



Business challenge

Rush University Medical Center needed to improve its ED patient flow and reduce patient wait times while combatting capacity shortages within the inpatient units, which caused backups in the department.

Transformation

With a bustling emergency department (ED), Rush looked to enhance its patient experience by improving flow, cutting wait times and reducing the number of patients who leave without being seen (LWBS). Teaming with IBM® Watson Health™ Simplr®, the hospital began to see a significant reduction in lengths of stay in its flow cells and significantly more patient volume through its quick turnaround, low resource flow cell.

Results

Reduces lengths of stay in flow cells

by more than 2,600 minutes per day for patients

Continuously improves quality of service and care

and reduces operational waste

Increases number of patients seen

in a more efficient manner and decreases patients who LWBS

Rush University Medical Center

Strategically reconstructing how patients flow through the emergency department

Located in the US in Chicago, Illinois, [Rush](#) is an academic medical center with hospital facilities for both adults and children. With a patient capacity of 664, the not-for-profit healthcare center employs more than 7,100 people and is the largest nongovernmental employer on Chicago's West Side. In 2007, Rush was the first Chicago-area organization to receive the prestigious Exemplary Voluntary Efforts (EVE) Award from the US Department of Labor in more than a decade.

“ In an ER, you need efficient patient flow, in and out. If you can't get them out, you can't get them in.”

—Patti Altman, Emergency Department Director, Rush University Medical Center

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Long wait times, stressed staff and patients

The greatest challenge for EDs is and has always been, capacity. With doors open 168 hours a week, 365 days a year, hospitals continuously look for ways to improve ED flow. Although various tweaks may alleviate some issues, services could be better coordinated and optimized from the onset at most facilities.

Rush, a leading hospital based in Chicago, was feeling the constraints of trying to efficiently reconfigure its ED to combat the overcrowding that was causing problems for both hospital staff and patients. The medical center was suffering from long wait times in the ED, and patient flow was an issue because the emergency room (ER) was usually backed up with inpatient admissions.

Another pivotal challenge was moving patients from the ED into designated units. The flow out of the ED to inpatient units was slow and often encountered delays, thus increasing patient risk—and that cascaded into other areas of the hospital. “The longer you have patients in your department, the problems start and there is more risk to patient experience and safety,” says Patti Altman, the Emergency Department Director at Rush. “We needed to embark on creating a clinical decision unit—an admissions unit—and we needed help doing it.”

Working with Lean methodology, an initiative to eliminate waste and streamline operations using Lean management methods and tools, wasn't new to Rush. The team had previously tried to implement change within its workflow but found it difficult to sustain. “We weren't getting results and we realized we needed an entire value stream transformation to really get to where we wanted to go,” explains Dr. Paul Casey, the Acting Chief Medical Officer at Rush. “It was time to engage some outside help.”

Getting into a new flow

Rush brought in Simpler to assist in its journey toward achieving and sustaining quality patient care and financial growth. Starting from scratch, Altman's team and Simpler designed an ideal 12 - 18-month Lean transformation plan around the hospital's four pillars: people, quality and safety, growth and reach, and financial strength. Rush leadership also heavily analyzed a vast amount of data and analytics and worked out what an entire value stream transformation would entail.

“We just felt like we needed to reinvent ourselves,” Altman says. “There was a lot of planning and education with the Simpler team that went into how we were going to change the design of the ED. We also looked at where all the waste was

“We put together a very aggressive timeline with Simpler with multiple flow cells. There was no other ER doing this type of rapid improvement transformation at this level.”

—Patti Altman, Emergency Department Director, Rush University Medical Center

occurring, and it became apparent that we had a lot of opportunities to reduce it.”

Simpler's approach is designed to rapidly identify and then implement the strategic improvement opportunities that exist within any organization. The Rush staff took on planning and education as they worked toward achieving change in the ED—and fast. “The pace of change was a little faster than what we've done in the past, so there was a lot of adjustment for staff at once, but they were very receptive,” explains Dr. Casey, of the rapid changes.

After going through the Simpler flow prerequisite work of process preparation (2P) to configure the space for flow and staffing demand, the ED team then built each flow cell through a rapid series of workshops.

To drastically enhance the flow through each cell, they designed a real-time flow management system.

The initial deployment provided significant learning and some results but didn't deliver the breakthrough change that was needed and expected. “When things didn't work, we didn't just stand still; the team and Simpler reevaluated and made adjustments,” says Christine Costello, Process Improvement Consultant at Rush. “We made sure to document feedback from the staff so that they owned the process and could be a part of changing it. This really helped in driving the right questions and successfully making adjustments based on the idea we heard from the team.”

From there, leadership and Simpler laid out what they found were the biggest opportunities and challenges remaining and formed a 2.0 version of the plan.

A refined emergency department

To combat high ED boarding numbers, Rush opened a critical decision unit and successfully decreased wait times for Level 4 patients. “If patients don't need a full inpatient admission, consultants can meet with them quicker and in a quieter setting,” says Altman. “It helps elevate some of the burdens

on the department because we're able to move patients along faster and safely."

The Rush staff has reduced lengths of stay—from when patients enter a flow cell until they receive a disposition for discharge, admission or transfer—by more than 2,600 minutes per day for patients. This has freed up capacity to pull more patients into the flow cells, significantly reducing the number of patients who leave before treatment. Also, with highly reliable standard work within the flow, the staff have created a capacity to pull 150 patients per day from the medium resource flow to the lower acuity flow, where the length of stay is 100 minutes shorter per encounter.

With the support of a Simpler coach, the Rush ED team developed flow management tools that enable the flow cell team members to evaluate their work cell performance in real-time. The tools help providers and staff see patients' progress and adjust plans, allowing them to act immediately to correct flow disruptions when they are not meeting service goals.

Rush's value stream transformation is still in the very early stages, but changes are evident all around the ED. "The work we've been doing in the ED with Simpler has been very helpful in, at the very least, shaving down 5 - 10 minutes, and every little minute counts in this kind of work," Costello says. The atmosphere continues to improve throughout the ED as the staff members make huge strides toward accomplishing their goals and fine-tuning what they've learned.

"The ED team has worked really hard to get their staffing demand in alignment, making changes to layout and processes and then implementing the changes," Casalo adds. "They've done everything they can to change what they can. There are some things we can't control, such as the turnaround time to get a CT scan or X-ray, patient time with doctors, or waiting for a room to be turned around."

The team at Rush is well on the way to its destination as its continuous improvement journey carries forward. As challenges pop up along the way, staff feel equipped with the right tools

to tackle issues and empowered to give feedback to leadership. "It's a process and not a one-shot thing. It's ongoing, and we need to keep looking at ways to improve and keep evolving," Dr. Casey says. "That's a big strength of our group."

"It's been great having most of the senior leadership very engaged with Simpler, doing rounds on the floor with staff, being open to change and all-around communicating. That's not something I've seen everywhere."

—Christine Costello, Process Improvement Consultant, Rush University Medical Center

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