



# SAINT VINCENT HEART CENTER

## Angioplasty Outcomes Report 2005

Updated 12/2005

### **Saint Vincent Health System in top 10% nationally for door-to-balloon times.**

#### **Summary**

During the last reporting period, April-June 2005, 100% of patients with ST elevated MI admitted through the Saint Vincent emergency room had a door-to-balloon time of less than 90 minutes. Nationally, this puts the Saint Vincent Heart Center in the top 10% for door-to-balloon times according to CMS/Premier, Inc.<sup>1,2</sup> With perfect adherence to the American College of Cardiology and the American Heart Association guidelines recommending door-to-balloon times of 90 minutes or less, Saint Vincent cardiologists lower loss of valuable heart muscle, lower mortality rates, reduce length of stay, and allow for a better quality of life for our patients.

A recent research article published in the Journal of the American Medical Association (JAMA) indicated a national delay in door-to-balloon times during evening and weekend hours. The research reported a 21-minute delay in door-to-balloon time during off hours leading to a 45% decrease in adherence to guidelines.<sup>3</sup> At the Saint Vincent Heart Center, with cardiologists on site 24 hours a day, 7 days a week, we are able to treat patients with the same efficiency during off hours as we do during normal weekday hours. This adherence to guidelines during off hours as well as

regular hours results in lower loss of valuable heart muscle, lower mortality rates, shorter length of stay, and a better quality of life for our patients. At Saint Vincent, time matters. At Saint Vincent, *we know how to treat people.*

#### ***Evidence-based practices***

- Saint Vincent understands the importance of evidence-based practices and has been adhering to guidelines since 1998.

#### ***Lower Mortality Rates***

- Second quarter 2005 reports indicate only 4% mortality, 3 percentage points lower (43% different) than the best practice, 7%.

#### ***Shorter Length of Stay***

- AMI length of stay is consistent with the national benchmark of 5.2 days.

#### ***Higher volumes mean better outcomes***

- Saint Vincent Cardiologists performed approximately 1200 angioplasty procedures in 2004 alone.

#### ***Low Complication Rate***

- Through experience, the highly skilled interventional cardiologists at Saint Vincent keep complication rates at a minimum.

## Evidence-Based Practice (EBP)

“Evidence based medicine is the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients. This practice means integrating individual clinical experience with the best available external clinical evidence from systematic research.”<sup>4</sup>

Clinical evidence shows that evidence-based practices lower mortality, decrease 30-day readmissions, and decrease the length of stay. Globally researched, evidence-based practices are becoming increasingly prevalent throughout the healthcare community. Recognizing the importance of evidence-based practices in patient care, Saint Vincent began adopting the guidelines in 1998.

Implementation of evidence-based practice at Saint Vincent:

- Pneumonia Implemented 1998
- **AMI Implemented 2003**
- CHF Implemented 2003
- Bowel surgery Implemented 2003
- A fib Implemented 2004
- Stroke / TIA Implemented 2004
- Total joints Implemented 2004
- Falls prevention Implemented 2004
- Prevention of DVT Implemented 2005
- CABG Implemented 2005
- Palliative care Implemented 2005

Maintaining the highest level of care, nurses and physicians at Saint Vincent work together to implement these clinical practice guidelines to achieve the best possible outcomes.

Saint Vincent Health Center’s outcomes exceeded the improvement expected through implementation of these evidence-based practice guidelines.

## Saint Vincent in top the 10%

First performed in 1977, today coronary angioplasty is a relatively common procedure. While performed frequently in catheterization labs across the country, there is a national discrepancy between normal and off-hour door-to-balloon times. Where some facilities are able to come close to the < 90-minute door-to-balloon time guideline set by the American College of Cardiology (ACC) and the American Heart Association (AHA) during their regular day hours, there is a 45%

lower frequency of adherence during night and weekend hours.<sup>3</sup>

**AMI  
Evidence-Based Guidelines**

**Outcomes:** ↓Mortality, ↓LOS

**Measured Best Practices**

1. **Door-to-Balloon <90min**
2. ASA within 24h
3. Beta Blocker w/in 24h
4. ASA @ D/C
5. Beta Blocker @ D/C
6. ACEi @ D/C for LVSD
7. ARB if ACEi not tolerated
8. Statin @ D/C
9. Smoking Cessation counseling

Table 1: Evidence-based guidelines for AMI

Saint Vincent is an exception to this trend. With 100% of patients having door-to-balloon times less than 90 minutes (average of 78 minutes) in the latest reporting period, Saint Vincent is in the top 10% nationally. While recent studies indicate a 21-minute delay in door-to-balloon times during off-hours across the country, Saint Vincent off-hour door-to-balloon times are less than 90 minutes, consistent with ACC/AHA guidelines.

