

Bridging the Experience-Complexity Gap: How AI is Empowering NICU Nursing Staff

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I was observing in a NICU two weeks prior to my team implementing our critical care clinical decision-support platform. A patient slated to be discharged that day experienced a bradycardic episode. Because there was not sufficient documentation to support that this was an isolated event, the baby needed to remain in the unit for an additional three days for observation.

With my background in critical care nursing, this scenario is all too familiar to me. Patients in the intensive care setting are increasingly complex, and with that, clinical workflows do not always provide meaningful clinical data at your fingertips to spot subtle deterioration or an impending adverse event.

With our platform, this care team will soon be able to leverage the power of relevant and timely clinical insights via an intuitive display of trended patient data. This allows nurses to bring attention to the patient and inform clinical decisions. Simply put, Etiometry augments a nurse's ability to provide safe care, identify clinically relevant changes in patient condition, and provides a mechanism to avoid similar events in the future.

We know these types of situations are not unique – especially when we consider current rates of high clinician turnover and, in turn, the need to rely on newer nurses to care for increasingly complex patients. This situation is what the healthcare industry has coined the [Experience-Complexity Gap](#).

Nurses, in general, carry the immense responsibility of monitoring and managing patients clinically, coordinating with multi-disciplinary teams, and providing continuous communication to caregivers and loved ones. This—in the setting of a novice caregiver with high acuity patients—can lead to burnout over time.

However, if an inexperienced nurse were armed with the right contextual information in the right place at the right time, they would have the tools to paint a clinical picture and communicate their findings with the care team, potentially improving upon an otherwise stressful situation. Furthermore, a shared mental model surrounding a patient's clinical condition and plan of care benefits many facets of care, such as: driving efficient ventilator weaning, reduction in readmissions, and offsetting the burden of data collection. These are just a few examples of what is possible with Etiometry.

Chelsea Adams is Etiometry's Vice President of Customer Success.

Etiometry's AI-powered software helps nurses and other clinicians better understand patient status, communicate more effectively, and deliver more consistent care. The Etiometry platform's capabilities include data aggregation and visualization, clinical pathway automation, and a powerful quality improvement tool.

Data aggregation and visualization enable a holistic view of patient data from monitoring systems, peripheral devices, EHR data and others.

Often during rounds and shift change, nurses provide a summary of vital signs, significant events and pertinent changes to the plan of care during the last 12 hours. Collecting the data can be time-consuming, and the result is likely a handwritten account of the prior shift. Reporting vital signs ranges and shift anecdotes may under-represent or completely miss significant findings. Etiometry's data aggregation and visualization solution allows clinicians to paint a picture of the patient's recent state directly from a bedside display and aligns the care team with the same insight into abnormal trends or significant events to identify a potential needed change in treatment.

According to a Medical Director of Cardiac Critical Care and Clinical Informatics at a large east coast children's hospital, "Etiometry is automated with no user bias of the data. And it is dynamic - visualizing granular events that lead to a physiological change."

He queried his team of nurses regarding their thoughts on using Etiometry and found that 88% said it was easy to use, makes tasks easier and helps them accomplish tasks in the fewest steps possible; 79% said Etiometry saved them time.

Embedded hospital protocols can be automated to track hospital-specific guidelines to standardize workflows and drive consistent, timely adherence to guidelines to improve outcomes.

Etiometry's clinical pathway automation can be used to guide clinical decision-making based on hospital-specific criteria and alert clinicians when a patient is ready for a particular intervention or procedure, helping to reduce variability in care and improve patient outcomes. One example is the ability to alert clinicians when the patient is eligible for an extubation readiness test (ERT). Reduction in ventilator time can reduce length of stay, drives bottom-line savings and could result in an open bed for another patient, thus increasing throughput and revenue.

According to a CVICU Medical Director and avid user of Etiometry, “Getting the information for an ERT takes only one click. You get all the data you need on one screen so you can look at everything – Easy.”

Clinical pathway automation eases the burden of complying with clinical guidance, allows clinicians to practice at the top of the licenses, and provides an easy mechanism to evaluate quality improvement initiative effectiveness while providing insight into patient outcomes.

Drive quality initiatives and research with accessible long-term storage and reporting of clinical data.

Interactive reporting of embedded automated pathways in the Etiometry Platform revolutionizes the ability to evaluate performance and ensure the implemented care guidelines are having the desired impact of improving quality. Without a tool like Etiometry, measuring the success and outcomes of clinical guidance is a labor-intensive process, and lacks the supporting data to evaluate the effectiveness to reach the best possible outcomes.

What most critical care leaders appreciate about the Etiometry Quality Improvement database is the ability to quickly retrieve large volumes of normalized patient data with APIs to complete research or develop and deploy your algorithms and eliminate gaps in the EHR when data archives represent activities charted hourly.

As a leader in clinical decision-support software, Etiometry is utilized in several NICUs in the top children’s hospitals nationwide. We believe that the widespread utilization of the Etiometry platform will yield relief for nurses and other clinicians in the NICU and will contribute to closing the experience-complexity gap affecting our nation’s high-acuity care teams. In doing so, we give nurses time back in their day to provide high-quality care and allow patients and their families to be discharged with peace of mind.