

## **P1 Unexpected Parental Response to Enhanced Obesity Prevention Counseling for Very Young Children**

### **BACKGROUND:**

There is little information on parental reactions to infant obesity prevention efforts in primary care practice. Current prevention strategies include fostering parent healthy habit modeling and attention to rapid or excessive weight gain during infancy. Objective: Assess parental perceptions and beliefs about obesity-related preventive care delivery from practices whose parents uniformly perceive the doctors provide advice on healthy eating for their infant/toddler versus practices where parents perceive the doctors provide advice less often.

### **METHOD**

An anonymous survey of parents/guardians of children age  $\leq 2$  years was conducted in 8 practices. The survey assessed family demographics and parental perceptions. The perceptions included agreement with pediatrician's providing advice on parent eating and physical activity, agreement with the concept that parent modeling influences child eating and exercise, and levels of concern for rapid weight gain of infants and toddlers. Those practices in which  $>95\%$  of parents recalled having received advice from their child's doctor on healthy eating for their child were considered to have enhanced obesity prevention counseling. Multivariate logistic regression (LR), including practice as a random effect to account for clustering, examined factors (parental education, language, health insurance, and practice obesity prevention counseling status) associated with parental perceptions.

### **RESULTS**

375 parents/guardians (20-75 per practice) completed the survey. 33% had an infant/toddler receiving Medicaid, 52% were college graduates, and 46% spoke only English at their home. 89% agreed that they follow healthy eating recommendations provided for their child by their child's doctor. However, 38% disagreed that the doctor should advise the parent on either eating or physical activity; less than half (39%) strongly agreed that modeling of health behaviors influences both child diet and physical activity; and 31% report not being concerned about rapid weight gain either in infants or toddlers. 3 of 8 practices (38%) were assigned "enhanced obesity prevention counseling" status based on parental responses. In LR models, parents at the practices with enhanced obesity prevention counseling were more likely to agree that they would be concerned about their infant or toddler gaining weight rapidly (odds ratio [OR] 1.8, 95% confidence interval [CI] 1.0-3.1), more likely to disagree that the doctor should advise on either eating or physical activity for parents (OR 3.9, 95% CI 2.2-6.8), and more likely to have less than strong agreement that modeling of health behaviors influences both child's diet and physical activity (OR 3.8, 95% CI 2.0-6.7).

### **CONCLUSION**

Providers who have incorporated comprehensive obesity preventive care may experience pushback from parents who are not expecting pediatricians to address parental health habits or don't perceive that their modeling of health behaviors would impact their children's habits. A careful assessment of parent perspectives on health and preventive care is warranted.

### **PRESENTERS:**

Adolfo J. Ariza, MD

Lauren B. Raine

Victoria Y. Charicki, BS

Helen J. Binns, MD, MPH

## **P2 A Practice-Based Randomized Trial of MyAsthma, an Electronic Health Record-linked Patient Portal to Facilitate Shared Decision Making in Pediatric Asthma**

### **BACKGROUND:**

Pediatric asthma affects more than 7 million children in the United States. Shared decision making promises to improve care for children with chronic conditions such as asthma but has been difficult to implement in real-world settings. Patient portals linked to electronic health records (EHRs) may improve implementation. The objective of this study was to evaluate the feasibility, acceptability, and impact of MyAsthma, a shared decision making patient portal for pediatric asthma.

### **METHOD**

We conducted a 6-month randomized, controlled trial of the MyAsthma portal at 3 primary care practices within The Children's Hospital of Philadelphia's Pediatric Research Consortium (PeRC). We enrolled a convenience sample of children aged 6-12 years with persistent asthma and their parents/legal guardians. Randomization occurred at the patient-level and was stratified by practice and level of asthma severity. Families in the intervention group were enrolled in the MyAsthma portal, while families in the control group received standard care. Intervention group families received monthly reminders to log into the portal and complete surveys. To measure outcomes, participants completed surveys at enrollment, 3 and 6 months. MyAsthma was developed using input from parents of children with asthma, clinicians, nurses, and hospital administrators with the goal of improving communication between families at home and the primary care practice. The key components include entry of parents' concerns and goals related to asthma treatment; monthly tracking of asthma symptoms, medication side effects and adherence, progress toward goals, and management of concerns; and access to educational content and documents generated in primary care offices. Based on the results of monthly check-in surveys, MyAsthma generates guidance directed at both families and the primary care practice through automated messages including visual summaries. The primary study outcomes were (1) feasibility, measured by the proportion of intervention families who completed the check-in survey each month, the number of children with poorly or uncontrolled asthma identified, and whether primary care practices responded to each family with poor or uncontrolled results; and (2) acceptability of the portal to families based on 5-point likert-scaled items. Secondary outcomes included the number of Emergency Department (ED) visits and hospitalizations over the 6 months of the study, the number of days of school that children missed due to asthma and the number of days of work that parents missed in the past month. We also assessed differences in asthma control using the validated Asthma Control Tool between the two groups using longitudinal regression models with score as the outcome and the interaction of study arm with time as the exposure. This small study was designed to describe benefits of using MyAsthma in preparation for a larger trial.

### **RESULTS**

We enrolled 60 families (30 in each arm). 47% of children had moderate or severe asthma, and the mean age was 8.3 years. 65% of parents in the intervention group completed portal surveys during  $\geq 5$  months of the study. There were no differences in demographic characteristics between frequent users and other parents, although parents of children with more severe asthma used the portal more frequently (75% were frequent users compared to 47% with mild asthma). The portal identified 17 instances of children with poorly or uncontrolled asthma and 1 instance of medication side effects, which were followed-up by primary care practices by phone or electronic messages in all but one instance. Satisfaction with the portal was high; 92% of intervention families reported that MyAsthma made it easier to care for their child's asthma, and 92% said they were satisfied with the portal. Overall, families in the intervention group reported fewer ED visits and hospitalizations over 6 months than families in the control group (3 vs. 9 and 0 vs. 2, respectively). Only 2 intervention families reported  $\geq 1$  ED visit, compared to 6 control families, and no intervention families reported any hospitalizations. In addition, children in the intervention group missed fewer days of school in the past month (16 vs. 52 days in the control group), with 7 children missing  $\geq 1$  day in the intervention group compared to 11 control children. Intervention parents missed significantly fewer days of work due to asthma (1 vs. 40 days in the control group), with 1 parent missing  $\geq 1$  day compared to 10 parents in the control group. In addition, the intervention group reported significantly better asthma control during a flare, with a reduction of 3.3 points on a 25-point scale.

### **CONCLUSION**

Use of an EHR-linked asthma portal was feasible and acceptable to families and improved clinically meaningful outcomes. These promising early results justify a large-scale trial of MyAsthma to improve asthma outcomes in a larger population.

### **PRESENTERS:**

Alexander G. Fiks, MD, MSCE  
Stephanie Mayne, MHS  
Dean Karavite, MSI  
Andrew Suh, BS  
Ryan O'Hara, BA  
LeMar Davidson, MS  
Michelle Ross, PhD

### **ADDITIONAL AUTHORS:**

Robert W. Grundmeier, MD

## **P3 Conducting the First VA Women's Health Practice-Based Research Network Study: Lessons from the Field**

### **NEEDS & OBJECTIVES**

The VA Women's Health Practice-Based Research Network (WH-PBRN) provides research infrastructure in support of multi-site women's health research through a network of partnered VHA facilities. We synthesized lessons learned from conducting the WH-PBRN's inaugural study, "Patient Priorities for Gender-Specific Care," in order to advance WH-PBRN design and to facilitate the work of future research teams seeking to implement multi-site studies involving clinic-based interviews of women Veteran VHA patients.

### **SETTING & PARTICIPANTS**

A total of 515 women Veterans across four WH-PBRN sites completed interviews between April and November 2012. This pilot study required mail and telephone recruitment, followed by an in-person interview conducted in conjunction with a scheduled clinic visit. Eligible women Veterans were identified from VHA administrative data; inclusion criteria were: being a woman Veteran over 18 years of age, having two or more VA primary care visits in 2011 at one of the four participating WH-PBRN sites, and having no active diagnosis of dementia or psychosis in 2011. Women Veterans with suicidal/behavioral flags in the medical record were excluded, as were patients exhibiting noticeable impairment at recruitment.

### **DESCRIPTION**

WH-PBRN Local Site Coordinators convened weekly with the study's Project Manager and the WH-PBRN's Program Manager to troubleshoot logistical issues and to share and record lessons learned. At the close of the study, WH-PBRN Local Site Coordinators documented 10 categories of lessons learned at their sites: Study mailings, post-mailing phone calls, recruitment/opt-out processes, obtaining appointment lists from local sites, tracking patient contact, barriers to participation, general logistics of the study, regulatory processes, relationships with clinic staff, and interactions with the WH-PBRN Coordinating Center and the Study Team. This catalogue of lessons learned was synthesized into overarching themes.

### **EVALUATION**

Barriers to the conduct of WH-PBRN-based research included cumbersome national and local processes to extract and combine patient contact data with local appointment schedules, travel logistics and time management of the Local Site Coordinator who needed to juggle interview appointments for patients available in clinic at somewhat unpredictable times, and requirements for space for research activities in a busy clinic environment. Facilitators included strong relationships between the local WH-PBRN research team and local women's health clinic leadership and staff, strong communication within the multi-site team, and an overall perception that women Veterans want to help other women.

### **DISCUSSION/REFLECTION/LESSONS LEARNED**

While complexities of conducting multi-site, clinic-based research had to be addressed, this experience demonstrated the feasibility of recruiting women Veterans in diverse sites, and identified strengths of a PBRN approach. WH-PBRN standard operating procedures can integrate these lessons for the application to future WH-PBRN studies. This will accelerate the future conduct of multi-site VA research seeking to increase engagement of women Veterans in research.

### **PRESENTERS:**

Susan M. Frayne, MD, MPH  
Alyssa Pomernacki, MPH  
Diane Carney, MA  
Rachel Kimerling, PhD  
Lori Bastian, MD, MPH  
Bevanne Bean-Mayberry, MD, MHS

### **ADDITIONAL AUTHORS:**

Jill Blakeney, RN; Jill.Blakeney@va.gov Holly Erschens, BA; Holly.Erschens@va.gov Karen Goldstein, MD, MPH; Karen.Goldstein@va.gov Brittany Martin, MA, MLitt: Brittany.Martin2@va.gov Anne Sadler, PhD, RN: Anne.Sadler@va.gov Elizabeth M. Yano, PhD, MSPH; Elizabeth.Yano@va.gov Julia Yosef, MS, RN; Julia.Yosef@va.gov Susan M. Frayne, MD, MPH; Susan.Frayne@va.gov

## **P4 Disparities in Patient-Reported Barriers to Attending Diabetes Group Visits**

### **BACKGROUND:**

Diabetes Group Visits have been found to improve health-related quality of life and key diabetes physiological parameters, yet many patients are not accessing this service when available. This exploratory study aims to delineate the barriers to attending Diabetes Group Visits for Hispanic and non-Hispanic patients. According to national surveys, Hispanic adults are 1.7 times more likely to be diagnosed with diabetes and 50% more likely to die from the disease than non-Hispanic adults. In addition, it is estimated that the Hispanic population in the United States will triple by 2050. Understanding the barriers to Diabetes Group Visits in Hispanic patients may optimize chronic disease management support and decrease the risk of diabetes related complications.

### **METHOD**

Eligible study participants included adult patients with a diagnosis of type 2 diabetes from Bethlehem Family Medicine, a hospital owned, suburban family medicine practice in Eastern Pennsylvania. A cohort of 50 patients received the initial pilot survey. Following revisions of the initial survey and accounting for mailing exclusions, 187 patients were invited to participate, and 48 patients returned completed surveys. Of those 48, 14 (29.2%) self identified as Hispanic.

### **RESULTS**

Hispanic patients named system barriers to Diabetes Group Visits more frequently than non-Hispanic patients, including time, copay, transportation, and work and/or other responsibilities, with a difference of 64.3% as compared to 47%. Hispanic patients were 2 1/2 times more likely to report copay as a barrier than non-Hispanic patients. 42.9% of Hispanic patients named work and/or other responsibilities a barrier as compared to 32.3% of non-Hispanic patients. Hispanic patients were less likely than non-Hispanic patients to cite individual barriers to Group Visit participation, such as prefer to not talk about health in a group setting, diabetes under control, and do not need additional disease management support, with a difference of 57.1% versus 61.8%.