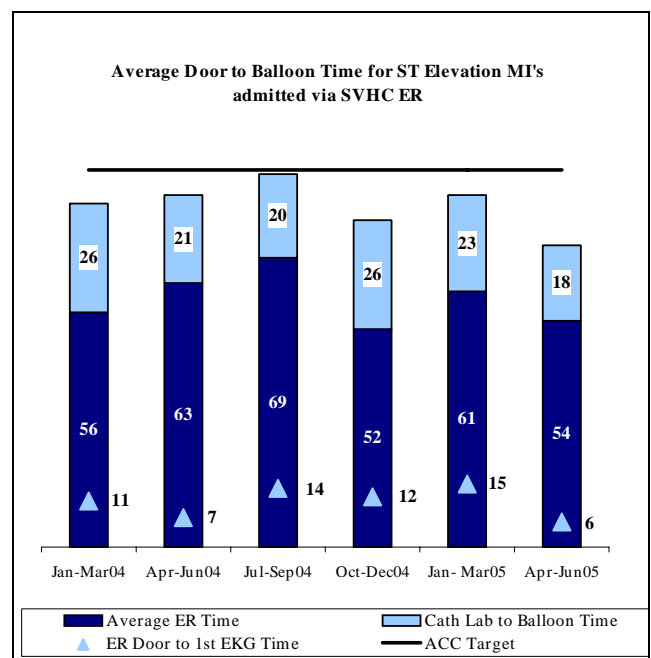
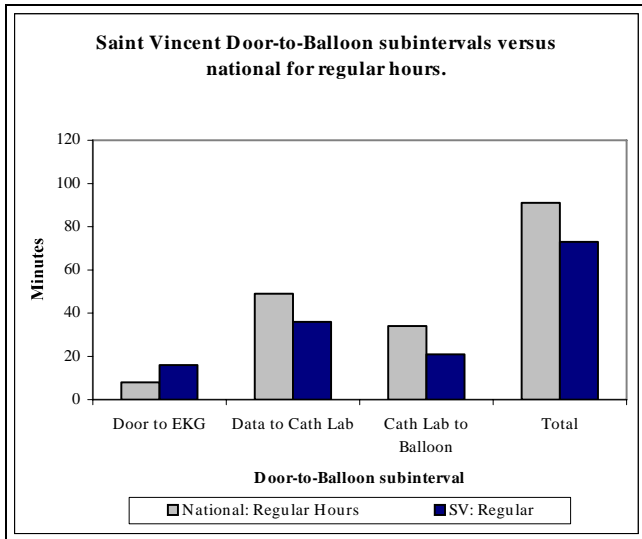
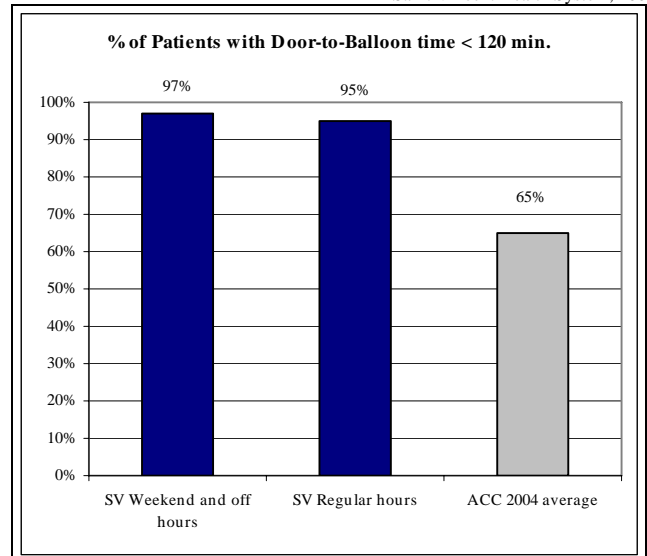


Chart 1: Segmented door to balloon times at Saint Vincent, January 2004 through June 2005 as they relate to the American College of Cardiology target, 90 minutes.



