

# Innovative Solutions: Early Recovery After TAVR and Same Day Discharge

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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:

Nature of Financial Relationship

Consultant Fees/Honoraria

Ineligible Company

Edwards Lifesciences

# Need for innovative strategies

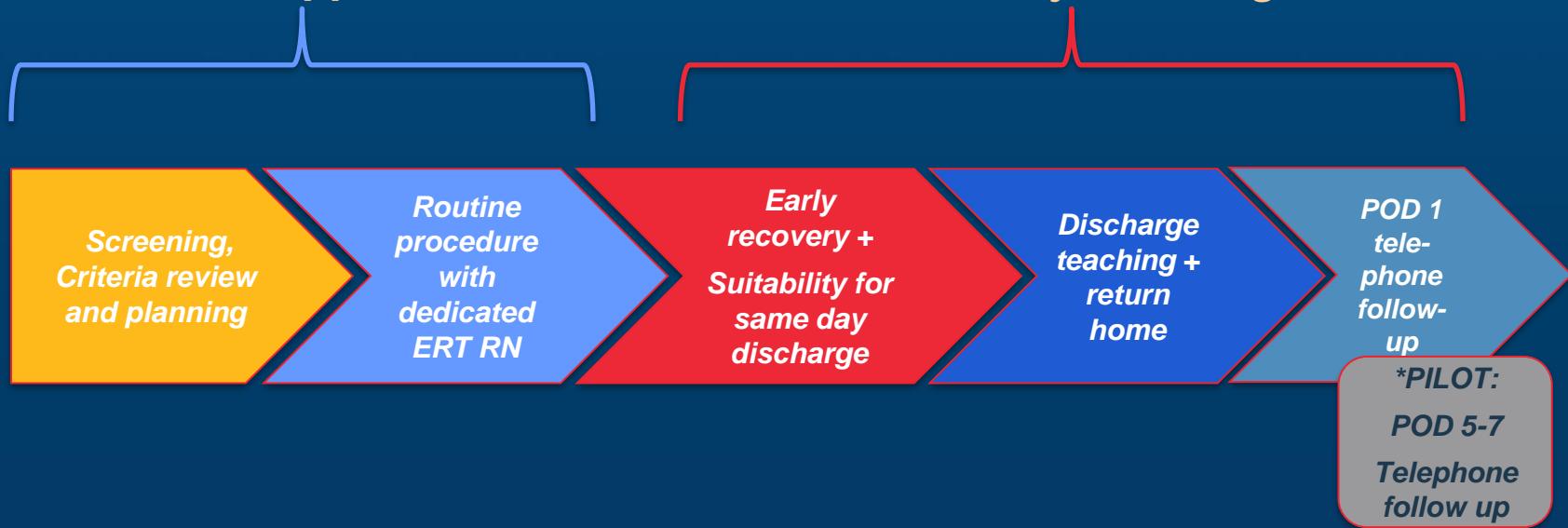


- *Increasing* TAVR volumes
- *Increasing* wait times to procedure
- Support flexible scheduling and procedural capacity
- Demand for limited resources: space and personnel
- Competing demands for Anaesthesia

# Early Recovery after TAVR (ERT)+ Same Day Discharge: Process

*ERT = Nurse supported sedation*

*Same Day Discharge*



# Evidence: Everything that was learned from Vancouver Clinical

JACC: CARDIOVASCULAR INTERVENTIONS  
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## NEW RESEARCH PAPERS

### STRUCTURAL

#### Feasibility and Safety of Same-Day Discharge Following Transfemoral Transcatheter Aortic Valve Replacement

Amar Krishnaswamy, MD,<sup>a,\*</sup> Toshiaki Isogai, MD, MPH,<sup>a,\*</sup> Ankit Agrawal, MD,<sup>a</sup> Shashank Shekhar, MD,<sup>a</sup> Rishi Puri, MBBS, PhD,<sup>a</sup> Grant W. Reed, MD, MSc,<sup>b</sup> James J. Yun, MD, PhD,<sup>b</sup> Shinya Unai, MD,<sup>b</sup> Daniel J.P. Burns, MD, MPH,<sup>c</sup> Patrick R. Vargo, MD,<sup>d</sup> Samir R. Kapadia, MD,<sup>a</sup>