### **CONCLUSION**

Hispanic patients were more likely than non-Hispanic patients to report system barriers to attending Diabetes Group Visits. Diabetes Group Visit attendance has been correlated to improved diabetes outcomes, including quality of life and diabetes biomarkers, including hemoglobin A1c and LDL. Addressing this disparity in a population with high rates of diabetes and related complications will inform future study to increase accessibility to Diabetes Group Visits.

### **PRESENTERS:**

Beth Careyva, MD

Melanie Johnson, MPA

Kyle Shaak, BS

Brian Stello, MD

## **P5 Qualitative Evaluation of Practice Facilitation in Primary Care Practices: Identifying Barriers and Facilitators to Successful Practice Change**

### **BACKGROUND:**

Practice facilitation has been demonstrated to be effective for assisting primary care practices in implementing changes to workflows, providing guideline-concordant care, and implementing various health information technologies (HIT). However, although much has been written to demonstrate that practice facilitation works, less is known about why or how it works. Western New York was selected as one of 17 Beacon Communities nationwide by the Office of the National Coordinator for Health Information Technology to demonstrate how HIT could advance patient-centered care, while achieving the three-part aim of better health, better care, at lower cost. The Western New York Beacon community used practice facilitators to help primary care practices improve clinical outcomes and patient safety through the use of HIT focusing on diabetes care management. The goal of this study was to understand the process of practice facilitation and facilitators' perspectives on barriers and enablers to practice change.

### **METHOD**

Semi-structured qualitative interviews were conducted with practice facilitators responsible for helping practices implement the Beacon project changes in their offices (n=14). Interviews were audio-taped and transcribed for analysis. Transcripts were analyzed using an immersion-crystallization approach to identify predominant themes.

### **RESULTS**

Facilitators reported being involved in several types of activities simultaneously, including data management, project management, education and support in the context of busy primary care practices that were working on multiple projects and adjusting to ongoing changes in healthcare. Facilitators identified seven key enablers to practice change: presenting data to practices, positive facilitator-practice relationships, practice buy-in, technology, effective project management strategies, collaboration, and outside support for practice transformation. They also identified critical barriers that had significant impacts on the success of practice change. The barriers included competing demands, data and technological problems, poor relationships, limited direct access to providers and subsequent limited provider buy-in. Presentation of data and positive relationships were discussed as ways to enhance buy-in and thereby enhance successful adoption of new practices.

### **CONCLUSION**

Interviews with practice facilitators identified diverse barriers and enablers to successful practice change that can be addressed in future interventions and practice facilitation programs. The study was small, was limited to one geographic area, and focused on a specific project (use of HIT for diabetes care), potentially limiting its generalizability. The findings suggest that developing good relationships—specifically, by identifying existing practice hierarchies, demonstrating oneself as a resource of value to practices, and developing trust with practice staff, are key to successful practice facilitation. Good relationships and communication can help overcome barriers and make enablers more effective. Strategies to enhance relationship-building between practice facilitators and practice staff need to be identified and implemented as the basis of facilitation projects.

### **PRESENTERS:**

Bonnie M. Vest, PhD  
Charlotte Cipparone, BA  
Ana-Monica Racila, BA  
Kaitlyn Edbauer  
Linda S. Kahn, PhD  
Arvela R. Heider, PhD

### **ADDITIONAL AUTHORS:**

Nancy Maloney, MBA Angela Wisniewski, PharmD Chester H. Fox, MD Ranjit Singh, MD MBA

### **P6 A needs assessment of drug disposal practices in Indiana: a study from the Medication Safety Research Network of Indiana (Rx-SafeNet)**

#### **BACKGROUND:**

An estimated 40% of prescription drugs dispensed in the US are never used. Unused and expired medications have the potential to cause environmental contamination and contribute to unintentional poisonings, illegal drug diversion, and substance misuse/abuse. While some steps are being taken at the federal and state level to promote “drug take-backs,” these programs occur on a limited basis and a continuing focus on proper drug disposal is warranted. To this end, we are conducting a needs assessment of drug disposal practices of patients visiting Rx-SafeNet member pharmacies.

#### **METHOD**

We developed a survey to query pharmacy patients regarding their drug disposal behaviors by deriving questions from the literature as well as drafting a number of original questions. This was a weighted convenience sample. In order to achieve 80% power to detect a difference of 10%, a sample of 200 patients was used. To determine the number of surveys that would be distributed at each pharmacy, the population of all cities in which the pharmacies were located was calculated using the 2012 estimated Census. The sample size was then multiplied by the fraction of the population of the respective city divided by the population of all cities participating in the study. Descriptive statistics were calculated.

#### **RESULTS**

To date, a total of 107 surveys of the target of 200 surveys have been collected. Ten pharmacies have participated primarily from areas outside of Indianapolis; and patients from an additional 3 pharmacies located in Indianapolis will be included in the final sample. Characteristics of the population are 77.4% female, 83.2% white, and a mean age of 50.4 + 15.4 years. The majority of female respondents were 18-39 years of age while the majority of male respondents were 60 years of age and older. Nearly 89% of the respondents reported that they had unused or expired medication in their home. The average number of prescription medications patients reported taking in the past week was 4.9 + 5.9. Approximately 30% of the sample had a prescription for a controlled substance. Common behaviors for handling unused or expired medication was storing it (59.6%), throwing it in the trash (42.6%), and/or flushing it down the toilet (21.3%). Just over 35% of respondents reported they had been given information concerning where they could drop off their unused or expired medications in their community. In terms of how pharmacies could make it easier to dispose of medications, 43% of respondents endorsed putting a secure bin in the lobby of the pharmacy.

#### **CONCLUSION**

Our preliminary findings reflect that current methods of disposal are not readily known to patients and prescription medications are being disposed of incorrectly. Additional mechanisms for disposing of unused and expired medication may be needed, as well as educating patients about these mechanisms.

#### **PRESENTERS:**

Mary Ann Kozak, DrPH  
Johnna Melton, RPh  
Stephanie Kleyman, PharmD  
Margie Snyder, PharmD, MPH

## **P7 Identifying Performance Behaviors and Expectations of Practice-based Research Network Clinician Members**

### **BACKGROUND:**

Practice-based research networks (PBRNs) are opportunities for health care professionals, including pharmacists, to participate in knowledge creation focused on improving health care delivery to, and outcomes in, real world patients. PBRNs are diverse and complex organizations dependent upon committed and productive clinician members participating in all research stages, from conceptualization to dissemination. Currently, no tools exist that can help PBRN directors evaluate the performance of their members, which is critical for developing productive practice-based research partners. The objective of this study was to identify expected and experienced PBRN clinician member performance behaviors.

### **METHOD**

As part of a larger study on leadership and performance in PBRNs, thirty-two semi-structured interviews were conducted with 16 PBRN directors and 16 non-director participants (e.g. clinician members) selected using a maximum variation strategy. Interview questions addressed performance expectations as well as positive and negative critical incidents experienced with clinician members while completing PBRN projects. Interview questions were piloted with experienced PBRN directors and participants from 2 PBRNs. After transcription, interview data were randomized. Two researchers used a systematic behavioral item coding process that evaluated both content validity and reliability of their analysis. Disagreements were resolved and performance domains were identified through a consensus-forming process involving both researchers.

### **RESULTS**

PBRN clinician member performance was discussed in 30 of 32 interviews, which averaged 26 minutes. Twenty-two behavioral item codes were generated. Content validity and reliability of item generation were statistically demonstrated. A consensus process was used to identify four performance domains: commitment, leadership, awareness, and communication, within the data that were face validated by two experienced PBRN directors.

### **CONCLUSION**

Evaluation of clinician member performance within a PBRN should focus commitment, leadership, awareness, and communication. Future research should evaluate factors contributing to increased performance which would be valuable to PBRN directors interested in developing clinician practice research partners.

### **PRESENTERS:**

Brandon J. Patterson, PharmD, PhD  
Barcey T. Levy, MD, PhD  
Barry L. Carter, PharmD  
Shanrae'l M. Stoner  
William R. Doucette, PhD  
Julie M. Urmie, PhD

### **ADDITIONAL AUTHORS:**

Mary C. Schroeder, PhD [mary-schroeder@uiowa.edu](mailto:mary-schroeder@uiowa.edu)

## **P8 Characterization of Primary Care Clinicians' Use of Genomic and Pharmacogenomic Testing.**

### **BACKGROUND:**

Since the completion of the Human Genome Project in 2003, research in genomics and pharmacogenomics has resulted in the development of testing that has redefined the screening, prevention, and treatment of disease. The National Human Genome Research Institute of the NIH has adopted the phrase "personalized medicine" to describe the use of genomic information to direct individualized care. Only FDA intervention has prevented commercial companies from marketing low-cost, at home genomic testing direct to patients. This diffusion of genomics often makes its way to the primary care clinician, who frequently serves as a resource to patients navigating the healthcare system. Relatively little has been studied about the clinical activity and attitudes of primary care clinicians when engaged in genomic-related healthcare decisions.

### **METHOD**

In 2012, primary care researchers at Thomas Jefferson University, Christian Care Health System, and Lehigh Valley Health System authored a survey to characterize the use of genomics and genetic counseling among primary care clinicians, their attitudes toward genomics and genetic counseling, and case-based decision-making. Notification of the survey was mailed to 834 Family Medicine and General Internal Medicine clinicians across the three healthcare systems in the Spring of 2013. Two weeks after notification, surveys were mailed to the clinicians, along with stamped return envelope and a link that allowed electronic completion. Results were collected by mail and digitally for approximately 12 weeks. The survey was conducted with the approval of IRB at each site. Clinicians were compensated with a \$5 gift card for completing the survey. The study was funded by the Dean's Office at Thomas Jefferson University. Multivariate analysis was conducted to assess the confidence of those ordering genomic testing or counseling to discuss the results with patients or to have sufficient time and resources for patients when compare to respondents who have not ordered genomic testing.

### **RESULTS**

A total of 316 responses (response rate, 37.89%) were received. Nineteen percent of respondents had ordered genetic testing for prenatal screening, cancer screening, microarray testing, pharmacogenomics testing, or other disease testing within 6 months of the survey. Thirty three percent had consulted a genetic counselor on behalf of a patient for the same testing in that same timeframe. Clinicians who ordered genetic testing or who consulted a genetic counselor tended to report higher level confidence in their ability to discuss test results than those who did not order testing. Similarly, respondents who consulted a genetic counselor were more confident in their available resources than those who did not refer a patient for genetic counseling. The plurality of respondents who ordered testing or counseling tended to classify their responses as "Somewhat Confident."

### **CONCLUSION**

Ordering genomic testing or counseling was not uncommon among physicians in our sampling frame. Those who ordered testing or counseling were more confident in discussing test results and in their local genomic resources than peers who did not engage in testing/counseling. The trend for more confidence does not imply those who engage in testing/counseling were more capable than their peers, and the predominance of respondents who ordered testing/counseling being only "Somewhat Confident" suggest the limitations facing primary care in incorporating genomics. This survey supports other work that calls for evidence-based decision support, ideally integrated in HIT, and integration of robust genetic counseling services for primary care.

### **PRESENTERS:**

Brian Stello, MD  
Geoffrey Mills, MD, PhD  
Melanie B. Johnson, MPA  
Christopher V. Chambers, MD  
Heather Bittner Fagan, MD, MPH  
Michael P. Rosenthal, MD  
Kyle Shaak, BS

### **P9 Expanding the VA Women's Health Practice Based Research Network: Increasing Capacity for Equitable Representation in Research**

#### **BACKGROUND:**

The number of women Veterans (WV) using Veterans Affairs (VA) care has doubled over the past decade. Despite growth, there are a limited number of WV at a single VA facility, making it challenging to recruit enough women to ensure their representation in research. To expand women's health (WH) research, in June 2010 VA Health Services Research and Development (HSR&D) funded the Women's Health Research Network, which includes a Practice Based Research Network (WH-PBRN). WH-PBRN infrastructure facilitates multi-site WH research through a national network of partnered VA facilities, and fosters bi-directional partnership of clinicians and researchers together striving to improve the health and health care of WV. Initial WH-PBRN development was informed by pilot studies conducted at four inaugural sites. With the intent to grow into a more diverse network, a call for WH-PBRN Site applications went out in October 2011; the PBRN expanded to 37 sites in January 2012. As a WH-PBRN program evaluation activity, we examined representativeness of WH-PBRN sites (relative to VA sites nationally) before and after expansion.

