



# NURSING/PATIENT CARE BIENNIAL REPORT 2018 - 2019





Lillian Toomey, BSN, RN, CPN, and Danielle Little, BSN, RN, CPN, at Boston Children's at Waltham



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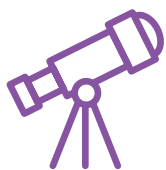


# Boston Children's Hospital Mission, Vision, Goals and Philosophy



## Our Mission

To provide the highest quality health care, be the leading source of research and discovery, educate the next generation of leaders in child health, and enhance the health and well-being of children and families in the communities we serve.



## A Vision of Tomorrow

Boston Children's Hospital has been, and will continue to be, the world leader in compassionate family-centered care and pediatric science. Our vision is to lead change in the care and well-being of children through leading-edge research, state-of-the-art, innovative clinical care and diagnostics, and the development of new drugs, therapeutics and devices to treat and cure what is not currently possible.



## Nursing/Patient Care Vision

Through relationship-based care and powerful partnerships with patients and families, Boston Children's Hospital nurses and interprofessional teams serve as local, national and global leaders in shaping the science and delivery of safe and high-quality pediatric health care, while nurturing healthy work environments.



## Our Shared Values: The Boston Children's Way™

We hold ourselves to the highest values of **respect**, **inclusivity**, **teamwork** and **kindness** to provide patients, families, and each other with an experience equal to the care we deliver.

### Featured on the cover:

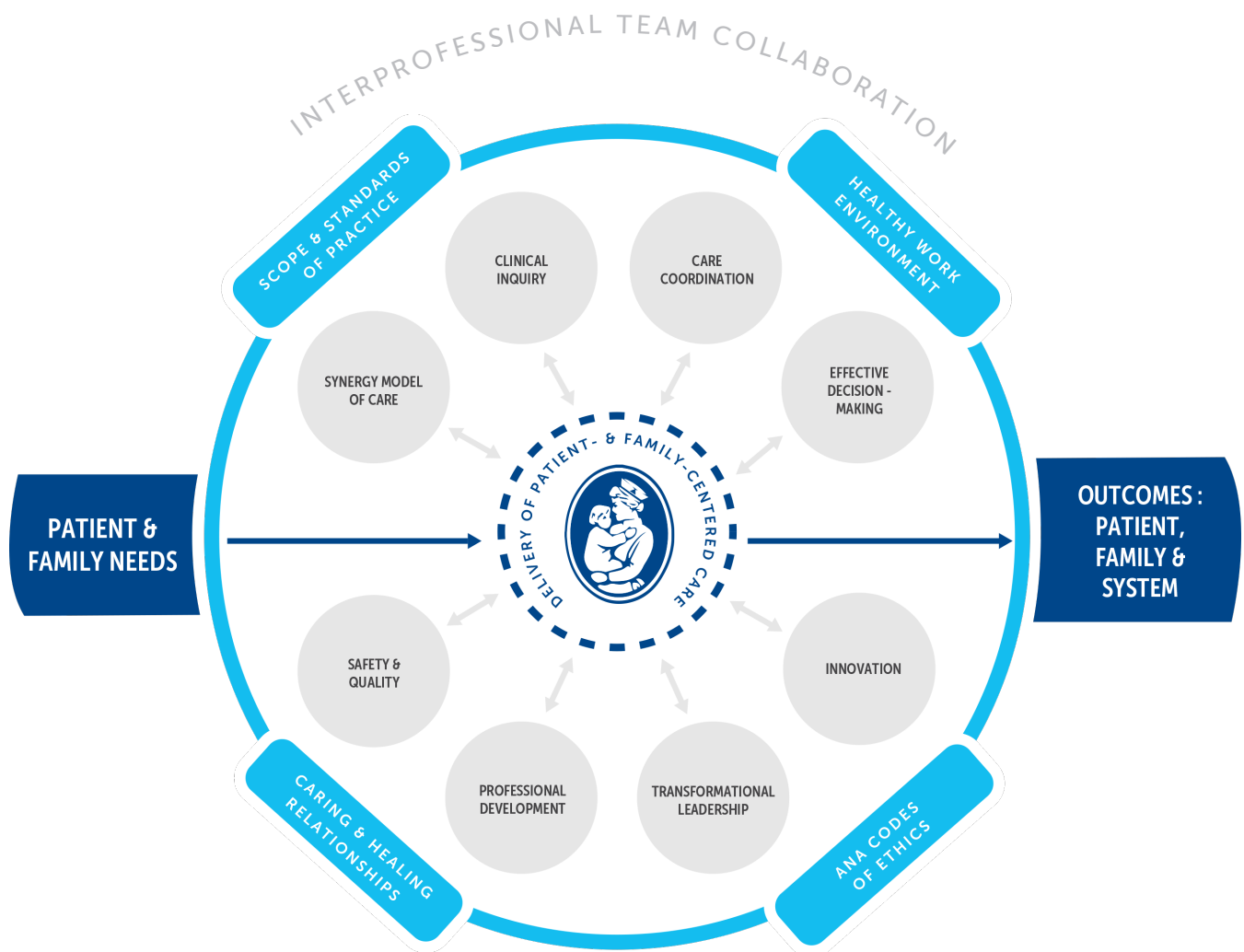
Rosa Mejia, BSN, RN, with Jacob on the Multidisciplinary Intensive Care Unit, Kerry-Kate Ceglarski, BSN, RN, and Alexi Gumuka, RRT, with Christina on the Cardiac Intensive Care Unit, Margaret Holland, PA-C, with surgical team, Stephan Bottex, BSN, RN, with Siddath on the Orthopedics/Surgery Unit, Ashley D'Eon, BSN, RN, CPN, with Travis at Boston Children's at Peabody



# Nursing/Interprofessional Care Model

## Our Professional Practice Model

Boston Children's Nursing/Interprofessional Practice Model provides a framework to guide how nurses and team members practice, communicate and develop professionally. It defines what is important to our workforce, describes the environment in which care is delivered, drives future professional practice evolution, and depicts how all clinical team members interact with patients and colleagues to provide evidence-based, quality care.





# Nursing/Patient Care Goals

## System-Level Goals 2019-Beyond



### Care

Continue to lead and improve pediatric care in quality, safety, access and experience



### Operational Excellence

Ensure financial sustainability in order to fulfill our four-part mission through growth and operational excellence



### Our People

Recruit, engage and retain the very best people



### Research & Innovation

Drive research to connect to patient care and increase our market differentiation



## Nursing/Patient Care Goals 2019-Beyond

### Care & Innovation

- Strengthen targeted nursing-sensitive indicators and selected specialty outcome measures
- Optimize the utilization of technology to enhance care coordination

### Patient Experience & Community

- Expand and support community initiatives linked to clinical workforce development
- Increase opportunities to integrate patient/families into patient care initiatives including safety and quality

### Workforce

- Evolve professional development through structured mentorship, sponsorship and certification opportunities
- Recruit, retain, and nurture an increasingly diverse clinical workforce and their leaders

### Research

- Continue to expand interprofessional team capabilities via clinical inquiry and translational research
- Apply and translate science to advance evidence-based outcomes







Courtney Rollins, BSN, RN, with John at Boston Children's at Lexington





Juliana Ivanof, clinical assistant, with Kehlani at Children's Hospital Primary Care Center at Longwood



# 150 Years Forward: Celebrating Nursing and Patient Care Excellence Then and Now



Dear Colleagues,

It is a great privilege to share the Boston Children's Hospital 2018-2019 Nursing/Patient Care Biennial Report, highlighting a substantial number of innovations in pediatric nursing practice. Earlier this year, Boston Children's launched its 150th-anniversary celebration,

marking the hospital's original incorporation on March 22, 1869. A year-long celebration followed, with events that reinforced our shared commitment to one another as caregivers and to the hospital's long-standing purpose. The impact of Boston Children's nursing and patient care excellence is reflected in our 150th nursing celebration video: [bit.ly/150nursing](http://bit.ly/150nursing).

Our founders identified three core tenets. All remain central to our mission today: 1) The treatment of medical and surgical diseases of children; 2) the attainment and diffusion of knowledge; and 3) the establishment of a formal training program for nurses. The essential work of nurses, together with a wide range of clinical disciplines, is foundational to our history of excellence in patient care, research, innovation and service to others. Adeline Blanchard Taylor, a graduate of the same school as Florence Nightingale, became Boston Children's first hospital superintendent, overseeing patient care at the original 20-bed building in Boston's South End – known for many years as The Children's Hospital. Numerous nursing and patient care pioneers have since shaped the state of our professional practice. In many instances, they served – or continue to serve – as national and international leaders in the science of pediatric care delivery.

Over the past year, a series of strategic planning efforts was completed throughout the organization, including a refresh of system-level priorities and nursing/patient care goals. Focus areas align with the five American Nursing Credentialing Center Magnet® domains, with care and innovation, patient experience and community, workforce, and research goals further informing the hospital's direction for 2019 and beyond.

This report showcases an extensive body of work featuring novel care delivery innovations, including:

- Meaningful integration of behavioral health services across a wide range of settings
- The growing impact of our advanced practice clinician workforce
- The ongoing modernization of innovative technology to impact patient flow and care processes
- Reductions in central line-associated bloodstream infections via team-based strategies
- Advancements in professional development and healthy work environment initiatives

I look forward to supporting ongoing efforts to build upon the strong foundation for professional practice so many have shaped. I am honored and humbled to advance this work together.

With appreciation to all,

*Laura J. Wood*

Laura J. Wood, DNP, MS, RN, NEA-BC

Senior Vice President, Patient Care Operations & Chief Nursing Officer

Spring Carpenter Chair for Nursing

Boston Children's Hospital









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# INNOVATIONS IN CARE DELIVERY



625

Number of pediatric patients who participated in a nationwide study to validate a groundbreaking pressure injury assessment tool designed for children treated with a medical device



Sandy Quigley, MSN, RN, CPNP-PC, CWOCN, with Bella on the Solid Organ Transplant/Surgery Unit

# Collaborating to Prevent Pressure Injuries

## Nurse-Led Multi-Hospital Study Brings National Model to Scale

For more than three decades, Boston Children’s Hospital registered nurses have made it their mission to find new strategies to prevent, detect and manage hospital-acquired pressure injuries (HAPI) in pediatric patients.

Their clinical inquiry and evidence-based protocols have not only changed the hospital’s culture in managing wounds, ostomy and continence care, but also led to the

development of the first-ever valid, reliable instrument to identify HAPI risk in children — the Braden Q Scale.

## Pushing the Conversation Forward

Historically, clinicians believed that pressure injuries were not prevalent in pediatric patients. But **Sandy Quigley, MSN, RN, CPNP-PC, CWOCN**, advanced practice registered nurse level II and clinical specialist in Wound, Ostomy & Continence Care, had seen the evidence and

sought to dispel this myth. In the early 1990s, Quigley collaborated with nurse scientist **Martha Curley, PhD, RN, FAAN**, to develop the Braden Q Scale for predicting pressure injury risk in pediatric patients. Adapted from the adult-based Braden Scale, the Braden Q continues to reshape harm reduction in children throughout the world.

Despite its widespread use, however, the Braden Q had two key limitations. First, the tool did not address device-related pressure injuries that were increasingly prevalent in pediatrics since the publication of the original study. Second, initial reliability and validity testing of the scale excluded several cohorts, including neonates under 3 weeks, children over 8 years, cardiac patients and patients in non-ICU environments.

Quigley and Dr. Curley sought a way to replicate their original study to incorporate medical device risk (“D” is for device) within a pediatric patient population. They developed the Braden QD Scale in collaboration with other pediatric colleagues, and organized a multi-hospital clinical and translational research study to test its predictive validity. It was a first-of-its-kind, nurse-led research initiative to include all clinical services and patients up to 21 years.

### National Study Validates Efficacy

Eight pediatric academic medical centers across the U.S. participated (see sidebar). Dr. Curley was the primary investigator, with Quigley and **Catherine Noonan-Caillouette, MS, RN, CPNC, CWOCN**, advanced practice registered nurse level II, Plastic Surgery, serving as co-investigators. The study included 625 patients, preterm to 21 years, with a medical device. Enrollment was stratified by age, patient type and hospital unit to ensure generalizability from the study population to acute care pediatrics.

Each hospital named a nurse as the Braden QD Research Study lead site investigator consistent with Institutional Review Board standards to ensure patient safety and protection. Each site identified two teams of nurses to evaluate enrolled subjects. At Boston Children’s, **Lindyce (Linda) Kulik, PhD, RN, CWON, CCRN**, nurse practice specialist level II, Cardiac Intensive Care Unit, was lead site investigator. More than 17 Boston Children’s nurses participated – a diverse

### Published Articles

- Predicting Pressure Injury Risk in Pediatric Patients: The Braden QD Scale. *Journal of Pediatrics*, January 2018 192: 189-197e2.
- How to Predict Pediatric Pressure Injury Risk with the Braden QD Scale. *American Journal of Nursing*, November 2018 Vol. 118, No. 11.
- Hospital-acquired Pressure Injuries in Children with Congenital Heart Disease: Prevalence and Associated Factors. *Pediatric Critical Care Medicine*, June 2019 accepted for publication.

### Braden QD Study Sites and Principal Investigators

- **Boston Children’s Hospital**  
Lindyce Kulik, PhD, RN, CWON, CCRN
- **The Children’s Hospital of Philadelphia**  
Judith Stellar, MSN, CRNP, PPCNP-BC, CWOCN
- **UPMC Children’s Hospital of Pittsburgh**  
Tracy Pasek, DNP, RN, CCNS, CCRN, CIMI
- **Primary Children’s Hospital (Salt Lake City)**  
Stacey Shelley, DNP, RN
- **Children’s Medical Center Dallas**  
Tracy Chamblee, PhD, RN
- **Rady Children’s Hospital - San Diego**  
Mary Anne Dilloway, BS, RN
- **Lucille Packard Children’s Hospital-Stanford**  
Charleen Deo Singh, PhD, RN, FNP-BC, CWOCN
- **Cincinnati Children’s Hospital Medical Center**  
Anne Blevins, BSN, RN, CWOCN



group that spanned Cardiology, Oncology, Surgical Programs, Critical Care and Medical Services. Team One entered demographic and clinical data and counted each device on every patient. Team Two performed head-to-toe skin assessments to identify any existing HAPI in concert with the bedside nurse.

Data collected over two years showed a total of 86 HAPIs were observed in 49 patients: 22 immobility-related pressure injuries in 14 patients and 64 medical device-related pressure injuries in 42 patients.

“The Braden QD Scale performed well in predicting immobility-related and medical device-related pressure injuries in the overall sample with a sensitivity of 86 percent and a specificity of 59 percent, similar to that of the Braden Q,” reported Dr. Curley, professor, University of Pennsylvania School of Nursing.

These findings validated the Braden QD Scale as a single instrument available for use by pediatric nurses to assess both immobility-related and medical device-related pressure injury risk across diverse clinical populations typically cared for in children’s hospitals. As part of a comprehensive program to prevent HAPI, the use of this tool promotes patient

safety, quality of care and evidence-based practice in pediatric hospitalized patients.

### Disseminating the Braden QD Worldwide

Hospitals involved in the study are currently completing the roll-out of the Braden QD Scale, targeting completion in 2019-2020.

To further disseminate this valuable resource, numerous Braden QD-related articles have been published in peer-reviewed journals (see sidebar on page 13).

“Collaboration across multiple pediatric institutions resulted in successful practices that will benefit patients in all pediatric acute care settings,” Quigley says. “The clinical study was challenging and never would have come to fruition without the unwavering support of a village of dedicated nurses and nurse scientists nationwide.” ■



### Magnet® Nurse of the Year

In recognition of her continuing leadership in pediatric hospital-acquired pressure injuries, **Sandy Quigley, MSN, RN, CPNP-PC, CWOCN**, advanced practice registered nurse level II and clinical specialist in Wound, Ostomy & Continence Care, received the 2018 Magnet Nurse of the Year® award from the American Nurses Credentialing Center (ANCC). This highly prestigious award acknowledges clinical nurses within Magnet-designated hospitals for their outstanding contributions in innovation, consultation, leadership and professional risk-taking. Quigley’s award, in the category of “New Knowledge, Innovations and Improvements,” recognizes her decades-long dedication to improving pressure injury care around the world. She received the award at the ANCC National Magnet Conference® in Denver.

# 95%

Percent of 15,500 well-child visits for patients ages 5-22 screened for developmental and behavioral needs

# Integrating Behavioral Health Services

## Interprofessional Teams Advance Holistic Care

Approximately 4.5 million children in the United States have a behavioral health issue that impacts their emotional and social functioning. However, research indicates that only about 50 percent of these children and adolescents receive needed treatment.<sup>1</sup>

Children's Hospital Primary Care Center (CHPCC) offers a distinct approach to early intervention. Registered nurses, social workers, psychologists, psychiatrists and primary care providers (PCPs) have teamed up to create an integrated program to provide holistic care in concert with children, adolescents and their families.

As a result of new integrated behavioral health models designed by nurses, social workers and physicians, 64 percent of patients are presently receiving a behavioral health referral, and more than 70 percent continue to utilize behavioral health services one year later.

In 2014, Boston Children's Hospital secured a Harvard Medical School grant seeking to better integrate mental health and primary care. This program is led by an interprofessional team, including **Joanne Cox, MD**, associate chief, Division of General Pediatrics, **Sally Cheek, LICSW**, social work program manager, CHPCC, and **Pamela Schubert Bob, MHA, RN, NE-BC, CPN**, interim director of nursing/patient care operations, Ambulatory

Pediatrics/Medicine Programs. Nurses and patient care teams now follow an algorithm-driven model that enables prompt access to integrated primary care and behavioral health treatment (see graphic on page 17).

