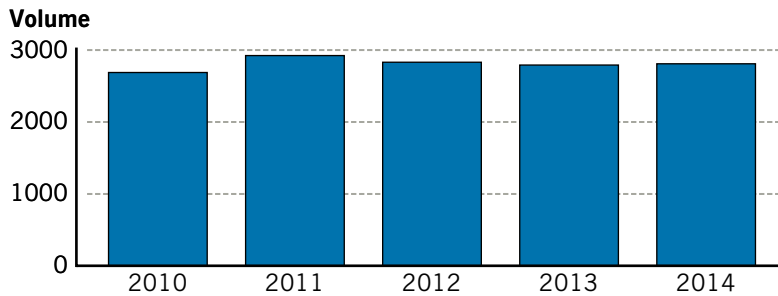


Valve Disease

Valve Surgery Volume, 2010 – 2014

2014 Volume (N = 2798)



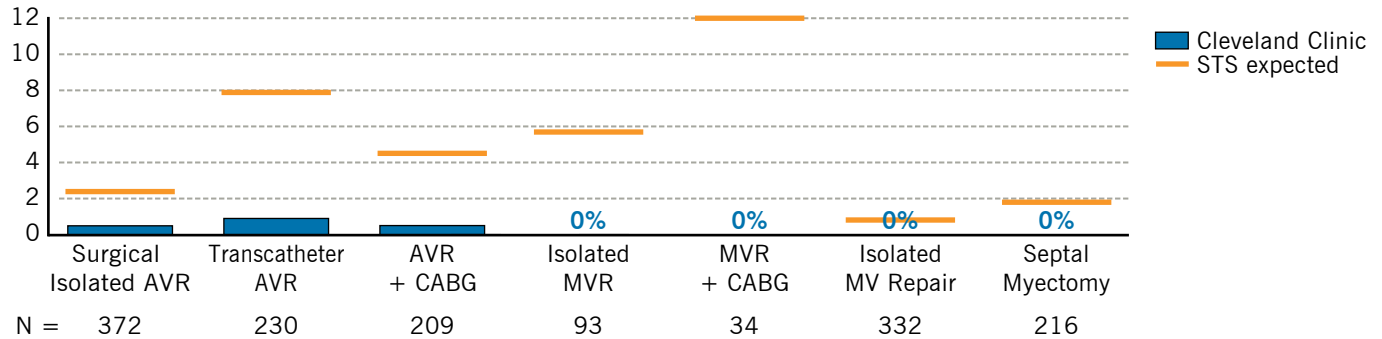
In 2014, Cleveland Clinic surgeons performed 2798 valve surgeries. A total of 2174 were primary operations and 624 were reoperations.

Cleveland Clinic surgeons have implanted more than 12,500 bioprosthetic aortic valve replacements since the 1990s, with excellent short- and long-term outcomes.

Valve Surgery In-Hospital Mortality (N = 2798)

2014

Percent



The 2014 in-hospital mortality rates for all types of valve surgery were lower than expected at Cleveland Clinic.

Source: Society of Thoracic Surgeons (STS) National Adult Cardiac Surgery Database 2014

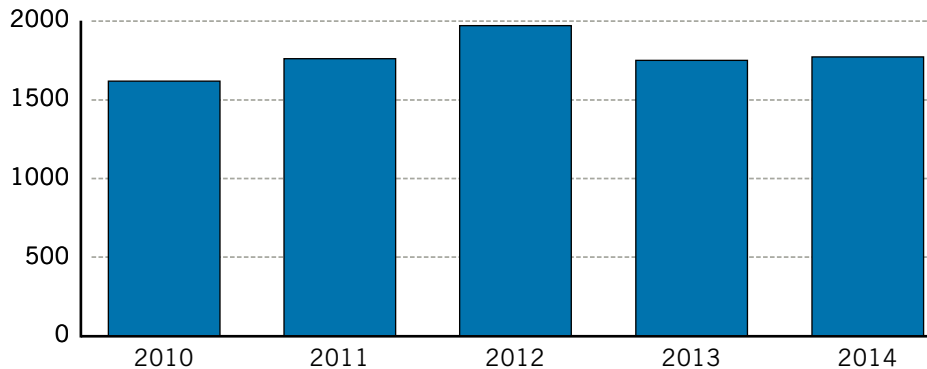
Abbreviations: AVR = aortic valve replacement, CABG = coronary artery bypass grafting, MV = mitral valve, MVR = mitral valve replacement, TAVR = transcatheter aortic valve replacement

