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East Liverpool City Hospital Launches a New Service: Cardiac Catheterization

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East Liverpool City Hospital (ELCH), located at the junction of Ohio, Pennsylvania, and West Virginia, now provides low risk cardiac catheterization and vascular services. These new offerings are a welcome addition to the healthcare services available to residents in Columbiana County and the surrounding Ohio River Valley. Previously, cardiovascular patients had to travel at least 25 miles to Pittsburgh, Steubenville, or Youngstown for diagnostic catheterization. But with the opening of this new center at ECLH, patients now have access to tertiary physicians right in their local community. The new dual purpose Cardiac and Vascular Center brings cutting edge cardiovascular services to the community hospital setting at East Liverpool City Hospital.

Starting in July 2003, cardiovascular patients have been able to have all diagnostics done without leaving the area. This added convenience will likely increase patient satisfaction by offering quality care close to home. Improved accessibility to cardiovascular care also benefits local residents who may otherwise not seek care because of geography.

Using "cardiac catheterization," cardiologists can look for blockages in the individual arteries that carry blood to the heart muscle. Quantities of dye are injected through a narrow tube inside the heart while taking x-rays from outside allowing the cardiologist to see a clear picture of arterial blockage. Knowing the exact location of narrowing in the arteries helps the physician better advise patients about the best way to treat coronary artery disease vis-à-vis medicines, surgery, angioplasty, or stents.

In an effort to better serve the vascular patient population in East Liverpool, interventional radiologists will be performing Percutaneous Transluminal Angioplasty (PTA), an effective non-surgical treatment for patients with Peripheral Vascular Disease (PVD). PTA, "opens up" blocked arteries by threading a thin plastic tube called a balloon catheter to the point of arterial narrowing. The balloon inflates and presses the plaque against the vessel wall in order to restore blood flow. The balloon is then deflated and removed from the artery.

Feasibility studies for the addition of this new program to the hospital began in early 2000 with Burt Hill Kosar Rittelmann Associates Architects and Engineers evaluating four or five possible locations within the existing hospital where a cath lab suite could be built. First, a space program was written for a Cardiac Catheterization Lab Suite incorporating the requirements of the State of Ohio; the Guidelines for Construction and Equipment of Hospitals and Medical Facilities; and the special needs of the User Group at ELCH. Next, key factors that were evaluated for each location that included: square footage available in each location; adjacencies to the Emergency Department, ICU, Outpatient Cardiology facilities and the Outpatient Entrance; and availability of heating, ventilation, air conditioning, and electrical power to meet current standards for a cath lab. This provided ELCH a clear picture of the magnitude of adding a Cath Lab Suite from the facility standpoint. Then, schematic floor plans and construction cost budgets were developed for each site being evaluated.

To develop the new diagnostic cath and vascular services, the Administrative Team at East Liverpool Hospital, selected Corazon Consulting "The Heart Experts," a leading national cardiovascular consulting firm based in Pittsburgh, to assist East Liverpool Hospital in a two-phase project for the efficient delivery of invasive angiographic services. The project included:

- A dual purpose cardiac and peripheral angiography suite;
- Comprehensive implementation support; and
- On-site program management and development of internal personnel for assumption of a leadership role.

During Phase I: Program Planning and Design, Corazon determined requirements for the selection and operation of an efficient angiography service; analyzed current operations and recommended strategies to optimize physical plant operations and care delivery processes (capacity studies, staffing analysis, patient care management); assisted in the development of credentialing requirements for the Invasive Cardiology and Interventional Radiology Departments; and contributed to the development of a marketing plan to include promotional campaigns and collateral materials for the new program.

During Phase II: Implementation Support and Process Design involved creating an efficient staffing models and defining optimal patient flow across the continuum (preadmission to post-discharge) with consideration for location, personnel, hospital efficiencies, patient and family needs, and payor constraints. Corazon provided "best practice" benchmarks; assisted with the implementation of a cost management process; provided advice on reimbursement, managed care contracting, coding, and billing issues; and finally conducted a mock survey to assess staff readiness immediately prior to start-up.

Combining the studies by Burt Hill and Corazon, the ELCH administration and board had all the information needed to proceed with this project, confident of initiating a successful new service for the community, in a financially sound move for the hospital.

With the location determined, the final members of the design team were selected. Toshiba Medical Systems provided the dual-plane Cath Lab equipment and Witt Biomedical established the physiological monitoring capabilities. With the team of the ELCH User Group, Burt Hill, Corazon, Toshiba, and Witt in place, the process flowed very smoothly from design through construction.

To begin the construction portion of the project, Outpatient Physical Therapy was moved to an off-site location that would better respond to outpatient access needs, which then made space available within the hospital for this project. This allowed the new Cath Lab Suite to be built in a convenient location for both outpatient and inpatient access while providing optimal adjacencies to the hospital's Emergency Department, Cardiac Rehabilitation, and Testing Facilities.

Construction and equipment installation proceeded very quickly and efficiently thanks to the management of Tedco Construction. The proposed 120 day construction schedule was compressed to 90 days by Tedco, allowing the new service to be available even sooner to ELCH. The accelerated schedule pleased all parties involved who have been waiting anxiously for over two years, when discussions of adding a Cath Lab began.

The new 3,000 sf Cardiac Catheterization Suite includes: Family Waiting, Family Consultation, Physician Office/Viewing, 3-Bed Patient Holding Area with a Nurse Station, Nourishment Station, Toilet Room, Clean Utility, Soiled Utility, Housekeeping, Male and Female Staff Locker Rooms with Toilets, Cath Lab (500 + sf), Control Room, Scrub Alcove, Image Storage, and Electronics Room.

The design motif includes curving bulkheads, floor patterns, and nurse station counter to soften the environment for the patients. Earth tone colors representing sand and water were selected to complement and reinforce the ocean/beach theme that is suggested by the architecture and artwork chosen for the Patient Holding Area. This artwork also slides up and down to conceal the medical gas outlets when not in use. The result of this attractive and functional space is a patient friendly suite that creates a soothing atmosphere for the patients and the staff.

The lab, as of February 15, 2004, has now been open for patient treatment for 8 months. To date the lab has completed 127 total procedures. These results compare favorably with the projected utilization of the new lab for the first three months as the word gets out that ELCH is now offering these services. The lab staff reports that the design of the suite is functioning beautifully and that all cases have been successful and without any patient complications.

A new era has begun at East Liverpool City Hospital with Cardiac Catheterization and Vascular Services now available in East Liverpool, Ohio.

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