6 hours. Cortisone, intramuscularly, is given every 12 hours. ACTH is given intravenously, dissolved in 500 ml. of a 5 percent solution of dextrose, by constant drip over a period of 8 hours every day when 20mg. are given, and over a period of 12 hours every day when 30 or 40 mg. are given.

One hundred mg. of ACTH given intramuscularly may be regarded as the average daily dose at the beginning of treatment, but in severe systemic diseases the optimal daily dose is 200 or 300 mg. a day. Children require larger doses than would be expected on a basis of their body weight. Small children should receive about half the adult dose and larger children nearly the adult dose.

In selecting the dosage one must rely above all on the clinical response. ACTH and cortisone act rapidly, and if in a few days clinical improvement has not occurred, it is advisable to increase the dosage. Eosinophil counts need not be performed frequently, but it is advisable to check the number of eosinophils before treatment is started, after the first administration, after 1 day of treatment and occasionally during the course of treatment. Counts are best made at the time of the maximum effect of the drug, i.e., 3 to 4 hours after an oral or intramuscular dose or 1 hour after termination of an intravenous infusion. In some diseases clinical improvement occurs while a fairly large number of eosinophils are still present in the circulating blood, but in most diseases, particularly in pemphigus, adequate clinical improvement does not seem to occur until the number of eosinophils (at the time of the maximum effect of the drug) has been reduced to below 50 per cu. mm.

The dangers inherent in the administration of ACTH and cortisone and the precautions necessary to prevent serious complications are referred to. The most common side-reactions against which one must be on guard are: retention of fluid leading to cardiac decompensation (best averted by restriction of the sodium chloride and fluid intake); hypokalemic alkalosis (prevented by prophylactic administration of potassium chloride, 3 to 6 Gm. per day by mouth); reactivation of an old pulmonary tuberculosis or of a peptic ulcer; psychoses; and severe infections. In order to prevent severe, overwhelming infection in very ill or debilitated patients during periods of treatment with ACTH or cortisone, it is advisable to administer concomitantly an antibiotic drug, preferably chloramphenicol, aureomycin or terramycin.

It is concluded that ACTH and cortisone are of considerable value in the treatment of several serious dermatoses, such as pemphigus, systemic lupus erythematosus, dermatomyositis and generalized exfoliative dermatitis. In these diseases ACTH and cortisone represent the best treatment available and may save the life of the patient. Treatment should be started as soon as possible.

In chronic inflammatory nonfatal dermatoses, ACTH and cortisone should be administered at present only to patients who are so ill that they are bedridden. The reason for this is the temporary nature of the beneficial effect produced by ACTH or cortisone. Once started, this treatment must be carried out for a long period of time. In patients who are not seriously ill the not infrequent occurrence of undesirable side-effects of prolonged treatment may result in a situation in which the treatment is worse than the disease.

Some diseases, especially atopic eczema, psoriasis and chronic discoid lupus erythematosus, have a tendency to rebound so forcefully that the disease may be worse on discontinuance of therapy than it had been before. (New England J. Med., 6 Sept., 1951, W. F. Lever)

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A New Method for Obtaining Barium Enemas in Colostomy Patients

Although the site of the original lesion cannot be demonstrated, follow-up barium enema studies are important in patients who have had an abdomino-perineal excision of a carcinoma of the rectum.

In order to facilitate barium examinations in colostomy patients, various devices such as the bulb of an asepto syringe and Bardex catheters have been used to retain the barium suspension in the residual colon during the examination. However, there are drawbacks to these methods. During the examination, barium often leaks around the bulb of the catheter, running over the abdominal wall and over the x-ray equipment. In addition, during the period of evacuation and while the postevacuation films are being taken, emission from the colostomy cannot be controlled and there is further soiling of the patient and equipment. This causes much embarrassment to the patients who as a group are very fastidious about their colostomies and pride themselves in the degree of care and control they have attained. Previously, the procedure has been so disagreeable that the author has had patients refuse to return for further follow-up examinations.

Method. The equipment required for the method of examination to be described is very simple and is pictured in Fig. 1. It consists of a Rutzen type ileostomy bag, a No. 22 Bardex catheter fitted with a stopper, several corks, a 50 cc. syringe and a hemostat. The hole in the face plate of the ileostomy bag is enlarged to about 2.5 cm. in diameter in order to fit the colostomies which are, in general, larger than ileostomies. Directly opposite this hole, another one is cut in the bag 1.5 cm. in diameter into which a No. 6 black rubber cork is inserted and firmly tied. This cork is grooved around the edge to aid in fastening

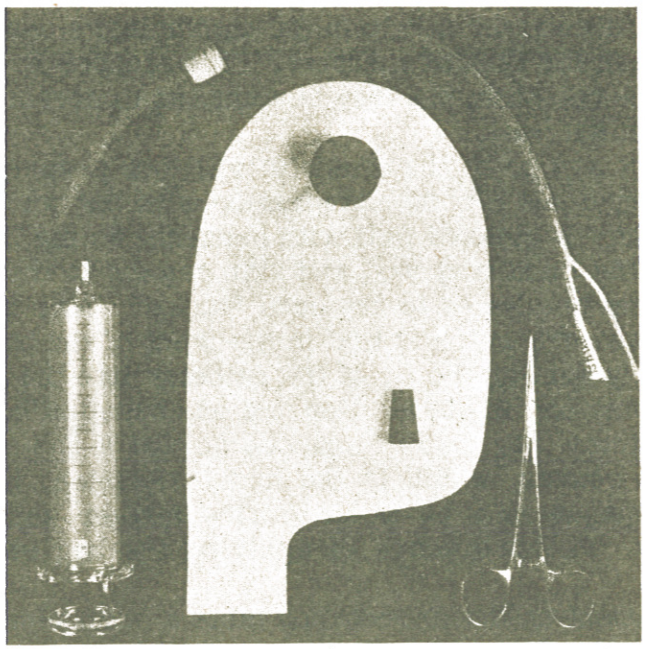

Fig. 1.—Basic equipment necessary for doing barium enemas in patients with colostomies.

