

# Lakeland's Cardiac Surgery Program: A Quality Leader

Lakeland HealthCare's cardiac surgery program performance is significantly better than the national average, achieving a "3 Star" rating<sup>1</sup> from the Society of Thoracic Surgeons and zero percent mortality for isolated primary coronary bypass surgeries in 2007<sup>2</sup>. For all major procedures performed at Lakeland, the mortality rate was significantly lower compared to national averages of 2.5% - 4.8% for reported fall 2007 data (see table 1).

Post-operative complications at Lakeland also had a lower incidence than the national average, 8.6% versus 14.8%, with an average patient length of stay 7.8 days at Lakeland compared to the 9.2 day national average (see table 2).

Led by **Kourosh Baghelai, M.D.** of Lakeshore Cardiothoracic and Vascular Surgery, the Lakeland cardiac surgery program considers a number of key initiatives as crucial to its success.

## Evidenced-Based Care

According to the Society of Thoracic Surgeons, their comprehensive rating system allows for comparisons regarding the quality of cardiac surgery among hospitals across the country. Approximately 12% of participating hospitals received the "3 star" rating, which denotes the highest category of quality. In the most current analysis of national data available<sup>3</sup>, the cardiac surgery performance of Lakeland Regional Medical Center,

*Table 1. Comparison of 2007 Mortality Rates of Lakeland versus Society of Thoracic Surgeons' Reporting Hospitals, partial year, January 2007 to June 2007\**

2007 Mortality Rates	Lakeland	National <sup>†</sup>
All cases (CAB <sup>‡</sup> , valve, and valve + CAB)	<b>0/67</b>	2.5%
Isolated CAB	<b>0/60</b>	2.1%
Isolated CAB (on pump)	<b>0/36</b>	1.8%
Isolated CAB (off pump)	<b>0/24</b>	1.8%
Isolated CAB (first operation)	<b>0/54</b>	2.0%
CAB reoperation	<b>0/6</b>	3.7%
Aortic valve replacement & CAB	<b>0/5</b>	4.8%



Post op Complications	Lakeland	National <sup>†</sup>
Deep sternal wound infection	<b>0%</b>	0.3%
Permanent stroke	<b>0%</b>	1.1%
Renal failure	<b>1.7%</b>	3.6%
Prolonged ventilation	<b>5.0%</b>	9.0%
Length of stay	<b>7.8 days</b>	9.2 days

*Table 2. Comparison of Postoperative Complications of Cardiac Surgery Between Lakeland and Society of Thoracic Surgeons' Participating Hospitals\**

Joseph was found to lie in the highest quality tier, thereby receiving an STS 3 star rating.

"Those of us who work closely with Lakeland's open heart surgery program are impressed with its strength," said **Laurie Fleming**, Vice President of Diagnostic and Ambulatory Services at Lakeland. "The audit conducted by the Society of Thoracic Surgeons confirms this. Two cardiac surgeons, not associated with Lakeland, reviewed our program and reported that the comprehensiveness of the program and the resources allocated far surpassed other hospitals comparable in size."

The physicians who deliver cardiac services are striving for a perfect care model at Lakeland. In order to achieve



this goal, specific parameters have been identified and are strictly followed to produce the significant decrease in morbidity and mortality rates. According to **Dr. Baghelai**, success rests on four key aspects of the perfect care model.

*"First, we ensure that we know our patient," said **Dr. Baghelai**. "We assess and properly stratify the risks, so that when we are performing surgery, we can be prepared for possibilities that are specifically related to the patient. Then we tailor the post-operative care to the patient to minimize the risks of cardiac, pulmonary, renal, and other complications." (see sidebar/box).*

Next, the physicians' commitment to the precise conduct of the operation determines the outcomes. "We've standardized anesthetic management to achieve early extubation and minimize pulmonary complications,"

said Dr. Baghelai. "We eliminate the stresses that can arise during surgery. For example, if a patient has severe COPD with elevated risk of pulmonary complications, we avoid the lung machine and perform beating heart surgery."

