

Aortic Valve Stenosis: Replace (SAVR) or “Stent” (TAVR)

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AVR

Surgical Aortic Valve Replacement: SAVR

- Chest incision

- Cardiopulmonary bypass

Transcatheter Aortic Valve Replacement: TAVR

- place expandable aortic valve into stenotic valve with catheter-femoral or non-femoral approach

- no cardiopulmonary bypass

TAVR vs SAVR



Your Parent is 86 years old, no medical problems other than HTN. You will choose his/her care for aortic stenosis.

- NI LV, no CAD, NI renal function, mod MR, atrial fib

TAVR?

Please Vote Now

SAVR?



SAVR

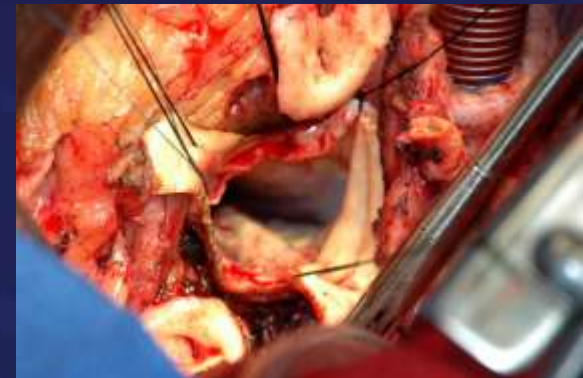
US - 500,000 people have severe
aortic stenosis
-half are symptomatic



50% die within 2 years after onset symptoms without
treatment

85,000 *surgical AVR's* performed yearly in US

What about the other
165,000 patients?



SAVR

Hysterectomy – 600,000 procedures/yr (90% for benign ds)

mortality = 0.1%

Cholecystectomy – 600,000 procedures/yr

mortality = .2%

All Heart Surgery – 300,000 procedures/yr

Aortic Valve Replacement – 85,000 procedures/yr

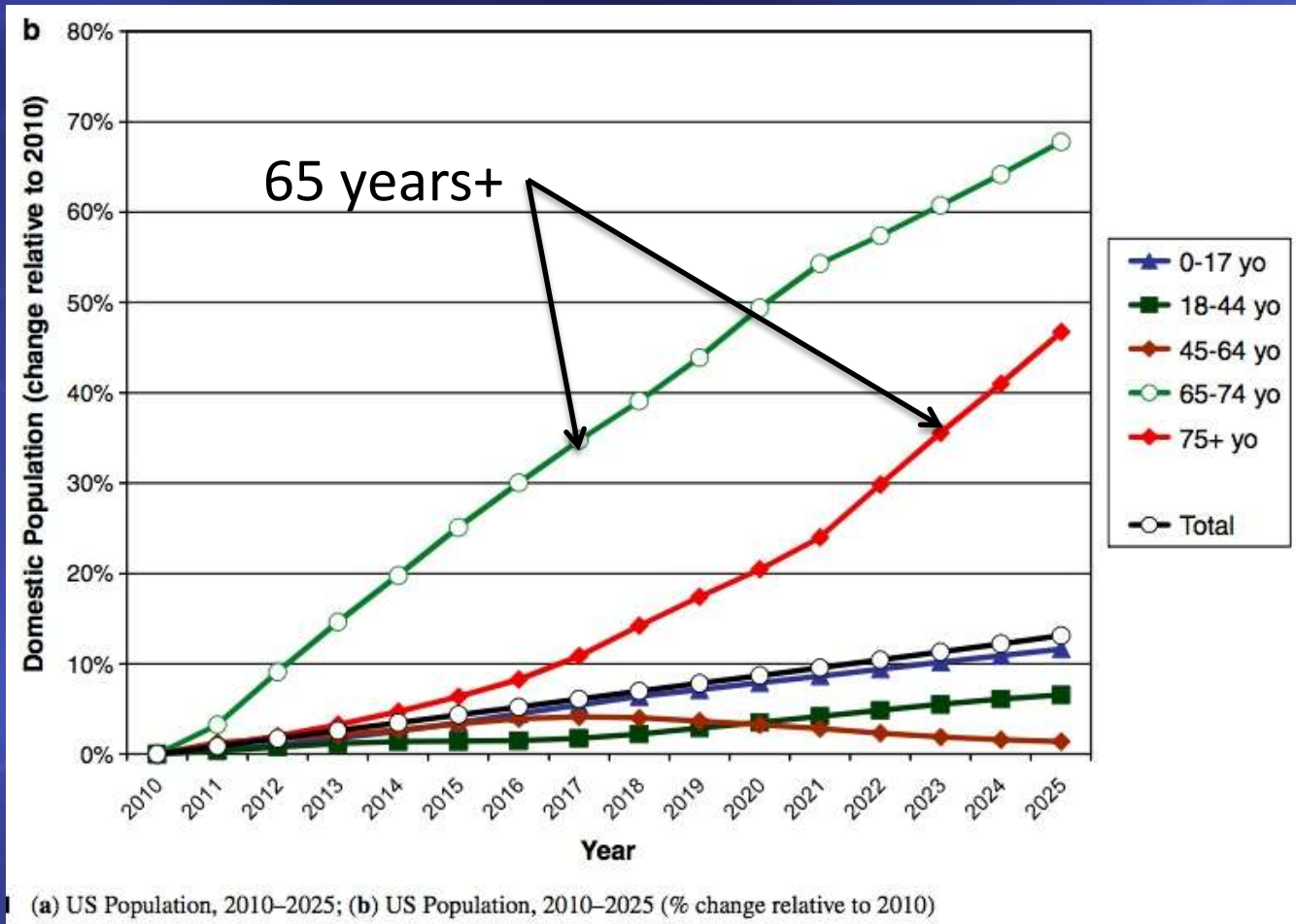
mortality = 2.0% (STS 2013)

