SPECIAL COMMITTEE REPORT

Standards for Centers Caring for Patients with Congenital Cardiac Defects

Report of the Subcommittee on Education and Standards in the Field of Congenital Heart Disease

The purpose of this report is to provide standards for services and necessary equipment for centers responsible for the diagnosis and surgical care of patients with congenital defects of the heart and blood vessels.* Skill in this field is dependent on training and on continuous extensive experience which in turn is related to the caseload of an institution. Before establishing such a center, careful consideration should be given to the real need in the city or area for this highly specialized type of diagnostic workup and surgical correction. Many skills and facilities needed are not ordinarily available outside a medical center.

Accurate diagnosis of the congenital cardiac malformation is a prerequisite to cardiac surgery. To have a diagnostic center for this purpose is, therefore, of prime importance for any hospital in which cardiac surgery is performed.

This type of work requires highly developed teamwork on the part of the pediatric or medical diagnostician, surgeon, anesthesiologist, roentgenologist and members of allied services. It is not advisable to have a sharp division between diagnostic and surgical responsibilities. The center in which cardiac surgery is done must be ultimately responsible for both definitive diagnosis and surgical care. The essential requirements for a diagnostic center follow below.

I. STAFF

A. Physicians. The following specialists should be on the team:

1. A pediatric cardiologist or a cardiologist who is thoroughly familiar with the diagnostic features and care of patients with congenital cardiac malformations is essential. The importance of a pediatrician on the team is evident when it is realized that more than one half of such patients are in the pediatric age group.

2. A qualified radiologist who has had additional training in the cardiovascular field.

3. A qualified surgeon with training in cardiovascular surgery who should be directly responsible for the surgical care of the patients.

4. A physician-anesthesiologist with experience in cardiovascular surgery and open-chest anesthesia is mandatory.

5. The team which is capable of performing cardiac catheterization and angiocardiology, conforming to the standards established by the two reports of the Committee on Cardiac Catheterization and Angiocardiography of the American Heart Association.2,3

A well-trained pathologist familiar with the problems of the physiologist, the cardiologist and the surgeon can assist the team in many ways. Extensive

This report of the Subcommittee on Education and Standards in the Field of Congenital Heart Disease appointed by the Council on Rheumatic Fever and Congenital Heart Disease of the American Heart Association reflects that committee's findings in the matter under study.

* This report serves to augment the Recommended Standards for Cardiovascular Clinics.1
pathologic study should be made, if possible, on all patients who do not survive and the pathologic findings should be regularly reviewed by the whole group.

The Registry of Cardiovascular Pathology sponsored by the American Heart Association in cooperation with the Armed Forces Institute of Pathology, Washington 25, D. C., can supply pathologists and other members of the staff with material that may assist in the education of the physician in malformations of the heart, particularly those of surgical significance. The Institute will, upon request, also work up material if local facilities do not permit a thorough study.

B. Nurses. Outpatient and inpatient departments should have registered professional nurses familiar with the care of patients undergoing diagnostic study and cardiovascular surgery. It is preferable that the clinic nurse has public health experience and is capable of assisting families to secure nursing supervision at home. The hospital nursing care must be under the close supervision of nurses familiar with needs of such cardiac patients. Expert and individual nursing care must be continued during the postoperative period for as long as it is medically advisable.

C. Medical Social Worker. A qualified medical social worker should be a full-time member of the staff. Medical social service should be available during all stages of care irrespective of economic status because of the anxiety, fear and worry in the family when cardiac surgery is considered. The case worker should be willing to aid in all social problems and must be experienced in the socioeconomic conditions usually found in such families, often young and inexperienced families. Both the medical social worker and the nurse (or public health nurse) should work together with the health and social agencies in the patient's community to establish optimum care for the patient.

II. Diagnostic Facilities

A. General: The following facilities, usually provided in a clinic, should be available:
   (1) Fluoroscopy and x-ray,
   (2) electrocardiography, and
   (3) a laboratory for routine analysis of blood and urine.

B. Special: The following special facilities are mandatory:
   (1) Bacteriology laboratory,
   (2) blood chemistry laboratory,
   (3) medication and oxygen at close hand for emergencies and
   (4) laboratory and equipment for cardiac catheterization, angiography and aortography, conforming to the standards set by the Committee on Cardiac Catheterization and Angiography.\(^2\)\(^3\) this laboratory must be equipped for determination of oxygen saturation of arterial blood. It is desirable also to have a cardiopulmonary laboratory.

