“The farther backward you can look, the further forward you can see”

Winston Churchill

Where we were

Where we are

Where we are going

Bruce W. Usher, MD
American College of Physicians
Oct 2015

ECHOCARDIOGRAPHY
NOTABLE CONTRIBUTORS

Inge Edler & Helmut Hertz – 1953
(Developers of cardiac ultrasound)

Jack Reid & Claude Joyner – 1963
(Circulation – mitral stenosis)

Harvey Feigenbaum -1965
(JAMA – pericardial effusion)
“Father of Echocardiography”

Charles Haine - 1st sonographer
Sonia Chang – 2nd sonographer

1968

The American College of Cardiology

INDIANA UNIVERSITY SCHOOL OF MEDICINE
KRAHNTE INSTITUTE OF CARDIOLOGY

ULTRASOUND:
Diagnostic Use
January 11 and 12, 1969

1st Edition 1972  239 pages

2005

Echocardiography
MAGNET PROGRAM

1st Edition 1972  239 pages

239 pages 790 pages
INSTRUMENTATION

MUSC 1975

- 1 sonographer
- Closet
- <250 studies
- Strip chart - develop
WHAT IS NEW IN THE ECHO LAB

MISSIONS OF MUSC
Patient Care
Education
Research

Echo Doppler study is the most frequently ordered diagnostic test for the comprehensive evaluation of the heart!
WHY ECHO DOPPLER?

Advantages:
- No radiation or nephrotoxicity
- Portable
- Serial measurements
- Cost
- Readily available
- Anatomy + Physiology (pathophysiology)

ECHO
- TRANSTHORACIC
- TRANSESOPHAGEAL
  - M MODE
  - 2 D
  - 3 D
  - 4 D
  - LONGITUDINAL STRAIN
  - STRESS TEST
  - INTRAVASCULAR

DOPPLER
- CONVENTIONAL
  - PULSE
  - CONTINUOUS WAVE
  - COLOR FLOW
  - TISSUE SPECKLE TRACKING

OUTLINE
1. Volume
2. Financial
3. Personnel
4. Technology
5. Reporting
6. Administrative
7. Future
“Echocardiography is alive and well and getting better”

Harvey Feigenbaum, MD
1999 American College of Cardiology Bishop Lecture
PERSONNEL

2008
10,000 STUDIES

2011
11,009 STUDIES

David Gregg, IV, M.D.
Marian H. Taylor, M.D.

Salvatore A. Chiaramida, M.D.
Peter L. Zwerner, M.D.
“IF YOU DON’T KNOW WHERE YOU ARE GOING, YOU WILL NEVER GET LOST!”

NEW DEMANDS
EXPANDING SERVICES
• HEART VALVE CENTER
• HEART FAILURE EXPLOSION
• VAD SERVICE
• ELECTROPHYSIOLOGY
• STROKE CENTER
• ONCOLOGY
• PULMONARY HTN / LUNG TRANSPLANT SERVICE
• RAPID ACCESS
• LAA CLOSURE DEVICE
• ADULT CONGENITAL

SPECIAL PROCEDURES
• HOCM ASA
• PFO/ASD CLOSURE
• E VALVE (MITRAL CLIP)
• TAVR
• WATCHMAN LAA CLOSURE
• VALVULOPLASTY
• CARDIAC BIOPSY
• BICYCLE STRESS TESTING
• TEE’S
• LONGITUDINAL STRAIN
• 3D
• CLOSURE OF PROSTHETIC VALVE PARAVALVULAR
NEW REQUIREMENTS

• Focused right heart
• Comments on aorta size at 3 levels
• Education:
  Pulmonary fellows
  Anesthesia residents
  CT surgery Residents
  ER Residents
  Internal Medicine Residents Elective

RESPONSE TIME

• STAT
• ASAP
• CPC
• TEE’s
• ADD ON – Cardiology Clinic
  Oncology
  CPC, ED
  Rapid Access

TECHNOLOGY

• 3D TTE MACHINE
• 3D TTE MACHINE
• SPECKLE TRACKING OR LONGITUDINAL STRAIN
TECHNOLOGY

BICYCLE ERGOMETER

• STRESS TESTING
• VALVULAR DISEASE
  Ao Stenosis
  Mitral Stenosis
  Mitral Regurg..
  Pulm. Art. Press..
  Cong. Ht. Dis

HOW TO ACCOMPLISH?

• Add sonographers
• Add qualified interpreters
• Requires support from Administration including Heart and Vascular Center
• Requires spending money to make money
REQUESTS, REPORTS

- Epic – changes
- Request: more clinical information – Why?
- Structured reporting system
- Form: Conclusion – Why?
- Speckle tracking (AFI) – myocardial strain
- Pulm. Artery systolic, mean and diastolic pressure

ADMINISTRATION

- 2 LEAD SONOGRAPHERS
- MONTHLY ECHO FACULTY MEETING
- QUALITY ASSESSMENT
- LEADERSHIP

1979

Adell Bell
- 2nd Sonographer
- Instrumental in development of MUSC Echo Lab
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