AVR is 10 – 20 times higher risk than other more common surgeries

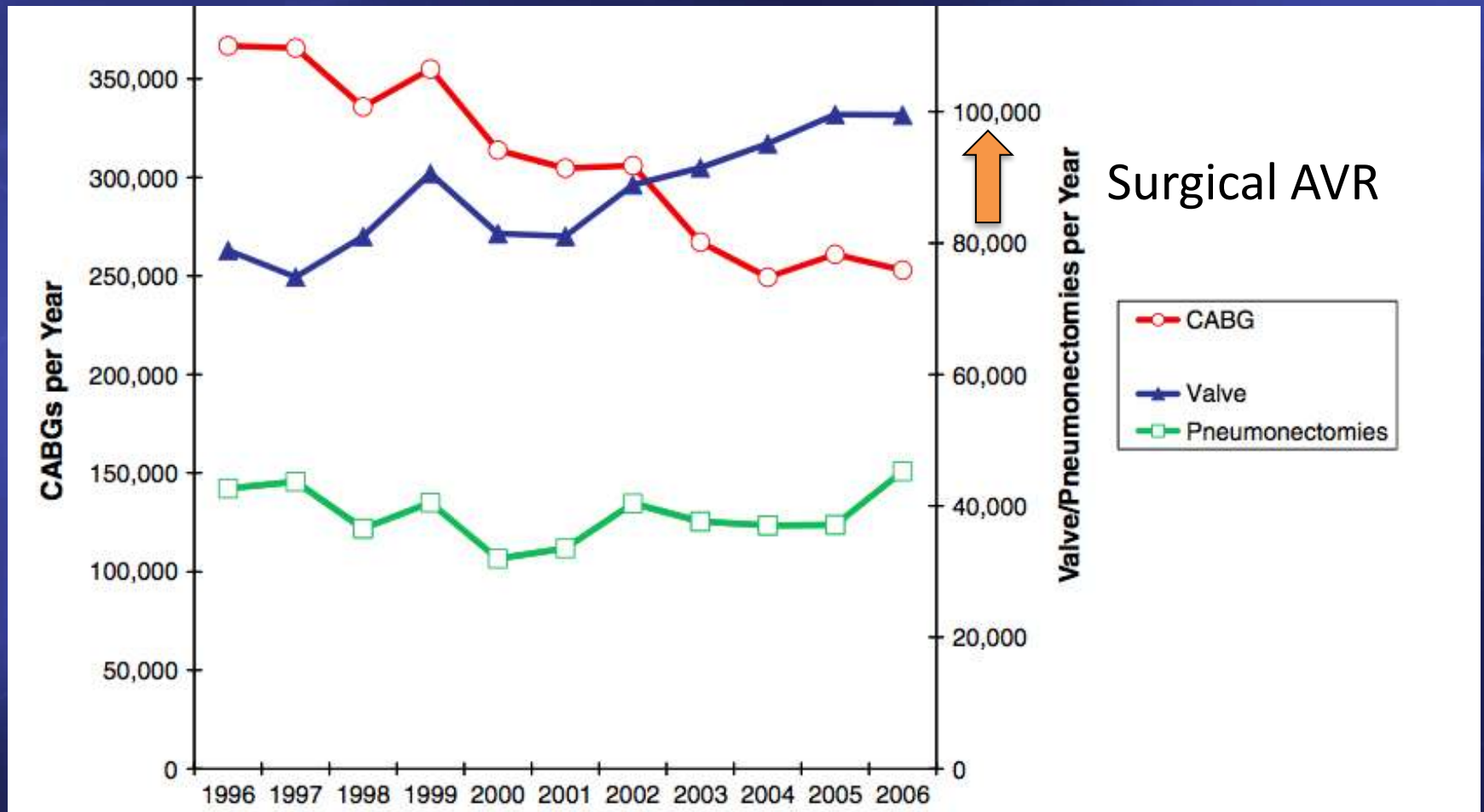
Why TAVR

- Addresses patients too high risk for surgery
- Increased number of high risk patients-aging population
- May have less risk than SAVR in similar risk patients (to be determined)
- Easier recovery for patients
- \$\$Less expensive????

The US population is Aging



Surgical AVR is Increasing: 1996-2006



TAVR vs SAVR: Consider Costs

SAVR: valve cost = \$3,000 – 5,000



TAVR: valve cost = \$32,500



Hospital reimbursement: same for both procedures:

East/west coast = \$88,000 – 94,000

Midwest = \$32,000 – 62,000

AVR: Just Valve Cost

- “If you think health care is expensive now, wait until you see what it costs when it's free!”

P.J. O'Rourke

AVR



Honda Accord

10x

TAVR



Ferrari

TAVR Costs

Partner B trial:

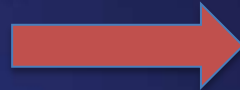
- Average cost of procedure = \$78,000

Programs attempt to justify costs:

- Profits from more surgical AVR's subsidize costs of TAVR patients
- Shorter length of stay compared to SAVR

Physicians have strong desire to use the best therapies available and don't always consider costs

TAVR



St. Vincent Heart Center

approx. 1,000 OHS/yr

Add 100 TAVR/yr at \$10,000 loss /patient

Can we afford TAVR???

TAVR costs

More valves on market will increase competition and lower cost

Regionalization of procedures to streamline techniques and improve efficiency

High volume centers likely will have less complications = less cost

The valve costs 8,000 US dollars in Europe-the US subsidizes the world

SAVR: Obsolete or Better than TAVR?

St. Vincent Heart Center performed > 400 aortic valve surgeries in 2012

Society of Thoracic Surgeons
Database (STS)

