An important consideration in regard to standards of care for children with cardiovascular problems is that the pediatricians have the responsibility for organizing a good diagnostic and surgical team. A good anesthesiologist, a competent surgeon, good nursing care, and keen postoperative observation for early signs of complications are all essential to success. The pediatricians cannot regulate the surgeon, but the standards set can require that the surgeons have met their own standards before they have charge of the pediatric surgical program. The superb results of open-heart surgery as quoted by Dr. Kirklin from the Mayo Clinic are unfortunately not a universal experience and hence recommendations for surgery in a given area must be based on local operative results.

The responsibility for operation rests clearly with the pediatrician and the pediatric cardiologist. The family grants permission for operation but their consent is given on the basis of the advice they receive from the doctor. If operation is not indicated or the risk too high, ours is the responsibility to persuade child and parent not to have an operation. To do right by the child and the family the diagnosis should be accurate, the indications for surgery should be clear, and the family should fully understand the situation. Even if the odds are overwhelmingly in favor of a successful operation, for any one patient the odds are one to one between life and death.

Cardiac operations should be undertaken only to correct or alleviate an abnormality of the heart. Indeed, the pediatrician must be certain that the child's complaints are related to the cardiac condition. The tendency is a natural one to assume that two unknowns go together. Therefore, if the child has a malformation of the heart, the common assumption is that his other complaints, especially if the cause of these is not clear, are related to the cardiac condition. The responsibility rests squarely with the physician who recommends operation to determine whether correction of the cardiac malformation will correct the child's disability. This is one reason why pediatric cardiologists are needed. The commonest example familiar to many pediatricians is that of mental retardation in the patient with a congenital malformation of the heart. It is so easy to say that the faulty circulation caused the mental retardation. The two conditions frequently occur together, but there is no evidence that the one "causes" the other. Many a mother with a cyanotic child has expressed anxiety to have an operation before the brain has been damaged. Usually she fears mental retardation and not a stroke or the damage which results from a brain abscess. Whether and how much the repeated minute thrombi which occur with prolonged polycythemia cause any injury of the brain is impossible to determine for we do not know the maximum capacity of the human brain. There are certainly children with prolonged severe anoxemia and polycythemia who have been able to lead their class through grammar school. The reverse is also true. The mentally retarded child remains retarded after complete correction of the cardiac malformation. It is quite possible that the factors which were responsible for the abnormality of the heart also affected the development of the brain.

My former chief, Dr. Edwards A. Park, that great pediatrician who trained so many of the leading pediatricians of today was a great believer in special clinics. He felt that children with chronic conditions...
needed special care and that the best way to study disease was by careful observation over long periods of time. Such prolonged observation is quite as important for patients operated upon for cardiac abnormalities as it is for patients who are not operated upon. Follow-up observations are essential if we are to know whether or not the patient has really an increased life expectancy and which type of operation gives the greatest benefit to the patient. Merely to close a ventricular septal defect does not necessarily increase the patient's life span. To correct a Tetralogy of Fallot in childhood does not necessarily mean that the child will always have a normal heart. We know not how the heart which has been incised and patched will grow. We know not the long-time effects of the patch. The responsibility for long-term evaluation of operation rests with the pediatrician and cardiologist. Our 5-year results after an anastomotic operation for Tetralogy of Fallot were excellent, our 10-year results were remarkably good, our 15-year results were not so good. Will the 15-year results of total correction of Tetralogy at 5 or 8 years be better than the ultimate outlook is for those patients who had an anastomosis at 8 years even though a second operation may be needed at 18 or 22 years of age? Who knows? These are problems for the current pediatricians and those of the future to answer.

Medicine is steadily advancing. The standards of today are not the standards of tomorrow, but the maintenance of high standards today and the realization that nothing is so good that it cannot be improved will help make tomorrow's standards high. Above all we need both keen and critical observation.
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