#### **METHOD**

WH-PBRN Site applications included questions about facility characteristics, including items indicating level of local research support, such as presence of an affiliated HSR&D center at the facility. We coupled that data with aggregated, site-level national VA administrative data from Fiscal Year 2012, describing characteristics of WV patients using each site.

#### **RESULTS**

From Pre- to Post-Expansion, the network grew from 4 sites, representing 14,583 WV outpatients, to 37 sites, representing nearly 8 times as many WV (110,061 WV out of 346,799 nationally). Expansion successfully increased representation of diverse populations. For example, across sites, number of WV of childbearing age (younger than 45 years) increased from 6,008 Pre to 47,897 Post, and number with rural residence increased from 3,800 Pre to 24,073 Post. Member Sites together are fairly representative of VHA as a whole; for example, 44% of WV at the 37 PBRN sites have age <45 (versus 42% VA-wide), 22% (versus 28%) have a rural residence, 90% (versus 90%) used primary care, and 41% (versus 38%) used mental health services. The main difference is that 62% have an HSR&D Research Center (versus 18% VA-wide). Number of VA Integrated Service Networks represented increased from 4 Pre to 17 Post, increasing geographic heterogeneity.

#### **CONCLUSION**

WH-PBRN represents a large and geographically diverse nation-wide network of 37 VA sites. Expansion increased the number and diversity of WV represented in the network. Across facilities, most women use primary care services, suggesting VHA primary care settings are an excellent venue for recruitment. Similarly, a large proportion receives mental health care: this is important since women's mental health care remains a major focus of VHA research. The expanded WH-PBRN provides greater opportunity to increase equitable representation of WV in VA research, and to conduct health services research that examines diverse health care delivery systems.

#### **PRESENTERS:**

Diane V. Carney MA  
Susan Frayne, MD, MPH  
Elizabeth M. Yano PhD, MSPH  
Ruth Klap PhD  
Lori Bastian MD, MPH  
Bevanne Bean-Mayberry MD, MHS

#### **ADDITIONAL AUTHORS:**

Anne Sadler PhD, RN Alyssa Pomernacki MPH Ciaran Phibbs PhD Fay Saechao MPH Vidhya Balasubramanian MS Yasmin Romodan MPH

## **P10 LAUNCHING A FAMILY MEDICINE RESEARCH PROGRAM: THE LAVAL UNIVERSITY EXPERIENCE**

### **BACKGROUND:**

In Canada, there is increased interest and investment in community based primary healthcare (CBPHC) research. Family Medicine Forum 2014 constitutes a good opportunity to raise the profile of CBPHC research in family medicine residency programs. Using the FMF 2014 as a springboard, our overarching goal is to increase long-term CBPHC research capacity in family practice teaching units (FPTUs) at Laval University. Objective: To describe a set of activities initiated by the Department of Family Medicine and Emergency Medicine (DFMEM) to achieve this goal.

### **METHOD**

Design: Longitudinal design using mixed methods. Target Population: Patients, family physicians, residents and allied health professionals in all 12 FPTUs at Laval University. Intervention: Inspired by the Logic Model that aligns needs of the target population with a set of specific activities to achieve desired outcomes, we first established governance of the initiative by hiring two family physicians involved in research and scholarship in FPTUs to provide support for FPTU members who wish to present at FMF 2014. These faculty members were in turn supported by a research coordinator and a senior researcher. We then launched a publicity campaign entitled On présente et on publie (present and publish) using social media, electronic communication and local opinion leaders. We provided incentives such as an internal competition for the best abstracts submitted by FPTU members. We also identified barriers and facilitators to presenting research projects at FMF 2014, using focus groups in each FPTU and individual interviews with local opinion leaders.

### **RESULTS**

Main Outcomes: Barriers and facilitators to presenting research projects at FMF 2014 as perceived by FPTU members, attendance at FMF 2014 by Laval University members, and number of abstracts submitted. Results: Preliminary results indicate that barriers currently perceived by residents and their supervisors to presenting their research projects at FMF 2014 include: 1- the belief that presenting research projects is not necessary for residents and their supervisors, 2- the lack of support and training in primary care research, and 3- time constraints.

### **CONCLUSION**

A set of activities initiated by the DFMEM has the potential to increase long-term CBPHC research capacity in FPTUs at Laval University.

### **PRESENTERS:**

Ghislaine Tré  
Guy Béland  
Richard Fleet  
France Légaré  
Ghislaine Tré  
Pelletier Mathieu  
Rhéaume Caroline

### **ADDITIONAL AUTHORS:**

Amélie Lessard, Isabelle Samson,

## **P11 What Making PROMISES Can Produce: A Randomized Controlled Trial of a Patient Safety Quality Improvement Collaborative**

### **BACKGROUND:**

Policymakers face imperatives to minimize patient harm and safety risks, increase compensation for patients harmed by malpractice, learn from errors, and hold down costs. The AHRQ-funded PROMISES (Proactive Reduction of Outpatient Malpractice: Improving Safety, Efficiency and Satisfaction) project investigated how reforming primary care practices in Massachusetts could better achieve these goals. In this paper, we examine the impact of PROMISES on staff and patient perceptions regarding ambulatory safety processes, culture and malpractice risk.

### **METHOD**

A randomized trial of 25 adult ambulatory practices (16 intervention, 9 controls), employing one to 10 physicians participating in a safety-related improvement collaborative, PROMISES focused on three high-risk processes: lab-test result tracking, referral follow-up, medication management, and culture and communication issues. The 15-month intervention included quarterly face-to-face learning sessions, monthly webinars, and coaching from improvement advisors. We administered pre- and post-intervention surveys, covering 11 safety domains. A 63-item survey measured staff perceptions about the quality of safety-related processes, and a complementary 34-item survey assessed patients' attitudes toward services received. Improvement advisors reported post-hoc on their perceptions of each practice's implementation effort. We compared differences in mean and percent negative perceptions by safety domain between intervention and control practices and across practices expending high, medium, or low implementation effort using univariate and bivariate regression models.

### **RESULTS**

Across 25 practices, 292 and 287 (61%/60%) staff and 1767 and 1521 (48/42%) patients responded to the pre- and post-intervention surveys, respectively. Following the intervention, 10% of staff and 8% of patients' responses were negative on average overall; mean of 2.1 and 1.5, respectively, on a scale of 1-to-5 (lower is better). According to staff, the overall percentage of negative responses in intervention practices declined by 1.8 compared to control sites, a 17% relative improvement. Practices deemed more likely to succeed also improved relative to those that expended less effort, especially in the three high-risk domains targeted by PROMISES, with 8.1 percentage points lower negative response, an 89% relative improvement. According to patients, all practices improved following the intervention period. Among intervention practices, those considered more likely to succeed improved relative to those considered less likely, with 1.61 lower percent negative response (20% relative improvement); however, intervention practices did not outperform controls. However, few comparisons were significant.

### **CONCLUSION**

Two novel instruments with 11 domains performed well with consistent and reproducible results. Overall, selected patient safety domains remain in need of further improvement according to perceptions of staff and patients following the PROMISES demonstration. For the three high-risk domains, staff survey results suggest improvement following implementation relative to baseline measures and control practices. Patient surveys did not detect improvement in the intervention practices relative to controls. However, both staff and patients observed meaningful improvement among intervention practices that improvement advisors felt engaged and accomplished more through the PROMISES program. Documenting more significant change may require more time (both time for practices to meaningfully engage in transformation and time for intervention to affect perceptions) and resources than our 15-month project allowed.

### **PRESENTERS:**

Harry Reyes Nieva  
Judy Ling  
Nicholas Leydon, MPH  
Joel Weissman, PhD  
Donald Goldmann, MD  
Catherine Yoon, MPH

### **ADDITIONAL AUTHORS:**

E. John Orav, PhD; David W. Bates, MD, MSc, Paula Griswold, MPH; Marykate O'Malley, MSc; Madeleine Biondolillo, MD; Gordon Schiff, MD; Sara Singer, MBA, PhD

## **P12 Lessons Learned during Year 1 of a State-Wide PBRN Collaboration on Dissemination of a Shared Decision Making Toolkit**

### **BACKGROUND:**

The existing network of primary care practices across North Carolina provides an ideal venue to examine the effectiveness of methods of dissemination. Despite advancing medical knowledge and education, significant gaps remain in rapidly translating new evidence into everyday practice. For this study, we are leveraging a partnership between the Medicaid network (Community Care Of North Carolina) and the North Carolina Network Consortium of PBRNs (NCNC) to identify best practices for dissemination of an evidence-based shared decision making toolkit for asthma management. This toolkit was previously tested across a regional network of practices within one PBRN with improved outcomes. This study tests dissemination on a larger scale by randomizing 30 practices across NCNC to one of three arms: (1) No dissemination; (2) Traditional Dissemination: one didactic session; (3) facilitated participatory dissemination. Here, exploration of lessons learned will add to knowledge of PBRN partnerships.

### **METHOD**

Lessons learned were solicited from each of the four participating NCNC PBRNs and assembled into themes.

### **RESULTS**

Across all themes of lessons learned, the critical lesson was the importance of a flexible approach that balanced the need to tailor methods and strategies to individual PBRNs and practices while maintaining project fidelity. 1) Grants and Protocols • During grant writing develop standardized budgets, ways of recruiting and incentivizing practices and project roles. • Post award develop standard documentation such as Manual of Procedures (MOP) that incorporates options to provide cross PBRN flexibility. 2) Subcontracts and IRB • Start contracts immediately. The IRB takes longer at some sites and may not be streamlined. Understand the unique IRB implications at each institution. 3) Practice Recruitment strategies • Develop unified recruitment strategies with standardized flyers and practice incentives. Recruitment can easily start on multiple fronts, e.g., from stakeholders, and from each PBRN. Multiple strategies may reach one practice thus causing confusion. • Develop strategies around Incentives. We learned during recruitment that Maintenance of Certification module completion was possible for American Board of Family Physicians as an incentive but not as readily translatable for pediatricians/internists, which could create unintentional biases. • Be aware that changes in Healthcare are overwhelming physicians leaving little energy for research. Practices are aligning with different hospitals/groups, new EHR systems, ICD-10, and state budget cuts affecting Medicaid. 4) Training • Add a facilitator training session with Medicaid case managers around use of the Medicaid portal. 5) Stakeholder partnerships • Maintain strong partnerships with named stakeholders, eg, Medicaid asthma workgroup. • Develop new partnerships with stakeholders. For example, at the healthcare system level, collaboration was sought with asthma and/or health coaching implementation experts; AHEC is a state-level stakeholder doing practice coaching. 6) Changes Between Grant writing and Post Award • Prepare for changes post award. For example, access to one PBRNs clinic for project recruitment was delayed due to restructuring by the local healthcare system. • Another PBRN was undergoing a conversion of the EHR to EPIC - recruitment flexibility was needed. 7) Communication • Strategize communication methods eg Webex. Different institutions often have differing technical strengths, and experiences.

### **CONCLUSION**

Collaboration is wonderful. Have fun, it's messy, there will be pulling of hair, but we grow and this strengthens our PBRN relationships across the meta-network. This analysis of "lessons learned" is a lesson learned in itself. This process of pausing to reflect on challenges strengthens collaboration.

### **PRESENTERS:**

Hazel Tapp, PhD  
Jacquie Halladay, MD  
Paul Bray, MA  
Tamera Coyne-Beasley  
Lindsay Kuhn, PA-C  
Kelly Reaves, BN

### **ADDITIONAL AUTHORS:**

Tom Ludden, PhD; Sveta Mohanan, MD; Laura Noonan, MD; Lauren Mowrer, Thamara Alkhazraji; Andrew McWilliams, MD MPH Jeniffer Rees; Madeline Mitchell, Katrina Donahue MD; Kathleen Mottus.

### **P13 The Practice Level Costs of Office-based Hypertension Performance Improvement Activities: The Heart Healthy Lenoir (HHL) Study**

#### **BACKGROUND:**

BACKGROUND: The Heart Healthy Lenoir (HHL) study is an ongoing practice based quality improvement (QI) effort designed to enhance hypertension (HTN) care delivery and narrow racial disparities in HTN control in rural North Carolina. Participating practices engage in overall QI activities for their hypertensive population as well as focus on a subset of their patients with uncontrolled hypertension who are eligible for phone based health coaching. As part of this project, we studied the practice level staff and coaching costs of engaging in the HHL activities.

