HealthGrades has ranked The Valley Hospital in the top 10 percent in the nation for Cardiac Surgery.

HealthGrades has ranked The Valley Hospital in the top 5 percent in the nation for overall Cardiac Services.

Valley has received 2010 Excellence Awards in Cardiac Surgery, Cardiac Care, and Coronary Intervention.

Valley has earned Disease-Specific Care Certification — the Gold Seal of Approval — from The Joint Commission for the care of patients with heart failure.

Valley’s Cardiac Surgery program has been consistently recognized with a three-star rating — the highest possible recognition – by The Society of Thoracic Surgeons for quality and clinical excellence.

Valley has earned Disease-Specific Care Certification — the Gold Seal of Approval — from The Joint Commission for the care of patients with heart failure.

Valley has earned a prestigious five-star rating from HealthGrades for the treatment of heart attack and heart failure, overall cardiovascular, cardiology services, coronary bypass surgery, valve replacement surgery, and coronary intervention procedures.

Valley is a two-time recipient of the prestigious Magnet Award for Nursing Excellence from the American Nurses Credentialing Center.

Valley’s Intensive Care, Intermediate Care, and Cardiac Surgery Intensive Care Units have each received the Beacon Award for Critical Care Excellence, from the American Association of Critical Care Nurses.

A special thank you to Dorothy Capone, Linda Pulver and Joann Scirocco for their help in compiling the data.

Publications in Peer review Journals (2008-2010)

Spontaneous rupture of a non-aneurysmatic ascending thoracic aorta.

Cardiogenic shock due to partial occlusion of the left coronary ostium in infective endocarditis: a case report.

Acute Mitral Regurgitation Requiring Urgent Surgery because of Chordal Ruptures after Extrime Physical Exercise: Case Report.


Abstracts presented in major cardiothoracic surgery meetings (2007-2010)

Active endocarditis: a surgical alternative using a stentless porcine valve.
Heart Valve Summit of the American College of Cardiology, Boston, June 2007.

Safety and effectiveness of a novel surgical technique to ligate the left atrial appendage. Long-term Follow up.
International Society of Minimal Invasive Cardiothoracic Surgery annual meeting, Boston, June 2008.


Implementing a Cardiac Prevention Program in Women with a Dollar and a Dream Preventive Cardiac Nursing Association.
Chicago, April 2010.
Dear Colleague,

The Valley Heart and Vascular Institute is pleased to share with you the fourth edition of our Outcomes Report. For the first time we have included the results achieved by our cardiology, electrophysiology, and vascular colleagues.

The key to success in the process of delivering efficient care is the integration of services. A close collaboration between different specialties treating similar pathological entities leads to the best results.

In this report you will find four consecutive years of cardiac surgery data. We believe this timeframe reflects the continuity of care we provide for our patients at the Institute, and at the same time, offers a larger patient population from which to evaluate our results.

Our commitment to excellence has been recognized by The Society of Thoracic Surgeons. We have received the highest rating six consecutive times, positioning us among the top 12% of surgical programs in the nation.

We are grateful for your support and remain committed to providing you and your patients with the best possible outcomes.

Alex Zapolanski, M.D., F.A.C.C., F.A.C.S.
Director of Cardiac Surgery, The Valley Heart and Vascular Institute
Clinical Professor of Surgery, College of Physicians & Surgeons, Columbia University
The specialty of cardiac surgery has been at the forefront of documenting results. Our field provides a unique opportunity to assess performance. The Society of Thoracic Surgeons (STS) has developed a database that collects surgical demographics and results. It also uses a methodology to adjust for case complexity. These statistical techniques, while not perfect, attempt to compensate for the difficulty of assessing the risk of different groups of patients. We use these national standards to evaluate our results.

Based on past surgical experience, patients with a specific pathological process have an “expected” result from a heart operation. The “observed” result from any type of surgery can then be compared to the expected result. A ratio is calculated. Anything equal to 1 is satisfactory. A ratio less than 1 exceeds expectations.

Improvements in surgical techniques and technological advances have contributed to enhanced results even with increased patient complexity. Morbidity and mortality continue to decrease, creating new standards to strive for.

We encourage you to review the enclosed material and keep it handy for reference. Comparative data has been obtained from the 2009 Fall Harvest of The Society of Thoracic Surgeons.

“Program Volume and Performance”

The cardiac surgery program performed 2,052 procedures over a four-year period (1/2006 to 12/2009). The management of cardiac disease is in constant evolution. Controversy still remains regarding therapy for certain subsets of patients where different approaches seem equivalent. Referrals for surgical management are changing. Fewer patients with coronary disease are considered for surgery due to the effectiveness of medical management and percutaneous interventions. Yet, evidence has surfaced that patients with mitral regurgitation and aortic stenosis should be considered for surgical correction prior to ventricular deterioration. In this context, The Valley Heart and Vascular Institute performs a higher percentage of valvular and other complex procedures than The Society of Thoracic Surgeons’ average.

