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10-2016

Passport to the PICU: A Quality Improvement Project for Resident Critical Care Education

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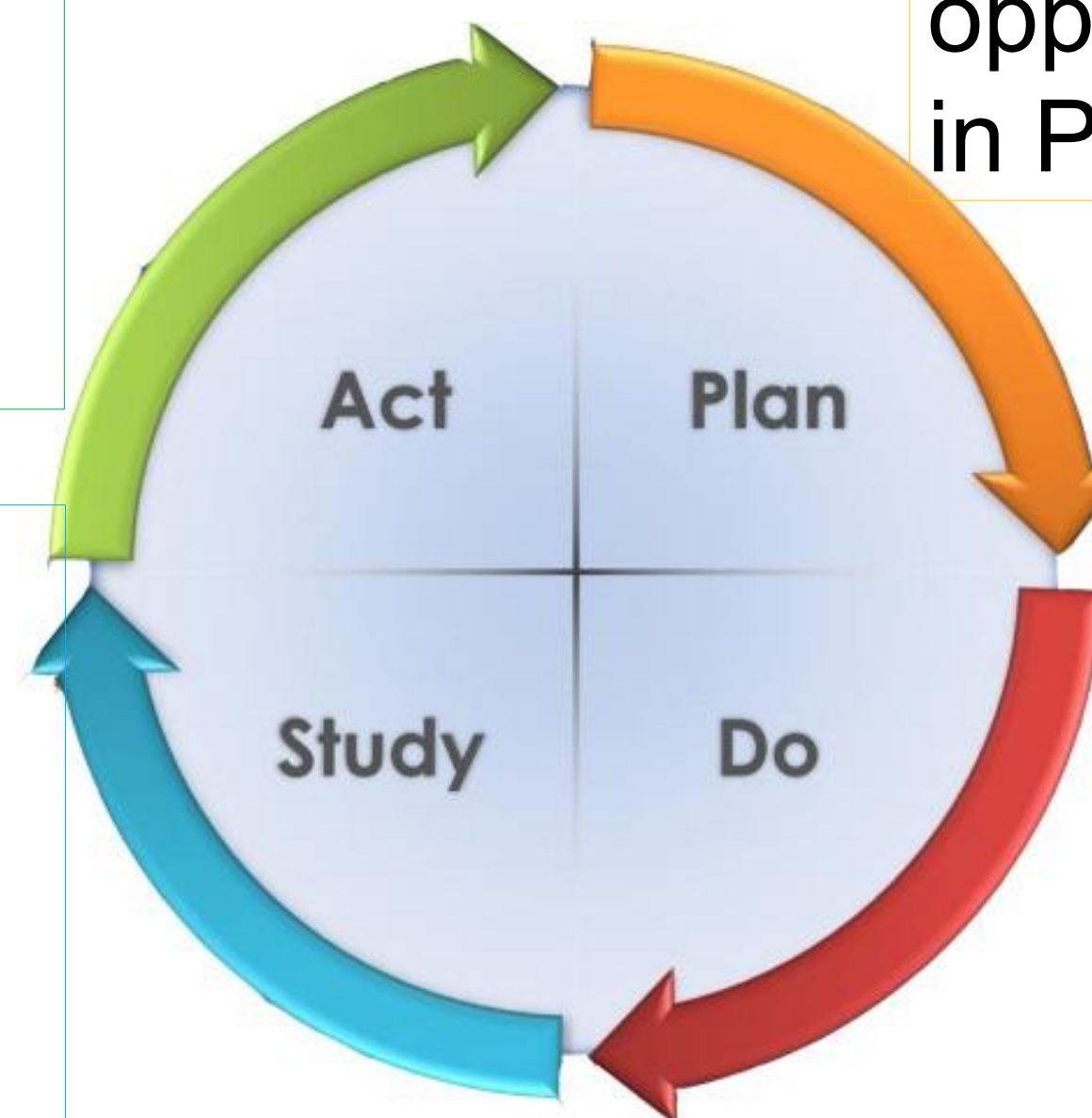
Introduction: The Pediatric Intensive Care Unit (PICU) has significant variability in patient numbers, acuity and disease processes represented throughout the year. This variability leads to differences in educational exposure for our residents. Prior attempts at standardizing education through a scheduled didactic program were limited by the time constraints of this high intensity and unpredictable environment. In 2015, the pediatric critical care rotation evaluation had the lowest scores for provision of didactic education. On a Likert scale of 1-5 (with 5 being excellent), the didactic scores were 3.41 (Jan - June 2015) and 3.79 (July - Dec. 2015.), lower than other rotations (mean S.D. 0.98, 1.14, respectively). Adult learners require diverse educational methods for optimal learning, and hands-on learning through patient care should be augmented through other educational experiences.

Specific aim: Develop a PICU resident curriculum and a) have trainees receive >90% education on 12 core critical care topics each rotation and b) improve our resident evaluation in the area for provision of didactics to a score of >4.0 by January 1, 2017.

