

Appendix Recent Cardiac Program Articles

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**Dominican Hospital
Foundation.**
A Dignity Health Member

Thank you for your interest in learning more about the community impact of Dominican Hospital's cardiac program.

Enjoy the following articles that are extracted from the Focus on Health.

This magazine is published three times a year by Dominican's Communications & Marketing Department.

Featured Articles:

1. Heart Valve Replacement without Open Heart Surgery
2. 360 Degrees of Heart Health
3. Preventing a Silent Killer
4. Life Saving Technology on the Move
5. Back in Action after a Heart Attack
6. Dominican Hospital Receives National Recognition for Heart Bypass Surgery
7. Dignity Health Dominican Hospital is Known for Excellence in Care, Safety, and Service
8. Seeing the Future

Heart Valve Replacement without Open Heart Surgery

Transcatheter Aortic Valve Replacement is now approved for a broader class of patients

It sounds futuristic: heart valve replacement without surgery, followed by a rapid recovery lasting mere days. But in fact, Transcatheter Aortic Valve Replacement (TAVR) has been available for two years to a small percentage of cardiac patients at Dominican Hospital, and a recent move by the FDA has paved the way for more patients to benefit from the groundbreaking, non-invasive procedure.

As of August 2016, patients who are considered an “intermediate risk” for traditional open-heart surgery may be considered for TAVR. Previously, only “high-risk” patients—those too elderly, frail, or ill to safely undergo open-heart surgery—were eligible.

“It increases the pool of patients who qualify,” says interventional cardiologist Neil Sawhney, MD.

Unlike surgical valve replacement, which requires opening the patient's chest, TAVR requires only a small incision. During TAVR, a balloon and a collapsible stent are fed intravenously, via a catheter inserted at the upper thigh or the chest, to the site of the faulty valve. Once in position, the balloon is inflated to open the stent.

“We do it with people under local an-



esthesia,” says Dr. Sawhney. “We don’t even put them on a breathing machine, much less open their chest. The recovery goes from being months to days.”

Dr. Sawhney and cardiothoracic surgeon Bilal Shafi, MD, caution against expecting TAVR to become commonplace for younger heart patients in the near future, because more research needs to be done.

“Surgical aortic valve replacement is still the standard of care,” says Dr. Shafi.

Still, TAVR is inching from being a tool of last resort to one that may be used more often.

“We keep getting better,” says Sawhney. “This is what happens with all technology.”

The TAVR team at Dominican Hospital, led by cardiothoracic surgeon Bilal Shafi, MD, (front, left) and cardiologist Neil Sawhney, MD, (front, right) shrinks valve replacement recovery time from months to days.

“We don't put [TAVR patients] on a breathing machine, much less open their chest. The recovery goes from being months to days.”

—Dr. Sawhney

For more information about TAVR, and to watch a video about how it works, visit dignity-health.org/dominican/hearts.

360 Degrees of Heart Health

From prevention to recovery, Dominican offers an array of services to cardiac patients



A heart attack is the last thing anyone wants. But if it's going to happen, Santa Cruz County is a good place to be. As the county's designated heart attack receiving center, Dominican Hospital has world-class response times that are significantly faster than the national standard, says Director of Cardiovascular Services Sarah Edmundson: 48 to 50 minutes between time of patient arrival and opening of the blocked blood vessel. The national standard is 60 to 90 minutes.

"While all programs across the country have improved their response times recently, Dominican has been a leader in this performance for over 15 years," Edmundson says.

Dominican is a comprehensive cardiac care program, as committed to prevention and recovery as to emergency care. That means it offers a full complement of cardiac outpatient

Members of Dominican's award-winning cardiac team are as committed to prevention and recovery as they are to emergency care.

services and programs dedicated to education, early detection, and diagnosis, as well as management, rehabilitation, and support services.

In the "prevention" category, Dominican offers free screenings for early signs of heart disease (see sidebar on Dare to C.A.R.E., page 16), hypertension, and atrial fibrillation (irregular heartbeat). The hospital also offers health fairs free to the public (the next being the 9th Annual Health & Lifestyle Expo for Women on May 18, www.mysanta-cruzdoctor.org).

Diagnostic testing and urgent disease management are two other important pieces of the puzzle. The cardiac intervention team performs more than 1,300 cardiac catheterizations, includ-

ing 450 stent procedures each year. Patients at Dominican underwent more than 3,300 echocardiograms last year and more than 400 stress tests, Edmundson notes. These tests address potentially life threatening cardiac problems that need timely interpretation and clinical action.

As part of the hospital's congestive heart failure treatment program, patients and their families can learn strategies for symptom management, while the hospital's chronic disease management support group provides a place for patients to share common concerns like access to affordable medications.

As for recovery, Edmundson notes that all cardiac surgery patients are referred to Dominican's cardiac rehabilitation program (see sidebar, page 19), where they receive information about nutrition as well as help establishing healthy levels of physical activity.

"Cardiac rehab gets them on their way to making healthy lifestyle changes and taking proper care of their heart," Edmundson says. "It's about health care management, of course, but it's also about happiness and quality of life."