#### **METHOD**

METHODS: We interviewed practice staff, providers, administrators, computer support personnel and health coaches regarding the amount of time required to develop, implement and maintain new QI activities. Development activities include one-time activities performed to design the study in the context of practice work flow and culture and how to define the populations of focus. Implementation activities include those required to engage in ongoing processes such as reviewing monthly hypertension control data, delivering standardized HTN care and delivering 8 coaching calls to each patient with uncontrolled HTN. Maintenance activities are those required to continue to pull and review performance data, participate in continuing education events and care for new incident cases of uncontrolled HTN. Twenty staff members from 4 diverse primary care practices and two regional health coaches were interviewed over a 15 month period from 2012-2014 as the HHL activities were implemented. We used actual staff experiences to document time required for study participation. We estimated coaching costs by standardizing these expenses across a panel size of 1,567 patients/1 full time provider equivalent (pFTE). Using nationally reported rates of hypertension we estimated that each pFTE cares for 274 patients uncontrolled HTN. Costs were calculated using mean hourly role specific US wages in 2010 that do not include benefits.

#### **RESULTS**

RESULTS: Major expenses include personnel time for defining uncontrolled hypertensive populations, abstracting performance data on hypertension control, attending educational sessions and covering the costs of health coaching. Development phase costs were \$ 3,726 /p FTE. Implementation phase costs were \$ 6,788/pFTE for office staff and \$18,848 for coaching costs. We estimate that it will cost \$1,228/year/ pFTE to maintain key office based QI activities and an additional \$84 per additional incident case of uncontrolled hypertension.

#### **CONCLUSION**

CONCLUSIONS: The time and personnel costs required to implement new hypertension care activities and to offer health coaching to those with uncontrolled HTN are not trivial, but likely consistent with other efforts to improve care processes and patient outcomes in practice. Understanding practice level costs and how they balance with practice incentives to deliver more equitable and higher quality care may facilitate engagement in QI. This information can help inform policy makers, patients and practices regarding the resources needed to improve HTN care delivery in primary care practice settings.

#### **PRESENTERS:**

Jacqueline R Halladay MD MPH  
Jim Tillman DMin  
Alan Hinderliter MD  
Doyle M Cummings PharmD  
Katrina Donahue MD MPH  
Darren DeWalt MD MPH

#### **ADDITIONAL AUTHORS:**

Crystal Cene MD MPH, Cassie Miller MPH, Beverly Garcia MPH, (Darren DeWalt is the Senior Author)

### **P14 ATTITUDES TOWARD HPV VACCINE: DIFFERENCES BETWEEN PARENTS OF MALE AND FEMALE ADOLESCENT**

#### **BACKGROUND:**

Recommendations for human papillomavirus (HPV) vaccination of adolescent males and females originated at different dates and for different reasons. We have previously identified parental hesitancy concerning vaccines for adolescents. The objective of this study is to identify differences in attitudes toward HPV vaccine between the parents of adolescent males and females.

#### **METHOD**

In 2012, parents of 11-17 year-old adolescents were surveyed at any type of visit to 6 pediatric practices in OK and SC. Attitudes were measured with an adapted Parent Attitudes about Childhood Vaccine (PACV) survey originally developed by Opel et al. The 15-item survey is not vaccine specific; it rates general vaccine hesitancy (on a scale of 0-100) with higher scores indicating greater hesitancy. Medical records were reviewed and adolescents were considered "due for HPV vaccine" if, at the end of the visit, they had received < 3 doses and were eligible for an additional dose. Using  $\chi^2$ , and t-tests for bivariate analyses and logistic regression for multivariable analyses, we explored whether adolescents being due or not due for HPV vaccine was associated with gender, parents' total PACV score, or responses to individual PACV items.

#### **RESULTS**

Data were analyzed from 375 parents and adolescents (55% male). Adolescent males were more likely to be due for HPV vaccine than females (65% v. 46%,  $p < 0.001$ ). The mean PACV score for parents of females (26.5) was higher (more hesitant) than for parents of males (22.5),  $P = 0.02$ . PACV scale did not predict HPV vaccine status for either males (OR=1.005; 95%CI: 0.986, 1.024;  $p = 0.61$ ) or females (OR=0.988; 95% CI: 0.969, 1.006;  $p = 0.19$ ). Parents responses to two PACV items differed by adolescents' gender. Parents of females expressed more concern that vaccine might not prevent disease (47% v. 34-7%;  $P = 0.02$ ) and more concern that vaccines might not be safe (52% v. 35%;  $P = 0.004$ ). Among parents of females, hesitancy expressed on two items was associated with their daughters being due for HPV vaccine. Agreement with the statement "Ever having delayed a vaccine for reason other than illness or allergy" was associated with females being due for HPV vaccine (15.6% among those due v. 3.3% among those not due;  $p = .001$ ). Disagreement with the statement "I am able to openly discuss concerns about vaccines with my doctor" was more frequent among those due for HPV vaccine (6.5%) than among those not due (1.1%;  $p = .03$ ).

#### **CONCLUSION**

While the overall hesitancy scale was not associated with being due for HPV vaccine, parents of females expressed greater hesitancy about vaccines than parents of males. Expressions of hesitancy on two items were associated with being due for HPV for females. The differences in attitudes found can guide strategies to promote HPV vaccination in parents of both males and females.

#### **PRESENTERS:**

James R Roberts  
Jessica.J.Hale@gmail.com  
Robert Jacobson  
Charlene Pope  
David Thompson  
Paul M. Darden

## **P15 Shared Decision Making and its effects on asthma burden in the underserved ambulatory care setting.**

### **BACKGROUND:**

Asthma accounts for high morbidity and mortality in the United States with an estimated prevalence estimated at 8 percent. Estimated costs of the disease are around \$56 billion dollars, attributed to direct medical costs, lost school and work days, and compliance. The purpose of our study was to evaluate trends in the treatment of acute exacerbations in the ambulatory setting patients enrolled in a novel shared-decision making (SDM) clinic in six medically underserved clinics in Charlotte, NC at Carolinas Healthcare System. A secondary outcome was the presence of documented pulmonary function testing a year before and on the initial encounter of the SDM clinic.

### **METHOD**

A retrospective chart review was performed amongst patients who were enrolled for at least a year in the SDM clinic. Individual charts in the electronic medical record were reviewed one year before and after entry into the SDM clinic. In-office exacerbations were defined as the documentation of in-office bronchodilator treatment and/or a prescription for systemic steroids. Patient charts were also evaluated for the presence of PFTs during the follow-up period.

### **RESULTS**

Of the total 258 patients enrolled in the SDM clinic, over 203 (78%) were eligible for the chart review. At the time of submission, chart reviews were ongoing with a total of 51% of charts reviewed. From this, there was a 21% reduction of in-office treatments for exacerbations from one year before to one year after the initial SDM encounter. Only 8% of patients before enrollment had documented PFTs on chart, but this number increased to 82% after the initial SDM encounter.

### **CONCLUSION**

Based on a partial review of eligible charts, Shared Decision is linked to a reduction in ambulatory encounters for the treatment of acute asthma exacerbations and is also correlated with increasing the likelihood of having pulmonary function testing performed.

### **PRESENTERS:**

Jay Patel, MD, MPH  
Sveta Mohanan  
Hazel Tapp, Ph.D.

### **ADDITIONAL AUTHORS:**

Andrew McWilliams MD MPH, Mike Dulin MD Ph.D., Delyse Bright MD, and Alisahah Cole MD

## **P16 Using data within the EMR for practice improvement: results from a national survey of CPCSSN participants**

### **BACKGROUND:**

The Canadian Primary Care Sentinel Surveillance Network (CPCSSN) collects and aggregates electronic medical record (EMR) data from over five hundred physicians on over six hundred thousand patients across Canada. CPCSSN provides quarterly feedback to physicians and clinics on a number of health care indicators including patient demographics, chronic disease prevalence and quality of care measures. A questionnaire survey of sentinel physicians participating in CPCSSN was developed to evaluate the value of the feedback that CPCSSN provides to contributing physicians and establish the content that a physician would like to receive in their reports.

### **METHOD**

All 532 physicians that contribute data to CPCSSN were eligible to receive the survey. However, two of the ten networks were unable to participate in the study, and one study chose to select five physicians and distribute the survey by telephone. The survey consisted of 26 multiple choice and open answer questions. The first twenty questions surveyed physicians' attitudes toward the feedback reports. The remaining six questions obtained demographic information about the respondent. A physician could opt out of taking the survey at any point.

### **RESULTS**

Of the 405 physicians sent the questionnaire 70 (17.3%) responded. Almost all respondents indicated that receiving feedback reports is valuable to their practice. Respondents were in agreement that some of the language wasn't well understood (yearly contact group, YCG) and the most useful component of the report is the comparison to other practitioners and local clinics. Some respondents recommended that the reports incorporate longitudinal data, drug prescribing data and more prevention and screening indicators. Changing the formatting and language was encourage as this would improve knowledge translation.

### **CONCLUSION**

While the low response rate limits the generalizability of the results there was overwhelming agreement that the feedback reports are valuable. In addition, the open answer questions returned a number of important recommendations to incorporate into the feedback report.

### **PRESENTERS:**

Rachael Morkem  
Dr. Tyler Williamson  
Jyoti Kotecha  
Anita Lambert-Lanning  
Dr. Nandini Natarajan

## **P17 Leveraging PBRNs to Accelerate Implementation and Diffusion of Chronic Kidney Disease Guidelines in Primary Care Practices**

### **BACKGROUND:**

Four practice based research networks (PBRNs) participated in a project to demonstrate whether research networks can increase dissemination, implementation, and diffusion of evidence-based treatment guidelines for chronic kidney disease (CKD).

### **METHOD**

Highly motivated practices from four PBRNs received baseline and periodic performance feedback, academic detailing, and weekly practice facilitation for 6 months. Each Wave I practice then recruited two additional practices to receive performance feedback, academic detailing, and monthly facilitation, as well as to participate in monthly “local” learning collaboratives led by the Wave I practices. The primary outcomes were adherence to 10 key recommendations from the National Kidney Foundation Kidney Disease Outcomes Quality Initiative Guidelines determined retrospectively from medical records abstraction. Practice priority, change capacity, care process content and willingness to participate in future quality improvement (QI) projects were measured before and after the interventions.

### **RESULTS**

Wave I practices were more likely to have participated in a QI initiative. Following the intervention, Wave I practices (N=31) improved their care of CKD patients significantly, and most were able to recruit two additional practices (N=58). Wave II practices also improved their adherence to CKD guideline recommendations. Practices in both waves increased the number of strategies used, and practices in both waves were more likely to participate in future QI projects.

### **CONCLUSION**

With some assistance, PBRN practices can act as “early adopters,” facilitating the diffusion of evidence-based practices to other practices.

### **PRESENTERS:**

James W. Mold, MD, MPH  
Cheryl B. Aspy, PhD  
Robert Harris, PhD  
Paul Smith, MD  
Lyndee Knox, PhD  
Paula Lipman, PhD

### **ADDITIONAL AUTHORS:**

Margot Krauss, MD, MPH Chet Fox, MD Leif Solberg, MD Therese Zink, MD

### **P18 An emergency room diversion program to reduce non-emergent visits by Medicaid clients in Colorado Springs, Colorado**

#### **BACKGROUND:**

The Emergency Department Diversion Program was a 12-month project in which Community Care partnered with Peak Vista Community Health Centers (Peak Vista) to assess the effectiveness of an ED Diversion (EDD) Program at reducing inappropriate use and overuse of ED services, and improving access to primary medical care for three cohorts of high ED users within the Community Care Accountable Care Organization providing care for 60,000 Medicaid clients.

#### **METHOD**

Cohort study. A total of 301 Medicaid clients representing three primary care practices were followed regarding the EDD program. ED utilization for the 301 patients was determined for the nine months prior to the institution of the EDD program and for nine months after a client was enrolled in the EDD program

#### **RESULTS**

ED utilization for the cohort decreased from 2125 visits to 1508 visits (29%). Based on an average cost of \$710 per ED visit this represents a savings of \$438,070.

