MultiCare & Catalyst
MultiCare Drives a 22% reduction in Septicemia and $1.3M of Cost Savings Using Data-Driven Approach to Care
The effort was supported by the system’s top leadership who participated in a data-driven approach to prioritize care improvement based on an analysis of resources consumed and variation in care outcomes. Reducing Septicemia (mortality rates) was a top priority for MultiCare as a result of three hospitals performing below, and one that was performing well below national mortality averages.

In September, 2010, MultiCare implemented Health Catalyst’s Adaptive Data Warehouse, a healthcare-specific data model, and subsequent clinical and process improvement services to measure and effect care through organizational and process improvements. Two major factors contributed to the rapid reduction in septicemia mortality:

**Clinical Data to Drive Improvement**

The Adaptive Data Warehouse™ organized and simplified data from multiple data sources across the continuum of care. It became the single source of truth requisite to see care improvement opportunities, and to measure change. It also proved to be an important means to unify clinical, IT, and financial leaders and to drive accountability for performance improvement.

Having proven difficult to define due to the complex comorbidity factors leading to Septicemia, MultiCare partnered with Health Catalyst to refine the clinical definition of sepsis. Health Catalyst’s data work allowed MultiCare to explore around the boundaries of the definition and to ultimately settle on an algorithm that defined a septic patient. The iterative work resulted in increased confidence in the severe sepsis cohort.

**System-wide Critical Care Collaborative**

The establishment and collaborative efforts of permanent, integrated teams consisting of clinicians, technologists, analysts and quality personnel was essential for accelerating MultiCare’s efforts to reduce septicemia mortality. Together the collaborative addressed three key bodies of work – standard of care definition, early identification, and efficient delivery of defined care standard.

**Standard of Care: Severe Sepsis Order Set**

The Critical Care Collaborative streamlined several sepsis order sets from across the organization into one system-wide standard for the care of severely septic patients. Adult patients presenting with sepsis receive the same care, no matter at which MultiCare hospital they present.

**Early identification: Modified Early Warning System (MEWS)**

MultiCare developed a modified early warning system (MEWS) dashboard that leveraged the cohort definition and the clinical EMR to quickly identify patients who were trending towards a sudden downturn. Hospital staff constantly monitors MEWS which serves as an early detection tool for caregivers to provide preemptive interventions.

In just twelve months, MultiCare was able to reduce septicemia mortality rates by an average of 22 percent, leading to more than $1.3M in validated cost savings during that same period. The Sepsis cost reductions and quality of care improvements have raised the expectation that similar results can be realized in other areas of MultiCare including heart failure, emergency department performance and inpatient throughput.

**Efficient delivery: Code Sepsis (‘Time is Tissue’)**

The final key piece of clinical work undertaken by the Collaborative was to ensure timely implementation of the defined standard of care, to patients who are more efficiently identified. That model already exists in healthcare and is known as the ‘code’ process. Similar to other ‘code’ processes (code trauma, code neuro, code STEMI), code sepsis at MultiCare is designed to bring together essential caregivers, in order to efficiently deliver time-sensitive, life-saving treatments to the patient presenting with severe sepsis.

In the spring of 2012, leadership at MultiCare Health System (MultiCare) — a Tacoma, Washington-based health system — realized the results of a 12-month journey to reduce Septicemia.

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About MultiCare

The Tacoma, Wash.-based MultiCare Health System is an integrated health organization composed of four hospitals, numerous primary care and urgent care clinics, multispecialty centers and nearly 500 healthcare providers. The system is consistently on the cutting edge of information technology (IT) advancements and for the third year in a row has been named as one of the nation’s Most Wired healthcare organizations by Hospitals & Health Networks magazine.

About Health Catalyst

Health Catalyst provides data warehousing solutions that actually work in today’s rapidly changing healthcare environment. Health Catalyst is on a mission to transform healthcare in the U.S. by utilizing its next-generation data warehousing solutions to accelerate care improvement for all types of healthcare systems. Helping hospitals and health systems to create a data-driven approach to care, Health Catalyst provides clinical, IT and financial executives with the tools and technologies necessary to improve care by reducing costs. Clients include Allina Hospitals and Clinics, MultiCare Health Systems, North Memorial Health Care, Stanford Hospital and Clinics, Texas Children’s Hospital, and Providence Health & Services.