**"Our program uses same-day assessments from social workers, and an algorithm-driven, stepped-care model to triage patients to the most appropriate resource."**

*Katie Dowd, LICSW, behavioral health team leader*

## Nurses Provide Key Safety Net

Nurses provide crucial inter-visit support to ensure continuity of care. If a primary care physician, nurse practitioner, nurse or social worker has behavioral health concerns about a patient, a team of nurses is activated via a follow-up request. Nurses contact families to ensure prescriptions are filled and to reinforce medication education provided at the time of a prior visit.

Should broader behavioral or depression concerns be identified during the course of this follow up, nurses notify social workers, nurse practitioners and physicians. CHPCC also added a dedicated nurse practitioner to provide time-sensitive psychopharmacology and consulting services to patients within a single visit.



## What Sets Boston Children's Integrated Primary and Behavioral Care Model Apart?



### Integration of staff

Social workers are available during clinic visits to assess immediate needs.



### Collaborative approach

Social workers, primary care providers, psychologists, psychiatrists and registered nurses work as an integrated team to coordinate care.



### Flexibility

Families are welcomed whenever they are ready to seek additional services, even if they don't return for a year or more.



### Support

From helping to reduce the impact of food insecurity to guiding a family's search for new housing resources, clinical staff connect families to a broad array of resources to meet essential needs.

"Registered nurses and nurse practitioners offer a critical safety net that was far less formalized prior," says Schubert Bob. "As a result, our providers feel more comfortable ordering new medications because a follow-up system has been established."

## Meeting Accountable Care Organization Goals

Boston Children's was an early pioneer in establishing a dedicated approach to integrating care for children with multispecialty, complex care needs. Focused attention to integrate behavioral health with primary care settings has improved outcomes.

"The growing use of the algorithm, completion of secondary screenings and the ongoing refinement of care coordination are strengthening successful engagement of families with behavioral health services," says **Katie Dowd, LICSW**, behavioral health team leader.

The program helps meet several key accountable care organization (ACO) goals:

**Depression screening.** CHPCC updated its processes in 2019 and now uses a self-reported questionnaire that screens for anxiety and depression simultaneously in children ages 5 and up.

**Early intervention.** The clinic consistently screens more than 95 percent of patients at well-child visits for developmental and behavioral needs. This prompt assessment addresses symptoms before they escalate.

**Reduced ED utilization.** Children are seen in the primary care setting rather than the emergency department.

**Inpatient follow-up.** After hospital discharge, nurses perform targeted outreach to confirm referrals are made and services are in place.

**Rochelle James, LCSW**, behavioral health care coordinator, says the program engages patients and families and builds trust. "Collaboration between nurses, social workers, primary care providers (PCP) and psychologists gives us the opportunity to coordinate care in a way not possible in other settings." ■

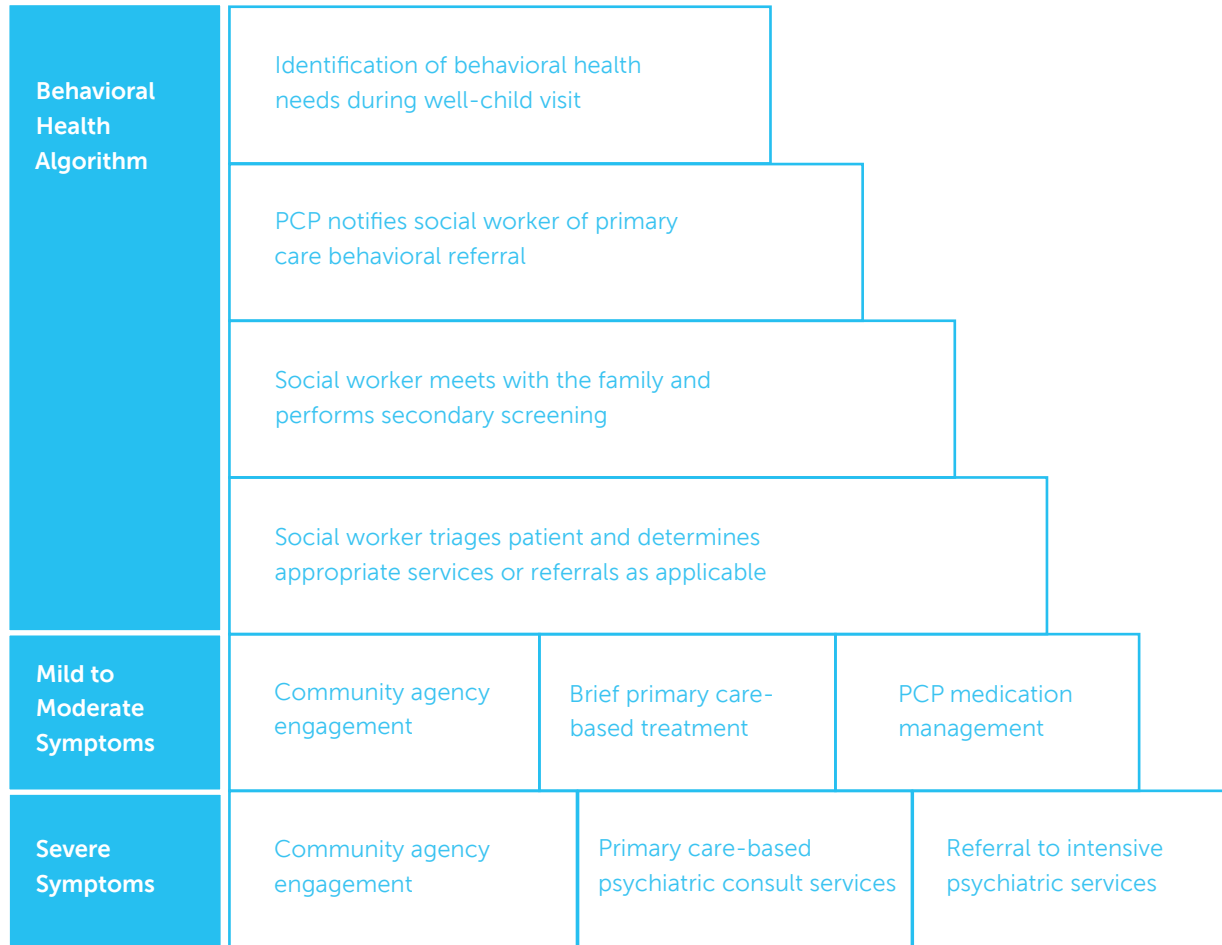
Article Citations:

<sup>1</sup> Whitney, D. G. (2019, February 11). US National and State-Level Prevalence of Mental Health Disorders and Disparities of Mental Health Care Use in Children. *JAMA Pediatrics*, 173(4), 389–391. doi: 10.1001/jamapediatrics.2018.5399.



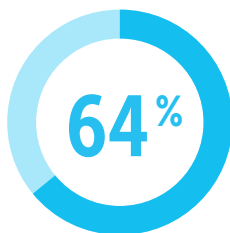
## Boston Children’s Behavioral Health Care Decision Algorithm

The Behavioral Health Care Algorithm depicted below uses a step-wise approach to promote early identification of patients’ behavioral health needs and promptly connect children and families to key resources.

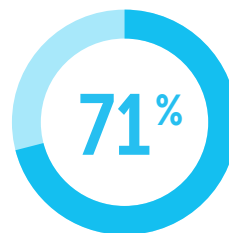


## Behavioral Health Care Algorithm Outcomes

One year after implementation, the algorithm shows promise in improving outcomes.



64% of patients were more likely to receive a behavioral health referral when the primary care physician followed the algorithm.



71% of patients were more likely to be in services a year later when referred within the primary care medical home and given secondary screenings.



3,400 /  
13,000

Number of unique patients treated and appointments completed by Boston Children's infusion programs annually

260 → 52

Infusion treatment delays reduced from approximately 260 patients per year to 52 patients per year. Delays are defined as patients unable to receive prescribed therapy on the scheduled appointment date or at the prescribed interval.



Joan Shea, DNP, RN, CPON, with Raegan at Boston Children's at Waltham Infusion Center

## Advancing Value-Based Infusion Care

### Nursing and Finance Teams Smooth Access for Ambulatory Infusion Patients

Timely treatment achieved through effective care coordination is essential to ensure uninterrupted care of infusion patients. At Boston Children's Hospital's Waltham Infusion

Center and the Center for Ambulatory Treatment and Clinical Research (CATCR), insurance and authorization delays were contributing to scheduling postponements and significant family stress and disruption.

Infusion program leaders **Patricia Pratt, MA, BSN, CPHQ, CPN**, vice president and associate chief nurse, Pediatric/Medical Nursing & Patient

Care Operations, and **Jennifer Fortin, MSN, RN, NEA-BC**, nurse director, Pediatric/Medical Nursing, CATCR, Waltham Infusion and Therapeutic Apheresis Programs, knew that families faced an agonizing choice: delay critical treatment or proceed without pre-authorization and risk having to pay for infusion services themselves.

“We needed a better way to track the progress of insurance authorization, prevent treatment delays, reduce last-minute cancellations that erode our ability to see all patients seeking treatment, and improve the patient, family and care provider experience,” Fortin says.

## Multifaceted Improvement Strategies

Pratt and Fortin contacted Patient Financial Services (PFS) to form a cross-organizational working group to design workflow improvement strategies. The team members analyzed the end-to-end process from both a patient-family and interdepartmental perspective to better understand the challenges faced and further optimize the care process.

“We were able to collaborate in ways that benefit families and reduce administrative burden,” says **Paul Nealey, CHAM, director**, Patient Financial Clearance, who co-led the group with Pratt.

These changes resulted in key improvements, including:

**A standardized infusion services referral template** that seamlessly moves data from provider to clinic to PFS to payer. “It bridges the gap between clinical and financial team workflows, and reduces gaps in data collection that may lead to future delays in scheduling, treatment or

payment,” says **Kristi Reyes, BSN, RN, clinical nurse manager, PFS**.

**Daily and weekly infusion/PFS huddles** to review cases and collectively identify the best way to adjudicate pending authorizations.

**Dedicated PFS staff** to focus exclusively on infusion cases.

**Creation of a dedicated infusion case manager associate role** to focus exclusively on the authorization process and provide patients, families, insurance companies and clinicians a single point of contact.

**Engaging families and referring physicians** to educate payers and advocate for appropriate coverage of rare and complex pediatric conditions.

## Fewer Delays, Higher Satisfaction

Results have been dramatic. In just one year, treatment delays at the Waltham Infusion Center and CATCR dropped, improving the patient and family experience, increasing provider satisfaction, and supporting appropriate remunerations for services provided.

“Treatment delays occur when patients are unable to receive their prescribed therapy at their scheduled appointment date or at the prescribed interval. We were able to reduce the number of patients experiencing these delays from five or six per week to just one or two per week,” Pratt says. “This is a huge satisfier for our families who are so appreciative they don’t have to worry about missing treatment or being responsible for a large out-of-pocket-payment.” ■

## Team Members

### Infusion Programs

**Patricia Pratt, MA, BSN, CPHQ, CPN**, vice president and associate chief nurse, Pediatric/Medical Nursing & Patient Care Operations

**Jennifer Fortin, MSN, RN, NEA-BC**, nurse director, Pediatrics/Medical Nursing, CATCR, Waltham Infusion and Therapeutic Apheresis Programs

**Kristen Renaud, MEd**, patient services administrator III, Medical Procedure Units

**Kathleen Louis**, case management associate, Infusion Programs

### Patient Financial Services

**Paul Nealey, CHAM**, director, Patient Financial Clearance

**Kristi Reyes, BSN, RN**, clinical nurse manager

**Antonia Lai**, supervisor, Patient Accounts

**Ixland Nettey**, senior patient finance representative

**Kamissa Rene**, senior patient finance representative



## **Nurse Practitioner-Managed Sickle Cell Clinic Decreases Emergency Department Utilization**

Sickle cell disease (SCD) is a chronic blood disorder with acute complications that too often results in unplanned, and sometimes frequent, use of emergency department (ED) services. To decrease ED utilization, **Joan Shea, DNP, RN, CPON**, staff nurse III, Waltham Infusion Center/CATCR, Medicine Patient Services, led a quality improvement initiative to assess and treat SCD patients with fever within a nurse practitioner (NP)- managed outpatient clinic.

**“Our NP-led model of care lowered ED utilization, reduced costs, and improved patient and family satisfaction.”**

***Joan Shea, DNP, RN, CPON, staff nurse III, Waltham Infusion Center/CATCR, Medicine Patient Services***

“Our goal was to improve the efficiency of care and reduce costs while maintaining the same high quality of care provided in the ED,” Shea says

Families of younger SCD patients and young adults experiencing a fever are now directed to call Boston Children’s Hematology Department, where they are triaged. If they meet specific criteria – older than 6 months of age with no pain or acute respiratory symptoms – they are referred to the CATCR, where NPs use the hospital’s evidence-based, clinical practice guidelines for outpatient management of sickle cell-related fever to assess and treat patients.

Managing care in the outpatient setting:

- Decreased ED utilization rates by 37 percent
- Decreased family financial burden, reducing out-of-pocket expenses by 75 percent
- Decreased cost of care associated with Boston Children’s ED visits by 68 percent
- Reduced time to initial antibiotic administration by ~ 29 minutes, consistent with enterprise-wide sepsis initiatives for antibiotic administration within 60 minutes
- Reduced length of visit by approximately 2.5 hours
- Resulted in high patient/family satisfaction scores, with 93 percent of patients and families rating their experience as “best possible care”

Over time, Shea believes these results will continue to improve as patients, families and providers opt for CATCR- based treatment. “Using an NP-managed outpatient clinic for this patient population is an effective use of clinical resources,” she says.

This NP-designed outpatient model of care is now being expanded to meet the needs of other chronically ill children, aiming to contribute to further reductions in cost and improvement in the quality of care. In 2019, the hospital’s Neurology and Pain programs replicated Shea’s model to treat chronic migraine patients in both the Waltham and CATCR locations. ■





Suzanne Rostler, MS, RD, LDN, with Olivia at Boston Children's at Waltham



Feel  
Better  
Soon!







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# EXCELLENCE IN PRACTICE



60-150

FDA predictions of the number of new gene therapies ready for patient use by the year 2025

# Integrating Novel Therapies into Nursing Practice and Patient Care Delivery

## Nurse-Led Team Coordinates Groundbreaking Treatments

A revolution in pharmacological gene therapy is underway, as marked by a tremendous acceleration in the creation of novel therapies to treat genetic disorders at the molecular level. Boston Children's Hospital Nursing and extended team members, in partnership with hospital researchers and scientists, biotech and biopharma partners, and interprofessional colleagues, have developed a set of specific processes to meet the challenges inherent in launching these groundbreaking treatments.

## Setting the Standard for Novel Specialty Care

The hospital's system-level strategic response originated in 2017 after the U.S. Food & Drug Administration (FDA) approved the life-changing drug SPINRAZA® (nusinersen) to treat spinal muscular atrophy (SMA). To coordinate the administration of this first-of-a-kind therapy, key clinical and support teams came together, including Neurology, Pharmacy, the Center for Ambulatory Treatment and Clinical Research (CATCR), Marketing & Communications, Patient & Family Education, Physical Therapy, Government Relations, the Office of Ethics

and General Counsel, Patient Financial Services; and Patient Relations.

In addition, because SPINRAZA was a unique therapy, the highest levels of hospital leadership set a framework for implementation. This group was led by **Laura Wood, DNP, MS, RN, NEA-BC**, senior vice president, Patient Care Operations, and chief nursing officer; **Douglas Vanderslice**, executive vice president, Finance, IT and Real Estate, and chief financial officer; and **Vincent Chang, MD**, chief medical officer for operations.

**“Nurses lead by pulling all the intersecting pieces together to ensure the process flows and patient care quality and safety remain at the forefront.”**

**Colleen Dansereau, MSN, RN, CPN, director of clinical operations, Gene Therapy Program, and director of clinical research nursing, Dana-Farber/Boston Children's Cancer and Blood Disorders Center**

Today, with several gene therapy products currently available, and hundreds more in the FDA pipeline, the hospital has implemented the emerging medical discoveries care process to translate novel therapies from clinical research to direct patient care.

The two-phased model is the product of the Office of Emerging Medical Discoveries, which includes representatives from Pediatric/Medical Nursing, Pharmacy, Business and Legal Services, as well as the Office of Ethics, Patient Relations and other resources as required. The team mobilizes when a new drug or treatment becomes available, and is being considered for use within a specific patient population.

"We are often at the forefront to propose new practice standards," says **Patricia Pratt, MA, BSN, CPHQ, NE-BC**, vice president and associate chief nurse, Pediatric/Medical Nursing & Patient Care Operations. "Registered nurses are at the table from day one with physicians, scientists, and pharmacists anticipating what patients need, developing clinical pathways and workflows, and ensuring the right processes are in place."

## Nurses at the Nexus of Care

Once the decision is made to proceed with a new drug, the Office of Emerging Medical Discoveries assembles a group of stakeholder representatives with defined roles and responsibilities.

"We commission a bigger group that draws from Nursing, subspecialty medical services, Laboratory, Patient Financial Services, Government Relations, Patient Relations, and other key roles," says **Al Patterson, PharmD**, chief pharmacy officer. "With the use of the Boston Children's emerging medical discoveries

care process, we've learned how to convene this group quickly to operationalize these new therapies once they come on board."

