

## Increasing Capacity for High Acuity Pediatric Patients

Patricia Hametz, MD, MPH<sup>1,2</sup>, Mark Shlomovich, MD<sup>1,2</sup>; Tara Buckenmyer, MHA, MSN, RN, NEA-BC<sup>1</sup>  
Sponsor: Edward Burns, MD; Executive Dean<sup>2</sup>

<sup>1</sup>The Children's Hospital at Montefiore; <sup>2</sup>Albert Einstein College of Medicine, Bronx, NY

**Background:** Surges in pediatric critical and intensive care needs are difficult to predict and variable in duration. Health systems need an adaptable model to expand capacity to maximize efficiency and safety and allow for optimal resource utilization. As a regional children's hospital, The Children's Hospital at Montefiore (CHAM) supports needs of patients and hospitals in surrounding area during periods of increased demand for high acuity care.

**Purpose/Objective:** One component of the ability to expand capacity is a Pediatric Intermediate Care Unit (PIMU). A PIMU provides intensive monitoring and care to pediatric patients too sick or complex to be cared for on general inpatient floors but who are not critically ill requiring admission to the Pediatric Intensive Care Unit (PICU). This project aims to develop a PIMU to meet the unique needs of CHAM and hospitals of the health system.

### **Methods:**

**Approach:** *Determine need:* Number of beds and census criteria for operationalization will be predicted from historical trends in average daily census and wait times for PICU beds. *Design model:* Describe target patient population and appropriate staffing. *Identify necessary resources:* equipment, training, other personnel. *Create budget plan:* Costs include staffing, personnel, equipment and supplies. Marginal revenue from increased physician billing; hospital billing of higher acuity patients, and improved throughput. *Design workflows:* Operational issues will be addressed, including notification and procedures for standing up and shutting unit; admission criteria and processes; escalation procedures; care guidelines and protocols, etc. **Evaluation:** Metrics to evaluate PIMU will include *length of stay and excess days* for patients admitted to PIMU and PICU, benchmarked using PHIS (Pediatric Health Information System); *costs versus revenues*; *patient experience* measured by Press Ganey survey responses, compared to historical data; *staff experience*, as measured by employee engagement survey administered every other year. Balancing measures will include *workload* for nurses in PICU and PIMU compared to PHIS benchmarks.

### **Outcomes/Results to Date:**

*Need and Model:* PIMU will comprise 6 monitored beds, convertible from regular med-surg beds, with core staff of 2 up-trained med-surg nurses (1:3 nurse:patient ratio); 1 pediatric hospitalist; 1 physician assistant and 1 respiratory therapist. *Eligible populations:* patients up to age 21 years who are acutely or chronically ill but not at high risk of mortality, and require intensive monitoring or treatment not able to be administered on med-surg unit because of safety concerns or need for higher level of staffing.

*Baseline data analysis:* 1. Press Ganey survey responses demonstrate an association between census and percentage of negative comments about patient experience. 2. Delays in care, as indicated by time from requesting PICU bed to admission to PICU, are positively correlated with hospital census.

### **Discussion and Summary/Implications:**

Creating a PIMU will formalize and organize care of moderate and high acuity patients during times of census surges in a children's hospital, with the goals of more efficient care, improved experience and better outcomes for patients and families. Developing a structure which allows for the unit to be operationalized only as needed may result in optimization of resource utilization and minimization of costs. A PIMU at the regional children's hospital is the first step towards building an integrated pediatric service line across the health system to better meet the complex healthcare needs of all children within the network.