F O R  E X A M P L E

<table>
<thead>
<tr>
<th>Procedure Category</th>
<th>Number of Procedures</th>
</tr>
</thead>
<tbody>
<tr>
<td>Additional Valve</td>
<td>134</td>
</tr>
<tr>
<td>MV Replacement + CABG</td>
<td>86</td>
</tr>
<tr>
<td>MV Replacement</td>
<td>134</td>
</tr>
<tr>
<td>MV Repair + CABG</td>
<td>216</td>
</tr>
<tr>
<td>MV Repair</td>
<td>195</td>
</tr>
<tr>
<td>Re-op CABG</td>
<td>37</td>
</tr>
<tr>
<td>Primary CABG</td>
<td>1,056</td>
</tr>
</tbody>
</table>

73 Others 114 Aortic Surgery 33 MV Replacement + CABG 41 MV Replacement 86 MV Repair + CABG 67 MV Repair 216 AVR + CABG 195 AVR 37 Re-op CABG
MAJOR PROCEDURES MORTALITY

<table>
<thead>
<tr>
<th>Year</th>
<th>VHVI</th>
<th>STS</th>
<th>N.J.</th>
<th>LG</th>
<th>VHVI</th>
<th>STS</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>1.8%</td>
<td>2.5%</td>
<td>1.2%</td>
<td>1.48%</td>
<td>1.48%</td>
<td>2.4%</td>
</tr>
<tr>
<td>2007</td>
<td>1.7%</td>
<td>2.5%</td>
<td>1.2%</td>
<td>1.48%</td>
<td>1.48%</td>
<td>2.4%</td>
</tr>
<tr>
<td>2008</td>
<td>1.6%</td>
<td>2.6%</td>
<td>1.2%</td>
<td>1.48%</td>
<td>1.48%</td>
<td>2.4%</td>
</tr>
<tr>
<td>2009</td>
<td>2.6%</td>
<td>2.6%</td>
<td>2.6%</td>
<td>2.5%</td>
<td>2.5%</td>
<td>2.4%</td>
</tr>
</tbody>
</table>

These numbers reflect patients operated on in 2009. The Valley Heart and Vascular Institute treats a large number of patients of advanced age. In 2009, the number of patients over the age of 80 increased from 19% to 21% of the total population, an increase of 2%. As risk increases with age, modern techniques allow us to offer complex procedures to this patient population.

MORTALITY RELATED TO AGE

The key to success in the process of delivering efficient care is the integration of services. A close collaboration between different specialties treating similar pathological entities leads to the best results.

The Institute’s Physicians and Nurse Practitioners

The Valley Heart and Vascular Institute is fortunate to have a dedicated team of board certified surgeons and nurse practitioners who possess extensive knowledge and the advanced skills necessary to expertly care for the medical and psycho-social needs of our cardiothoracic surgery patients.

This team works to manage patients before and after surgery. Together, they promote a positive healing environment for patients and their families throughout the continuum of care, including pre-hospitalization and intensive care stay through discharge. This comprehensive approach blends intellect and compassion, resulting in the highest quality of care and patient satisfaction.

THE INSTITUTE’S PHYSICIANS AND NURSE PRACTITIONERS

From left to right: Mariano Brizzio, M.D.; Alex Zapolanski, M.D., F.A.C.C.; Jason Sperling, M.D., F.A.C.S.; and Bruce Mindich, M.D., F.A.C.S., Emeritus Medical Staff

From left to right: Andrea Storper, ANP-BC; Mary C. Collins, ACNP-BC; Linda Romeo, ANP-BC; Elaine Tormey, ACNP-BC, and Kimberly Pryslak, ACNP-BC. Missing from the picture are Carrole Dorcent, ACNP-BC, Dee Dubose, ACNP-BC, Jeanne Hoare, FNP-BC, and Denise Goldstein, ACNP-BC.

“The key to success in the process of delivering efficient care is the integration of services. A close collaboration between different specialties treating similar pathological entities leads to the best results.”

“From left to right:” Andrea Storper, ANP-BC; Mary C. Collins, ACNP-BC; Linda Romeo, ANP-BC; Elaine Tormey, ACNP-BC, and Kimberly Pryslak, ACNP-BC. Missing from the picture are Carrole Dorcent, ACNP-BC, Dee Dubose, ACNP-BC, Jeanne Hoare, FNP-BC, and Denise Goldstein, ACNP-BC.
GLUCOSE CONTROL IN CARDIAC SURGERY PATIENTS

Intra-operative and post-operative control of blood sugar has been shown to improve results. The Valley Heart and Vascular Institute team strictly adheres to protocols to achieve these results. The chart reflects results for 2009.

STERNAL WOUND INFECTIONS

The incidence of deep sternal wound infections has been below the STS national average. Glucose control has contributed to the avoidance of this complication. In addition, the limited number of surgeons involved in patient care contributes to a consistent approach in surgical techniques that reduce risk.

CORONARY DISEASE

The coronary bypass operation was developed more than 40 years ago. Over the past decade the national mortality has decreased progressively. We believe that evaluating the results of coronary surgery using the single end point of mortality is not sufficient. In addition to achieving a better than expected operative mortality, we have focused on a number of other elements to assess the quality of our coronary bypass operations.

The following data reflect:
- extensive revascularizations,
- higher utilization of arterial grafts,
- less blood utilization, and
- minimal renal complications.

The following data reflect:
- 68% VHVI
- 75% VHVI
- 81.7% VHVI
- 92% VHVI

OFF-PUMP SURGERY ACTIVITY

Since the inception of the OPCAB technique, Valley Heart and Vascular Institute surgeons have performed more than 4,000 procedures. The majority of our patients are operated on without cardiopulmonary bypass. Our data, as well as many publications reflect the benefit of this technique in selected patients, particularly those at high risk of predicted mortality.

Off-pump techniques benefit men and women and narrow the disparity in mortality after coronary bypass grafting.*

SEVERITY OF RISK

It should be noted that in the context of improvements in medical, pharmacological, and percutaneous interventional management of patients with coronary disease, a greater percentage of patients referred to surgery have left main trunk stenosis. After a steady increase for several years, since 2007, the incidence of left main has leveled off.