**Colleen Dansereau, MSN, RN, CPN**, director of clinical operations, Gene Therapy Program, collaborates with nurse leaders to determine what is needed to safely and effectively deliver the therapy to patients. This includes the design and delivery of tailored clinical education programs, patient/family education materials, orders and standards of practice, new equipment, new certifications, and physical space. She then works with nurses and other clinical leaders in each area to put the pieces in place.

## Nurses Contribute to Administration of First FDA-Approved Gene Therapy

In 2018, Dana Farber/Boston Children's Cancer and Blood Disorders Center became one of 30 cancer centers in the country certified to offer KYMRIAH® (tisagenlecleucel), an innovative gene therapy for children and young adults with refractory or relapsed acute lymphoblastic leukemia (ALL.)

Boston Children's research and stem cell transplant nurses jointly developed an intensive education program to guide frontline staff nurses to assess and monitor patients prior to, during, and after KYMRIAH administration. Led by **Brenda MacKinnon, BSN, RN**, research nurse, Gene Therapy Program, and nurse navigator



**Colleen Dansereau, MSN, RN, CPN**, director of clinical operations, Gene Therapy Program, and director of

clinical research nursing, Dana Farber/Boston Children's Cancer and Blood Disorders Center, collaborates with interprofessional teams to safely deploy new therapies to Boston Children's patients.

## On the Cutting Edge

As scientists decode the human genome and uncover more targeted therapies for specific patients and conditions, Boston Children's Hospital finds itself in the middle of a biotech revolution. "Pediatrics has a high percentage of orphan diseases that lend themselves to these interventions, which puts us on the cutting edge of the gene therapy evolution and a prime beneficiary," says **Al Patterson, PharmD**, chief pharmacy officer.

In addition to KYMRIAH, the hospital recently began offering ZOLGENSMA® (onasemnogene abeparvovec-xioi), a one-time treatment that offers an alternative to SPINRAZA therapy for SMA patients. Clinical trials are well underway for near-future therapies to treat a host of diseases, including severe combined immunodeficiency (SCID), adrenoleukodystrophy (ALD), and sickle cell disease.



for the KYMRIA<sup>®</sup> Program, and **Robyn Blacken, BSN, RN, CPHON<sup>®</sup>, BMTCN<sup>®</sup>**, Stem Cell Transplant Program nurse and nurse navigator for the KYMRIA<sup>®</sup> program, this innovative education curriculum provides an overview of the collection of T cells (apheresis), chemotherapy conditioning, infusion and recovery.

“As we see more of these patients, we have established processes to support interprofessional rounding with a strong focus on patient safety and quality. We continue to support the care team to incorporate what they’ve learned into their care,” says **Mary-Jeanne Manning, MSN, PPNP-BC, CCRN**, advanced practice registered nurse level II and pediatric critical care nurse practice specialist, Medical-Surgical Intensive Care Unit.

### Rapid Changes in Nursing Practice Anticipated

The FDA predicts that, by 2025, as many as 25 new gene therapy products may be made available for use each year. Boston Children’s nurses and patient care teams are well prepared to successfully deliver these innovative treatments, offering new hope to patients and families.

Research is at the forefront of the 2019-2024 Nursing/Patient Care Strategic Plan. Leaders are evaluating how to support the growth of clinical research nursing, genetics/genomics education and research protocols.

Goals include:

- Expand clinical team capabilities regarding clinical inquiry and translational research.
- Develop and implement a research curriculum for key clinical roles.
- Apply and translate science to advance evidence-based outcomes.

“Personalized health care and targeted therapies are increasingly guiding treatment,” says Dansereau. “We are educating our nurses, our pharmacists, and our financial services staff to think in a creative, new way – to shift the model of how medicine is practiced. We’re ahead of the game because we already have a unique program in place.” ■

### Operational Leaders: Office of Emerging Medical Discoveries

- **Al Patterson, PharmD**, chief pharmacy officer
- **Donna Casey**, vice president, Strategic Business Planning and Budget
- **Colleen Dansereau, MSN, RN, CPN**, director of clinical operations, Gene Therapy Program, and director of clinical research nursing, Dana-Farber Boston Children’s Cancer and Blood Disorders Center
- **Christopher Kirby, JD, MPH**, deputy general counsel
- **Patricia Pratt, MA, BSN, CPHQ, NE-BC**, vice president and associate chief nurse, Pediatric/Medical Nursing & Patient Care Operations

### Therapeutic Apheresis Nurses Embrace a New Frontier

Apheresis, the complex procedure used to collect T cells from a patient’s blood, can be challenging, especially when the patient is a child. The collection procedure requires the placement of a large venous catheter followed by confinement to a bed for approximately 10 hours.

“The patient must be constantly monitored for complications by a trained apheresis nurse to ensure the patient remains safe and the collection is successful,” says **Jennifer Fortin, MSN, RN, NEA-BC**, nurse director, Medicine Patient Services, Center for Ambulatory Treatment and Clinical Research (CATCR), Waltham Infusion, and Therapeutic Apheresis Programs.

Boston Children’s Therapeutic Apheresis Unit (TAU) is the only pediatric apheresis program in New England and treats patients from around the world. The nursing team consists of experienced pediatric nurses who are expert in apheresis practices, technologies and associated regulatory requirements. They are proud to support clinical research and novel therapies that drive the use of so many first-of-a-kind therapies.

## Nurses and Interprofessional Colleagues Move Translational Research Forward

As part of the hospital's enterprise-wide strategic planning refresh process in 2019, continued emphasis is being placed on translational research – a “bench-to-bedside” commitment to rapidly harness knowledge from basic science discoveries to fundamentally reshape health outcomes for children.

Armed with broad clinical and subspecialty practice knowledge, research nurses throughout the organization are partnering with investigators to lead planning and implementation of a growing number of complex interventional trials involving drugs, devices and novel therapies.

**Lucinda (Cindy) Williams, DNP, RN, PNP, NE-BC**, nurse director, Experimental Therapeutics Unit, co-director, Experimental Therapeutics/Interventional Trials (ET/IT) Center, Institutional Centers for Clinical and Translational Research and her colleague **Maggie Malsch, MSN, RN, CPHON**, clinical research, ET/IT Center, Institutional Centers for Clinical and Translational Research are developing clinical research infrastructure to support investigators focused on translational research; early-phase, first-in-human studies; and novel therapies.

**Breana Piekarski, MPH, RN**, research nurse, Department of Cardiac Surgery; **Andrea Hale, MPH, BSN, RN, CCRP**, associate director of clinical research, Division of Endocrinology; **Leslie Spaneas, MPH, RN, CCRP**, renal research nurse, Division of Nephrology; **Grace Bazin, BSN, RN**, research nurse, Translational Neuroscience Center; **Vanessa Young, BA, RN**, research nurse, Division of Newborn Medicine; and **Julia Giancola, BSN, RN**, research nurse, Division of Newborn Medicine are among Boston Children's research nurses working with both investigators and frontline nurses and clinical teams.

Together, Dr. Williams and Malsch provide operational support for complex interventional and sponsor-investigator studies. They also developed and now manage a program for Boston Children's sponsor-investigators whose

FDA-regulated studies require monitoring to ensure data integrity and subject safety. Dr. Williams, Malsch, and their colleague **Emily Clermont, MPH, BSN, RN**, nurse project manager, Institutional Centers for Clinical and Translational Research, in partnership with **Erica Denhoff, MPH, CCRP**, clinical research education program manager developed a competency-based clinical research curriculum for new research nurses and other clinical research professionals. The curriculum is designed to help these nurses secure baseline knowledge to successfully transition to the role of clinical research nurse.

Malsch has also been instrumental in developing the bone marrow failure portfolio of research studies, which includes multicenter interventional trials supported through the North American Pediatric Aplastic Anemia Consortium for rare disorders where treatment options are limited. These include Fanconi anemia, severe aplastic anemia and inherited bone marrow failure.

Clinical research nursing continues to expand and remains a key component of the hospital's 10-year Research Strategic Plan. ■



**Lucinda Williams, DNP, RN, PNP, NE-BC**, Nurse Director  
Experimental Therapeutics Unit  
Co-Director  
Experimental Therapeutics/  
Interventional Trials (ET/IT) Center  
Institutional Centers for Clinical and  
Translational Research



110 → 229

The growth of accredited graduate physician assistant programs in the United States over the last 20 years

Source: The American Academy of Physicians Assistants

400

The approximate number of academic institutions in the United States with accredited nurse practitioner programs

Source: The American Association of Nurse Practitioners (AANP)

131,000

The number of certified physician assistants in the United States

Source: The National Commission on Certification of Physician Assistants

270,000

The number of nurse practitioners licensed in the United States

Source: AANP National Nurse Practitioner Database, 2019



Maryellen Horgan, PA-C, with Hudson in Cardiac Surgery

# Advanced Practice Clinicians Drive New Models of Care

## Collaboration Improves Quality and Access

Changes in the health care environment have created new opportunities for physician assistants (PA) and advanced practice registered nurses (APRN) to have significant impact in the delivery of care. At Boston Children's Hospital, 74 PAs and 444 APRNs drive innovative care delivery models that not only improve quality, safety and cost-effectiveness, but also increase access and satisfaction for patients and families.

## Key Partners in Care

PAs partner alongside physicians, nurse practitioners, registered nurses and the extended care team to provide comprehensive and collaborative care to pediatric patients. By working in close collaboration with physicians, PAs refine and deepen their skill acquisition. For example, in the Department of Orthopedics, PAs staff an outpatient clinic with expanded morning and evening hours to broaden appropriate access so children don't have to miss school. PAs are available at the bedside too, coaching families through difficult treatments

or assessing problems. Recently, the hospital hired PAs who work solely in the Emergency Department (ED) and provide critical support to attending physicians.

This solid working relationship enhances every aspect of care, says **Michael Cunningham, MD**, otolaryngologist-in-chief. "As an integral part of the team, PAs allow us to provide a high level of care with a lot of checks and balances in the system, which is crucial for our hospital as it works toward being a high reliability organization."

APRNs are experts in their specialties, using their training, knowledge, and acumen to set the standard for advanced quality in clinical practice and patient outcomes. They also play a key role managing care in the outpatient setting. Boston Children's recently implemented a nurse practitioner-designed model of care for sickle cell and migraine patients. Outcomes include lower ED utilization, reduced costs, and improved patient and family satisfaction (see related story, page 20).

## PA Professional Practice

**Brenda Sefton, MSHS, PA-C**, lead PA in the Department of Cardiac Surgery, contributes to surgical procedures needed by some of the most complex congenital heart patients in the world. She also cares for patients in the cardiac intensive care unit (CICU) and the post-op outpatient clinic as an active partner with CICU attending physicians.

**Julia Allison, MHS, PA-C**, lead PA in the Department of Orthopedics, provides orthopedic specialty care to patients in the ED, including treatment of broken bones, sports injuries, back or joint problems and infections. "We are embedded in teams of highly varied professionals, all bringing exceptional training and different skill sets to the table," says Allison. "Working as a PA at

Boston Children's allows us to practice to advance innovation in many aspects of the care we provide."

## Expanding Education and Growth

The hospital's advanced practice clinician educational program provides learning opportunities for PAs and APRNs to enhance their knowledge and stay up to date on developments that impact clinical practice, patient care and future clinical inquiry. Topics reflect newly established standards and regulation or required education as a condition of licensure and credentialing.

In addition, PAs and APRNs are working together to refine core competencies for 2020. The objective is to promote patient safety and quality by creating a process that increases cognitive and procedural capabilities and competencies of any advanced practice clinician who requests additional clinical privileges.

## APC Competencies Improve Outcomes

Nurse practitioner **Margaret L. Schroeder, RN, PPCNP-BC**, Home Monitoring Program (HMP) coordinator, Cardiovascular Surgery, 8 East/Patient Services, Heart Center, uses her expertise to synthesize multifaceted components to care for medically complex infants and children.

Schroeder is HMP coordinator for infants with single ventricle physiology, following these extremely fragile newborns at home between their first surgery (performed within the first few days of life) and their second surgery (performed between 4 and 6 months). To support and educate parents and caregivers, Schroeder implemented standardized parent teaching, conducted numerous in-

services with staff nurses, led a quality improvement project to evaluate parent satisfaction and created an inter-stage review process. As a result, the HMP has successfully reduced inter-stage mortality rates among this vulnerable population.

When Schroeder joined the Cardiovascular Surgery group more than a decade ago, there were five nurse practitioners. Today, there are 13. She credits strong preceptorship and ongoing mentorship from an APRN colleague in helping to develop her expertise and practice. She now mentors new APRNs throughout the hospital in return.

**Cheryl Mullan, MSN, CPNP**, is pediatric nurse practitioner with the Rainbow Team for Children with Special Health Care Needs at Children's Hospital Primary Care Center at Longwood. As an APRN in the ambulatory setting, she continually advocates for better care standards for patients at home. She worked with a core group of nurses in the Rainbow Clinic to improve comprehensive care coordination guidelines for patients and families. She also lobbies Massachusetts lawmakers to improve care for medically complex children with developmental or intellectual challenges.

"The ability to apply our skills each day and to continue to learn helps us to grow our own knowledge and practice," Mullan says. "We provide vital continuity that fills a gap and adds value to the care of our medically complex patient population." ■



2,500

The number of families educated about safety behaviors and family services by High Reliability Family Champions in 2019 during first six months post-launch

70 / 24

The number of hospital employees who serve as High Reliability Family Champions, and the number of departments and roles they represent



Adam Homoki, MSN, BA, RN, with Nolan and parents on the Inpatient Cardiology Unit

## Expanding the Culture of High Reliability with Family Champions

High Reliability Organizations (HRO) commit to vigilance and attention to detail at the highest level and work to create a culture that anticipates risk to eliminate preventable harm. This concept has long been embedded in high-risk industries where mistakes can have catastrophic consequences, such as aviation, nuclear power and the military. Over the past several decades, health care organizations – including Boston Children’s Hospital – have embraced reliability science as well.

Strengthening HRO tenets is a core component of Boston Children’s decades-

long commitment to safety and quality. In 2014, the hospital embarked on an enterprise-wide initiative to educate every team member in HRO principles, tools, and behaviors to reduce errors and harm to patients and caregivers.

The hospital’s Family Advisory Council (FAC) has been a key HRO partner in the evolution of this work. Now in its 37th year, the FAC influences and shapes a wide range of operational practices and strategic initiatives throughout the enterprise. The committee was active in assisting with the HRO curriculum five years ago and recently helped

to design and steer the implementation of a new initiative to increase family participation in patient- and family-focused safety work as an extended part of the care team.

## HRO Family Champions

The initiative was conceived by **Marcie Brostoff, MS, RN, NE-BC**, vice president and associate chief nurse, Nursing/Patient Care Operations, and co-chair of the FAC with Valerie Fleishman, a parent volunteer whose child has been cared for at Boston Children's since soon after birth. Through this role and her lifelong leadership of programs to optimize the patient-family experience, Brostoff proposed engaging an interprofessional group of employees from across the hospital as HRO Family Champions. The goal is three-fold: to give patients and families a warm welcome, invite families to be active members of their child's care team, and provide education on available resources.

Brostoff brought the idea to the FAC and, in collaboration with a steering committee, decided to leverage the Patient Family Safety Resource pamphlet, which encourages families to partner with any member of the hospital to "speak up for safety" (see sidebar on page 32).

The hospital seeks to reinforce its commitment to patient- and family-centered care, including the engagement of families to identify potential safety risks. "Our goal is to help patients and families understand they are an essential part of the care team and should feel comfortable raising a question or concern at any time," says **Lisa Rubino, MBA**, director, Office of Experience and a steering committee member.

## Deepening Family Engagement

Every day, HRO Family Champions are deployed across the hospital to welcome each newly admitted patient and family. In addition to orienting families to existing

hospital resources, special outreach is made to encourage families to share observations, questions and concerns.

The conversation centers on three key points:

- You know your child better than we ever could, so if something seems wrong to you, speak up.
- If you have clinical questions or safety concerns, talk to your nurse or a member of your care team. Ask questions until you understand.
- If you have questions about resources, your nurse can put you in touch with a resource within the Hale Family Center for Families.

Brostoff deliberately sought to engage employees outside of nursing to serve as family champions to sustain the HRO message. Boston Children's registered nurses apply high reliability to their practice with patients every day, and this is an opportunity for other employees to engage directly to further support the patient and family experience. Champions include child life specialists, chaplains, physicians, social workers and administrative staff. Non-clinicians especially appreciate the work because it reconnects them to the bedside and elicits both pride and new insights.

## Embracing an HRO Culture

The first contingent of 70 HRO Family Champions began work in early 2019. Each champion volunteers one hour per week to welcome families and invite them to be full participants in the hospital's culture of safety.

- On the inpatient Cardiology Unit, clinical coordinator and HRO champion **Adam Homoki, MSN, BA, RN**, co-leads a team of nurses, clinical assistants, and providers with a longstanding commitment to patients and families as full care partners. Cardiology staff embraced high reliability concepts from the start and have

# 70%

Up to 70% of families are hesitant to voice concerns in the hospital.

*Source: Bell, S.K., Roche, S.D., Mueller, A. et al (2018). Speaking up about care concerns in the ICU: patient and family experiences, attitudes and perceived barriers. BMJ Quality & Safety, 27:928-936.*





1

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SPEAK UP  
FOR SAFETY

2

---

COMMUNICATE  
CLEARLY

3

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PAY  
ATTENTION  
TO DETAIL

embedded them into the unit's nursing culture and practice. As early adopters, they view everything from policy and procedure changes to technology upgrades and, most recently, family-centered rounding through a high reliability lens. The addition of champions was a natural progression to enhance what was already in place.