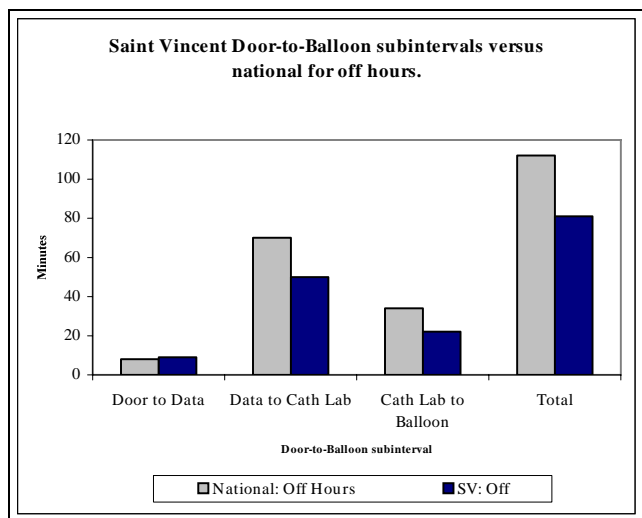
**Chart 2:** National regular-hour door-to-balloon times broken down to subintervals as compared with the Saint Vincent average.<sup>3</sup>

Delays in door-to-balloon time lead to more heart muscle damage and higher rates of mortality. The cardiologists at Saint Vincent are dedicated to the highest quality patient care. Knowing how significant treatment delays are on post-AMI quality of life, our cardiologists are on site 24/7 to ensure rapid treatment. Prompt treatment reduces loss of valuable heart muscle. Prompt treatment leads to a higher quality of life for our patients.

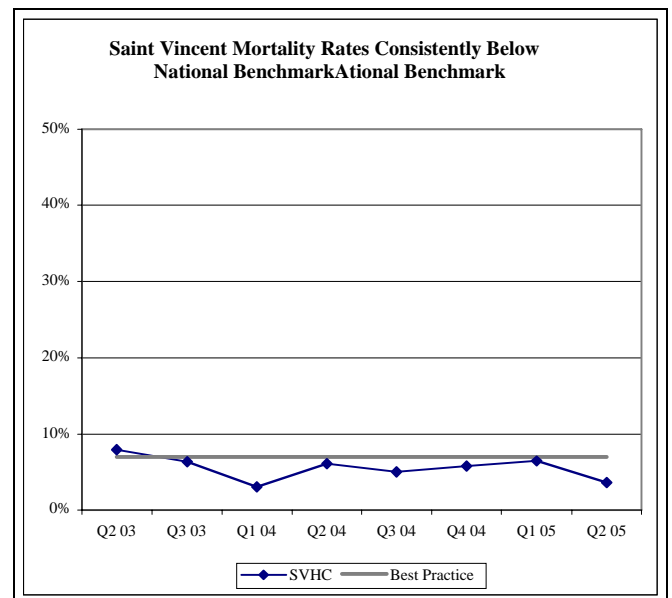


**Chart 4:** Percentage of patients with door-to-balloon times less than 120 minutes, Saint Vincent regular and off hours (July 1, 2004 - June 30, 2005) compared to 2004 national averages as reported by the American College of Cardiology.

low mortality rate trend at Saint Vincent for angioplasty procedures performed between the first quarter of 2003 and the second quarter of 2005.



**Chart 3:** National off-hour door-to-balloon times broken down to subintervals as compared with the Saint Vincent average.<sup>3</sup>



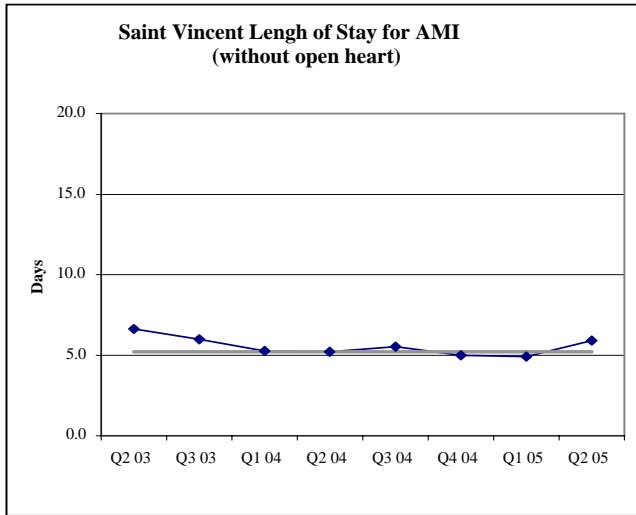
**Chart 5:** Saint Vincent mortality rates compared to national best practices benchmark for periods of 2003 through 2005.

