The Congenital Heart Program
At Albany Medical Center

Neil Devejian M.D.
Director, Pediatric Cardiac Surgery

Eric Spooner M.D.
Chief, Section of Pediatric Cardiology
Congenital Heart Program History

- Congenital Heart Surgery goes back to 1960 with Ralph Alley M.D.
- Dr. Shaher initiated Section of Pediatric Cardiology 1966
- Dr. Foster initiated more complex procedures 1975
- Dr. Britton initiated more complex procedures 1985

Congenital Heart Program History-2

- For multiple reasons, by 1996 most complex surgical cases were referred out of area to Boston or New York City.
- By 1996, a new team-oriented approach was needed, with all facets of cardiac care being integrated, with facility and programmatic upgrades in every area.
- This has now been accomplished
Necessary Elements for Optimal Cardiac Care

1. Physical Facilities
2. Pediatric Cardiology
3. Pediatric Cardiac Surgery
4. Pediatric Cardiac Anesthesia/Perfusion
5. Pediatric Intensive Care
6. Neonatal Intensive Care
Children’s Hospital At Albany Medical Center

Children’s Hospital at A.M.C.
Children’s Hospital at A.M.C.

- 17-Bed Pediatric ICU
- 50-Bed Neonatal ICU
- 35-Bed General Pediatrics Ward
- Pediatric Biplane Cardiac Cath Lab-March 2002 Opening
- Pediatric Cardiac O.R.
- Ronald McDonald => at Children’s Hospital

Ronald McDonald at A.M.C.
Lounge, play area, and sleeping facilities for families of patients in the NICU and PICU
New Pediatric I.C.U.
17 ICU beds with nursing station at each “pod”

Pediatric Intensive Care Rooms
- Each two rooms have a nursing station
- Each nursing station has a networked computer, printer, nursing supplies, networked monitor, etc.
Pediatric I.C.U. Patient

One of our complex patients (hypoplastic left heart syndrome) one day after hemi-Fontan procedure

Neonatal I.C.U.

- 52-Bed Neonatal Intensive Care Unit
Neonatal I.C.U.

Cardiac Cath Lab and O.R.

- New state-of-the-art all-digital biplane pediatric cardiac catheterization laboratory to open March 2002.
- Pediatric Cardiac Operating Room - optimized for infants with intraoperative trans-esophageal echo, video recording, specialized perfusion setup, etc.
Pediatric Cardiology

- Four Board-Certified Pediatric Cardiologists
  Matthew Farina MD, Steven Kamenir MD, Eric Spooner MD, Harm Velvis MD
- Outpatient facilities with Echocardiography, X-ray, EKG
- Interventional Cardiac Catheterization
  - Diagnostic cardiac catheterization
  - Balloon angioplasty for stenotic valves, vessels, coarctations
  - Coil embolization of PDA, collaterals, etc.
  - Device closure of ASD, VSD, fenestration
- Fetal Echocardiography
  - Two echocardiographers with 20 years combined fetal experience
  - Improves neonatal outcomes by planning, delivery at AMC
  - Fetal arrhythmia management
- Outreach Clinics bring us closer to the patient’s homes
  - (Glens Falls, Kingston, Cooperstown. Utica next?)
- Electrophysiology for management of arrhythmias

Cardiac Catheterization

- Number of Pediatric Catheterizations
- Percent Interventional
Pediatric Cardiac Surgery

- Neil Devejian M.D.
  - Full-time director of pediatric cardiac surgery
  - Practice is exclusively congenital heart disease

- Lewis Britton M.D.
  - Fully-trained pediatric cardiac surgery, but part-time with adults with C.H.D. and with Dr. Devejian on complex cases

Surgical Outcomes – Dr. Devejian

- 123 operations
- 101 major congenital cardiac cases (consecutive)
- 82 pump cases
- 1 death, operative mortality (1/101) = 1%
- 5 complications (5/101) = 5%
Congenital Heart Surgery
The numbers are up, the ages are down.