Aortic Valve Surgery

2014 Volume (N = 1762)

2010 - 2014

Volume



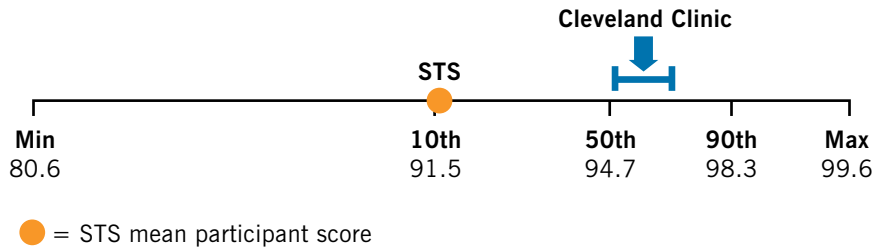
In 2014, a total of 1762 aortic valve procedures were performed at Cleveland Clinic.

Valve Disease (continued)

STS Rating for Coronary Artery Bypass Grafting + Aortic Valve Replacement

Cleveland Clinic ranked among the top 6.3% of US hospitals for coronary artery bypass graft (CABG) surgery plus aortic valve replacement (AVR), earning the Society of Thoracic Surgeons (STS) 3-star rating for this category (based on data from July 1, 2013, to June 30, 2014). This denotes the highest category of quality.

Participant Score (95% Confidence Interval)	STS Mean Participant Score	Participant Rating
95.8% (94.9-96.6)	91.6%	☆☆☆

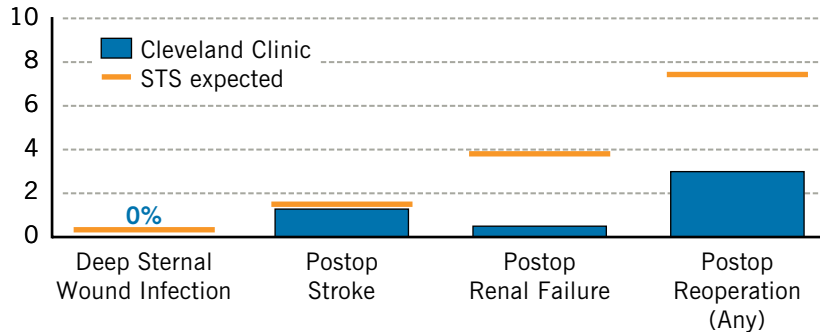


Source: Society of Thoracic Surgeons (STS) National Adult Cardiac Surgery Database 2014

Isolated Aortic Valve Replacement Complications (N = 372)

2014

Percent



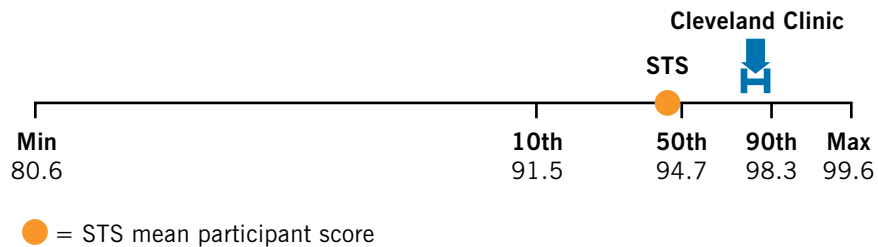
Cleveland Clinic had lower-than-expected rates of complications for isolated aortic valve replacement surgery.

Source: Society of Thoracic Surgeons (STS) National Adult Cardiac Surgery Database 2014

STS Rating for Aortic Valve Replacement

Cleveland Clinic ranked among the top 8% of US hospitals for aortic valve replacement (AVR) surgery, earning the Society of Thoracic Surgeons (STS) 3-star rating for this category (based on data from July 1, 2013, to June 30, 2014). This denotes the highest category of quality.