### Lower Mortality Rates

Evidence-based practice guidelines for AMI were implemented at Saint Vincent in March 2003. Since the guidelines were put into practice, mortality rates for AMI have remained below the national benchmark. Second quarter 2005 data indicates only 4% mortality, 3% less than the best practice 7%. Chart 5 shows the

### Benchmark Length of Stay

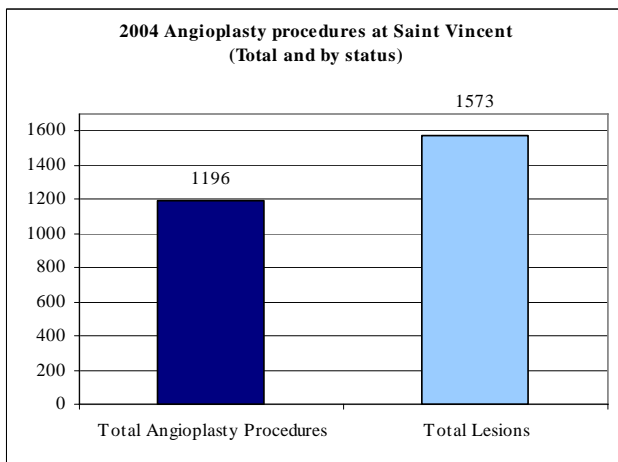
The implementation of evidence-based practice guidelines for AMI in March 2003 has resulted in length of stay results consistent with the national benchmark of 5.2 days. While the second quarter data for 2005 appear to be slightly higher than the national LOS, this is not a statistically significant difference.



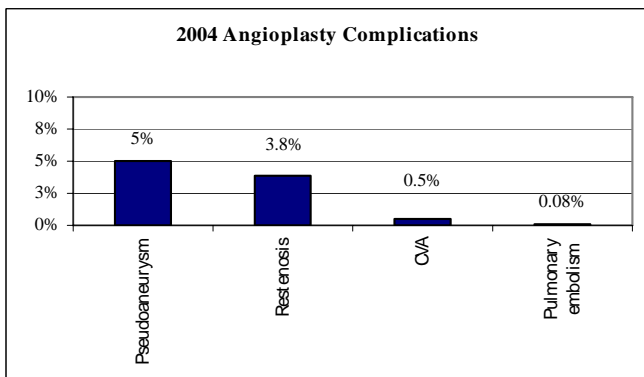
**Chart 6:** Length of stay for AMI at Saint Vincent v. best practice benchmark.

### Higher volumes mean better outcomes

The highly skilled interventional cardiologists at Saint Vincent performed 1196 angioplasty procedures in 2004 alone. Chart 7 illustrates the total number of angioplasty procedures and lesions.



**Chart 7:** Total number of angioplasty procedures performed in 2004 as well as the status breakout.



**Chart 8:** Complication resulting from angioplasty procedures performed at Saint Vincent in 2004.

25% of diagnostic cardiac catheterizations at Saint Vincent in 2004 lead to angioplasty. Because the Saint Vincent Heart Center staffs highly skilled cardiologists that specialize in both diagnostic and interventional procedures as well as cardiovascular surgeons, patients can receive any necessary follow-up promptly at Saint Vincent without off-site transfers or referrals. The cardiologists and cardiovascular surgeons at the Saint Vincent Heart Center treat patients in all areas of cardiovascular care.

### Low Complication Rate

The highly skilled interventional cardiologists at Saint Vincent focus on post-surgery quality of life. While coronary angioplasty has become a prevalent procedure, it is a procedure that requires skill and proficiency with high tech, complicated equipment. Only through experience can cardiologists avoid technical errors and clinical complications. The interventional cardiologists at the Saint Vincent Heart Center are highly skilled and experienced in performing coronary angioplasty.

