Optimization of the EVAR Pathway: An Integrated Organizational Model for Clinical Efficiency and Economic Sustainability

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INTRODUCTION

The hospital management of **endovascular abdominal aortic aneurysm repair (EVAR)** is marked by significant **heterogeneity** across healthcare facilities, reflecting local differences **in resource allocation, clinical organization, and care models**. This variability can impact both patient outcomes and system efficiency, highlighting the need for more standardized and effective approaches.

OBJECTIVE

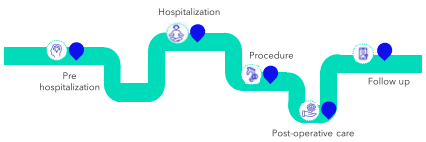
The present analysis examines the **organizational and economic impact of an optimized model of EVAR management** implemented at Poliambulanza Hospital in Italy and based on three core components: digitalization of clinical workflows, the presence of a dedicated ward physician, and continuity of clinical care.

METHOD

A structured survey has been conducted at a best-practice center in Northern Italy to reconstruct the patient care pathway for endovascular abdominal aortic aneurysm repair (EVAR) and to analyze its management under an optimized organizational model.
The analysis covered all phases of the care process: **pre-hospitalization**, **hospitalization**, **operating room**, **post-operative care**, and **follow-up**. Data have been collected on workflow timing, allocation of professional resources, and the extent of digital tool integration throughout the process

RESULTS

The site implemented an optimized patient management system for EVAR, supported by an integrated care pathway (PDTA), electronic medical records, and a dedicated ward physician.



Workflow Highlights:

- **Coordinated Care** and **Efficiency:** the **PDTA**, a **dedicated physician** and **clear staff roles**, streamlined admission and workflow, enhancing coordination and optimizing resource use.
- **Pre-hospitalization**: duration 2–4 hours, including comprehensive cardiological and routine exams, managed by two professionals.
- **Total hospital stay:** 3 days (1 pre-operative, 2 post-operative), compared to a national reference of 3.5[1].
- **Cost savings**: Each patient benefits from a **reduction** of 0.5 days **in hospitalization**, saving €230 (daily cost: €459.52[2]).

Digital tools enable efficient patient journey management by ensuring comprehensive tracking (beyond procedural steps), direct access to follow-up exams, and streamlined workflow.

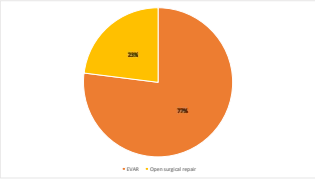


Figure 1. EVAR Adoption Rate in AAA Cases

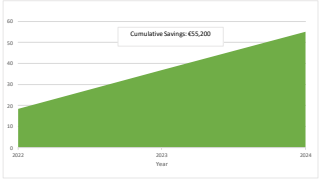


Figure 2. Cumulative Savings in € (2022-2024)

This streamlined approach ensures **continuity in decision-making** and **mitigates inefficiencies** such as delays, redundant tests, and extended stays.

Between 2022 and 2024, the adoption rate of EVAR for AAA cases at center reached 77% (figure 1), leading to cumulative **savings** of approximately **€55,200 over three years** (figure 2). Extrapolating these results nationally, applying the same EVAR adoption rate to the 8,949 aneurysm repairs performed in Italy in 2023 could yield an estimated €1.58 million in savings.

Follow-up appointments and exams are scheduled at the time of discharge, resulting in over 90% patient adherence. This strategy helps prevent delays in care, **lowers the risk of adverse events** and **ensures continuity of care**.

CONCLUSIONS

Implementing **optimized organizational pathways** for **EVAR**, as exemplified by the analyzed model, offers a concrete opportunity to **improve clinical and operational efficiency**, **free up hospital resources**, and **increase capacity without additional investment**.

The broader adoption of structured, integrated models—based on digitalization, clinical pathways (PDTA), and continuity of care—may help align centers with **higher standards**, promoting greater **equity** and **sustainability** in AAA management..

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CONTACT INFORMATION

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