Proactive Management of Severe Aortic Stenosis: From Detection to Early Treatment

January 21, 2026

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UCSF Health
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Disclosure of Relevant Financial Relationships

Within the prior 24 months, I have had a financial relationship with a company producing, marketing, selling, re-selling, or distributing healthcare products used by or on patients:

Industry Institutional Grant or Research Support

- Edwards Lifesciences
- Medtronic
- Abbott Vascular

Consulting Fees/ Honoraria

- Edwards Lifesciences
- Abbott Vascular
- Cardiovascular Research Foundation

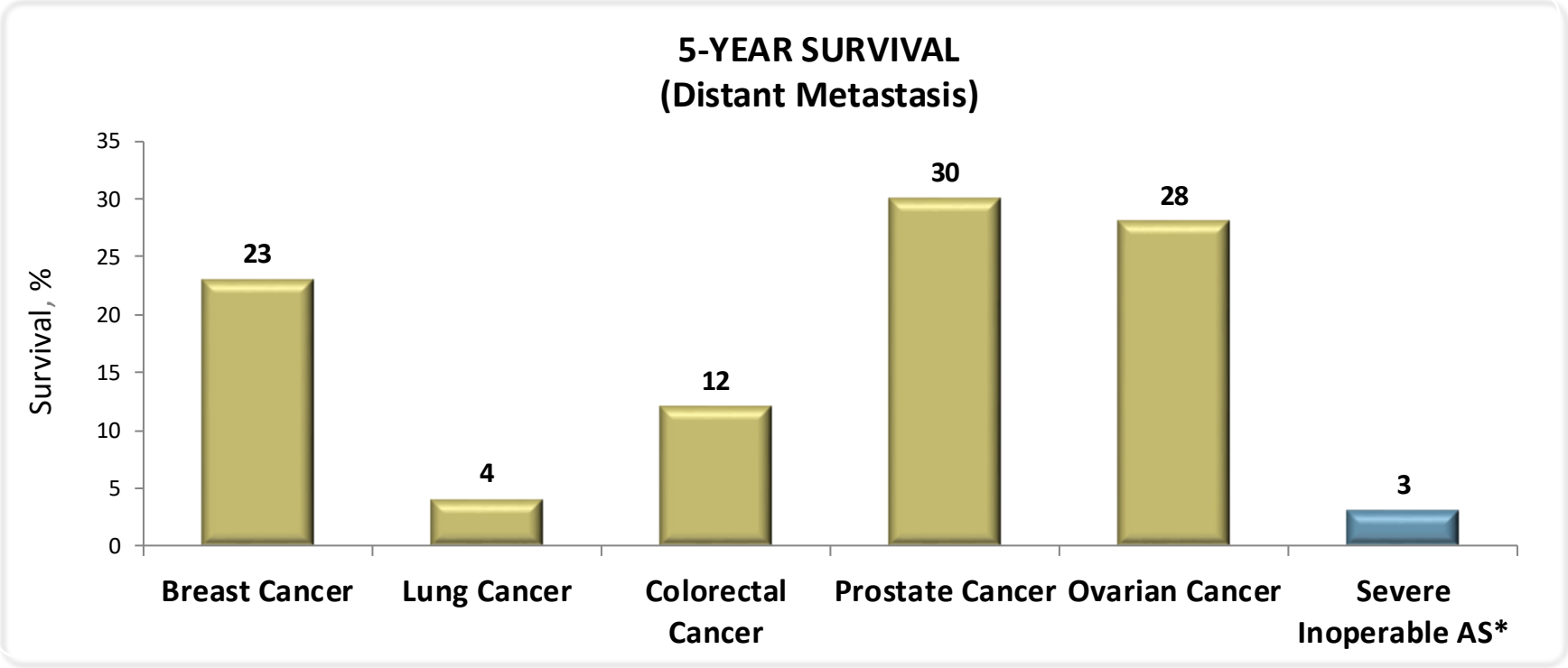
Equity/Ownership Stake

- Prospect Health

Objectives

- Describe the evolution of clinical management of severe aortic stenosis (AS).
- Explain short-comings that persist and are accentuated by progress in the clinical care of AS.
- Review potential solutions to optimize the detection and management of AS.

Dismal Prognosis of Symptomatic Severe AS without AVR



5-year survival of breast cancer, lung cancer, prostate cancer, ovarian cancer and severe inoperable aortic stenosis

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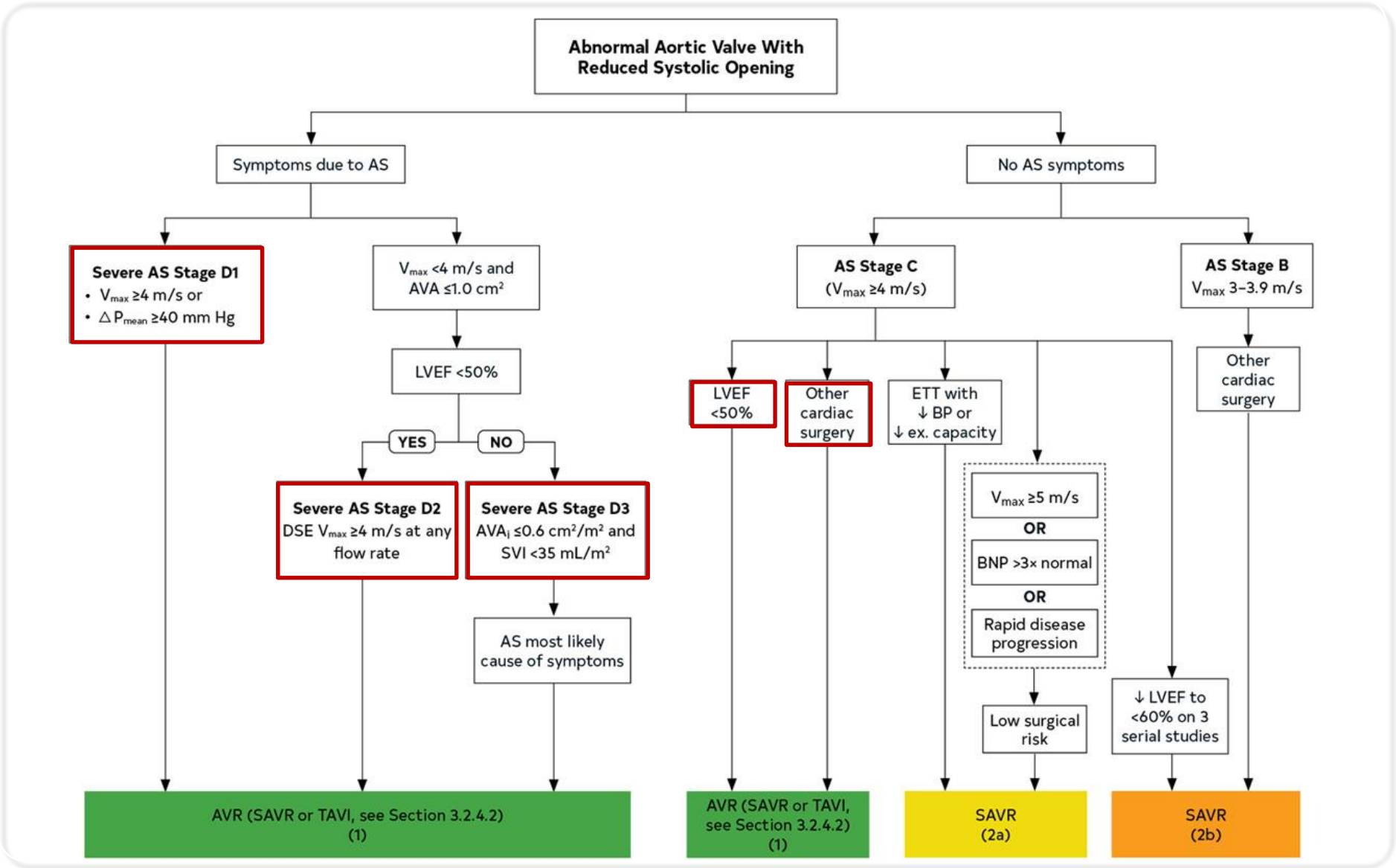
Analysis courtesy of Murat Tuczu, MD, Cleveland Clinic

National Institutes of Health. http://seer.cancer.gov/statfacts/. Accessed Nov. 2010.

2020 ACC/AHA Guidelines for AVR for Severe AS



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Otto C, et al. Circulation 2021.

2020 AHA/ACC Valvular Heart Disease Guidelines

For patients indicated for intervention, recommendations for deciding the appropriate intervention are based on age….

Key factors in the decision-making process may include anatomy and life expectancy.

….however, the final valve choice for patients of all ages should be based on shared decision making

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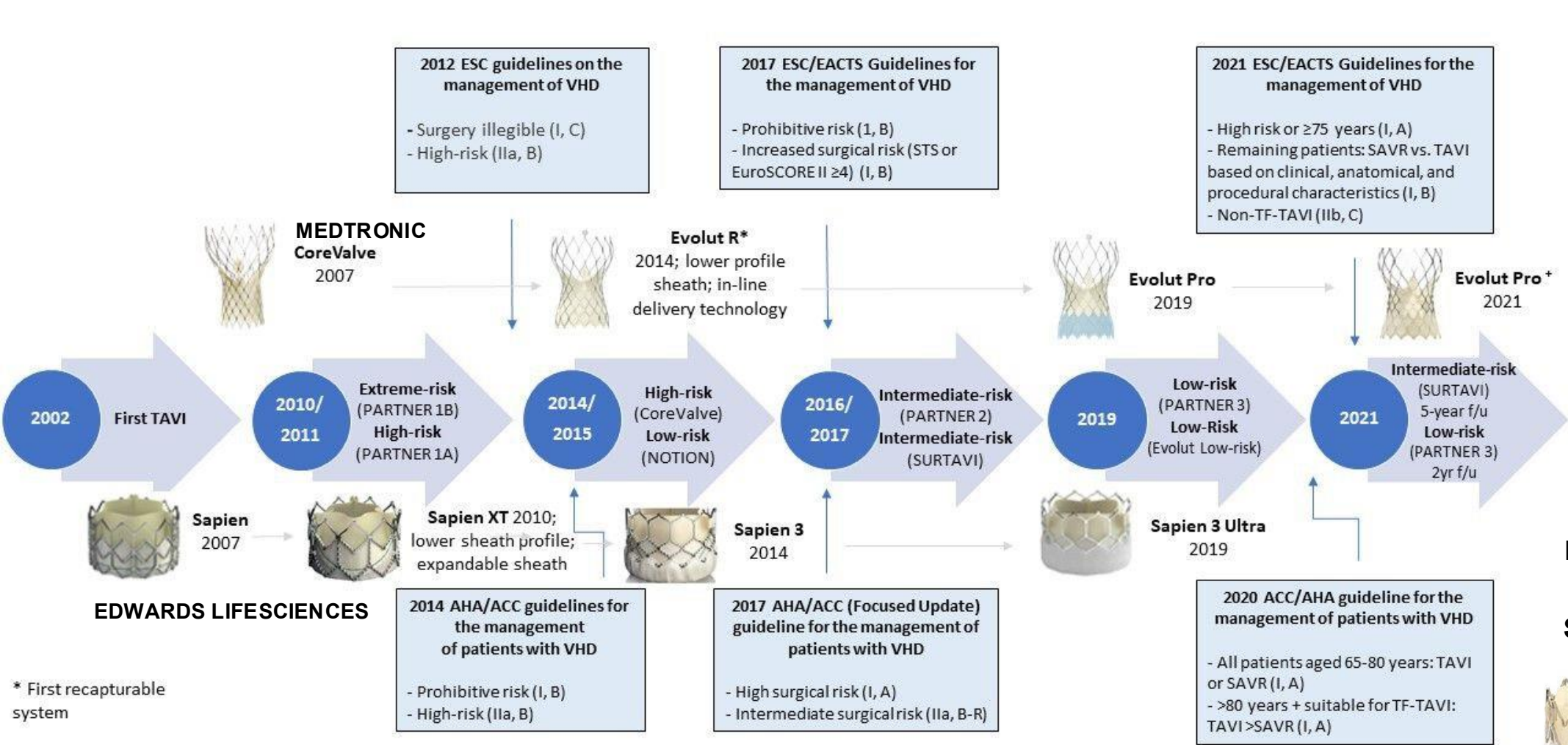
Otto C, et al. Circulation 2021.

Rapid Evolution of TAVR for Aortic Stenosis



Abbott Navitor
2023

INVESTIGATIONAL

Mirus
Siegel

Anteris
DurAVR

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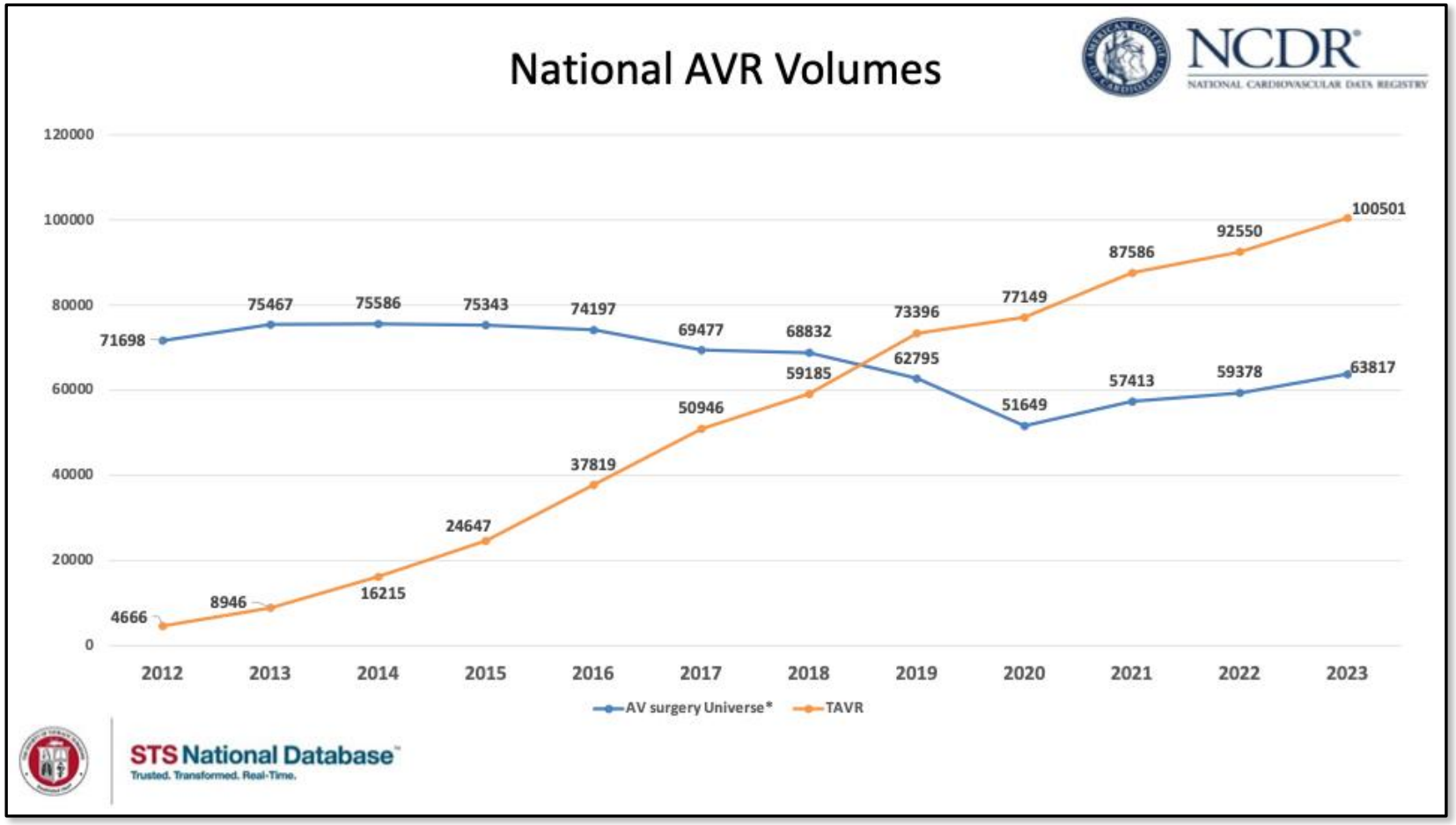
Tanner R, et al. Open Heart 2024.

TAVR Outcomes Continue to Improve



Superb TAVR Outcomes

- In-hospital mortality <1.0%
- Median LOS 1 day
- Stroke 1.4%
- Conversion to surgery 0.27%
- Pacemaker 7.8%

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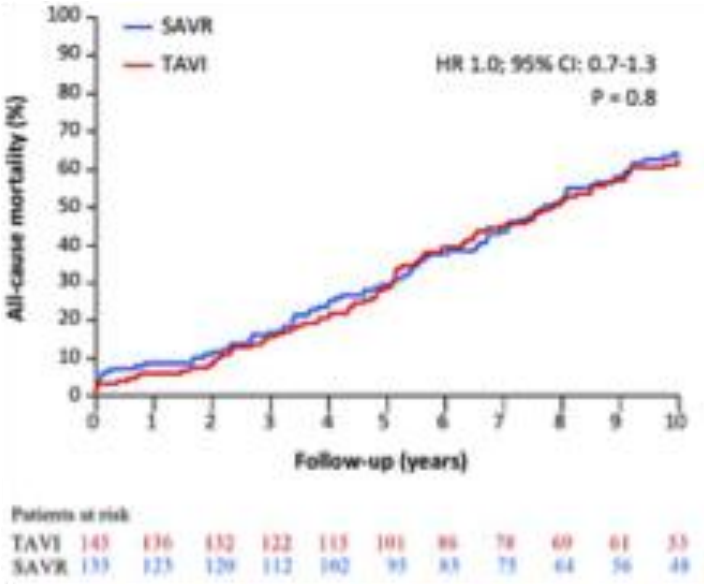
Does TAVR provide comparable long-term outcomes to SAVR?

