



## The Journey to Tracking Neonatal Intensive Care Unit Acuity☆



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### ABSTRACT

In 2001, The Institute of Medicine (IOM) proposed six aims for changing the American health care system. The Institute for Healthcare Improvement (n.d.)<sup>1</sup> Those aims were intended to make the future health care system; Safe, Timely, Effective, Efficient, Equitable, and Patient-Centered. With the acronym of STEEP, the proposal provided a very steep learning curve for the United States Health Care System. Fortunately for nursing leaders, having been trained in providing a safe environment for patients, monitoring trends, and solving problems, the learning curve was not as steep. A small group of multidisciplinary leaders have been working on achieving these aims in a midwest level IV neonatal intensive care unit. The focus has been to improve patient safety through appropriate staffing and communication amongst health care providers with the use of evidence, structure, and technology. The team of multidisciplinary leaders have redesigned the rounding process, improved communication, tracked acuity, and enhanced staffing as a result of tracking productivity and acuity in the NICU.

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In 2001, The Institute of Medicine (IOM) proposed six aims for changing the American health care system which were implemented by the Institute for Healthcare Improvement (IHI)<sup>1</sup>. Those aims were intended to make the future health care system; Safe, Timely, Effective, Efficient, Equitable, and Patient-Centered. With the acronym of STEEP, the proposal provided a very steep learning curve for the United States Health Care System. Fortunately for nursing leaders, having been trained in providing a safe environment for patients, monitoring trends, and solving problems, the learning curve was not as steep. A small group of multidisciplinary leaders have been working on achieving these aims in a mid west level IV neonatal intensive care unit.

The neonatal intensive care unit (NICU), the subject of this work, is categorized as a 59 bed, and provides the highest level of neonatal care in the unit providing readily available access to a wide range of medical and surgical subspecialties, respiratory support, and advanced imaging. With the addition of a fetal care center that offers ex utero intrapartum treatment (EXIT) and advanced medical and surgical technology, the acuity of the patients in the NICU has increased significantly over the last few years. The average daily census (ADC) continues to grow (currently 51.7) of 59 licensed beds. The current budgeted full time equivalents (FTEs) for nurse practitioner coverage has continued to grow to the current level of 29.5.

The National Association of Neonatal Nurse Practitioners (NANNP) published a position statement in 2012 on the appropriate case load of patients for a neonatal nurse practitioner (NNP), however, the document did not address the complex concept of patient acuity.<sup>2</sup> As the NICU census and acuity began to evolve, the NP team used a matrix approach and numerous strategies to explore and advocate for a safe case-load as proposed by the position statement for the NP team. The increased acuity issues were discussed with the NICU medical, APRN and nursing leadership up to the highest levels of the organization. The rounding process was also continually reviewed and revised to improve efficiency. Additional medical staff was added with one neonatologist in 2008, and one neonatal fellow in 2013 to work with specifically with the surgical population in the NICU as the medical team acclimated to the increased census and acuity. The informal NP leaders advocated for additional NPs as well to keep up with the steady growth. Adding NPs is a more difficult proposition compared with physicians since positions need to be justified and approved through senior patient service leadership. As Deming once said, "In God we trust all others must bring data." The decision was made to begin monitoring acuity and case load per practitioner each day in the NICU to justify the need for additional NP staff and additional support for the team and clinical manager.

### Historical Perspective

In scanning the environment of the safety-focused organization for tools and strategies developed for promoting patient safety, the NICU leaders discovered that the resident staff were involved in a research study with other children's hospitals to improve communication for hand-offs. The tool being tested was an evidence-based product

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<b>High Risk Awareness</b>	
Patients with any of the following are at higher risk. These risks should be planned for & discussed at hand offs & interdisciplinary communications	
<b><u>Watchers</u></b>	<b><u>Unstable</u></b>
<b><u>High Risk Procedures</u></b>	
Post Op Patient within 24 hrs. of Procedure	ECMO
Dialysis	
<b><u>High Risk Labs/Meds</u></b>	
Sepsis work up initiated in last 24 hours	
Insulin drip	Hyperkalemia requiring treatment
	Vasoactive drugs* - titrating or started in last 24 hrs.
Vasoactive drugs* - stable dose	
* Vasoactive drugs are epinephrine, milrinone, inhaled nitric oxide and flolan	
<b><u>High Risk Conditions</u></b>	
	Arrested within the last 24 hours
Critical airway/difficult intubation(ENT support)	Intubated patients requiring 80-100% FiO2
Intubated patients requiring 60-80% FiO2	Apnea / Brady / Desaturations <b>requiring</b> staff assists
Apnea / Bradycardia / Desaturations <b>not</b> requiring staff assists	
Seizures (in the past 48 hrs.)	Hypotension
Excessive or rapidly changing fluid losses	Seizures (uncontrolled)
Social Issues with acute safety concerns (Swatchers)	DIC
	Pneumatoxis diagnosed in the last 24 hours
Persistent staff or family concerns (gut feelings)	

**Fig.1.** The Illness Severity High Risk Awareness Tool. 2016 @ Cincinnati Children's Hospital Medical Center. All rights reserved.

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