

CASE STUDY

The Ottawa Hospital

Protecting patient privacy while using data
to predict patient outcomes.

MDCLONE



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Protecting patient privacy while using data to predict patient outcomes.



LOCATIONS

Ontario, Canada

HEADQUARTERS

Ottawa

SIZE

3 Sites

1,224 Beds

18 Research Facilities

60,247 Yearly Patient Admissions

SPECIALTIES

Cardiovascular Health

Nephrology

Surgery

Family Health

Emergency Services

Research & Academics

WEBSITE

ottawahospital.on.ca

As one of the largest academic and research hospitals in Canada, The Ottawa Hospital is a compassionate provider of patient-centered care, serving 1.3 million people across eastern Ontario as well as neighboring provinces in Gatineau, Quebec. With over 1,200 beds and three hospital sites, the center employs more than 12,000 healthcare professionals and support staff - making it one of the country's largest teaching hospitals.

Recognized as a world-class health-care organization for providing acute, specialized and complex care, The Ottawa Hospital is focused on delivering compassionate care while also expanding quality improvement, innovation projects, and research studies.

Through innovation and research, its doctors, researchers, and staff are defining new standards in patient care by discovering better ways to diagnose and treat patients while improving care.

This led to a partnership with MDClone, the only vendor that could deliver all of the requisite capabilities.

Challenges

Like many hospitals and health systems across the globe, The Ottawa Hospital's goals include the use of data to transform ideas to improve patients' health.

"I started on the game of trying to organize and get access to data almost 20 years ago. This has been a journey for many, many years. A big battle," said Dr. Alan Forster, Vice President of Innovation & Quality at The Ottawa Hospital.

A battle Dr. Forster knew would lead to better patient outcomes, if successful.

"Fundamentally, we need to understand what factors are associated with better outcomes," said Dr. Forster. "In order to do that, you need to define populations of interest and be able to look at outcomes that matter and assess for associations. If you can find those factors and modify them, then you can essentially lead to better outcomes."

However, gaining access to data in a timely manner while having the capacity and resources for complex analysis created significant challenges.

"The complexity of the data is phenomenal. The goal was to drive quality improvement in the hospital, but the barriers in place from a regulatory perspective and legal perspective almost made the whole project implode."

Dr. Alan Forster, The Ottawa Hospital

THE TIME-CONSUMING PROCESS AND LIMITED RESOURCES:

The Ottawa Hospital invested significant time and resources to move data analytics and quality projects forward. However, external solutions were limited, and internal and regulatory struggles halted progress:

1. Researchers submit data request
2. Data team consult / discovery call
3. Determine needs, data plan and cost estimate
4. Obtain necessary approvals
5. Data teams produce data

"Although we have a centralized data request process and a team of analysts working with stakeholders, people were still frustrated. When they have an idea, they don't want to wait. They have to wait because of our queue, because of calendars, because of ethics and privacy

processes,” said Deanna Rothwell, Director of Analytics, The Ottawa Hospital. “For more complex inquiries, it can take many months to sort out requirements, establish ethics approvals and sharing agreements and perform the actual work.”

Limited internal resources also slowed progress. “The data team is only so big and can only do things so quickly. The appetite for data is high and increasingly we have people asking for hundreds of fields across multiple data sources.” said Rothwell.

Continued frustrations led The Ottawa Hospital to build their own data warehouse solution and a centralized data request process.

“It did help us move the bar forward but also created other issues,” added Dr. Forster, “Namely, the centralized process and Data Warehouse attracted more interest to tap into the data. While the interest was great, everyone was still going through the same growing queue and dependent on an analytical team with the technical skills and content knowledge to query the Data Warehouse.”

Determined to move ahead, The Ottawa Hospital diligently searched for other solutions.

Solution

“When we discovered what the MDClone ADAMS Platform could do for us, we saw this real beautiful opportunity to democratize access to information in a way that was always our dream to do. We could only hope but because of the complexity and legal limitations it felt out of reach,” said Dr. Forster.

In February 2020, The Ottawa Hospital became the first center in Canada to partner with MDClone. The MDClone ADAMS Platform allowed healthcare professionals and researchers to identify and leverage potentially lifesaving data into actionable information that can transform patient care and outcomes.

Additionally, the platform can gather, use, and share the insights while fully protecting patient privacy. MDClone’s technology creates a synthetic data set from health system data that is statistically comparable to the original but contains no actual patient information.