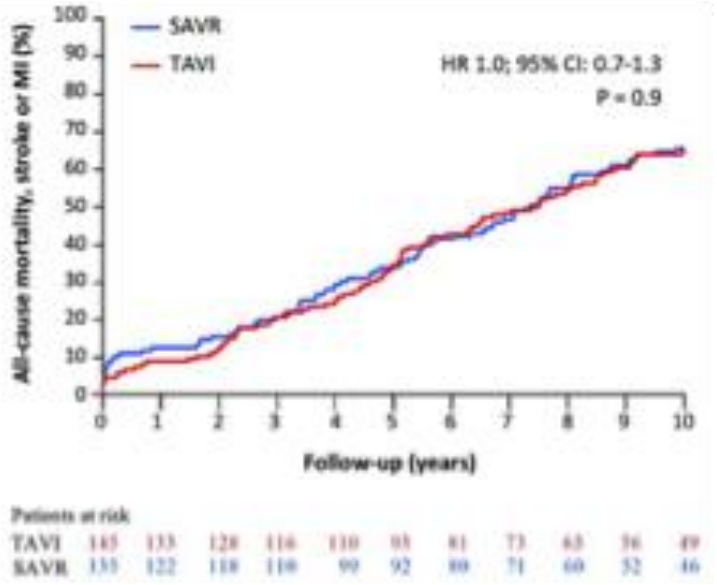
The NOTION Trial

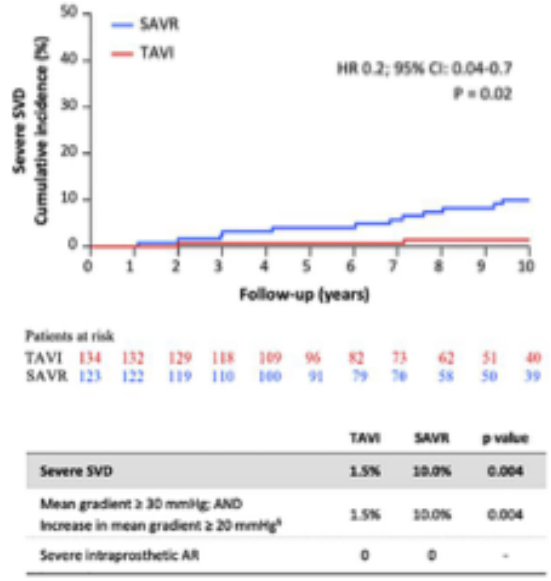
10-Year Outcomes of TAVR vs. SAVR

- 280 low-risk patients: SEV TAVR vs SAVR
- Mean age 79 yrs
- 38 German sites

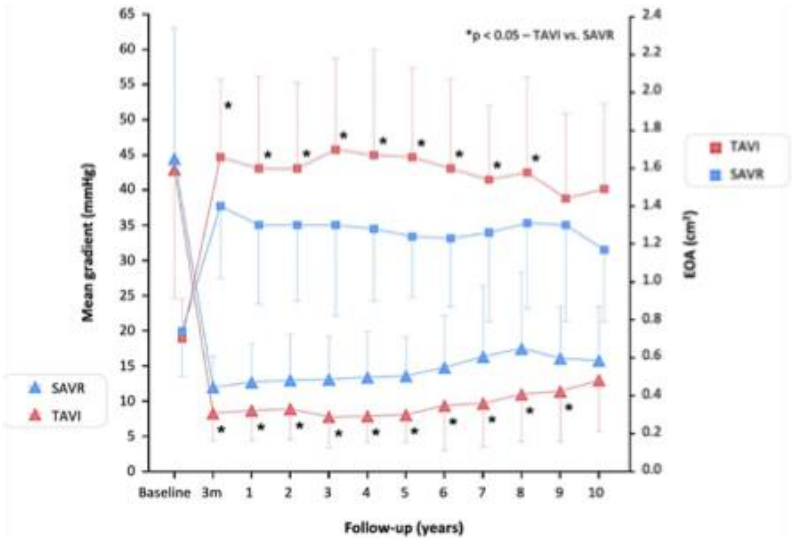
	TAVI (n = 145)	SAVR (n = 135)	P-value
All-cause mortality	62.7	64.0	.8
Cardiovascular death	49.5	51.2	.7
Stroke[a]	9.7	16.4	.1
Stroke with sequelae	6.9	10.4	.3
Transient ischaemic attack	9.7	6.7	.3
Myocardial infarction	11.0	8.2	.4
New-onset atrial fibrillation	52.0	74.1	<.01
New permanent pacemaker	44.7	14.0	<.01







	TAVI	SAVR	p value
Severe SVD	1.5%	10.0%	0.004
Mean gradient ≥ 30 mmHg; AND Increase in mean gradient ≥ 20 mmHg[a]	1.5%	10.0%	0.004
Severe intraprosthetic AR	0	0	-



Thyregod HGH, et al. Euro Heart J 2024.

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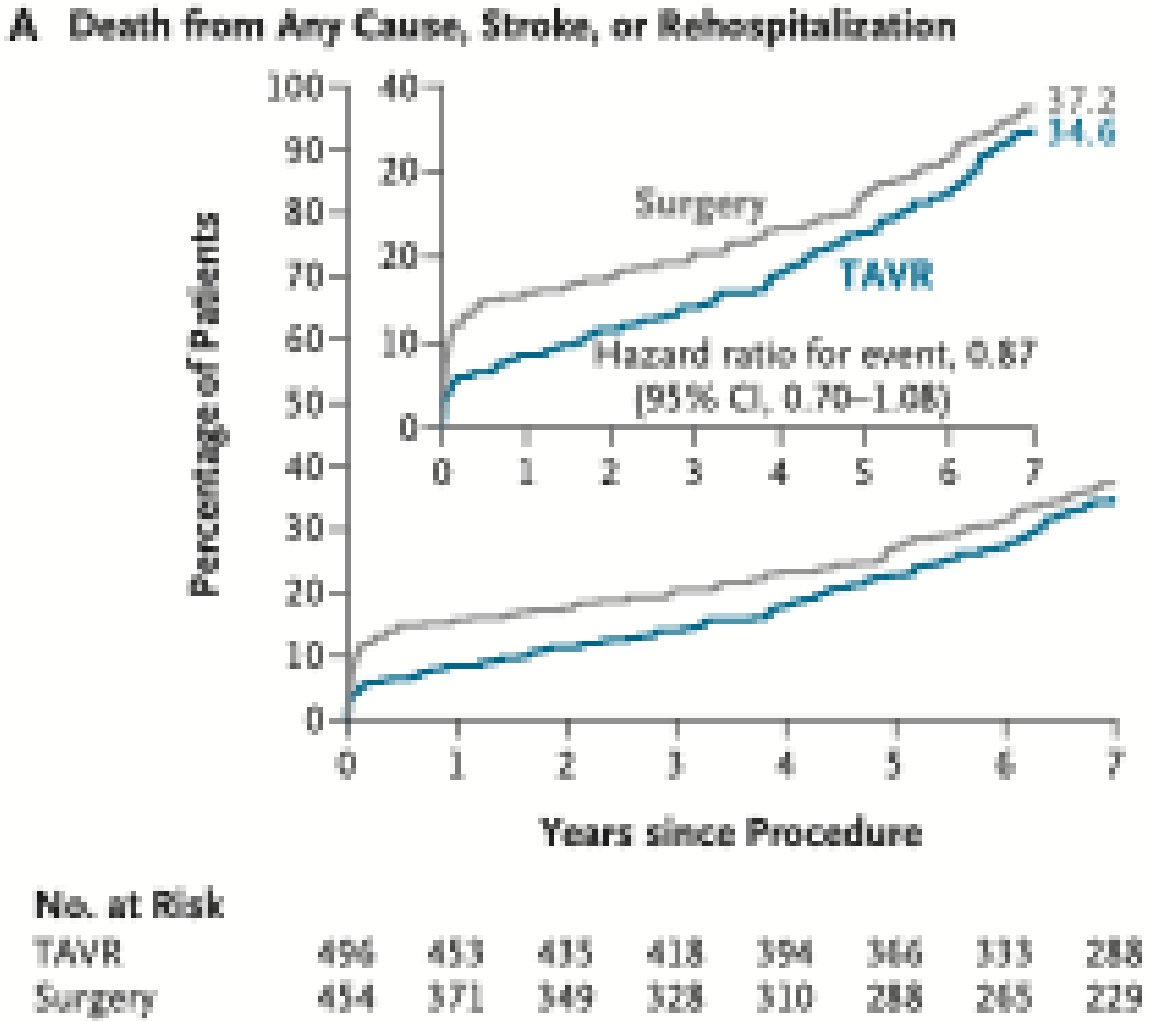
PARTNER 3
7-year Outcomes

The NEW ENGLAND JOURNAL of MEDICINE

ORIGINAL ARTICLE

Transcatheter or Surgical Aortic-Valve Replacement in Low-Risk Patients at 7 Years

Martin B. Leon, M.D.,[1,2] Michael J. Mack, M.D.,[3] Philippe Pibarot, D.V.M., Ph.D.,[4] Rebecca T. Hahn, M.D.,[1,2] Vinod H. Thourani, M.D.,[5] S.H. Kodali, M.D.,[1,2] Philippe Généreux, M.D.,[6] Samir R. Kapadia, M.D.,[7] David J. Cohen, M.D.,[2,8] Stuart J. Pocock, Ph.D.,[2,9] Yiran Zhang, M.S.,[10] Molly Szerlip, M.D.,[3] Julien Ternacle, M.D., Ph.D.,[11] S. Chris Malaisrie, M.D.,[12] Howard C. Herrmann, M.D.,[13] Wilson Y. Szeto, M.D.,[13] Mark J. Russo, M.D.,[14] Vasilis Babaliaros, M.D.,[15] Tamim Nazif, M.D.,[1,2] John G. Webb, M.D.,[16] and Raj R. Makkar, M.D.,[17] for the PARTNER 3 Investigators*



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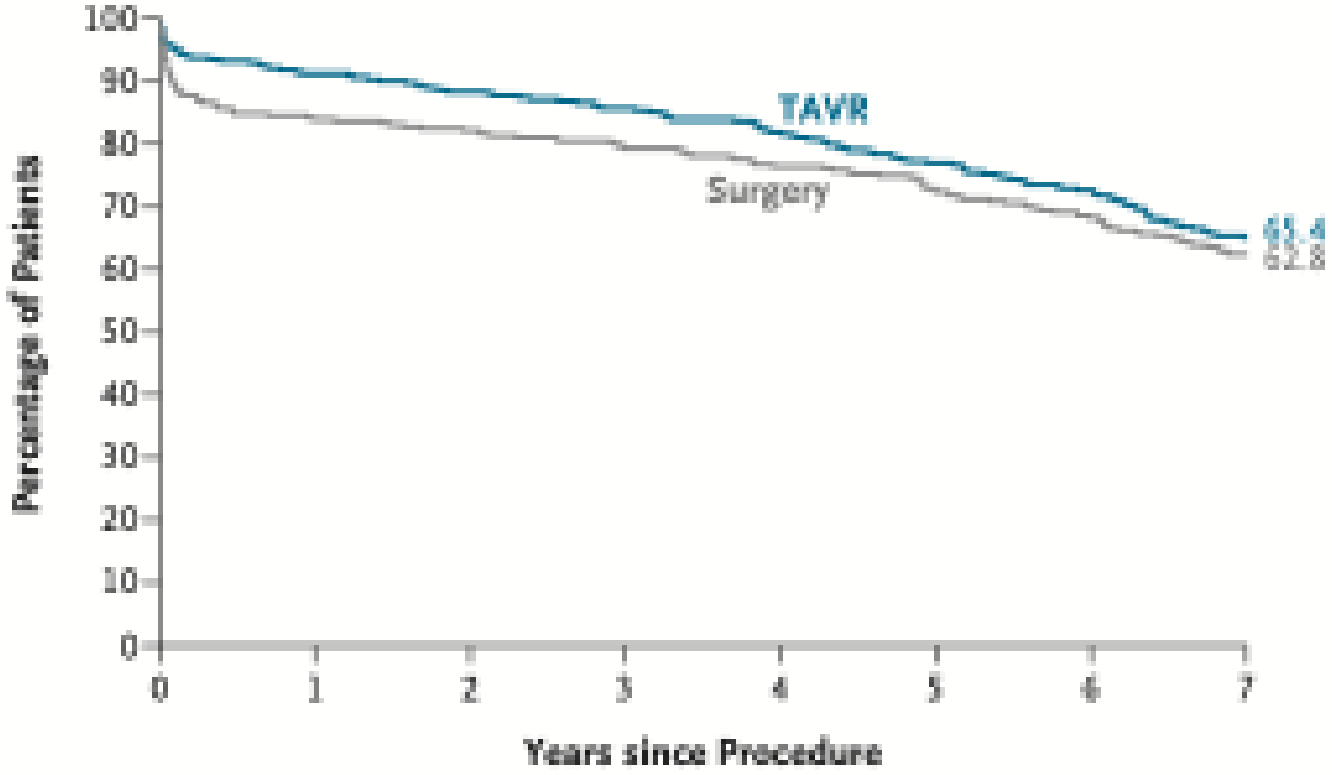
Leon M, et al. NEJM 2025.

Favorable Event-Free Survival with TAVR

A Restricted Mean Event-free Survival Time for the First Primary End Point (death from any cause, stroke, or rehospitalization) at 2555 Days



Mean Event-free Survival Time (95% CI)	days
TAVR	2108 (2038 to 2179)
Surgery	1974 (1886 to 2062)
Difference (TAVR–surgery)	134 (22 to 247)

No. at Risk								
TAVR	496	453	435	418	394	366	333	288
Surgery	454	371	349	328	310	288	265	229

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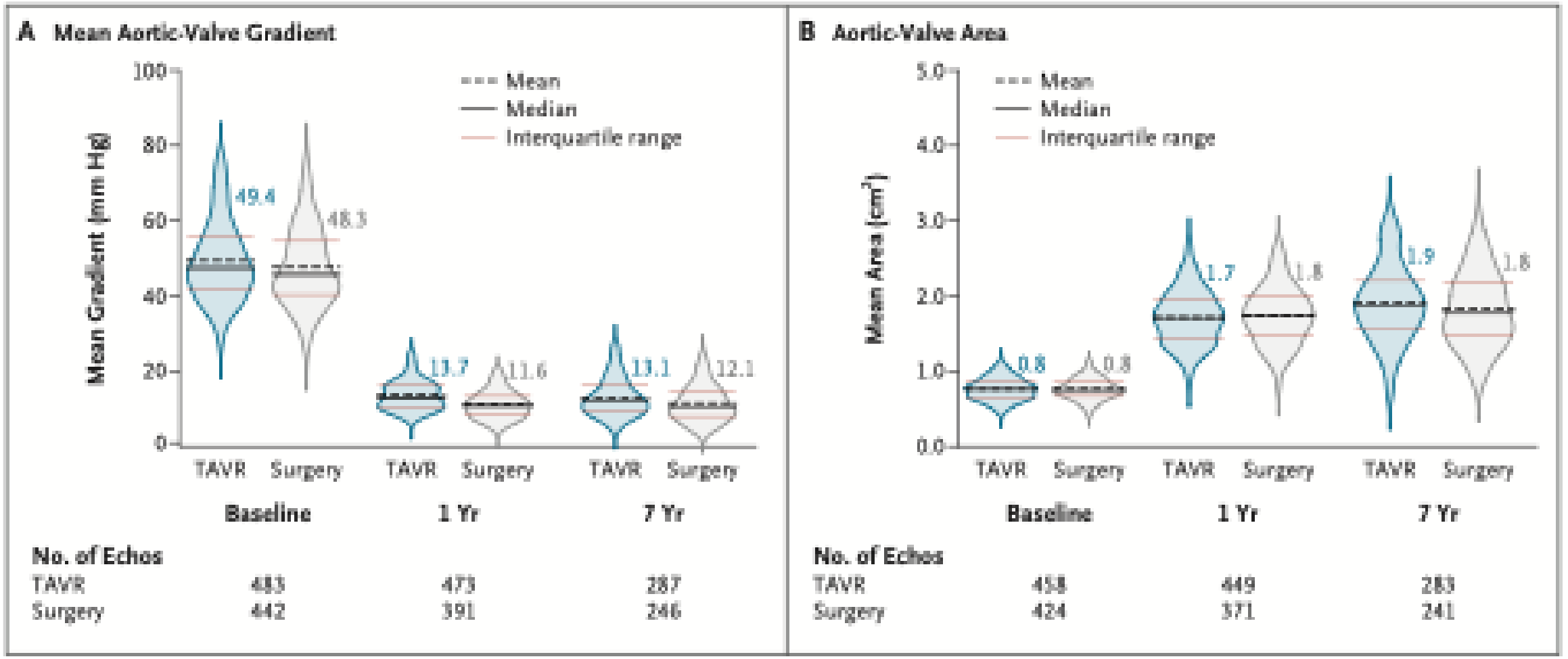
Leon M, et al. NEJM 2025.

Excellent TAVR Durability at 7 years



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Leon M, et al. NEJM 2025.