Comparison of the Severity of Risk of Valley Hospital Patients versus STS Coronary Artery Bypass Patients

Triple Vessel Disease

- Valley Hospital: 86.9%
- LG: 74.6%
- STS: 74.8%

Previous Cardiac Surgery

- Valley Hospital: 10.3%
- LG: 5.5%
- STS: 5.1%

SEVERITY OF RISK

左主干疾病

- Valley Hospital: 45.6%
- LG: 30.5%
- STS: 37.3%

患者年龄在65岁以上的患者

- Valley Hospital: 61%
- LG: 53.3%
- STS: 52.9%

左主干病变发病率

2009年的手术数量为466例，涉及左主干病变的患者。2009年，LMCA的死亡率为0，将整个病例组的死亡率降低到0.8%。这个数据低于Syntax试验的死亡率，并为管理这类解剖学病变的患者设定了一个标准。

左主干疾病的外科治疗

大多数患者在没有心肺旁路的情况下进行手术。

比较山谷医院患者的严重风险程度与STS冠状动脉搭桥术患者的严重风险程度

左主干疾病在手术人群中

高发生率的左主干病变反映了在严重程度上的增加。
RESULTS AND QUALITY MEASURES

Observed to Expected Mortality Ratio

Isolated CABG refers to patients undergoing coronary bypass without any other procedures. Valley Heart and Vascular Institute surgeons performed 1093 isolated CABGs in the past four years with a combined mortality of 0.8% (2006 to 2009).

In 2009, mortality was zero.

RE-OPERATIVE MORTALITY FOR CORONARY SURGERY

Re-operative coronary surgery carries a higher mortality than primary procedures. For four consecutive years, mortality at Valley has been zero.

ARTERIAL GRAFT UTILIZATION

Arterial grafts improve long-term results by reducing risk of re-operation and reducing risk of cardiac events. The Society of Thoracic Surgeons considers the use of the internal mammary artery (IMA) as a quality indicator in coronary surgery. Surgeons at The Valley Heart and Vascular Institute use both IMAs more frequently than the national average.
The Cardiac Surgery team at The Valley Heart and Vascular Institute performs more grafts per patient than other hospitals across the nation. Off-pump techniques do not compromise the extensiveness and complexity of the operation. Complete revascularization improves long-term results.

**COMPLETENESS OF REvascularization**

(number of grafts per patient)

The Cardiac Surgery team at The Valley Heart and Vascular Institute performs more grafts per patient than other hospitals across the nation. Off-pump techniques do not compromise the extensiveness and complexity of the operation. Complete revascularization improves long-term results.

**BLOOD UTILIZATION**

The Valley Heart and Vascular Institute surgical team is continually striving to minimize the use of blood during coronary artery bypass graft surgery. The following results reflect improvements over the past three years. In 2009, 67% of patients had no transfusions at all.

**VHVI Blood Utilization Trends**

Srinivasa Edara, M.D.,
Director, Cardiac Surgery Intensive Care Unit,
is directly involved in the medical management of all cardiac surgery patients and assists families while their loved one is in the hospital.
The occurrence of renal failure in coronary surgery in our practice has remained low. We attribute these results to a reduction in our patients’ exposure to cardiopulmonary bypass. Attention to protecting the heart when the operation is conducted on bypass has led to better cardiac performance with a renal-protective effect.

ATRIAL FIBRILLATION

Atrial fibrillation remains a common event after cardiac bypass surgery. At The Valley Heart and Vascular Institute, we routinely eliminate the left atrial appendage in an attempt to reduce the risk of clot formation and potential embolization.

ENDOSCOPIC VEIN HARVESTING

Endoscopic vein harvesting has become the standard of care. Patients operated on at The Valley Heart and Vascular Institute benefit routinely from this technique. Endoscopic harvesting improves cosmesis, reduces pain, and has virtually eliminated the risk of infections in the lower extremities.

A film showing a videoscopic dissection and extraction of the vein through one small incision near the knee can be seen at www.valleycolumbiaheartcenter.com. Click on Procedures and Techniques, then Endoscopic Vein Harvesting.

Percentage Of Veins Harvested Endoscopically

“Endoscopic harvesting improves cosmesis, reduces pain, and has virtually eliminated the risk of infections in the lower extremities.”
The care provided in our comprehensive cardiac rehabilitation program presents patients and their families with guidelines for managing care after discharge, including activities of daily living, diet modification, psycho-social concerns, medications, and risk factor reduction.

The Cardiac Rehabilitation team, pictured here, is integral to our Center’s successful outcomes.

CARDIAC REHABILITATION

The care provided in our comprehensive cardiac rehabilitation program presents patients and their families with guidelines for managing care after discharge, including activities of daily living, diet modification, psycho-social concerns, medications, and risk factor reduction.

CARDIAC SURGERY INTENSIVE CARE

Our CSICU is comprised of a team of professionals dedicated to caring for our cardiac patients immediately following surgery. With experience and special training, this team is one of the key reasons for our Institute’s successful outcomes.

The Cardiac Surgery Intensive Care team, pictured here, is integral to our Center’s successful outcomes.

CENTER FOR HEART VALVE DISEASE

Valvular surgery continues to represent a significant percentage of The Valley Heart and Vascular Institute’s total volume of surgery. Over the last four years, 854 valve procedures were performed at The Valley Heart and Vascular Institute.