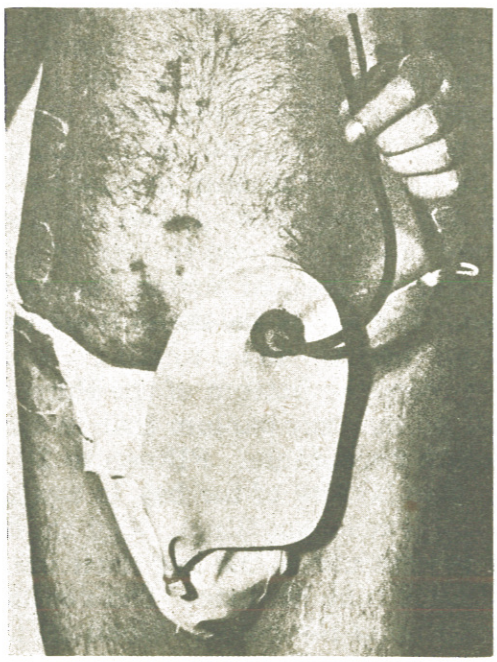

Fig. 2.—Ileostomy bag applied.

it to the bag, and it contains a hole in the center large enough to receive the stopper which is on the Bardex catheter. This stopper is placed about 12 cm. from the tip of the catheter, but may be adjusted to correspond to the thickness of the abdominal wall.

The patients are given the usual instructions preparatory to a barium enema so that they come for the examination with the colons empty. The skin about the colostomy is cleaned well with benzene, facing cement is applied to the face plate of the ileostomy bag, and skin cement to the skin about the colostomy. The cement is allowed to dry until "tacky". With the Bardex catheter fitted snugly in the cork which is tied in the front of the bag, the bag is applied over the colostomy guiding the tip of the catheter into the colostomy. Fig. 2 shows the ileostomy bag in place. For use on obese patients the brass face plate of the ileostomy bag may be snapped so that it has a slightly concave surface rather than convex, which is the usual situation. In addition a belt that is not radiopaque may be worn to give further support to the bag, but is not necessary. The procedure of applying the bag should not take more than 5 minutes.

With the patient on the fluoroscopy table a preliminary check of the abdomen may be made, after which the Bardex bag is blown up to a maximum of 15 cc. of air. The bag at this inflation measures 2.7 cm. in diameter, which is not enough to injure the gut, yet is enough to prevent the catheter from slipping out because the hole in the face plate is less than this diameter. There is no leakage of barium around the balloon even at this low inflation because the pressure of the barium suspension in the colon seats the balloon against the face plate of the Rutzen bag with the thickness of the abdominal wall intervening.

The free end of the Bardex catheter is attached to the source of barium which may be run in at any speed desired, and the fluoroscopic examination is carried out with no sense of urgency due to fear of leakage. After the initial films are made a hemostat is clamped across the catheter and the patient taken to the nearest bathroom. The air is released from the Bardex balloon, the catheter is removed from the bag, and a small cork inserted in its place. The rubber band is removed from the bottom of the Rutzen bag, which is allowed to hang into the toilet bowl so that any barium that is emitted into the bag necessarily drops into the waste receptacle. Fifteen to 20 minutes are required for this initial evacuation. The bottom of the bag is against occluded and the patient returned for the postevacuation films. Any barium leaking during this stage of the procedure is retained in the bag until the examination is over. If desired, air contrast studies may be done. The residual barium in the bag does not interfere with the outline of the colon. When all the films are taken, the patient is allowed to return to the toilet to evacuate the colon further until he thinks it is safe to remove the bag, put on his own device if he wears one and return home. The equipment is easily cleaned for further use and actually could be put up as a kit by a central supply room or by a technician.

Comment. Thirty patients have been examined by this method to date, and satisfactory fluoroscopic examinations and x-ray films have been obtained in all cases. It has been found to be reasonably quick, and the situation is under

control at all times. Some examinations have been obtained that otherwise would have been impossible. Several facts of importance have become apparent, however. If there is marked scarring about the colostomy causing deep fissures, especially in fat people, difficulty is encountered in making the bag stick for the lack of a flat surface. In these patients a belt should be worn to give the bag extra support. At no time in any patient should the bag be allowed to become overdistended and heavy with fluid for it will pull away from the skin, causing leakage. (Surgery, Sept., 1951, F. S. Cross)

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The Clinical Importance of Lesions Undetected in a Mass Radiographic Survey of the Chest

Are active lesions overlooked in mass surveys of the chest, and, if so, how frequently does this occur?

The present study is based on material provided by an investigation of the role of dual readings in mass roentgenography of the chest. There were 1,807 photofluorograms of entering college students which were interpreted independently 10 times by 6 individual readers. On one or more occasions these multiple readings brought to light 254 films which were called "positive," i.e., contained abnormal shadows. All of these 254 persons returned for 14 by 17 inch films which were then reviewed, and it was decided by unanimous opinion of all the readers that 30 of these films revealed evidence of inflammatory disease which required further clinical study. By this procedure, 30 persons were identified who will be referred to in the following as "roentgenographically positive" patients. There was sufficient control of the students involved that adequate clinical investigation could be undertaken in each case. In each instance an attempt was made to establish a diagnosis, to determine the activity of the process if inflammatory, and to obtain follow-up observations for as long as one year whenever possible.

