BENCHMARK: Impact of a transcatheter aortic valve clinical coordinator on hospital length of stay and safety

Frank D *et al*. Presented at EuroPCR, 14–17 May 2024. Paris, France

Published data highlights the vital role of a dedicated nurse coordinator in optimised TAVI pathways.[1,2] This role is recommended in the US guidelines,[3] and has been widely adopted in North America, but uptake remains low in Europe.[1]

The Clinical Valve Coordinator (CVC) role is integral to the Edwards Benchmark Program and it was a requirement for centres participating in the BENCHMARK Registry.[4]

The Edwards Valve Nurse Leadership Program provides a structured educational curriculum for CVCs based on implementation of nurse-led best practices.

Background

- The TAVI pathway is complex and, with increasing adoption of TAVI, there is a need to optimise the treatment pathway to improve efficiency without compromising patient safety[4]
- A TAVI CVC may support clinical decision making and help facilitate interdisciplinary team communication, minimising the risk of complications and optimising patient outcomes and resource management[5]
- Despite widespread adoption of the CVC role, data assessing the benefits of this role are scarce[5]

BENCHMARK Registry study design

- Patients undergoing transfemoral TAVI with balloon-expandable valves for severe symptomatic aortic stenosis were enrolled into the BENCHMARK Registry[5]
- **Each participating centre was required to establish a non-physician CVC and, at baseline, 13 centres already had a CVC established**[4]
- To compare patients from centres without a pre-existing CVC with patients from centres with a pre-existing CVC, the whole cohort was propensity score matched to give 913 patients without a pre-existing CVC (335 patients before implementation of BENCHMARK Practices, and 578 patients after BENCHMARK), and 913 patients with a pre-existing CVC (315 patients before implementation of BENCHMARK Practices and 598 patients after BENCHMARK).[5]

Primary endpoints

- Hospital length of stay (overall: door to TAVI, TAVI to door)
- Time spent in the ICU/CCU/IMC

Secondary endpoints

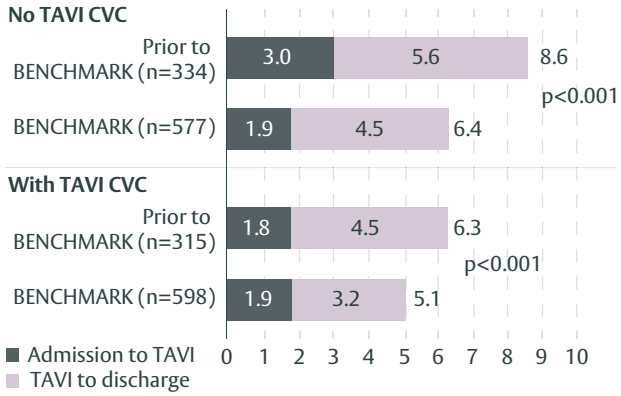
- 30-day safety outcomes

Results

Hospital length of stay[5]

2 days shorther length of stay in centres with a pre-existing CVC than those without

- Implementation of BENCHMARK Practices resulted in a significant reduction in length of stay in centres with and without a pre-existing CVC[5]



CVC, Clinical Valve Coordinator;
TAVI, transcatheter aortic valve implantation

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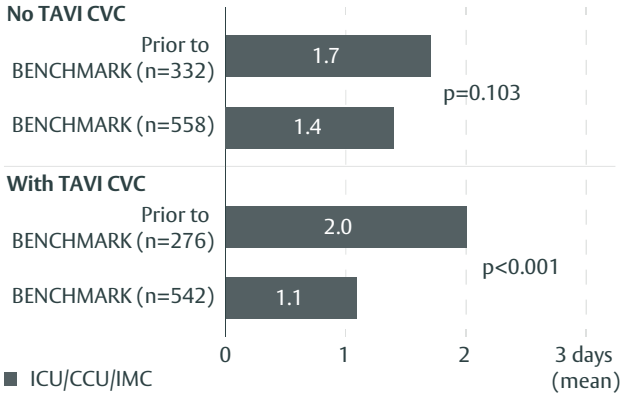
Critical care usage[5]

- Implementation of BENCHMARK Practices resulted in:
  - Numerical reduction in critical care facility use in centres without a pre-existing CVC
  - Significant reduction in critical care usage in centres with a pre-existing CVC



CVC, Clinical Valve Coordinator; CCU, coronary care unit; ICU, intensive care unit; IMC, intermediate care unit; TAVI, transcatheter aortic valve implantation

Patient discharge[5]

- In all centres, implementation of BENCHMARK Practices resulted in a significant increase in next day discharge (from 2.4% to 12.0% in centres without a pre-existing CVC; from 0.4% to 14.2% in centres with a pre-existing CVC, p<0.001)

30-day safety outcomes[5]

- After implementation of BENCHMARK Practices, neither group showed significant differences in the major safety endpoints of all-cause mortality, stroke/TIA, life-threatening bleeding, acute kidney injury or coronary artery obstruction requiring intervention
- **All-cause rehospitalisation at baseline was higher in the group without a pre-existing CVC than in the group with a pre-existing CVC (9.6% *vs* 4.9%),** and in the group without a pre-existing CVC the implementation of BENCHMARK Practices reduced the rehospitalisation rate to 5.2%

Conclusion[5]

- **Hospital length of stay was reduced** not only by the introduction of BENCHMARK Practices, but also **by the presence of a CVC**
- **Introduction of the CVC role also decreased the rehospitalisation rate at 30 days, resulting in a reduction in healthcare costs** and increase in the number of patients discharged to home
- **More patients were discharged to home** within 1 day following implementation of BENCHMARK Practices
- These data demonstrate **that the CVC plays a key role in the optimisation** of the TAVI patient pathway, particularly in combination with the implementation of BENCHMARK Practices

Abbreviations

CCU: coronary care unit; CVC: Clinical Valve Coordinator; ICU: intensive care unit; IMC: intermediate care unit; TAVI: transcatheter aortic valve implantation; TIA: transient ischemic attack

References

1. Lauck S, Forman J, Borregaard B *et al*. *Eur J Cardiovasc Nurs*. 2020; **19:** 537–44.
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3. Otto CM, Nishimura RA, Bonow RO *et al*. *Circulation*. 2021; **143:** e72–e227.
4. Frank D, Durand E, Lauck S *et al*. *Eur Heart J*. 2024; **45:** 1904–16
5. Frank D. Presented at EuroPCR; 14–17 May 2024; Paris, France.

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