Study Design

Prospective, multicenter RCT evaluating patients with asymptomatic, severe AS aged ≥ 65 years w/ an STS score ≤ 10% and LVEF ≥ 50%

Asymptomatic Status
Confirmed by negative treadmill stress test*

Randomization 1:1

Transfemoral-TAVR
(SAPIEN 3 or SAPIEN 3 Ultra THV)

Clinical Surveillance

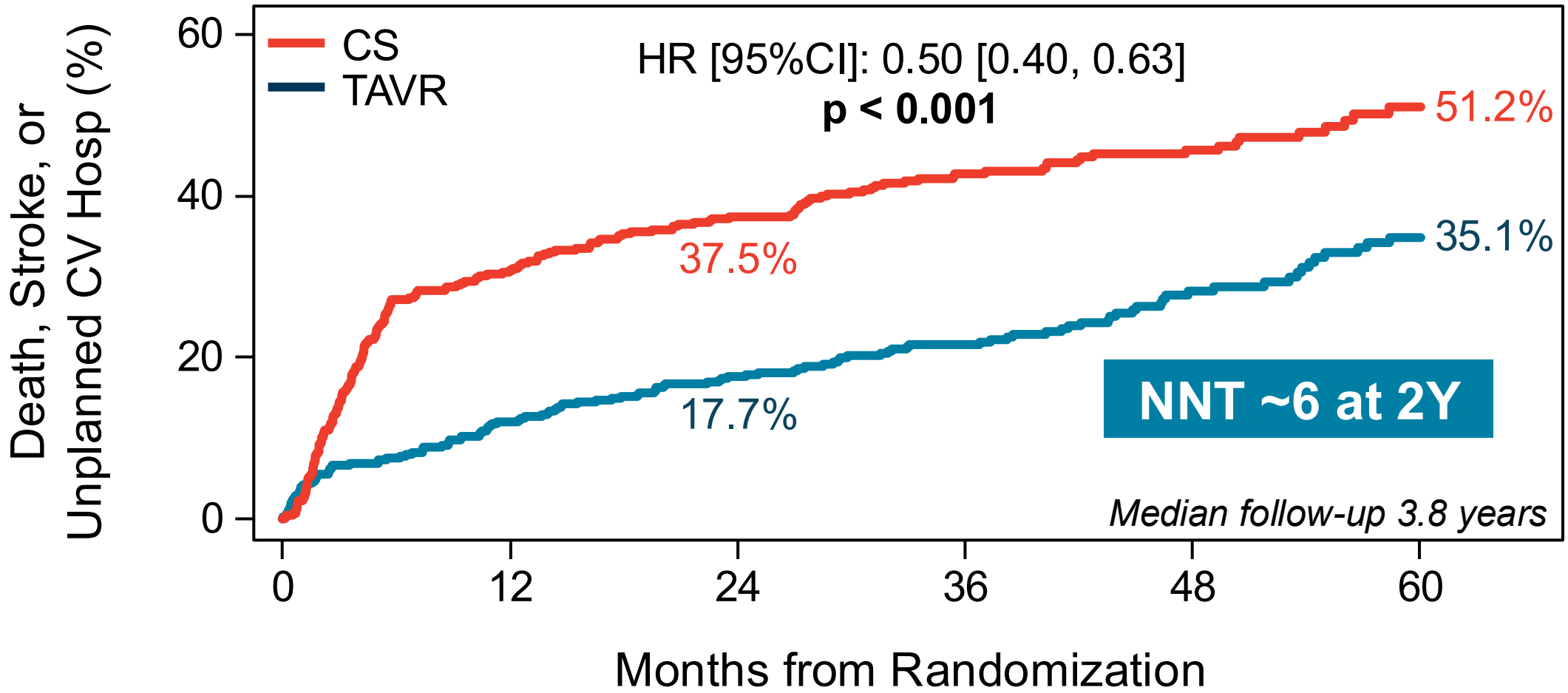
PRIMARY ENDPOINT (Superiority)
Non-hierarchical composite of all-cause death, any stroke, or unplanned CV hospitalization at a minimum follow-up of 2 years

*Courtesy of Philippe Généreux

**Confirmed by detailed clinical history alone if patient was unable to perform stress test*

Efficacy of AVR for Asymptomatic Severe AS

Primary Endpoint All-cause death, any stroke, or unplanned CV hospitalization



No. at risk:

TAVR	455	390	363	285	142	103
CS	446	305	266	187	117	46

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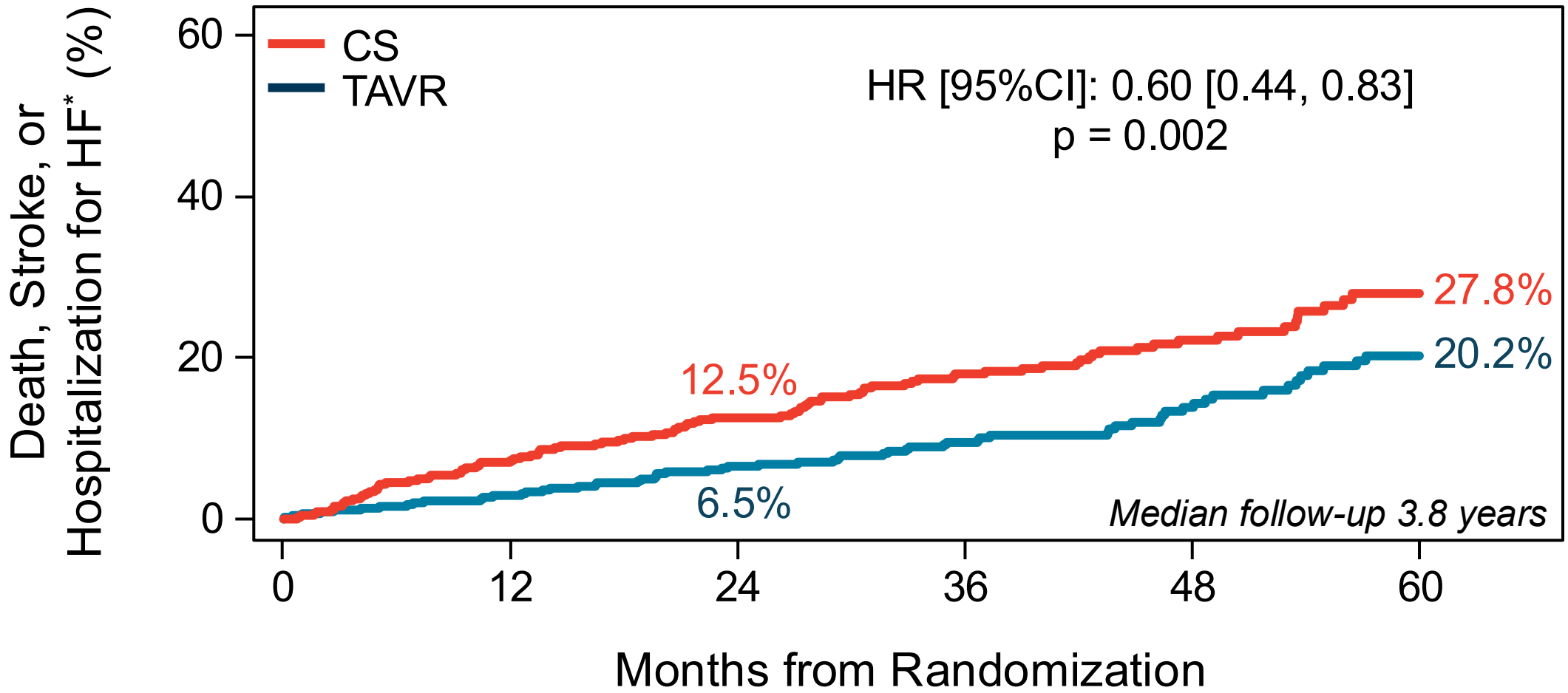
THE EARLY TAVR TRIAL

Efficacy of AVR for Asymptomatic Severe AS

Death, Stroke, or Hosp. for HF*



No. at risk:

TAVR	455	431	412	331	175	128
CS	446	410	376	268	163	77

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THE EARLY TAVR TRIAL

Clinical Presentation at Time of AVR Conversion

Patients classified based on acuity and severity of signs/symptoms

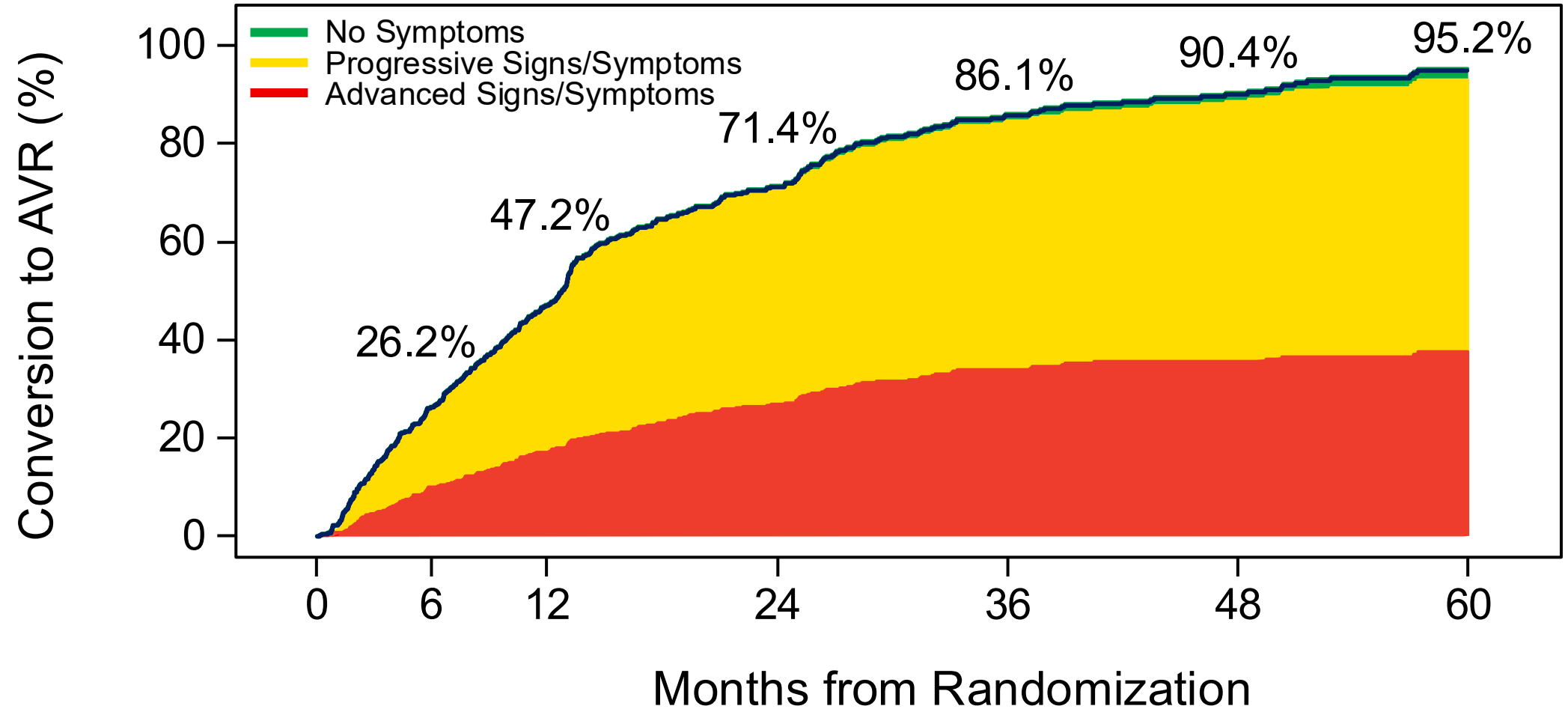
Asymptomatic
Includes pts who may have converted to AVR b/c they required additional medical procedures

Progressive Signs or Symptoms
NYHA II
Increase in HF Sx from baseline
≥1.5- to < 3-fold increase in NT-proBNP from baseline and age-specific threshold*

Advanced Signs or Symptoms / Acute Decompensation
NYHA III/IV
Syncope
Atrial fibrillation
Ventricular arrhythmia
Resuscitated sudden death/cardiac arrest
Hospitalization for HF and/or pulmonary edema
LVEF drops to < 50%
≥ 3-fold increase in NT-proBNP from baseline and age-specific threshold*

*125 pg/mL for patients ≤ 75 years and 450 pg/mL for > 75 years

Signs & Symptoms at Time of Conversion to AVR

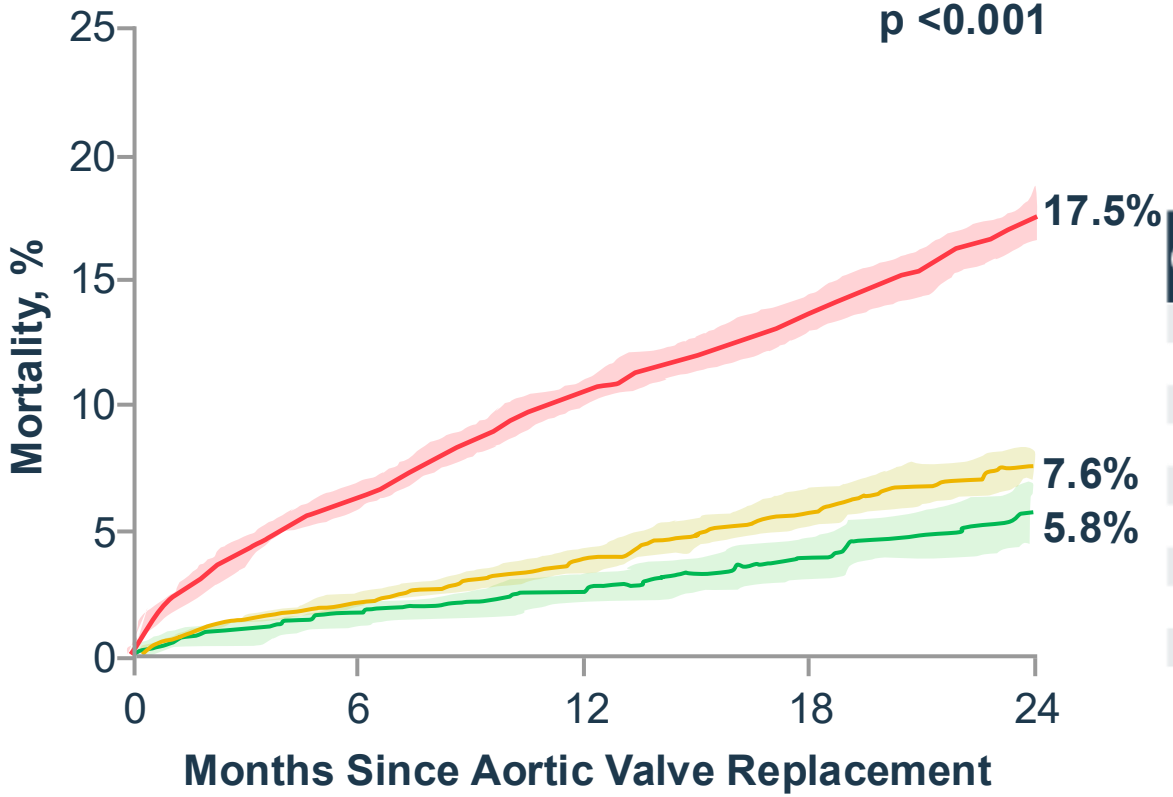


Median follow-up 3.8 years; At the time of analysis, 30 patients were still on study but hadn't converted to AVR

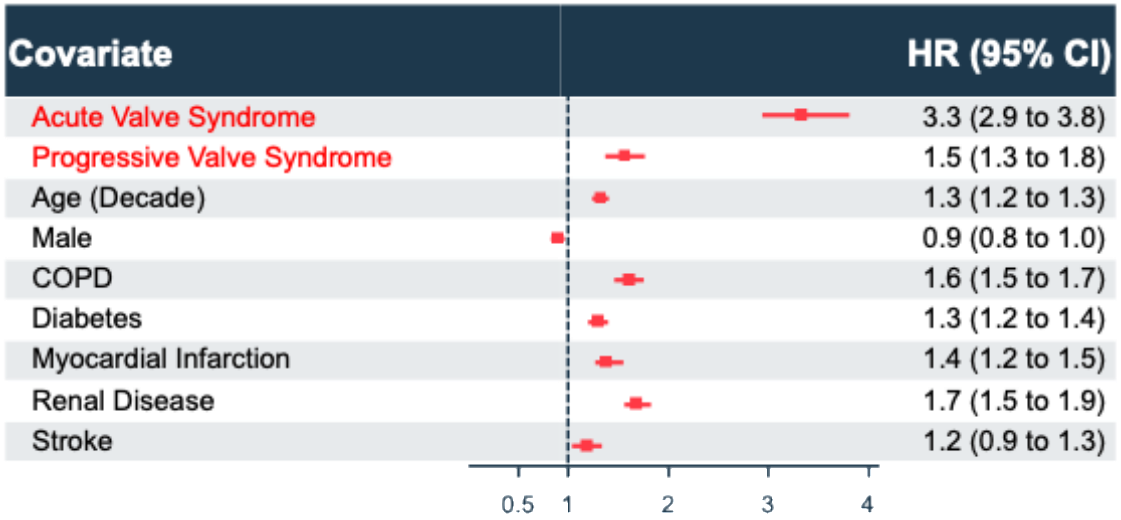
THE EARLY TAVR TRIAL

2-Year Mortality After AVR Per Clinical Presentation

ASx vs. Progressive vs. Acute Valve Syndrome



No. at Risk					
Asymptomatic	2504	1859	1540	1176	934
Progressive	6116	4710	3867	2871	2147
Acute	9218	6667	5243	3702	2700



THE EARLY TAVR TRIAL

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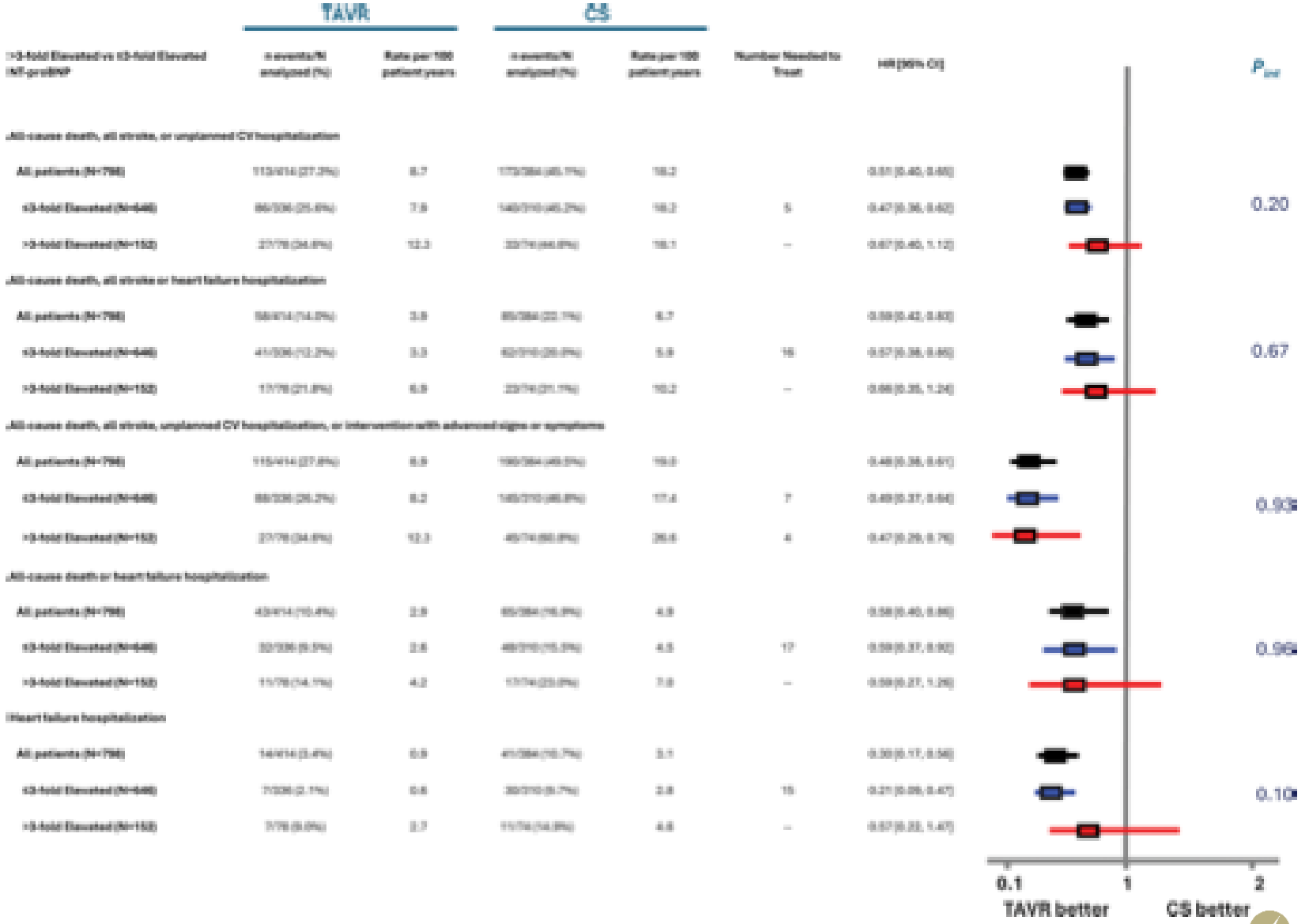
Genereux et al. Structural Heart In Press 2025