These various procedures provided information concerning the clinical status of the 30 "roentgenographically positive" patients by which they could be divided into "active" and "inactive" categories. While no clear-cut definition of activity can be formulated which is acceptable to all, for the purpose of the present study two sets of criteria are used: (1) those with bacteriologic proof of tuberculosis, referred to as "bacteriologically active"; (2) patients from whom no tubercle bacilli could be isolated at the time of the survey, but who were either receiving active collapse therapy at the time or in whom active therapy was instituted as a result of the survey, referred to as "clinically active."

As a result of the clinical and laboratory investigations on the "roentgenographically positive" patients, tubercle bacilli were isolated from 4 persons and in each instance this was confirmed by guinea pig inoculation. In addition to the 4 "bacteriologically active" instances there were 3 "clinically active" patients, 2 of whom were previously "bacteriologically active" but who were receiving active collapse therapy at the time of the study and another who was

hospitalized for 7 months as a result of the survey. All of the 7 showed a positive skin reaction to tuberculin. In the remaining 23 cases, the lesions were considered to be stable at the end of 1 year of observation.

It was possible to correlate the "activity" status of the 30 "roentgenographically positive" patients with the results of the original interpretations of photofluorograms. This indicated whether active lesions were overlooked. Moreover, the frequency with which active lesions were missed was compared with that of cases in which the lesions remained stable for 1 year.

This study has demonstrated that "active" lesions are overlooked and, although the study is based on relatively small numbers, it does indicate that an "active" lesion is just as liable to be overlooked as an "inactive" one. The definition of activity used was based on bacteriologic and clinical criteria. No claim is made of the infallibility of these criteria for activity, but they conform to those used in the day-by-day practice of the physician or clinic responsible for these patients.

Viewed in the framework of the actual operation of the clinic, it may be stated that the main purpose for the mass survey which was instituted among the students was to detect precisely the 7 patients considered "active" in this study. The results of the present study show that the reader was at least as liable to overlook the "active" lesions in these 7 patients as the presumably innocuous lesions in the 23 other persons.

The problem of error in film interpretation in mass roentgenographic surveys of the chest is of extreme practical importance. The problem can be minimized to some extent by having the survey films read independently by more than one reader. (Am. Rev. Tuberc., Sept., 1951, H. B. Zwerling, E. R. Miller, J. T. Harkness & J. Yerushalmy)

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Resistance to Insecticides

The development of resistance to DDT by common and medically important insects such as houseflies and mosquitoes has created a significant problem.

In the field, housefly resistance constitutes the most serious problem at present both in degree and distribution. In many areas practical control with DDT is no longer possible and the substitution of newer, more potent, insecticides has been successful for only limited periods. Reports on studies in Egyptian villages by U. S. Naval Medical Research Unit # 3 are typical of what may be expected in some areas. DDT had been used extensively for housefly control. In 1948 when results were not satisfactory, benzene hexachloride was substituted. Excellent control was obtained at first but by the end of 1949 this material was no longer effective. A switch to chlordane in 1950 again produced good control but by the end of the year resistance to chlordane had developed. Similar results have been reported from other countries including many areas in the United States. In some cases the use of alternate insecticides has not been effective and a high level of resistance to DDT, benzene hexachloride, chlordane and dieldrin has been demonstrated in the same strains.

On the other hand the majority of military installations in the United States have not as yet found DDT noticeably ineffective for fly control. This may be explained by good sanitation programs which limit fly populations and breeding rates and by relatively less extensive or heavy applications of DDT over wide areas such as have been used in native villages, dumps and dairies where most of the resistant strains have occurred. It may be significant that the first instances of fly resistance in the field were reported from areas where country-wide malaria control campaigns had for several years provided DDT residual applications to all houses. It is likely that resistance will be much less of a problem where insecticides are used only within screened areas so that fewer flies with a sublethal exposure are able to escape and breed.

The fact that continued and widespread use of the newer, most effective insecticides may, and probably will, eventually bring about a situation in which none of these materials will provide adequate control, introduces a new factor in the planning of all extended fly control programs. For good control beyond the first weeks of a campaign, consideration should be given to withholding the use of insecticides wherever non-chemical methods can be expanded to provide adequate control. Only in this way will the insecticides be effective in emergency situations. Permanent installations should eliminate all sources of fly breeding by sanitary garbage disposal routines and sanitary fill at dumps and should utilize all practicable non-chemical control methods. Where fly breeding occurs outside the reservation, cooperation of local and civilian authorities is essential. Where non-chemical control measures cannot be applied effectively the use of insecticides should be restricted to screened or enclosed areas if possible. If exterior treatments are essential the use of small particle fogs which do not leave heavy deposits over wide areas is not as likely to encourage the development of resistance as extensive exterior residual applications.

Fly control at overseas activities and in advanced areas will often require a different approach, since full application of sanitary control measures may be impossible and the future development of resistance to all insecticides may be of less importance than immediate disease control. However, basic sanitation principles should be applied to the greatest possible extent. Where DDT resistance appears, lindane, chlordane or dieldrin will usually be effective for one season at least, but resort to more than 1 or 2 of these should be strictly limited to emergency situations. Localities in which a high degree of resistance to all insecticides has developed are most uncommon at present but when this situation is encountered dependence on non-chemical methods will be necessary until effective new synergists or insecticides are developed.