Valvular Heart Surgery

- 67 MV Repair
- 216 AVR + CABG
- 86 MV Repair + CABG
- 41 MV Replacement
- 33 MV Replacement + CABG
- 134 Multiple Valve + Other
- 82 Valve + Aortic Surgery
- 195 AVR
- 8 MV Replacement
- 2 MV Replacement + CABG
- 6 MV Repair + CABG
- 1 MV Replacement
- 1 MV Replacement + CABG
- 1 Valve + Other
- 1 Aortic Surgery
- 1 Other
Since 1993, 921 mitral valves have been repaired at The Valley Heart and Vascular Institute. The great majority of patients with myxomatous and ischemic disease receive a valve repair. Mitral valve repair provides patients with better outcomes in degenerative and ischemic disease. In the period between 1/2006 and 12/2009, we performed 208 mitral valve repairs in three categories – isolated mitral valves, mitral valve with coronary bypass, and multiple valve procedures.

**MITRAL VALVE REPAIR AND REPLACEMENT**

<table>
<thead>
<tr>
<th>Year</th>
<th>VHVI</th>
<th>STS</th>
<th>LG</th>
<th>VHVI</th>
<th>STS</th>
<th>LG</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2009</td>
<td>4.8%</td>
<td>5.4%</td>
<td>5.4%</td>
<td>4%</td>
<td>1.2%</td>
<td>1.2%</td>
</tr>
<tr>
<td>2009</td>
<td>0%</td>
<td>1%</td>
<td>1%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

Mortality at Valley was 0% for four years.

**AVR + CABG Mortality**

<table>
<thead>
<tr>
<th>Year</th>
<th>VHVI</th>
<th>STS</th>
<th>LG</th>
<th>VHVI</th>
<th>STS</th>
<th>LG</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006-2009</td>
<td>5.0%</td>
<td>0%</td>
<td>5.0%</td>
<td>5.0%</td>
<td>2.3%</td>
<td>2.3%</td>
</tr>
<tr>
<td>2009</td>
<td>4.8%</td>
<td>1%</td>
<td>4.8%</td>
<td>4.8%</td>
<td>3.1%</td>
<td>3.1%</td>
</tr>
</tbody>
</table>

Mortality at Valley was 0% for four years. In 2009, 39 patients underwent multiple valve surgery with a mortality rate of 2.5%.

**MULTIPLE VALVE SURGERY**

The number of patients requiring multiple valve surgery has increased over the past four years. In the period 1/2006 – 12/2009, 125 patients required this complex procedure. In 2009, 39 patients underwent multiple valve surgery with a mortality rate of 2.5%.

Valley’s specially trained team of Cardiac Surgery Operating Room nurses and techs work closely with physicians, physician assistants, perfusionists, and nurse practitioners to ensure the best possible surgical experience for a patient and their family. Members of the team pictured here, from left to right, include: James Feliciano, OR Tech; Edcelyn Deang Ignacio, R.N.; Pavel Mironychev, OR Tech; Cristina Biloy, R.N.; Rosa Linda Schankereli, R.N.; Saw Lee Kaminsky, R.N.; Kyle Reed Duncan, OR Tech; and Annabelle Valdez, R.N. Not shown: Mary Mills, R.N. Right (insert): Alicia Smith, R.N, Cardiothoracic Operating Room Coordinator.
“There is nothing that makes me more proud than singing the national anthem before a New Jersey Jackals baseball game,” says Vincent Porta, Wood-Ridge resident, husband and father. But a sudden cardiac emergency made Vincent feel as if he would never hear “Play Ball” again. “I was at work and began to feel stomach discomfort,” recalls Vinny. “I went to the restroom and noticed my face was bright red. I had been battling high blood pressure for several years but after losing 90 pounds last year for my son Michael’s wedding, I thought I was in relatively good health.”

By the time he walked into his office down the hall and sat down, he was cold, clammy, and sweating profusely. “When I felt my left leg go numb, I started to call for an ambulance but couldn’t get the words out so I asked one of my employees to talk,” he says. Vincent was rushed to The Valley Hospital Emergency Department. As Valley staff raced Vincent to the cardiac surgery operating room, the aortic dissection ruptured. Blood escaped from his aorta and flooded his pericardium, and his heart stopped. Dr. Zapolanski opened Vinny’s chest and massaged his heart to get it beating again. Dr. Zapolanski and cardiac surgeon Mariano Brizzio, M.D., then replaced about four inches of Vincent’s damaged aorta with a Dacron graft.

“Mr. Porta was saved because of procedures we have in place in our Emergency Department and The Valley Heart and Vascular Institute to diagnose cardiac emergencies quickly and move patients expediently to surgery,” says Dr. Alex Zapolanski. “Within 36 minutes of Mr. Porta’s arriving in our ED, I had begun surgery.”

Following the surgery, Vinny spent four days in intensive care and two days in a cardiac step-down unit at Valley before he was discharged to his home. For four weeks, he underwent cardiac and physical rehabilitation with a Valley Home Care therapist and then began cardiac rehab classes at Valley three times each week. He must continue to see his Valley cardiologist, Michael Kesselbrenner, M.D., take his high blood pressure medication, and follow a low-cholesterol, no-salt diet.

“We will continue to monitor Mr. Porta because once one section of the aorta dissects, the rest can be compromised,” says Dr. Zapolanski.

“I can’t say enough about everyone at Valley,” says Vinny. “I owe a second chance at life, all because of the skill, expertise, and speed of the doctors and staff at Valley.”
Atrial Fibrillation (AFib) is a prevalent condition in the United States that increases with aging. AFib is associated with shorter life spans, a lifelong increased risk of adverse cardiac events including stroke and an overall significantly decreased quality of life. Depending on individual risk, Coumadin may be indicated for stroke prevention, albeit with a 1% annual risk of either a clinically significant bleeding or thrombotic event. Treatment of AFib ranges from catheter ablation in the Electrophysiology Lab, to open heart procedures that can treat the most difficult patient subsets. Surgeons at Valley Hospital are proficient in performing extensive bi-atrial Maze surgery (Cox-Maze III) as well as less invasive iterations of the procedure. We have access to the most up-to-date technologies for destroying or trapping AFib signals, including radiofrequency, cryothermy, and high-intensity focused ultrasound.