Elevated NT-proBNP and hs-cardiac Troponin T are of Limited Value in Guiding Timing of AVR



Lindman BR, et al. Circulation 2025

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THE EARLY TAVR TRIAL

Meta-Analysis Results

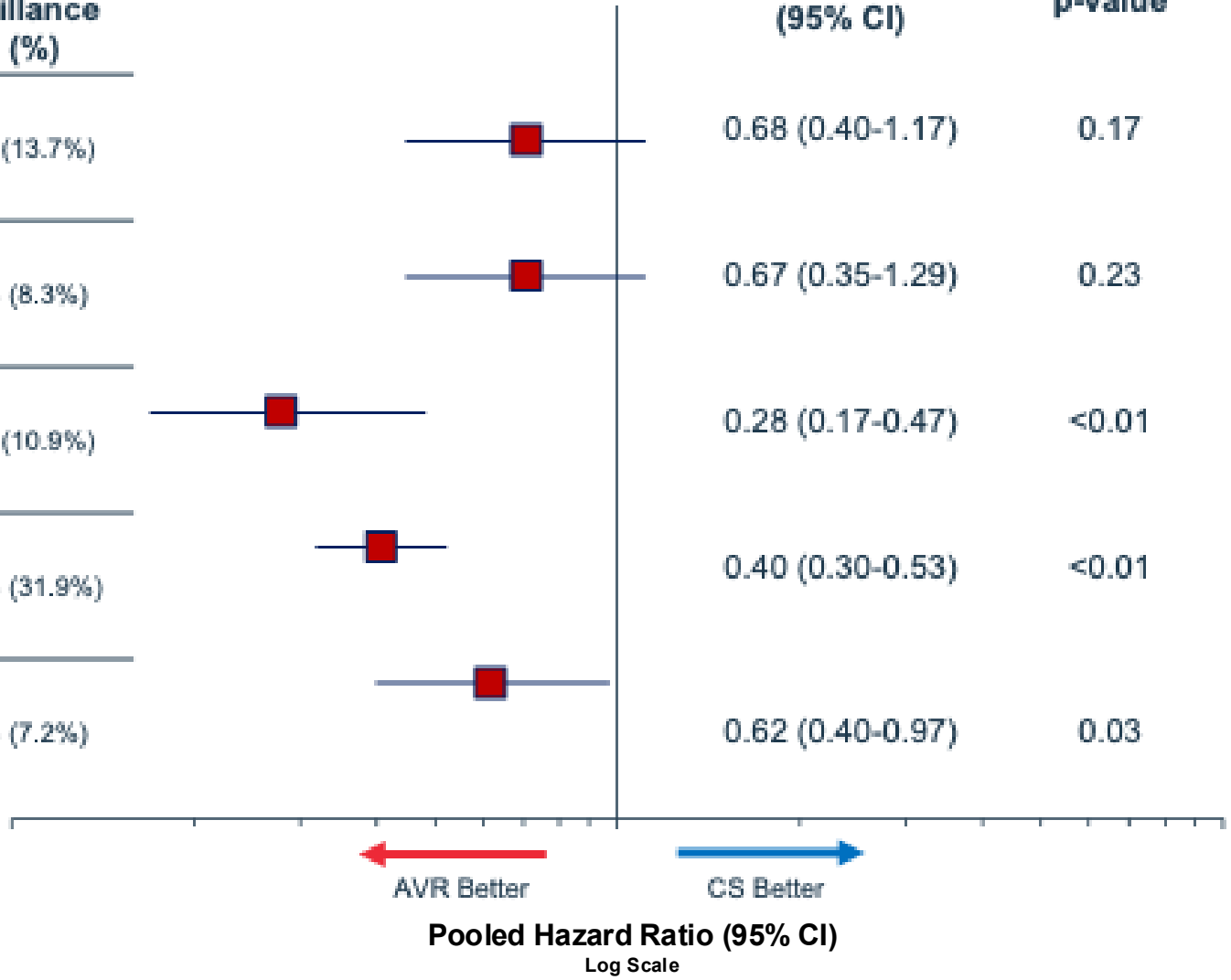
Summary of Randomized Controlled Trials

First Author Year, Study	Country	Study Period	Number of Patients		
			Total	AVR	CS
Généreux 2025 THE EARLY TAVR TRIAL	US & Canada	2017-2021	**901**	**TAVR** 455	446
Loganath 2025 EvoLVed-AS	UK	2017-2022	**224**	**SAVR/ TAVR** 113	111
Banovic 2024 AVATAR	Europe	2015-2023	**157**	**SAVR** 78	79
Kang 2020 RECOVERY	Korea	2010-2015	**145**	**SAVR** 73	72

Généreux et al. JACC 2025.

Meta-Analysis 4 RCTs Asymptomatic Severe AS

	Early AVR n/N (%)	Clinical Surveillance n/N (%)	Pooled Hazard Ratio* (95% CI)	p-value
All-Cause Mortality	70/719 (9.7%)	97/708 (13.7%)	0.68 (0.40-1.17)	0.17
Cardiovascular Mortality	37/719 (5.1%)	59/708 (8.3%)	0.67 (0.35-1.29)	0.23
Heart Failure Hospitalization	18/606 (3.0%)	65/597 (10.9%)	0.28 (0.17-0.47)	<0.01
Unplanned CV or HF Hospitalization	105/719 (14.6%)	226/708 (31.9%)	0.40 (0.30-0.53)	<0.01
Stroke	32/719 (4.5%)	51/708 (7.2%)	0.62 (0.40-0.97)	0.03



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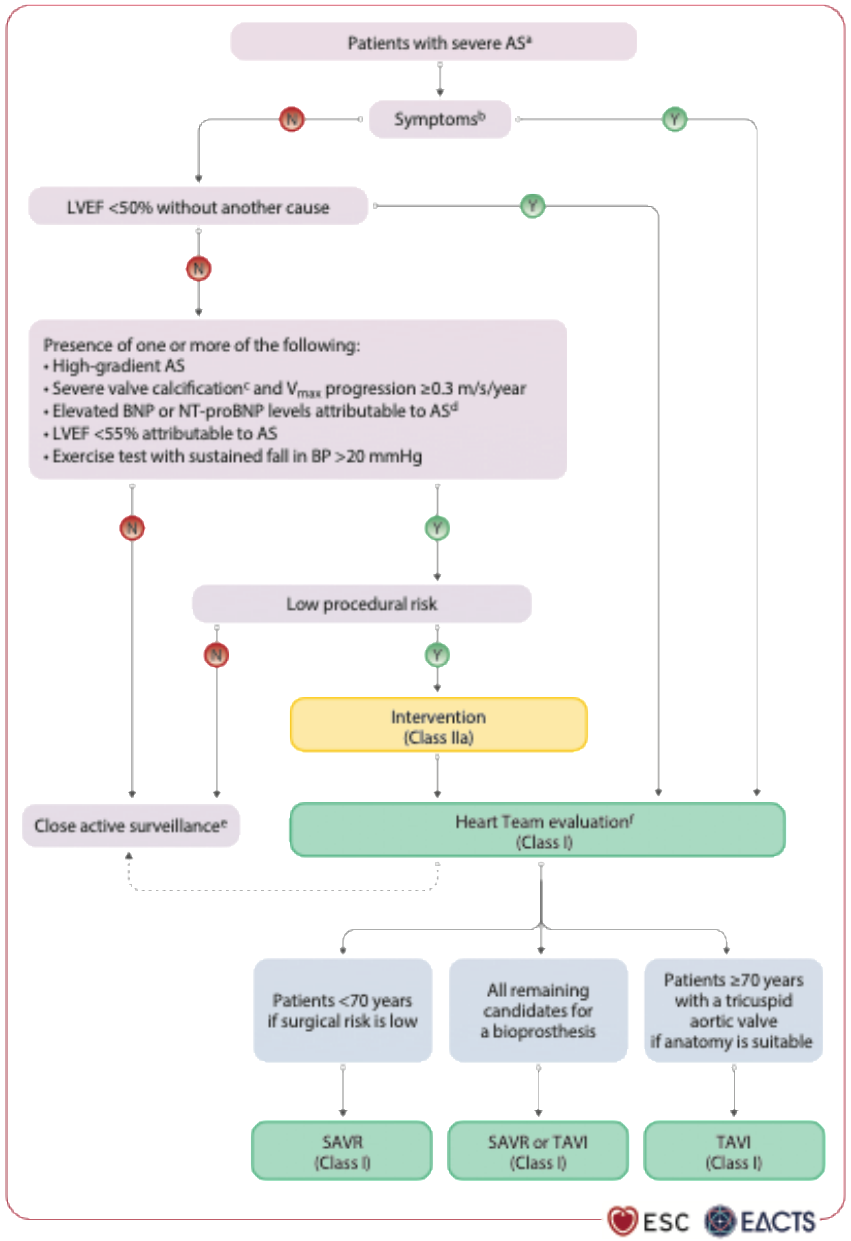
Genereux et al. JACC 2025

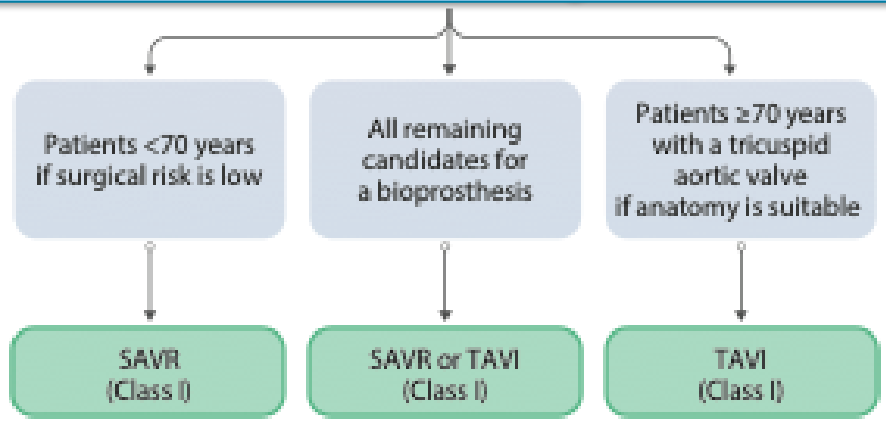
2025 ESC/EACTS Guidelines for the Management of VHD



ESC European Society of Cardiology

Add class IIa indication for asymptomatic AS with high gradient (mean AVG>40 mmHg).

Simplified guidance for SAVR vs. TAVI for bioprosthetic AVR with TAVI recommended at lower age.



Praz F, et al. Euro Heart J 2025.

Tremendous Progress

SAVR and TAVR have become safe and effective life-saving therapies.

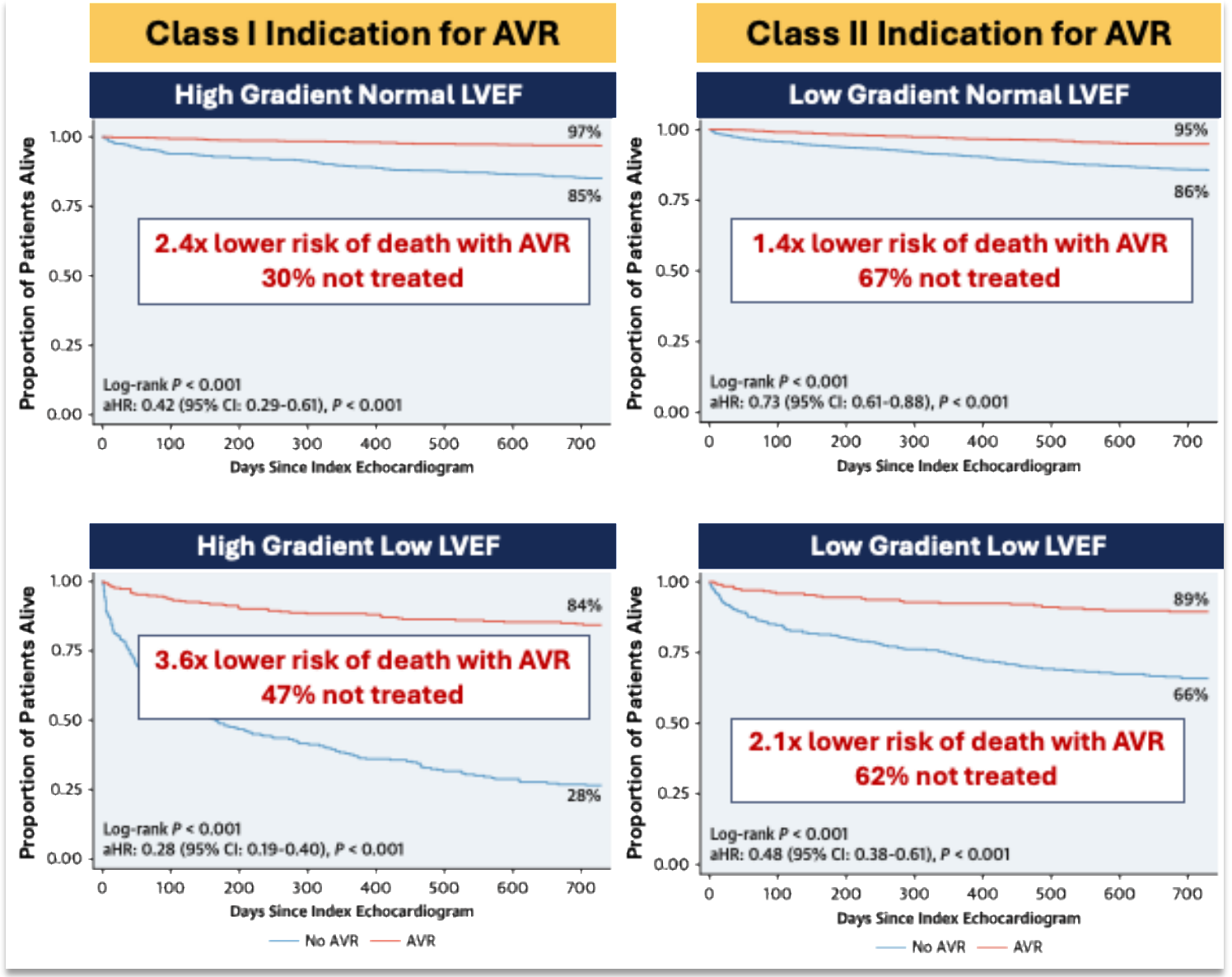
Both SAVR and TAVR are widely available across the US at >1200 and 800 hospitals, respectively.

Safety of AVR may now justify use in asymptomatic patients with severe AS.

AVR Saves Lives but Remains Severely Underutilized

Mass General Brigham 2000-2017:

- 11,993 patients with severe AS (aortic valve area <1cm2)



Li SX... Elmariah S. JACC, 2022;79:864-77.