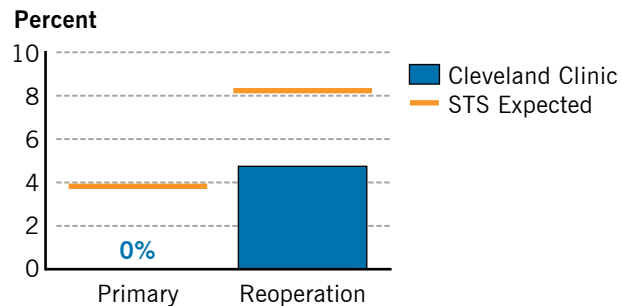
Participant Score (95% Confidence Interval)	STS Mean Participant Score	Participant Rating
97.6% (97.0-98.1)	94.3%	★ ★ ★



Source: Society of Thoracic Surgeons (STS) National Adult Cardiac Surgery Database 2014

Combined Aortic Valve Replacement & CABG Surgery, In-Hospital Mortality (N = 209)

2014



Aortic valve replacement, in combination with coronary artery bypass graft (CABG) surgery, is a complex operation. Despite this complexity and the associated increase in risks, in-hospital mortality rates for both primary operations and reoperations were low.

Source: Society of Thoracic Surgeons (STS) National Adult Cardiac Surgery Database 2014

Valve Disease (continued)

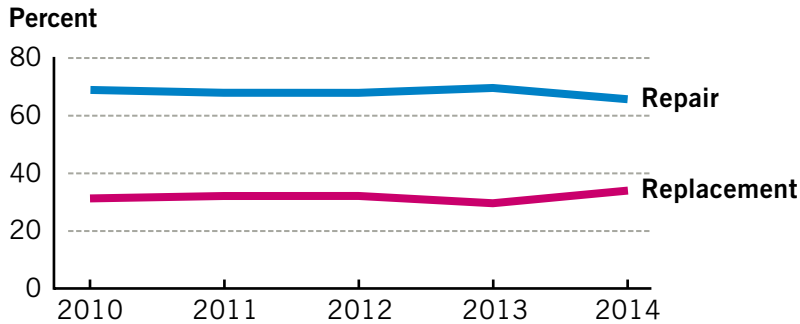
As world leaders in mitral valve repairs, Cleveland Clinic surgeons have performed 423 robotically assisted mitral valve repairs in the past 5 years (2010–2014).

The mortality rate was 0.2% (N = 1) compared with the expected rate of 1%–1.2%.

Source: Data from the UHC Clinical Data Base/Resource Manager™ used by permission of UHC. All rights reserved.

Mitral Valve Surgery Volume, Repair vs Replacement

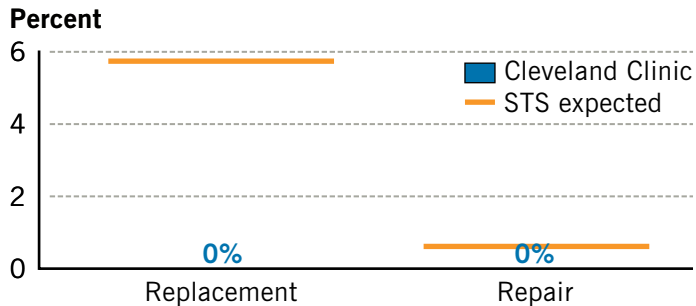
2010 – 2014



Cleveland Clinic performs mitral valve repair procedures rather than replacement whenever possible. Mitral valve repair is associated with better survival, improved lifestyle, better preservation of heart function, and a lower risk of stroke and infection (endocarditis) compared with mitral valve replacement. Repair procedures also do not require postprocedure anticoagulation therapy.

Isolated Mitral Valve Surgery, In-Hospital Mortality (N = 425)

2014



The 2014 in-hospital mortality rates for Cleveland Clinic patients who had isolated mitral valve surgery were lower than expected for both repair and replacement procedures.

