Appendix C:
ACHD Fellowship Training Curriculum (24 months)

General:

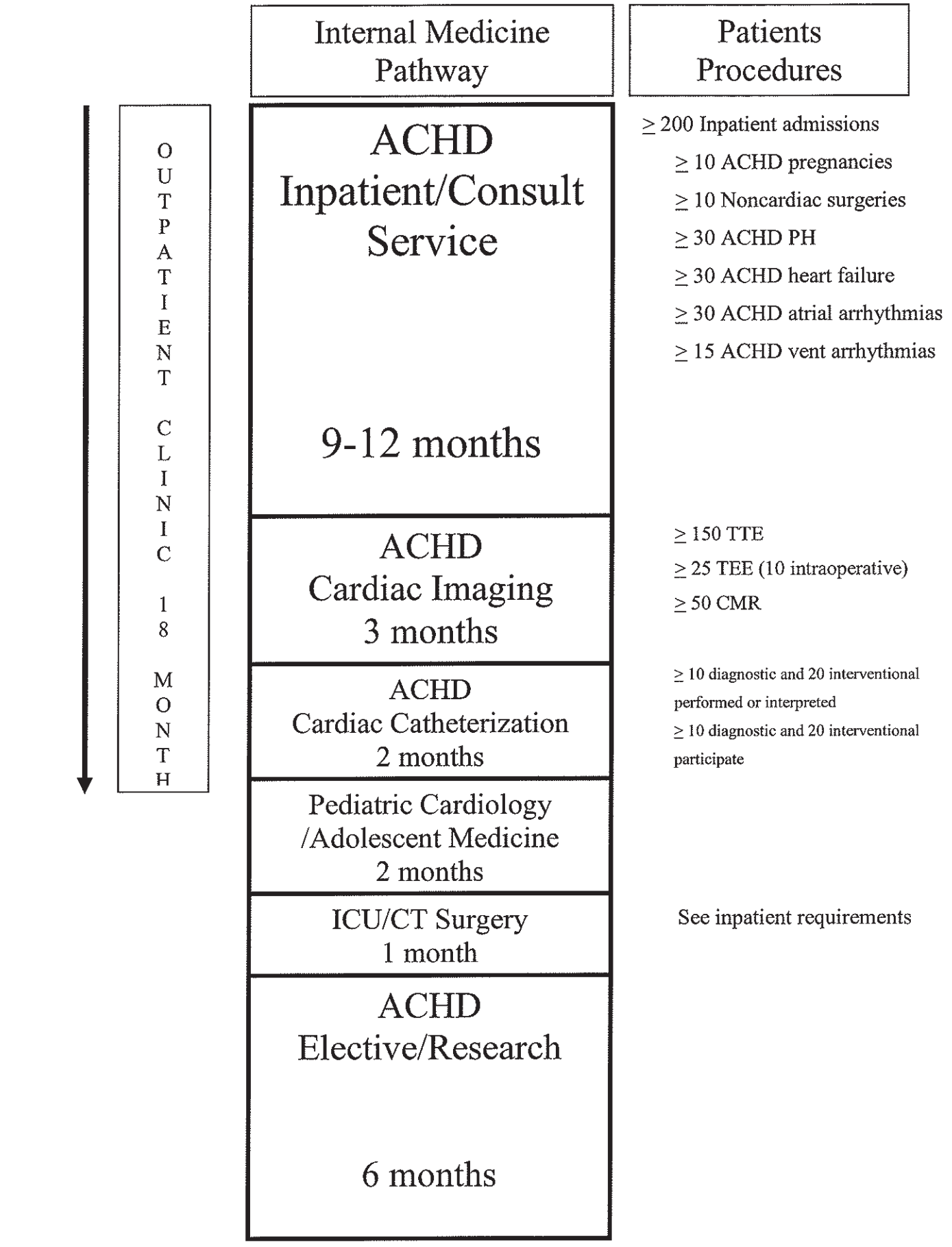
The 32nd Bethesda consensus conference, "Care of the adult with congenital heart disease", outlined specific competencies required of ACHD caregivers. These competencies hold today, and include, but are not restricted to:

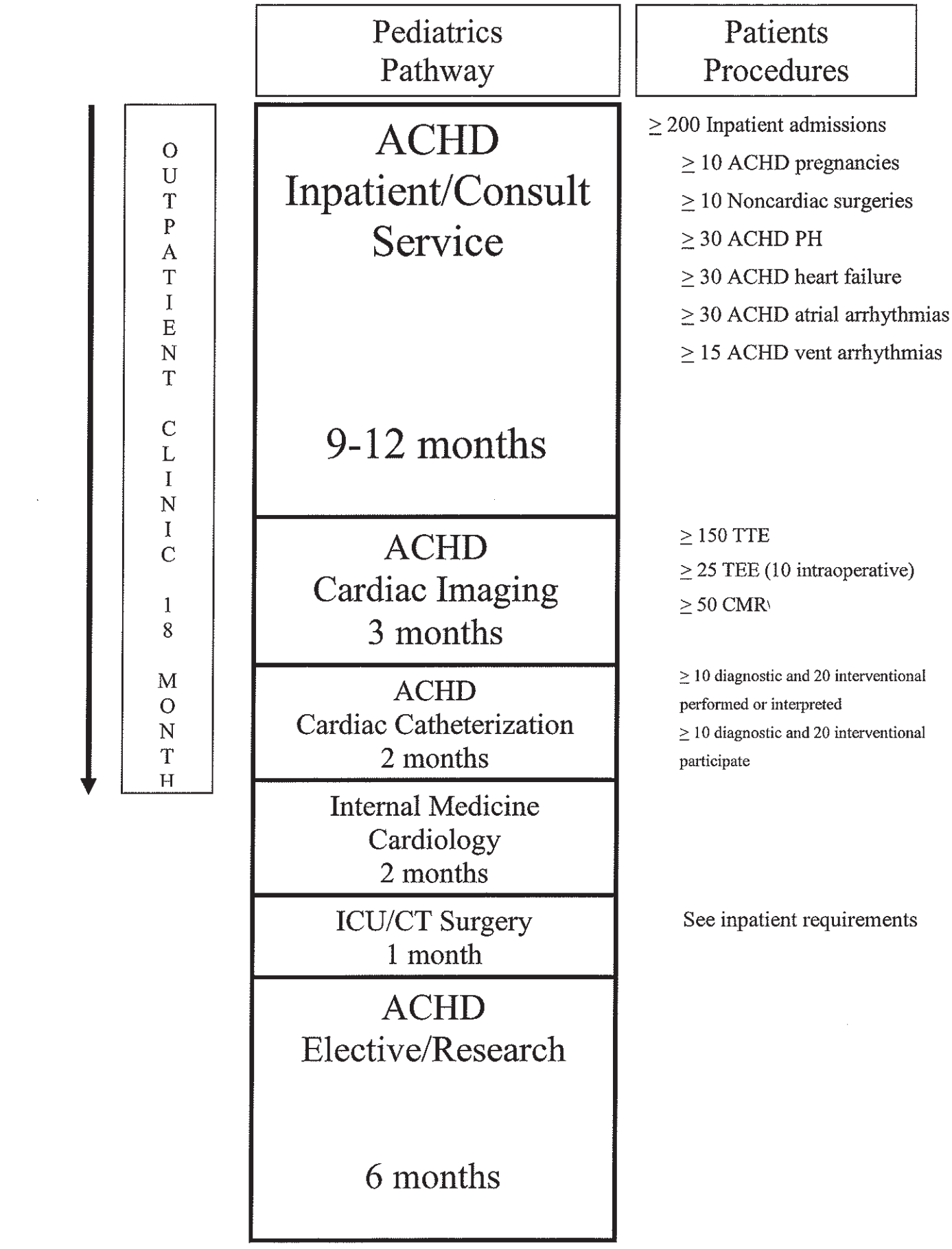
1. Medical and surgical management of CHD.
2. Postoperative management of adults with CHD.
3. Technical and diagnostic expertise in invasive and noninvasive cardiac procedures.
4. Recognition and management of acquired cardiovascular and cardiopulmonary disease.
    - Recognition and appropriate initial management of non-cardiac disease in adults.
    - Physiologic changes of pregnancy and awareness of the important effects on and presentation of CHD.
5. Psychosocial aspects of adolescence and the transition to, and through, adulthood.
    - Recognition of high-risk behaviors in adolescents and adults.
    - Life-style counseling and advocacy for adolescents and adults with CHD.
6. Principles of health promotion in adults.
    - Recognition of, and integration with, local and regional models of healthcare access and provision for individuals with chronic medical illness
    - Recognition of data-driven principles of care planning, and integration with established national and international guidelines of ACHD care.
7. Anatomy, morphology (and embryology), and pathophysiology of CHD
8. Direct and meaningful experience with clinical research methodology, including fundamentals of clinical epidemiology.