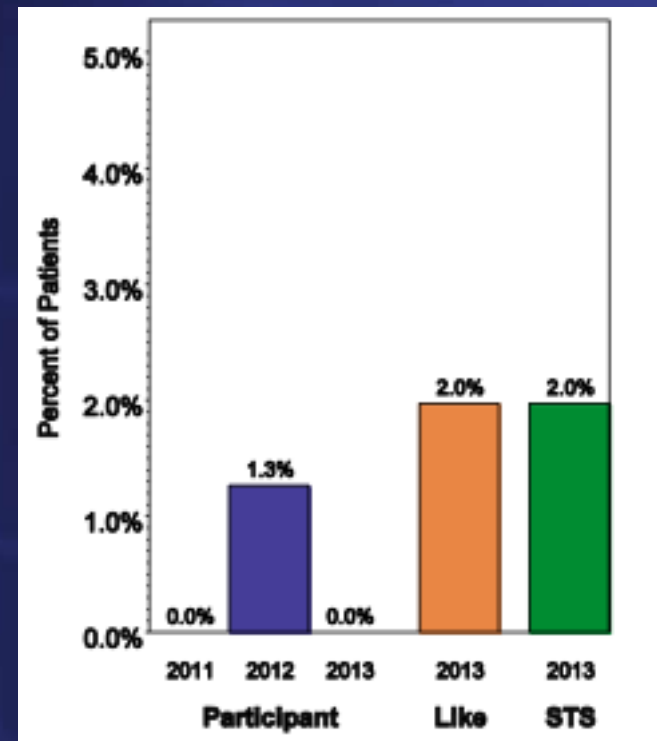
Observed/Expected Ratio

Isolated AVR:

2011: 0

2012: 0.4

2013: 0



SAVR: Improved Bioprostheses

Excellent proven valve long-term durability in older patients

Low morbidity/mortality

Less invasive approaches – smaller incisions, shorter operative times

SAVR: Less invasive



Traditional AVR

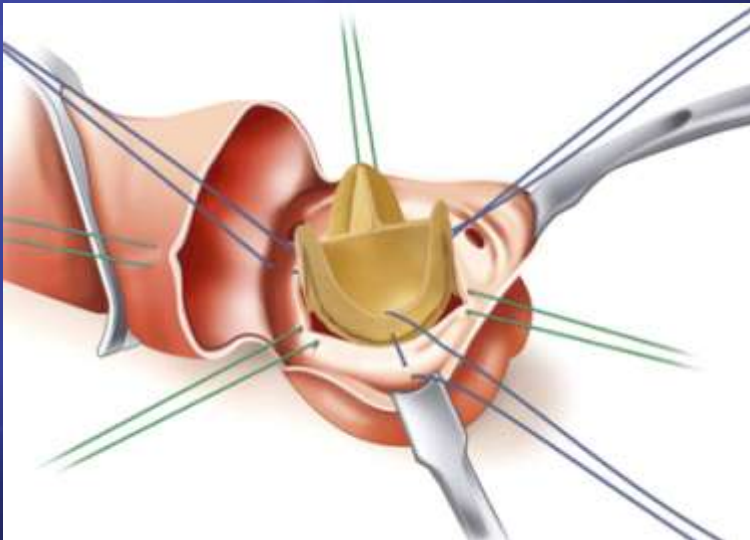


4 weeks After Mini-AVR

