

SIGNAL 1

Company Overview

January 2023

Our mission is to provide clinical teams with real-time, critical insights to optimize each patient's care and outcome, while delivering an exceptional experience for patients and their care team.

Signal 1 offers hospitals an AI-powered clinical decision support system that provides real-time insights into changes in patients' conditions and needs, monitoring patients from the time of admission right through discharge. Our predictions are integrated into clinical workflows and automatically update as new data becomes available, making them easily actionable for physicians and nurses, without creating any manual or extra work.

Our current suite of AI algorithms predict elevated clinical risk that may require an immediate patient care intervention and discharge readiness to enable the early development of a patient discharge plan. The algorithms also thoughtfully support a proactive, inclusive end-of-life planning and a balanced distribution of high-risk patients across nursing teams. Future products cover the emergency department and critical care, providing complete coverage of a patient's journey through the hospital.

Our technology

Signal 1's technology platform enables hospitals to seamlessly apply our AI algorithms to data that exists within the hospital's EMR system. We utilize existing standards for data transfer in your EMR, such as FHIR protocols, to enable a fast setup.

Our cloud-based platform manages all aspects of the AI solution lifecycle from secure data ingestion through to model inference and downstream integration. We retrain our models for your patient population, using your data as is without any additional work from your IT team.

Our platform is SOC 2 Type 1 certified with SOC 2 Type 2 certification expected by March 2023. We will be ISO 13.485 (MDSAP) certified by April 2023.

Our Value Proposition

Our product will transform the hospital experience across all measures and stakeholders by:

1. Improving patient outcomes and safety
2. Improving physician and nurse job satisfaction and mental well being
3. Improving the predictability of physician and nurse staffing plans
4. Lowering the overall total costs of hospital care for each patient
5. Improving the patients discharge and post hospital care plan
6. Improving the patient and family experience

Our Partnership Culture

We understand that it is easier to build new technologies than it is to get physicians and nurses to use them. We partner with our hospitals through model development, clinical roll-out design, change management, model evaluation and maintenance, and ideation of future solutions. Our deployment team brings years of experience working, and deploying digital technologies, in clinical settings.

Signal 1's collaborative deployment process includes six phases:

1. Understanding and prioritizing physician and nurses clinical care pain points and untapped opportunities.
2. Training and validation of our AI models for each of the hospital's nursing units and service lines.
3. Seamlessly integrating our technology platform into the hospital's technical infrastructure and securely accessing the hospital's electronic health record data.
4. Collaboratively co-designing and implementing the hospital's training and change management process.
5. Ongoing monitoring of our AI model's performance and impact on agreed upon clinical, safety, cost and satisfaction KPIs.
6. Proactively collaborating on publications, case studies and new use cases to meet the needs of the hospital's patients, physicians and nurses.

Our Approach to Responsible AI

We are committed to providing responsible and high-performing AI solutions. We train and validate our AI models for every hospital we work with.

We employ industry-leading best practices to ensure our models are accurate, robust, fair and transparent building on our team's years of experience deploying AI models at a top-5 retail bank in North America. We share our model evaluation process and results in an easy-to-read model validation report. Once deployed, we monitor our models to ensure performance is maintained and we retrain models as necessary.

Our Story

Signal 1 was founded in April 2022 by [Tomi Poutanen](#), [Mara Lederman](#) and [Muhammad Mamdani](#). Tomi (CEO) is a computer scientist and serial AI entrepreneur with previous exits to Yahoo, Microsoft and TD Bank. Mara (COO) is an economist and has worked with hundreds of AI and health technology start-ups during her time leading the Creative Destruction Lab in Toronto, the world's largest AI accelerator. Muhammad (Chief Scientific Advisor) is the Vice-President of Data Science and Advanced Analytics at Unity Health Toronto and a globally recognized leader in the area of clinical AI.

Signal 1 was formed with two key strategic partnerships. We have a partnership with [Unity Health Toronto](#), a health network in Ontario, Canada. St. Michael's Hospital, part of Unity Health Toronto, is a recognized leader in the area of clinical AI. St. Michael's Hospital serves as Signal 1's clinical partner, co-developing, deploying and clinically validating our use cases. Our initial applications have been in clinical use at St. Michael's Hospital since 2020.

We also have a technology partnership with [Layer 6/TD Bank](#). Layer 6 was founded by Signal 1 CEO Tomi Poutanen and acquired by TD Bank in 2018. Layer 6 is responsible for deploying AI across the Bank's lines of business in Canada and the US. Our partnership with Layer 6 gives Signal 1 a license to the [award-winning](#) Layer 6 AI technology stack. Our founding engineering and machine learning team came to Signal 1 from Layer 6.