The following policy on fly control is recommended for guidance of all naval activities:

(1) An extensive sanitary program designed to eliminate fly breeding sources and to reduce the use of chemical controls to the minimum required should be routine, whether or not resistance has developed. Effective incineration of all garbage and refuse or sanitary fill control of dumps should be considered as essential as sewage disposal facilities at all permanent installations.

(2) An immediate change to new and more powerful insecticides merely on suspicion that DDT resistance may be present is not recommended.

(3) Where DDT resistance is suspected a report should be made to an Epidemic Disease Control Unit, Malaria and Mosquito Control Unit or the Bureau of Medicine and Surgery so that action may be initiated to study the extent and degree of resistance and to recommend control plans.

(4) Substitute insecticides should be used only when non-chemical methods cannot be applied effectively and resistance to standard insecticide items has been fully demonstrated. Insecticide, liquid, containing 2 percent chlordane (for residual roach and ant control) is available under General Stores Standard Stock Numbers 51-I-155-375 - 1 gallon container and 51-I-155-385 - 5 gallon container and may be used for fly control out of doors according to directions in BUMED C/L 50-40. Standard Navy Insecticide (GSSO Stock # 51-I-165) containing lethane may be used for interior space treatments. A significant resistance to this item has not been reported from the field as yet. Formulations of lindane and dieldrin are under study for inclusion in the General Stores Supply Catalog but they will be issued only for use by qualified personnel. Pending standardization, open purchase and use of these or other non-standard insecticides is not recommended except in emergencies. Lindane is currently the substitute of choice because of its effectiveness against most insects and relatively lower toxicity in use concentrations. A 1 percent concentration applied at a rate of 1 gallon to 750 square feet for residual applications and a 0.4 percent concentration at a rate of 5 to 10 gallons per acre for outdoor area treatment is recommended.

Resistance to DDT has not as yet been as serious in the case of most other insects because of limited occurrence, slow development or knowledge of effective substitutes. Lindane, chlordane, dieldrin or other insecticides have been effective in control of most other resistant insects which have appeared in localized areas. (Preventive Med. Div., BuMed)

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Appointments to Regular Navy Medical Corps

Naval Reserve Medical Officers on active duty or in an inactive status may still submit applications for appointment in the Regular Navy Medical Corps. Civilian physicians with no previous service affiliation and who did not participate in the Army Specialized Training Program (ASTP) may also submit applications for appointment.

Appointments in all grades are made by authority of Title II, Public Law 365, 80th Congress. The grade in which appointed is based upon age and professional experience. The professional qualifications on all applications will be determined by a Board of Medical Officers convened by the Surgeon General on the basis of records and substantiating data submitted in the application filed. Written, oral or practical professional examination is not required unless deemed necessary by the Board of Medical Officers. Applications are invited from all

categories of eligible personnel. The procedures applicable to each category area are as follows:

(A) Naval Reserve Medical Officers on active duty may submit applications in letter form to the Chief of Naval Personnel via their Commanding Officer.

(B) Eligible civilians with no past service affiliation and who did not participate in the Army Specialized Training Program (ASTP) and Naval Reserve Medical Officers on inactive duty status should apply at the nearest Office of Naval Officer Procurement.

All applicants should make reference to Title II, Public Law 365, 80th Congress and should state that applications for appointment are being made under that authority. The application should be accompanied by:

(a) Application for appointment -- NAVPERS 953A

(b) A special fitness report covering the period from the date of the last report, or date of reporting for active duty, to the date of application.

(c) Report of Medical Examination (Standard Form 88), two copies, with Report of Medical History (Standard Form 89) attached to the original. Physical examination must be made by a Board of Medical Examiners. (Asst. Chief of Bureau for Personnel and Professional Operations)

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Course in Techniques of Using Radioisotopes in Research

The Oak Ridge Institute of Nuclear Studies, Oak Ridge, Tennessee, has announced the following winter schedule of class sessions in the Basic Course in Techniques of Using Radioisotopes in Research, to be given at Oak Ridge:

7 January	-	1 February	1952
4 February	-	29 February	1952
10 March	-	4 April	1952

Medical officers on active duty who wish to attend one of the class sessions as a student under the auspices of the Bureau should forward their applications via the Chief, Bureau of Medicine and Surgery. Applications should reach the Bureau at least 6 weeks prior to the convening date of the class session to allow for processing and transmittal to Oak Ridge in sufficient time for the Admissions Committee to determine the applicant's eligibility for admission.

The $25.00 registration fee for officers approved to attend the course will be borne by BuMed and authorization orders ONLY provided in accordance with BuSandA-BuPers' Joint Letter of 16 March 1951 (NDB 51-229). No reliefs can be furnished for officers during the period they are attending the course. (Professional Div., BuMed)

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From the Note Book

1. In accordance with Public Law 176 of 11 Aug. 1945, the President has proclaimed the week of 7 to 13 Oct. as "National Employ the Physically Handicapped Week." (SECNAV, 13 Sept. 1951)

2. Bacterial flagella, the simplest muscle fibers known, are protein in nature and not of the same chemical composition as the gummy material which surrounds bacteria. A better understanding of degenerative diseases which are directly concerned with muscle physiology may come from this discovery. This work in research was done by Dr. Henry Koffler of Purdue University and was sponsored by the Microbiology Branch of the Office of Naval Research and the Rockefeller Foundation. (Bio Sciences Group, ONR, Sept. 1951)