SAVR: Improved Prostheses



Stentless pericardial AVR

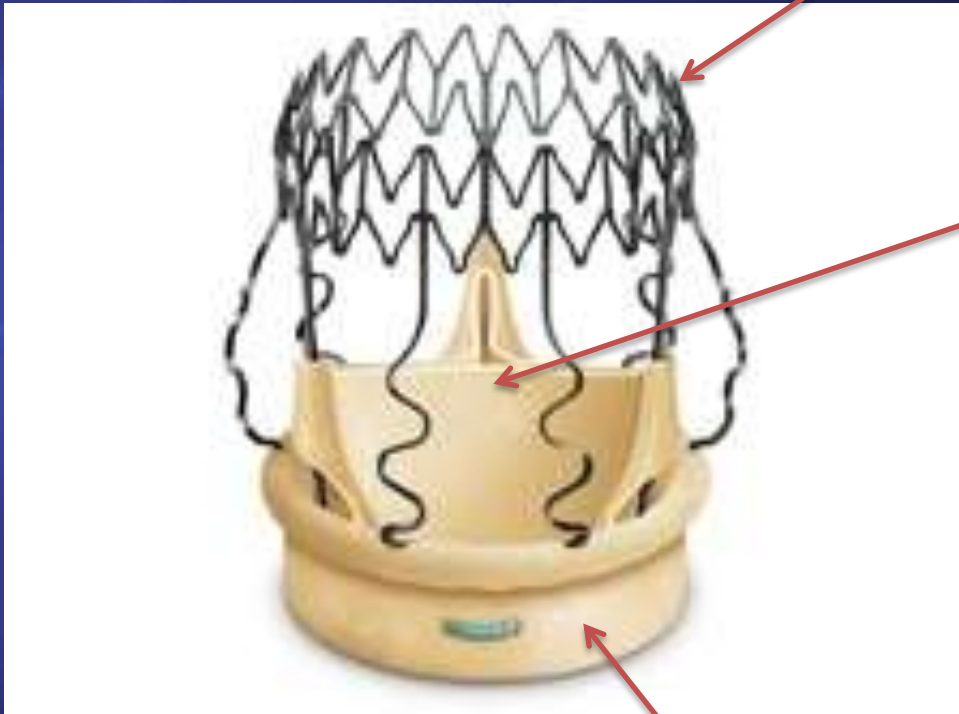


Single suture line



Excellent Hemodynamics

Sutureless AVR: Perceval



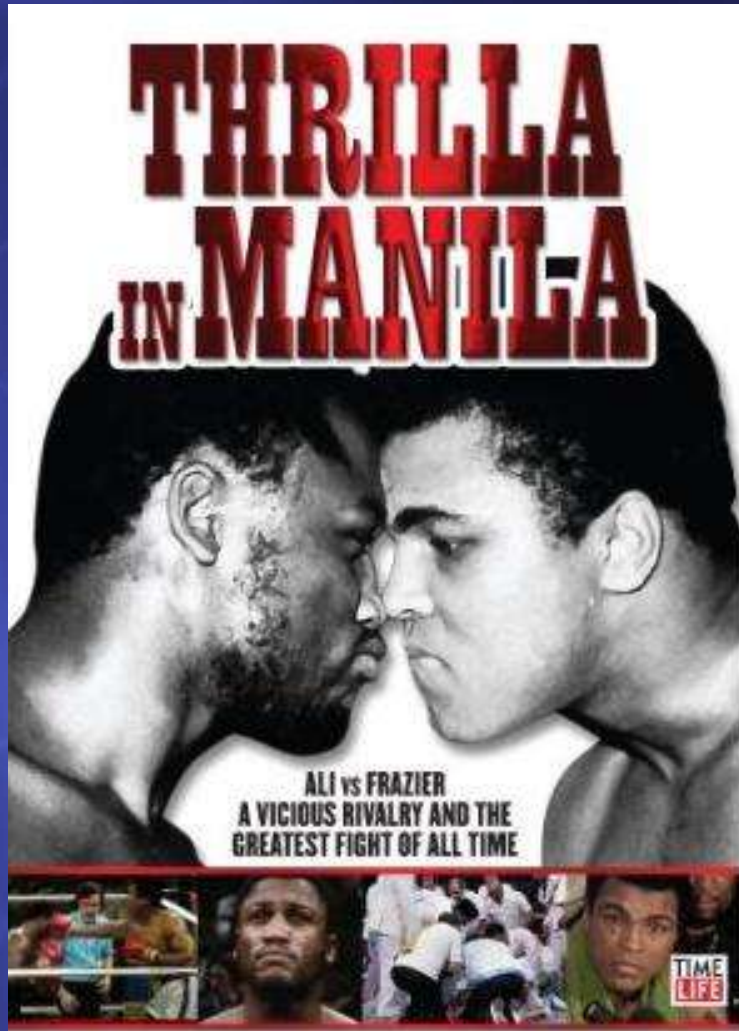
Nitinol Frame

Pericardial Leaflets

Annular Cuff



SAVR vs TAVR



May the best
Procedure win!

TAVR vs SAVR



Same Team!