- Adult –
  - 18 to 99 yrs.
- Pediatric –
  - 1 to 18 yrs
- Neonatal –
  - 0 to 12 mos.

Society of Thoracic Surgeons (STS) Database
Diagnostic Groupings for Comparison with AMC Data

- Atrial Septal Defect (ASD)
- Ventricular Septal Defect (VSD)
- AVSD (Endocardial Cushion Defects)
- Coarctation of the aorta
- Subaortic Stenosis (SAS)
- Tetralogy of Fallot (TOF)
- Total Anomalous Pulmonary Venous Return (TAPVR)
- Transposition of Great Arteries (TGA)
- Norwood/Modified Norwood
- Bi-Directional Glenn, hemi-Fontan
### Outcomes Referenced to STS Data

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<tr>
<th>#</th>
<th>Mortality</th>
<th>Morbidity</th>
<th>Reoperation</th>
<th>AMC LOS (days)</th>
<th>STS database LOS</th>
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<td>0</td>
<td>0</td>
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<tr>
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<tr>
<td>SAS</td>
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<td>0</td>
<td>6.5 11.2</td>
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<tr>
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<td>0</td>
<td>0</td>
<td>11.7 27.0</td>
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<td>Inoperation for L-PA thrombosis</td>
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<td>7.5 9.4</td>
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AMC outcomes vs. STS Data

- In all diagnostic groupings, AMC mortality is substantially less than the national average
- In all groupings except Transposition, length of stay is substantially less than the national average – an indicator of better results
- In two cases with TGA, both are alive, doing well and have excellent surgical results

Pediatric Cardiac Anesthesia/Perfusion

- Two Full-time Pediatric Cardiac Anesthesiologists – Dr. Ehlers, Dr. Crnkovic
- Two dedicated pediatric Cardiac Perfusionists
Pediatric Intensivists

- Four Board-Certified Pediatric Intensivists
  - Drs. Sanchez, Walsh, Edge, O’Donnell
- Intensivists sleep IN ICU at night for immediate access to patients in ICU, and their families
- Ronald McDonald facilities allow parents to stay with their children at all times.

Neonatal Intensivists

- Seven Board-Certified Neonatologists
  - Drs. Horgan, Clark, Pinheiro, Munshi, Fisher, Rios, Schulman
- Attending M.D.’s sleep in NICU for immediate availability to patients, Pediatric Residents and families
Summary:
The Necessary Elements for Optimal Cardiac Care Are All Here at AMC

1. Physical Facilities
2. Pediatric Cardiology
3. Pediatric Cardiac Surgery
4. Pediatric Cardiac Anesthesia/Perfusion
5. Pediatric Intensive Care
6. Neonatal Intensive Care

What has been accomplished

- Initiated strong pediatric cardiac surgery service with full-time Ped. Cardiac Surgeon
- Markedly increased numbers of surgeries
- Stopped sending complex cases out of AMCH
- Initiated vigorous interventional cath program
- Built the reputation of AMCH for care of complex pediatric cardiac services
What has been accomplished, cont.

- Trained cadre of nurses, attendings, and house-staff in pre- and post-op care
- Initiated intra-operative team approach
- Initiated trans-esophageal echo program with above

Goals for 2002

- Continue to add surgical cases
- Continue to train nurses and house staff
- Promote fetal echo program
- Increase outreach and number of cases via:
  - Field Clinics
  - Teaching at outlying hospitals
  - Visits to large referral practices
Goals for 2002, cont.

- Open biplane pediatric cath lab March 2002
- Additional cardiac cath numbers
  - Device placement for ASD, VSD, PDA
  - Balloon angioplasty
  - Coil embolization of collaterals, etc.
  - Electrophysiology with new Pediatric E.P. Service
  - Stent placement for stenotic lesions

Congenital Heart Program At Albany Medical Center
Why go anywhere Else?

- First-rate Facilities
- Integrated Team Approach to care
- Pediatric Cardiology with proven record
- Pediatric Cardiac Surgery with record comparable to anywhere in the U.S.A.
- Cost factors 50% less than Boston or NYC