



Business challenge

Demand for emergency services rose dramatically in recent years at NYC Health + Hospitals/Queens (Queens Hospital), causing overcrowding, excessive wait times and high walkout rates.

Transformation

At the front line of medical services in its community, the Emergency Department (ED) at Queens Hospital engaged the IBM® Watson Health™ Simpler team to help it deliver faster, more responsive care to patients and their families. With an optimized workflow, clinicians can screen incoming patients in a timely manner, slashing wait times while boosting satisfaction.

Results

~90% of all patients presenting to the ED examined by a highly trained clinician within 30 minutes of arrival

~50% reduction in overall patient length of stay down from 7 hours to fewer than 4 hours, and a ~40% reduction in dwell time

Reduced ED walkout rate to less than 2% reducing risks to patient safety and improving satisfaction

NYC Health + Hospitals / Queens

Achieves excellence in emergency room operations with IBM Watson Health

Located in Jamaica, New York, [Queens Hospital](#) is a major healthcare provider serving the borough of Queens. An affiliate of Mount Sinai School of Medicine and a member of NYC Health and Hospitals—among the largest public health care systems in the US—Queens Hospital has provided high-quality, affordable care for more than 80 years. Housed in fully modernized facilities, its comprehensive medical services for children and adults include four Centers of Excellence for cancer care, diabetes management, women’s health and behavioral health.

“We wanted to be the ED of choice for our community. This is why we started this journey towards excellence.”

—Dr. Dave Holson, Director of Emergency Medicine, NYC Health + Hospitals/Queens

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“We don’t want our patients to wait”

Each year, more than 100,000 people seek immediate medical attention from Queens Hospital, a public hospital with one of the busiest emergency rooms in the US. They and their loved ones come from the borough’s many culturally rich and diverse neighborhoods, where residents speak more than 130 languages and represent a wide range of socioeconomic backgrounds.

Despite their differences, upon arrival at the hospital’s ED, everyone expects prompt, personalized and high-quality care.

ED staff members, including approximately 35 physicians, 40 physician assistants (PAs), 5 nurse practitioners (NPs) and 85 nurses, dedicate themselves to delivering on these expectations, at all hours of the day and night.

“I feel we’re one of the best kept secrets in Queens, probably in New York City,” says Dr. Dave Holson, Director of Emergency Medicine. “We are an urban community hospital that serves a very diverse population. But once you get here, you feel at home and that’s what makes it such a special place.”



In recent years, after several other borough hospitals closed, the Queens Hospital ED experienced significant surges in demand for its services. Its volume of adult patients, especially from low-income families, nearly doubled, and its monthly ambulance runs increased from fewer than 1,000 to approximately 2,500. (The hospital has a separate pediatric emergency unit for children.)

“We were faced with issues of flow, overcrowding and limited space,” Dr. Holson explains.

When an individual entered the ED, PAs or nurses determined treatment priority by performing triage evaluations. The department uses the Emergency Severity Index (ESI) patient-triage system, which categorizes patients from level 1

(most urgent) to level 5 (least urgent) based on each patient’s acuity and resource needs. Level-1 and -2 patients received immediate treatment. However, because of growing demands placed on department services, level-3 to -5 patients often had to wait long periods of time, depending on the severity of their conditions.

“The primary reason folks come to an emergency department is to see a provider, and the longer patients wait the more likely they are to walk out,” says Dr. Holson. “That was our big challenge. The most critically ill were getting seen right away, but the level-3 patients—that’s where we wanted to close the gap.” Level-3 medical conditions generally require more tests, procedures and other resources to diagnose and treat than

less acute conditions. Examples include lower abdominal pain accompanied by nausea, and persistent lower leg pain and swelling.

Suja Mohan, RN, Nursing Director of Emergency Medicine and Radiology Services, agrees that too often the department could not meet its own standards for delivering prompt care. “We don’t want our patients to wait at all. We want them to see a provider right away.”

Even if patients and their families decide to wait it out, higher time-to-provider and length-of-stay (LOS) metrics can correlate with greater risk to patient safety and lower patient satisfaction. In addition, long wait times can increase a hospital’s direct costs and reduce its reimbursements from healthcare insurers. They can also thwart its ability to meet benchmarks for care as set by the Centers for Medicare and Medicaid Services (CMS).

The ED leaders sought to improve operations so that each individual is thoroughly evaluated upon arrival by an ED clinician (that is, a physician, PA or NP), swiftly treated, and then discharged or admitted to another unit, as needed. “We asked, ‘How can we best serve our patients and see them flow through the entire hospital system in a timely manner?’” explains Dr. Holson

A leader in lean transformation

Working with their parent organization, NYC Health + Hospitals, ED leaders at Queens Hospital had already taken initial steps to deliver more efficient, patient-centered care. The collaboration began in 2008, shortly after NYC Health + Hospitals joined with the Simpler team to launch Breakthrough, an enterprise-wide initiative to eliminate waste and streamline operations using lean management methods and tools.

In 2015, Dr. Holson and other ED leaders at Queens Hospital engaged more fully with the hospital's Breakthrough team and Simpler consultants. They sought to truly embrace the Simpler Operational Excellence approach for innovating, planning, problem-solving and tracking performance. "The paradigm shift was we wanted to be better. We wanted to be the ED of choice for our community," Dr. Holson explains. "This is why we started this journey towards excellence."