- **Amanda Growdon, MD**, Department of Pediatrics, pediatrician and clinical chief of Inpatient Services, sees the champion experience as an opportunity to step outside her usual physician role and support the hospital's commitment to care for the whole child and the whole family. Patient and family input can change the clinical plan. Sometimes it's something simple, such as parents who know their child doesn't like the taste of a certain antibiotic. Other times it could be more complex, such as families knowing the best way to re-introduce feedings through a feeding tube based on prior experience.
- **Jennifer Frank, MPP**, family partnerships coordinator, Office of Experience, represents the voice of families throughout Boston Children's Hospital. As a member of the FAC, she helped launch the HRO Family Champions program to ensure the family perspective is a priority across all areas and departments. Families she has spoken with have been appreciative of the hospital's attention to detail and safety. Some even get emotional when Frank tells them they are an important part of the care team.
- **Michael Levine, MBA, HACCP**, compliance specialist, Corporate Compliance/Office of General Counsel, served as a certified instructor of frontline staff when the hospital's high reliability initiative rolled out. Now an HRO Family Champion, he sees the role as a critical bridge between admission

and care. "Ultimately, it's going to reduce errors and provide a lot more information to clinicians that they might not have had," he says.

- **Yulia Kazakova, MTS**, chaplain, works closely with social workers in the Neonatal Intensive Care Unit (NICU) to provide support to NICU families and patients. Families are often surprised to learn of the many resources available, including parking, bedside meals and the lactation program. Kazakova believes that focused attention from the champions enhances the hospital experience for all involved.

### Practicing Cultural Sensitivity

Boston Children's has a diverse patient population, with families speaking more than 65 languages. In addition to English and Spanish, the Patient Family Safety Resource is available in simplified Chinese to meet the needs of families who speak Mandarin. An Arabic version will be added later this year. The hospital's interpreters also play an important role. When visiting non-English speaking patients, an interpreter accompanies the champion, so families understand the hospital's philosophy of care and their role in it. For Arabic patients, a case coordinator from the International Center serves as a champion to respect spiritual values and provide culturally competent care.

Based on the program's overwhelming success, plans are in the works to introduce family champions in the Emergency Department, Post-Anesthesia Care Unit and ambulatory sites in 2020. ■

### Speak Up for Safety!

The Patient Family Safety Resource encourages families to partner with caregivers to practice three key safety behaviors.

1. Speak up for safety
2. Communicate clearly
3. Pay attention to detail









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# TRANSFORMATIONAL LEADERSHIP





Suzanne Reidy, MS, RN, NE-BC; Michelle Lanni, BSN, RN; Christine Hall, BSN, RN, CPN; and Jody McGrath, MSN, RN, in the Coordinator of Patient Placement Operations Center

# Innovative Technologies Deliver Real-Time Insights

## Optimizing Patient Flow and Care Delivery

Increasing inpatient volumes and rising patient acuity and complexity are increasingly commonplace within health systems across the country. At Boston Children's Hospital, nursing and patient care operational leaders have turned to automation and artificial intelligence to address capacity challenges, developing innovative tools to more effectively manage patient throughput.

## Seeing the Big Picture

In 2017, with demand for inpatient bed capacity at an all-time high and space at a premium, Nursing/Patient Care Operations implemented the first iteration of a Boston Children's-designed patient flow dashboard.

The Coordinator for Patient Placement (COPP) rapidly adopted the software to manage patient movement throughout the hospital. Nurses could quickly see how many patients were waiting to be admitted and how many beds were available on each unit. They could also more effectively problem solve how to get new patients to the most appropriate setting.

Although the tool improved capacity management, only about 1,000 members of the 15,000 hospital workforce had access to the software. Nursing/Patient Care Operations led efforts to bring the dashboard to scale. Leaders partnered with the hospital's Business Intelligence and Innovation & Digital Health teams, as well as **Vincent Chiang, MD**, chief medical officer for Operations, to develop a tool that would give all staff situational awareness of capacity data system-wide.

Informatics specialists took on the challenge of integrating multiple data sources into one easy-to-use interface, and the **Capacity Insight Dashboard** was born.

## Improved Transparency and Communication

Since going live in 2018, the dashboard has helped everyone do their jobs more efficiently. Nurses can click through the individual units to identify pending or active discharges and which beds will open up. "It facilitates throughput because I can quickly plot out where children are likely to be admitted and get them to where they need to be," says **Christine Hall, BSN, RN, CPN**, staff nurse II, coordinator of patient placement.

The dashboard figures prominently in daily huddles for all charge nurses, breaking down silos and creating accountability. "Now that the data can be seen throughout the hospital and across the enterprise, there's more of an appreciation for what others are going through," says **Courtney Cannon, AB, MBA**, vice president, Business Operations and Strategy, "In the past, if you were in the emergency department (ED) with 20 patients waiting for a bed, a limited number of colleagues understood the urgency to rapidly admit and place patients in the appropriate treatment setting. Now, with so many source systems feeding into one interface, there's transparency for everyone."

## The Right Resources for Optimal Care

Greater transparency enables smarter planning. Each morning, **Lynn Darrah, MSPT, MHA**, director, Patient Care Operations, checks pending discharges and redistributes her team of care management associates to prioritize resources. **Suzanne**

**Reidy, MS, RN, NE-BC**, director, Patient Flow and Staffing, relies on the dashboard's capacity alerts to avoid bottlenecks. If a unit approaches high volume, coordinators of patient placement can reassign nurses or call upon Centralized Staffing Office resources to be deployed as part of a rapid-response surge protocol and care for patients. Automated alerts also notify Environment Services team members when a patient is discharged to expedite room cleaning and room turnover.

The next iteration of the capacity dashboard currently under development will integrate historical and real-time data. Key performance indicators are being established and automated to track critical system performance measures, such as ED-to-inpatient admission elapsed time as part of a continuous improvement process.

## Predictive Analytics in the ED: A Foundation for Artificial Intelligence (AI)

The Prediction of Patient Placement (POPP) application is an advanced, real-time forecasting tool designed to gauge the likelihood of an ED patient's admission within 30 minutes of triage. POPP was jointly developed in 2018 by clinicians, researchers, the Innovation and Digital Health Accelerator Team, and the IT Department's Business Intelligence Team.

POPP provides nursing and patient care team members with visibility into anticipated admissions from the ED. This allows the COPP to plan and, if necessary, shift other patients to better accommodate urgent admissions coming from the ED.

This tool is part of the growth of predictive analytic capabilities or AI being designed to mine historical data to proactively manage capacity and resources. ■

## Creating a Data Dictionary

One of the biggest benefits of the Capacity Insight Dashboard is standard definitions. During the discovery phase, leaders realized different units have historically used different terms to identify capacity issues. They encouraged stakeholders to come to agreement on standard language and definitions, which are now part of the lexicon. Units are free to use their own terms internally, but institutional definitions facilitate communication, and importantly, guide new analytic-driven understandings.





Karen Sussman-Karten, BSN, RN, IBCLC, with Jacob and his mother on Multidisciplinary Intensive Care Unit



70%

Reduction in ED visits annually for children with asthma after the implementation of an asthma action team protocol and education program

# Optimizing Care Coordination for Vulnerable Children and Their Families

41%

Reduction in ED visits annually for children ages one year or less, after the implementation of an outpatient care coordination program to support parents of newborns

## Nurse-Led Initiatives Improve Health Outcomes, Reduce ED Visits

Well-designed, targeted care coordination contributes to a more sustainable health care delivery system.<sup>1</sup> For families of children with complex health needs, focused nursing and interprofessional care coordination are increasingly seen as key to reducing fragmented care delivery and poor health outcomes.

Children's Hospital Primary Care Center at Longwood (CHPCC) serves a large number of medically complex patients. Recognizing that more could be done to facilitate multispecialty visits within one ambulatory appointment, the clinic has implemented several team-based initiatives to reduce family burden and optimize care processes.

Under the direction of **Pamela Schubert Bob, MHA, RN, NE-BC, CPN**, interim director of Nursing/Patient Care Operations for Ambulatory Pediatrics/Medicine Programs, and in collaboration with **Joanne Cox, MD**, associate chief of the Division of Pediatrics, **Kathleen Conroy, MD**, assistant medical director, and **Ellen Reisinger, MBA**, CHPCC senior project manager, the initiatives have made an impact. Emergency Department (ED) visits have dropped 70 percent for asthma patients and 41 percent among children under the age of 1. These new practice standards are currently being translated at

Boston Children's at Martha Eliot, an urban community health care setting in Jamaica Plain, MA, established in partnership with Boston Children's more than 45 years ago.

**"Our Newborn Group Visit is an amazing experience for families and a huge satisfier."**

**Pamela Schubert Bob, MHA, RN, NE-BC, CPN**, interim director of Nursing/Patient Care Operations for Ambulatory Pediatrics/Medicine Programs

## Asthma Action Team

A coordinated approach by the Asthma Action Team (AAT) led to a 50 percent decrease in urgent care visits, a 70 percent drop in ED visits and a 54 percent reduction in asthma-related hospitalizations. Under the leadership of **Linda Haynes, MS, PPCNP-BC, AC-C**, advanced practice registered nurse level II, CHPCC, and pediatrician **Faye Holder-Niles, MD**, this interprofessional team of registered nurses, physicians, nurse practitioners, and social workers collaborates with families to monitor symptoms and prevent asthma attacks before they occur (see sidebar on page 40).

**Sheila Petrosino, BSN, RN, AE-C**, CHPCC staff nurse II, conducts inter-visit outreach to families of children with poorly controlled asthma. In 2017 and



## Asthma Action Team Protocol: A Nurse-Led ACO Care Management Initiative



### Follow Up

Every week, the Asthma Action Team identifies at-risk patients based on their Asthma Control Test scores. A nurse follows up by phone.



### Assessment

The nurse assesses the patient's status. "Are you coughing?" "Do you have your medication?" "Do you need a refill?"



### Education

The nurse reviews the treatment plan and helps families address obstacles to adherence.



### Referral

The nurse schedules follow-up care, if needed.



### Follow Through

If contact is unsuccessful after three calls, the team sends a letter to the family requesting an update.

2018, approximately 1,250 families were contacted by telephone. These calls served as a key step to validate medication compliance and proactively identify risks that might contribute to an unplanned ED visit if not recognized early.

"Our efforts are essential to support and educate families, address barriers and help families access needed resources," says Petrosino.

## Strengthening Maternal-Child Health

All parents need support, particularly young or first-time parents who may face a wide range of challenges. Responding to this need, CHPCC implemented a care coordination program for parents of newborns that reduced ED visits among children 1 year and under by 41 percent. This nurse-led care delivery innovation includes weekly phone calls from a nurse to check in with new parents and assess their needs, answer questions, and offer reassurance.

CHPCC also started a Newborn Group Visit for 2-week-olds, featuring a nurse-led group discussion about infant care and development. Any family member is welcome, and grandparents often participate. "This is an amazing experience for families and a huge patient satisfier," says Schubert Bob.

Recently, nurses created ready kits for families of 4-month-olds, including education sheets and a thermometer, bulb suction, and medicine syringe. Nurses educate on the toolkit at well-child visits. "Families are thrilled to have an organized packet and dedicated education. Our nurses are providing

anticipatory guidance on practical topics of great value to families," says **Michelle Fleck, BS, RN, CPN**, clinical nurse educator.

## Nurse-Led Care Coordination

An Accountable Care Organization (ACO) is defined by the Centers for Medicare and Medicaid Services as "an organization of health care practitioners that agrees to be accountable for the quality, cost, and overall care of Medicare beneficiaries."<sup>2</sup> In 2018, Boston Children's Hospital developed its own ACO and is now the largest provider to Medicaid children and families in the Commonwealth of Massachusetts, and one of the largest ACOs nationally.

In collaboration with the hospital's ACO, CHPCC now directs its care coordination efforts to optimize support of medically complex patients – defined as children with two or more chronic conditions. As a result, ED visits for these patients dropped from 61 to 56 visits per 1,000 patients between 2015 and 2018.

A dedicated group of CHPCC registered nurses works side-by-side with families to provide support following any visit to the ED or inpatient admission. Calls are multidirectional – sometimes the nurse calls the family, sometimes the family calls in with a question, and sometimes a provider calls asking a nurse to reach out to the family.

In 2018, CHPCC nurses made more than 1,500 telephone calls. The three major areas of focus and intervention included: how well families understood the discharge

instructions, whether or not prescriptions had been successfully filled, and identification of follow-up support and care still required. Calls were made within 24 to 48 hours of discharge.

“We help families problem-solve issues related to durable medical equipment, supplies, and prescriptions. We also collaborate directly with the CHPCC nurse practitioner to obtain needed orders so these children return promptly to school as soon as medically ready to avoid additional absences,” says **Kerri Tinney, BSN, RN**, staff nurse II and lead complex care coordinator in CHPCC’s Rainbow Clinic. Charge nurse **Ludivenis Lara, BSN, RN**, coordinates clinic flow and helps anticipate patient needs, “If we know a complex patient is coming in who requires oxygen therapy and a tracheostomy tube, we assign rooms in advance with the right equipment and alert team members.”

## Structured Handoffs Improve Care Transitions

Research indicates that ineffective communication among health care professionals is one of the leading causes of medical errors and patient harm nationwide. To improve communication and facilitate transitions of care, Boston Children’s pioneered nearly a decade ago the development of the I-PASS tool. I-PASS is a mnemonic that stands for **I**llness Severity, **P**atient Summary, **A**ction List, **S**ituation Awareness and Contingency Planning, and **S**ynthesis by Receiver. The system is designed to reduce handoff-related communication failures by training patient care providers to use a standardized, structured method.

Boston Children’s nursing and interprofessional team members lead a nationwide initiative to implement the I-PASS tool. Research by **Amy Starmer, MD, MPH**, associate medical director of Quality, Department of Medicine, Division of General

Pediatrics, and others, found that the application of I-PASS was associated with substantial improvements in patient safety and reductions in medical errors, and can be used across a variety of disciplines and types of patient handoffs.<sup>3</sup>

The hospital is now refining I-PASS throughout the enterprise to meet specific care transition needs. The Case Management team uses a version of I-PASS as part of its Warm Handoff process. Warm Handoff securely shares patient health information with the Pediatric Physicians’ Organization at Children’s (PPOC) on admission and discharge. As a result, PPOC physicians stay abreast of their patients’ progress in the hospital and can follow up after discharge, if necessary.

“We have a system in place where we collaborate with our provider practices, durable medical equipment suppliers and community partners to facilitate effective care coordination with every patient and family,” says **Shahzina Karim, MSW, BSW, BA, LICSW**, senior director, Care Management. “The Warm Handoff is a critical element of patient care and safety.” ■

### Article Citations:

<sup>1</sup>National Academy of Medicine. (2018). Effective Care for High-Need Patients. Retrieved from: <https://nam.edu/HighNeeds/>

<sup>2</sup>Centers for Medicare & Medicaid Services. (2019). Accountable Care Organizations (ACOs). Retrieved from: [www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/](http://www.cms.gov/Medicare/Medicare-Fee-for-Service-Payment/ACO/)

<sup>3</sup>Starmer, A.J., Spector, N.D., West, D.C., Srivastava, R., Sectish, T.C., Landrigan, C.P., et al (2017). Integrating Research, Quality Improvement, and Medical Education for Better Handoffs and Safer Care: Disseminating, Adapting, and Implementing the I-PASS Program. The Joint Commission Journal on Quality and Patient Safety 2017; 43:319-329. Retrieved from: [www.sciencedirect.com/science/article/pii/S1553725017301769?via%3Dihub](http://www.sciencedirect.com/science/article/pii/S1553725017301769?via%3Dihub)

## I-PASS for Patient Safety

Using the I-PASS tool greatly improves patient safety and reduces medical errors.

- I** – Illness severity
- P** – Patient summary
- A** – Action list
- S** – Situation awareness and contingency planning
- S** – Synthesis by receiver





Jennifer Federlco, BSN, RN, CNOR, Jennifer Sirols, BSN, RN, CPN, and Katelyn O'Connor, MD, Anesthesia clinical fellow, with Micelle and mother in the Main Operating Room





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# QUALITY OF CARE





**Welcome to the 6<sup>th</sup> Floor!** My Weight: \_\_\_\_\_  
 Today is \_\_\_\_\_ Day \_\_\_\_\_

**TODAY'S TEAM**  
 NURSE \_\_\_\_\_  
 CA \_\_\_\_\_  
 ATTENDING \_\_\_\_\_  
 FELLOW \_\_\_\_\_  
 RESIDENT/NP \_\_\_\_\_  
 Social Work \_\_\_\_\_  
 Child Life Specialist \_\_\_\_\_

**Room Service: Call 5-FOOD**  
 What I drank and ate today:  
 Liquids: \_\_\_\_\_  
 Food: \_\_\_\_\_

**MY QUESTIONS/NOTES:**

**Handwashing is the best prevention against infection**

**GOALS FOR TODAY**  
 1. Take a bath   
 2. Brush Teeth   
 3. Get out of bed   
 4. \_\_\_\_\_  
 5. \_\_\_\_\_  
 6. \_\_\_\_\_

**Baxter Retching Faces (BARF®)**

**Pain Scale**  
 Wong-Baker FACES® Pain Rating Scale

0 No Pain  2 Mild Little Bit  4 More Even More  6 Quite Whole Lot  8 Really More  10 Worst Ever

Does your child need help getting up? Yes  No

**Fall Prevention**  
 Why is your child at risk for falling?

Medications	Equipment	Side rails up, Wheels locked	Crib rails all the way up
Previous Fall	Physical Therapy	Wear non-skid socks	

**Call for help if you are:**  
 Getting in the scale Going for a walk

**Boston Children's Safe Sleep Guidelines**  
 • Infants (0-12 months): a crib with side rails up at all times  
 • Toddlers (12-36 months): a hooded crib with side rails up at all times  
 • Emergency equipment must be within reach of the caregiver  
 • Patients may not sleep or co-bed with an adult

**DANA-FARBER Boston Children's CANCER AND BLOOD DISORDERS CENTER**



Marissa Thomas, MSN, RN, CPHON, with Colton on the Hematology/Oncology Unit



# 70%

Percent of families surveyed on Boston Children's Hematology/Oncology Unit who knew their child was currently considered at risk for falls and associated injuries

## Partnering to Achieve Zero Preventable Falls

### Nurses Collaborate with Patients and Families to Reduce Fall Risks

Patient falls are a significant safety issue for pediatric hematology/oncology patients. Children with cancer and blood disorders are four times more likely to fall while hospitalized than other patients.<sup>1</sup> Risk factors inherent in this population include disease and treatment sequelae, medication side effects, bone weakness and deconditioning, and an unforgiving hospital environment of hard floors and complex equipment.