3. A cold spray that stops excruciating pains of heart disease is among the medical subjects that will be studied under a research grant awarded by the Public Health Service. The spray, principally ethyl chloride, has already been tried out clinically in experiments by Dr. Janet Travell of Cornell University. Applied externally to the patient's exposed chest, the spray anesthetic freezes off "trigger areas" that initiate the darting currents of pain. (PIO release, FSA, PHS, NIH, 9 Sept. 1951)

4. The World Health Organization marked its second full year of activities with increased emphasis on the organization's role as a coordinating agency in international health work. Another section in the Secretariat, newly established in 1950, was that on social and occupational health. Most of the organization's activities with regard to this subject were integrated with those in other fields and, in many instances, were dependent upon cooperation with the International Labor Organization and other international agencies. (Indust. Health Monthly, FSA, PHS, Sept. 1951)

5. An ointment using zirconium in a vanishing cream is reported as a new and speedy remedy for poison ivy. (Science News Letter, 25 Aug. 1951)

6. In 1500 B. C., the citizens of Thebes were complaining that there were no longer any good old family physicians. Everyone was a specialist. Herodotus, the Greek historian, wrote, "The practice of medicine is so divided among them that each physician is a healer of one disease and no more. All the country is full of physicians, some of the eye, some of the teeth, some of what pertains to the belly." (Indust. Med. & Surg., Sept. 1951, from Illinois Health Messenger, July 1951)

7. Calcification of the vas deferens and its relation to diabetes mellitus and arteriosclerosis is discussed in New England Journal of Medicine, 30 August 1951. (J. L. Wilson & J. H. Marks)

8. One hundred seventy-one medical research scholars in 61 different schools and institutions throughout the country have been awarded Public Health Service research fellowships to aid them in continuing their studies and research. With the aid of the fellowships awarded this year more than 500 scholars are now actively pursuing clinical and basic research studies. (PIO release, FSA, PHS, NIH, 11 Sept. 1951)

9. "The Duration of Action of Residual D. D. T. Deposits on Adobe Surfaces" is discussed in Science, 7 Sept. 1951, by W. G. Downs, E. Bordas and L. Navarro.

10. Warfarin, GSSO Stock # G-51-359-10, is now added to the Supply Table. This item should be used in baits at a concentration of 0.02 percent, obtainable by mixing 1 part of the concentrate with 19 parts of bait material. (Preventive Med. Notes, # 5, 26 Sept. 1951. See Medical News Letter, Vol. 16, No. 9)

11. The value of cross-section diagrams in delivering accurate x-ray therapy into the female pelvis is discussed in Radiology, Aug. 1951. (J. Love, G. N. Combs, W. A. Askew, M. Harcourt)

12. The radical treatment of massive mixed angiomas (hemolymph angiomas) is discussed in Annals of Surgery, Aug. 1951, M. M. Ravitch.

13. "The Administration of Heparin" is discussed in S. G. & O., Sept. 1951. (I. F. Duff, J. W. Linman, R. Birch)

14. An improved telescope, a 60 mm. type, to be available soon, gives increased image contrast and brilliance, and superior correction of color and flatness of field. Mechanical features include an entirely new method of focusing, by internal movement of a prism. (Science News Letter, 8 Sept., 1951)

15. Thirty-eight administrators of federal hospitals will attend the Fourth Interagency Institute for Hospital Administrators, which will be held at the Federal Security Agency, Washington, D. C., for a 3-week period beginning 29 Oct. 1951. Twenty subjects will be studied, covering all phases of hospital operation, management, personnel relationships and community relationships. (PIO release, FSA, PHS, 12 Sept. 1951)

16. Humidity Indicator, a type with dry-and-wet-bulb thermometers, has a built-in slide calculator that is easily set to show the relative humidity at a glance. In use, the wick on the wet bulb is moistened and the pair of thermometers with their compact case, swung in the air. (Science News Letter, 15 Sept. 1951)

17. The total reported cases of poliomyelitis in the nation, as of the week ending 15 September 1951, decreased from 1,871 for the previous week to 1,797 for the current week. The cumulative total for the calendar year was 17,333; for the calendar year 1950 the corresponding total was 17,369. (Communicable Disease Summary, FSA, PHS, National Office of Vital Statistics, 20 Sept. 1951)

BUMED CIRCULAR LETTER 51-124 7 September 1951

From: Chief, Bureau of Medicine and Surgery
To: All Naval Hospitals (except USNH Yokosuka), Continental Infirmaries, and Continental Dispensaries

Subj: Report of Staffing Ratios at Medical Treatment Facilities (Report Symbol DDOMS-3)

Ref: (a) ManMedDept New Edition, Chapter 23, par 23-183

1. Appropriate changes in reference (a) are being made.

2. The requirements of the Department of Defense concerning the reporting of the duties of staff personnel distributed by in-patient care, out-patient care and other duties have been modified. Therefore, all hospitals (except Yokosuka) and all infirmaries and dispensaries CLUSA, shall submit to this Bureau monthly a letter report which includes the following information as of the end of the month. It is desired that the first report for the month of Sept. and all subsequent reports be forwarded according to these instructions in time to reach the Bureau by the 10th of the following month.

a. STAFF PERSONNEL SUMMARY ON DATE OF REPORT

Type of personnel	No. of personnel		Full-time equivalents				
	Authorized	On board	Total	In-Patient care	Out-patient care: Medical	Out-patient care: Dental	Other Duties
	Col. 1	Col. 2	Col. 3	Col. 4	Col. 5	Col. 6	Col. 7
Total							
Interns							
Other Medical Corps							
Dental personnel							
All other, officers, enlisted, civilians							

b. Work Load:

1. Average beds occupied during period_____.
2. Out-patient work units during period_____.
3. Total dental sittings_____.