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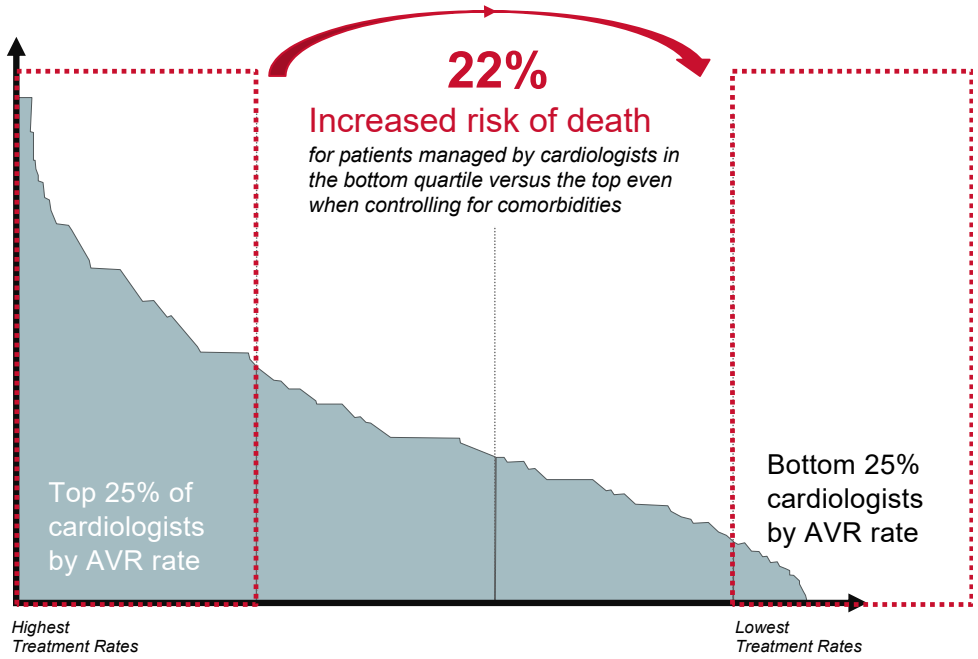
Rates of AVR and mortality are influenced by the managing provider

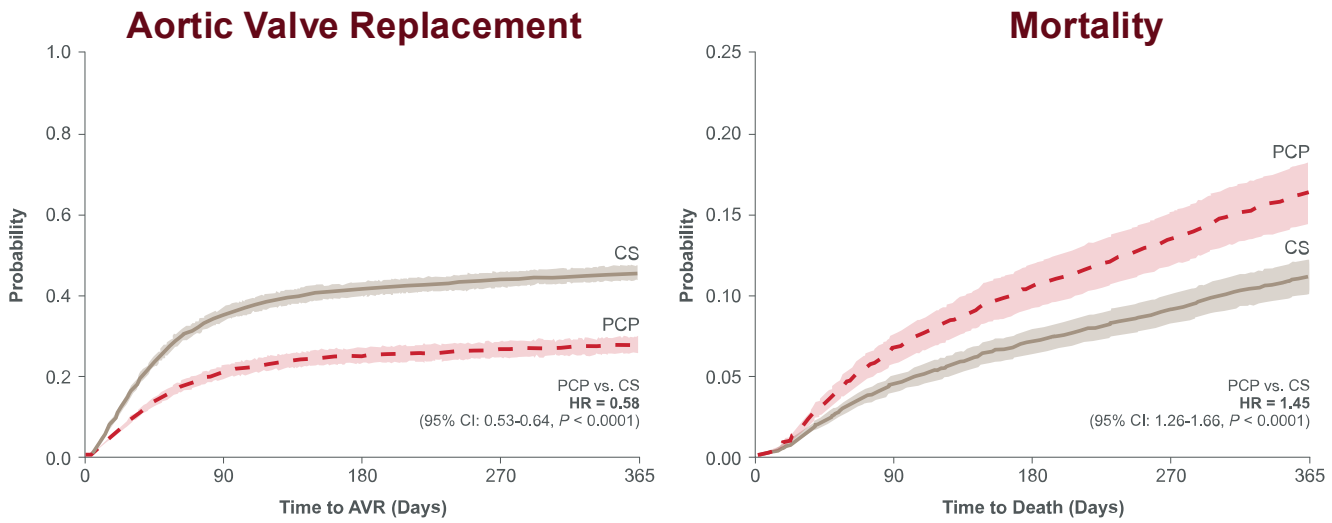
AVR treatment rate of Class I indicated sSAS patients in one year by managing cardiologist (%)

Difference of **2.3x** in receiving AVR (vs. no AVR) if a patient had a different managing cardiologist



Cardiologists ranked by treatment rates of AVR patients

Impact of Managing Provider Type (PCP vs. CS) on SAS Management and Mortality



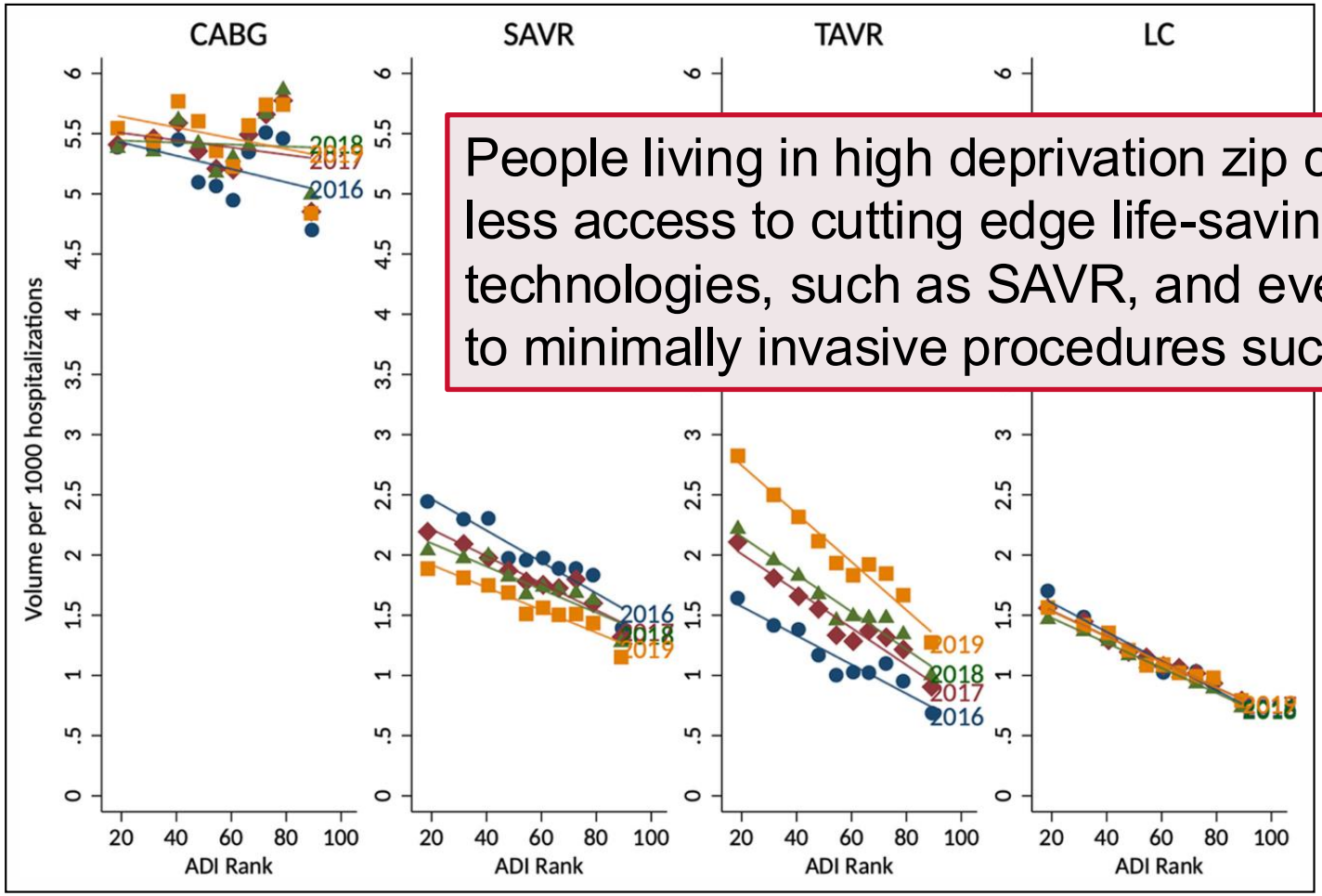
PCP-managed patients with SAS have significantly **lower rates of AVR and survival**

Brennan JM, *et al.* J Am Heart Assoc 2021.

Pellikka PA, *et al.* J Am Heart Assoc 2022.

Limited Access to Aortic Valve Procedures in Socioeconomically Disadvantaged Areas

- Procedural volumes from the HCUP State Inpatient Database for 2016 to 2019
- 25,721 observations from 6623 zip codes
- The data contain the universe of community hospital discharges regardless of patient coverage.



People living in high deprivation zip codes have less access to cutting edge life-saving technologies, such as SAVR, and even more so to minimally invasive procedures such as TAVR.

Figure 1. **Transcatheter aortic valve replacement and laparoscopic colectomy volumes, by area deprivation index rank and year.**

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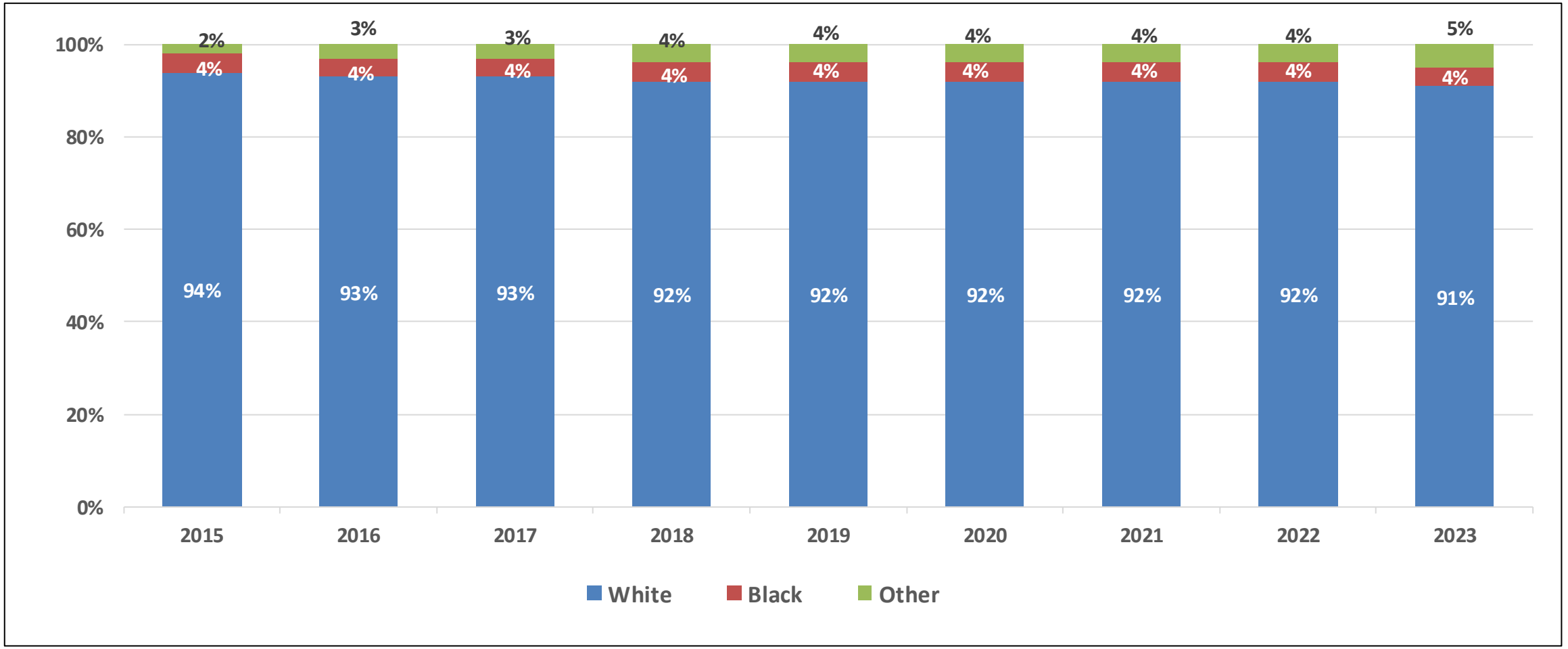
David G, et al. J Am Heart Assoc. 2024.

Racial Disparities in TAVR



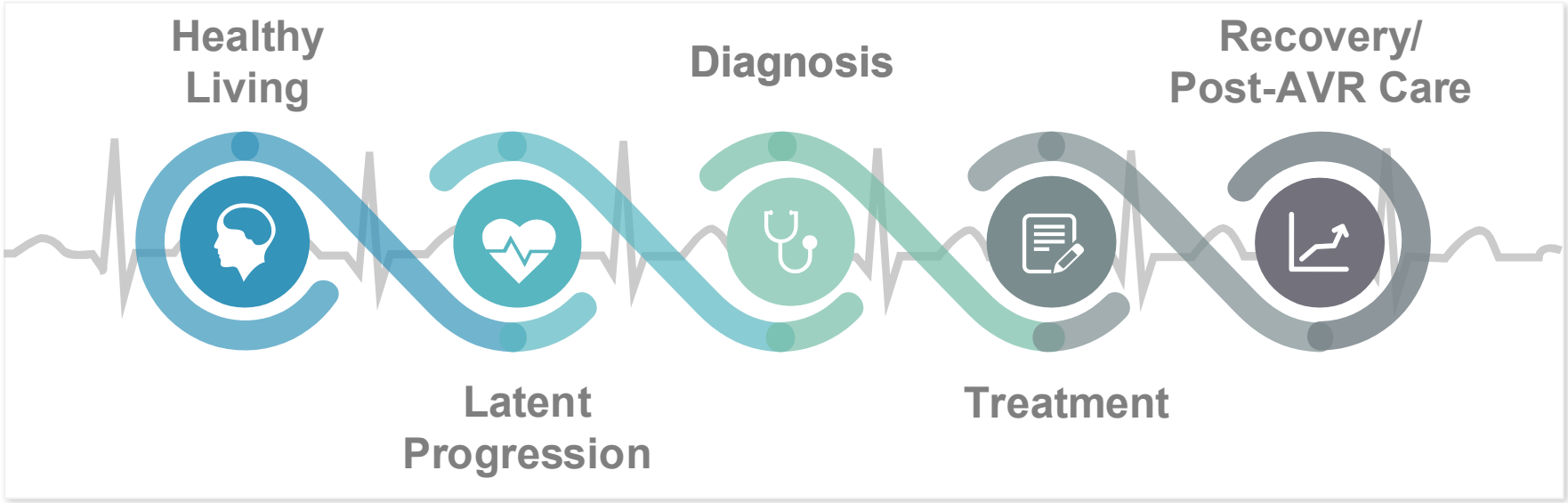
Source: STS/ACC TVT Registry Database

STS National Database™
Trusted. Transformed. Real-Time.

NCDR®
NATIONAL CARDIOVASCULAR DATA REGISTRY

Continuum of AS Care

Obstacles at every step



Awareness and patient beliefs

Lack of patient recognition of SAS impact, treatment options, and risks

Detection and diagnosis

Challenges in recognition, auscultation, echo interpretation, and symptom assessment

Referral and treatment

MD beliefs/biases, health system barriers, and suboptimal transitions of care

American Heart Association.
Target: Aortic Stenosis™

Target: Aortic Stenosis™

An AHA Quality Initiative

Aortic Stenosis Patient Care Pathway

	Awareness	Detection	Diagnosis	Referral	Treatment	Monitoring
American Heart Association. Target: Aortic Stenosis™	✓	✓	✓	✓	✓	✓
Current Procedural Registries					✓	✓

For Systems: Implementation of quality measures based on updated guidelines

For Health Care Providers: Delivery of guideline-directed, optimal-care standards education

For Patients: Increasing patient awareness and engagement

Goal to identify, measure, and report on processes that occur from the initial echocardiographic diagnosis of aortic stenosis, with the long-term goal of improving patient outcomes.

75 Hospital Contracted & Engaged

12,386 Patient Records Entered with 47,704+ Encounters

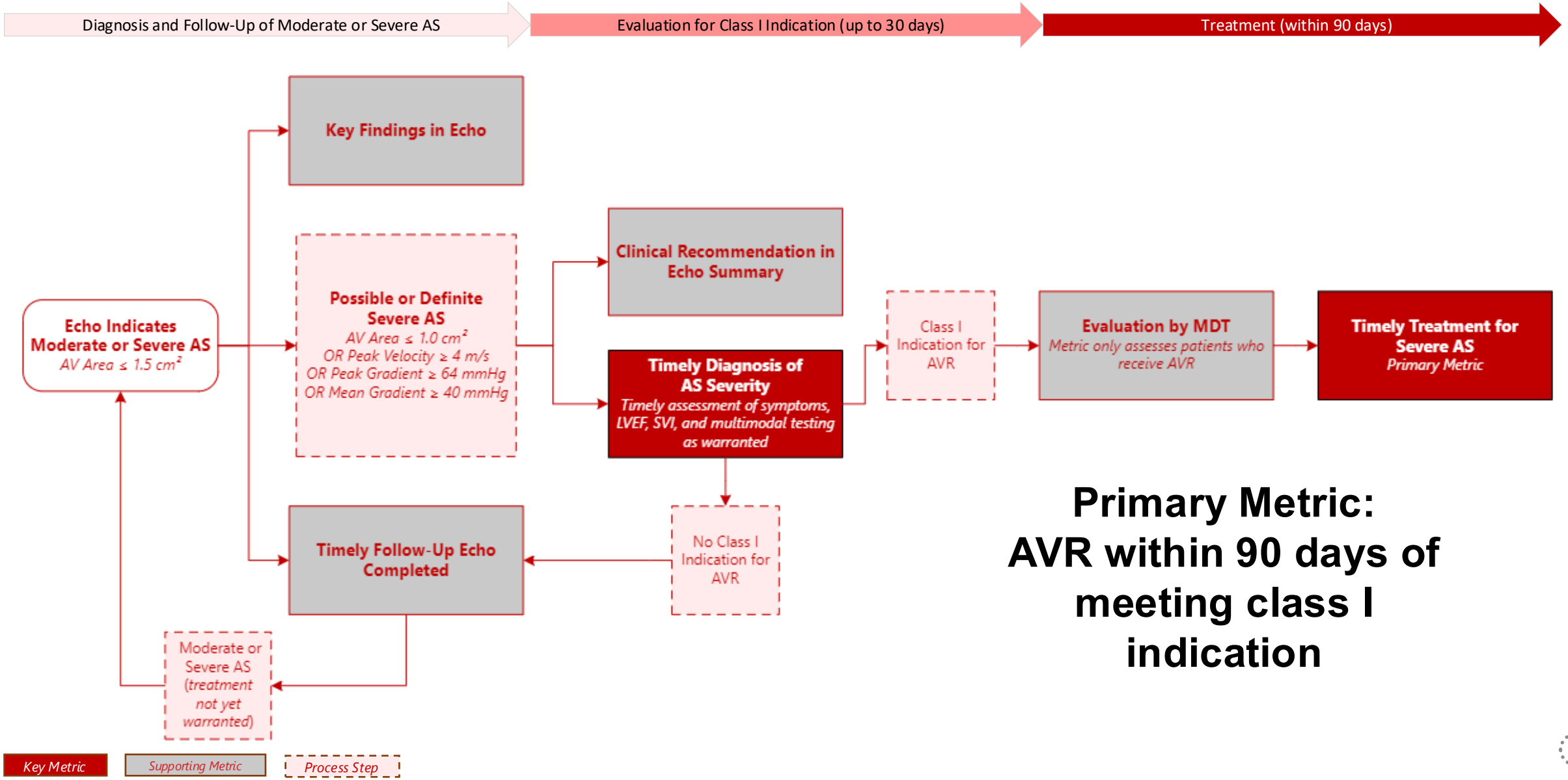
Data as of 24SEP2025

Edwards

Edwards Lifesciences is the national sponsor of American Heart Association's Target: Aortic Stenosis.

