erythrocytes was significantly reduced. This was not due to a change in the chemical rate of dissociation of oxyhemoglobin. Resuspending the cells in Ringer-Locke solution or adjusting the *p*H to 7.4 did not change either factor significantly. A small improvement in efficiency was obtained by adding hypertonic sodium chloride solution or incubating the blood at 37 C for an hour, which restored both respiratory function and flexibility to normal. (*Sirs, J. A.: The Respiratory Efficiency and Flexibility of Erythrocytes Stored in Acid–Citrate–Dextrose Solution, J. Physiol. 203: 93 (July) 1969.*)

BLOOD STORAGE IN ACD AND CPD Normal hemoglobin function of blood stored at 4 C deteriorates as erythrocyte 2,3-diphosphoglycerate (2,3-DPG) becomes depleted. Hemoglobin function, expressed as the P_{O_2} at which hemoglobin is 50 per cent saturated with O_2, was measured in ACD and CPD blood stored with added adenine and inosine, intermediates which promote resynthesis of ATP and 2,3-DPG. Whole blood units from normal men were split during collection into several plastic donor packs containing the preservatives to be compared. Hemoglobin function was maintained better in CPD than in ACD. Values close to normal were present for almost two weeks in CPD blood, a week longer than in ACD blood. Adenine, which maintains ATP and prolongs the self-life of ACD and CPD blood, hastened the depletion of 2,3-DPG and impaired hemoglobin function. Blood collected into CPD–adenine–inosine maintains 2,3-DPG at higher levels and allows near-normal hemoglobin function for longer than two weeks of storage. Further, addition of inosine to CPD–adenine blood during the storage period (as late as the 25th day) restores hemoglobin function to normal. (*Dawson, R. B., Jr.: The Hemoglobin Function of Blood Stored at 4 C in ACD and CPD with Adenine and Inosine, Transfusion 9: 285 (Sept.) 1969.*)

BLOOD STORAGE Whole blood collected in ACD solution with or without adenine was transfused into patients with various forms of blood loss. Units collected in ACD alone had been stored 14 to 28 days, while units collected in ACD with adenine had been stored 28 to 42 days. Of the 771 units in the study, 545 were transfused into 295 patients. A total of 276 units were collected in ACD with adenine and were given to 130 patients. Little or no reaction related to the transfusion and/or solution was detected from clinical observation and selected laboratory tests. Isotopic labeling of some of the transfused units given to more than 80 patients provided an estimate of the 24-hour posttransfusion survival of erythrocytes; the results were similar to the average survival obtained in normal subjects after single-unit transfusions. Because of apparent lack of toxicity, combined with adequate support of the bleeding patient, blood stored in adenine is useful after longer storage periods than is blood stored in plain ACD. The 70 per cent 24-hour survival guideline suggests satisfactory survival after 35 days of storage, and possibly after 42 days. Although none was demonstrated in these recipients, massive multiple-unit transfusions may have some unanticipated adverse effect, but careful clinical and laboratory observations in the present program discerned no such effect which might be ascribed to adenine or loss of intracellular hemoglobin and potassium from erythrocytes during storage. (*Shields, C. E., and others: Clinical Evaluation of Transfused Blood after Long-term Storage in ACD with Adenine, Transfusion 9: 246 (Sept.) 1969.*)

STORED BLOOD The effects of temperature variation and mechanical stress on the tolerance of blood to long-distance shipment were evaluated. Shipment techniques employing wet ice to maintain blood storage temperatures of 4 to 10 C were re-examined. Initial comparisons of blood collected in acid–citrate–dextrose were carried out at 10 and 22 C after long-term storage of brief exposure. Finally, ACD units warmed to 22 C for 24 hours were tested in informed human volunteers to determine posttransfusion survival. A shipping temperature of 10 C and even brief exposures of less than 24 hours to a temperature of 22 C, did not lead to marked adverse effects during the early phases of storage, that is, seven to 14 days. However, the incidence of adverse effects increased after longer storage. Decrease in survival was apparent in blood