3. In table (a) all staff personnel are to be counted, whether assigned full or part time to the medical treatment facility. However, when reporting personnel, include only those assigned to the medical treatment facility. Do not count personnel assigned to other commands who may support the medical treatment facility by providing such services as laboratory, dental, x-ray, etc. "Interns" (medical plus dental) shall be entered separately. Dental personnel shall include all persons (except interns) - officers, enlisted and civilians whose services are utilized in the providing of dental care. For the purpose of this report, the civilians reported as "On board" (Col. 2) shall include all civilian employees carried on the payroll on the date of the report, and military personnel on the unit rolls on the same day. The number of military personnel reported shall include those over whom the unit normally exercises administrative control (including those present for temporary duty and excluding those absent on temporary duty elsewhere).

4. Personnel reported as "On board" (Col. 2) shall be allocated in terms of full-time equivalents. "Full-time equivalents" is merely an expression of the number of persons on board related to the number working full time at the activity. If an activity has 10 people on board, 8 of whom are working full time and 2 half time the number of full-time equivalents would be 9. If, on the other hand, all the personnel on board are assigned full time to the medical treatment facility, the number reported as "Full-time equivalents" will be identical with the "On board" figure. The total "Full-time equivalents" (Col. 3) shall be distributed to "In-patient care" (Col. 4), "Out-patient care, Medical" (Col. 5), "Out-patient care, Dental" (Col. 6) and "Other duties" (Col. 7) according to the best available estimates of the proportion of time spent by staff personnel in those duties; however, it is necessary that Column 3 equal the sum of Columns 4, 5, 6 and 7.

5. Entries in Column 4 will reflect the number of personnel expressed in "full-time equivalents" who perform professional, administrative, and other services that contribute to the care of patients occupying beds in hospitals or infirmaries. All personnel assigned to dispensaries or out-patient clinics shall be reported in Columns 5, 6 and 7 only. Examples of such services that shall be considered as related to in-patient care are: professional services, hospital administration, supply, food service, patient and staff, welfare and recreation, hospital and housing maintenance and repair, etc. All personnel assigned to the medical treatment facility working in x-ray, laboratory and pharmacy who perform services for both in-patient and out-patient care shall be prorated on the basis of the relative number of treatments and procedures performed for in-patients and out-patients according to the best estimates. For example, if 70 percent of the procedures performed by these services are for in-patients and 30 percent are for out-patients during the report month, 70 percent of the civilians, doctors, nurses, other officers, and corpsmen assigned to these services would be reported in Column 4 and 30 percent in Column 5.

6. Entries in Column 5 will reflect in hospitals and infirmaries, the number of personnel (except dental) detailed, full or part time to out-patient clinics plus a prorated share of civilians, doctors, nurses, other officers, and corpsmen, as described in paragraph 5, to x-ray, laboratory and pharmacy. All personnel at dispensaries shall be reported in Columns 5, 6 or 7 as appropriate.

7. All personnel, civilians, dentists, and corpsmen assigned to dental services or who are utilized in the performing of dental service shall be reported separately in Column 6.

8. Personnel to be reported in Column 7 as performing "Other duties" may be classified in two categories, namely: (1) students and personnel under instruction or in training whose duties relating to in-patient or out-patient care are incidental to their primary training mission and who would not require replacements if detached from the activity; and (2) those individuals not directly related to the care of patients nor necessary in providing direct support of essential treatment facility activities. The latter group shall include such personnel as those performing preventive medicine and sanitation duties; individuals fulfilling functions relating to care of the dead; individuals in research or working on physical evaluation boards; personnel assigned to the activities for military convenience only, etc.

9. Work Load:

a. Average beds occupied during period. - This average for hospitals and those infirmaries submitting the Beds and Patients Report (DD Form 443) weekly shall be derived by adding the entries on Line 28, Column A, of DD Form 443 for the reports whose cut off dates (Wednesdays) fall in the report month and dividing the sum by four or five as appropriate. For all other infirmaries CLUSA submitting DD Form 443 monthly this average will be that recorded on Line 28 for the month of the report. Dispensaries CLUSA shall add the daily number occupying beds and divide by the number of days in the month.

b. Out-patient work units during period. - This figure will be taken from the Out-patient Report (DD Form 444) and will be the sum of:

1. Total Number of Treatments - Line 4 Column A.
2. Total Number of Flight Physical Examinations - Line 19 Column A.
3. Total Other Complete Physical Examinations - Line 20 Column A.

c. Total Dental Sittings. -

1. This will be the figure reported on Line 1, Column E, Section I, Part I of Dental Service Report (DD Form 477).

C. J. Brown
Acting

Circular Letter 51-124 will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-125 7 September 1951

From: Chief, Bureau of Medicine and Surgery
To: All Ships and Stations Having Medical Department Personnel Attached

Subj: Morbidity Report (DD Form 442), errors in

Ref: (a) BuMed Cir Ltr No. 51-62

1. This letter is to supplement and clarify instructions contained in reference (a). Morbidity Reports received thus far show numerous discrepancies, making it impossible to properly summarize them for use by the Bureau and the Department of Defense.

2. Personnel making and submitting DD Form 442 are requested to review instructions in BuMed Cir Ltr No. 51-62 and check the completed report to be submitted with the following list:

a. PART I

(1) Reference (a), paragraph 3.a. (3) requires that a separate report form shall be submitted for personnel of each military department. If medical service is provided to any members of the Army or Air Force a separate report is needed for each service concerned. These reports are in addition to the one covering Navy and Marine Corps personnel. On line 1 of Part I an entry shall be made indicating whether the form covers "NAVY", "ARMY" or "AIR FORCE" personnel.

