Oculys prEDict is a powerful real-time communication tool designed to broadcast a hospital's Emergency Department (ED) performance to the community and team members. ED teams can make informed timely decisions based on the predictions throughput and ED LOS admission performance, affecting a patients' care, experience and health outcomes.

Our unique solution includes behavioral and patient flow pattern, based on a sophisticated algorithm developed through 1,000+ research hours within an active Emergency Department. Unlike the imprecision of averages, prEDict calculates with a 90% accuracy rate. In other words, 90% of patients will see a physician within the estimated time.

The Oculys technology design and development is guided and led through the efforts of Kenneth N. McKay, PhD, MASc, BMath, Chief Scientist and Biao Wang, PhD, VP Data Scientist. Dr. McKay is also a tenured professor at the University of Waterloo.

In 2011, Dr. McKay dedicated nearly 2,000 hours during a sabbatical year, observing Emergency Departments (ED) and surgical suites (OR) at St. Mary's General Hospital (Kitchener, Canada). In the ED, he conducted the equivalent of a $500K study on the ED processes, delivering a robust analysis (200 pages) on hospital management. This report on ED activity resulted in the first, dedicated chapter in a quantitative handbook titled "Handbook of Healthcare Operations Management – Methods and Applications" on how to model and understand the ED work flow, along with publishing papers and presentations. Due to this comprehensive analysis and thorough literature review on EDs, the ED research resulted in the identification of 50+ unique characteristics, none of which is found in earlier literature or publications.

The most frequently asked question of clinicians when patients arrive at the ED is "how long is the wait to see a doctor?". Oculys prEDict provides current information prior to patient arrival, or as they arrive; as well as a list of health care alternatives, enabling patients in our community to be well-informed about their options.

Oculys' algorithm is a multi-stage heuristic algorithm that uses a combination of adaptive methods that are based on insights obtained from clues and signals in the data feeds. The core approach is NOT based on traditional forecasting methods; rather our core approach is based on understanding ED flows and how they behave.

Since approximately 80% of hospital in-patient admissions originate in the ED, understanding patient volume and wait-times provides a high level of value to staff. Knowing the anticipated patient wait-time with a high degree to accuracy empowers ED stakeholders to take action and make decisions to ensure efficient patient flow and manage metrics.