cent dextrose in isotonic solution of sodium chloride. The buoyy coat or gel which lies between the packed red blood cells and the supernatant plasma and which consists of white blood cells, platelets and fibrin is left behind in the bottle which was used for collecting the blood. The final suspension contains approximately 88 per cent of the red blood cells obtained from one donation of 500 cc. of whole blood. The cells are from 24 to 48 hours old when they are aspirated into the dispensing bottles. They are then stored in a refrigerator at 2 to 5 C. for a maximum period of seventy-two hours, after which time those not used are discarded. The suspension of red blood cells is typed and cross matched with the serum and cells of the recipient and is also examined for hemolysis, which, if present, is sufficient reason for discarding the suspension. An analysis of the suspension reveals averaged values as follows: a hemoglobin of 17 Gm. per hundred cubic centimeters, a red cell count of 6,180,000 and a white cell count of 2,000 per cubic millimeter. . . . It has been estimated that 50 per cent of the patients requiring blood transfusions in a large hospital probably need only red blood cells; and, since large quantities of these red blood cells are now being discarded in the preparation of plasma, it is logical that they be utilized as suspensions in the treatment of anemia. In time of war, when hospital beds are not plentiful and convalescence can be hastened by the administration of these red cell infusions, their use is of great value. At the Philadelphia Naval Hospital, 116 infusions of red blood cells have been administered in this series with only two reactions, an incidence of 1.72 per cent. The data obtained from a careful study of 72 of these infusions in 48 patients were tabulated. The average rise in hemoglobin for each 300 cc. suspension was approximately 1 Gm. and all but 4 of the cases showed clinical improvement. The results show that a waste product may be converted into an effective therapeutic agent in the treatment of anemia.” 6 references.

J. C. M. C.


“It is the purpose of this communication to report the results of 35 administrations of plasma prepared from donors with active malaria, and preserved by different techniques for varying lengths of time. . . . The donors were patients with active therapeutic quarten and estivo-autumnal malaria. . . . In 20 administrations of thawed plasma which had been ‘shell’ frozen in a solid carbon dioxide-alcohol bath, no transmissions of malaria were observed. In 3 administrations of restored plasma which has been dried from the frozen state, no transmissions were observed. In 2 administrations of plasma preserved in the liquid state for 1 day, there was 1 definite transmission and 1 probable transmission. In 5 administrations of plasma preserved in the liquid state for 1 week, there was 1 very doubtful transmission. In 5 administrations of plasma preserved in the liquid state for 2 weeks no transmissions were observed. It may be concluded that the likelihood of transmission of malaria by any plasma program, regardless of type of preservation used, is practically non-existent.” 15 references.

J. C. M. C.

"An important problem in replacement therapy is the amount of blood or plasma which is necessary for the individual patient. This depends primarily on two factors: (1) the amount of blood and/or plasma which was originally lost or which continues to be lost subsequent to the shock stimulus or as a result of additional shock stimuli, and (2) the extent to which the compensatory mechanisms of the body, such as vasoconstriction and hemodilution, can make up for the deficiency in blood volume. The complete evaluation of the replacement requirements of any one patient requires: (1) measurement of the blood volume, (2) estimation of the efficiency of the vasoconstrictive mechanism, and (3) analysis of the composition of the blood. No reliable test for the efficiency of the vasoconstrictive mechanism has been worked out as yet, although utilizing direct examination of the blood vessels of the conjunctiva by a technic worked out by Knisely may have possibilities. In an attempt to furnish a simple guide to replacement therapy in shock due to loss of blood or loss of plasma a chart was constructed. It is based primarily on the hematocrit value and the body weight, the two variables which can be most easily determined under emergency conditions. This guide to replacement therapy is presented as a simple means of evaluating the minimum requirements of blood or plasma for a patient who has suffered loss of blood or loss of plasma. It should be of particular value during the earlier phase of deficiency in blood volume, when clinical symptoms of shock have not as yet appeared." 8 references.

J. C. M. C.


"The observations made and conclusions drawn deal only with concentrated plasma. The salient features of the methods of preparation are: (1) pyrogen free technique for preparation of all apparatus, tubing and solutions; (2) sterile techniques throughout, checked by bacteriologic control studies; (3) pooling of blood of all different types just prior to separation of plasma; (4) bulk desication of plasma from the frozen state by the alvevac process; (5) sterile transference of dry plasma to small final container. In this study the various causes of reactions are considered in relation to four major possibilities: (1) factors inherent in the plasma or serum before preparation (related to donor); (2) factors introduced into the plasma during the preparation (related to processing); (3) peculiarities or idiosyncrasies of the patient (related to the recipient); (4) faults in administration (related to indications, contraindications, and mode of administration). Properly prepared concentrated plasma is safer than whole blood transfusions. Although plasma prepared by pooling after separation of erythrocytes carries very little risk, greater safety can be obtained by pooling of blood of all different types prior to separation. Preparation of plasma consists of (a) low temperature pooling of whole blood; (b) separation with two stage continuous separators; (c) vacuum desication from the frozen state; (d) adjustment of the hydrogen-ion concentration of final plasma solution to normal levels, and (e) pyrogen-free water and equipment for administration." 58 references.

J. C. M. C.