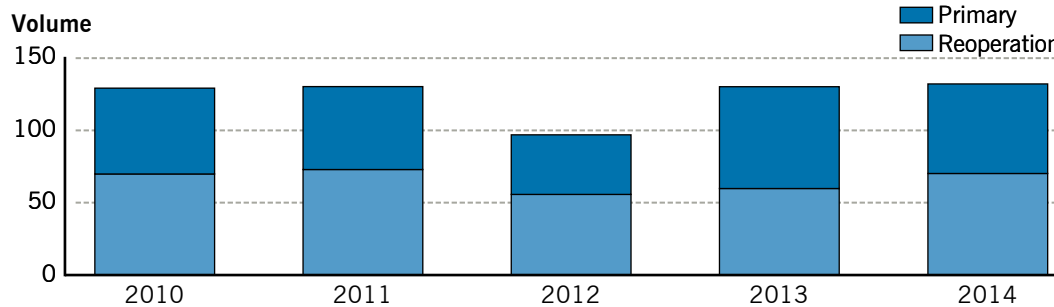
Source: Society of Thoracic Surgeons (STS) National Adult Cardiac Surgery Database 2014

Surgical Treatment of Active Infective Endocarditis

Bacterial (infective) endocarditis is a life-threatening infection of the heart valves or the heart's inner lining (endocardium). The condition causes growths on or holes in the valves or scarring of the valve tissue, most often resulting in a leaky heart valve. Cleveland Clinic surgeons treat patients with infective endocarditis, including those with advanced disease and prosthetic valve endocarditis.

2010 – 2014

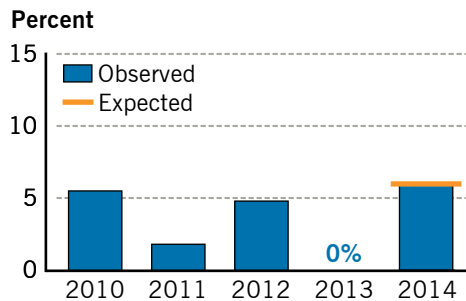
2014 Volume (N = 132)



In 2014, Cleveland Clinic surgeons performed 132 valve procedures to treat patients with infective endocarditis. A total of 62 were primary operations and 70 were reoperations.

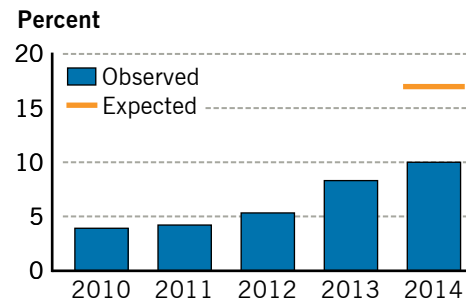
Infective Endocarditis Primary Operation, In-Hospital Mortality

2010 – 2014



Infective Endocarditis Reoperation, In-Hospital Mortality

2010 – 2014



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Valve Disease (continued)

Transcatheter Aortic Valve Replacement

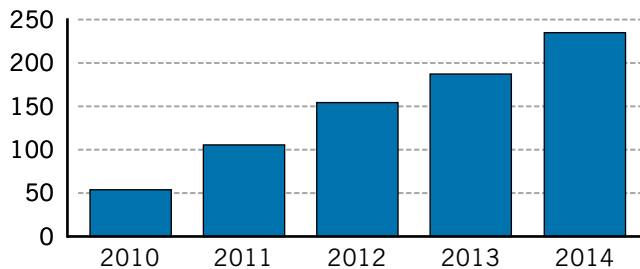
Cleveland Clinic is a national leader in the use of percutaneous treatment options for patients with valve disease.

Transcatheter Aortic Valve Replacement, Volume and In-Hospital Mortality

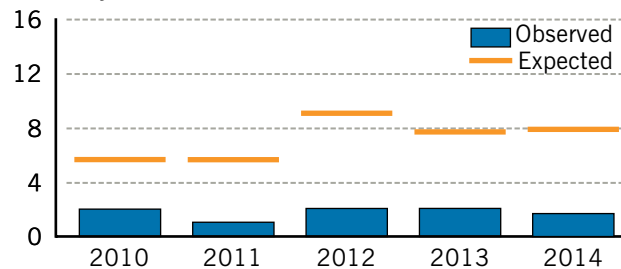
2014 Volume (N = 233)

2010 – 2014

Volume



Mortality (%)



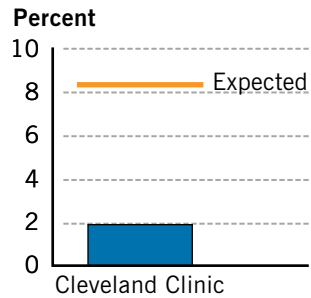
A total of 233 patients had transcatheter aortic valve replacement (TAVR) procedures at Cleveland Clinic in 2014. The in-hospital mortality rate was 1.7% compared with an expected rate of 7.9%.