(2) Line 2 (total sick days) should indicate the total number of sick days accumulated during the report period by the category of personnel reported. Thus the report form for Navy and Marine Corps personnel will have all sick days accumulated during the month by active duty members of the Navy and Marine Corps. The report for Army personnel will have sick days for Army patients only; and the report form for Air Force personnel will give sick days for Air Force patients only.

(3) The entries on lines 3 - 6 (patients remaining at end of period) depend on which category of personnel the report form covers, as indicated on line 1, Part I. On the NAVY report all active duty Navy personnel will be entered on line 3, all active duty Marine personnel will be on line 4, and all other individuals will be entered as supernumeraries on line 5. "Supernumeraries" will include all patients remaining who are not active duty Navy and Marine Corps. On the

report for ARMY personnel an entry will be made on line 3 of Army patients remaining; no entries will be made on lines 4 through 6. Likewise, on the report for AIR FORCE personnel an entry will be made on line 3 for Air Force patients remaining and no entries will be made on lines 4 through 6. The total of active duty personnel recorded here should be identical with the number reported on line 1, column M of Part II.

(4) The average strength, computed as directed in paragraph 4.b. of reference (a), should be based on the active duty personnel in the category of personnel reported on; i.e. the report for NAVY includes only Navy and Marine Corps personnel; the report for ARMY includes only Army personnel; and the report for AIR FORCE includes only Air Force personnel. When computing the average strength for NAVY, all active duty personnel of the Navy and Marine Corps should be included regardless of whether they are regularly assigned personnel or transient. This is needed so that in accumulating data for the report period the full Navy and Marine Corps average strength can be accounted for. The average strength of Army and Air Force personnel should be reported on the individual Army and Air Force reports as available. Such data are definitely available from ships and selected activities where Army and Air Force personnel are attached. At no time should anyone other than active duty personnel be used in computing the average strength; nor should any individual other than those on active duty in the appropriate service be included in breakdowns in either Part II or Part III of the reports relating to Navy, Army or Air Force personnel.

b. PART II

(1) Column A plus columns B, C and D minus columns E and F should equal Column M. The number reported on line 1 column A of the current report should be the same as the number of patients reported as remaining on line 1 column M of the report for the previous month.

(2) The manners of Admission recorded on NAVMED-F should be distributed as follows:

(a) Patients taken up as "A" and "RA" should be reported in column B.

(b) Patients taken up as "FT" should be reported in column C.

(c) Patients taken up as "ACD," "AD," "EC" and "FS" should be in column C.

(3) The sum of columns B and D of Part II should equal the sum of lines 1 through 92 of columns A and B of Part III.

(4) The number recorded on line 1, column C of Part II is the sum of lines 1 through 92 of columns A and B of Part III.

(5) Patients reported as taken up by change of class (line 1 column D) should equal those reported as dropped by change of class (line 1, column E).

(6) The number recorded on line 1, column F is the sum of line 1 of column G through L.

(7) Line 1, column E of Part II plus line 1, column F of Part II minus line 1, column K of Part II must equal the sum of lines 1 through 92 column E of Part III.

(8) The number reported on line 1, column K of Part II must equal the sum of lines 1 through 92 of column D of Part III.

(9) The number reported on line 1, column M of Part II must equal the sum of lines 1 through 92 of column F of Part III.

(10) The cases recorded on line 1 of column N should also be accounted for under the appropriate columns for Admissions and Dispositions. In addition, these cases should be entered on the proper line of Part III.

c. PART III

(1) All cases for which entries are made in column A, B or C should be accounted for in columns D, E or F. Because of cases remaining from the preceding month the sum of columns D, E and F may exceed the sum of the first three columns. But in no case may the sum of D, E and F be less than that of A, B and C.

(2) All entries should be numbers. In no cases should asterisks with a footnote in Part IV be used; nor should letters like "D", "DD" and "FT" be used.

(3) Entries should not be made in the cross-hatched cells opposite diagnostic class and group headings. The numbers should be on the proper line for the diagnosis.

(4) All entries made on lines 88 through 91 should be accounted for on the appropriate line of those from 93 through 98. The sum of entries on lines 93 through 98 should equal those in the same columns of lines 88 through 91.

(5) Care should be taken that entries properly belonging on line 92 are not placed on line 98 and are not included in the distributions on lines 93 through 98.

C. J. Brown
Acting

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-126 11 September 1951

From: Chief, Bureau of Medicine and Surgery
To: All Medical Department Activities and Facilities

Subj: BuMed Circular Letter 51-100; Requisitioning, receipt procedures, stock levels, emergency expansion reserves and priority indicators for medical and dental stores; modification of

Ref: (a) BuMed CirLtr 51-100
(b) Vol. VII, Chapter 2, Change 18, BuSandA Manual

This letter, which will not be printed in the Navy Department Bulletin, contains modifications to reference (a) which are necessary due to changes promulgated by reference (b).

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JOINT LETTER

BUMED CIRCULAR LETTER 51-127 13 September 1951

From: Chief, Bureau of Medicine and Surgery
Chief, Bureau of Supplies and Accounts
To: All Ships

Subj: Laundry services furnished to the Medical Department facilities aboard ship

Ref: (a) Par. 43460-3b(1), BUSANDA Manual, as revised by Instruction Memorandum 18-3 of 29 Mar 1951

(b) BUMED Cir Ltr No. 51-54; NDB 15 Apr 1951, 51-252, p 17

1. The last sentence of paragraph 6 of reference (b) shall be modified to read as follows:

"Such charges as laundry services and supplies (except for naval hospitals in hospital ships of the Military Sea Transportation Service), clerical supplies, and repairs to typewriters, etc., are not properly chargeable to the appropriation Medical Care, Navy, 1952." (New wording underscored.)

