Implementing Outcome Measurement Through Time-Driven Activity-Based Costing in the Pathway of Patients with Macular Degeneration

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Introduction

Incorporating **Time-Driven Activity-Based Costing (TDABC)** into healthcare processes holds promising potential for enhancing operational efficiency, optimizing processes, and freeing time that can be used to implement outcome measurement. This abstract discusses a specific application of TDABC at an ophthalmic clinic focused on the intravitreal application of anti-VEGF inhibitors for treating ocular diseases. The project commenced with an essential step: **comprehensive process mapping** which is the first phase of TDABC. This initial stage is crucial for gaining visibility into existing workflows, identifying inefficiencies, and pinpointing potential improvements. The goal was not only to **streamline operations** but also to **integrate outcome measurement** into the patient pathway, thereby enhancing the quality of care delivered.

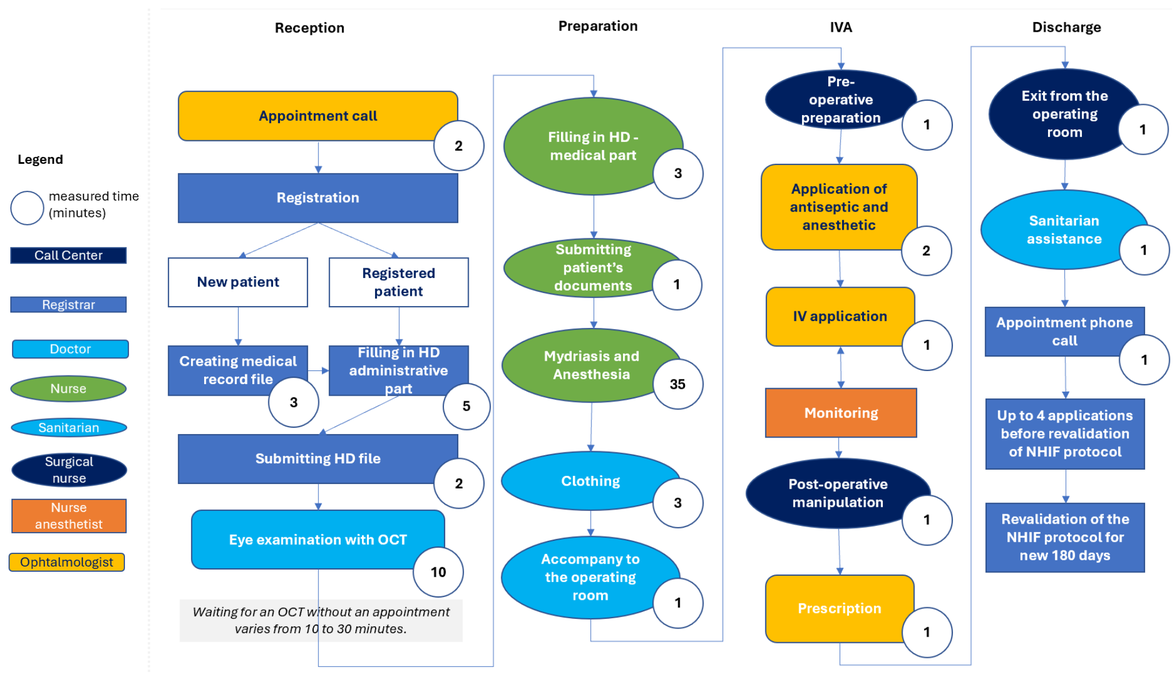

Figure 1. Intravitreal application process mapping before optimization

Methods

The project methodology involves a detailed examination of the clinic's existing processes, tracing the **patient journey** from reception to check-out. TDABC was employed to map out each step of the patient experience, identifying time-consuming and non-value-added activities. The data was meticulously gathered and analyzed, as demonstrated in Figures 1 and 2 which outline the pre- and post-optimization stages. The project focuses on **redesigning** these processes to minimize unnecessary steps and reduce patient waiting times. Through this optimization, capacity for more valuable activities was created—specifically, the integration of outcome measurement into the clinical workflow.

