

# **Increasing Ambulance Capacity with a Lean TOC Approach**

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## **Abstract**

The measure of ambulance cycle time is of particular interest in the performance of Emergency Medical Systems (EMS). Its value determines the ambulance capacity of the operations system of an EMS institution. For a given number of ambulances in operation, as the value of the average ambulance cycle time increases, total ambulance capacity for the system is reduced. Additional impacts resulting from this situation are; an increase on the average ambulance response time and patient's health risk due to the unavailability of ambulances; and a greater need of ambulance replacement investment requirements and operating cost. This work suggests an improvement approach based on Theory of Constraints (TOC) and elimination of waste for reducing ambulance cycle time. The approach is applied to a Mexican EMS institution based on metropolitan Monterrey. Results of the application are provided.

## **Keywords**

Ambulance cycle time; bottleneck, waste reduction; emergency operations

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