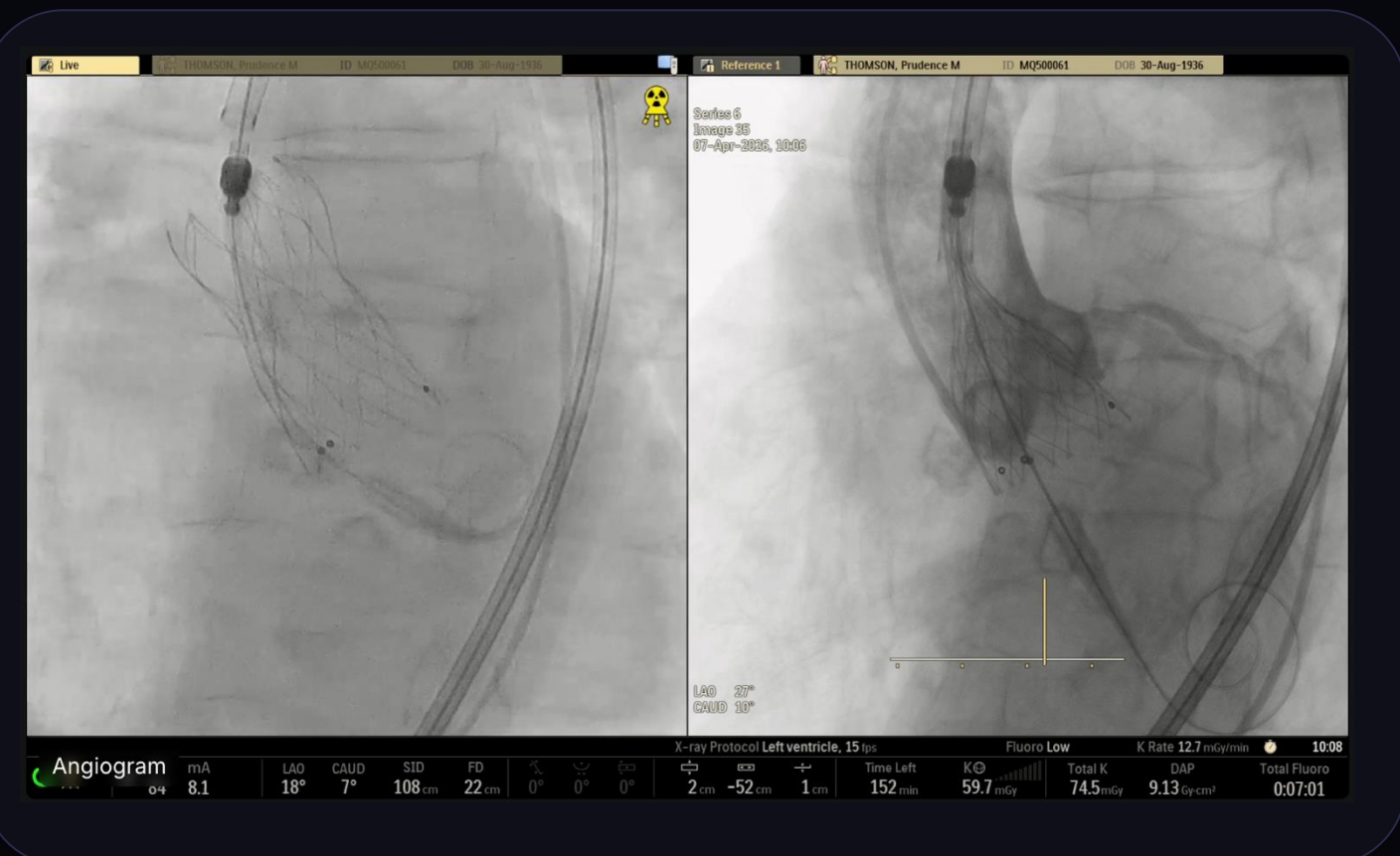


Standardising TAVI Procedural Steps For Ai Assisted Data Capture

SXR



Chapters		
F. TAVI position		26:18
TAVI: across AV		26:48
G. TAVI deploy		28:00
TAVI: Deploy		29:06
TAVI: release		29:58
H. TAVI finish		32:26
AO/LV Pressure		33:31
TAVI: Final Root Angio		33:56
ECG: score		33:31
I. Sheath out		35:55
Sheath remove & Angio		38:04
CEP score		19:14

98

Studies Included
(Scoping Review)

20

Procedural Steps
Standardised

120

TAVI Cases
Analysed

Wilson MK - Agiasotis S - Wilson H - Carney T - Puvanendran A - Ng M - Preda VA

120

Patients Analysed

18.3%

PVL (mild–moderate)

0%

Mortality

38.6→10.6

Mean AV Gradient mmHg
(pre → 6 weeks)

Findings	Detail
Operator variability	Step-order variability observed across operators; overall procedural outcomes not significantly impacted
Post-deployment BAV	Emerged as key additional step in 36.6% of cases, conditional scoring logic now embedded in framework
Haemodynamic improvement	AV gradient 38.6 → 10.6 mmHg at 6 wks • AV area 0.75 → 2.22 cm ² • Shorter LOS vs surgical AVR
VARC-3 complications	PVL 18.3% • Arrhythmia 12.5% • Stroke 1.7% • Tamponade 0.8% • MI 0% • Mortality 0%

Disclosures: MK Wilson — SXR inventor | H Wilson — SurgicalXR Employment | T Carney — SurgicalXR co-inventor

SCOPING REVIEW FINDINGS

- 1

Pre-interventional phase dominates
Imaging protocols well-characterised
74.4% of pre-interventional studies
- 2

Post-interventional markedly underrepresented
Only 13.3% of studies; discharge protocols largely absent
- 3

Device & operator variation poorly documented
Sapien, Evolut, Navitor: distinct deployment approaches unstandardised

CRITICAL GAP

- Catheter manoeuvres & valve deployment steps remain largely unpublished
- No reproducible step-level protocol across centres or devices
- Operator-level variation linked to complication risk but poorly measured

Research Objective

Can SXR® AI-assisted intraoperative capture and a 20-step scoring framework standardise TAVI procedural technique and does operator variation influence complication rates and outcomes?

KEY CONCLUSIONS

- ✓

First systematic TAVI standardisation using AI-assisted intraoperative capture across 120 cases
- ✓

Operator variability in step order observed; overall procedural outcomes not significantly impacted
- ✓

20-step framework + conditional logic provides a reproducible quality-improvement and training tool
- ✓

Outlier case capture highlights critical decision-making preceding complications invaluable for safety and training

FUTURE EDUCATIONAL DIRECTIONS

- 📢

1-to-Many Teaching
The 20-step TAVI Score converts the traditionally 1-to-1 proctorship model into scalable, structured education accessible to any centre or trainee globally
- 📺

Live-Stream Proctoring via SXR®
Real-time streaming to remote experts extends proctoring reach beyond geography, enabling real-time guidance and international mentorship
- ✓

AI-Assisted Competency Assessment
Scored end-state images and annotated highlight reels as objective training benchmarks for cardiology fellowship programs