American Heart Association®
Target: Aortic Stenosis™

Measure Relationship Diagram



Primary Metric: AVR within 90 days of meeting class I indication

American Heart Association.
Target: Aortic Stenosis™

2026 HOSPITAL RECOGNITION CRITERIA

(based on 2025 data)

PRIMARY MEASURE

75%

Timely Treatment for Severe Aortic Stenosis:

Percentage of patients with a Class I Indication for Aortic Valve Replacement who receive definitive treatment (SAVR or TAVI) within 90 days of initial diagnosis

6 patient minimum in denominator

55%

Defect-Free Timely Diagnosis of Aortic Stenosis Severity:

Percentage of echoes with potential severe Aortic Stenosis who have all necessary evaluation and testing completed to clarify severity and determine whether a Class I Indication exists

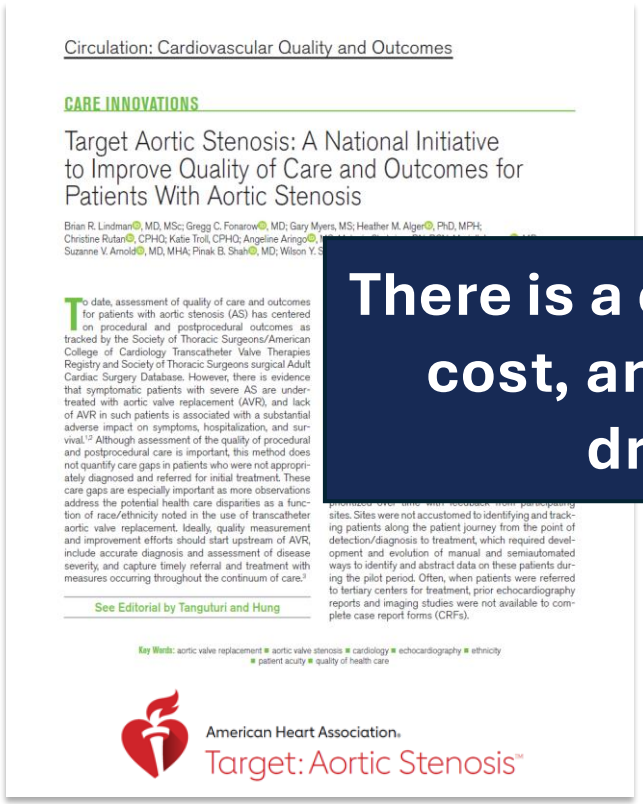
30 echoes minimum in denominator

Supporting Measures: Must report, but no threshold set for achievement and no minimum requirement for denominator

- Key Findings in Echo Report and Summary/ Conclusion
- Evaluation by Multidisciplinary Team
- Timely Follow up Echocardiogram Completed

• VOLUME CRITERIA •
Must have 40 patients with encounters dated in 2025 entered into the registry

Target: Aortic Stenosis and ACC/AHA Establish Performance Metrics for High-Quality Care for Severe AS



Circulation: Cardiovascular Quality and Outcomes

CARE INNOVATIONS

Target Aortic Stenosis: A National Initiative to Improve Quality of Care and Outcomes for Patients With Aortic Stenosis

Brian R. Lindman, MD, MSc; Gregg C. Fonarow, MD; Gary Myers, MS; Heather M. Alger, PhD, MPH; Christine Rutan, CPHQ; Katie Troll, CPHQ; Angeline Aringo, ... Suzanne V. Arnold, MD, MHA; Pinak B. Shah, MD; Wilson Y. S...

To date, assessment of quality of care and outcomes for patients with aortic stenosis (AS) has centered on procedural and postprocedural outcomes as tracked by the Society of Thoracic Surgeons/American College of Cardiology Transcatheter Valve Therapies Registry and Society of Thoracic Surgeons surgical Adult Cardiac Surgery Database. However, there is evidence that symptomatic patients with severe AS are undertreated with aortic valve replacement (AVR), and lack of AVR in such patients is associated with a substantial adverse impact on symptoms, hospitalization, and survival.[1,2] Although assessment of the quality of procedural and postprocedural care is important, this method does not quantify care gaps in patients who were not appropriately diagnosed and referred for initial treatment. These care gaps are especially important as more observations address the potential health care disparities as a function of race/ethnicity noted in the use of transcatheter aortic valve replacement. Ideally, quality measurement and improvement efforts should start upstream of AVR, include accurate diagnosis and assessment of disease severity, and capture timely referral and treatment with measures occurring throughout the continuum of care.[3]

See Editorial by Tanguturi and Hung

Key Words: aortic valve replacement ■ aortic valve stenosis ■ cardiology ■ echocardiography ■ ethnicity ■ patient acuity ■ quality of health care

sites. Sites were not accustomed to identifying and tracking patients along the patient journey from the point of detection/diagnosis to treatment, which required development and evolution of manual and semiautomated ways to identify and abstract data on these patients during the pilot period. Often, when patients were referred to tertiary centers for treatment, prior echocardiography reports and imaging studies were not available to complete case report forms (CRFs).

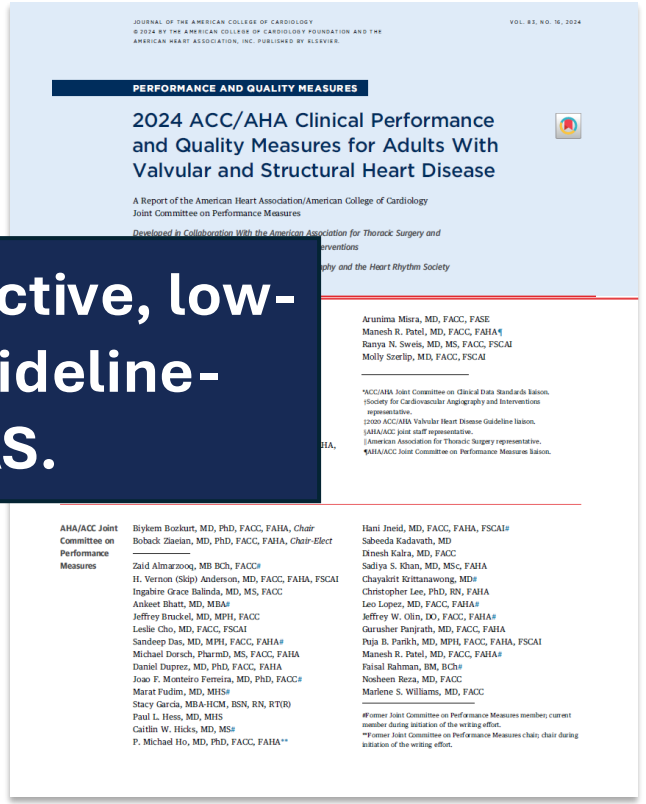
American Heart Association.
Target: Aortic Stenosis™

Primary quality metric

There is a clear and unmet need for effective, low-cost, and scalable tools to bolster guideline-driven management of severe AS.

90 days

of diagnostic echocardiogram



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PERFORMANCE AND QUALITY MEASURES

2024 ACC/AHA Clinical Performance and Quality Measures for Adults With Valvular and Structural Heart Disease

A Report of the American Heart Association/American College of Cardiology Joint Committee on Performance Measures

Developed in Collaboration With the American Association for Thoracic Surgery and ...erventions

...phy and the Heart Rhythm Society

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AHA/ACC Joint Committee on Performance Measures

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#Former Joint Committee on Performance Measures member; current member during initiation of the writing effort.
**Former Joint Committee on Performance Measures chair; chair during initiation of the writing effort.

Focused quality measures are optimizing **active surveillance** from detection to early intervention

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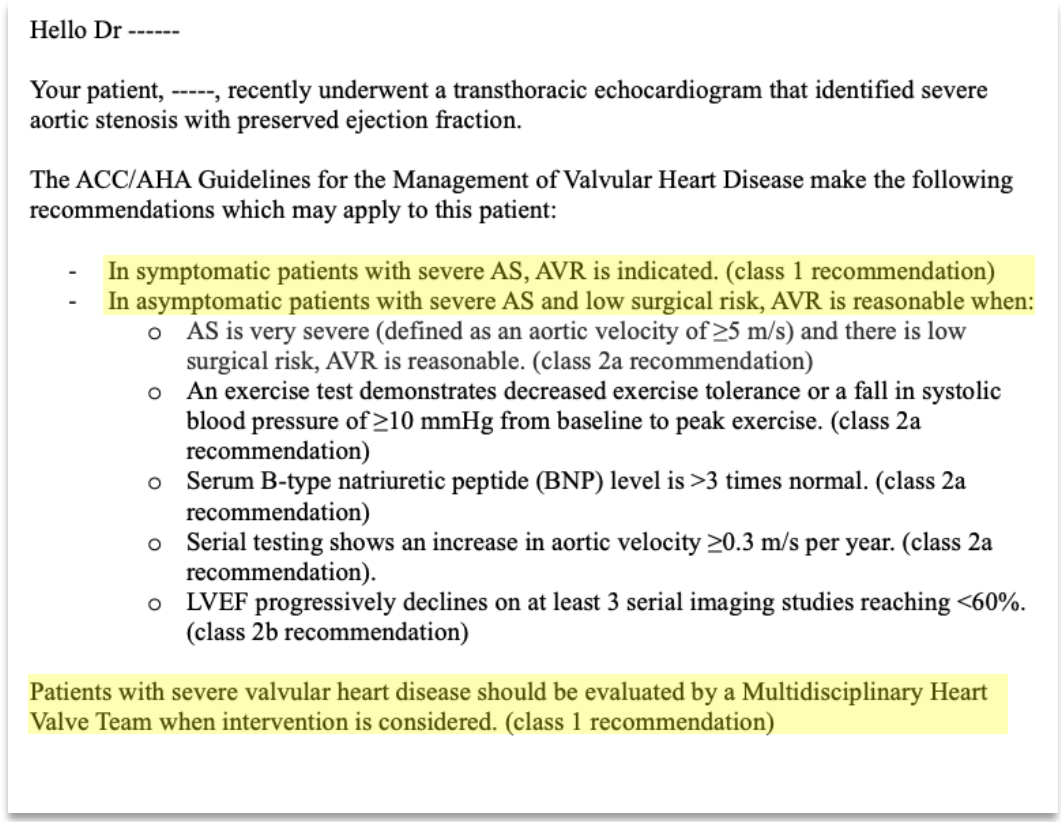
Heart & Vascular Center

1. Lindman BR, et al. *Circ Cardiovasc Qual Outcomes*. 2023;16:e009712. DOI: 10.1161/CIRCOUTCOMES.122.009712
2. Jneid et al. J Am Coll Cardiol. 2024 Apr, 83(16) 1579–1613.

Electronic Provider Notification

Personalized EPN via e-mail and EMR in-basket:

1. High gradient, normal LVEF
   - mAVG ≥40 mmHg, LVEF ≥50%
2. High gradient, low LVEF
   - mAVG ≥40 mmHg, LVEF <50%
3. Low gradient, normal LVEF
   - mAVG <40 mmHg, LVEF ≥50%
4. Low gradient, low LVEF
   - mAVG <40 mmHg, LVEF <50%



Hello Dr ------

Your patient, -----, recently underwent a transthoracic echocardiogram that identified severe aortic stenosis with preserved ejection fraction.

The ACC/AHA Guidelines for the Management of Valvular Heart Disease make the following recommendations which may apply to this patient:

- In symptomatic patients with severe AS, AVR is indicated. (class 1 recommendation)
- In asymptomatic patients with severe AS and low surgical risk, AVR is reasonable when:
  - AS is very severe (defined as an aortic velocity of ≥5 m/s) and there is low surgical risk, AVR is reasonable. (class 2a recommendation)
  - An exercise test demonstrates decreased exercise tolerance or a fall in systolic blood pressure of ≥10 mmHg from baseline to peak exercise. (class 2a recommendation)
  - Serum B-type natriuretic peptide (BNP) level is >3 times normal. (class 2a recommendation)
  - Serial testing shows an increase in aortic velocity ≥0.3 m/s per year. (class 2a recommendation).
  - LVEF progressively declines on at least 3 serial imaging studies reaching <60%. (class 2b recommendation)

Patients with severe valvular heart disease should be evaluated by a Multidisciplinary Heart Valve Team when intervention is considered. (class 1 recommendation)

DETECT AS Trial

UCSF Health Heart & Vascular Center

Study Design

Pragmatic, single-blinded, cluster randomized controlled trial and quality improvement initiative conducted within the multicenter MGH academic health system.

Patients with TTE revealing aortic valve area (AVA) ≤1.0 cm^2

1:1 Randomization of Clinical Providers

Hierarchical assignment durable through subsequent patients

Electronic Provider Notification (EPN)

285 providers caring for 945 patients enrolled

Usual Care

Primary Endpoint: The proportion of patients receiving AVR within 1-year of the index TTE

Follow-up: Complete 1-year

ClinicalTrials.gov identifier: NCT05230225

Investigator-initiated study sponsored by Edwards Lifesciences.

DETECT AS Trial

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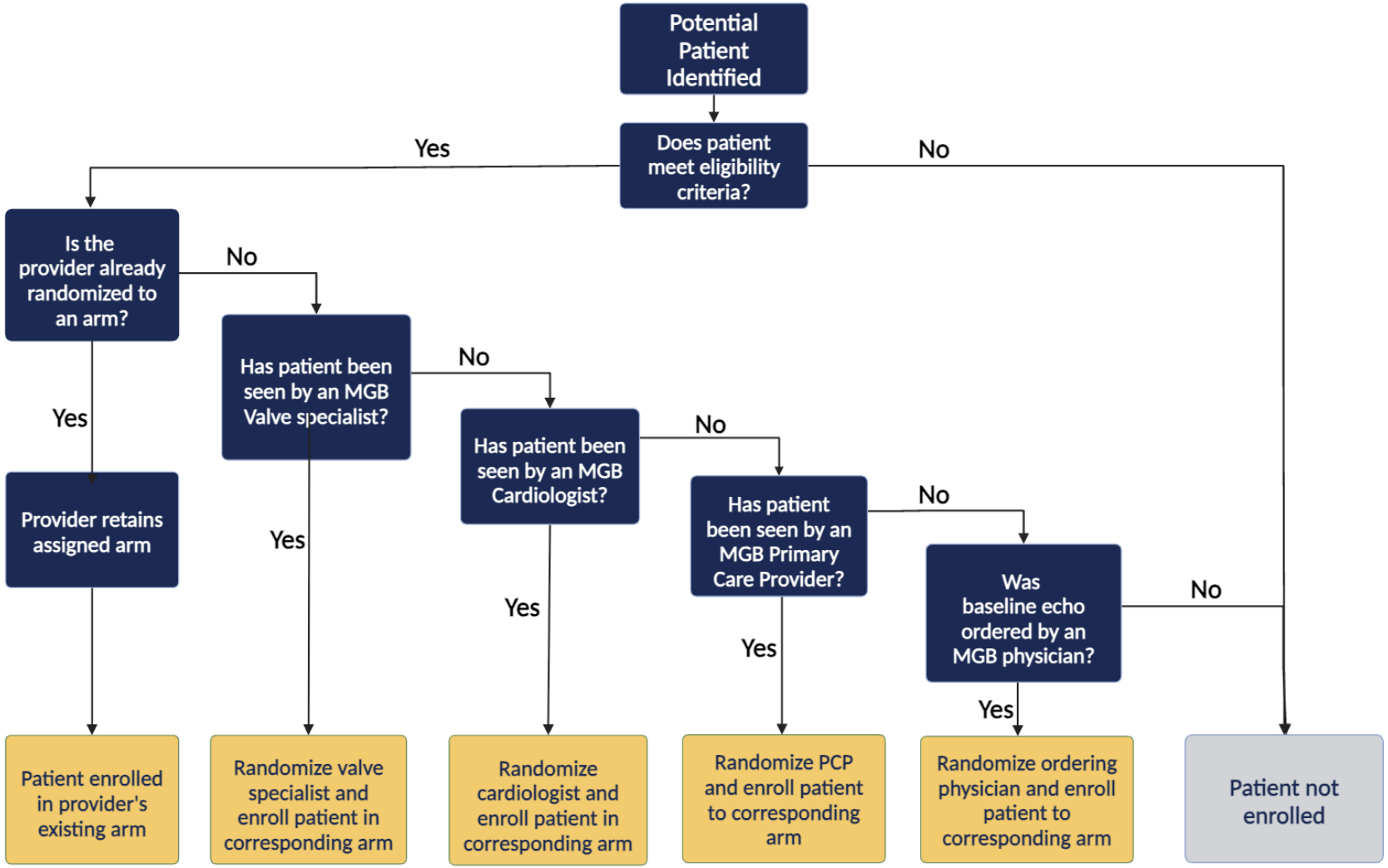
Hierarchical EPN Algorithm



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Tanguturi V... Elmariah S. *Circulation*. 2025