2. Reference (a) provides that laundry services furnished to Medical Department facilities aboard ships, except to naval hospitals in hospital ships of the Military Sea Transportation Service, are not chargeable to the appropriation

Medical Care, Navy. The Bureau of Medicine and Surgery continues to receive charges against the appropriation Medical Care, Navy, from vessels other than hospital ships of the Military Sea Transportation Service. Future charges shall be made in accordance with reference (a).

H. L. Pugh C. W. Fox

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JOINT LETTER

BUMED CIRCULAR LETTER 51-128 17 September 1951

From: Chief of Naval Personnel
Chief, Bureau of Medicine and Surgery

To: All Ships and Stations

Subj: Instructions regarding use of commercial air transportation of remains of deceased personnel

Ref: (a) Article 17-36(1), ManMedDept
(b) Article 17-38(4), ManMedDept

1. Instructions contained herein supplement those contained in references (a) and (b) governing use of non-escorted commercial air freight which is offered to the next of kin of deceased personnel, when available, for transportation of remains within the continental limits of the United States.

2. "Available" is construed to mean commercial air freight available at or adjacent to point of departure and destination. The nearest transportation officer or air line representative has or can obtain this information. Addressees should bear in mind that commercial air freight does not in all cases parallel air passenger service. For example, Washington, D. C. air freight terminus for some air lines is in fact at Baltimore, Maryland.

3. The fact that remains must be transferred en route to another air carrier is not a determining factor, nor will air shipment of remains be denied for this reason. Requests, however, for combination air and rail shipment will not be approved.

4. If ultimate destination does not have air freight facilities but does have a rail passenger terminus and next of kin or their representative request air shipment to a destination having air freight facilities, next of kin must bear any cost incurred in moving remains from air depot to ultimate destination. If, on the other hand, ultimate destination has neither air freight nor rail passenger terminus the next of kin will only be required to bear the costs for moving re-

mains when the airport is farther from the ultimate destination than the rail passenger terminus and only for the difference between the distances from the ultimate destination to the airport and to the rail passenger terminus. Acceptance of above charges by the next of kin must be received before air shipment is made.

L. T. DuBose C. J. Brown

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BUMED CIRCULAR LETTER 51-129 18 September 1951

From: Chief, Bureau of Medicine and Surgery
To: All Hospitals

Subj: Blood transfusions; use and accurate reporting of

Ref: (a) BUMED Cir Ltr No. 46-133
(b) BUMED Cir Ltr No. 50-111
(c) Par. 416.4, ManMedDept, 1945
(d) BUMED Cir Ltr No. 50-141

1. Computations based on Reports of Surgical Operations (NAVMED-P) reveal significant increases in the administration of blood transfusions for C. Y. 1950 over C. Y. 1949. Increased blood usage rates are apparent for dependents and Veterans Administration patients as well as for active-duty personnel.

2. The present emergency has created a critical shortage of dried plasma (human). A vigorous campaign is underway to replenish stocks by means of voluntary donations of blood. Indiscriminate and excessive use of whole blood diminishes proportionately the amount of blood available for conversion into plasma. Therefore, all commanding officers, through chiefs of services, shall initiate measures to assure conservative and judicious use of blood. Transfusions are to be considered primarily as life-supporting measures, and to be used only when definite indications for use of blood are present. Purposeless transfusions and the consequent unjustified demand for more and more blood will soon dissipate the only asset a blood bank has--the community good will that recruits donors.

3. The above does not alter the basic instructions concerning blood transfuions as given in references (a), (b), and (c).

4. Since reliable data are absolutely necessary for administrative planning and supply, emphasis is again directed to the need for accurate reporting of blood and plasma transfusions (operation titles 990, 991, and 992) on Report of

Surgical Operations (NAVMED-P) as contained in reference (d).

C. J. Brown
Acting

The above letter will not be printed in the Navy Department Bulletin.

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BUMED CIRCULAR LETTER 51-130 18 September 1951

From: Chief, Bureau of Medicine and Surgery
To: Distribution List

Subj: Request for information regarding naval cemeteries and naval plots in civilian cemeteries

1. A recent survey of the Bureau's records has revealed that the information on file regarding naval cemeteries located on Navy reservations and Navy plots in civilian cemeteries is very limited. It is therefore requested that each addressee submit a report in triplicate containing the following information on cemeteries under his jurisdiction:

(a) Name of cemetery
(b) Total number of grave sites
(c) Number of burials
(d) List of individuals interred therein, showing grave, row and plot number
(e) Area
(f) How and when acquired (naval plots in civilian cemeteries)
(g) Approximate number of man hours per annum devoted to maintenance and approximate cost (in cases of naval cemeteries), or maintenance, by whom, and annual costs (in cases of naval plots in civilian cemeteries), and source of financing in each case

2. It is further requested that in each case of future burial, a letter report, MED-088, Report of Burial in Navy Cemeteries or Plots, be submitted containing the name and status of the individual and the grave, row and plot number.

C. J. Brown
Acting

The above letter will not be printed in the Navy Department Bulletin.

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NAVY DEPARTMENT
BUREAU OF MEDICINE AND SURGERY
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