Over the next year, we hope to be able to offer patients the opportunity to enroll in a prospective database specifically geared towards patients who have advanced forms of AFib and are usually not offered an intervention. By objectively tracking our outcomes utilizing implantable loop recorders (ILRs), we will find the patient subsets that will benefit from aggressive treatment of their condition.

Coumadin reduces but does not eliminate stroke risk in AFib. Importantly, almost every patient undergoing heart surgery at Valley (and every patient undergoing an AFib procedure) has a structure called the left atrial appendage excluded from the heart. 80-90% of clot formations occur in the left atrial appendage. Therefore, we believe that patients are better protected when that appendage is eliminated.

Dissection of the aorta is one of the most catastrophic cardiovascular events. When aortic dissection involves the ascending aorta and emergency surgery is required, rapid and accurate diagnosis is imperative as delay leads to poor outcomes. Emergency Department physicians at Valley have a high level of accuracy at recognizing this entity. The presence of Computer Tomography equipment in the Emergency Department accelerates the diagnosis and improves surgical results.

The surgeons at The Valley Heart and Vascular Institute have performed 24 emergency ascending aortic dissections over the past four years, with only one fatality. This mortality rate of 4.1% compares favorably to the results of the International Registry of Aortic Dissections (IRAD) mortality rate.

Over the past few years, our program has been growing dramatically by way of a comprehensive management program encompassing both surgical and non-surgical treatment of thoracic aortic aneurysms. The main goal of this program is to prevent two deadly adverse events: rupture and dissection. This can only be accomplished by a combination of careful risk stratification, disease-specific counseling for patients and doctors, surveillance, and pre-emptive intervention. Since the International Registry for Type A Aortic Dissection (IRAD) has reported that dissection occurs at sizes less than 5.5 cm in 60% of the cases, and sizes less than 5 cm in 40% of cases, clearly the antiquated risk profiling based on size alone is seriously flawed. We use a more sophisticated risk stratification system, including the concept of relative aortic size to identify those patients that might benefit from pre-emptive surgery, before they manifest catastrophic aortic event.

Our operative techniques represent the most up-to-date strategies available today: valve sparing (David) procedures, aortic valve repair, hybrid open and endograft (stent) procedures, as well as classical operations, with aggressive utilization of neuroprotective maneuvers. Our surgical results continue to be superior to those of both the nation and the region.

The vast majority of patients will not meet criteria for pre-emptive surgery, and are enrolled into a sophisticated prospective database. With the help of our expert radiologists, we have created a novel surveillance system that is able to glean much more information from ECG-gated CT Angiograms than simply maximum diameter alone. The program’s goal is to become the “gatekeeper” for this serious disease entity in our extended community.

In the years 2006-2009, we performed 115 procedures with a mortality rate of 4.3% (including emergencies) compared to an 11% mortality rate of the STS.
MECHANICAL CARDIAC SUPPORT

The rare situation in which the heart’s pumping ability has become so acutely compromised that it cannot sustain normal body functions is called ‘cardiogenic shock.’ This can occur as a consequence of heart attack, valvular failure, viral infection, and rarely, after open heart surgery.

Valley Hospital is well-equipped to handle such a dire situation. When medicines or other support strategies fail, we have a range of ‘ventricular assist device’ (VADs) that can take over some or all of the pumping capacity of the heart.

One device, called Impella, is placed percutaneously through the groin using fluoroscopic and TEE guidance. This device is only 5mm in diameter yet can generate 2.5 liters/minute of blood flow (approximately 50% of the normal cardiac output). Impella is also used pre-emptively in the cath lab for high-risk stenting procedures.

We also have used Abiomed ‘Ventricles’, capable of supporting either or both the right and left ventricle, with full flow capabilities, in excess of 5 liters/minute. Such mechanical support has been used to allow the patient’s own heart muscle to recover, or as a bridge to heart transplantation when necessary.

The Impella 2.5 is a minimally invasive, catheter-based cardiac assist device.

CARDIAC SUPPORT

A perfusionist is a highly trained health professional who operates the heart-lung machine during cardiac surgery and other surgeries that require cardiopulmonary bypass. The perfusionist is a member of the cardiothoracic surgical team. The perfusionist’s main responsibility is to support the physiological and metabolic needs of the cardiac surgical patient so that the cardiac surgeon may operate on a still heart.

Valley’s team includes from left to right: Richard Schankereli, Shelia Rager, Chandra Pesaladinne, and Murlidhar Rao Vydyula. Not shown: Albert Leisz.

Transmyocardial Laser Revascularization (TMR)

Transmyocardial Laser Revascularization (TMR) is available at The Valley Hospital for patients with diffusely diseased coronary arteries that are not suitable for conventional coronary surgery. TMR is also used in conjunction with conventional surgery in areas of the heart where the coronary arteries are small or too diseased to accept a bypass.

While TMR has not been shown to prolong life, it helps to control angina, reduces re-admissions to the hospital, and can be a solution for patients with disabling angina who cannot be revascularized.
Valley's Congestive Heart Failure Program is a multidisciplinary program that incorporates the expertise of physicians, surgeons, nurse practitioners, nurses, pharmacists, dietitians, cardiac rehabilitation professionals, case management specialists, respiratory therapists, and home care staff. The program offers patient education and professional consultation.