### Tackling a Recalcitrant Problem

Boston Children's Hospital's registered nurses have taken on the challenge of reducing falls among this high-risk group. Over the last three years, the hospital has collaborated with patients and families to implement a series of iterative quality assurance-performance improvement (QAPI) initiatives that have provided insights and guided further evolution of its fall prevention standards of practice.

When fall rates increased within the hospital's 30-bed Hematology/Oncology Unit in 2016, **Lisa Morrissey, MPH, MSN, RN**, interim nurse director, Inpatient Pediatric Hematology/Oncology/Stem Cell Transplant Program, recognized the urgency to address this significant patient safety risk. Morrissey engaged a nurse-led interprofessional team to partner

with patients and families to devise a comprehensive fall prevention program. The team created an educational poster that outlined – in words and pictures – factors related to increased fall risk.

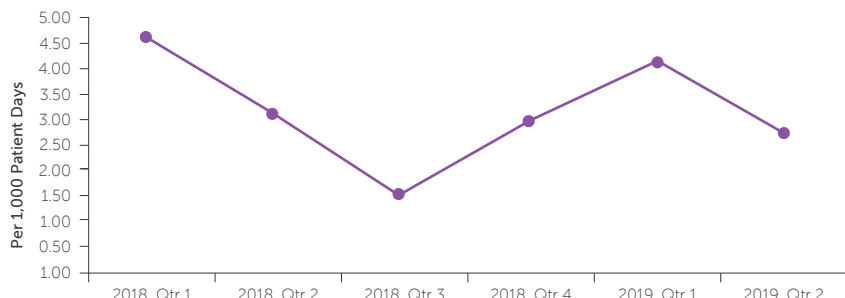
Morrissey collaborated with **Marissa Thomas, MSN, RN, CPHON**, and **Katie Martin, BSN, RN, CPHON**, to spread and scale fall prevention efforts. The team designed and implemented a Falls Prevention Week to engage and further educate clinicians, families and patients about these risks. Thomas and Martin worked with Physical Therapy, Child Life and Resource Room teams to plan patient and family activities that focused on issues associated with fall risk, including proper body mechanics, patient transfer and medication risks (see sidebar on page 46).

The educational effort showed early promise. The unit's fall rate dropped from four patient falls per month to 3.2, importantly including an outcome measure of no falls with injuries. Despite this bright start, the fall rate continued to fluctuate. Thomas enlisted the help of **Ashley Renaud, MSN, RN, CNL**, professional development specialist, Nursing Quality and Professional Practice. Together, they conducted a systematic review of the literature and identified additional tests of change to introduce as part of this ongoing quality improvement work.



## The Journey to Zero Preventable Falls with Injury

Falls with Injury Per 1,000 Patient Days on Hematology/Oncology Unit



### Developing Targeted Interventions

Thomas and Renaud formally surveyed nursing staff and families and discovered a significant disconnect. While nurses completed general fall risk education, patients and families did not translate this risk to changes in their level of vigilance. “The survey demonstrated that, despite 80 percent of patients being identified at risk, more work was needed to implement necessary observation and protective practices,” says Thomas.

In 2019, the team designed four targeted interventions to address this gap:

- 1. Every shift fall prevention education that’s adapted to each patient’s inherent risk.** Nurses educate patients and families on fall risk and fall prevention on every shift. Education is both standard (i.e., sleep safety, appropriate footwear, when to call for assistance) and personalized to patient-specific risks (i.e., medication/sedation side effects, risks associated with fractures, deconditioning and low blood counts).
- 2. Fall prevention education on the whiteboard.** The small bedside poster on fall prevention was replaced by a “fall risk” section on the patient bedside whiteboard, providing a powerful visual reminder to patients, families and staff.
- 3. Clinical Assistant (CA) purposeful rounding.** The unit is working to ensure that, every hour, the RN or CA asks patients directed questions, including ‘Do you need to use the bathroom?’ ‘Are you in a comfortable position?’ ‘Is there anything out of reach that I can get for you?’
- 4. Kamishibai card (K-card) rounding.** Quality improvement team members observe nurses and families to ensure quality education is being delivered (see sidebar on page 47). Data is shared weekly to measure progress and drive iterative change.

### Medications and Fall Risk

Medications present one of the biggest fall risks for hematology/oncology patients. Boston Children’s pharmacists team up with nurses and physicians to educate patients and families about this critical area of concern.

“We want to increase awareness that these patients face varying levels of risk from a wide range of medications and treatments,” says **Julie Gegg, PharmD, BCOP**, clinical pharmacist, Pediatric Oncology.

For example:

- Chemotherapy, steroids, and radiation weaken bone density and increase the chance of a fracture.
- Sedating medications alter cognition.
- Medications not normally associated with falls, such as blood pressure drugs or diuretics, can make patients dizzy and dehydrated.
- It’s not just the type of medication; it’s the number. The more medications a patient takes, the greater the risk of a fall.

With increased understanding comes heightened awareness – helping nurses and families work together to identify reasonable interventions and monitoring techniques.

## Amplifying the Family Voice

Some of the best ideas come from the Family Advisory Council, a dedicated group of parents engaged in decisions that affect quality of care, safety and the patient experience. They pointed out that it's hard to move around in the smaller rooms, especially when patients are hooked up to so many pieces of equipment.

Leaders partnered with Engineering and a patient safety handler to find innovative ways to create more space. Recommendations include mounting computers on the wall and reconfiguring closets to accommodate bedside tables and make it easier to access the bathroom. "Enhancing patient mobility will move us closer to our goal of preventing all falls," says Thomas.

## Interprofessional Partnerships Fuse Patient and Clinical Team Safety and Well-Being

Nursing actively partners with departments across the hospital to promote the health and safety of both patients and staff.

For example, Boston Children's is strengthening its system-wide Safe Patient Handling and Mobility (SPHM) program. Leader **E. Tucker O'Day, MSPT, MS, HEM**, risk manager, Environmental Health & Safety, educated hematology/oncology staff on the use of portable floor lifts and how, when using the devices with patients who are experiencing mobility challenges, they can prevent falls. "Safe patient handling programs have an impact on patient fall prevention," says O'Day. "We want staff to understand that the SPHM program benefits not only them but their patients as well."

Another key partner is Physical Therapy, which educates nurses on body mechanics and safe transfer techniques, and provides direct physical therapy to patients to address weakness, balance deficits and sensory changes related to medications and disease processes. **Megan Geno, DPT, PT, PCS**, manager of operations, Physical Therapy, serves on the hospital's Falls Committee. The group meets monthly to review falls, monitor trends and identify areas where initiatives can make a meaningful impact. ■

Article Citation:

- <sup>1</sup> Lee, Y. L. G., Yip, W. K., Goh, B. W., Chiam, E. P. J., & Ng, H. P. C. (2013). Fall prevention among children in the presence of caregivers in a paediatric ward: a best practice implementation. *International Journal of Evidence-Based Healthcare*, 11(1), 33–38. doi: 10.1111/1744-1609.12003. Retrieved from: [www.ncbi.nlm.nih.gov/pubmed/23448328](http://www.ncbi.nlm.nih.gov/pubmed/23448328)

## What is K-Card Rounding?

Centuries ago, Japanese monks used Kamishibai cards (K-cards) to tell stories. The idea was later adapted by the auto industry as part of the Lean manufacturing process to ensure workers maintained safety standards and performed quality checks. In recent years, K-cards have made their way into health care. Research suggests that the cards are an efficient visual method to initiate conversations between unit leaders and frontline staff about bundle compliance, and an effective way to sustain best practices.<sup>2</sup>

Boston Children's uses K-cards to improve performance and quality in multiple areas, including prevention of central line-associated bloodstream infections (CLABSI) and catheter-associated urinary tract infections (CAUTI).

On the Hematology/Oncology Unit, **Ashley Renaud, MSN, RN, CNL**, professional development specialist, Nursing Quality and Professional Practice and her team conduct K-card rounding to assess compliance with fall prevention education. Real-time feedback is collected electronically and posted weekly to create a system of accountability and keep the momentum going. "K-card rounding sends a clear message that motivates staff to deliver fall prevention education," says Renaud.

Article Citation:

- <sup>2</sup> Shea, G. E., Smith, W., Knobloch, M. J., & Safdar, N. (2018). K Cards: A Visual Method to Sustain Evidence-Based Practice. *American Journal of Infection Control*, 46(6). doi: 10.1016/j.ajic.2018.04.173. Retrieved from: [www.ajicjournal.org/article/S0196-6553\(18\)30396-1/pdf](http://www.ajicjournal.org/article/S0196-6553(18)30396-1/pdf)



270+

Number of gender-affirming surgeries performed at Boston Children's Center for Gender Surgery since 2017

2,000+

Number of staff members at Boston Children's who have received Safe Zone training on LGBTQ+ identities, gender and sexuality



Maria Semnack, BSN, RN, with Nick

# Promoting an Affirming Environment for Gender Diverse Patients

## Interprofessional Education Supports Clinical Practice in Gender Surgery

Boston Children's Hospital has been a national leader in transgender care for more than a decade. The journey to promote an affirming environment began in 2007 when the hospital opened the first major program in the country to focus on treating the medical and mental health needs of the transgender population. The hospital's Gender Management Service (GeMS) provides an affirming, interdisciplinary assessment and care program for gender-diverse individuals and their families.

Since the program's inception, GeMS has evolved further thanks to greater public awareness about gender diversity, increased medical and psychological research, improved

access to care and strong support from the hospital. "Understanding one's gender identity is a very individual process, and GeMS provides a thorough and thoughtful assessment with personalized recommendations, best practices of medical care for every age group and ongoing support," says **Francie Mandel, LICSW**, director of mental health services, GeMS.

Care continued to evolve with the opening of the Center for Gender Surgery (CfGS) in 2017 — the first of its kind in the United States in a major pediatric hospital setting. CfGS has performed more than 270 gender-affirming surgeries to eligible adolescents and young adults and was designated a center of excellence in 2018. The Center closely collaborates with clinicians in GeMS, Urology and Gynecology to provide truly comprehensive services.

## Fostering an Informed and Welcoming Hospital Community

Creating an affirming environment requires the education and participation of everyone with whom the patient and family interact. As the hospital expanded its transgender services, registered nurses and interprofessional staff led the way in developing extensive education.

**Kim-Marie Hughes, RN, CNOR**, staff nurse II, Waltham Inpatient, was one of several nurses who helped to develop a curriculum to support effective transgender patient care delivery. When she scrubbed for the first chest reconstruction procedure for a patient at Boston Children's at Waltham in 2017, she had no idea what to expect. "I had so many questions and very little knowledge about this population," she says. "I set out to learn as much as I could." The more she learned, the more she realized how much she didn't know.

Hughes recognized the urgency to educate her fellow perioperative nurses. She conducted a needs assessment and developed educational sessions to address existing gaps. At each session, the staff asked more questions, and the dialogue began to open up. "I felt like we were all learning a new language and making connections to the many issues and challenges that transgender youth face," she says.

Building on the success of Hughes's sessions, **Kristi Boyer, BSN, RN, CPN**, staff nurse II, Waltham Inpatient, and **Lorraine LeFever, BSN, RN, CPN**, staff nurse II, Waltham Inpatient, adapted the content to guide nurses providing postoperative care. They used existing resources and experts to meet unit-specific educational needs. Again, the thirst for knowledge was overwhelming and in 2019, nurses selected "care of transgender patients" as a core annual competency requirement and focus of further education and skill validation.

## Expanding Cultural Competence and Sensitivity

The education at Boston Children's at Waltham is just part of the hospital's overall effort to increase cultural competence and understanding among interprofessional staff. **Elizabeth Boskey, PhD, MPH, LICSW**, social worker and research fellow, and **Maria Semnack, BSN, RN**, staff nurse I, both from CfGS, have led more than 50 educational sessions in the last two years. Their curriculum includes Transgender Care 101: Understanding Gender Identity and Gender Diverse Clients, as well as clinical and psychosocial components. "Doing this work can be scary, and some people might experience moral distress or at a minimum have many questions," Dr. Boskey says. "We want to give everyone a safe place to express uncertainties that many feel."

Semnack believes knowledge and understanding are the best remedies for fear and discrimination. She notes that staff may come

## One Nurse's Journey of Understanding



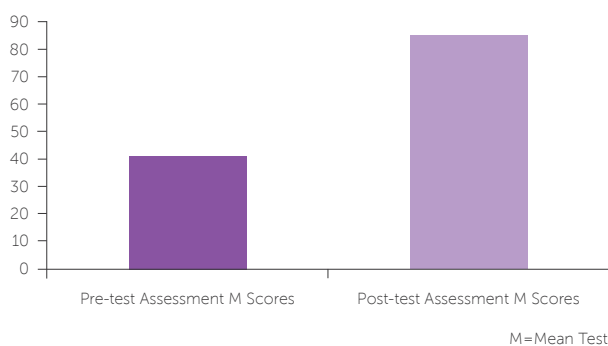
As part of Boston Children's celebration of nurses during National Nurses Week in 2018, **Kim-Marie Hughes, RN, CNOR**, staff nurse II, Waltham Inpatient, shared her powerful story of how caring for transgender patients has changed her practice. She received the

hospital's Anne Micheli Award for Outstanding Staff Nurse Exemplar. Below is an excerpt:

*"My goal is to deliver the best possible care to every patient regardless of who they are or who they appear to be. Reviewing Morgan's chart gave me a snapshot of what this patient had endured getting to this point. His inner sense of self did not align with his physical appearance and his feelings about the gender he was assigned at birth. After many years of emotional suffering and abuse, this delightful human being trusted our surgical team to finally make this right for him.*

*I am so deeply gratified to be able to make a meaningful contribution to patient outcomes in gender-affirming surgeries and procedures. I want to share what I have learned with my colleagues and peers so that no transgender patient suffers from our lack of knowledge. Caring for Morgan has changed me as a nurse, and his bravery and passion have reignited my love and passion for nursing."*

## Pre & Post Assessment Scores: Transgender Education



Before transgender education, just **41 percent** of perioperative nurses at Boston Children's at Waltham felt knowledgeable about transgender issues. Afterwards, that number jumped to **85 percent**.



into one of her sessions thinking one way, but they leave thinking a completely different way "Education takes the pressure off so they can stop worrying and focus on the patient," she says. "Our patients perceive that comfort."

**Kathleen Corrigan, MS, BSN, RN, CPN**, perioperative staff nurse II, educates nursing and interprofessional surgical team members on technical procedures and the social-cultural aspects of caring for transgender patients. The response is often emotional, though consistently positive. "When you put a face to the surgery and understand what the patient has gone through to get here, you feel you're helping to alleviate distress, which is very rewarding," she says.

Since its implementation in 2015, more than 2,000 Boston Children's team members have received Safe Zone Training, a formal curriculum to provide in-person education to any department that requests it. The program was created by

**Katharine Thomson, PhD**, attending psychologist, Department of Psychiatry, in partnership with the LGBTQ & Friends Committee (co-chaired by **Todd Katzman, MHA, CPA, CMPE**, executive director, Department of Surgery, and **James Smith**, department manager, Parking and Commuter Service) and the Rainbow Health Consortium for Gender and Sexual Diversity (co-chaired by Dr. Thomson and **Sabra Katz-Wise, PhD**, staff scientist and assistant professor in Adolescent/Young Adult Medicine). Safe Zone Training offers a basic overview of terminology and concepts related to sexual orientation and gender identity, and provides participants with a safe forum to ask questions

and examine ways to navigate patient- or colleague-related scenarios.

### Providing Equitable Care

For five years in a row, Boston Children's has received the **Healthcare Equality Index's (HEI) Leadership Status** (see sidebar).

The HEI organization reviews health care facilities' policies and practices to ensure equal access and treatment of Lesbian, Gay, Bisexual, Transgender, and Queer (LGBTQ) patients, visitors and employees. "In addition to being a valuable tool for hospitals, the HEI is used by LGBTQ patients and families to find facilities that provide equitable and inclusive care," says **Allison Scobie-Carroll, MSW, MBA, LICSW**, senior director of Social Work & Family Services and a key HEI organizational leader.

### Gender Identity in the Electronic Health Record

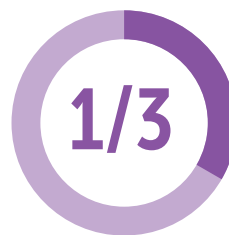
Creating a welcoming environment includes addressing patients by their affirmed gender, name and pronoun. This information may differ from their legally designated name and sex in the hospital's electronic health record (EHR). In partnership with an interprofessional team of experts, from nursing informaticists to clinicians and administrators, Scobie-Carroll is leading efforts to modify Boston Children's EHR to accurately capture each patient's affirmed name and pronoun. These changes will be implemented soon to promote consistent use during each care encounter. ■

## An Evolution of Health Equity Index (HEI) Standards at Boston Children's: 2015-2019

In 2019, Boston Children's was recognized as one of 408 Health Equity Leaders nationally.