III. Diagnostic Services to the Patient

A. Outpatient Department. In many instances, the diagnosis of the congenital cardiac defect can be established on an outpatient visit by means of a complete medical history, physical examination, fluoroscopic examination, x-ray, electrocardiogram and laboratory studies for blood and urine. The cardiologist should be able to fluoroscope all patients as a part of his examination.

B. Inpatient Department. It is well to recognize that some patients with congenital cardiac defects suffer from anoxemia, polycythemia or cardiac decompensation and require hospitalization and careful medical management during the period of diagnostic evaluation. Facilities for special diagnostic studies should be available to aid in a definitive diagnosis of all patients when necessary. Those patients in need of such studies as cardiac catheterization, angiography or aortography should be hospitalized likewise for these procedures. It is preferable to have all diagnostic patients admitted to the medical or pediatric service of the medical center.

C. Teamwork. All members of the staff or team should work together in the evaluation of the patient's condition and in making decisions, but one staff physician should be solely responsible for the individual patient. The diagnostic team should have experience in the interpretation of cardiac catheterization findings in conjunction with the complete
clinical picture; never should cardiac catheterization or angiocardiographic findings be considered alone. It is desirable to hold regularly scheduled cardiovascular conferences to discuss not only individual cases but changes in general concepts of cardiovascular surgery.

IV. Basic Requirements in the Surgical Care of Patients

A. A qualified surgeon with training and experience in cardiovascular surgery, including the use of arterial grafts, should be directly responsible for the surgical care of patients. He should have sufficient experience to meet with confidence the innumerable unusual situations that may arise.

B. There should be a full-time resident surgical and medical staff in the hospital, capable of dealing with all problems that arise following surgery.

C. Nursing supervision and care by nurses familiar with the needs of patients undergoing cardiovascular surgery are essential. It is highly desirable to have specialized nursing care provided in a recovery unit on a 24 hour basis. These nurses should be trained in the aftercare of patients undergoing cardiovascular surgery. Special nursing care should be given as long as it is medically advisable.

D. A physician-anesthesiologist who has had experience with patients undergoing cardiovascular surgery and open-chest anesthesia is mandatory.

E. Special equipment such as various types of needed oxygen apparatus, blood bank facilities, cardiac resuscitation or tracheotomy sets should be available through each 24 hours.

F. A source of arterial grafts should be available to a surgical staff member who is experienced in using them.

G. The operating room should be thoroughly equipped with all the advisable surgical instruments especially devised for intrathoracic and cardiovascular work as well as those commonly required for general surgery.

H. A recovery unit or its equivalent is important in providing special care and attention during the early hours after operation and advisedly should be open on a 24 hour basis.

The highly specialized staff and the facilities mentioned above are considered basic and are often not available outside a medical center that constantly cares for such patients.

V. Aftercare

A. Staff Care and Evaluation of Patient. It is essential that the medical staff at all times work closely with the surgeon and evaluate the results of surgery and the patient’s cardiac reserve prior to discharge. Usually it is the responsibility of the cardiologist or pediatrician to assess the patient’s cardiac reserve and to make recommendations concerning resumption of his activities.

The medical social worker and public health nurse should be available to assist with plans upon discharge of the patient from the hospital. They should follow through with referrals to the patient’s local community, when indicated. The aim of both nurse and medical social worker should be to work together and to aid in follow-up planning, in order to achieve the best possible adjustment and rehabilitation of patient and family.

B. Contact with Referring Physician. The referring physician should be kept informed at all stages of the diagnostic study and care. He should be advised concerning:

(1) The indications and recommendation for surgery,

(2) The results of operation, including the occurrence of any postoperative complications and

(3) The condition of the patient at the time of discharge from the hospital.

Recommendations for future medical management and follow-up after discharge are necessary for all cardiac patients.

C. Follow-up: It is advisable that the center request follow-up visits in order to obtain
accurate evaluation of the operative results over a long period of time and, in turn, to send this information to the referring physician to assist him in his future management of the patient. It is sincerely hoped that all diagnostic and surgical centers will carefully evaluate their long-term operative results.

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REFERENCES
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