The Ottawa Hospital improves patient care and safety

A care management platform from IBM transforms hospital operations, achieving process innovation

Overview

The need

The Ottawa Hospital was admitting a growing number of patients with complex symptoms. Care teams were struggling to compensate for manual processes that could be highly variable.

The solution

IBM provided a care management platform, improving coordination of and visibility into changing patient and hospital conditions, allowing practitioners to collaborate and spend more time with patients.

The benefit

The solution supports more consistent processes across the hospital, improving patient flow, quality of care, patient safety, access to specialized resources and the overall patient experience.

Formed in 1998 through the merger of five different health institutions, The Ottawa Hospital (TOH) is one of the largest academic teaching hospitals in Ottawa, Ontario, Canada. With four campuses throughout the city, the hospital has approximately 1,200 beds, 12,000 employees and 1,500 physicians.

Setting an aggressive goal for improvement

About five years ago, the management and board of directors at The Ottawa Hospital set an aggressive goal. They wanted the hospital to be ranked within the top 10 percent among academic health science centers in patient care and quality in North America. To achieve that goal, the hospital needed to be able to manage, measure and improve its performance in several key metrics. At that time, the hospital hired Dale Potter as senior vice president and chief information officer. The hospital believed Potter could use his prior experience in process management within the manufacturing industry to help transform the hospital.

Over the years, The Ottawa Hospital dealt with numerous challenges. Occupancy rates, for example, grew to 110 percent or even greater. At the same time, the hospital saw an increase in the complexity of patient conditions. “Over the years, as we have improved medical diagnostic equipment, we have improved our evidence-based practices in medicine, and people are living longer,” says Potter. “So it shouldn’t be a surprise that we have more complex and critically ill patients at much, much older ages than we would have had 40 or 50 years ago.” Patients with complex conditions require care from multiple departments, which must be able to communicate and collaborate effectively.

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—Dale Potter, senior vice president and chief information officer, The Ottawa Hospital

However, The Ottawa Hospital found that with this increased complexity, healthcare professionals were spending more time searching for information and resources, resulting in less time with their patients. As a result, patients could experience delays in their care, impacting the overall patient experience. "The difficulty gathering information is certainly one of the biggest challenges that our care providers have," says Glen Geiger, chief medical information officer, The Ottawa Hospital. "Their top concern was difficulty gathering information to coordinate many different facets of care in a timely fashion."

This increased complexity was also placing a significant burden on the care providers to make sure they had all the information they need before making decisions and treating patients. "Traditionally, hospitals don't manage processes particularly well and patient flow is one process," says Valerie Gamache-O'Leary, senior director and deputy chief information officer, The Ottawa Hospital. "The focus for clinicians is really to deliver care and to make sure patients are safe and well taken care of. The notion of thinking about how to manage them through a hospital stay is really secondary to providing the care. So it's really important for the management team at the hospital to figure out how to help them to do that better."

Creating a comprehensive care process management platform

The Ottawa Hospital engaged IBM to help it create a comprehensive care process management platform with the goal of improving patient flow, safety, quality of patient care, and the overall patient experience. The platform is based on the integration of multiple IBM offerings and includes business process management and operational decision management. Designed to be easily extensible, the care process management

Solution components

Software

- IBM® Blueworks Live™
- IBM Business Process Manager
- IBM Sametime®
- IBM WebSphere® Message Broker
- IBM WebSphere Operational Decision Management

Services

- IBM Business Process Optimization
- IBM Global Services Application Innovation Services
- IBM Global Services Strategy and Transformation
- IBM Software Services for WebSphere

platform builds on features in the IBM products to help improve patient flow and other operational processes. Some key features of the care process management platform include:

- Closed-loop communication capabilities to ensure in-process communications are properly sent, received and acted on. For example, providers can enter detailed consult requests, track responses and follow established escalation procedures and policies. Or, an attending physician can send an electronic request to a patient's general practitioner for clarification on a past diagnosis.
- The ability to view and maintain a patient's "circle of care," a simple, easy-to-use visual interface that identifies the providers involved in a patient's care and facilitates communication and collaboration between them. The circle of care helps members of the care team understand which services are currently engaged in the patient's care and which are no longer involved, and identify the specific people currently available within those services, addressing the dynamic nature of resource scheduling in the hospital.
- A multi-disciplinary activity plan that enables providers to assign tasks, monitor activities and gain visibility into the entire chain of activities, helping the care team communicate and collaborate and reducing the amount of time spent searching for patient statuses.
- Metrics for tracking process execution that can then be benchmarked against historic and real-time data, so information from processes that are currently running can be used to make immediate, more-informed decisions. For example, knowing the historical response times for various doctors and their areas of specialization might help select the most appropriate doctor for an emergency department consult, balancing skills and predicted response time. This benchmarking also provides the necessary information to practice evidence-based care by determining which processes are working and what process changes need to occur to improve outcomes.

Implementing process improvement

The hospital used the IBM® Blueworks Live™ offering to model its processes. The IBM applications help enable management to collaborate with physicians and clinical staff, capturing their input about the processes that they perform every day. "I have never had care process improvement initiatives that were as positive as this one," says Geiger. "The stakeholders were riveted to our meetings. They were extremely excited about the options they were being presented with." After modeling processes, it becomes possible to modify them and improve them, eliminating bottlenecks or bridging communication gaps with automated coordination.

One process that has been improved using the IBM tools is admitting. Before a patient can be admitted into a department from the emergency department (ED), the ED doctor must complete a consult with a physician from that department. In the past, it could be challenging for the ED to obtain timely consultations. With the new solution, if the consult isn't completed in the stipulated time, an exception is automatically raised to ensure the consult is completed. The closed-loop ED consult request capability eliminates missed pages and ensures the electronic consult can occur in a timely manner. Everyone involved, from the ED doctor to the patient's family, knows what to expect and can plan accordingly.

Before the IBM solution, managing the process for discharging a patient was not as coordinated as it could be. Depending on a patient's illness or injury, their condition at time of discharge and their post-hospitalization care plan, a number of approvals may be required before discharge. For example, discharge after hip surgery would require sign-offs from the physician, pharmacist, physical therapist and occupational therapist. So if the patient's primary physician decides that a patient is ready to be discharged early, the extended team would also need to change plans to complete their procedures. In the past, the manual nature of detecting plan changes meant that final tests could not be scheduled in a timely manner, leading to unnecessary delays in discharge. With growing hospital occupancy rates, these types of delays put a further strain on patient backlog and overcrowding.

With the care management platform, everyone can see the patient's most current projected discharge date, based on the care team's latest input. Business rules automatically notify the required specialists and clinicians as the patient's status changes. In addition, the required activities can be performed, appointments can be made and discharge plans prepared in a timely manner, helping to speed the patient through the discharge process and keeping the patient informed at all times. "What we are doing is putting process orchestration and process models in place, so that you can literally see the characteristics of the hospital system," says Potter. "You can see, for example, that the flow in the emergency department is too fast to be taken up in the admitting units, and you can then influence that."

Improving care and the patient experience

The use of the IBM solution at The Ottawa Hospital is helping care personnel and hospital administrators improve patient flow, ultimately improving patient outcomes and delivering a more positive patient experience. "Personally, I am going to spend more time focusing on the right things and less time focusing on the mechanics, the bureaucracy, the paperwork and other things," says Geiger. "I am not spending time chasing information, I am spending time dealing directly with the patients." The hospital anticipates that the new solution is going to have far-reaching effects, for The Ottawa Hospital and possibly for the entire industry. "I think introducing business process management into health care is going to change the world" says Gamache-O'Leary. "Being able to drive out the inefficiencies to free up clinicians to do the things they ought to be doing for the patients helps provide better care."

For more information

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