

Navy and 25 per cent of the enlisted men in each Medical Regiment in the Army. 5. The inclusion in the anesthesia kits of the following materials: (a) An adequate supply of morphine. (b) Vasopressor drugs and other stimulants. (c) Some kind of standard card, printed according to the types of anesthesia at hand, for a brief but accurate record. 6. The storage of the anesthesia kits in close proximity to the apparatus for transfusion of blood and the intravenous administration of plasma, physiologic solution of sodium chloride and dextrose in solution.

"Two factors make inhalation anesthesia rather difficult to use in field hospital work: (1) the difficulty of transporting gas tanks, which are extremely heavy when carried in any number, and (2) the explosibility of inhalation anesthetics. . . . For several reasons ether by itself is undoubtedly the best inhalation anesthetic for use in combat areas. First, it is easily carried . . . ; second, it will keep indefinitely; third, it is not expensive; fourth, the administration of ether by the open drop method makes it one of the easiest and safest of all anesthetics to use, and fifth, while it is explosive, it is less so than any of the other inhalation anesthetics. . . . Wherever possible . . . spinal or intravenous anesthesia, the two types of anesthesia with which this paper is principally concerned, should be employed aboard ship. . . . Regional block anesthesia will be of use in base hospitals when time is available and when other types of anesthesia are not feasible. . . . Rectal anesthesia induced by avertin with amylene hydrate has certain excellent qualities, but it should be used only in base hospitals. . . .

"Both spinal and intravenous anesthesia have qualities which make either one or the other, or a combination of both, ideal for most surgical procedures in wartime. Individual kits contain-

ing all accouterments necessary for administration of either spinal or intravenous anesthesia can be put up with minimum expense and with maximum efficiency. The agents for inducing these types of anesthesia are easily transportable; they do not constitute an explosion hazard; they are relatively easy to administer after moderate instruction and experience, and each individual kit will keep indefinitely." 4 references.

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MCCARTHY, K. C.: *English Medicine and the War*. Ohio State M. J. 37: 1149-1153 (Dec.) 1941.

"During the past year I was fortunate to be able to observe, at close range, the organization of the medical profession in England under wartime conditions. . . . I was assigned to the orthopedic unit of the American Hospital in Britain, which was stationed at Basingstoke, in Hampshire. . . . There were four surgical services. . . . There were three full time and two part time anesthetists; the house surgeons do many of the more minor cases. . . . The theatre was piped for nitrous-oxid and oxygen, and there were two Boyle's machines in each room, so that one anesthetist could supervise two tables should that need arise. Nitrous-oxid was plentiful, though there was often some delay in filling orders due to transportation difficulties. There was also a great shortage of cylinders as no new ones are being made, and a great many were left behind at Dunkirk. Cyclopropane is not supplied by the government, but can be obtained, although it costs twice as much as it does here. Supplies must be ordered well in advance of requirement. Pentothal is a favorite anesthetic for minor cases, and is also being used by some men for more prolonged operations, such as brain surgery, and a number of ingenious devices have been made

for the prolonged and continuous administration of this drug. Nitrous-oxide plus ether is the most popular anesthesia for routine major surgery, although sometimes nitrous-oxide is reinforced with chloroform. Open ether was very seldom seen, though sometimes it was used to maintain anesthesia after induction had been carried out with gas given by Clover's inhaler. Spinal, local or regional blocks were rare. . . .

"Casualties are brought in directly from the scene of action, or from first aid posts. . . . Those . . . seriously injured, that require treatment for shock, go immediately to the resuscitation wards, where they are warmed up, given oxygen by a mask and bag apparatus, and blood transfusions, if necessary. A good stock of plasma and serum is kept on hand, and is constantly replenished by donor centers established in all the large cities. . . . Oxygen therapy equipment is available at all hospitals for the treatment of gas casualties."

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FISCHER, T. E.: *General Anesthesia in the Treatment of Maxillo-facial Cases*. Mil. Surgeon 89: 877-892 (Dec.) 1941.

"Nitrous-oxide-oxygen is admirably adapted to oral surgery procedures, for it may be administered in a closed system and the concentration of the gases easily controlled. With the commercial machines now on the market, nitrous oxide can be used as a vehicle for other gases depending upon the type and site of operation. Then, too, the divided oral and nasal inhalers enable the continuance of the anesthesia, leaving the mouth free for operative procedures. . . . Nitrous-oxide per se is a relatively weak anesthetic. Therefore, its use must be confined to those cases in which muscular relaxation is not desired, or to produce sleep only in cases in which relaxation has

been produced by other means. . . . The greatest objection to nitrous-oxide-oxygen is that anesthesia is maintained only with the quantity of nitrous-oxide from 90 to 93 per cent, and the oxygen from 7 to 10 per cent. . . . It is this high concentration, with its risk of anoxemia, which constitutes the principal objection to its use. . . .

"Ethylene has been listed as the number two gas for safety to the patient. But the fact that ethylene is an unsaturated hydrocarbon which, when mixed with other gases, is very highly explosive and inflammable in the pure state, causes this safety factor to be disregarded in relation to oral surgery. . . . Cyclopropane is number three in safety to the patient. It has low toxicity with a wide margin of safety, and does not produce anoxemia. . . . Cyclopropane seems to increase the tendency toward capillary oozing during operation. . . . This gas, administered by the closed endotracheal method, in the opinion of almost all of the investigators offers a tremendous advantage in maxillo-facial surgery. . . . Ethyl chloride as a general anesthetic is safe, convenient, and economical. My personal opinion is, that it is too toxic for use in adults in the amount needed to induce general anesthesia for any length of time. Its chief indication is for short operations on children. . . . Vinyl ether, or vinethene, . . . has been used successfully by a large number of men. . . . At present it is not recommended for operations lasting longer than one-half hour, if given without oxygen. . . . Ether still remains the most popular agent for operations requiring prolonged anesthesia and complete muscular relaxation. . . . Ether per se offers no advantages whatsoever in the field of maxillo-facial surgery, unless added to other gases to produce muscular relaxation. . . . Chloroform, except for its toxic effect upon the parenchymatous organs, and