The Heart Failure Program has been integrated with the hospital's cardiac surgery, interventional cardiology, electrophysiology, diagnostic imaging, and home care services to ensure heart failure patients access to existing evidence-based evaluations and treatments.

Technologies and procedures offered through Valley’s Heart Failure Program include:
- Cardiac MRI with MARISA™ capability,
- Ultrafiltration,
- Defibrillators and resynchronization,
- Ventricular remodeling surgery, and
- Left ventricular assist devices.

We have also developed strategies to improve surgical outcomes in patients with severely diminished left ventricular function (‘low-ejection fraction’ patients). The philosophy is based on minimizing or eliminating the duration of ‘down-time’ of the heart muscle during heart surgery.

Heart failure is one of the most prevalent conditions in clinical medicine. Five million people in the U.S. have heart failure, and it is estimated that 68% of these patients suffer from coronary disease. Yet, only 11% of all patients with ischemic cardiomyopathy undergo cardiac catheterization. In turn, only a fraction of heart failure patients can be treated with the many tools available today. Two thirds of patients with heart failure due to ischemic cardiomyopathy have recoverable myocardium and could be helped by surgery or percutaneous intervention.

At Valley MRI technology with special software – MARISA™ – allows us to identify patients that could benefit from available therapies.

“Five million people in the U.S. have heart failure, and it is estimated that 68% of these patients suffer from coronary disease.”
A wide variety of interventional treatment options are available from Valley's comprehensive interventional cardiology program. Interventional procedures are those in which catheters or other devices are inserted through blood vessels to diagnose and treat disease. Using a wide range of the most sophisticated technology available, from imaging equipment to implantable devices such as drug eluting stents, patients who come to Valley are offered state-of-the-art cardiac care in our high-risk Catheterization Laboratory. Among the many treatment options available are interventions for coronary artery disease, congenital abnormalities, heart failure, valvular heart disease, and carotid and peripheral disease.

For a referral to a Valley Hospital Interventional Cardiologist, call 1-800-VALLEY 1 (1-800-825-5391).
At The Valley Heart and Vascular Institute, a greater number of patients receive the necessary supplemental medicines, compared with the ACC-NDR.

Patients with acute myocardial infarctions who are managed with PCI have a lower complication rate compared to the national average.
Abdominal Aortic Aneurysms
An estimated 43,199 people die annually from aortic disease. This number rivals the number of people who die annually from breast cancer, homicides, pancreatic cancer, colon cancer, prostate cancer, and motor vehicle accidents.

Endovascular abdominal aortic aneurysm repair represents a minimally invasive approach to treating patients with aneurysms. Complications are lower across the board when compared with traditional open surgical repair. Even patients with ruptured aneurysms may be treated with endovascular stenting.

Cerebrovascular Disease
People with cerebrovascular disease are at increased risk of temporary or permanent stroke. In addition, carotid artery stenosis is a marker for increased risk of coronary artery disease and peripheral vascular disease. Treatment options for carotid artery stenosis include medical management or surgical intervention called carotid endarterectomy.

Survival for patients undergoing endovascular AAA repair: 99%
One of the best survival rates in the country.

30-day mortality for combined elective and emergency endovascular repair of abdominal aortic aneurysms between 2002 and 2009: 0.5%

In the period 2003 -2009, 396 total carotid endarterectomies were performed with a combined mortality and stroke rate of 0.5%. American Heart Association Guidelines for carotid endarterectomy: Asymptomatic patients: <3% combined morbidity/mortality; symptomatic patients: <6% combined morbidity/mortality.

Electrophysiology
Electrophysiology is a subspecialty of cardiology that examines the conduction system and electrical stability of the heart by recording and stimulating from within the cardiac chambers. It is one of the fastest growing areas in cardiology. Abnormal rhythms, formerly only treated by medications, can now be treated by sophisticated and highly specialized treatments, such as implantable devices and catheter ablation.

With the most sophisticated technology available in the field, Valley Hospital electrophysiologists take great pride in offering a full-range of the most effective treatments for a broad range of heart rhythm abnormalities.

For a referral to a Valley Hospital Electrophysiologist, call 1-800-VALLEY 1 (1-800-825-5391).

EP Lab Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>EPS</th>
<th>ICD</th>
<th>Div</th>
<th>Ablation</th>
<th>MFS</th>
<th>ITS</th>
<th>PPM (new)</th>
<th>Generator Change</th>
<th>Load or Pocket Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ablation in Cath Lab

<table>
<thead>
<tr>
<th>Year</th>
<th>Major Complication Rate</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2006-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.03%</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

EP Lab Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>EPS</th>
<th>ICD</th>
<th>Div</th>
<th>Ablation</th>
<th>MFS</th>
<th>ITS</th>
<th>PPM (new)</th>
<th>Generator Change</th>
<th>Load or Pocket Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cerebrovascular Disease
People with cerebrovascular disease are at increased risk of temporary or permanent stroke. In addition, carotid artery stenosis is a marker for increased risk of coronary artery disease and peripheral vascular disease. Treatment options for carotid artery stenosis include medical management or surgical intervention called carotid endarterectomy.

For a referral to a Valley Hospital Electrophysiologist, call 1-800-VALLEY 1 (1-800-825-5391).

