PRIS Project Updates

**Comparative Effectiveness of Intravenous v. Oral Antibiotic Therapy for Serious Bacterial Infections**
The aims of this project are to compare the effectiveness of oral antibiotics vs. intravenous antibiotics delivered via a PICC and to compare patient and caregiver reported quality of life and adherence to therapy for oral antibiotics vs. IV antibiotics delivered via a PICC in children who require prolonged home antibiotic therapy after hospitalization for a serious bacterial infection.

Site recruitment has been the main focus of the project during this quarter and two webinars were held to offer additional information about the study and provide potential sites an opportunity to ask questions. Many PHIS hospitals are already members of PRIS and we will be working to contact those that are not, to join us on the PIVVOT study and become part of the PRIS network as well.

**Global Assessment of Pediatric Patient Safety (GAPPS): a national validation study of a comprehensive tool to identify adverse events in hospitalized children**
The objective of this project is to test the validity and reliability of the Global Assessment of Pediatric Patient Safety (GAPPS) tool in identifying adverse events in the inpatient setting. In the pilot phase of the project, the efficacy and accuracy of an existing global pediatric trigger tool was tested as a potential method to quantify adverse events. In the current phase of this project we will nationally test a trigger tool modified based on pilot study and expert panel results to validate its use across different hospital settings.

This project has two specific aims:
- To test a pediatric-specific global trigger tool, GAPPS, used to detect adverse events in all areas of care; and
- To test the GAPPS tool in a national setting allowing for comparison and utilization across a variety of hospitals with differing characteristics to allow improved national application across a large number of care centers

The GAPPS Project began recruiting in the first quarter of this year and made final selections on May 7th. The project is in full study start-up mode. Chart review will be starting this summer!

**Infrastructure Funding + Prioritization Project**
The Prioritization Project uses detailed administrative data from the PHIS database to identify pediatric hospital conditions that are prevalent, cumulatively expensive, and highly variable in terms of resource utilization.

During the 2nd quarter of 2013, the project team continued to ‘drill-down’ to find explanations for variation in selected high priority conditions, with most work focused on the appendectomy and pneumonia drilldowns.
The appendectomy drilldown team, which is led by Shawn Rangel MD MSCE and Samir Shah MD MSCE, has focused on a cohort of 37,469 children treated with low-severity appendicitis (non-perforated) at 39 PHIS hospitals. The goal of the drill-down is to characterize the magnitude of cost variation across hospitals and to identify aspects of management that are associated with the greatest relative cost in the treatment of this disease. Cost variation between hospitals, both overall and associated with specific management areas, was analyzed. Solutions were developed for all data quality issues, including a novel method for assigning room-associated costs based on three levels of acuity. This approach was devised to address inconsistencies between hospitals in how patients are assigned and charged for facility services (room cost). Key findings from the analysis include a greater than two-fold difference among hospitals in overall median treatment-related cost, as well as significantly different treatment-related cost within the cohort for each of the individual management areas examined. Operating room costs were found to be the greatest driver of cost variation overall and among most hospitals, while facility costs were a close second for both overall cost and inter-hospital variation. A manuscript is currently in preparation. In the next phase, the team will explore the relationship between practice patterns, resource use and outcomes, and will drill-down deeper into the nature of cost variation within the individual management areas (e.g. operative costs).

Karen Wilson MD MPH is leading the fourth and final drilldown for Pneumonia which was chosen in August. Dr. Wilson has spent significant time developing the study framework and organizing the study team. The full team including data analysts and statisticians began meeting in early October and is currently working on defining the study cohort and looking at preliminary data.

The DKA (Diabetic Ketoacidosis) project team, led by Joel Tieder MD MPH, received confirmation that their manuscript, “Variation in Resource Use and Readmission for Diabetic Ketoacidosis in Children’s Hospitals” has been accepted for publication in Pediatrics with electronic release on July 22. The paper reports the project’s finding that readmission for DKA within a year of hospitalization is common, accounting for one-fifth of all DKA admissions and that resource use, hospital length of stay, and readmission rates vary widely across major U.S. children’s hospitals, even after adjusting for differences in patients. The study paper concludes that further research is needed to understand these differences and to identify the most cost effective strategies for managing diabetes.

