

Safe and sound

Human-centered
ER triage

 **accenture**



**Ontario
Health**



A call for change

Keeping human interests central is seldom more important than in an emergency room (ER). When triage nurses are faced with an ER case, they need to act quickly and confidently, knowing their choices are likely to result in access to appropriate care, and the best possible patient outcomes.

They need to observe and evaluate patients effectively and communicate clearly while correctly applying the Canadian Triage Acuity Scale (CTAS) to ensure patients have the best possible experience.



Easier said than done. Getting an accurate CTAS score means weighing thousands of combinations of 169 presenting complaints and more than 400 modifiers that refine the severity of the patient's vital signs and symptoms.¹

Enter Ontario Health², an agency created by the Government of Ontario to connect and coordinate the province's healthcare system. Its innovative interventions help to ensure that Ontarians receive the best possible care.

ERs in Ontario log more than five million patients each year³, according to a provincial review⁴ which documented that 44 percent of ER patients are being triaged inappropriately. Hospitals and individual practitioners followed varying methods for patient intake, diagnosis and documentation, and many processes were manual.

The provincial review findings raised the need for standardization based on leading practices and the cloud-based use of data analytics and automated decision-support technology to put patient interests first. The Ministry of Health granted funds for the development of an electronic decision-support tool.

When tech meets human ingenuity

Ontario Health sought assistance from Accenture in developing the Electronic Canadian Triage and Acuity Scale (eCTAS) solution to ensure that patients feel safe and benefit from improved access to ER care, more human treatment experiences and better health outcomes.

The project began with input from nurse practitioners and other emergency room staff across Ontario. Accenture worked with Avanade and Ontario Health to develop the algorithm, put it in a production environment, test it and make modifications. The automated tool enables ER nurses to triage patients by type and severity of symptoms, ensuring the best possible outcomes for serious cases. This ensures that the worst cases access care first, and the relative need for care is constantly reassessed, ensuring the best possible health outcomes for Ontarians.

The solution architecture and underlying algorithm were developed using agile development processes. The tool integrates with HL7, a standard system for health messaging and information transfer used in many parts of the world. The Web-based application was placed in the Microsoft Azure cloud, tested, and refined, and rolled out at 12 sites.

By the spring of 2018, cloud-based hosting had helped keep costs down and accelerated implementation in [120 emergency rooms across Ontario](#). Minimal training and communications have been needed due to ease of use. The application appears on a single computer screen and can be accessed via desktops and tablets on multiple operating systems.

In cases when a patient's condition is deemed critical, an override button flags them for immediate attention. To prevent problems should network connectivity be lost, the project team built in seamless offline capabilities for mission-critical applications.



A valuable difference



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Within a year, the tool was being used to triage about [400,000 patients monthly](#). Pre- and post-launch audits indicate the tool achieved a 17 percent increase in triage appropriateness. By the following year, over 100 hospitals in Ontario were using eCTAS to triage 85 percent of all Ontarian ER patients.⁵

The innovative eCTAS tool enables emergency room clinicians to triage patients according to the type and severity of presenting signs and symptoms, and helps hospitals rapidly prioritize care for at-risk patients. Manual emergency-room documentation processes have been greatly reduced, and Ontario's clinicians now triage emergency patients with a higher degree of accuracy.

Development and initial implementation took roughly half as long as previous projects of similar scope. The application marked a first in Canada for cloud-based, emergency triage decision support, and is the nation's first implementation of a triage and acuity scale algorithm.

In Ontario, the solution is also a first for visiting information and standardizing a triage dataset, both in real time, for personal health information hosted in a secure cloud, and standard questions for infection control with real-time updates.

Other provinces and hospitals around the world continue to seek effective, data-driven ER support, and eCTAS sets a standard for them to follow.

Due to the project's success, Accenture was awarded a contract extension for managed services related to the application and looks forward to providing the best talent and technology to serve the people of Ontario.

For more information

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