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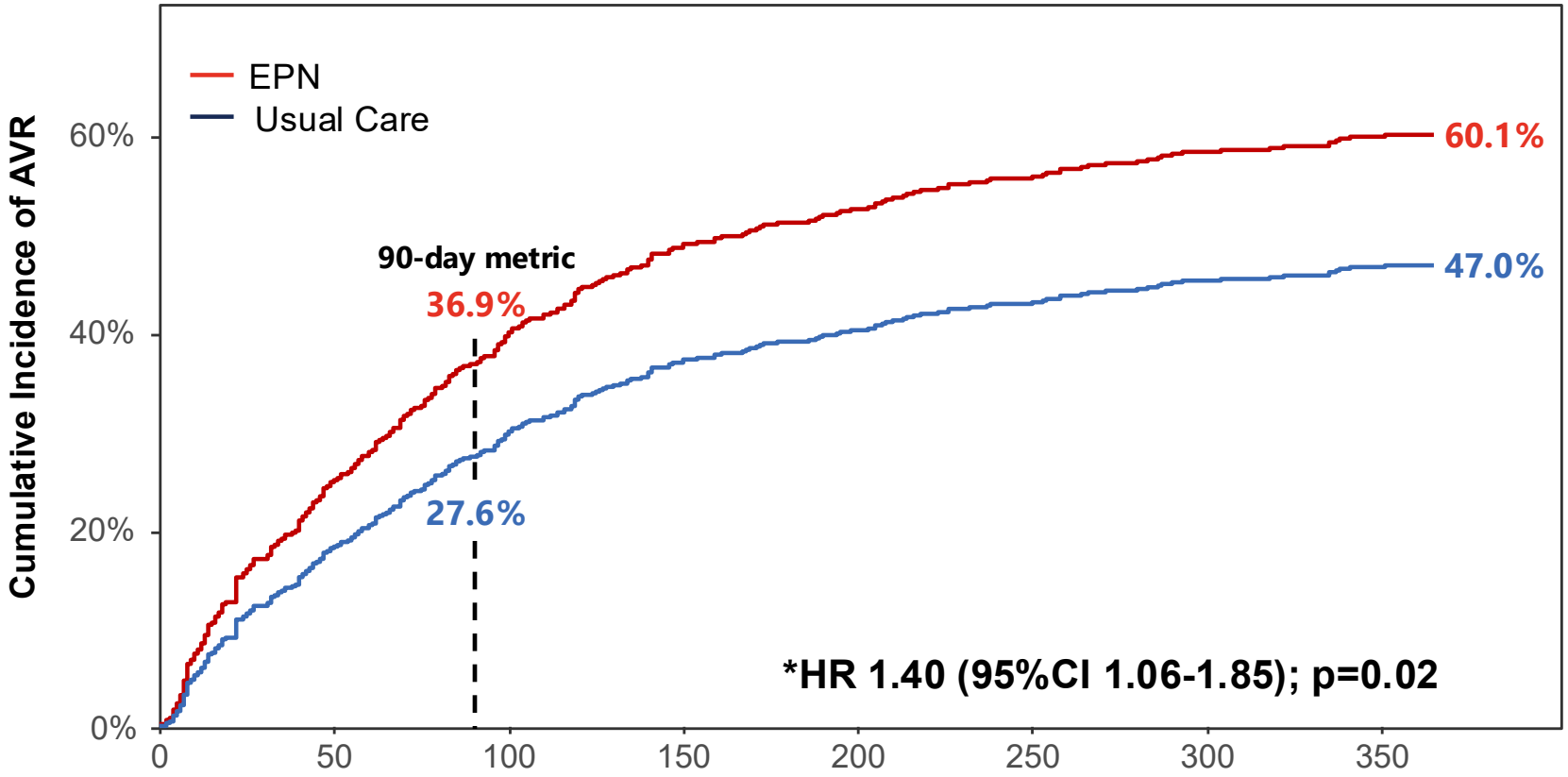
Symptomatic Patients



Number at risk

EPN	305	220	166	138	123	110	95	87
Usual Care	241	177	146	120	110	100	91	87

Cause-specific Cox model of AVR and competing risk of mortality

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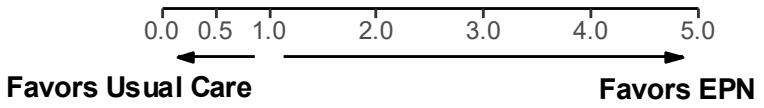
Subgroup Analyses

Subgroup	Patients	AVR rate (Notification vs. Control)	*Odds ratio [95%CI]	P-Value	P-Value for Interaction
Age, year					0.57
<65	110	53.8% vs. 50.0%	1.17 [0.55, 2.47]	0.69	
65-80	444	53.9% vs. 42.6%	1.60 [0.96, 2.64]	0.07	
>80	385	40.7% vs. 26.0%	2.00 [1.17, 3.41]	0.01	
Sex					0.006
female	437	46.8% vs. 25.9%	2.78 [1.69, 4.57]	<0.001	
male	500	49.8% vs. 45.5%	1.16 [0.73, 1.83]	0.53	
AV Mean Gradient					0.91
<40	599	34.3% vs. 22.4%	1.83 [1.21, 2.77]	0.004	
>=40	340	75.1% vs. 60.8%	1.89 [1.03, 3.46]	0.04	
LVEF					0.55
<50%	123	50.0% vs. 34.0%	1.94 [0.93, 4.06]	0.08	
>=50%	815	47.9% vs. 37.8%	1.55 [1.05, 2.28]	0.03	
Symptom Status					0.18
With Symptom	546	60.7% vs. 46.5%	1.77 [1.17, 2.65]	0.006	
No symptom	392	28.3% vs. 26.4%	1.23 [0.71, 2.11]	0.46	
Echo location					0.09
Inpatient	278	53.6% vs. 33.1%	2.49 [1.44, 4.31]	<0.001	
Outpatient	661	45.8% vs. 38.9%	1.27 [0.81, 1.99]	0.30	
Provider Specialty					0.51
Valve specialist (procedural)	156	71.8% vs. 56.6%	1.96 [0.98, 3.91]	0.06	
Cardiologist	620	44.1% vs. 38.5%	1.26 [0.85, 1.88]	0.25	
Primary Care Physician	117	36.8% vs. 20.4%	2.27 [0.97, 5.31]	0.06	
Other	46	21.4% vs. 18.8%	1.18 [0.25, 5.60]	0.83	



*Mixed effects logistic regression models providers as a random effect.

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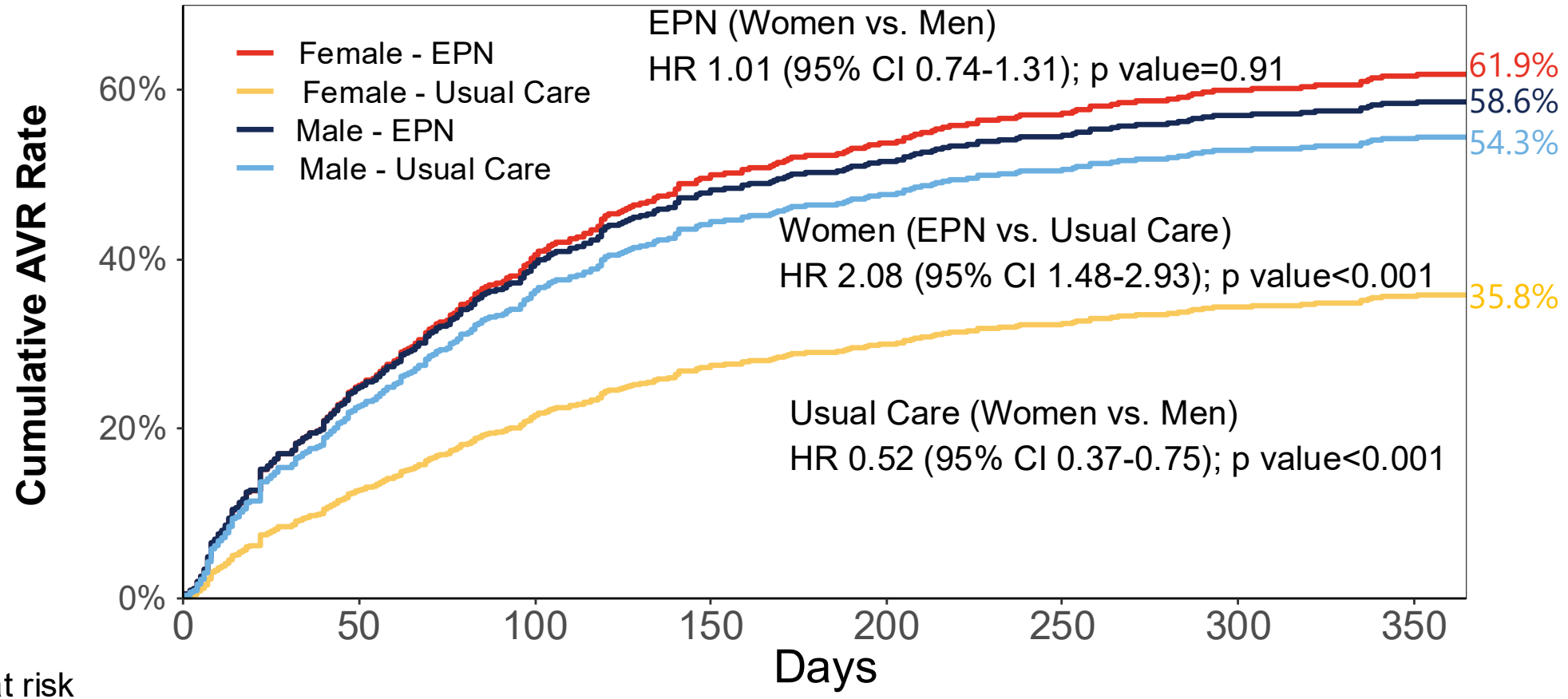
Symptomatic Patients



Number at risk

Women - EPN	154	111	84	71	64	59	53	50
Women - Usual Care	93	78	71	59	54	48	45	44
Men - EPN	151	109	82	67	59	51	42	37
Men - Usual Care	148	99	75	61	56	52	46	43

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Cause-specific Cox model of AVR and competing risk of mortality

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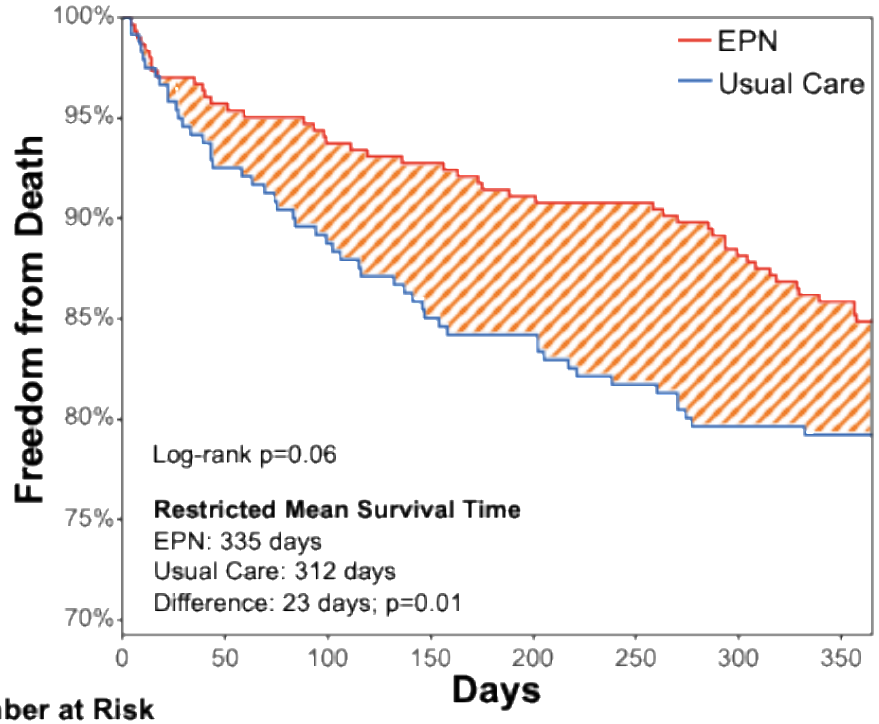
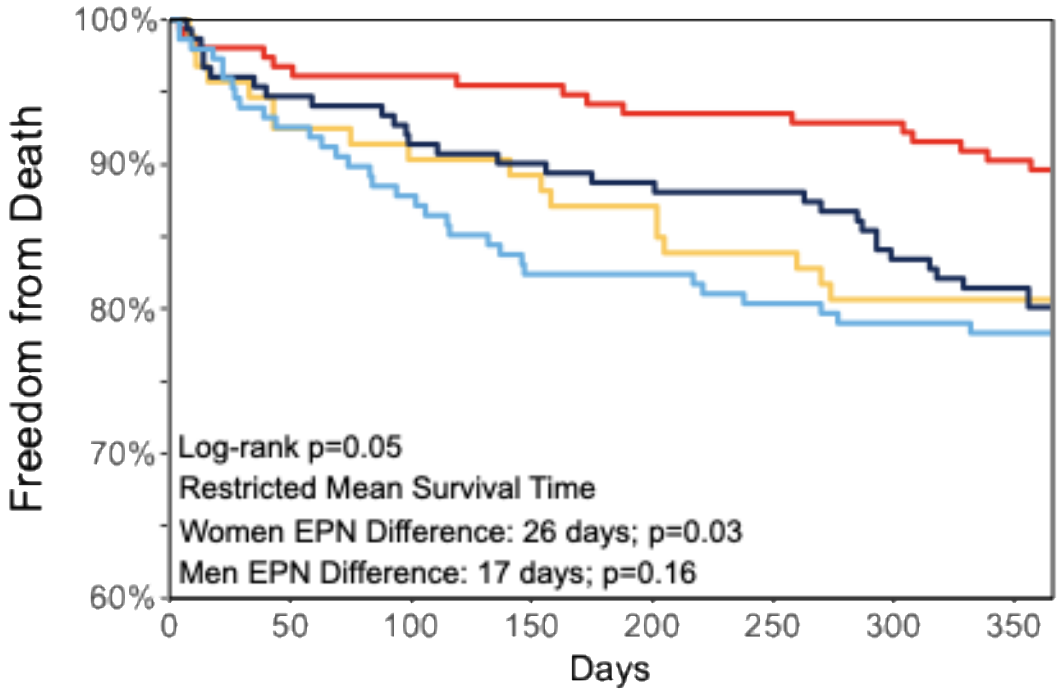
Survival
Symptomatic Patients



Number at Risk

EPN	305	292	286	283	278	277	269	262
Usual Care	241	223	214	205	203	197	192	191



Women - Usual Care Men - Usual Care Women - EPN Men - EPN

Number at Risk

Women - EPN	154	149	148	147	144	144	143	139
Women - Usual Care	93	86	84	83	81	78	75	75
Men - EPN	151	143	138	136	134	133	126	123
Men - Usual Care	148	137	130	122	122	119	117	116

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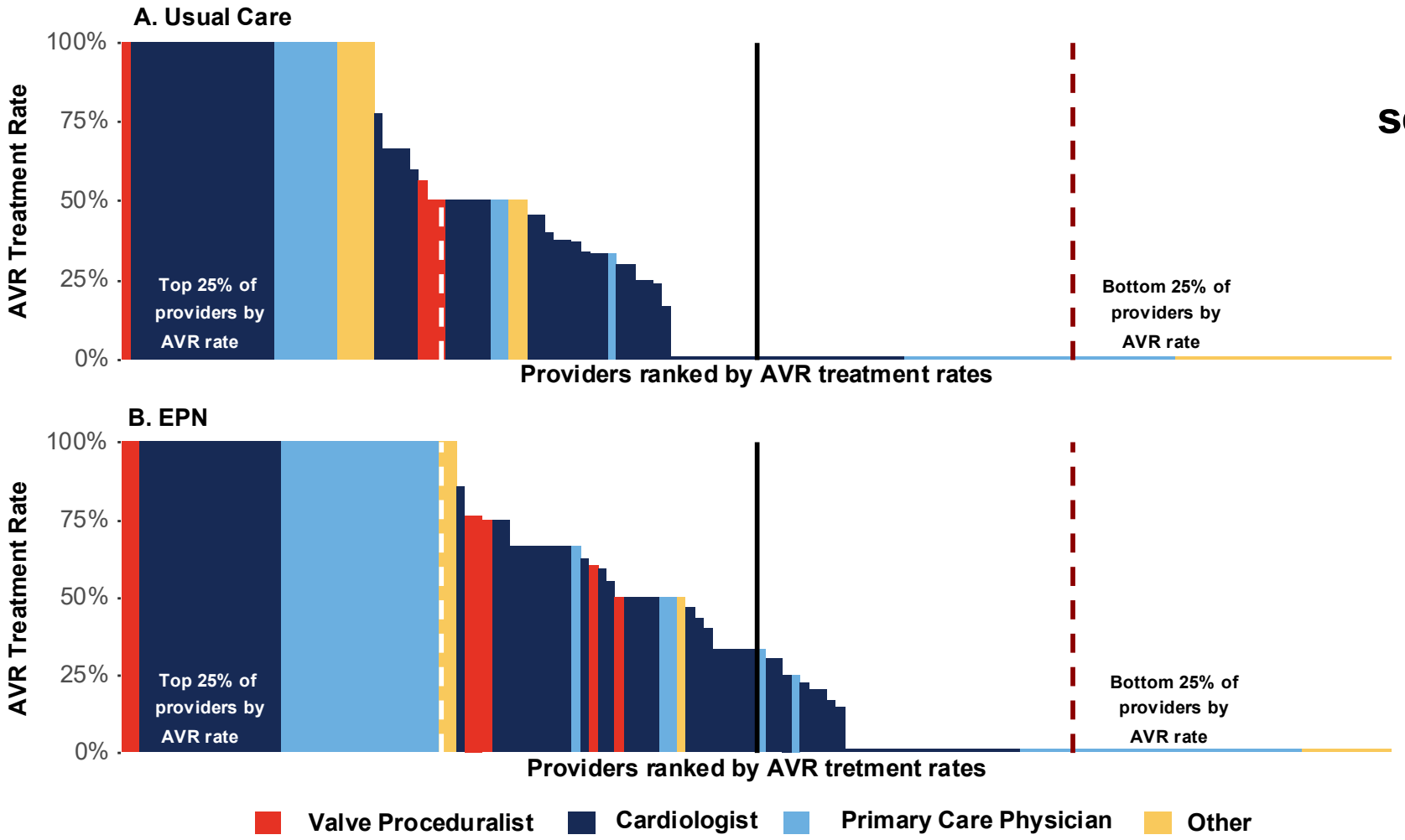
Individual Provider Referral Rates Improved with EPN



Fewer providers without a severe AS patient undergoing AVR (43.1% with EPN vs. 56.7% with usual care; p=0.03).