Preventing a Silent Killer

The 20-minute screening that can detect early signs of vascular disease

Cardiovascular disease is the leading cause of death in the United States, particularly among men, and kills more than 600,000 Americans each year.

Because those with cardiovascular disease may exhibit no symptoms, it can go undiagnosed until an advanced stage that can result in heart attack, stroke, amputations, and death.

Dare to C.A.R.E. is a free and non-invasive screening program offered by Dominican Hospital and the Dominican Hospital Foundation that requires no preparation, takes only 20 minutes, and is a strong first step toward prevention of vascular disease.

The Dare to C.A.R.E. screening process uses ultrasound technology to

check the carotid artery, the abdominal aorta, and blood flow in the extremities. At the appointment, a sonographer takes measurements in a patient's neck, abdomen, and legs (patients only need to remove their shoes).

Immediately after the screening, results are shared with the patient and Dominican Hospital's cardiothoracic team. A letter is also sent to the patient and his or her primary care physician. If the screening uncovers disease, the patient and doctors can put together a treatment plan to resolve issues that might otherwise have resulted in serious problems.

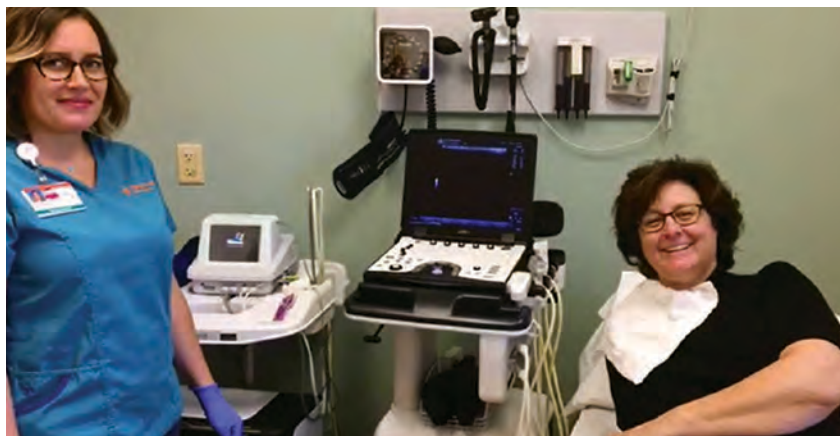
The program is open to anyone over age 60; to community members over

50 with specific risk factors (smoking, diabetes, high blood pressure, high cholesterol, family history of heart disease, lack of physical activity, and obesity); and to those over 40 with diabetes.

Amanda Henderson, Dominican's director of imaging services, says it is an excellent prevention tool because the screening is so easy.

"You don't need to fast, there's no need for prep, and the screening is good for five years," Henderson says. "It really is time well spent."

To learn more and to schedule your free screening, call 831.462.7788 or visit www.dignityhealth.org/dominican/daretocare



Those with cardiovascular disease can exhibit no symptoms, which is why screening is so important. Here, Dominican Hospital President Nanette Mickiewicz, MD, right, demonstrates how easy it is to get a free Dare to C.A.R.E. vascular screening.

Life Saving Technology on the Move

Dominican's portable life support machine buys precious time

Good things come in small packages. Dignity Health Dominican Hospital's portable life support machine gives doctors a chance to perform lifesaving procedures in the event of cardiac or pulmonary failure.

Weighing just 22 pounds and roughly the size of a film projector, the extracorporeal life support (ECLS) machine, funded by the Dominican Hospital Foundation, can temporarily take over for the heart and/or lungs, oxygenating and removing carbon dioxide from the blood before returning it to the body. It can do this for minutes, hours, or even days, supporting patients during emergency surgery or while in recovery. The machine's small size means it can be deployed wherever it is needed, including during transport to and from other hospitals.

"It basically buys us time to fix the underlying problem," says cardiothoracic surgeon Bilal Shafi, MD, medical director of the ECLS program. "It also provides a safety net for us to do high-risk open heart surgery."



Dominican's cardiac team can quickly and easily move the ECMO portable life support machine around the hospital, and to and from other hospitals.

Cardiovascular Clinical Educator and ECLS Coordinator Marsha Moreno says 20 patients have been supported since the program began in mid-2015. Several of them likely would not otherwise have survived.

“The fact that we’ve been able to support these people who were in full cardiac arrest or respiratory failure and provide them the opportunity for a full recovery speaks to the innovation of our cardiac services program.”

—Marsha Moreno

Back in Action after a Heart Event

Cardiac rehab classes help heart patients rebuild physical and emotional health

Resuming normal activity after a heart attack or surgery can be daunting. Dominican Hospital's cardiac rehab classes provide a bridge to independence through clinically supervised exercises and individually tailored plans.

At the hospital's Cardiac Risk Reduction center, patients wear

heart monitors during group classes and follow workouts designed specially for them by a clinical exercise physiologist or registered nurse. "If something abnormal comes up, we're right there to catch it," says Lifestyle Management program director Eric Hand.

Most importantly, the center offers a wide range of exercise choices for

individuals, from seated steppers to treadmills to elliptical trainers.