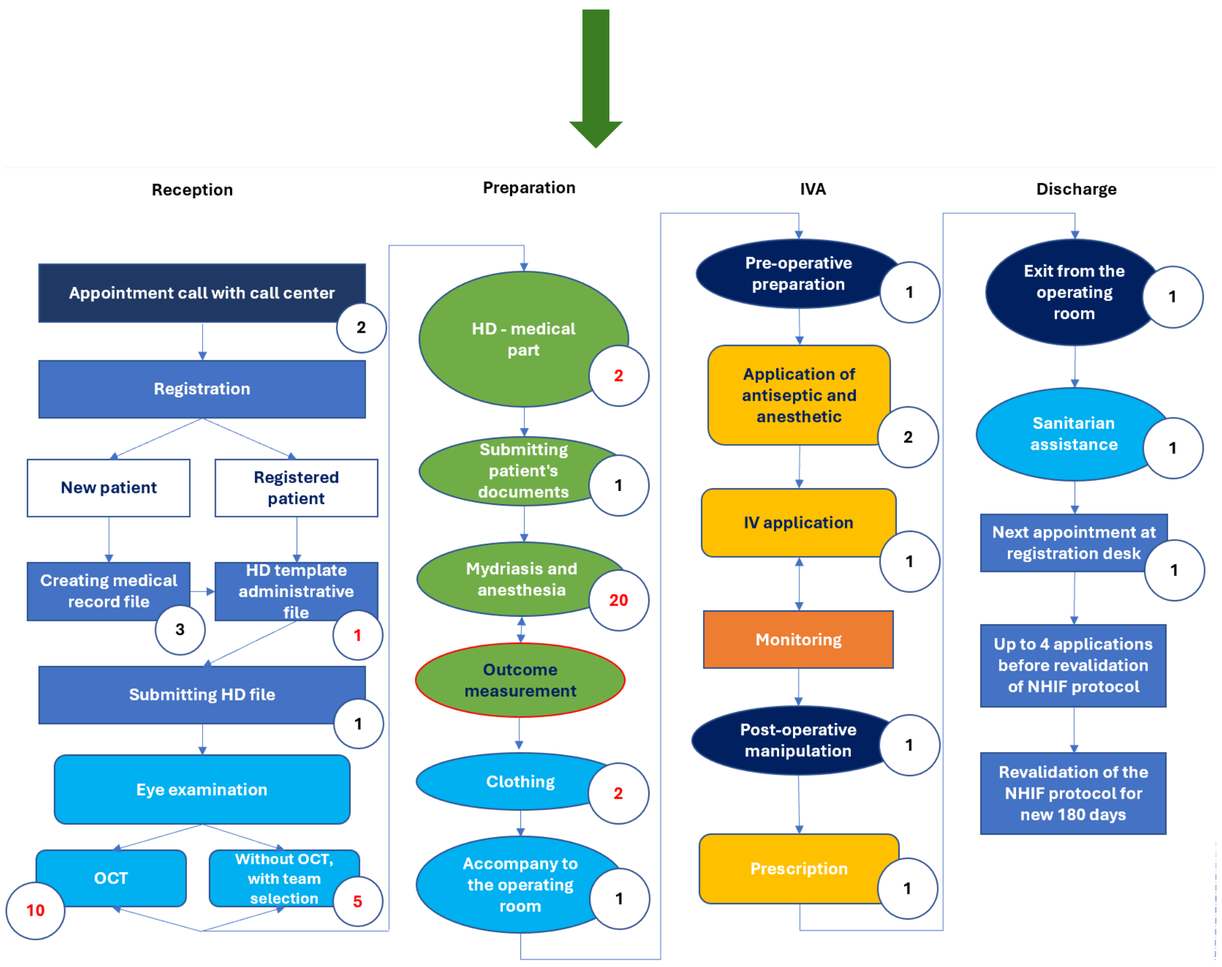

Figure 2. Intravitreal application process mapping after optimization

Results

The application of TDABC yields substantial improvements in clinic throughput and efficiency. The total process time for patient visits is reduced by nearly 50%, from an initial **72 minutes to approximately 36 minutes** for new patients. This significant reduction allows for reallocating freed-up resources effectively. With the time savings achieved from process optimization, a new component was introduced into the patient pathway: the **measurement of patient-related outcomes** (PROs) via **EQ-5D-5L** and the **ICHOM standard set for macular degeneration**. This step is strategically placed during the medical preparation phase before the intravitreal injection. Approximately 10 minutes of the optimized process time are allocated to this task, now a routine part of the patient's treatment experience. The medical staff, including young ophthalmologists, received specialized training to effectively measure and document these outcomes. The training emphasizes accuracy and efficiency in administering the questionnaires, ensuring that this new task meshes seamlessly with existing procedures without adding undue burden to the patient or clinical workflow.

The integration of the outcome measurement does not extend the patient's overall time at the clinic but rather replaces less productive activities with this value-adding process. The measurement process is now fully operational, with young ophthalmologists administering the EQ-5D-5L and ICHOM datasets during what used to be downtime for patients. This integration not only maximizes the use of time but also enhances the clinic's capability to monitor and improve patient outcomes systematically.

Conclusion

The implementation of TDABC in the ophthalmic clinic proves to be a transformative initiative. It is well received by healthcare professionals and providers, resulting in added value even in the current fee-for-service system. By mapping and optimizing patient pathways, the clinic not only streamlines its procedures but also creates the capacity to incorporate meaningful outcome measurements into the clinical routine. This integration supports the clinic's mission to provide patient-centered care that is both efficient and outcome-focused. Future efforts will concentrate on evaluating the long-term effects of these integrated practices on patient satisfaction and clinical outcomes. These efforts will likely provide valuable insights into the sustained benefits of process optimization and outcome measurement in enhancing healthcare delivery.

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