



## Simulation Modeling Cures Patient Waiting Room Woes



### Problem

A pediatric clinic had long outpatient wait times and low throughput, resulting in lost revenue and patient and staff dissatisfaction

### Solution

Alacer designed a simulation model that allowed creating optimized patient flow patterns

### Results

On-schedule appointments increased 87%; patient capacity increased 117%, \$560,000 added revenue; eliminated follow-up appointments, saving \$400,000/year

### Overview

Nothing is more frustrating for parents than having to wait to make an appointment for a child to visit a doctor, or spending a long time with a toddler in a waiting room. For a major Midwestern hospital's outpatient pediatrics clinic, this was the norm. Over half of the appointments took longer than their allotted time, resulting in needed follow-up visits to complete tests and vaccinations – amounting to over \$400,000 in lost revenue annually. By applying discrete event simulation techniques (process modeling) and Lean principles, the Alacer team determined that the right resources were not in the right places at the right times to support best practices workflow and maximum throughput.

### Challenges

When the quality of care is an organization's first priority, it's not always possible to make incremental changes in day-to-day activities and measure the results without impacting patients. To avoid trial-and-error disruptions, Alacer created a simulation model that would allow its experts to optimize existing workflow patterns, aligning the quantity and type of demand profile against the correct resources. By understanding patient surge times and matching them to correct staffing levels and resources, Alacer could make recommendations that would enhance patient care while increasing revenues through more efficient use of time and talent.

### Results

Immediate patient flow improvements were experienced, triggering internal momentum to further refine the "standard work" solution. Within 90 days, patient visits that were completed within their allotted time increased to 87%. This resulted in the hospital's ability to book more patients, generating \$560,000 in new revenue. Additionally, as efficiency increased and the need for follow-up visits decreased, \$400,000 per year in lost revenue was eliminated. Improved satisfaction scores from patients and staff proved the success of process simulation. Based on this success, the technique was used to optimize other practice areas and clinics within the healthcare system.