Methods: We developed a new PICU resident curriculum to facilitate the provision of consistent resident education in a busy, often unpredictable environment. A 'PICU passport' was developed using ABP content specifications for general pediatrics and consensus from the critical care faculty, *who served as content experts*. The passport is provided to each resident at the beginning of the rotation (*). The passport includes 12 core and 12 elective topics. Opportunities for education on these topics may occur through bedside teaching, 1 on 1 discussions or small group teaching with the PICU attending or fellow. Residents can supplement the unit based teaching with video modules on 8 of the core topics through an online critical care course from the Society of Critical Care Medicine. These videos may be accessed at any time during the rotation. The residents are responsible for documenting the completion of an educational session (either on-line or *by traditional teaching*). The critical care faculty and fellows affix their initials to any topics that they personally address. The passports are returned at the completion of the rotation. Data entry is performed using Redcap. Outcome measures are: 1) percent of trainees receiving education on the 12 core topics and 2) resident evaluation scores on provision of didactics. The percent of residents who have completed and turned in their passports is our process measure. Balancing measures in this project would include negative feedback from attendings or residents about the usability of the passports.

Have identified that core topics are readily discussed but elective topics are highly variable.

Redcap form created to track and evaluate the progress of the passport implementation



Created "Passport" to track didactic/educational opportunities for residents in PICU

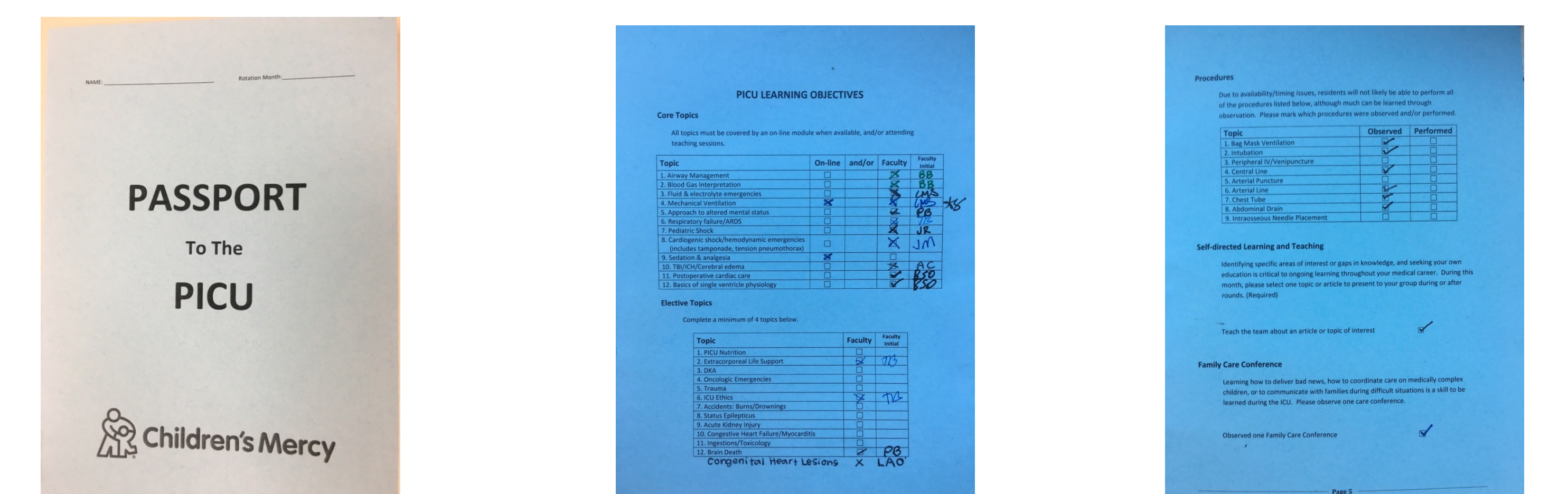
Starting July 1st, residents were given passports to utilize and faculty were educated regarding the expectations of the project

Results: Since the initiation of this program, 13/14 residents have submitted their "Passport" data. All residents submitting data (100%) have received online and/or faculty education on the core topics of: airway management, blood gas interpretation, electrolyte and fluid emergencies, mechanical ventilation, pediatric shock, and sedation and analgesia. Twelve residents (92%) received online and/or faculty education on altered mental status, respiratory failure/ARDS, cardiogenic shock, post-operative cardiac care, and single ventricle physiology. Eleven (85%) of residents received teaching on traumatic brain injury. In addition, eleven residents (85%) received faculty teaching on a minimum of four elective topics.