Cardiology and CV surgery
meet regularly to discuss
best approach to treat
aortic valve disease

“Virtual” Valve
Clinic

Valve Clinic

Aortic Stenosis

- Treatable (can they survive therapy)?
 - Low risk, younger age, need for other surgical therapy
SAVR →
 - Higher risk, elderly, “frail” → TAVR
- Not Candidate
 - Medical Rx, hospice
 - BAV, see if can optimize, improve medical condition and become candidate

TAVR: Our Program



February 2011
First TAVR in Indiana



POD #1

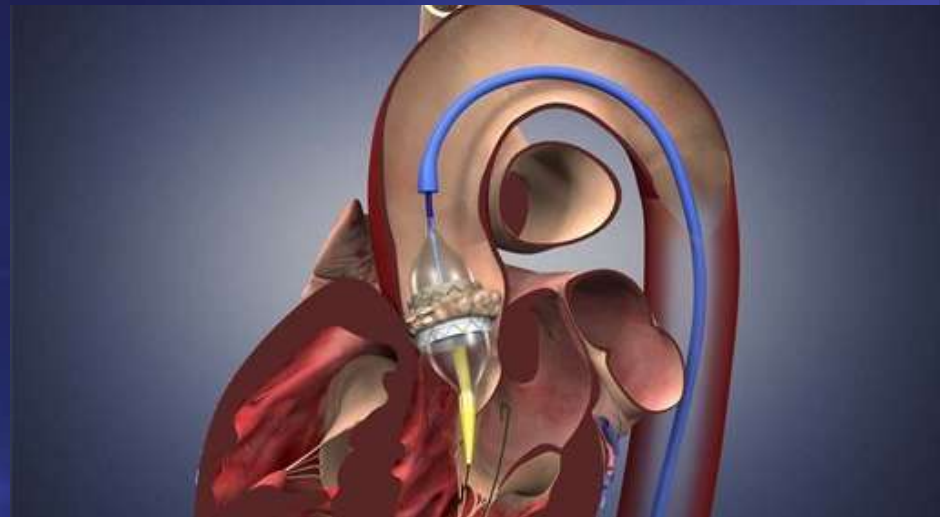
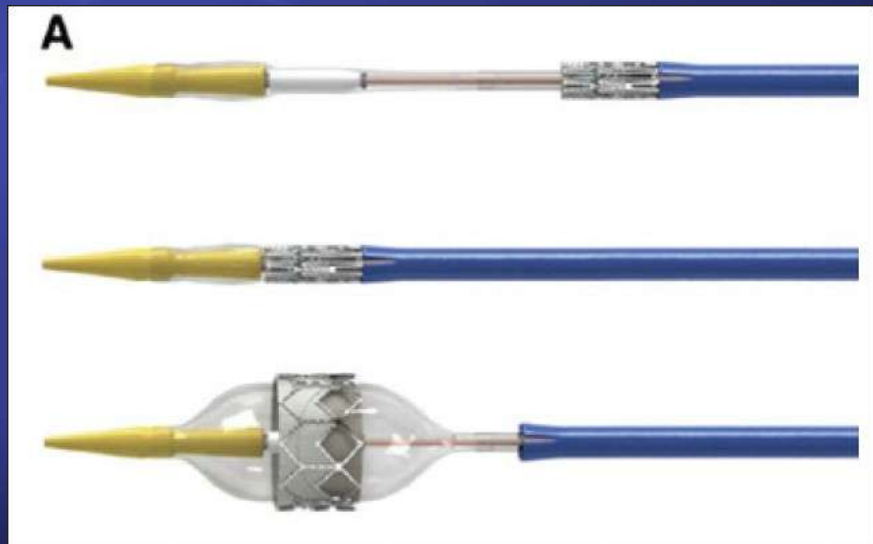
Home in 3 days

TAVR: Our Program

Edwards Sapien

FDA approved for patients too high risk for surgery

First implanted in June, 2012



TAVR: St Vincent Heart Center

Cardiologists: James Hermiller, Greg Elsner

Cardiac Surgeons: David Heimansohn, Sina Moainie

	2011	2012	2103(august 31)	Total
Corevalve	33	34	42	109
Sapien	0	23	40	63
Total	33	57	82	172

TAVR: St Vincent Heart Center

Demographics

	Male/Female	Mean Age
2011	23/10	81.7
2012	25/32	81.6
2013	54/28	82.9
Total		

TAVR: St Vincent Heart Center Outcomes

	Bleeding	CVA	30 day mortality	30 day Readmit	Prolonged Vent
2011(33)	0	2	2	3	3
2012(57)	0	0	4	3	4
2013(82)	0	0	5	11	7
incidence	0%	1.1%	6.4%	9.9%	8.1%