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STRUCTURAL HEART  
2022, VOL. 4, NO. 4, 302-309  
<https://doi.org/10.1007/s42440-020-01773-5>

### ORIGINAL RESEARCH

#### Nurse Led Sedation: The Clinical and Echocardiographic Outcomes of the 5-Year Emory Experience

Patricia Keegan, NP, DNP<sup>a</sup>, John C. Lisko, MD, MPH<sup>a</sup>, Norihiko Kamioka, MD<sup>a</sup>, Samuel Maidman, MD <sup>a</sup>, Jose N. Binongo, PhD<sup>a</sup>, Jane Wei, MPH<sup>a</sup>, Ratna Vadlamudi, MD<sup>a</sup>, J. Kirk Edwards, MD<sup>a</sup>, Nishant Vatsa, MD<sup>a</sup>, Aneesha Maini<sup>a</sup>, Shawn Reginault<sup>a</sup>, Patrick Gleason, MD<sup>a</sup>, James Stewart, MD<sup>a</sup>, Chandan Devireddy, MD<sup>a</sup>, Peter C. Block, MD<sup>a</sup>, Adam Greenbaum, MD<sup>a</sup>, Robert A. Guyton, MD<sup>a</sup>, and Vasilis C. Babaliaros, MD<sup>a</sup>

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Derk Frank <sup>1,2,\*</sup>, Eric Durand <sup>3</sup>, Sandra Lauck <sup>4</sup>, Douglas F. Muir <sup>5</sup>, Mark Spence<sup>6</sup>, Mariuca Vasa-Nicotera<sup>7</sup>, David Wood<sup>8</sup>, Francesco Saia <sup>8</sup>,

SEARCH  
ar surgery

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Innovations in Care

Vancouver Transcatheter Aortic Valve Replacement Clinical Pathway

Minimalist Approach, Standardized Care, and Discharge Criteria to Reduce Length of Stay

Sandra B. Lauck, PhD; David A. Wood, MD; Jennifer Baumbusch, PhD; Jae-Yung Kwon, MSN; Dion Stub, MBBS, PhD; Leslie Achtem, BSN; Philipp Blanke, MD; Robert H. Boone, MD; Jonatha JACC: CARDIOVASCULAR INTERVENTIONS  
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The Vancouver 3M (Multidisciplinary, Multimodality, But Minimalist) Clinical Pathway Facilitates Safe Next-Day Discharge Home at Low-, Medium-, and High-Volume Transfemoral Transcatheter Aortic Valve Replacement Centers

The 3M TAVR Study



Check for updates

*Criteria and planning*

# ***Setting up for success***

## **Patient considerations:**

- ✓ Local residence
- ✓ Social support available and appropriate
- ✓ No major mobility concerns
- ✓ No communication barriers
- ✓ Frailty score
- ✓ Patient/family interest

## **Clinical considerations:**

- ✓ Low risk of vascular complications
- ✓ Planned minimalist procedure in cath lab
- ✓ Absence of high-grade conduction delay

*Confirmed at Heart team meeting*

## ***Exclusion criteria:***

- X Barriers to emergent intubation
- X Inability to lie supine
- X Failed previous procedural sedation or extreme anxiety
- X Iliofemoral <5.5 mm
- X If in-patient: Hemodynamic instability or other significant medical issue(s)
- X Significant cognitive impairment that limits ability to understand/follow instructions

**Routine procedure with dedicated ERT RN**

**Nursing staffing model:**

Responsibilities of ERT RN:

- Monitoring of patient status (VS, ETCO<sup>2</sup>) and comfort
- Administration of medications as per MD verbal orders
- Coaching and support
- Communication and advocacy

**Other staffing complement:**

- Scrub/Crimp RN
- Circulating RN
- Hemodynamic/documentation RN
- Radiology technologist