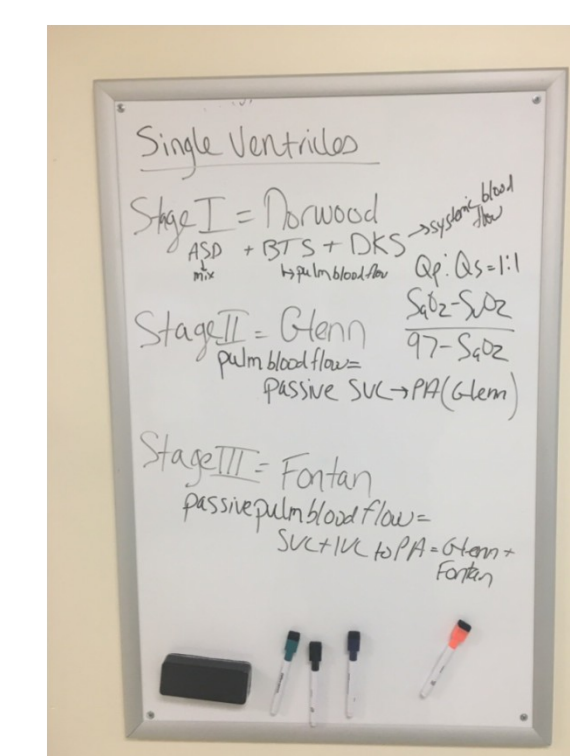
Conclusion: We created a new PICU educational program which allows for consistent teaching, using both attending face-to-face discussion and online modules. We have had high completion and submission of the "Passport," indicating the feasibility of the program in our unpredictable, high acuity environment. We have been able to achieve > 90% of residents being exposed to 11 of the 12 "core" topics. We await results from the residents through the semi-annual rotation evaluations. The next PDSA cycle will focus on increasing the frequency of the lesser taught core and elective topics. Continuing to improve the education of residents in critical care settings will ultimately contribute to improved care for our pediatric patients.

Future Directions: Additional information has also been gathered during the "Passport" project, providing back ground information to help guide future PDSA cycles. In addition to the next cycle focusing on improving teaching around lesser taught core and elective topics, we anticipate upcoming work on the following educational components:

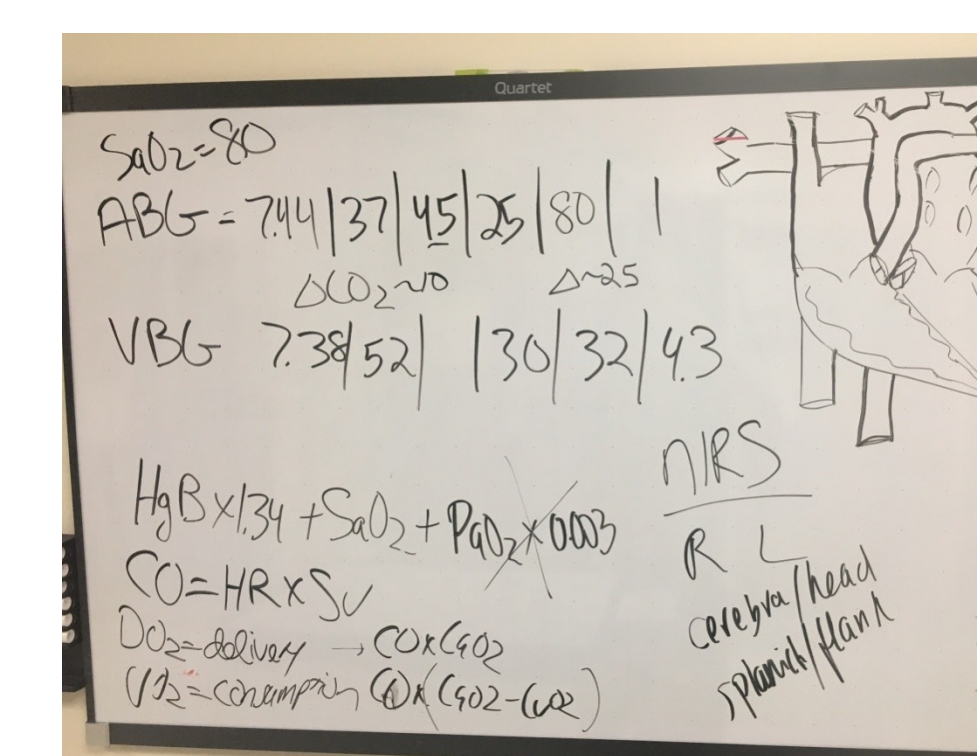
- **Residents As Teachers:** Residents document their own provision of teaching on rounds on the Passport. We wish to promote residents recognize their own knowledge gaps, learning to fill those gaps independently, and sharing that knowledge with the team.
- **Procedural Proficiency:** We wish to fully understand and ultimately improve the procedural competency of residents following their PICU rotations. Resident procedural experience is also collected in the Passport.
- **Delivering Difficult News:** The PICU rotation allows the residents to observe and learn techniques on the delivery of bad news. We strive to get residents exposure to family care conferences and end-of-life conversations with documentation in the Passport.



The "Passport to the PICU" allows for daily reminders to residents and faculty of the expected educational goals, with the ability to document completion of education.



White boards were installed throughout the PICU to help facilitate face-to-face and in-the-moment teaching of residents with the daily PICU workflow.



Acknowledgements: We would like to thank the Residency Program Directors, Chief Residents, and GME office for their support of this project.

References:
* Zurca A, et al. The PICU Passport: An Innovative Approach to Streamlining Pediatric Resident Learning in the PICU [Abstract]. Critical Care Medicine Vol. 43(12) Supplement 1, December 2015, p63.

Author Disclosures: NONE