In addition to two or three hour-long classes per week, patients are invited to attend educational sessions on topics including relaxation techniques, healthy eating, and the emotional impact of heart disease.

"We're here to empower individuals to take control of their health," says Mr. Hand. "Having a heart event can be very disempowering. People can feel their body let them down. So we're letting them see that, yes, this happened, but you can still live a full, active life."

"We're here to empower individuals to take control of their health."

— Eric Hand



Cardiac patients, like Rob Twombly, can speed physical and emotional recovery after a heart event with a customized rehabilitation program through Dominican Hospital.

Dominican Hospital Receives National Recognition for Heart Bypass Surgery

Dominican is one of only 82 medical facilities nationwide recognized with the highest possible rating for clinical excellence in coronary artery bypass surgery

Dominican Hospital's heart surgery patients can rest assured that they are in the best hands.

Dominican has earned a three-star rating, the highest designation possible, for the quality of its coronary artery bypass surgery (CABG) from The Society of Thoracic Surgeons (STS).

"Dominican Hospital's heart and vascular program delivers unsurpassed cardiac care to our patients, right here in our community," said Dominican Hospital President Nanette Mickiewicz, MD. "The Society of Thoracic Surgeons is considered one of the highest standards by which to evaluate cardiac surgery programs, and this recognition underscores the excellence of our surgical team."

The designation is the result of a comprehensive rating system that compares the quality of cardiac surgery programs in the majority of hospitals across the nation. The STS Adult Cardiac Surgery Database (ACSD) gathers information from more than 90 percent of the facilities that perform adult cardiac surgery in

the United States. Of the 859 ACSD participants included in the most recent reporting period from July 2015 through June 2016 for isolated CABG, just 82 received a three-star rating.

"Dominican Hospital's cardiac program is the most decorated in the Monterey Bay area, and treats the most complex cases," said Bilal Shafi, MD, cardiothoracic surgeon. "We deliver a comprehensive approach to care that leads to the best outcomes for our patients."

For more information about Dominican's cardiac program, call 831.462.7243 or visit dignityhealth.org/dominican/hearts.



Dignity Health Dominican Hospital is Known for Excellence in Care, Safety, and Service

Healthgrades 2016 Report to the Nation:

- One of America's 100 Best Hospitals for Coronary Intervention
- Among the top 10 Percent of Hospitals for Cardiac Surgery
- Among the top 10 Percent of hospitals for Patient Safety
- Five Star Recipient for:
 - Coronary Bypass Surgery
 - Coronary Intervention Procedures



Listed as a Top U.S. Hospital by the Leapfrog Group with an "A" Safety Grade



Recognized by the American Heart Association for Heart Failure Quality Measures Achievements



Recognized as a Top Hospital for Open Heart Surgery by the Society for Thoracic Surgeons



Recognized by Blue Shield of California for quality in Cardiac Care

With and for the Community

Seeing the Future

Virtual reality helps Dominican's Cardiac Hybrid Operating Suite take shape



A virtual reality rendering of the hybrid operating room.

“The Cardiac Hybrid Operating Suite is a critical part of our commitment to providing innovative, leading-edge cardiovascular services to the people of Santa Cruz County,” — Sarah Edmundson, Dominican Hospital director of cardiovascular services

Interventional cardiologist Neil Sawhney, MD, stands in a room at Dominican Hospital, looking through a pair of high tech goggles. The room is nearly empty, yet he sees the general layout, flow of people, and location of equipment that will make up the hospital's advanced Cardiac Hybrid Operating Suite in the not-too-distant future.

The suite's architects are using VR to give doctors who will operate there an opportunity to visualize the space while it is in the planning stages. Based on their extensive experience, the

doctors' recommendations will help ensure that the room is designed and built to meet their needs and the needs of their surgical teams.

"The Cardiac Hybrid Operating Suite is a critical part of our commitment to providing innovative, leading-edge cardiovascular services to the people of Santa Cruz County," says Sarah Edmundson, Dominican's director of cardiovascular services. "When it is finished, our cardiac team will be able to perform more advanced interventions and minimally invasive techniques."

Dr. Sawhney's "tour" of the suite before it exists came courtesy of virtual reality (VR) technology. Also participating in the VR tour was cardiovascular surgeon Bilal Shafi, MD. The physicians work together on cardiac stenting and valve procedures at Dominican.

Involving the doctors in the early stages of planning can also help avoid the possibility of expensive and time consuming changes later in the process. Construction of the Cardiac Hybrid Operating Suite, funded by the Dominican Hospital Foundation, began in late February.

"A hybrid operating room is designed to function as a traditional operating room for major cardiac surgery and as an interventional suite," explains Elizabeth Sweeney-Villavicencio, Dominican's director of surgical services. "For example, it allows the interventionalist to first try the least invasive approach and then, if necessary, switch to open surgery."

This concept requires more equipment in one room than a traditional operating room, and much of it has to be built into the floor and walls. Planning and designing an advanced Cardiac Hybrid Operating Suite is complex. Virtual reality is helping Dominican complete the process more effectively and efficiently.



Cardiologist Neil Sawhney, MD, receiving a virtual tour of Dominican's forthcoming Cardiac Hybrid Operating Suite.

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