TRANSFUSION HEPATITIS Over 600 patients received over 11,000 units of blood during open heart operations, average 18 units each. There were 12 cases of hepatitis, a case incidence of 1.86 per cent, or an infectivity incidence of 0.10 per cent. The low incidence of hepatitis is attributed to the use of voluntary donors. Professional or paid donors are carriers of hepatitis six times more often than voluntary donors. Paid donors include narcotic addicts, alcoholics, and others with abnormal liver function tests. (*Adashek, E. P., and Adashek, W. H.: Blood Transfusion Hepatitis in Open-Heart Surgery, Arch. Surg. 87: 792 (Nov.) 1963.*)

DEEP HYPOTHERMIA Dogs were put under hypothermia without operation and without cardiac standstill. Blood cooling to 15°C. and rewarming with partial bypass revealed no metabolic acidosis. With pure oxygen in the oxygenator arterial *p*H remains constant. Acidosis may occur after cardiac arrest and lowered perfusion of parts of the body lying distal to the perfusion cannula or after use of a low perfusion volume or after too steep temperature gradients, especially in surface cooling, when there is greater oxygen demand in surface areas and lowered cardiac output during the rewarming phase. When 3 per cent carbon dioxide is added to the oxygenator respiratory acidosis is found in cooling which is fully reversible. During bloodstream cooling cardiac fibrillation is rarer than in surface cooling. Thus, with 3 per cent carbon dioxide in the oxygenator respiratory acidosis occurred; but with pure oxygen, P_{CO_2}, *p*H and standard bicarbonate remained unchanged. (*Schlosser, C., and others: Changes in Blood Gases and Acid-Base Balance Under Experimental Conditions in Blood Stream Cooling Below 20 Degrees Rectal Temperature, Thoraxchirurgie 10: 709 (June) 1963.*)

HYPERBARIC PERFUSION A series of hypothermic perfusions were carried out on dogs under hyperbaric conditions. Flow rates of 40 to 100 ml./kg./minute produced no metabolic complications. Severe reductions of flow (10 ml/kg./minute) are also reasonably well tolerated for periods up to 60 minutes at temperatures of 10° and 20° C. without development of a profound lacticacidosis. However, beyond this time limit, an accumulation of anaerobic metabolites will result in a severe derangement of acid-base equilibrium. It is doubtful whether the benefits derived under pressure are of sufficient magnitude to warrant the routine application of this technique in the surgical correction of the more common cardiac defects. (*Bernhard, W. F., and others: Feasibility of Hypothermic Perfusion Under Hyperbaric Conditions in the Surgical Management of Infants With Cyanotic Congenital Heart Disease, J. Thor. Cardiov. Surg. 46: 651 (Nov.) 1963.*)

PULSATILE PUMP A high-amplitude pulsatile pump-oxygenator used for perfusion in animals and humans accomplished excellent venous return with little tendency to internal blood pooling and better tolerance to high flow and prolonged perfusion and relatively physiologic distribution of blood flow. In the nonpulsatile flow perfusion, hemodynamic deviation increases abnormally when the flow rate exceeds 60 ml./kg. In the pulsatile flow perfusion, deviation does not become significant until it exceeds 80 ml./kg. Use of pulsatile flow prolongs the safe perfusion period by aproximately 30 per cent. (*Nakayama, K., and others: High-Amplitude Pulsatile Pump in Extracorporeal Circulation With Particular Reference to Hemodynamics, Surgery 54: 798 (Nov.) 1963.*)

OXYGENATOR In extracorporeal circulation for cardiac surgery, the functions of both gas and heat exchange require dispersion of blood over a large surface area. The advantages of combining both in one unit are reduction in primary volume, length of tubing, number of connections, reduced trauma to the blood and reduced danger of gas embolism as a result of warming the blood. A vertical-screen oxygenator was modified by replacing the screens with plates, on the surface of which blood is filmed for oxygenation, and through the center of which liquid flows to effect heat exchange. (*Smyth, N. P. D., and Blades, B. B.: Combined Gas and Heat Exchange in Extracorporeal Circulation, J. Thor. Cardiov. Surg. 46: 629 (Nov.) 1963.*)