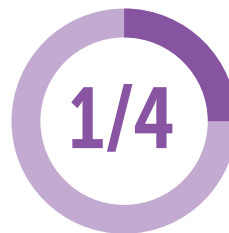
To earn HEI status, Boston Children's has:

- Revised language in all Patient and Family Rights documents (including the Visitation Policy)
- Developed a Restroom and Locker Room policy and signage that says people may use the resource consistent with their gender identity
- Developed the Gender Identity Policy and Workplace Transition
- Added language protecting orientation and gender identity to HIPAA documents and training
- Made transgender care an explicitly enumerated benefit on its summary of health benefits



One-third of the transgender population who see a health care provider report a negative experience due to their gender identity.

Source: National Center for Transgender Equality



One-quarter of the transgender population say they avoid seeking needed health care out of fear of mistreatment.

Source: National Center for Transgender Equality

# 30,100

Estimated number of CLABSI events that occur in intensive care units and wards of U.S. acute care facilities each year

Source: Centers for Disease Control and Prevention. (2015). National and State Healthcare-Associated Infections Progress Report. Retrieved from: [www.cdc.gov/HAI/pdfs/progress-report/hai-progress-report.pdf](http://www.cdc.gov/HAI/pdfs/progress-report/hai-progress-report.pdf)

# Uniting to Stop Central Line-Associated Bloodstream Infections

## Interprofessional Summit Yields New Approaches to Persistent Challenge

Central line-associated bloodstream infections (CLABSI) are among the most common preventable conditions in hospitalized children. CLABSI is associated with significant morbidity, mortality and costs. The Centers for Disease Control and Prevention report there are more than 28,000 CLABSI-related deaths annually, with a cost per case of more than \$46,000.<sup>1</sup> Preventing CLABSI is an important safety priority at children's hospitals nationwide.<sup>2</sup>

Decades-long efforts have resulted in a significant reduction in central line infections at Boston Children's Hospital. The Infection Prevention and Control team and clinicians throughout the hospital continue a relentless focus to achieve zero preventable CLABSI. Despite ongoing vigilance, both at Boston Children's and nationally, CLABSI remains a multifactorial challenge.

**“CLABSI reduction is a challenge. We implemented everything in the literature, so we renewed our commitment to find new ways to improve further.”**

***Jennifer Ormsby, BSN, RN, CPN, CIC, director, Infection Prevention and Control***

The hospital is constantly innovating. In 2017, an interprofessional workgroup created and implemented a standardized, evidence-based CLABSI policy and applied it hospital-wide. In addition, the hospital is part of the Children's Hospitals' Solutions for Patient Safety (SPS), a national collaborative of pediatric hospitals

committed to rapid dissemination to improve child health outcomes nationally. Since December 2018, Boston Children's has experienced ten consecutive months below both the mean CLABSI rate and the SPS network CLABSI rate. Concurrently, the majority of Boston Children's inpatient units have gone longer than 90 days without a CLABSI event (see Figure 1, page 52).

Even with these gains, the hospital sought new insights to eliminate CLABSI. “While we continue to apply successful quality improvements described in the literature, we are also testing new innovative CLABSI prevention interventions,” says **Jennifer Ormsby, BSN, RN, CPN, CIC**, director, Infection Prevention and Control.

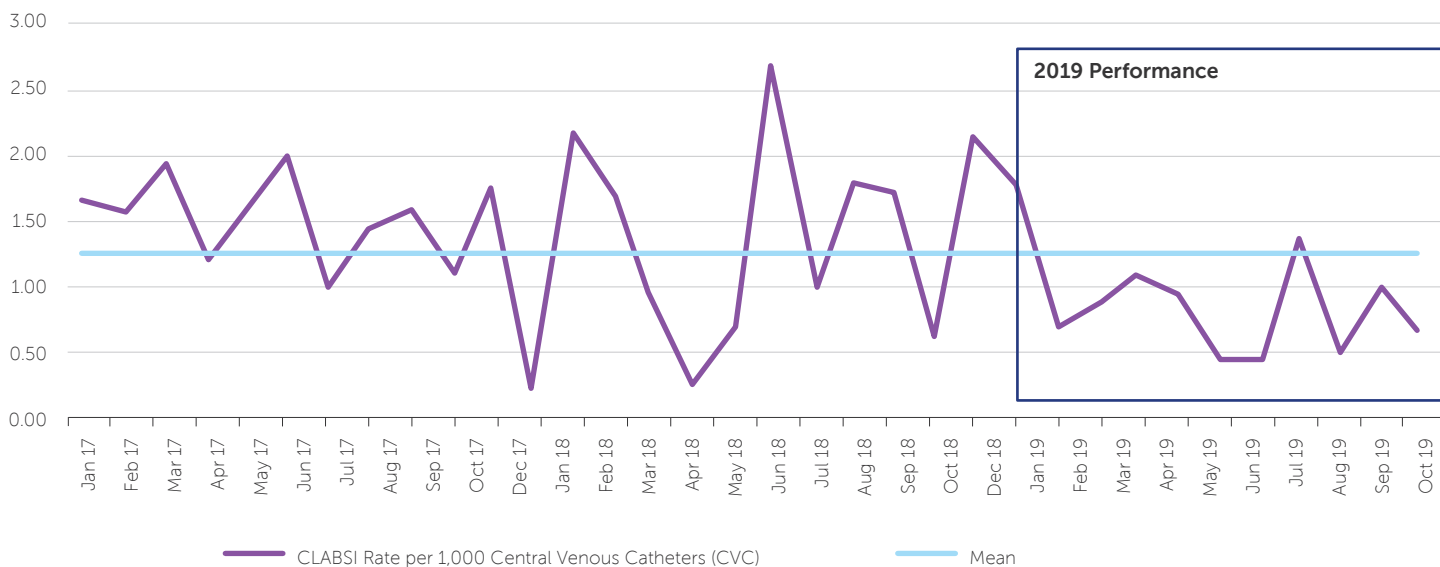
## CLABSI Summit 2.0

**Laura J. Wood, DNP, MS, RN, NEA-BC**, senior vice president of Nursing/Patient Care Operations and chief nursing officer, and **Jonathan A. Finkelstein, MD, MPH**, senior vice president and chief safety and quality officer, directed a team of nursing leaders, physicians and infection preventionists to organize a second CLABSI summit in 2019. This interprofessional event united stakeholders from across the enterprise to brainstorm new ideas. Participants included hospital leadership, infection preventionists, quality improvement specialists, registered nurses, surgeons and physicians from numerous departments.

Having multiple stakeholders in the room made it easier to understand barriers and explore new directions. For frontline nurses, the summit was an important opportunity to make their voices



### CLABSI per 1,000 Central Line Days



heard. “Historically, initiatives that sound good on paper don’t always work at the bedside, so it was great that we had the opportunity to provide recommendations because we know how realistic these concepts are,” says **Renée Lehane, BSN, RN**, staff nurse II, infection prevention nurse, Medical-Surgical Intensive Care Unit.

**Angela Sorensen, BSN, RN**, staff nurse II, infection prevention nurse, Cardiac Intensive Care Unit, used summit learnings to implement unit-based, real-time education initiatives, including:

- Creation of a continuous slide presentation that highlights infection prevention practices, central venous catheter (CVC) care and hand hygiene data
- Formation of a unit-based Infection Prevention Committee that serves as the unit’s “eyes and ears” and educates staff as needed
- Implementation of real-time infection prevention audits to identify successes and opportunities for improvement
- Staff huddles to share information
- Continued use of K-card rounding, a visual management tool to improve central line performance

### CLABSI Workstreams

Through discussion and an interprofessional approach, summit participants identified six key workstreams:

**1. Leadership engagement, rounding and huddles.** Senior leaders and clinical teams now round twice a month on selected units to raise visibility and awareness of CLABSI

and other program safety issues. Evidence supports a link between executive walk rounds and improvement in staff perceptions of safety culture.<sup>3</sup> Research demonstrates that when managers spend time engaging with staff on the frontlines of care, it builds trust, understanding and accountability.<sup>4</sup> Intentional rounding, specifically, is a positive intervention used to improve patient safety and satisfaction.<sup>5</sup>

- 2. Visual displays of data.** Units are currently implementing dashboards and whiteboards to share data related to enterprise-level key performance indicators, including CLABSI.
- 3. Standardized training.** The hospital continues to implement consistent, standardized training for line maintenance and care. Nurses in new hire orientation receive thorough infection prevention education. Weekly K-card rounding is also being conducted on each unit to reinforce CVC care best practices.
- 4. Standardized hand-off.** CLABSI bundle elements, such as daily bathing, are being incorporated into the I-PASS hand-off process to improve communication related to CLABSI prevention at transitions of care. I-PASS is a mnemonic used to standardize verbal handoffs among staff and stands for **I**llness Severity, **P**atient Summary, **A**ction List, **S**ituation Awareness and Contingency Planning, and **S**ynthesis by Receiver.
- 5. Expand Bright STAR pilot.** Boston Children’s is part of the Blood Culture Improvement Guidelines and Diagnostic Stewardship for Antibiotic Reduction in Critically Ill Children (Bright STAR), a national quality improvement collaborative

to optimize blood culture practices in the pediatric ICU in an effort to decrease false positives. Interventions to date have resulted in a 20 percent decrease in the blood culture rate, from 14.5 cultures per 100 patient days to 11.2, and an increase in the number of peripheral blood cultures, from 0.74 to 1.33 per 100 patient days (see Figure 2). The team is currently analyzing this data to determine whether it will be safe and feasible to spread and scale Bright STAR to all inpatient areas moving forward.

- 6. Innovation.** With few products available to prevent central line contamination in pediatric patients, the hospital is turning to staff to devise one. A nurse-led, device-focused pediatric innovation hackathon is under development for winter of 2020. Nurses will team up with the hospital's innovation team, patients and families, interprofessional colleagues and a broad range of local engineering, academic and industry experts. Together, they plan to consider new innovations aimed at reducing and eliminating central line contamination that occurs via patient-related soiling of the insertion site.

"Boston Children's continues to innovate to find new ways to reduce preventable CLABSI and improve the hospital experience for patients and families," says **Thomas Sandora, MD, MPH**, hospital epidemiologist and staff physician, Infectious Diseases. "Our organization-wide commitment to high-reliability concepts and evidence-based methods will help us achieve this goal." ■

#### Article Citations:

<sup>1</sup> Haddadin, Y., & Regunath, H. (2019). Central Line Associated Blood Stream Infections. Treasure Island, FL: StatPearls Publishing. doi: [www.ncbi.nlm.nih.gov/books/NBK430891/](http://www.ncbi.nlm.nih.gov/books/NBK430891/)

<sup>2</sup> Carter, J H, et al. "Risk Factors for Central Venous Catheter-Associated Bloodstream Infection in Pediatric Patients: A Cohort Study." *Infection Control & Hospital Epidemiology*, 2016, pp. 939-945, doi: [10.1017/ice.2016.83](https://doi.org/10.1017/ice.2016.83).

<sup>3</sup> Weaver, S, et al. "Promoting a Culture of Safety as a Patient Safety Strategy: A Systematic Review." *Ann Intern Med.*, 5 Mar. 2013, pp. 369-374, doi: [10.7326/0003-4819-158-5-201303051-00002](https://doi.org/10.7326/0003-4819-158-5-201303051-00002).

<sup>4</sup> Singer, S, and A Tucker. "The Evolving Literature on Safety WalkRounds: Emerging Themes and Practical Messages." *BMJ Qual Saf*, 2014, pp. 789-800.

<sup>5</sup> Ryan, L, et al. "Intentional Rounding – An Integrative Literature Review." *J Adv Nurs*, 2019, pp. 1151-1161, <https://doi.org/10.1111/jan.13897>.

## Nurses Lead First-Ever FDA-Supported Study Examining Safety of CHG Baths for Infants

Evidence suggests that daily bathing with chlorhexidine gluconate (CHG) can help reduce CLABSI rates in intensive care unit (ICU) patients older than 2 months of age. But what is the impact on infants younger than 2 months?

Boston Children's ICUs launched a pilot study to better understand the risks and benefits. **Celeste Chandonnet, MSN, RN, CCRN-K, CIC**, infection preventionist, Infection Prevention and Control, served as principal investigator. It was the first nurse-led, U.S. Food & Drug Administration (FDA)-supported study in the hospital's history.

Infants between 36 and 48 weeks postmenstrual age in the Neonatal ICU (NICU) and Cardiac ICU received twice-daily skin assessments, twice-weekly two percent CHG baths and weekly blood sampling to monitor CHG levels.

Seven of nine subjects showed CHG levels greater than 100 mg/ml, which was higher than most levels reported in the literature.

"After consultation with the FDA, and out of an abundance of safety for study subjects, we closed the study prior to achieving the goal sample size of 50 infants," Chandonnet says. "As a result, further studies are needed to provide a safety profile, including acceptable CHG levels. Our preliminary study suggests clinicians should use caution when considering the use of CHG-containing products in this vulnerable population."

Because the risks remain unknown, Boston Children's NICU will not include daily CHG bathing as part of the CLABSI bundle for infants under 2 months.

Chandonnet's study has been accepted for publication in *The American Journal of Critical Care* in 2019 or early 2020.

## CLABSI 2.0 Innovation Elements



Leadership engagement, rounding and huddles



Expand Bright STAR (blood culture practice improvement) pilot



Visual displays of data



Standardized hand-off



Innovation



Standardized training



Akmal's  
way to success

LA RÁPIDA ACTIVADA POR LA FAMILIA

FAMILY ACTIVATED RAPID RESPONSE

1. Call your nurse or doctor if you see any of the following signs or symptoms:
2. Call your nurse or doctor if you are worried about your child's health.
3. Call your nurse or doctor if you are unsure about your child's health.



Genevieve McCallum, BSN, RN, with Akmal on the Orthopedics/Surgery Unit





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# EMPOWERMENT & PROFESSIONAL DEVELOPMENT



79

Number of graduates of the Nursing Science Fellowship since its inception in 2011

73

Number of nurses enrolled in the Evidence-Based Practice Mentorship Program since its inception in 2016



Doreen White, BSN, RN, CNOR, Boston Children's at Waltham and Lexington; Janelle Nobrega, MSN, RN, CPNP, Inpatient Cardiovascular Program; Michael Greenlee, BSN, RN, Cardiac Intensive Care Unit; Melissa Heywood, BSN, RN, from Royal Children's Hospital in Melbourne, Australia; Kathryn Franklin, BSN, RN, CNOR, Cardiac Surgery

# Building a Culture of Clinical Inquiry

## Advancing the Science of Pediatric Nursing

Since the earliest days of modern nursing, nurses have connected clinical inquiry with clinical practice to provide the best patient outcomes. The advent of nursing science is attributed to Florence Nightingale, who linked poor sanitary conditions to high death rates among wounded soldiers in the Crimean War.<sup>1</sup>

Today, a culture of inquiry is considered essential to the delivery of quality nursing care. Boston Children's Hospital has developed a unique model for success that empowers registered nurses not just to ask questions but to answer them. The hospital's Nursing Science Fellowship

(NSF) and Evidence-Based Practice Mentorship Program (EBPMP) provide a robust framework to drive hospital-wide improvements that make patient care safer and more effective.

## The Nursing Science Fellowship

The NSF began in 2011, as an idea of Patricia Hickey, PhD, MBA, RN, NEA-BC, FAAN, vice president, associate chief nurse, Cardiovascular and Critical Care Operations, and Jean Connor, PhD, RN, CPNP, FAAN, director of Nursing Research, Cardiovascular and Critical Care Services. It joins frontline nurses with nurse scientists to pursue research projects. It is the only hospital-based program of its kind in the country.

What started as a simple idea to support clinical inquiry in critical care has evolved into an enterprise-wide program with six PhD-prepared nurse mentors. To date, 79 nursing science fellows from inside and outside the hospital have enrolled in the two-year program. The program is competitive within Boston Children's and has increasingly attracted interest from around the world.

Each fellow is paired with a nurse scientist mentor to complete a scholarly project that advances the science and practice of pediatric nursing. They share their progress quarterly and disseminate finished work through presentations, posters, and publications.

### Generating Knowledge to Improve Care

Fellows do more than simply investigate a question. They make the connection between clinical inquiry and clinical practice to change how nurses approach their work every day. "Fellows bring learnings back to the bedside to sustain a level of inquiry, mentor colleagues and make them aware of resources to examine the questions they raise," Dr. Hickey says. "It aligns well with unit, departmental and hospital goals to generate new knowledge and improve care."

