

Emory Health Infusion Center Improves Patient Satisfaction

Winship Cancer Institute

Success Story

Healthcare

MedModel



CHALLENGES

The Winship Cancer Institute Infusion Center was faced with serious resource utilization issues. The Infusion Center, part of Emory Healthcare, the top hospital in the Atlanta, GA metro area, had a back-up of patients waiting in its lobby. They were facing issues with how resources were being utilized and scheduled and a staffing shortage which led to long wait times during peak hours and busy days. Patients spent an undesirable 30-35 minutes in the waiting room.

The center was also attempting to figure out if using an electronic CPOE (Computerized Physician Order Processing) would reduce processing time and what would happen with an expected 32% increase in patient volume. Also when the infusion center lab was backed up, they had to send out to a different lab which caused further delays.

Patient perception is very important to any hospital and according to their patients, waiting more than 20 to 25 minutes was unacceptable. In addition, their strategic plan forecasted a 9-10% increase in patient volume per year over the next three years. It seemed a simulation analysis was necessary to finding an optimal solution within this complex and variable hospital environment.

OBJECTIVES

They needed to model the present state of patients and resource flow in the Cancer Institute Infusion Center, to identify and analyze system bottlenecks and performance metrics, especially:

- Wait time in lobby
- Chair utilization

They needed to obtain results from simulating the following operational scenarios:

- Scheduling
- Staffing
- CPOE - Pharmacy order processing time scenarios

They needed to plan for future increases in patient volume and make recommendations to improve customer service levels and operational efficiency.

SOLUTION

The Emory Clinic Operations Support Department conducted a simulation analysis of the patient flow process through the infusion center. The process was validated and verified against historical data and opportunities for improvement were identified. Different scenarios were run to analyze scheduling, staffing, CPOE (Computerized Physician Order Processing) and patient volume increases.

The center wanted to determine if their baseline schedule, a Saturday and Sunday full business day schedule, or a smoothed arrivals and Saturday and Sunday full business day schedule would decrease wait times. The model proved that extending the hours on weekends significantly reduced wait times and was already being implemented.

Staffing scenarios were run, as well. Which was their best option: baseline state, seven bays open with two RNs per bay, or six bays? It was discovered by the model that the absence of a single RN increased wait time in the lobby by 9.5% and having a full bay closed increased wait time by 113.7%. Changing the schedules of the 1, 2, and 3 hour infusions to afternoon sessions reduced bottlenecks and chair times by 13.7% and wait time in the lobby by 35.76%.

CPOE is where providers enter prescription or infusion orders electronically and sign them digitally. The major advantages to using CPOE are, a reduction in paperwork, eliminating manual transport of paper orders, a reduction in order errors and improvement in pharmacy order processing times which then decreased wait time in the lobby by 20%. Using CPOE reduced pharmacy order turn around by 35% and average chair time by 7.6%. While considering ways to increase the efficiency of the pharmacy, they also discovered that better coordination between the lab and provider schedules would provide more efficiency. Pharmacy turnaround time was then a concern because they found that the extra hour they put into the infusion treatment time was not enough to make up for a long wait at the pharmacy.

Concerning the future expectancy of patient volume increases, the model showed that two additional RNs would be needed Monday to Friday and wait times could be decreased to 22.61 minutes and chair time decreased to 198.94 minutes.

VALUE PROVIDED

One result of the model that was already being implemented was to extend business hours to Saturday and Sunday and have three bays open instead of just two. This resulted in a 4% decrease in chair time and a 23.7% reduction of wait time.

Planning for the future
Impact of a 32 % increase in the number of infusion patients at Clifton Road

