

# Standardization and optimization of the transcatheter aortic valve implantation clinical pathway: experience from Split

 **Marija Romić\***

University Hospital of Split,  
Split, Croatia

**KEYWORDS:** standardization; transcatheter aortic valve implantation, quality.

**CITATION:** *Cardiol Croat.* 2025;20(1-2):41. | <https://doi.org/10.15836/ccar2025.41>

**\*ADDRESS FOR CORRESPONDENCE:** Marija Romić, Klinički bolnički centar Split, Spinčićeva 1, HR-21000 Split, Croatia. / Phone: +385-97-6151-277 / E-mail: [marijaromic31@gmail.com](mailto:marijaromic31@gmail.com)

**ORCID:** Marija Romić, <https://orcid.org/0000-0002-7683-2837>

**Background:** Transcatheter aortic valve implantation (TAVI) has revolutionized the management of severe symptomatic aortic stenosis, offering a less invasive alternative to surgical valve replacement, in selected patients. However, variability in patient selection, procedural workflow, and post-procedural care can impact clinical pathway and outcomes.<sup>1-3</sup> Our goal was to develop a standardized and optimized TAVI clinical pathway to enhance efficiency, safety, and patient outcomes.

**Materials and Methods:** A multidisciplinary TAVI team at the University Hospital of Split aimed to prepare a comprehensive list of standardized TAVI protocols, and to monitor its safety and effectiveness through various quality indicators. Key process elements, including patient selection, pre-procedural workup, intraprocedural workflow, and post-procedural care, were reviewed and refined. The protocols aimed to incorporate structured algorithms for different phases of the TAVI clinical pathway. The following quality indicators were used: number of developed protocols; % coverage of each TAVI clinical pathway phase; staff satisfaction; and procedural duration and flow.

**Results:** We have developed a total of 9 standardized protocols, encompassing preprocedural, intraprocedural and postprocedural aspects (100.0%). For the purpose of daily utilization and validation, the protocols were solely in Croatian language. The implementation of the protocols was smooth, and all members of the TAVI team have accepted it (100.0%). An overall staff satisfaction was high, resulting in daily utilization of the protocols (100.0%). Procedural duration was significantly shortened after the introduction of the protocols (median procedural time (skin entry to closure): 70 minutes vs. 40 minutes). Finally, based on the abovementioned assessments and quality indicators, the standardization and optimization of the TAVI clinical pathway was achieved.

**Conclusion:** Optimization of the TAVI clinical pathway is feasible using the standardized local protocols. The protocols from the University Hospital of Split have met the predefined quality indicators, but its association with the patient clinical outcomes is needed. Further research is needed to validate long-term benefits across diverse populations.

**RECEIVED:**  
February 5, 2025

**ACCEPTED:**  
February 14, 2025



**LITERATURE** 

1. Chopra M, Luk NHV, De Backer O, Søndergaard L. Simplification and optimization of transcatheter aortic valve implantation - fast-track course without compromising safety and efficacy. *BMC Cardiovasc Disord.* 2018 Dec 10;18(1):231. <https://doi.org/10.1186/s12872-018-0976-0>
2. Kratochvílová L, Mašek P, Neuberger M, Nováčková M, Toušek P, Sulženko J, et al. Might simplification of transcatheter aortic valve implantation reduce the burden on hospital resources? *Eur Heart J Suppl.* 2022 Mar 30;24(Suppl B):B28-B35. <https://doi.org/10.1093/eurheartjsupp/suac009>
3. Hewitson LJ, Cadiz S, Al-Sayed S, Fellows S, Amin A, Asimakopoulos G, et al. Time to TAVI: streamlining the pathway to treatment. *Open Heart.* 2023 Sep;10(2):e002170. <https://doi.org/10.1136/openhrt-2022-002170>