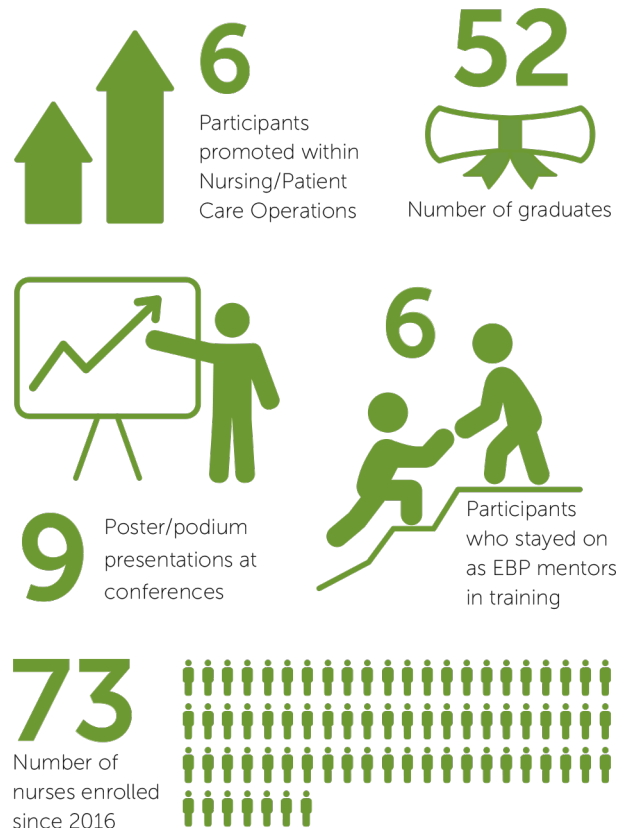
In her fellowship, **Maeve Giangregorio, MSN, RN, CPN**, clinical coordinator, Cardiovascular Inpatient (8 East), investigated the management of PICC lines in pediatric heart failure patients with continuous inotropic support. Her findings were published in the *Journal of Pediatric Nursing* and resulted in an adjustment of maintenance protocol for PICC lines throughout the hospital.<sup>2</sup> "The fellowship energized my critical thinking and enhanced my understanding of how to build an evidence-based practice," she says. The experience also influenced Giangregorio's decision to return to graduate school, which ultimately played a role in her advancement.

Work by **Patricia Pratt, MA, BSN, CPHQ, CPN**, vice president, associate chief nurse, Pediatrics/Medical Nursing & Patient Care Operations, led to a new Children's Hospital Early Warning Score (CHEWS) algorithm on all medical procedural units. CHEWS provides a standardized assessment of patients at risk for cardiac arrest. Being a fellow changed the way Pratt viewed problems and solutions and deepened her appreciation for data. It also contributed to her own promotion to her current position.

### Promoting New Nursing Knowledge

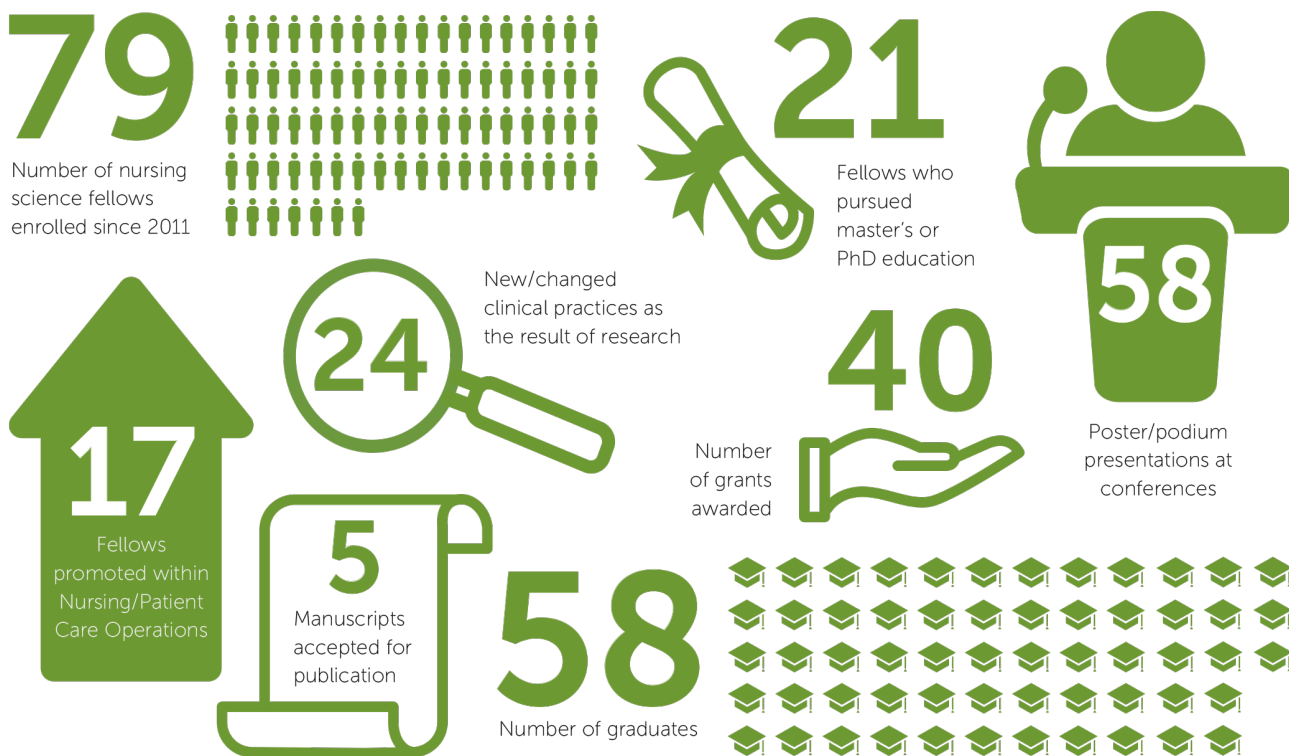
The Nurse Executive Committee for Research and Inquiry (NECRI) was established in 2012 to bring together the collective expertise, experience and influence of nurse leaders and scientists from across Boston Children's Department of Nursing/Patient Care Operations. Led by **Patricia Hickey, PhD, MBA, RN, NEA-BC, FAAN** and **Michele DeGrazia, PhD, RN, NNP-BC, FAAN**, NECRI aligns clinical inquiry with nursing clinical operations to advance nursing science and improve care and outcomes for patients and families. It serves as a model for the development of a hospital-based research and clinical inquiry program and bolsters the next generation of pediatric nursing knowledge, innovation, cost-effective practices and models of care delivery.<sup>3</sup>

### Evidence-Based Practice (EBP) Mentorship Program Outcomes





## Nursing Science Fellowship Outcomes



**Dennis Doherty, MSN, RN-BC**, professional development specialist, Clinical Education & Informatics, explored the Healthy Work Environment in the Medical-Surgical Intensive Care Unit. His outcomes spurred a staff-centric approach to measuring the health of the workplace across departments and inspired him to pursue his master's and PhD degrees.

For the first time, the group is now interprofessional with one participant from the Physical Therapy Department and plans to expand the rate of interprofessional participation further in future years.

### Evidence-Based Practice Mentorship Program

The EBPMP was formed in 2016 under the leadership of **Michele DeGrazia PhD, RN, NNP-BC, FAAN**, **Paul Ethan Schuler DNP, CPNP-AC/PC**, **Carol Atkinson MS, PPCNP-BC**, and **Fiona Paul DNP, RN, CPNP**. It is a self-directed immersion program that pairs nurses with evidence-based practice (EBP) expert mentors to address important clinical practice questions.

The program features an annual EBP lecture with national nursing/interprofessional EBP thought leaders who also meet with incoming EBP mentorship program participants to support idea generation..

Previous speakers included:

#### 2016

**Bernadette Melnyk, PhD, RN, APRN-CNP, FAANP, FNAP, FAAN**, dean and professor, vice president for Health Promotion, chief wellness officer and executive director of the Helene Fuld Health Trust National Institute for EBP at The Ohio State University College of Nursing and nationally renowned EBP author and researcher.

More than 50 nurses have graduated from the program, which welcomed its fourth cohort of 21 nurses in 2019.

**2017**

**Kathleen White, PhD, RN, NEA-BC, FAAN**, professor and clinical nurse specialist at Johns Hopkins Hospital and noted EBP author.

**2018**

**Lynn Gallagher-Ford, PhD, RN, NE-BC, DPFNAP, FAAN**, senior director, Helene Fuld Health Trust National Institute for EBP at The Ohio State University College of Nursing and widely known EBP leader.

**2019**

**Kathleen Stevens, EdD, MS, RN, ANEF, FAAN**, director of the Improvement Science Research Network and professor in the School of Nursing at the University of Texas Health Science Center, focused on the integration of improvement science and EBP.

**The Power of Critical Thinking**

Both the NSF and the EBPMP provide a committed infrastructure, processes, and resources to advance nursing science and improve care and outcomes for patients and families.

Dr. Connor notes that once nurses experience research in action and the power of critical thinking, they immediately see the value. "It empowers them with the language of inquiry and strengthens their ability to be clinically expert and practice at the highest level." ■

## Article Citations:

<sup>1</sup> Kerrigan, E. (2018, June 19). Learning from History: Florence Nightingale. Retrieved March 15, 2019, from <https://integrispa.com/blog/learning-from-history-florence-nightingale/>.

<sup>2</sup> Giangregorio, M., Mott, S., Tong, E., Handa, S., Gauvreau, K., & Connor, J. A. (2014). Management of Peripherally Inserted Central Catheters (PICC) in Pediatric Heart Failure Patients Receiving Continuous Inotropic Support. *Journal of Pediatric Nursing*, 29(4). doi: 10.1016/j.pedn.2013.12.002

<sup>3</sup> Degrazia, M., Difazio, R. L., Connor, J. A., & Hickey, P. A. (2019). Building and Sustaining a Culture of Clinical Inquiry in a Pediatric Quaternary Hospital. *The Journal of Nursing Administration*, 49(1), 28–34. doi: 10.1097/nna.0000000000000704

**Current Nursing Science Fellows**

The Class of 2019 includes a diverse group of staff nurses and advanced practice registered nurses from units and departments across the Boston Children's enterprise.

- **Kerri Fournier, BSN, RN, CPN**, research nurse, Experimental Therapeutics/Interventional Trials, Institutional Centers for Clinical and Translational Research, wants to better understand delivery practices and characteristics of pediatric/young adult gastroenterology (GI) patients receiving infliximab infusion therapy, and describe the prevalence of infliximab infusion reactions in an ambulatory infusion clinic. The number of patients with chronic GI conditions is increasing and there is no clinical standard for infliximab treatment or pretreatment nationally. Findings from Fournier's study will provide valuable information to inform best practice in children's hospitals nationwide.
- **Patrick Loughran, BS, RN, CCRN**, staff nurse III, Cardiac ICU, is studying the current state of practice of chest tube management, manipulation and discontinuation in post-operative pediatric patients. Loughran published an article in the June 2019 issue of *Critical Care Nurse*<sup>1</sup> about the lack of research on pediatric chest tube manipulation. He hopes that, after evaluating the data, he can validate if a standardized process could improve the delivery of care to patients with chest tubes.
- **Vivian Williams, MSN, BSN, CPNP**, advanced practice registered nurse II, Urology, developed and implemented one of the first nurse practitioner-led newborn circumcision clinics in 2016. Her research focuses on the impact of this novel clinic, especially around patient satisfaction, safety, quality and cost outcomes. In addition, through the support of her fellowship mentor, Williams also partnered with Boston Children's Patient & Family Education team, Marketing, Legal and Quality departments to develop a new Photographic Atlas of Healing after clamp-style circumcision, which will be marketed nationally.

## Article Citation:

<sup>1</sup>Loughran, P. (2019, June). Stripping or Milking of Chest Tubes. *Crit Care Nurse*, 39, 72–73.



# 64

Number of Healthy Work Environment (HWE) champions from across the Boston Children's enterprise who participated in HWE workshops and led year-long improvement efforts with local teams



Rebecca Coffey, PTA, Chloe St. Rose, MOT, OTR, Dennis Doherty, MSN, RN-BC, Lauren Wilson, BS, CCLS II, and Angela Franceschi, MEd, CCLS III

## Creating a Healthy Work Environment

### Hospital Validates Assessment Tool for Interprofessional Use

A healthy work environment (HWE) is essential for clinical excellence and optimal patient outcomes. Finding the good within the environment can improve everything from staff engagement and retention to safety and patient care.<sup>1</sup>

In 2009, the American Association of Critical-Care Nurses (AACN) introduced its Healthy Work Environment Assessment Tool (HWEAT) to help registered nurses create a fulfilling workplace. This electronic quantitative assessment features six evidence-based standards (see graphic). The healthiest work environments successfully integrate these standards to produce effective and sustainable outcomes for both patients and staff.

Boston Children's Hospital was an early adopter of the AACN HWEAT when it launched nationally. In 2010, cardiovascular and critical care areas began using the tool to elicit staff perceptions and identify areas for improvement.

### Expanding the Tool Hospital-Wide

The ability to quantify results was a novel step and soon the hospital sought to expand HWEAT beyond critical care. **Patricia Hickey, PhD, MBA, RN, NEA-BC, FAAN**, vice president, associate chief nurse, Cardiovascular and Critical Care Operations, and **Jean Connor, PhD, RN, CPNP, FAAN**, director of Nursing Research, Cardiovascular and Critical Care Services, led a formal research study to test HWEAT's reliability and validity across the enterprise.

Laura Wood, DNP, MS, RN, NEA-BC, senior vice president, Patient Care Operations and chief nursing officer, joined Drs. Hickey and Connor to propose HWEAT be administered to all care team members throughout the organization. Responses showed internal consistency, with every cohort rating in the same direction and seeing things in a similar way. In addition, responses aligned with those from another hospital-wide measure: the Agency for Healthcare Research and Quality's Hospital Survey on Patient Safety Culture. These findings, published in 2018 in the *American Journal of Critical Care*, showed for the first time that HWEAT was a valid tool across disciplines and departments.<sup>2</sup>

**“Patient and staff outcomes are inextricably linked. Whatever we do to improve the work environment is well aligned with improving patient care and outcomes.”**

**Patricia Hickey, PhD, MBA, RN, NEA-BC, FAAN, vice president, associate chief nurse, Cardiovascular and Critical Care Operations**

“Every member of the health care team contributes to, and is accountable for, achieving and sustaining a healthy work environment, so it's critical that we have this evidence-based organizational measure to inform and support our journey to excellence in high reliability,” says Dr. Hickey.

## Implementing Targeted Improvements

With HWEAT successfully validated for interprofessional use, Nursing/Patient Care Operations is now leading its implementation. HWE lead **Dennis**

**Doherty, MSN, RN-BC**, professional development specialist, Clinical Education & Informatics, developed and launched a curriculum in 2018 to educate and inspire 64 unit-based HWE champions. These champions shared results with staff and together identified opportunities for improvement.

**Lauren Wilson, BS, CCLS II, Megan Gallucci, BS, CCLS I, and Angela Franceschi, M.Ed, CCLS III**, HWE champions in Child Life Services, note that leading the work has been a unique opportunity for professional growth. “It's really developed our leadership skills,” says Wilson. “Conversations can sometimes be difficult, but the tool fosters a supportive venue to share opinions.” Child Life is incorporating a peer review process to give staff the opportunity to provide feedback and strengthen their attainment of the True Collaboration standard.

In the Department of Physical and Occupational Therapy, champions **Tamara Alie, PT, DPT, Rebecca Coffey, PTA, and Chloe St. Rose, MOT, OTR**, are leading discussions around the Meaningful Recognition and Appropriate Staffing standards. “One of the many foci of our department is to address Meaningful Recognition through the development of a process of self-reflection and self-identification of internal meaningful recognition,” says Alie.

## Empowering Staff and Improving Outcomes

Boston Children's reduces initiative fatigue by bringing survey findings back to staff and letting them drive improvement initiatives. Staff use their collective voice to create the workplaces they want and need, resulting in stellar employee and nurse engagement scores (see sidebar). And that, Dr. Hickey says, translates to better patient care. “Patient and staff outcomes

## American Association of Critical-Care Nurses Standards for Establishing and Sustaining Healthy Work Environments



Skilled Communication



True Collaboration



Effective Decision-Making



Appropriate Staffing



Meaningful Recognition



Authentic Leadership



## National Database of Nursing Quality Indicators (NDNQI)

October 2018

Boston Children's outperformed the NDNQI mean measures.

# 5.27

RN-to-RN Interaction

# 4.22

"In my job I am treated with dignity and respect"

# 3.04

Collegial RN-MD Relationships

# 4.11

"I have what I need in my job, so I can make a contribution that gives meaning to my life"

*National comparison data are a product of Press Ganey's National Database of Nursing Quality Indicators® (NDNQI)®*

are inextricably linked. Whatever we do to improve the work environment is well aligned with improving patient care."

### Meaningful Recognition: It's Personal

For her doctoral study, **Kierrah Leger, DNP, RN**, nurse manager, Surgical Transplant Unit, analyzed meaningful recognition measures within three surgical inpatient units. Although scores were good, she saw an opportunity for improvement. "Upon completion of a systematic review of the literature, Meaningful Recognition was noted to be the least investigated of AACN's six standards," says Dr. Leger. "I wanted to see how we could optimize recognition at the unit and work team levels."

A synthesis of qualitative data from six focus groups consisting of a study sample of 22 inpatient nurses revealed meaningful recognition means different things to different people. Based on the results, Dr. Leger implemented a combination of strategies that address this divergence. Key changes included increased leadership visibility on the units, the creation of a process for peer recognition, and the sharing of nursing practice exemplars routinely at staff meetings. In addition, Nursing/Patient Care Operations leadership has directed additional funding to scholarships that augment the hospital's tuition remission funding to further strengthen professional development opportunities for frontline care team members. Further support has also been provided for participation in national and regional meetings for staff to disseminate professional practice initiatives.

### Nursing Engagement: Outperforming the National Benchmark

As a Magnet®-designated organization, Boston Children's participates in a nationally benchmarked RN engagement survey. In 2018, 80 percent of direct care nurses and advanced practice registered nurses took part in the National Database of Nursing Quality Indicator's (NDNQI) Practice Environment Scales with Magnet Module – the highest level of participation achieved by Boston Children's nurses since this survey was launched almost two decades ago. The NDNQI survey includes several questions that are similar to HWEAT. Results outperformed the national benchmark among academic medical centers in all seven categories. ■

Article Citations:

<sup>1</sup> American Association of Critical-Care Nurses. (OAD). Retrieved July 2, 2019, from [www.aacn.org/nursing-excellence/healthy-work-environments?tab=Patient Care](http://www.aacn.org/nursing-excellence/healthy-work-environments?tab=Patient%20Care).

