Development of a generic emergency department discrete-event simulation model

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Background

Emergency Departments (EDs) have a critical role in patient care and their process complexity presents challenging operational questions, e.g.,

- staffing decisions,
- resource allocation,
- patient flow.

Discrete-Event Simulation (DES) models can help evaluate the performance of process improvement approaches.

DES models are often built with site-specific constraints that limit their applicability to other hospital sites.

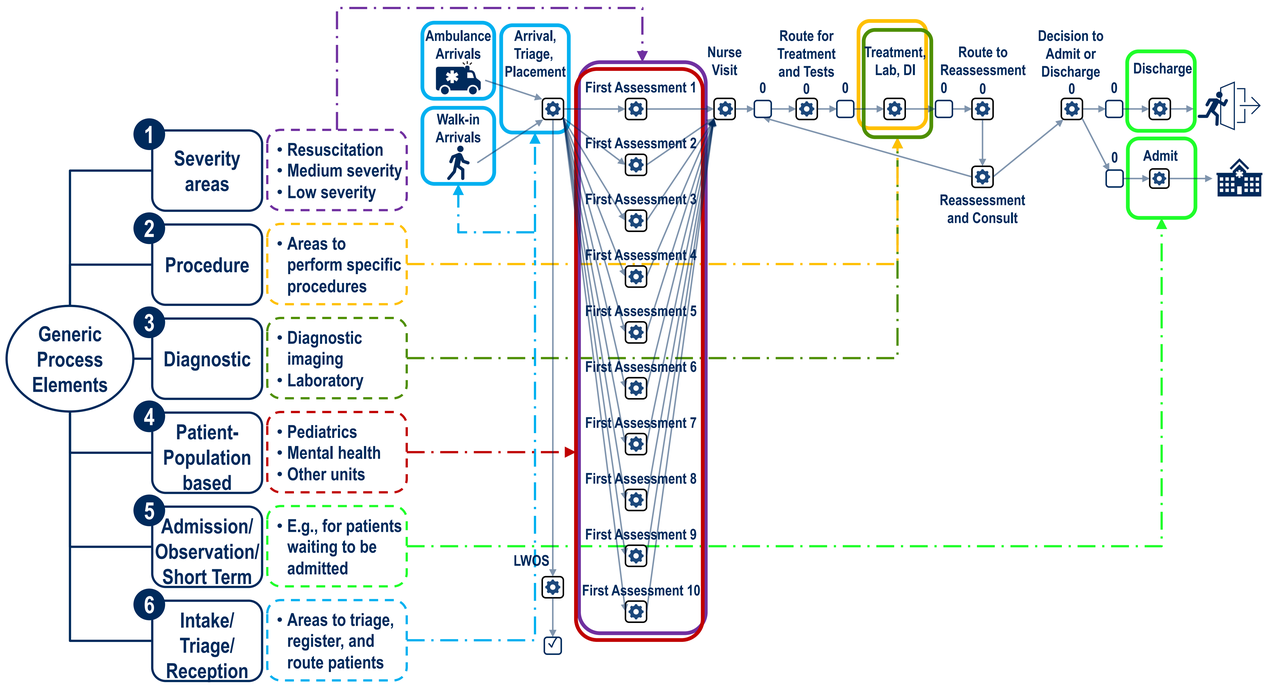
Methodology

High-fidelity generic DES model represents the ED flow by mimicking the key actions and rules of real systems.

Validated the output of the model with data sets belonging to 9 sites in Canada, U.S.A, and U.K.

Results

A single input-driven generic model in Simul8.



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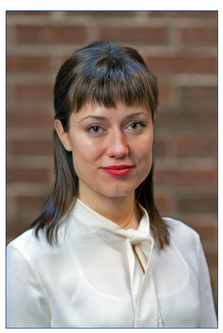

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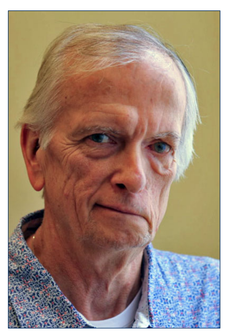

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