Through the experience of performing high volumes of angioplasty procedures coupled with strict adherence to evidence-based practices, our cardiologists are able to keep complication rates at a minimum. Chart 8 displays the types of complications that arose in 2004 along with the low percentage of occurrence.

### Conclusion

The Saint Vincent Heart Center is ranked in the top 10% of national hospitals according to Premier, Inc., a company working with the Centers for Medicare and Medicaid Services (CMS).<sup>1,2</sup> An exception to the national trend of off-hour delays, Saint Vincent door-to-balloon times are consistently within the ACC/AHA guideline, less than 90 minutes. At Saint Vincent, we know you can't schedule a heart attack. We are prepared to offer the highest quality patient care 24 hours a day, 7 days a week.

Lower door-to-balloon times lead to less damaged heart muscle. Less damage to heart muscle means lower mortality, shorter length of stay, and higher quality of life for our patients. With cardiologists on site 24/7, patients treated for AMI at Saint Vincent will notice less change in their daily routine and overall well being than patients not treated within the ACC/AHA guidelines. At Saint Vincent, time matters. At Saint Vincent, *we know how to treat people.*

## Cardiologist Profiles

Consultants in Cardiovascular Disease, Inc.  
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### David Borowski MD

Medical School:  
Albany Medical College, 1985

Certification:  
American Board of Internal  
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Residency:  
Albany Medical Center Hospital 7/1/1985 - 7/1/1989



### Manuel Forero MD

Medical School:  
Juan N Corpas, 1980

Certification:  
American Board of Internal  
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Residency:  
Tulane Univ. Hosp. & Clinics 7/1/1987 - 7/1/1990



### Jeffrey Buetikofer MD

Medical School:  
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Certification:  
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Residencies:  
Univ. Hospitals of Cleveland 6/1/1985 - 6/1/1986, Univ.  
Hospitals of Cleveland 6/1/1983 - 6/30/1985



### Mark Izzo MD

Medical School:  
Medical College of  
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Certification:  
American Board of Internal  
Medicine / American Board of  
Interventional Cardiology /  
American Board of IM-Cardiovascular Disease /  
American Board of IM-Interventional Cardiology

Residency:  
Temple University Hospital 7/1/1989 - 7/1/1992



### Joseph Caccione MD

Medical School:  
Hahnemann University School  
of Medicine, 1985

Certification:  
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Medicine / American Board of  
IM-Cardiovascular Disease /  
American Board of IM-Interventional Cardiology

Residency:  
Univ. Hospitals of Cleveland 7/1/1985 - 7/1/1988



### James MacKrell MD

Medical School:  
University of Pittsburgh School  
of Medicine, 1983

Certification:  
American Board of Internal  
Medicine / Certification Council  
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American Board of IM-Cardiovascular Disease

Residency:  
University of Pittsburgh 7/1/1984 - 6/30/1986



**Andrew Mecca MD**

Medical School:  
Chicago Medical School, 1988

Certification:  
American Board of Internal  
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Residency:  
Loyola University of Chicago 7/1/1988 - 6/30/1991



**Ross Peterson MD**

Medical School:  
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Certification:  
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Residency:  
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**William Mecca MD**

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American Board of IM-Interventional Cardiology

Residencies:  
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**Samuel Ward MD**

Medical School:  
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School of Medicine, 1989

Certification:  
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IM-Cardiovascular Disease /  
American Board of IM-Interventional Cardiology

Residency:  
Duke University Medical Ctr. 7/1/1989 - 6/30/1992



**References and Additional Reading**

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2. Centers for Medicare and Medicaid Services  
<http://www.cms.hhs.gov/>
3. Magid DJ, Wang Y, et al. Relationship between time of day, day of week, timeliness of reperfusion, and in-hospital mortality for patients with acute ST-segment elevation myocardial infarction. *JAMA*. 2005;294:803-812.
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<http://www.acc.org/clinical/guidelines/stemi/Guideline1/index.pdf>

**For Physicians Referring a Patient**

24 hours a day, 7 days a week, to refer a patient to a specialist at Saint Vincent, you or your staff can call the One-Call Transfer line, 1-800-326-3336. Our trained staff will help you access our hospitalist program, the appropriate specialist, or hospital service. Provide the appropriate patient and physician information, and a member of the One-Call Transfer team will take care of the paperwork and arrangements. We will call the referring physician after the patient's hospital stay or after any major procedure of change in condition.