#### **CONCLUSION**

An Emergency Department Diversion program can help to reduce non-emergent ED utilization in Medicaid patients. Further studies are needed to determine the effect of confounding factors may influence the effectiveness of such a program.

#### **PRESENTERS:**

Mari Long, PhD

Joel Dickerman, DO

## **P19 I-PrACTISE - Involving Industrial Engineering science and methods in PBRN Research**

### **NEEDS & OBJECTIVES**

Primary care is in need of better support if the needs of patients and clinicians are to be met. For this support, whether technical or organizational, to be grounded in research, there needs to be a better understanding of the cognitive and social processes that are the care process (the "basic science of Primary Care").

### **SETTING & PARTICIPANTS**

I-PrACTISE is a national collaborative to improve primary care through Industrial and Systems Engineering (ISyE) based at the University of Wisconsin (UW). Its mission is to create a home for scholars and clinicians with interest and expertise in industrial engineering and/or primary care to conduct funded projects directed at improving the quality of primary care for patients, clinicians and staff. I-PrACTISE (although not under this name) has a 14 year history of productive collaboration.

### **DESCRIPTION**

Several of these projects, including a large RCT designed to test a method to reduce Information Chaos, have involved PBRN Members, specifically the Wisconsin Research and Education Network (WREN).

### **EVALUATION**

The evaluation has been the successful application for R-01 funding, the publication of multiple papers and most recently the successful application for 3-year AHRQ conference funding. Additional R-01 applications have been submitted.

### **DISCUSSION/REFLECTION/LESSONS LEARNED**

This relatively unique and productive collaboration can be utilized by other PBRNs to help them in their work. It links practicing clinicians with ISyE experts in methodology to develop funded projects that help networks and their patients.

### **ONLINE RESOURCE**

[www.i-PrACTISE.org](http://www.i-PrACTISE.org)

### **PRESENTERS:**

John W. Beasley, MD  
Tosha B. Wetterneck, MD, MS  
Pascale Carayon, PhD  
Erkin Otles, BS

## **P20 A Qualitative Study of Asthma Care across the Charlotte Metro Area**

### **BACKGROUND:**

The overall goal of the Asthma Comparative Effectiveness (ACE) Study was to improve health outcomes for patients with asthma using comparative effectiveness research. One way was to develop and implement a “Shared Decision Making” (SDM) approach for asthmatic patients from five ambulatory care clinics. Qualitative data was collected from the shared decision making clinics and other clinics with different socio-economic background and geographic locations across the Charlotte metro area that participated in different levels of intervention in the study.

### **METHOD**

Focus groups for this study were conducted in rounds every six months. In each round of focus groups contact was made with one clinic from each of our subgroups. We recruited their patients, provided lunch and ran the focus group. Each was between 5-10 participants with at least 1-2 providers in each group. We wanted a mix of both patients and providers to get a good understanding from both sides of what was currently happening around asthma care. The discussion lasted about an hour and some of the questions would consist of goals, having an asthma plan and planning ahead for asthma attacks. Clinics were selected to provide a cross-section of the Charlotte metro area to represent different socio-economic and geographic locations.

### **RESULTS**

Many themes came out of these focus groups including a large number of subthemes. -Cost/Economic Barriers/Process Subtheme: Time/productivity Cost of prescriptions/lack of knowledge of insurance rules Electronic Medical Record (EMR) productivity Medication choices Process of healthcare delivery (analysis of triggers, extreme trigger avoidance) Therapeutic choices (alternative therapies, breathing exercises, exercise, relaxation) -Self-Governance/Adherence Subtheme: Symptoms observed and discussed Asthma Action Plan Goal Setting Control Education about options Lack of identity; not wanting to acknowledge disease School Issues (politics, inhaler knowledge) -Education Subtheme: Controller vs. Rescue inhaler Disease management planning Options Techniques Triggers Types of medications - Patient: “Well, I got a feeling everybody’s the same I don’t think a patient has a choice, I think, you know, the doctor is the one that is well-versed, knowledgeable and by listening to the patient and their symptoms and what hasn’t worked in the past, and he knows how often and how much the patient should take, so I think that’s mainly left up to the doctor.” (NCFP\_4\_26\_12 Page 7) -Patient: “No, it’s been awhile. But one of my meds I cut in half because a 30 day supply is \$75. There was no generic for that one. It was pill form. It is important for doctors to really understand that just because a person dresses nice doesn’t mean ... I can come in a beautiful suit but I can’t afford my medication. (CFP 102312 – Pg. 1)” -Provider: “It totally depends on what we can do. If we have options, we give them. Umm, and you know with the advent of EMR we are able to see more what’s on formulary, what’s available, umm for sliding scale patients, what referral is available, what investigation is available. For Medicaid and Medicare, the constant struggle with getting a test authorized before we even can get a result, before we can even get a patient scheduled for it, so for us I think, we don’t always have the options for choices...” (BP\_2\_24\_12 Page 12-13)

### **CONCLUSION**

There is a strong need for educational interventions around asthma across many different clinics. Learning to use inhalers properly, avoiding triggers and understanding the importance of a controller medication can be valuable in the long-term management of asthma among patients across all socioeconomic backgrounds regardless of where people live.

### **PRESENTERS:**

Lauren Mowrer  
Hazel Tapp, PhD  
Tom Ludden, PhD  
Thamara Alkhazraji, MSPH  
Lindsay Kuhn, MHS, PA-C  
Kelly Reeves, BSN, RN  
Micahel Dulin, MD, PhD

### **ADDITIONAL AUTHORS:**

Yhenneko Taylor, PhD Cheryl Courtlandt, MD

## **P21 Emergency Department Visits for Non-Traumatic Dental Conditions: Analysis of Qualitative Interview Data from Patients, Health Providers, and Community Stakeholders**

### **BACKGROUND:**

Recent U.S. data suggest significant increases in the number of patients utilizing the ED for treatment of non-traumatic dental conditions (NTDCs) (Lee et al. 2012; Okunseri et al 2012). While studies have identified various factors related to NTDC-related ED use (e.g., low-income, racial/ethnic minority status, being insured by Medicaid, having no insurance, and living in a Health Professional Shortage Area) (Hong et al. 2011; Okunseri et al. 2008), no studies to date have used qualitative methods to examine stakeholder and patient perspectives on NTDC-related ED use and to identify possible strategies to reduce and prevent ED visits. The goals of this study were to better understand the multilevel determinants of NTDC-related ED use, generate a preliminary conceptual model on ED use, and outline strategies aimed at preventing ED use for NTDCs. We achieved these goals by collecting qualitative interview data from a sample of community stakeholders and patients in Oregon. This study will help our team plan future studies that test interventions and policies aimed at preventing NTDC-related ED use.

### **METHOD**

We focused on 6 communities in Oregon (5 rural and 1 urban). From these communities, we recruited a purposive sample of community stakeholders (n=34) and individuals with a history of ED use for NTDCs (n=17). Community stakeholders were recruited through hospitals, urgent cares, and local dental societies. We used snowball techniques to identify additional stakeholders. The stakeholder group included ED staff (physicians, nurses, and managers), hospital administrators, dental society leaders and dentists, non-profit health program executives, and other relevant stakeholders. Patients were recruited from hospitals and safety net dental clinics. We generated preliminary 12-item interview scripts for stakeholders and ED utilizers. Cognitive interviewing methods were used to pre-test the scripts with representative stakeholders and patients. Each interview was conducted in person or by phone and digitally recorded.

### **RESULTS**

There was agreement among interviewed stakeholders and patients that the ED does not have the trained staffs, equipment, or space to deliver definitive dental care. As a result, EDs are only able to provide palliative care (e.g., nerve blocks, antibiotics, analgesics). Patients described overwhelming social, economic, and behavioral barriers to preventive and restorative dental care that might help to prevent NTDCs and use of the ED, including repeat ED visits for unresolved NTDCs.

### **CONCLUSION**

The determinants of ED use for NTDCs are multilevel and multifactorial. Future strategies aimed at reducing and preventing NTDC-related ED use will require complex interventions that modify patient oral health related behaviors, involve medical and dental care providers, incorporate community-level solutions like fluoridated water, and reform existing programs and policies aimed at vulnerable populations, including Medicaid.

### **PRESENTERS:**

Mark Remiker, MA  
Sankirtana Danner, MFT  
LJ Fagnan, MD  
Donald Chi, DDS, PhD

## **P22 Health IMPACTS for Florida: Utilizing community-based participatory research principles to strengthen a PBRN**

### **NEEDS & OBJECTIVES**

To increase and strengthen Health IMPACTS for Florida's (HI) recruitment of primary care practices in its practice-based research network (PBRN), community-based participatory research principles were employed to create richer and more productive relationships across the state of Florida. Specifically, key community and academic stakeholders helped to identify and then facilitate relationships for HI to successfully partner with respective practices. Creation and implementation of research protocols for HI's studies were shaped with practice involvement. Specific study implementation logistics varied across each practice to coincide with the site's characteristics, resources and workflow, and results of the study were disseminated back to practices, with special emphases on desired outcomes of focus. In one practice, the final study protocol was specifically catered to the needs of the practice and its patients.

### **SETTING & PARTICIPANTS**

Health IMPACTS for Florida (HI) is a statewide (PBRN) based on the partnership of University of Florida (UF) and the Florida State University (FSU). Primary care practices involved in the PBRN are diverse, including community health centers, private practices, academic clinics, hospitals, school-based clinics, residency programs and federally qualified health centers. Provider specialties include pediatrics, family medicine, adolescent medicine and sports medicine. Cities represented in HI are Gainesville, Jacksonville, Orlando and Tallahassee. Community stakeholders include academic professors, community organization leaders and practice directors.

### **DESCRIPTION**

HI utilized CBPR principles to recruit practices for study participation. Affiliated medical school sites for UF and FSU served to network with local practices across north and central Florida. HI community research associates (CRAs) acted as liaisons between the PBRN, clinical practices and community and academic stakeholders, providing training, facilitating study implementation and supplying ongoing technical support. Once recruited to participate in the PBRN, some sites self-selected to participate in one or both HI pilot studies. Logistics of implementation were a collaborative effort between HI and practices, with continuous input from providers and stakeholders used to improve logistics and implementation.

### **EVALUATION**

HI successfully recruited 41 practices that were then involved in at least one study. Each practice reported weekly feedback of their participation experiences via in-person CRA visits. These were recorded as fidelity monitoring for all sites, and used for collaborative quality improvement. A research summit was held to disseminate findings and lessons learned, and to gather information from providers on their research experiences, topic areas/research questions for future studies, provider incentives to promote continued and expanded participation, and feedback from subjects and parents. Final study summaries were disseminated to all participating practices after study completion. Practices that completed at least one study expressed interest in participating in future HI research opportunities.

### **DISCUSSION/REFLECTION/LESSONS LEARNED**

CBPR principles are crucial to the vitality of the HI PBRN. Successful recruitment of practices and study participation to completion varied on several factors, such as interest in the research topics, perceived benefits of study involvement, staff support, clinic needs and characteristics, information technology capabilities, study fit with patient populations and disruption of work flow. HI will continue to draw upon CBPR tenets to enrich its network and relationship with practices and stakeholders.

### **PRESENTERS:**

Maryum Khan, MPH  
Jessica De Leon, PhD  
Elizabeth Shenkman, PhD

### **ADDITIONAL AUTHORS:**

Health IMPACTS for Florida

## **P23 Rural Health Workforce Adaptive Strategies in Kansas**

### **BACKGROUND:**

The maldistribution of physicians across the United States is a perennial problem. In Kansas, the maldistribution of family physicians is as low as 34.2 per 100,000 in some rural areas compared to a peak of 59.7 in urban south central Kansas. As a consequence of this maldistribution there are many programs targeting physician placement in rural practice. Retention of those doctors is critical. There are many stresses placed on these physicians as a result of their rural and frontier practice location. Rural healthcare providers and systems have adopted a number of strategies to mitigate these stresses. "Adaptive Strategies" is a term that has been applied to evolutionary biology, sociology and business concepts, but to our knowledge has not been used to discuss factors determining resiliency in rural physicians and health care systems. Furthermore, many studies have examined individual stress, burnout and other factors that help or hurt physicians, but we found no study that has cataloged the range of adaptive strategies conferring resiliency. Many of the rural and frontier counties in Kansas have less than four primary care physicians (PCPs) per county. This number leaves the county at risk for a health care crisis in PCP workforce should a physician leave or become ill. A better understanding of the adaptive strategies employed can provide a basis for future studies to evaluate their use and efficacy, which is crucial in light of worsening workforce predictions for rural Kansas and the precarious situation of their health care systems. In order to facilitate comparison with other state level data, we chose to use the Kansas Population Density Peer Groups as designated by the Kansas Department of Health and Environment to define rurality.