In addition, **Dr. Baghelai** and his partner, **Shawn Tittle, M.D.**, have developed "a great surgical toolbox." The surgeons can perform technically challenging operations, and if a change of course is necessary during an operation, they are skilled at many techniques which can be utilized to ensure a good outcome.

Finally, the Lakeland team has worked diligently to optimize post-operative care. "The patient benefits from the constant involvement of an on-site physician," said Dr. Baghelai. "An intensivist is intimately involved around the clock in the care of every patient from the moment of arrival, from the operating room until discharge. The surgeons, respiratory therapists, and nurses work closely together throughout the patient's stay, and thus problems are recognized and treated immediately."

An ongoing multi-disciplinary team approach is used to review the results of quality initiatives underway to assure the best outcomes.

*"The entire post operative phase is already carefully planned when the patient arrives in the critical care unit after surgery," said **Stephen Hempel, M.D.**, Vice President of the Medical Staff. "This allows for early extubation, removal of all invasive monitoring devices, and patient ambulation within 12 to 16 hours of surgery. Any patient changes not defined in the post operative care plan can be quickly assessed and managed. It is truly a team effort. The objective data on our outcomes tells the story."*

### Primary Care Physician Role

Primary care physicians considering where to send their patients for cardiac treatment can have confidence in Lakeland's outstanding outcomes and the breadth of the program. Timely referral to the surgeons at Lakeshore Cardiothoracic and Vascular Surgery can positively influence the quality of life for the patient.



"Our numbers are not declining, indeed, our program is growing," said **Dr. Baghelai**. "We are not referring cases out – we are performing every procedure at Lakeland, and for a higher risk pool of patients. Our observed complication rates are lower, and our outcomes are improved. Physicians can be assured that their cardiac patients will receive the best possible care, here in our community."

*"We aren't just performing routine bypass surgeries," said **Dr. Tittle**. "Thirty percent of our cases are complex operations, including valve repair and combined valve/bypass, as well as thoracic aortic aneurysms and dissections."*

Open heart surgeries performed at Lakeland are currently at their highest volume in five years, while across the nation, physicians are seeing a decline of 10-15% in the number of open heart procedures.

**Visit the Society of Thoracic Surgeons website at [sts.org](http://sts.org) website to view the risk calculator used for patient assessment. To schedule a consultation with Dr. Baghelai or Dr. Tittle, call Lakeshore Cardiothoracic and Vascular Surgery at (269) 408-1660.**

<sup>1</sup> Definition of 3 Star rating: participant performance is significantly higher than the STS mean based on 99% Bayesian probability.

<sup>2</sup> Mortality rates are evaluated and reported based on a case review 30 days following surgery.

<sup>3</sup> For period of July 1, 2006 through June 30, 2007.

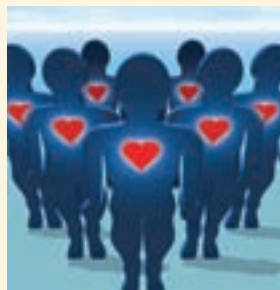
<sup>†</sup> CAB = coronary artery bypass surgery.

\*STS claims do not allow Lakeland to publicly report like hospitals' data.

<sup>†</sup>The values reported by STS have undergone risk adjustment and are further evaluated for observed versus expected outcomes.

## Evidenced Based Patient Selection

**T**o ensure the probability of excellent outcomes for cardiac patients, Lakeland physicians employ evidence-based selection. After initial evaluation and referral by a cardiologist, the patient's characteristics are prospectively analyzed using a risk calculator from the Society of Thoracic Surgeons that considers national data collected from over 100,000 patients.



The calculator estimates the possible risks of morbidity and mortality and generates statistics of a patient's chance of dying, acquiring pneumonia, experiencing kidney failure, and other complications.

"Specific indications and classifications for all cardiac procedures are published by the American Heart Association," said **Dr. Baghelai**. "Thus, in a very patient-specific way, we can advise about the available options for treatment."