EP Lab Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>EPS</th>
<th>ICD</th>
<th>Div</th>
<th>Ablation</th>
<th>MFS</th>
<th>ITS</th>
<th>PPM (new)</th>
<th>Generator Change</th>
<th>Load or Pocket Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Ablation in Cath Lab

<table>
<thead>
<tr>
<th>Year</th>
<th>Major Complication Rate</th>
<th>2006</th>
<th>2007</th>
<th>2008</th>
<th>2009</th>
<th>2006-2009</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0.03%</td>
<td>0%</td>
<td>5%</td>
<td>0%</td>
<td>0%</td>
<td>0%</td>
</tr>
</tbody>
</table>

EP Lab Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>EPS</th>
<th>ICD</th>
<th>Div</th>
<th>Ablation</th>
<th>MFS</th>
<th>ITS</th>
<th>PPM (new)</th>
<th>Generator Change</th>
<th>Load or Pocket Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Cerebrovascular Disease
People with cerebrovascular disease are at increased risk of temporary or permanent stroke. In addition, carotid artery stenosis is a marker for increased risk of coronary artery disease and peripheral vascular disease. Treatment options for carotid artery stenosis include medical management or surgical intervention called carotid endarterectomy.

For a referral to a Valley Hospital Electrophysiologist, call 1-800-VALLEY 1 (1-800-825-5391).

EP Lab Statistics

<table>
<thead>
<tr>
<th>Year</th>
<th>EPS</th>
<th>ICD</th>
<th>Div</th>
<th>Ablation</th>
<th>MFS</th>
<th>ITS</th>
<th>PPM (new)</th>
<th>Generator Change</th>
<th>Load or Pocket Revision</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
The Valley Heart and Vascular Institute

Clinical Trials

At The Valley Hospital we have a variety of ongoing clinical trials. Some of the trials currently taking place include studies to evaluate new drug-coated cardiac stents, new medications, new methods in cardiac surgery, combinations of medications, heart valves, a registry to monitor patients, and studies to evaluate the quality of life of patients who receive pacemakers.

For more information visit www.valleymedicine.com/cardiology.

Staff Biographies

Alex Zapolanski, M.D., F.A.C.C., F.A.C.S.
Director, Cardiac Surgery

Board Certification: American Board of Surgery, Diplomate, American Board of Thoracic Surgery, Diplomate, Cardiothoracic Surgery Program

Education: State University of New York at Buffalo, New York, NY; University of Virginia, Charlottesville, VA

Alex Zapolanski, M.D., F.A.C.C., F.A.C.S., is a Clinical Professor of Surgery at Columbia University College of Physicians & Surgeons. Throughout most of his 27-year career, he has been conducting clinically oriented research. He has become primarily in perfectioning minimally invasive techniques in valve surgery, coronary surgery, and atrial fibrillation surgery.

Dr. Zapolanski performs the full spectrum of cardiac procedures with special interest in extensive revascularization, thoracoabdominal aortic surgery, and surgical management of atrial fibrillation.

Dr. Zapolanski speaks English, Spanish, Italian, and French.

Jason S. Sperling, M.D., F.A.C.S.
Subspecialty Director, Thoracic Aortic Surgery and Surgical Atrial Fibrillation Program

Board Certification: American Board of Surgery, Diplomate, American Board of Thoracic Surgery, Diplomate, Cardiothoracic Surgery Program

Education: University of Miami, Miami, FL; Mount Sinai Hospital, New York, NY; Weill Cornell Medical College, New York, NY

Jason S. Sperling, M.D., F.A.C.S., is board certified in both general and cardiothoracic surgery. He has an academic appointment as Assistant Professor of Surgery at the University of Miami. His surgical training was completed at the University of Miami and the Cleveland Clinic.

Throughout his career, Dr. Zapolanski has participated in clinical research in the developing of an artificial heart, minimally invasive cardiovascular surgery, lung transplantation, new cardiac valve surgery, and new stem cell therapy.

Dr. Zapolanski has published more than 50 original research papers in peer-reviewed journals and presented at annual meetings of the American College of Cardiology, American Association of Thoracic Surgeons, and Society of Thoracic Surgeons.

Jason S. Sperling, M.D. speaks English, Spanish, and French.

Mariano E. Brizzio, M.D.
Certified in cardiovascular surgery by the Colegio Argentino de Cirujanos Cardiovasculares. Education: University of Buenos Aires School of Medicine, Buenos Aires, Argentina. Fellowship: Cesar Cardarelli Hospital, Buenos Aires, Argentina.

Mariano E. Brizzio, M.D., is a Clinical Instructor in Surgery at the University of Buenos Aires School of Medicine in Buenos Aires. He is skilled in all types of cardiothoracic surgery, with special interests in minimally invasive approaches, valve surgery, atrial fibrillation, blood preservation techniques, and heart failure.

Throughout his career, Dr. Brizzio has participated in clinical research in the developing of an artificial heart, minimally invasive cardiovascular surgery, lung transplantation, new cardiac valve surgery, and new stem cell therapy. He has served on the boards of several major surgical and medical societies and has been awarded numerous grants and honors.

Dr. Brizzio speaks English, Spanish, Italian, and French.
Bruce P. Mindich, M.D., F.A.C.S., Emeritus Medical Staff
Board Certification: American Board of Thoracic Surgery, Diplomate
Education: Syracuse University, Syracuse, NY; SUNY Downstate Medical Center, Brooklyn, NY
Residency: Mount Sinai Medical Center, New York, NY; Interfaith Medical Center-Brooklyn, Brooklyn, NY
Fellowships: Cleveland Clinic Foundation, Cleveland, OH; University of Alabama Medical Center, Birmingham, AL

Bruce P. Mindich, M.D., F.A.C.S., is a Clinical Professor of Surgery at Columbia University’s College of Physicians and Surgeons. Dr. Mindich served as Director of Cardiac Surgery at The Valley Hospital from the Cardiac Surgery program’s formation in 1988 to 2005. He has been the recipient of numerous awards and honors and has authored or co-authored scores of research papers, clinical book chapters, and clinical abstracts. He has presented at major clinical conferences across the country.