Source: Data from the UHC Clinical Data Base/Resource Manager™ used by permission of UHC. All rights reserved.

Since the inception of the transcatheter aortic valve replacement (TAVR) program in 2006, Cleveland Clinic has become a world leader in the use of this specialized treatment in patients carefully selected based upon stringent clinical criteria. More than 700 patients have had this procedure at Cleveland Clinic with great success. There were 12 in-hospital deaths in the 648-patient cohort (2011–2014, average age 81.15 years), which represented a 1.9% mortality rate compared with the expected rate of 8.28%.

Transcatheter Aortic Valve Replacement, In-Hospital Mortality (N = 648)

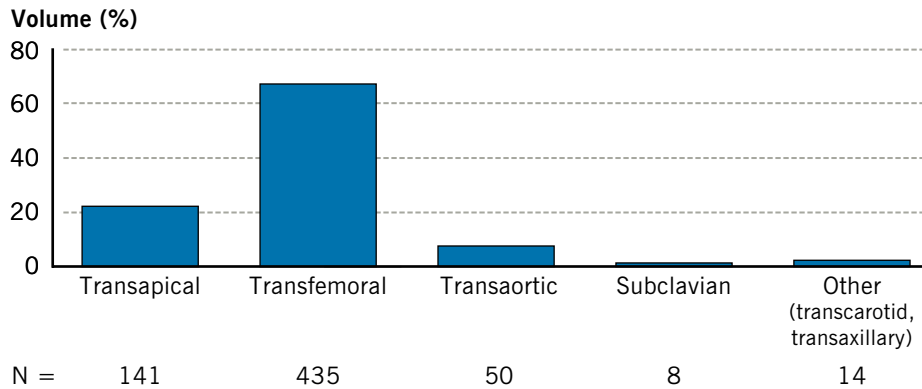
2011 – 2014



A total of 648 patients had transcatheter aortic valve replacement procedures at Cleveland Clinic from January 2011 through December 2014. The in-hospital mortality rate was 1.9% compared with the expected rate of 8.28%.

Transcatheter Aortic Valve Replacement, Volume by Approach (N = 648)

2011 – 2014



The majority of transcatheter aortic valve replacement procedures performed at Cleveland Clinic from January 2011 through December 2014 were done using a transfemoral approach.

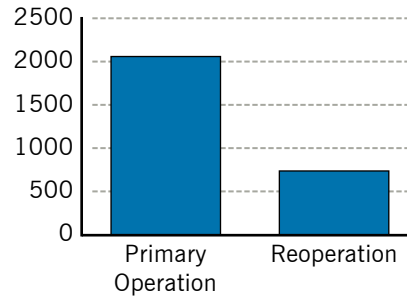
Valve Disease (continued)



Valve Surgery – Primary Operation and Reoperation Volume (N = 2798)

2014

Volume

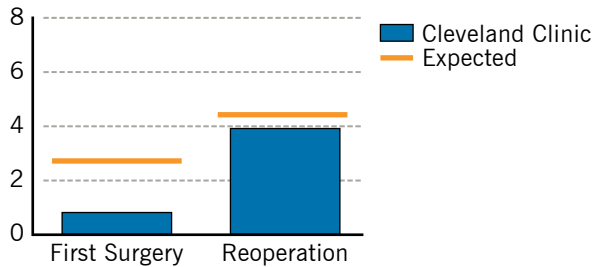


Cleveland Clinic surgeons performed 2798 valve procedures in 2014. A total of 26% were reoperations on patients who had previous open heart surgery.

Valve Surgery – Primary Operation and Reoperation In-Hospital Mortality (N = 2798)

2014

Percent



Patients who have valve surgery reoperations have a somewhat higher risk of death compared with patients who have primary surgery. This is due to the overall decrease in health over time. Despite this, the in-hospital mortality rates for patients were lower than expected for reoperations as well as for primary procedures.

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