“The fact that we have a tool now to do that which also protects patient privacy is inspiring. It helps us plan how we are going to move forward. Synthetic data along with the data engine, it is a game changer. I do not think that other products can boast what they’ve done.”

Dr. Alan Forster, The Ottawa Hospital

The Ottawa Hospital set a goal to create a prototype and implement the MDClone solution using data from the hospital by end of summer.

MDClone has allowed The Ottawa Hospital to make better, more informed decisions at a much more rapid pace including:

- 1 Identifying populations and key attributes that have poor outcomes
- 2 Exploring signals in the data that you might not have seen
- 3 Applying strategic quality improvement projects
- 4 Rapidly changing and assessing outcomes

UNLIMITED EXPLORATION

“For us, we want to get data into the hands of those who have the ideas and can bring those insights to the table. It will be much faster to explore their ideas while they are in the moment by matching them up to a tool that gives them unlimited exploration, on their own, and in a fast manner,” said Rothwell.

“I personally love MDClone and am extremely excited to use it,” added Dr. George Grammatopoulos, Staff Orthopedic Surgeon in the Arthroplasty and Hip Preservation Team, “I can’t believe I can do in minutes what previously took me months!”

SPEED TO INFORMATION

Partnering with MDClone also dramatically increased the speed of information within The Ottawa Hospital’s four walls but additionally throughout the globe. Any user can ask and answer any question in real-time utilizing The MDClone ADAMS Platform and through The Global Network consortium.

“To have a local and global ecosystem where you’re able to test ideas quickly, it is very hard to put a dollar value and benefit that comes from that,” said Dr. Forster.

MAXIMIZE RESOURCES

Added Rothwell, “MDClone allows researchers to access information in the system and the ability to explore it on their own and not bog down the central data and IT teams. It frees up resources to tackle other projects and help researchers with their exploration.”

“Once you become experienced, it allows self-sufficiency, and you can do things on your own time,” said Dr. Sunita Mulpuru.

Outcomes

“The staff at MDClone were amazing,” commented Rothwell. “They really understood healthcare data and helped us learn more about our own data”

The Ottawa Hospital and MDClone implemented the proof of concept using data from the hospital’s data warehouse. This provided for an opportunity to demonstrate the ability to improve patient outcomes and reduced costs. The initial proof of concept focused on a subset of patients living with frailty in Ottawa.

“With MDClone, people outside of the analytics team had the ability to explore the data on their own dynamically,” said Rothwell. “All the information about the patient is brought into one place - labs, tests, diagnosis, outcomes. People didn’t have to think about every detail of what they may want ahead of time, they could modify and adapt their question without having to request a new data set.”

Deanna Rothwell, The Ottawa Hospital

“The platform launched on schedule.” Rothwell added, “I was so impressed by the team. I wasn’t sure we’d be able to meet the tight timelines, but we were ahead of schedule in some areas and even during the COVID-19 pandemic.”

Within six months of the system going live, The Ottawa Hospital used MDClone to identify quality improvement opportunities that would significantly impact the quality of care for patients through reductions in length of stay and readmissions. These opportunities can improve patient care and also positively impact organizational costs.

By early 2021, The Ottawa Hospital had more than ten use cases in flight ranging from elective surgery outcomes, emergency hospitalization predictability and pre-operative anemia.

“We looked at preoperative anemia and its effect on influencing outcomes, including blood transfusions including length of stay, including morbidity and mortality factors,” Dr. Forster described. “We were able to do that work and analysis within weeks, which really would have taken probably months or years to get to that same level of confidence.”

Conclusion

With this collaboration, The Ottawa Hospital is leading Ontario and Canada in building the infrastructure for effective, secure innovation.

“MDCClone’s technology is helping The Ottawa Hospital deliver 21st century health care to our patients,” said Dr. Forster. “Without having MDCClone, we couldn’t get there. You could do this work, but it really would be very inefficient, and you would also be faced with potential concerns that you weren’t protecting patient privacy adequately.”

The Ottawa Hospital continues to analyze and evaluate results and look for additional use cases to launch – all with the goal of improved patient outcomes as well as cost savings for the hospital.

“The platform’s ability to help our physicians and researchers visualize, analyze and share high-value clinical insights while protecting patient privacy is an important part of providing world-class care and better outcomes for our patients.”

Deanna Rothwell, The Ottawa Hospital

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SEE A DEMO

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