Together, they created a vision and strategy for delivering value to patients at every point of care, from the moment of arrival until being discharged or admitted for the next appropriate level of care. The process involved mapping out the department's existing value stream and analyzing it for gaps



between it and the ideal state. They took everything into account—from the number of medical stretchers needed, to courtesy and cleanliness, to staffing levels, to overall facility design—with the goal of matching resources to fluctuating patient volumes with zero waiting, waste and errors.

"One of the things we enjoyed about the journey is the level of granularity with which we approached the subject, really looking at the flow of the patient from arrival and all the possible permutations and combinations of where they could be processed in the ED," says Dr. Holson. "Then, working in the context of 'What does good look like?' and breaking it down so that we could see where our gaps were."

Simpler consultants helped the ED leaders organize an operational flow using cells, which dedicate specific floor space, processes and resources to certain functions. The team conceptualized distinct cells for functions associated with patient arrival, assessment and treatment by ESI level, holding, and discharging and admitting, then tested multiple ways of organizing the cells.

The consultants also worked with the ED to implement an early care model, which places emergency-trained clinicians up front to perform triage-focused medical screening exams immediately upon patient arrival. A medical team then transports ESI level-1 and -2 patients (with life-threatening illnesses or injuries) directly into one cell, while level-3 patients receive treatment in

another cell before being discharged or held until stabilized. Staff direct level-4 and -5 patients to the urgent care center, where they might have minimal waits.

Using this model, the frontline team enters initial assessment data into the hospital's electronic medical record system, so patients and companions answer key questions only once. "And we also script out what patients should expect, so from the beginning they have a good sense of what the rest of the journey will look like," says Dr. Holson. "I think that puts to rest a lot of their fears and helps to address questions they might not even want to ask. Patients get a whole different experience at the back end."

From the start, Simpler and Breakthrough specialists at Queens Hospital worked on the ED floor as real-time coaches for ED leaders, who in turn engaged staff members. The corporate Breakthrough team also provided initial guidance. Week-long workshops gave everyone opportunities to test different components of the value stream in real conditions, challenge traditional processes, share ideas and learn by doing.

"We even celebrated the failures," explained Dr. Holson, "because that allowed us to learn from that experience and say, 'How can we do better the next time as we plan things going forward?'"

The department also established—and sustains—a culture of continuous improvement through consistent application of Simpler Business System tools and techniques. Staff contributed to setting incremental performance targets and reviewed metrics during daily management and communication huddles, one held during each shift. In addition, department binders documented standardized workflows across disciplines and served as a basis for performance evaluations. “We now have standard work for everything,” says Mohan, who updates the binders to reflect ongoing improvements. “‘Standard work’ is like a mantra here.

“We also developed strong liaisons with people we work with in the lab and radiology,” she adds. “We consistently meet with them and report our metrics and our concerns.” By holding the other areas of the hospital accountable for turnaround times on diagnostic test results, the ED can treat patients more efficiently.

With everyone invested in success, the unit has taken on a new rhythm and energy and become a model for lean transformation across Queens Hospital. “Simpler helped us create tools that made sense to us from our perspective,” says Dr. Holson. “This is why lean is basically part of our fabric and we’ve been able to continue to make changes, grow and pursue excellence.”



30 minutes to see a doctor

The ED’s performance metrics reflect the unit’s ongoing achievements in improving patients’ experiences and speeding community access to emergency providers. Thanks to the early care model, approximately 90 percent of all patients now receive examinations by ED clinicians within 30 minutes of arrival. By improving time-to-provider rates for all ESI-level patients, the department also significantly decreased walkout rates to less than 2 percent, compared with 8 percent in 2008.

Patients’ overall LOS also decreased on average by nearly 50 percent to fewer than 4 hours, except for when patient volumes spike dramatically. Previously, patients stayed up to 7 hours in the ED, as measured using 2013–2014 data. The department also achieved a 40-percent reduction in dwell time—the timespan from when the ED decides to admit a patient to the time the patient arrives at the appropriate unit. The reduction in delays reflects improvements in not only ED flow but also in new connections made between it, diagnostic teams and the Inpatient Services unit. “Now, instead of

pushing to get patients upstairs, patients are actually being pulled upstairs [by Inpatient Services], which is the ideal model that you want,” explains Dr. Holson.

“One of our biggest accomplishments was ... to blur the lines between [the ED and other departments] rather than working in silos,” comments Afsheen Mazhar, Administrative Director of Emergency Medicine, who helped drive day-to-day improvements and perform on-the-spot problem-solving. “We’re still continuing to work on that journey, but a lot of pull systems were created after we learned how to apply lean tools.”

By transforming the patient experience, the department now can better control costs, qualify for reimbursements and meet CMS benchmarks. Armed with new insights into patient flow, it also recently undertook a multiphase, multimillion-dollar expansion of its physical facilities. With more floor space, the department can continue to create cohesive, integrated approaches to accommodating growing patient volumes. It can also better advance the hospital’s mission to provide everyone in Queens access to high-quality, comprehensive care.

The lean process of empowering employees to drive and sustain changes is an ongoing journey, and the ED leaders are proud of their department's accomplishments. "We've really created a continuous learning environment, so now the staff is ready for change all the time," says Jason Punsalan, Chief Physician Assistant, Department of Emergency Medicine.

Perhaps most important, the transformed ED helped boost the hospital's patient satisfaction ratings, as measured by Consumer Assessment of Healthcare Providers and Systems. And ED leaders hear it directly from the patients themselves.

"Now, when I work in front, a lot of the patients come back to the triage booth, smile and tell us, 'Thanks,'" says Dr. Holson. "To me, that's what makes it worth it at the end of the day."

Solution component

- IBM® Watson Health™ Simplr

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