# Torin AI-based scheduling

## How artificial intelligence is increasing OR productivity



Many variables can complicate OR planning. Adding machine learning to Torin takes OR management to an unprecedented level. Torin's machine learning represents a real opportunity to eliminate inefficiencies and prioritize surgeries - allowing hospitals to realize the greatest potential of their ORs.

### Decrease solution complexity

Working in the OR can be challenging because it is a complex, dynamic environment and often time- and resource-constrained. To optimize the OR, many existing data gaps must be to be filled. With Torin, OR managers can perform data analysis comparing planned surgeries with the actual surgeries that took place. Torin improves accuracy of OR scheduling through e.g. AI-based prediction of surgery times.

### Torin AI-driven prediction of surgery times

With the help of artificial intelligence (AI), Torin uses machine learning to analyze relevant variables: From a patient's body mass index to when the surgeon last performed the procedure. Torin compares data from thousands of surgeries to predict the duration of a surgical procedure and other relevant predictions. Because the system is based on machine learning, every time new surgeries are completed and new data emerges, the algorithm learns to become more and more accurate.

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# The value of AI-driven prediction of surgery times

## 5-40%* improved predictions vs human

Applying artificial intelligence technology to the OR management workflow enables better prediction of surgery time. A machine learning algorithm can take into account many more variables than the human brain.

## Increased accuracy of OR schedule

By calculating surgery time based on documented data and context data, the OR schedule will be more accurate. You already have the data in your hospital, we only need to bring them together.

## Improved OR utilization

The solution automatically checks for potential conflicts to avoid incoherencies and gaps, ensuring a more cost-effective and structured surgery plan.

## Improved patient and staff satisfaction

An OR schedule that can be executed on time will reduce overtime hours for staff. Ultimately, patients experience the reassurance of a well-organized, calm hospital with surgeries running according to schedule.

## Fewer cancelled and delayed surgeries

Increased plan accuracy reduces delayed or cancelled surgeries on day and reduces costs.

## Seamless integration in existing scheduling functionalities

When creating an OR appointment, the predicted surgery time is automatically proposed by Torin. The user can now decide to continue with the proposed time or override if applicable.

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## Torin is using AI for a better prediction of surgery times

**Input**

- Historical OR data
- Variables used by the machine learning algorithm
  - Surgery type
  - Patient data
  - Anesthesia and clinical data
  - Staff data - e.g. experience of the surgeon

- Predicted surgery times by surgery type
- Displays which variables have influenced the surgery times by which degree
- 5-40%* improved predictions vs human
- Increased accuracy of OR schedule

**Outcome**

*Based on internal studies with a pilot customer

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