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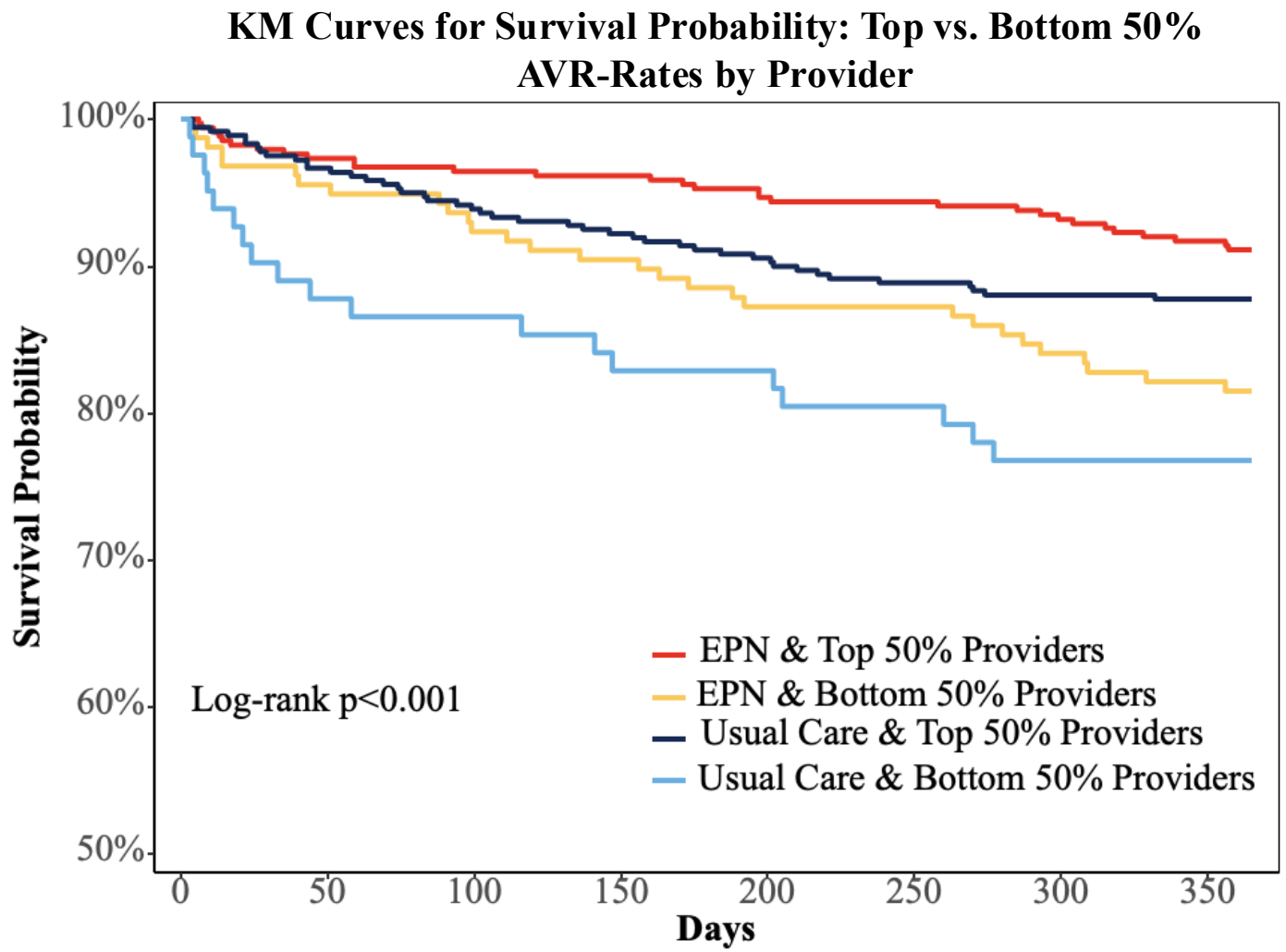
EPN Improve Referral Rates Among High-Performing Providers



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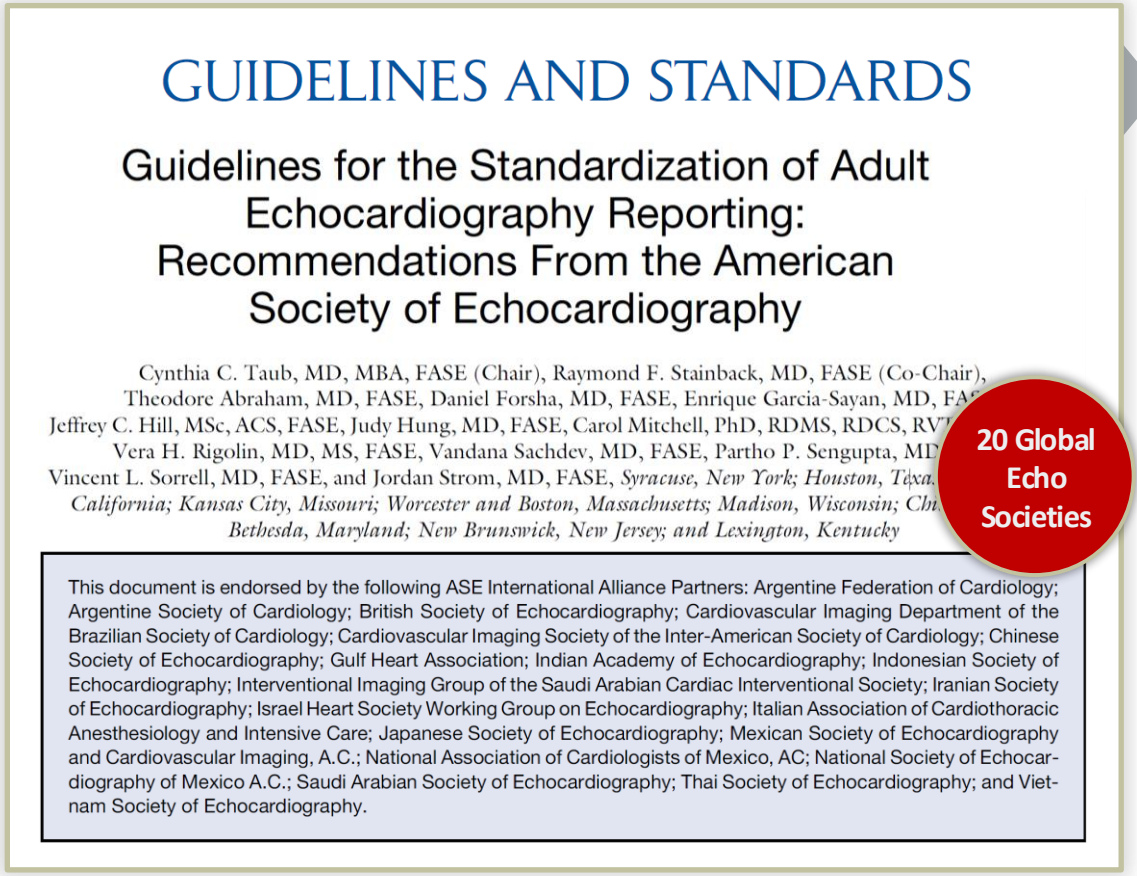
Clinical Implications

Electronic provider notifications are a simple and scalable tool to raise awareness of critical echocardiographic findings, mitigate disparities, and to encourage the guideline-directed diagnosis, referral, and treatment of severe AS.

2025 ASE Standardization Guidelines View the Echocardiographer as an Active Participant in Translating Findings into Timely Clinical Decision-Making



GUIDELINES AND STANDARDS

Guidelines for the Standardization of Adult Echocardiography Reporting: Recommendations From the American Society of Echocardiography

Cynthia C. Taub, MD, MBA, FASE (Chair), Raymond F. Stainback, MD, FASE (Co-Chair), Theodore Abraham, MD, FASE, Daniel Forsha, MD, FASE, Enrique Garcia-Sayan, MD, FA… Jeffrey C. Hill, MSc, ACS, FASE, Judy Hung, MD, FASE, Carol Mitchell, PhD, RDMS, RDCS, RV… Vera H. Rigolin, MD, MS, FASE, Vandana Sachdev, MD, FASE, Partho P. Sengupta, MD… Vincent L. Sorrell, MD, FASE, and Jordan Strom, MD, FASE, *Syracuse, New York; Houston, Texa… California; Kansas City, Missouri; Worcester and Boston, Massachusetts; Madison, Wisconsin; Chi… Bethesda, Maryland; New Brunswick, New Jersey; and Lexington, Kentucky*

20 Global Echo Societies

This document is endorsed by the following ASE International Alliance Partners: Argentine Federation of Cardiology; Argentine Society of Cardiology; British Society of Echocardiography; Cardiovascular Imaging Department of the Brazilian Society of Cardiology; Cardiovascular Imaging Society of the Inter-American Society of Cardiology; Chinese Society of Echocardiography; Gulf Heart Association; Indian Academy of Echocardiography; Indonesian Society of Echocardiography; Interventional Imaging Group of the Saudi Arabian Cardiac Interventional Society; Iranian Society of Echocardiography; Israel Heart Society Working Group on Echocardiography; Italian Association of Cardiothoracic Anesthesiology and Intensive Care; Japanese Society of Echocardiography; Mexican Society of Echocardiography and Cardiovascular Imaging, A.C.; National Association of Cardiologists of Mexico, AC; National Society of Echocardiography of Mexico A.C.; Saudi Arabian Society of Echocardiography; Thai Society of Echocardiography; and Vietnam Society of Echocardiography.

KEY GUIDELINE UPDATES

- Critical findings, including **severe AS**, should be documented in the report and **verbally communicated** to the ordering provider **within minutes**
- Echocardiologists should include a **recommendation statement for further referral / evaluation** of significant AS
- Valves must clearly state normal vs. abnormal status, with **mild, moderate, or severe severity grading consistent with guidelines**
- Guidelines state that a **summary statement should be included** in each echocardiography report

"These guidelines may help **redefine the role of echocardiography in patient care** from passive, descriptive reporting **to active physician-guided participation in patient management.**"

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Taub CC, et al. *JASE*. 2025; 38 (9) **735-774**. DOI: 10.1016/J.ECHO.2025.06.001

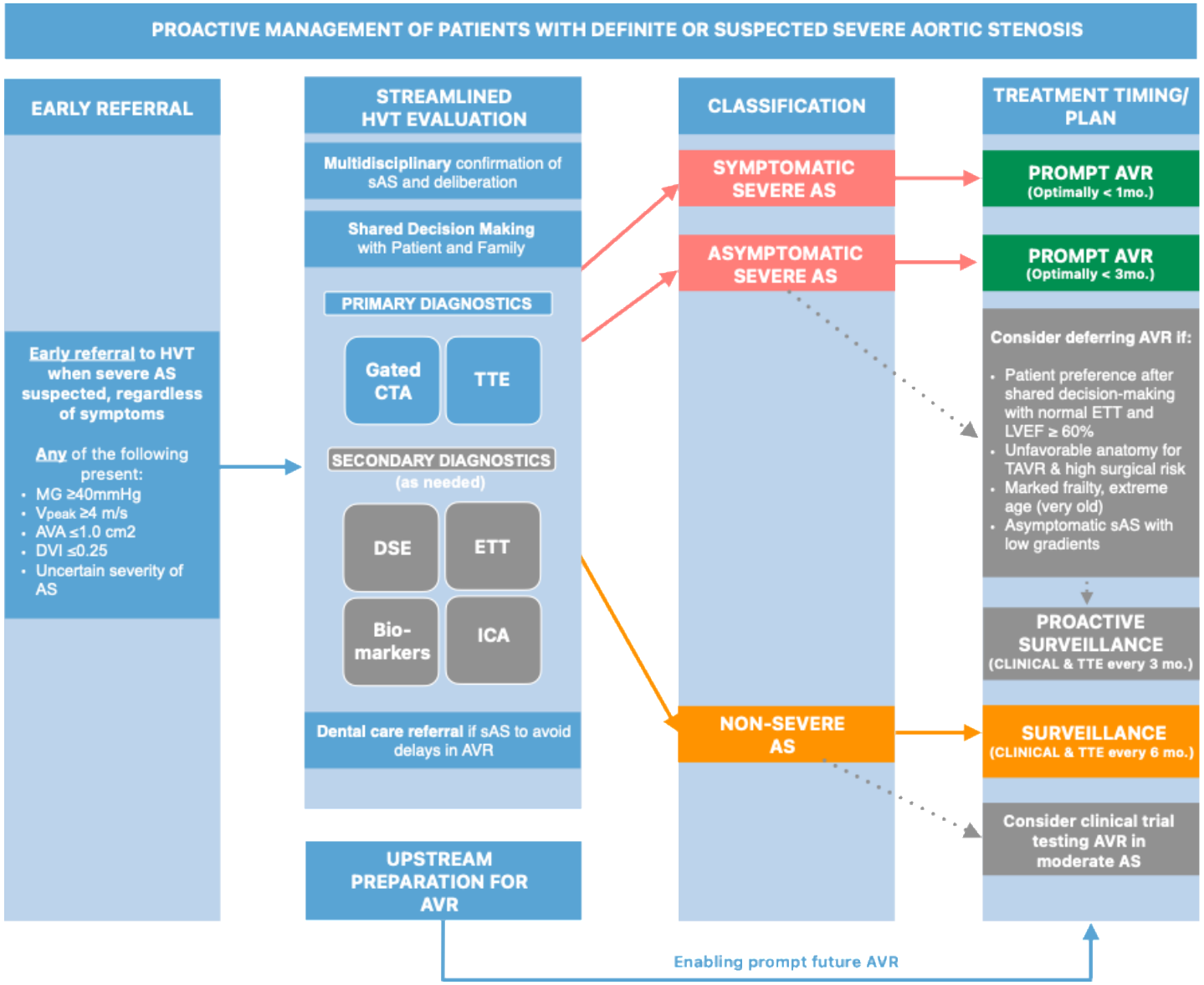
Echocardiologists should include a recommendation statement for further referral / evaluation of significant AS

Significant AS includes severe and moderate AS. Example statement provided in Guidelines below.

"This patient has significant aortic stenosis that, according to the current American College of Cardiology/American Heart Association/ASE valvular heart disease guidelines, may warrant treatment. As clinically appropriate, further evaluation and/or referral should be considered."

Taub CC, et al. *JASE*. 2025; 38 (9) 735-774. DOI: 10.1016/J.ECHO.2025.06.001

Proactive Management of Definitive or Suspected Severe AS



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Lindman BR, et al. *JACC* In press.

Active AI-based Surveillance, Evaluation, & Management

- EMR
- Faci
- Avoi
- Ackn
- Inco

DETECT AS II Study:

Integrated Electronic Health Record Decision Support for the Detection and Management of AS

Consecutive patients with severe AS (AVA ≤1cm²)
Inclusion Criteria: ≥ 18 years
Exclusion Criteria: mechanical or prosthetic aortic valve

Standard of Care (Retrospective)
1-year pre-implementation

EHR Care Path-facilitated care
1-year post-implementation

Primary endpoint: AS Evaluation or AVR within 90 days
Secondary endpoints: Time to AVR, mortality/HF hospitalization, Heart Valve Team referral, AS billing code diagnosis, TTE surveillance

Secondary Objectives
Safety-net hospital implementation
Racial/ethnic/gender disparities; social disparities of health

stenosis referral to ast 90 days.

AI-based Management of VHD


Article

Detecting structural heart disease from electrocardiograms using AI

https://doi.org/10.1038/s41586-025-09227-0

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Open access

Check for updates

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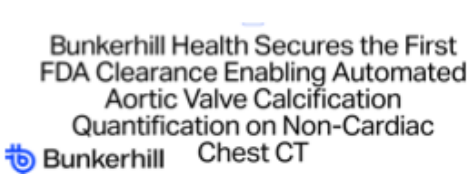
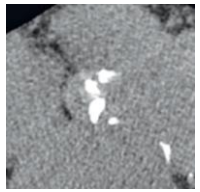

Bunkerhill Health Secures the First FDA Clearance Enabling Automated Aortic Valve Calcification Quantification on Non-Cardiac Chest CT

Bunkerhill



JAMA | Original Investigation | AI IN MEDICINE

Complete AI-Enabled Echocardiography Interpretation With Multitask Deep Learning

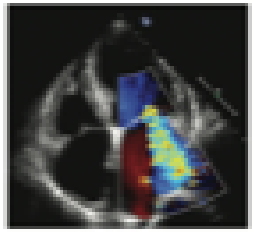
Gregory Holste, MSE; Evangelos K. Oikonomou, MD, DPhil; Márton Tokodi, MD, PhD; Attila Kovács, MD, PhD; Zhangyang Wang, PhD; Rohan Khera, MD, MS

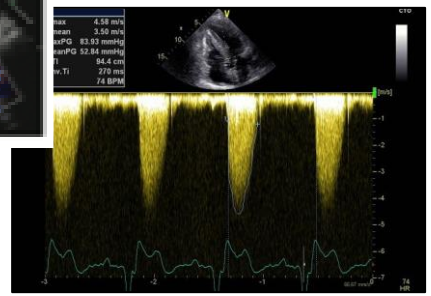
Circulation

ORIGINAL RESEARCH ARTICLE

Deep Learning for Echo Analysis, Tracking, and Evaluation of Mitral Regurgitation (DELINEATE-MR)

Aaron Long, MS*; Christopher M. Haggerty, PhD*; Joshua Finer, MS; Dustin Hartzel, BS; Linyuan Jing, PhD; Azadeh Keivani, PhD; Christopher Kelsey, BS; Daniel Rocha, BA; Jeffrey Ruhl, MS; David vanMaanen, MS; Gil Metser, MD; Eamon Duffy, MD; Thomas Mawson, MD; Mathew Maurer, MD; Andrew J. Einstein, MD, PhD; Ashley Beecy, MD; Deepa Kumaraiah, MD; Shunichi Homma, MD; Qi Liu, MD; Vratika Agarwal, MD; Mark Lebehn, MD; Martin Leon, MD; Rebecca Hahn, MD; Pierre Elias, MD†; Timothy J. Poterucha, MD†





Decision Support & Referral

TEMPUS

PROSPECT HEALTH

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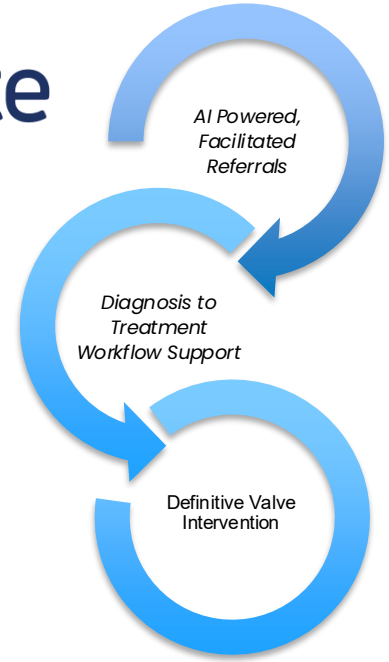

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Summary

- Surgical and transcatheter AVR are efficacious, safe, and widely available.
- Emerging data are poised to broaden indications for AVR to include asymptomatic severe AS.
- However, undertreatment of symptomatic severe AS, persistent disparities in care, and barriers to care persist.
- Digital technologies and AI-based tools show promise in aiding population-based screening, diagnosis, and clinical workflows to further optimize AS care.

Thank you!

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Heart & Vascular Center

Heart & Vascular Center

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