# ***Local anaesthesia, nursing coaching and sedation***

**1<sup>st</sup> Case of the day**

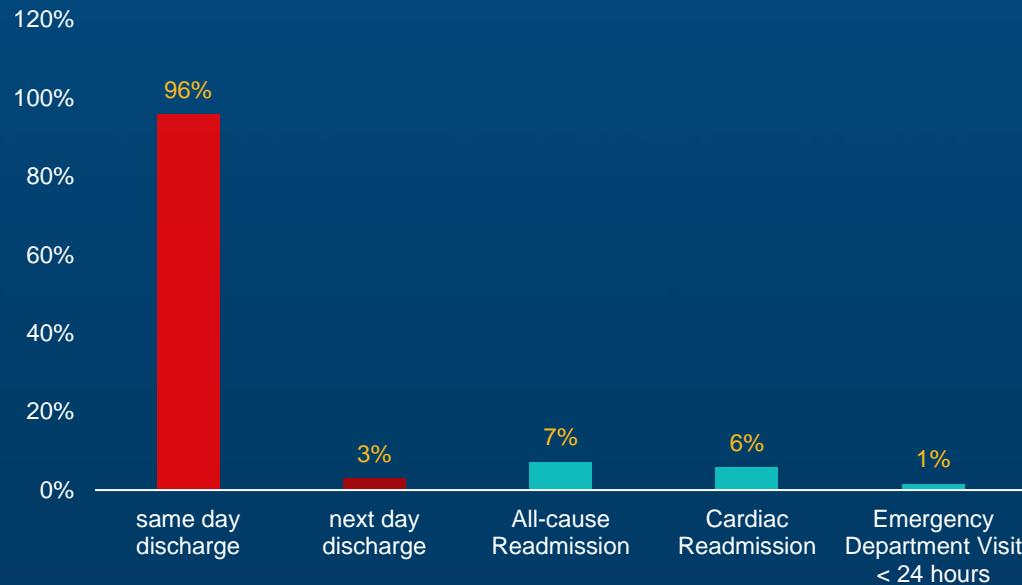
**Dedicated ERT RN**

**'Back up plan' for hemodynamic instability**

**ERT 'checklist'**

Anaesthesia available if needed

# Vancouver ERT: Discharge Disposition and 30-day Health care utilization Outcomes (n=75)



# Patient experiences POD #5-7 (N=33):

*“ I would rather been asleep... but happy and worth it to get back to my home same day”*

*“ ...hard to hear, lots of voices around me”*

*“...better than my angiogram”*

*“ I like the frequent check-ins, staff introductions, being part of the team”*



# Keys to Success



**BUILD THE DREAM TEAM:**  
MULTIDISCIPLINARY  
'CHAMPIONS'



**DEVELOP PROTOCOLS:**  
SELECTION CRITERIA &  
ROLES



**CREATE WORKFLOWS,**  
ENSURE PT  
SAFETY



**IMPLEMENTATION**  
'GO LIVE' DATE,  
CONSISTENT  
SCHEDULING



**CONDUCT:**  
TRAINING/  
SIMULATIONS



**COLLECT DATA AND SHARE:**  
OUTCOMES  
'SPACE' FOR FEEDBACK

# Major Milestone for the ERT journey...

- 6 cases/day
- ERT pathway
- 4 successful same day discharge



# Future Directions

- EPIC TAVR: Enhanced Pathway for Inpatient Care - “*Treat and return*”
- ER- TEER: Awake TEER with 4-D ICE
- Ad hoc ERT any day as needed
- Regularly scheduled ERT day 1 day a week (5-6 cases)



# Conclusion

- ERT is a promising approach to *optimize* resource utilization and improve procedural efficiency without compromising patient safety or outcomes
- *ERT supports access to care:* addressing scheduling and procedural capacity whilst maintaining quality care
- *leveraging expertise* of the cath lab nursing scope and practice
- **RECIPE for SUCCESS** = Criteria for patient selection + robust protocols/back up mechanisms + streamlined procedure + thoughtful implementation/review