### **METHOD**

Using a convenience sample drawn from providers in 87 rural Kansas counties, we collected information about strategies employed by physicians and hospitals to adapt to workforce shortages of primary care physicians. An extensive survey was administered to one PCP and one hospital administrator in each county by first-year medical student investigators participating in a summer research program. Twenty-nine students were placed in rural community medical practices for a six-week period. Surveys focused on provider and practice characteristics, and the use of physician substitutes, team approaches to care, locum tenens in the practice, and supply in the community of alternatives to private primary care medical practice. Respondents for both surveys gave their informed consent to participate before survey questions are asked. The study protocol was approved by our Institutional Review Board as an exempt study.

### **RESULTS**

Interviews from 67 PCPs in mostly rural counties and 76 hospitals were completed during the summer of 2013. Quantitative and qualitative analyses and a description of adaptive strategies utilized in these counties are provided. Even though a convenience sample was used the demographics matched those of all rural Kansas PCPs. Demographics of the survey participants reflect that of rural Kansas physicians in general.

### **CONCLUSION**

The concept of adaptive strategies seems to have useful applicability to help determine resiliency for stressed physicians. Several adaptive strategies addressing PCP shortages in rural Kansas were noted. These included, amongst others: postponing retirement; increased utilization of alternative care providers; escalated recruitment efforts; and the use of locum tenens. We believe our findings can help guide the development of future interventions and models aimed at attenuating the present and predicted rural workforce shortage. Further analysis of the concept of adaptability as it applies to resiliency may be useful in defining the characteristics that are determinants of the ability to withstand the stresses of rural and frontier practice. Subsequently, these factors can help to identify individuals with those characteristics and possibly could be used to teach a skill set of adaptive strategies that would increase success in rural practice. This work will be the subject of future study.

### **PRESENTERS:**

Michael Kennedy, MD  
Luke Haws, DO  
Joseph LeMaster, MD  
Anthony Wellever, MS  
Eve-Lynn Nelson, PhD

### **ADDITIONAL AUTHORS:**

Jessica Huff, Scott Rempel, Cordelia Staab, Jessica Parrish, Jacob Hessman, Jayme Barnes, David Hein, Dan Chernoff, Caitlin Butler

### **P24 The quality of chronic pain assessment and management in the Cincinnati Area Research and Improvement Group (CARInG) Network**

#### **BACKGROUND:**

Chronic non-malignant pain (CNMP) is common in primary care settings, but continues to present many problems for clinicians and their staffs to assess and manage. As part of a larger study to improve the care of patients with CNMP, we examined the current quality of CNMP assessment and management in 12 primary care offices of the CARInG Network affiliated with a large academic health center. We also assessed clinician and medical assistant (MA)/nursing staff attitudes towards chronic pain care.

#### **METHOD**

We reviewed charts from a random sample of patients seen by clinicians at the 12 practices who had at least 2 visits in the previous 12 months with the diagnosis of chronic pain, chronic pain syndrome or other chronic pain. If there were insufficient patients for a clinician with those diagnoses, then we also searched for patients with low back pain, osteoarthritis, joint pain, neuropathy or fibromyalgia; we reviewed 5 – 15 charts for each provider. We abstracted data related to key evidence based recommendations for the primary care of chronic pain patients. Since much data was not in searchable form, we manually reviewed each chart, reading all progress notes from the 12 month period, as well as abstracting data from other parts of the chart. Clinicians and MA/nursing staff at each office were also surveyed with paper forms about their attitudes toward chronic pain care.

#### **RESULTS**

The 12 practices included 1 Internal Medicine residency; the rest were all Family Medicine or Internal Medicine/Medicine-Pediatric practices. We reviewed a total of 485 charts (range 10 – 95 at each practice). We surveyed 64 clinicians (physicians, residents and nurse practitioners) and 68 MAs and nurses. We identified 67% of the patients from chronic pain codes. Assessments of pain severity, functional disability and psychosocial distress occurred in 65%, 60% and 50% of patients, respectively. There was an assessment for depression in 39%. The use of non-pharmacological approaches was documented in 42% of patients. Fifty-six percent of patients were on chronic opioids; of those patients, 72% had side effects discussed, 68% had an opioid contract, 52% had a urine drug test, 55% had a state prescription report performed, and 29% documented opioid abuse risk. Clinicians feel more stress dealing with patients with CNMP than do their MA/nursing staff (72% vs. 42%), but the clinicians are more likely to believe that patients with CNMP can be managed by primary care than their MA/nurses (80% vs. 45%).

#### **CONCLUSION**

Primary care clinicians still struggle to practice evidence based care for patients with CNMP, including meeting legal requirements and recommended monitoring for patients prescribed opioids. Primary care clinicians, however, do believe they can manage these patients. These data are currently guiding a trial of quality improvement techniques to improve the care of patients with chronic pain.

#### **PRESENTERS:**

Nancy C. Elder, MD, MSPH  
Jill Boone, PharmD  
MaryBeth VonderMeulen, RN  
Ryan Imhoff  
Amy Short  
Tiffany Diers, MD

#### **ADDITIONAL AUTHORS:**

Barb Speer

## **P25 Enhancing Child Health in Oregon (ECHO) Primary Care Learning Community**

### **BACKGROUND:**

The Oregon Health Authority (OHA), in partnership with the States of Alaska and West Virginia, formed the Tri-state Children's Health Improvement Consortium (T-CHIC) to implement quality improvement activities funded through a Children's Health Insurance Plan Reauthorization Act (CHIPRA) Quality Demonstration Grant. T-CHIC, working in collaboration with expert consultants and a broad range of stakeholders, will demonstrate the unique and combined impact of patient-centered care delivery models and health information technology (HIT) on the quality of children's healthcare, as measured by a variety of indicators being assessed simultaneously for their validity and utility in driving quality improvement. The ECHO primary care learning community is a portion of the T-CHIC project, specific to Oregon and its PCPCH standards, that will provide insight into the four aforementioned goals. Within the state of Oregon, the ECHO learning community will be implemented to allow for innovation in implementation of the core concepts of medical home as described in the attributes of the Oregon Patient Centered Primary Care Home (PCPCH) Standards.

### **METHOD**

The overall structure of the learning community is based on the Institute for Healthcare Improvement's Breakthrough Series Collaborative Model. In this model, project staff develop project framework, curriculum for learning sessions, and proposed changes. Participants then attend learning sessions and plan specific PDSA (Plan-Study-Do-Act) cycles to take back to their practices. These PDSA cycles are meant to be in draft form; it is anticipated that participants will need to discuss proposed changes with other members of the practice, and make changes as appropriate. Between learning sessions, participants implement changes in their practices, and results are presented at the next learning session. Practice facilitators are available to participants "at the elbow" to assist in evaluating the proposed aim statements and revisions to PDSA cycles, address implementation challenges, and assist in data collection and interpretation.

### **RESULTS**

Analysis is currently ongoing but will include presenting clinic descriptive data and linking those characteristics to identify facilitators and barriers to adoption of PCPCH Standards, coding of pre and post focus group interviews to identify emergent themes and difference-in-difference analysis from before and after educational sessions. We are also in the process of reviewing patient experience of care data as collected by the state of Oregon for seven of the eight practices through the Consumer Assessment of Healthcare Providers and Systems Patient-Centered Medical Home Survey (CAHPS CG PCMH), and will be analyzed and compared to measured changes in medical home implementation for significant differences related to utilization, overall satisfaction, access to care, specialty care and follow-up care. The remaining practice that independently assessed patient experience of care through the Consumer Assessment of Healthcare Providers and Systems Child 12-Month for Clinician & Group Surveys (CAHPS CG) will also have the information collected, analyzed and compared to measured changes in medical home implementation for significant differences related to utilization, overall satisfaction, access to care, specialty care and follow-up care. This will occur at the beginning and end of the project (baseline CAHPS results October 2012, final CAHPS survey results October 2014).

### **CONCLUSION**

We are currently in the final year of the ECHO project, and have broken down progress of the eight practices into three priority areas, family engagement, care coordination and sustainability in the practice. To date, we have learned that the main facilitators to the success of this project fall under practice culture, clinic capacity to utilize/manipulate their electronic health record, practice capacity to meet outside mandatory meetings, have the Oregon Health Authority as a contributing partner and practice facilitation. In turn, the major barriers we are discovering are mainly focused around EMR capacity and their ability to manipulate forms/build as needed, the need for management of various drivers (internal and external) that influence how a practice strategically approaches change, time and funding for Care Coordination.

### **PRESENTERS:**

JILLIAN CURREY  
LJ Fagnan  
RJ Gillespie  
Jillian Currey  
LeAnn Michaels  
Molly DeSordi  
Colleen Reuland

### **P26 Community Pharmacists' Willingness to Participate in a Rural Appalachian Practice-Based Research Network**

#### **BACKGROUND:**

Practice-based research networks (PBRNs) are groups of health care practitioners who engage in translational research and quality improvement activities, with the overarching goal of improving patient care in primary care settings. The Appalachian Research Network (AppNET), a rural primary care PBRN established in 2009, comprises 17 clinics in 16 rural communities in South Central Appalachia. AppNET's mission is to conduct and support practice-based research to improve the quality of rural primary care delivered in the region and work toward the goal of eliminating health disparities of the people of South Central Appalachia. Researchers at ETSU seek to integrate community pharmacies in AppNET communities into the PBRN, thereby establishing a novel interprofessional rural PBRN. Little research exists regarding the willingness to participate in and the role of community pharmacies in interprofessional PBRNs. The objective of this study was to assess community pharmacists' perceptions regarding practice-based research and interest in participating in AppNET using a mixed-mode survey research approach.

#### **METHOD**

A 50-item survey instrument was developed by the researchers to gather pharmacist- and pharmacy-specific characteristics, perceptions of research conduction in community pharmacies, benefits of and barriers to participation in a PBRN, and overall interest in PBRN participation. A directory of all pharmacies in communities containing one or more AppNET clinics was developed using a health professions licensing directory and web search tools. Researchers contacted all pharmacies via telephone to determine appropriate contact persons at each pharmacy. Thereafter, two waves of paper-based surveys were mailed to 69 pharmacist contacts, along with a personalized cover letter and a stamped return envelope, followed by an additional telephone call to tailor questionnaire delivery to personal preferences (eg, mail, email, fax). Descriptive statistics were calculated using SPSS version 20.

#### **RESULTS**

A response rate of 45% was obtained. Respondents were on average 44 years of age and had been licensed as a pharmacist for an average of 19 years. Fifty-seven percent of respondents were affiliated with independent pharmacies despite independents comprising 45% of AppNET pharmacies. A large majority of respondents (87%) were very or somewhat interested in participating in AppNET. The majority of respondents felt that potential time constraints and workflow interruptions were the greatest barriers to participation. One hundred percent of respondents indicated that research on prescription drug abuse, medication adherence, and medication safety are very or somewhat applicable to their practice settings. Ninety-two percent felt that research on value-added services (e.g., immunizations, diabetes education) and medication therapy management was somewhat or very applicable to their practice.

#### **CONCLUSION**

Integrating community pharmacies into AppNET will create a unique interprofessional PBRN and allow for interdisciplinary conduction of research to address multifaceted health care topics. Overall, pharmacist respondents in AppNET communities indicated interest in research that benefits the care of their patients and interest in AppNET participation. Further research is warranted to develop AppNET enrollment mechanisms that minimize barriers to participation of community pharmacies in practice-based research.

