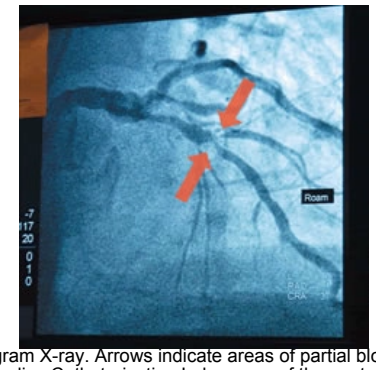
When Minutes Matter

Eisenhower's Cath Lab is There to Deliver



Angiogram X-ray. Arrows indicate areas of partial blockages.

At the heart of the Eisenhower Medical Center hospital is the Cardiac Catheterization Lab — one of the central command centers of the Eisenhower campus, an area where lives are saved and stories unfold nearly every day. Within the walls of this fully-digital radiological suite can be found some of the most technologically advanced equipment in the area, as well as a team of seasoned professionals who are poised day and night to move into action whenever the need arises.

The wide variety of health care provided at the "cath" lab includes cardiac diagnostic work and subsequent intervention, peripheral vascular work and emergency (emergency department) intervention — typically at the time a patient is experiencing a heart attack (myocardial infarction).

The cardiac diagnostic work and intervention comprise the bulk of the services and consist most commonly of angiograms — x-rays of blood vessels used to determine if there is abnormal blood flow in those vessels leading to and from the heart.

"Although many of our cardiac angiograms start out as a diagnostic procedure, they frequently transition into an interventional one," says Lynn Hart, RN, MSN, Administrative Director, Surgical Services, Critical Care, Emergency Department and the Cath Lab. "By the time the patient is referred to the cath lab, there is usually some other testing that's been done and some sense that there could be a blockage before engaging in a procedure like an angiogram."

Although angiograms are considered invasive, they are relatively simple procedures that are quite safe. A catheter is inserted into the vessels, usually through the groin and x-ray dye is injected, creating a contrast that makes the vessels visible on the x-ray.

Eisenhower's Cardiac Catheterization Lab recently made a significant capital investment in equipment and now uses a GEInnova ™ all-digital cardiovascular imaging system, which allows cardiologists to view hard-to-see blood vessels with exceptional clarity even under the most difficult conditions. The system utilizes digital subtraction technology for leg angiograms, which removes the bone and muscle mass, leaving a clear picture of the arteries without all of the extraneous matter, allowing cardiologists to better visualize blockages.

The Eisenhower Cardiac Cath Lab also has some of the most advanced intervention procedures available in cardiac medicine today, among them — stent and balloon angioplasty. Astent is a small, flexible, springlike device that is used to support arterial walls after angioplasty, and can be used to treat artery blockages in the kidney, legs, groin and most commonly, the heart. The stent rides in on a balloon, which is filled with dye to provide visual contrast. Once the stent is in place, the balloon is deflated and removed, leaving the stent behind.

Eisenhower's Cardiac Catheterization Lab also uses special stents called drug-eluting stents, part of the newest treatment for coronary artery narrowing. Also known as "coated" or "medicated" stents, a drugeluting stent has been coated with a pharmacologic agent (drug) that is known to interfere with the process of restenosis (reblocking). The current data demonstrates that the drug-eluting stents are extremely successful in reducing restenosis.

"The restenosis rate has dropped from over 20 percent to less than five percent nationwide since incorporating the drug-eluting stents," Hart says. "These are having a dramatic impact on patient care."

Approximately 2,400 patients come through the Eisenhower Cardiac Catheterization Lab each year, with more than 1,200 of them receiving some kind of interventional or emergency procedures.

During a heart attack, just how much difference does a minute make? "Time is muscle!" says Lynn Hart, RN, MSN, Administrative Director, Surgical Services, Critical Care, Emergency Department and Cardiac Catheterization Lab. "And, unfortunately, heart attacks tend not to wait for anyone."

Minutes matter, and that's why the dedicated and highly skilled team of registered nurses (RNs), lab technicians and cardiologist are available 24-hours-a-day, seven-days-a-week, including holidays. The team, which consists of five RNs and five Radiology Technologists (RTs), are all required to live within close proximity of the hospital, and work collaboratively with the emergency department to ensure critical diagnostic and interventional procedures are delivered in a timely manner, thus markedly improving patient outcomes.

Since the mid-to-late 1990s, the cath lab has improved patient outcomes so much so that they consistently reach their average "door-to-open vessel target" of 90 to 100 minutes, meaning that only approximately one-and-one-half hours elapse between the time a heart attack patient comes through the door of the lab or emergency department, to the time they are on the surgical table receiving life-saving treatment.

"It can be very challenging getting a call at three a.m. just when you've finished up a shift," says Steve Jones, Certified Radiology Technologist. "But then you're in your car heading over here, and once you're here, you see the gratitude in the patient's eyes — it's very, very rewarding. There aren't too many places in the hospital where you can say definitively that you saved a life."

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