<sup>2</sup> Connor, J. A., Ziniel, S. I., Porter, C., Doherty, D., Moonan, M., Dwyer, P., ... Hickey, P. A. (2018, September). Interprofessional Use and Validation of the AACN Healthy Work Environment Assessment Tool. *American Journal of Critical Care*, 27(5), 363–371. doi: 10.4037/ajcc2018179

# 100%

Percent of Nursing Career Lattice Program graduates who have received their BSN degrees



Cecilia Waithe, RN, Melissa Rodriguez, BS, and Tyonne Hinson, DrPH, MSN, RN, NE-BC

## Mentorship: A Cornerstone of Nursing and Clinical Professional Development

### Nursing Career Lattice Program

Mentorship is a key component of Boston Children's Hospital's Nursing Career Lattice Program (NCLP). The NCLP was launched 10 years ago by **Eileen M. Sporing, MSN, RN, NEA-BC, FAAN**, senior vice president, patient care operations and chief nurse emerita, and **Marcie Brostoff, MS, RN, NE-BC**, vice president, and associate chief nurse, Nursing/Patient Care Operations, to expand the racial and ethnic makeup of Boston Children's nursing team and ensure staff represent the children and families they serve. The program offers educational and financial support as well as personalized mentorship to diverse hospital employees who

want to pursue nursing careers.

One-on-one mentoring helps participants navigate challenges and achieve their goal of becoming a nurse. Traditionally, the NCLP's lead mentor **Cecelia Waithe, RN**, and Boston Children's staff nurses served as mentors. However, as leaders increasingly recognized the essential value of mentoring, the model expanded to feature peer-to-peer mentorship. Today, Lattice graduates who have been serving as nurses at Boston Children's for several years are paired with current NCLP participants. They meet monthly to discuss everything from routine issues such as how to prepare for class or a job interview, to more complex topics such as



77%

Percent of Nursing Career Lattice Program graduates who continue to work at Boston Children's since the program's inception in 2010

26

Number of Nursing Career Lattice Program participants who have earned nursing degrees since 2010

balancing academic success with work-life responsibilities.

**"It's critically important that we meet individuals where they are and support them on their professional development journey."**

***Tyonne Hinson, DrPH, MSN, RN, NE-BC, director, Nursing Diversity Initiatives and Nursing Career Lattice Program, NCSDF Senior Advisor***

NCLP graduate **Phuc Ho, BSN, RN**, staff nurse I, Hematopoietic Stem Cell Transplant Unit, found the mentoring so beneficial, she is now a peer mentor herself. "Having someone check in on me was incredibly valuable," she says. "When I needed that extra motivational push, my mentor was there. I want to be sure others have that same support."

The Lattice program has come to exemplify how a workforce diversity initiative can lead to outcomes that support and sustain an inclusive culture, while embodying a fundamental commitment to excellence in nursing.

To date, 38 participants have enrolled in the program. All 26 graduates have earned their BSN degrees, with five earning combined ADN and BSN degrees. "Everyone's circumstances are different," says **Tyonne Hinson, DrPH, MSN, RN, NE-BC**, director, Nursing Diversity Initiatives and Nursing Career Lattice Program. "The benefits of sustained mentorship relationships prior to starting a new academic commitment, during the course of a rigorous academic program, and following an eventual transition to professional practice are all critical to participant success."

## Student Career Opportunity Outreach Program

Mentoring is also at the heart of Boston Children's Student Career Opportunity Outreach Program (SCOOP), a six-week summer internship for high school students interested in exploring nursing as a career. SCOOP embeds students in various clinical areas throughout the hospital, where they learn about health care delivery, observe nurses and interprofessional teams, and interact with patients. Each student is placed with a nurse mentor who provides guidance, insight and encouragement. Mentoring these young people early can impact their decision to pursue nursing or other health professions and provide a strong pipeline to strengthen future workforce development.

## Boston Children's Clinical Mentorship Platform Launch

To further nurture its nursing and interprofessional workforce, Boston Children's recently initiated an evidence-based, nurse mentoring platform. Launched in 2019 as the RN Career Path tool, the system features structured programs to help nurses grow and develop in five areas: clinical nurse, advanced practice registered nurse, nurse leader, nurse manager/director and nurse executive. "This new program will expand mentoring opportunities, help us meet the mentoring needs of nurses and other clinical disciplines at all levels, and support career growth and professional development," says **Lynne Hancock, MSN, RN, NE-BC**, Magnet® program director and project director, Patient Care Operations. The mentoring platform is being prototyped with a small group of RNs in the fall of

2019, with plans to expand to the entire nursing workforce and clinical team members throughout the organization in 2020 and beyond.

## **Nursing Cultural Sensitivity and Diversity Forum**

The Nursing Cultural Sensitivity and Diversity Forum (NCSDf) is a nurse-led affinity group that serves diverse patients, families and staff at Boston Children's Hospital.

Convened in 2009 as a venue for minority nurses to share perspectives and challenges, the NCSDf has evolved over the past decade. The forum recently developed a new charter to align its work with the hospital's enterprise goals and set priorities for the next two years (see sidebar).

"We've added more structure, re-engaged diverse staff as well as NCSDf friend and allies, and have a renewed sense of purpose," says **Lexi Yusah-Cramer, MSN, RN**, nurse manager, Orthopedics/Surgery (10 Northwest) and NCSDf chair. "As our patient population and our nursing workforce become increasingly diverse, the forum is an important venue to learn about different cultures, ways of thinking and how to make care more inclusive."

In addition to building the charter and committee structure in 2018-2019, the forum has hosted dialogues on various topics, including Care of the International Patient and a Professional Advancement and Diversity Panel. In the fall of 2019, subcommittees will begin targeted activities, such as a Diversity Book/Journal Club, Diversity Nursing Grand Rounds, Community Outreach Programming, and the launch of an online NCSDf community.

The group welcomes nurses of all races and backgrounds interested in improving care for diverse patients, supporting the advancement of diverse staff and strengthening community relationships. Another key to success is consistent support from managers and directors to raise visibility and foster participation. ■

## ***Nursing Cultural Sensitivity and Diversity Forum: Strategic Priorities 2019-20***

### **Care (Our Patients)**

- Nursing Cultural Sensitivity and Diversity Grand Rounds

### **Professional Development (Our People)**

- Professional advancement, engagement and support
- Involvement in nurse mentorship
- Partnership with an affinity resource group

### **Research/Innovation (Evidence-Based Practice)**

- Journal Club: diversity in health care
- Nursing Science Fellowship engagement and Evidence-Based Practice Mentorship Program (EBPMP)
- Social media presence

### **Community (Relationships & Outreach)**

- Nurse ambassador to support diverse recruitment
- Join with Student Career Opportunities Outreach Program (SCOOP) summer internship initiatives
- Partner with Community Opportunities Advancement at Children's Hospital program
- Advanced community outreach programming



## Meet Prior Nursing Career Lattice Program Graduates

### Phuc Ho, BSN, RN, staff nurse I, Hematopoietic Stem Cell Transplant Unit

Phuc was inspired to pursue a nursing career after giving birth to her first child. "The nurse who cared for me was incredible," she says. "I was so vulnerable, and she provided comfort, assurance and a voice as she advocated for my son and me during my delivery. I knew I wanted to provide that same level of support to others during their difficult time."

She became involved in the NCLP during her first year of nursing school. It helped her transition from her job as an administrative assistant to a clinical assistant on Boston Children's Hematopoietic Stem Cell Transplant Unit. Navigating school, work and family obligations was stressful, and she appreciated the support and guidance of an NCLP mentor. When she felt overwhelmed, the impact of a simple email asking, 'How are you doing?' gave her motivation.

Phuc believes the NCLP is important to encourage diversity in nursing and ensure nurses represent the people they care for. She now serves as a peer-to-peer mentor to a current Lattice participant, and one day hopes to return to school to become a pediatric oncology nurse practitioner or certified registered nurse anesthetist.



### Ivandro M. Cardoso, BSN, RN, staff nurse I, Radiology

The child of two nurses from Cape Verde, Ivandro always dreamed of becoming a nurse to make his parents proud. When he learned of the NCLP, he was in community college, wondering how he would pay for nursing school. The program gave him encouragement, guidance and confidence throughout his educational journey. Ivandro earned his ADN, becoming the first member of his family to graduate from college, and went back to school for his BSN. After graduation, the NCLP helped him get his first nursing job on the Boston Children's Inpatient Transplant Unit. He is currently thinking about returning to school to become a nurse practitioner.

"I was so focused on my academic goals, I used to take my daughter in her stroller to my classes," Ivandro says. "Back then, I was a full-time security officer, a part-time EMT and a single dad trying to finish college. I had too many people depending on me not to succeed. I stuck it out thanks to the help and support of my parents and numerous mentors and sponsors in the NCLP."

### Daksha Dumornay, BSN, RN, staff nurse I, Neonatal Intensive Care Unit

Growing up, Daksha was a Boston Children's Hospital patient and loved it so much she dreamed of becoming a pediatrician. But in high school, she had an epiphany. It was the nurses who shaped her dreams. "They were amazing and compassionate and made me realize that someday I wanted to provide the same exceptional care to patients and families," she says.

Daksha discovered the NCLP while working as an administrative associate at Boston Children's. Once she was accepted into nursing school, the program provided a nurse mentor who supported and encouraged her as she balanced her first nursing job in the Neonatal Intensive Care Unit (NICU) with a rigorous RN-to-BSN academic program. The NCLP also provided supplemental financial aid.

Daksha has mentored other nursing students, helping them select a nursing program and complete their college applications. One of those students recently graduated and plans to enroll next in an RN-to-BSN program. Eventually, Daksha hopes to pursue an MSN in nursing education and encourage student nurses on their academic journeys.



### Diana Morales, BSN, RN, staff nurse I, Neonatal Intensive Care Unit

Diana grew up in a Latino household and is the daughter of Nicaraguan immigrants. After earning a degree in economics and working in the banking industry, she joined Boston Children's as a business analyst. It was there she saw first-hand how essential nurses are to the healing process and felt the call to nursing.

At the time, she wasn't in a position to return to school, but the Lattice program provided mentorship and support and over a period of years she earned her BSN. Now a NICU nurse at Boston Children's, Diana sees the relief on the faces of families when they come to the unit and find out that one of their caregivers shares many of their cultural experiences, and can speak their native language.

"Because of the Lattice program, I get to do what I love and am deeply passionate about. Most importantly, I get to be a change agent to support the success of our increasingly diverse nursing workforce," she says. Today, Diana is a peer mentor for incoming Lattice participants and active participant in the NCSDP.



# DAISY Award® for Extraordinary Nurses



The Daisy Award® is conferred monthly to an outstanding nurse at Boston Children's Hospital. Recipients are nominated by patients, families and coworkers to recognize and celebrate compassionate nursing care. Narratives submitted with nominations describe the ways in which nurses and nursing practices impact patients and families. The program is made possible through the generosity of Mark and Bonnie Barnes who launched this recognition program after experiencing the remarkable impact of registered nurses in the care of their adult son.

Now in place in 2,800+ health care organizations throughout the world, Daisy Award® recognition is part of Boston Children's commitment to foster healthy work environments, nurture nurses and advance meaningful recognition. Over the past nine years, more than 100 Boston Children's nurses have received a Daisy Award® recognizing their individual contributions. Pictured here are Boston Children's Daisy Award® winners from January 2018 through September 2019.



**January 2018**  
Janet MacDonald, BSN, RN, CDN  
Staff Nurse II  
*Center for Childhood Liver Disease*



**February 2018**  
Courtney Englehardt, RN  
Staff Nurse I  
*Neurology/Neurosurgery*



**March 2018**  
Samantha Covelle, RN  
Advanced Practice Registered Nurse I  
*Bridges Young Adult Program  
(formerly Emergency Department)*



**April 2018**  
Carly Moran, RN  
Staff Nurse I  
*Dana-Farber Cancer Institute  
(formerly Boston Children's  
Hematology/Oncology)*



**May 2018**  
Maura Coveney, RN  
Staff Nurse I  
*Neurology/Neurosurgery*



**June 2018**  
Kathryn Delaney, BSN, RN, CPN  
Staff Nurse II  
*Post-Anesthesia Care Unit*



**June 2018**  
Sheila Curran-Campbell, MSN, RN, CPN  
Staff Nurse III  
*Post-Anesthesia Care Unit*



**July 2018**  
Rebecca Ward, RN  
Staff Nurse I  
*Cardiac Intensive Care Unit*



**August 2018**  
Molly Klinka, BSN, RN  
Staff Nurse I  
*General Medicine*



**September 2018**  
Tatiana Ortiz, BSN, RN  
Staff Nurse I  
*Solid Organ Transplant/Surgery*



**October 2018**  
Stephanie Oliveri, BSN, RN  
Staff Nurse I  
*Infant/Toddler Surgery*



**November 2018**  
Sarah McAlister, BSN, RN  
Nurse Practice Specialist  
*Inpatient Cardiology*



**December 2018**  
Michelle Costa, BSN, RN  
Staff Nurse I  
*Solid Organ Transplant/Surgery*





**January 2019**  
Tricia Crowley, BSN, RN  
Staff Nurse II  
Emergency Department



**February 2019**  
Melanie Lopez, BSN, RN  
Staff Nurse I  
Intermediate Care Program



**March 2019**  
Ernesto Osmena, BSN, RN  
Staff Nurse I  
Surgical Programs



**April 2019**  
Peri Schaut, BSN, RN  
Staff Nurse I  
Medical-Surgical Intensive Care Unit



**May 2019**  
Julie Quistorff, BSN, RN  
Staff Nurse I  
Children's Hospital Primary Care Center



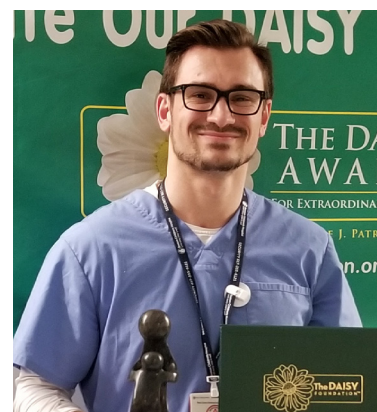
**June 2019**  
Sydney Godett, BSN, RN  
Staff Nurse I  
Inpatient Cardiology



**July 2019**  
Ashley Weinstein, BSN, RN  
Staff Nurse I  
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**August 2019**  
Lindsay Boulter, BSN, RN, CCRN  
Staff Nurse I  
Cardiac Intensive Care Unit



**September 2019**  
Michael Orlando, BSN, RN  
Staff Nurse I  
General Medicine





Chandlee Gore, PNP, with Clara at Boston Children's at Peabody







# Nursing/Patient Care Contribution to Organizational Recognition



## **U.S. News & World Report Best Children's Hospital Recognition**

Boston Children's Hospital was ranked the nation's #1 children's hospital by *U.S. News & World Report* in 2019-2020, marking the sixth straight year the medical center has appeared atop the Honor Roll of Best Children's Hospitals. Rankings are based on four key elements: reputation, patient outcomes, patient safety and care-related factors, such as nurse staffing, nursing-sensitive indicators, and breadth of services. To determine the rankings, U.S. News analyzed clinical data from nearly 200 pediatric hospitals and survey results from pediatric specialists nationwide, relying heavily on patient outcomes including mortality and infection rates as well other nursing-sensitive measures.



## **American Nurses Credentialing Center Magnet® Designation**

In 2018, Boston Children's Hospital achieved its third consecutive Magnet designation from the American Nurses Credentialing Center. Magnet Recognition® is considered the most prestigious international distinction a health care organization can receive for quality patient care, nursing excellence and innovation in professional nursing. As a Magnet hospital, Boston Children's is part of an elite group of only eight percent of health care organizations nationwide to achieve this coveted credential. Patient families rely on Magnet designation as the ultimate seal of high-quality nursing.



## **Emergency Nurses Association Lantern Award**

Boston Children's Emergency Department (ED) earned its third consecutive Lantern Award from the Emergency Nurses Association in 2018. This prestigious recognition is held by an estimated one to two percent of hospitals and accorded to emergency departments that exemplify exceptional practice and innovative performance in the core areas of leadership, practice, education, advocacy and research. The ED first earned the Lantern Award in 2012.



## **American Association of Critical-Care Nurses Beacon Award for Excellence**

The Neonatal Intensive Care Unit and Medicine Intensive Care Unit both currently hold gold Beacon Designation for Excellence from the American Association of Critical-Care Nurses. The Cardiac Intensive Care Unit holds silver Beacon Designation. The awards recognize nursing's impact on every facet of patient care, including work environment, leadership structures, evidence-based practice, improvement science, and patient, family, and staff outcomes.



# Boston Children's Hospital Nursing: 150 Years of Impact

From its earliest days, nursing at Boston Children's Hospital has embodied a culture of innovation to improve care for patients and families everywhere. Nurses have served as local and global leaders, shaping how care is delivered, leading research and discovery, and educating the next generation of caregivers.

"A History of Nursing, Highlights from 1869 to 2019" chronicles Boston Children's 150 years of nursing influence and achievement. The video features a remarkable group of nurse leaders who broke barriers, forged solutions and continue to lead the practice and science of pediatric nursing regionally, nationally, and around the world today.

▶ Watch video at [bit.ly/150nursing](https://bit.ly/150nursing)



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