#### **PRESENTERS:**

Nicholas E Hagemeyer, PharmD, PhD  
Kyle S Hagen, PharmD  
Emily L Sorah, PharmD  
Sarah Blevins, PharmD candidate  
Kelly Ferris, PharmD candidate  
Richa Shah, PharmD candidate

## **P27 MyPreventiveCare: Methods to engage stakeholders in a multi-PBRN study to disseminate and implement a patient portal for prevention**

### **NEEDS & OBJECTIVES**

Evidence-based preventive services offer profound health benefits, yet Americans receive only half of indicated services. Government and healthcare organizations are promoting the adoption of information technologies to engage patients in their care, such as personal health records (PHRs), but the current functionality may not fully utilize the technology's potential. We developed a theory-driven interactive PHR called MyPreventiveCare that uses higher functionality to more deeply engage patients in health promotion. The theory defines five levels of functionality: (1) collecting patient reported information, (2) integrating with electronic health records (EHRs), (3) translating information into lay language, (4) providing individualized, guideline-based clinical recommendations, and (5) facilitating patient action. We have demonstrated that implementing PHRs with these higher levels of functionality in a small number of practices in Virginia can inform and activate patients more effectively than current PHRs. Whether this can be generalized more broadly to other settings is unknown.

### **SETTING & PARTICIPANTS**

This study is a collaboration between three Practice-Based Research Networks (PBRNs) – the Virginia Ambulatory Care Outcomes Research Network (ACORN), OCHIN and a third to be determined network – to systematically evaluate whether an interactive preventive health record (IPHR) called MyPreventiveCare (MPC) can be broadly implemented and disseminated. The PBRN collaboration provides: (1) primary care practices with a variety of locations, sizes, cultures, and patients; (2) a large proportion of disadvantaged patients for testing MPC feasibility; (3) informatics infrastructure to support MPC integration; (4) recent introduction of PHRs, providing an optimal window to compare effectiveness; and (5) multi-disciplinary research teams and infrastructure to field the study.

### **DESCRIPTION**

We are employing a mixed-method, stakeholder-engaged, two phased design to fully evaluate the dissemination and implementation of MPC. In Phase 1, we plan to randomize 46 practices to implement MPC or continue to use their existing PHR. Throughout, we will engage intervention practice clinicians and patients as co-investigators to inform the study design, advance and tailor MPC content, integrate MPC into workflow, analyze findings, and disseminate results. Within each PBRN, clinicians and staff will participate in learning collaboratives and biweekly diary entries; patients will participate in local advisory boards. In Phase 2, MPC will be offered to control and non-intervention practices to observe how MPC is implemented more broadly. In both phases, we will examine all patients with an office visit between the ages of 18-75 with an emphasis on assessing disparities in use and outcomes among disadvantaged patients.

### **EVALUATION**

Data sources will include the EHR/PHR/MPC databases, patient and practice surveys, field notes, learning collaborative and patient advisory board transcripts, practice diary entries, and patient interviews. Analysis will be based on the RE-AIM model, measuring Reach (creation of MPC accounts by patients), Adoption (practice decision to use the MPC), Implementation (consistency, fidelity, barriers, and facilitators of use), and Maintenance (sustained use). Effectiveness will be assessed through the randomized comparison of intervention and control practices on the incremental effect of MPC for shared decision-making, patient prevention knowledge, and receipt of cancer screening tests. These analyses will allow us to identify the challenges and solutions of both integrating MPC into existing EHRs and PHRs and, more broadly, of engaging patients and families in their health through patient portals.

### **DISCUSSION/REFLECTION/LESSONS LEARNED**

Design and implementation of this study is heavily influenced by the engagement of health system, practice, and patient stakeholders, as well as the rapidly evolving national informatics landscape. For example, an originally engaged PBRN partner had to withdraw from the study when their health system initiated competing informatics initiatives between submitting and receiving the grant. We are utilizing existing PBRN relationships to support the identification of new partners. Furthermore, many sites are challenged by the possibility of being randomized to the control condition when seeking standardization of informatics functionality. Stakeholders, with support from the funder, are encouraging us to reconsider our originally proposed randomized controlled effectiveness evaluation. Working with stakeholders as coinvestigators serves as a mechanism to overcome the expected challenges of this large study and design a more effective dissemination and implementation trial.

### **PRESENTERS:**

Rebecca A Aycock, PhD  
Paulette Lail Kashiri, MPH  
Alex H Krist, MD, MPH  
Christine Nelson, RN, PhD  
Jill Arkind

### **ADDITIONAL AUTHORS:**

K. Stein, PhD, J. Devoe, MD, DPhil, S. Wolver, MD, D. Chelmow, MD, J. Borzelleca, MD, D. Longo, ScD, and R. Etz, PhD

## **P28 The Influence of Setting on Factors in the Parent Pediatrician Partnership Scale**

### **BACKGROUND:**

Previous analyses identified a latent structure of five factors among the 32 items in the Parent Pediatrician Partnership Scale (PPPS), a scale developed to assess partnership between parents and pediatricians. The factors included Parental Involvement (PI, 4 items), Pediatrician Sensitivity (PS, 7 items), Communication (Co, 4 items), Access (Ac, 2 items) and a broad Comprehensive factor (BC, 13 items). A total partnership score (TP) was also calculated. The current analyses seek to identify the influence of setting, community practice compared to hospital-based sub-specialty clinics on the five factors.

### **METHOD**

In order to understand how the two settings influenced partnership scores, we conducted Chi-Square and t-test comparisons between parents and children in community practices as compared to those attending hospital-based sub-specialty clinics. The sample population was predominantly White (70.4%), had a family income of over \$35,000 (50.6%), had at least some college education (70.4%), the child was brought to the index appointment by a guardian living in a married relationship (64.5%), and the index child was male (61.3%). Parents were interviewed in two settings: community practices (n=157; 48.3%) and sub-specialty clinics located in a children's hospital (n=168; 51.7%).

### **RESULTS**

The sub-specialty clinics involved were developmental and endocrinology. Setting—community practice vs. sub-specialty clinic—was the most robust characteristic that influenced scores on four of the five factors, with subspecialty parents scoring higher on PI, PS, Co, BC, and TP scores. In order to understand how the two settings influenced partnership scores, we conducted Chi-Square and t-test comparisons between the two groups. Two parent/child characteristics differentiated settings where children in community practices were more likely to have an IEP in school and parents were more likely to have had at least one child with a chronic illness attend the setting at one time. The remainder of significant differences related to the interaction between parent/child and setting. Parents/children in community practices had attended the setting longer on average than those in sub-specialty clinics (7.2 vs. 5.1 years), went to the setting more in the last year (12.3 vs. 3.1 days), and had been to the setting more recently (72.4 vs. 150.3 days). The only setting-related measure of intensity that was higher for sub-specialty clinic families was that of having seen the same pediatrician at all visits during the last year (79.6% vs. 42.6%).

### **CONCLUSION**

At least two possible explanations for these findings present themselves. The sub-specialty clinic parents may have averaged higher scores on partnership factors because of their having seen only one pediatrician in the clinics rather than multiple pediatricians in a community practice. It is also possible that the clinic focus on a single, potentially more serious condition led parents to place more value on the partnership.

### **PRESENTERS:**

Richard C. Rapp  
Greg Eberhart, M.D.  
John Pascoe, M.D.  
Michael Dressing, B.S.  
Richard C. Rapp

### **ADDITIONAL AUTHORS:**

## **P29 Integrating Virtual Care Coordination within a Safety-Net Patient Centered Medical Home: Lessons Learned**

### **BACKGROUND:**

Healthcare delivery systems are increasingly being held accountable for the health outcomes of the communities and populations they serve. While population health interventions have a growing evidence base, care delivery systems continue to grapple with how to scale these high-cost, complex interventions across diverse populations and large geographic footprints. Virtual care offers healthcare systems a promising solution to address both of these issues; yet little is known about how best to integrate virtual care into real-world primary care settings. In this pilot study, we test the feasibility of integrating virtual case management and enhanced primary care services into an existing Patient Centered Medical Home (PCMH), which serves a safety-net population. Preliminary results and lessons learned will be presented.

### **METHOD**

High risk patients were identified from a Carolinas Healthcare System PCMH using a scoring system with variables for inappropriate utilization, socioeconomic status, and poorly controlled chronic diseases (Hypertension, Diabetes, and Depression). We first obtained consent for participation from patients' primary care providers (PCPs). Enrolled patients were loaned a tablet device with 4G connectivity, which enables them to access a Virtual Care Team consisting of: a primary care provider (called an ambulatory intensivist), clinical case manager, social worker, pharmacist, and behavioral therapist. Each patient has weekly visits with the Virtual Care Team and in-person visits with his/her usual PCP at 6 and 12 weeks. All care is directly coordinated with the patient's PCP. We also pilot tested the effectiveness of incentives with gift card distributions to patients at designated milestones. We used rapid cycle improvement methods (plan, do, study, act) with a primary focus on three areas: communication, technology, and patient engagement. Quantitative data collection included: disease specific measures (Hemoglobin A1c, blood pressure, and PHQ-9)), pre/post self-reported health status (VR-12), visit frequency, visit duration, utilization, and patient satisfaction. Qualitative data will be gathered through key informant interviews with patients, Virtual Care Team members, and PCPs. Cost and time modeling were conducted with the following assumptions: clinic cycle time of 90 minutes/visit; patient time (travel plus clinic cycle times) of 210 minutes/visit; and \$180/in-person physician visit, \$150/in-person behavioral health and pharmacist visit, and \$50/virtual visit with any provider. Three month results for the first cohort are pending at the time of the abstract, but will be available for the presentation.

### **RESULTS**

Six patients are enrolled—all have complex social situations and 4 are insured by Medicaid. Of these 6 patients, severe Depression was present in 5; poorly controlled Diabetes in 2; and high inappropriate ED utilization in 2. One patient was asked to leave the study due to lack of engagement. On average patients had 9 provider visits (PCP, ambulatory intensivist, behavioral health, or pharmacist) over the first 6 week period. Virtual services were more cost effective and efficient compared to modeling of equivalent in-person visits in usual care (numbers presented as 6 week totals): clinic personnel time 495 vs 810 minutes; patient time invested 735 vs 1890 minutes; and cost \$660 vs \$1500. Lessons Learned: Communication Questions: How to best communicate patient interactions and delegate action items across team members? How to keep the PCP up to date without overwhelming him/her? How to reduce redundant documentation? Lessons: (1) Thread-based communication within the Electronic Health Record; (2) Shared patient calendars; (3) Dashboard health summaries for each patient; (4) Bi-weekly multidisciplinary patient huddles. Technology Questions: What combination of hardware and software works best to connect virtually with a vulnerable population? Lessons: (1) Simplified software platform with one touch connectivity; (2) Lowest bandwidth possible; (3) Provide hardware and connectivity to patients; and (4) Always have the telephone as a back-up for when virtual connectivity fails. Patient Engagement Questions: How to select a patient who is ready and willing to participate? What is the right frequency of visits? How to keep patients engaged over the intervention timeframe? Lessons: (1) Must have an upfront evaluation of readiness to change or a 'run-in' period; (2) Need to consolidate and coordinate team contact to once per week to avoid overwhelming the patient; and (3) Patient incentives are key to engagement and should be offered at short time intervals.

### **CONCLUSION**

Virtual care can be an appropriate vehicle for extending PCMH services beyond the walls of a clinic even for vulnerable populations. However, truly integrating this service is challenging in populations with barriers such as limited access to and knowledge of technology, complex social situations, and mental illness.

### **PRESENTERS:**

Andrew McWilliams  
John Emmerson  
Whitney Rossman  
Melanie McDermid  
Thomas Ludden  
Hazel Tapp

### **ADDITIONAL AUTHORS:**

Allison Bickett, Johanna Wilson, Vicki gardin, Michael Fite, Julia Courchaine, Allison Chalecki, Melanie Spencer, Guy Glorioso, Kathleen Kaney, Lisa Hebert, Zeev Neuwirth, and Michael Dulin

## **P30 Estimating the Cost of Transformation to and Sustaining the PCMH Model of Practice**

### **BACKGROUND:**

The patient-centered medical home (PCMH) is an innovative model of care that will help deliver population health in the primary care setting. Small practices represent a large share of the primary care market and are critical to the success of PCMH implementation nationwide. Previous research has found that cost may be a major obstacle to transformation; however, the generalizability of these findings to small practices is an open question. The objective of this study was to create, pilot, and explore the validity of a structured tool that would allow smaller practices to estimate and report the cost of practice transformation.