Dr. Mindich was instrumental in bringing the Off-Pump Coronary Artery Bypass procedure to Valley in 1999. The procedure allows a greater number of cardiac patients with heart disease to have bypass surgery since the surgeon can bypass as many as five or six vessels without relying on a heart-lung machine and heavy anesthesia.

Srinivasa Edara, M.D., F.C.C.P., Director, Cardiac Surgery ICU
Critical Care Medicine; Internal Medicine
Board Certification: Subspecialty Board of Critical Care, Diplomate; American Board of Internal Medicine, Diplomate; American Board of Sleep Medicine, Diplomate
Education: Guntur Medical College, India
Residency: Interfaith Medical Center-Brooklyn, Brooklyn, NY
Fellowships: Mount Sinai Medical Center, New York, NY; St. Luke’s-Roosevelt Hospital Center, New York, NY

Srinivasa Edara, M.D., F.C.C.P., is a member of the American College of Chest Physicians, Society of Critical Care Medicine, and American Society of Sleep Medicine. He is experienced in the management of medical problems and complications in cardiac surgery patients. He is published in well-known scientific journals.

His areas of interest include post-operative atrial fibrillation, perioperative glucose control, and minimizing perioperative blood products utilization.

Julia Karcher provides administrative leadership for the majority of Valley’s cardiac program, including cardiac surgery, interventional cardiology, noninvasive cardiology, and electrocardiography. She oversees services that include the Valley Heart and Vascular Institute, a 48-bed Critical Care Service comprising Coronary Care, Cardiac Surgery Intensive Care, Intensive Care, Intermediate Care, and a new four-bedded Neuroscience Unit; the Cardiac Research Department; the Cardiac Catheterization and Electrophysiology Suite that performs more than 5,000 procedures annually; and noninvasive cardiology.

Julia Karcher is a past recipient of Mount Sinai Hospital’s Presidential Service Award for her service to patient and physicians, which she received during her seven-year tenure in patient care services management. Julia has a B.A. from Barnard College of Columbia University, and an MBA from The Stern School of Business, New York University. She is also a member of the American College of Health Care Executives, and a winner of the YWCA TWIN Award.
HealthGrades has ranked The Valley Hospital in the top ten percent in the nation for Cardiac Surgery.

Valley has received 2010 Excellence Awards in Cardiac Surgery, Cardiac Care and Coronary Intervention.

Valley’s Cardiac Surgery program has been consistently recognized with a three-star rating – the highest possible recognition – by The Society for Thoracic Surgeons for quality and clinical excellence.

HealthGrades has ranked The Valley Hospital in the top 5 percent in the nation for overall Cardiac Services.

Valley has earned a prestigious five-star rating from HealthGrades for the treatment of heart attack and heart failure, overall cardiac service, cardiology services, coronary bypass surgery, valve replacement surgery, and coronary interventional procedures.

Valley is a two-time recipient of the prestigious Magrath Award for Nursing Excellence from the American Nurses’ Credentialing Center.

Valley is a two-time recipient of the prestigious Chambers Award for Outstanding Hospital Award for Service Excellence.

Valley’s Intensive Care, Intermediate Care, Coronary Care, and Cardiac Surgery Intensive Care Units have each received the Beacon Award for Critical Care Excellence, from the American Association of Critical Care Nurses.

Stroke Related Mortality in Coronary Surgery is reduced by Off Pump Approach

Brizzi, M.E., M.D.; Zapolanski, A., M.D.; Shaw, R.E., M.D.; Spertling, J.S., M.D.

Ann Thoracic Surg. 2010; January

Improving Outcomes in Cardiac Surgery

Valley is a two-time recipient of the prestigious Magrath Award for Nursing Excellence.

10 Award-Winning Reasons to Make The Valley Hospital Your Hospital for Cardiac Care

Publications in Peer review Journals (2008-2010)

Spontaneous rupture of a non-aneurysmatic ascending thoracic aorta.

Brizzio, M.E., M.D.; Zapolanski, A., M.D.; Kesselbrenner, M., M.D.

Journal of Cardiac Surg 2009 April 24 (2):221-14

Cardiogenic shock due to partial occlusion of the left coronary ostium in infective endocarditis: a case report.

Brizzio, M.E., M.D.; Zapolanski, A., M.D.; Spertling, J.S., M.D.


Acute Mitral Regurgitation Requiring Urgent Surgery because of Chordal Ruptures after Extreme Physical Exercise: Case Report.

Brizzio, M.E., M.D.; Zapolanski, A., M.D.


Zapolanski, A., M.D.; Brizzio, M.E., M.D.; Spertling, J.S., M.D.; Bronstein, E.H., M.D.; Shaw, R.E., Ph.D.; Mentakis, M., M.D.

Innovations 2008; 161-163

Unexpected Durability of a Bjork-Shiley first generation Aortic Valve after 40 years of implantation.


A special thank you to Dorothy Capone, Linda Pulver and Joann Scirocco for their help in compiling the data.

Abstracts presented in major cardiothoracic surgery meetings (2007-2010)

Unconventional grafting sequence in Off Pump By-pass Surgery


Posterior Pericardiotomy Decreases the Incidence and Duration of Atrial Fibrillation After Coronary Artery Bypass Grafting


Implementing a Cardiovascular Prevention Program in Women with a Dollar and a Dream

Preventive Cardiac Nursing Association Chicago, April 2010