Work has continues to progress on the tonsillectomy drilldown, which is led by Sanjay Mahant MD MSc. The two major questions to be explored in this drill-down are: 1) the relationship between perioperative care processes and revisits in the first 30 days, and 2) the relationship between perioperative costs and revisits in the first 30 days.

**PHIS+: Augmenting the Pediatric Health Information System (PHIS) with Clinical Data**

This project is linking clinical data from 6 hospitals to a common administrative database – to conduct CER studies.

Over the last few months we have continued to make significant progress with laboratory and radiology data. Lab data for the initial period (2007-2011) has been processed and validated for all six hospitals. Children’s Hospital Association (CHA) is in the process of analyzing the data for the CER studies. Hospitals are now working on extracting and submitting 2012 lab data for processing and validation.

Validation of radiology data is complete at five of the six hospitals. Work has progressed on the natural language processing (NLP) for the PHIS+ Pneumonia study. The CER team is in the process of annotating a sample of thoracic radiology reports from each site. The NLP tool will learn from the expert annotations and
then automatically extract this information from clinical notes. NLP will be applied to reports meeting study criteria for appendicitis and osteomyelitis as well.

All six hospitals have submitted microbiology data. CHA staff is working with the CER teams to identify tests for inclusion in order to create the validation files. Four of the six hospitals have successfully validated non-culture micro data.

The CER project teams continue to work on portions of their projects that can be started before the clinical data are available. Project timelines have been adjusted based on delays with the data validation process. We received AHRQ approval to work into a no cost extension year.

New publications and presentations for PHIS+ include a manuscript and poster abstract submitted to the AMIA conference on PHIS+ radiology data, and a presentation on the PHIS+ work at a conference in Washington, DC. The citations are listed below:


I-PASS: IIPE-PRIS Accelerating Safer Signouts

This study is examining the effectiveness of a "resident handoff bundle" in accelerating adoption of safer communication practices in pediatric hospitals, and was developed within the PRIS network and endorsed by the Initiative for Innovation in Pediatric Education (IIPE).

The I-PASS Study continues to progress as planned across all study sites. The past quarter marked the end the 28 months of data collection for the I-PASS Study. The Data Coordinating Center (DCC), Brigham and Women’s Hospital (Boston, MA) and the Coordinating Center (CC), Boston Children’s Hospital (Boston, MA) worked very closely to support data transmission from Wave 3 sites to the DCC, coordinate the analysis of medical error data by physician raters, and conduct data cleaning and analysis. In addition to the many routine work group meetings via teleconference, the CC hosted an in-person meeting in May, coincident with the beginning of the 2013 Pediatric Academic Societies meeting.

Overseen by the Coordinating Council and Education Executive Committee, team continued dissemination efforts this quarter. The I-PASS Study Group presented four workshops, and a state-of-the-art plenary, at national meetings this spring. The team also took advantage of local opportunities and presented a poster, an
invited webinar, and a Grand Rounds Presentation. Work groups met and prepared manuscripts and resources for publication. An editorial entitled, *Closing the Gap: A Needs Assessment of Medical Students and Handoff Training* was published in the Journal of Pediatrics, Association of Medical School Pediatric Department Chairs (AMSPDC) Pages in May. Additionally, two suites of curricular materials were published as peer-reviewed resources through MedEdPORTAL this quarter: *I-PASS Handoff Curriculum: Handoff Simulation Exercises* and *I-PASS Handoff Curriculum: Campaign Toolkit*. The I-PASS Study Group continued to disseminate curricular resources and materials through the study website, [www.ipasshandoffstudy.com](http://www.ipasshandoffstudy.com) as well. To date the group has received 716 materials requests from 48 states and 19 countries outside the U.S.

**I-PASS Study PRIS Network Project Update**

**Publication and Presentation Project Details**

**April-June 2013**

**State-of-the-Art Plenary**

Srivastava R, Landrigan CP, Dayan PS, Conway PH, Dean JM, Homer CJ. “Dissemination and Implementation Science – Spreading evidence from high-quality studies across institutions to improve patient outcomes” State-of-the-Art Plenary presented at the Annual Pediatric Academic Societies Meeting, May 2013; Washington, DC.

**Workshops**


**Poster**


**Webinar**


**Grand Rounds**


**Publications**