ACHD fellowship training allows for the development of these specific competencies within the framework of the six ACGME general competencies, in addition to providing formal academic mentoring requisite for the success and future growth of program graduates. These central and core competencies in ACHD care can be achieved via prior training in any of several entry pathways including general pediatrics, general internal medicine, medicine-pediatrics, adult cardiology, pediatric cardiology, adult-pediatric cardiology: all of these funnel down to 2 core pathways prior to ACHD subspecialty training: a) adult cardiology and b) pediatric cardiology. The trainee with combined adult and pediatric cardiology training would be allowed to choose either pathway, provided completion of, and competency in, all training blocks was demonstrated at some point prior to the completion of ACHD subspecialty training. This system thereby allows for a central core, with the vast majority of its components accomplished during the formal ACHD subspecialty training, and for other requisite ones to have been completed prior to entry due to the varied nature (pediatrics, medicine, medicine-pediatrics, pediatric or adult cardiology) of fellow entry into subspecialty training. These "blocks" of training are outlined below, specific to ABIM or ABP entrance to ACHD subspecialty training. Critical to the acceptance of such a schema, it must be recognized that the organization of ACHD regional care has varied based upon center- and region-specific patient, caregiver and resource demographics. Thus, the proposed "blocks" may be thought as virtual: some training programs

may implement specific, intensified and focused periods of training and education so as to achieve requisite experience and competencies for the ACHD trainee, whereas others may have less restrictive training periods, achieving the same requisite experience and competencies. Therefore, the schemes presented below should be seen as model templates, from which each program will construct its own center-specific construct so as to achieve experience and competencies for the ACHD trainee within the framework of region-specific organization of ACHD care. The schemes are presented a) firstly in diagrammatic form, followed by b) description of the individual training cores, with experiential requirements to be met within in each core, and with c) overarching requisite competencies to be fulfilled by the ACHD trainee by the completion of the fellowship period.

a) Diagrammatic schemes for ACHD training pathways




Pediatrics Pathway
Patients Procedures
OUTPATIENT CLINIC 18 MONTH
ACHD Inpatient/Consult Service
9-12 months
≥ 200 Inpatient admissions
≥ 10 ACHD pregnancies
≥ 10 Noncardiac surgeries
≥ 30 ACHD PH
≥ 30 ACHD heart failure
≥ 30 ACHD atrial arrhythmias
≥ 15 ACHD vent arrhythmias
ACHD Cardiac Imaging 3 months
≥ 150 TTE
≥ 25 TEE (10 intraoperative)
≥ 50 CMR
ACHD Cardiac Catheterization 2 months
≥ 10 diagnostic and 20 interventional performed or interpreted
≥ 10 diagnostic and 20 interventional participate
Internal Medicine Cardiology 2 months
ICU/CT Surgery 1 month
See inpatient requirements
ACHD Elective/Research
6 months
24 months

b) Description of individual training cores, with experiential requirements to be met within each core.

1-Clinical Inpatient Care and Management:

Regional and institutional practice varies regarding primary vs. consultative management strategies for adult survivors with CHD receiving in-hospital care. Regardless of pre-established boundaries, the subspecialty training of fellows expert in the care and management of ACHD must follow a paradigm of complete care for all inpatients with congenital heart disease, regardless of the service that they are admitted to. ACHD fellowship training guidelines must be adaptable to individual programmatic boundaries to allow for attainment of sufficient experience for the training fellow coupled with ability to provide undivided attention to inpatient needs, either in defined blocks of inpatient coverage, or dispersed throughout additional rotations. Such potentials may include

- **9-12 months** dedicated in-patient ACHD service (via either primary ACHD admitting service, or ACHD consultation service model), or
- **12-18 months** care of ACHD inpatients, overlapping in part with additional rotations. Supervisory care must be provided to assure that during this time, fellows do not have conflicting training responsibilities that preclude ability to provide undivided attention to inpatient needs, if and as they arise.

During this time, the ACHD fellow would care for, and roster, ≥ 200 ACHD in-patient admissions, from either beginning to end of hospitalization or from onset to offset of fellow rotation, depending upon the local care paradigm. Fellows would be expected to:

- review presentation, surgical notes, available past imaging, interventions and hemodynamics
- synthesize presenting issues, formulate plan of Rx, correlate plan to care guidelines
- follow care plan to patient outcomes
- coordinate care follow with outpatient care team
- maintain roster of all patients cared for

Inpatient management should include (but is not limited to) active care for

≥ 10 ACHD pregnancies
≥ 10 ACHD non-cardiac surgeries
≥ 20 ACHD cardiac surgeries
≥ 30 ACHD associated pulmonary HTN
≥ 30 ACHD heart failure
≥ 30 ACHD associated atrial arrhythmia
≥ 15 ACHD associated ventricular arrhythmia