### **METHOD**

The study utilized a survey and a semi-structured interview to inventory all of the clinical activities involved in practice transformation and sustaining the PCMH model in the sample population of practices, as well as a large academic primary care practice. Costs of each activity were captured during a transformation period of 2008 – 2011. Economic principles regarding cost were applied to the PCMH model as designed by accrediting agencies and as applied by the practices. The study team created a structured tool using the activities and costs recorded by 11 small to medium sized practices (less than 10 FTE providers). All of the practices had been previously recognized as NCQA accredited PCMHs and received financial incentives in order to implement the PCMH model and to apply for PCMH certification.

### **RESULTS**

In order to capture and categorize cost, the structured tool contains three categories used to assess each activity's costs: costs can be direct or indirect, related to labor or to capital, and can be one-time or ongoing costs. In addition, each cost element can be related to one of the six NCQA activity categories, the cost of certification, or through changes to practice culture. Finally, many costly activities have offsets, both in the short term or long term, which determines whether an activity is cost increasing, cost decreasing, or cost neutral for practices. The structured tool was able to capture significant variation in the specific costs and availability of cost data among the practices in the study.

### **CONCLUSION**

The successful transformation to a PCMH and process of sustaining the model requires a range of activities and costs that were often difficult to describe and quantify. The cost offsets and quality-based financial incentives gained from PCMH designation may not outweigh the cost of transformation depending on the practice. Using the structured tool and data generated by this study, small practices will be able to determine a range of costs for transformation specific to their individual characteristics and plan their budgets accordingly. Policymakers and payers can determine appropriate reimbursements or financial incentives to pay for implementation of the PCMH model using this type of cost evidence.

### **PRESENTERS:**

Robert D Lieberthal, PhD  
Tom Karagiannis, PharmD  
Colleen Payton, MPH, CHES  
George Valko, MD  
Manisha Verma, MD, MPH  
Mona Sarfaty, MD, MPH

## **P31 Engaging practitioners in research question development through a question database**

### **NEEDS & OBJECTIVES**

One goal of Practice Based Research Networks (PBRNs) is engaging practitioners in the development of research questions that are relevant to practice. However, this goal is often difficult to execute as practitioners may be intimidated by the research process and the steps required to complete even a simple proposal. Out of the 16 projects designed by our Dietetics Practice Based Research Network (DPBRN, a national network of Registered Dietitian Nutritionists), only two ideas have originated from practitioners. The goal of this new methodology is to engage practitioners in the development of research questions and to provide a resource for individuals looking for topics of investigation relevant to practitioners.

### **SETTING & PARTICIPANTS**

All members of the Academy of Nutrition and Dietetics, which includes Registered Dietitian Nutritionists (RDNs), Dietetic Technicians, Registered, and dietetics students were invited to participate in an anonymous online survey about their knowledge of the DPBRN, their current involvement in research, and barriers to involvement in research. Over 4000 survey responses were received.

### **DESCRIPTION**

Survey respondents were invited to submit a question to the network, after agreeing to the following conditions: the network may or may not answer the question, share the question with others, or apply for grant funding to answer the question. They were asked "what is a question in your nutrition practice that needs to be investigated through research?" Respondent questions were sorted, duplicates grouped, and a policy for their use and distribution developed.

### **EVALUATION**

Three-hundred and ninety questions were received. Questions were eliminated if they were: partial thoughts that could not be interpreted, not directly related to nutrition and dietetics, or were duplicates. The remaining 273 unique questions were grouped by setting (inpatient, critical care, schools, business, dietetics education, food systems), disease/condition (diabetes, renal, heart, overweight/obesity/weight loss, malnutrition, oncology, eating disorders, sports, gastrointestinal, wellness, other), intervention (federal program, nutrition support, dietary supplements, delivery approaches, cost effectiveness, care patterns, education/counseling), life stage (perinatal, pediatric, geriatric), and Nutrition Care Process phase (screening, assessment, diagnosis, intervention, monitoring/evaluation). Categories were not mutually exclusive. The most frequent categories were disease/condition--overweight/obesity (31 questions), intervention--education/counseling (33) and Nutrition Care process phase--intervention (159) and monitoring/evaluation (203). The following themes emerged (each with an example question): guidelines for care of obese patients particularly in critical care and obstetric situations (How do you accurately determine protein needs of obese patients in an acute care setting?), pace of diet-progression post-surgery ("How soon should a patient's diet be advanced after surgery?"), optimal number of counseling visits for behavior change (What is the ideal MNT appointment frequency for specific diseases?) and comparing care provided by RDNs to care from other health professionals (What is the cost savings realized by an RD treating prediabetes vs other practitioners?). A policy has been developed for the continuation of this methodology, including soliciting questions, adding them to the database, distributing the database to researchers (including students), and tracking completed projects that answer database questions.

### **DISCUSSION/REFLECTION/LESSONS LEARNED**

Practitioners in a variety of dietetics practice areas submitted questions to the database; something that was not achieved through previous attempts to obtain research questions from practitioners (using a simple ten- question proposal form). The database has the potential to access practitioner expertise to identify important questions and strengthen the practitioner voice in the PBRN model. Further evaluation must track database use and outcomes. One limitation is the large number of questions pertaining to interventions--while interventions are important and critical to study, intervention studies are large and costly and may not be easily carried out by new researchers who we anticipate as the main users of the database. In addition, many of the submitted questions were non-specific and may require advanced practice knowledge to craft into a complete research question. Providing guidance to question submitters on the PICO (Population Intervention Condition Outcome) question format or encouraging questions that can be answered observationally or via survey may make the database more user-friendly for new researchers, although it may change the type and limit the number of questions that are suggested.

### **PRESENTERS:**

Rosa Hand, MS, RDN, LD

Rosa K Hand, MS, RDN, LD

Jenica Abram, MPH, RDN, LDN

## **P32 What do Registered Dietitian Nutritionists want from a Practice Based Research Network?**

### **BACKGROUND:**

Member engagement is a critical element of Practice Based Research Networks (PBRNs) for generating relevant research questions and for finding members to carry out projects reliably. Registered Dietitian Nutritionists (RDNs) frequently report low self-efficacy in carrying out research and poor support from supervisors for participating in research activities. The Academy of Nutrition and Dietetics (the Academy) has a national Dietetics Practice Based Research Network (DPBRN). Currently the DPBRN has 1400 members, which is many more members than projects; presenting a challenge for member engagement. Therefore, an understanding of what members want from a network is important.

### **METHOD**

An invitation to participate in an anonymous online survey was emailed to all Academy members (n=67,626) in November 2013. Questions included whether the individual was a member of the DPBRN, their engagement in network and non-network research, barriers to research participation, knowledge of network projects, resources used in the past to learn about research, interest in becoming engaged in the network, as well as demographic questions covering professional experience and practice area. The survey was open for three weeks and was approved by the Long Island University Institutional Review Board.

### **RESULTS**

The survey received 4134 responses (6.1% response rate). Of the survey respondents, 170 were members of the DPBRN (4%). Barriers to research, which have been reported elsewhere, were similar to those reported in the past, with lack of institutional support reported more than lack of knowledge or skills. DPBRN members were more likely than non-members to have a doctorate (29% vs 8%,  $p<0.05$ ) and work in higher education (33% vs 12%,  $p<0.05$ ) or research (20% vs 7%,  $p<0.05$ ). The most frequently used resource for learning about research was taking a research course at a college or university (71% of DPBRN members vs. 60% of non-DPBRN members). DPBRN members were more likely than non-members to be familiar with the Academy's research resources such as the toolkit and methodology papers. When asked what resources would be helpful for learning about research in the future, the most frequently selected response was "having a standard data collection tool so patient information could be sent to a central site and analyzed in combination with data from other sites" (48% of DPBRN members and 33% of non-members identified this as extremely helpful), followed by mentorship (36% DPBRN members vs. 30% non-DPBRN members). "Have developed protocols in place that I can execute at my site" (essentially describing a PBRN) was 3rd most useful to non-members and 4th to members. Write-in comments highlighted themes regarding practices being "too small for research," the importance of employer buy-in, and the belief that non-clinical practitioners could not participate. The most important reason to join the DPBRN or participate in network projects for non-members was continuing education credits (64.2%) For network members, participation was most dependent on relevant projects being available (66.9%). Stipends for project involvement were second most important for network involvement in both groups. Workshops, followed by a listserv and regional events were the most popular ways to engage with other members and network leadership. Throughout the write-in responses, themes that emerged included: wanting help from the network in developing buy-in from institutional leaders, needing more information about the network, and the importance of mentorship.

### **CONCLUSION**

This survey revealed important trends in what members want from the DPBRN that will help guide our network in implementing changes that increase member value (e.g., providing general information about the network through opportunities for continuing education credit). Member value is particularly important because of the relatively low research self-efficacy in RDNs and the large number of network members proportional to available projects. We were surprised by the strong demand for workshops and the low use of existing resources such as the Academy's research toolkit. These data can also be used to increase network membership, which is currently a small percentage of the overall membership of the organization. While increasing members without additional projects may seem counterintuitive, the high proportion of DPBRN members who are educators or researchers rather than practitioners limits its value as a network and must be improved. It will be important to develop messaging so that all RDNs know they can participate regardless of practice area or size and to develop tools and collaborations to increase the perceived value of research at institutional levels.

### **PRESENTERS:**

Rosa K Hand, MS, RDN, LD  
Christine Dougherty, RD  
Jerrilynn Burrowes, PhD, RD, CDN

### **P33 The Comparative Effectiveness of Asthma Interventions within an AHRQ PBRN: Final Results**

#### **BACKGROUND:**

Asthma is a chronic lung disease that affects more than 23 million people in the United States, including approximately 7 million children. The burden of asthma in the U.S. is high, accounting annually for 2 million emergency department visits, 504,000 hospitalizations, 13.6 million physician office visits, and over 4,200 deaths while resulting in \$15 billion in direct medical costs. Patients with asthma also report a lower quality of life, with 18% of all asthmatic patients rating their overall health as poor. Carolinas HealthCare System (CHS) is a large vertically integrated non-profit system, thus, making it ideal to implement comparative effectiveness research because of the potential impact to the over 2.5 million diverse patients that receive their care under a unified electronic medical record system. The purpose of this study was to identify best practices for improving health outcomes for patients with asthma using comparative effectiveness research (CER) within the Mecklenburg Area Partnership for Primacy-care Research (MAPPR) Practice-Based Research Network (PBRN).

#### **METHOD**

CER strategies and a centralized database were created using hospital as well as community data to compare 3 different asthma management approaches among asthmatic patients who received care within 89 clinics across CHS located in Charlotte, North Carolina. The interventions were 1) the deployment of an integrated approach to asthma care (IAC) based on the Chronic Care Model across 77 primary care practices; 2) implementation of a shared decision making (SDM) approach to asthma care in 6 ambulatory clinics primarily serving the vulnerable population; and 3) to enhance an existing school-based care (SBC) asthma management program by providing additional resources including an electronic data collection system that linked children with their primary care providers via a school nurse.

#### **RESULTS**

The research team was able to successfully develop and deploy 3 interventions across a large integrated network of primary care practices and schools. The interventions showed significant impact on: (1) improved quality of asthma care delivery; (2) reduced asthma exacerbations - defined by oral prednisone use, emergency room (ER) visit or hospitalization for asthma; (3) improved pediatric quality of life; (4) reduced school absenteeism; and (5) reduced overall cost of care. Among SDM clinic patients, asthma related ER visits dropped 42% ( $n = 212$ ,  $p < 0.05$ ) and hospitalizations were reduced 50% within 6 months of the intervention. Oral steroid prescription orders were significantly decreased by 46% within 3 months of the intervention ( $n = 237$ ,  $p < 0.05$ ) and 24% within 6 months of the intervention.

#### **CONCLUSION**

The advancement of comparative effectiveness research has a significant impact on patient care and delivery, especially when evidence-based interventions are tailored to a real-world setting. As healthcare reform continues to demand improvements in quality of care and while decreasing costs, CER will be an essential tool to help shape the face of healthcare.

#### **PRESENTERS:**

Thamara Alkhazraji  
Michael Dulin, MD, PhD  
Lindsay Kuhn  
Hazel Tapp, PhD  
Thamara Alkhazraji, MSPH  
Yhenneko Taylor, PhD  
Kelly Reeves, BSN, RN

#### **ADDITIONAL AUTHORS:**

Lauren Mowrer, BA; Thomas Ludden, PhD; Maria Bonaiuto, MSN, NCSN; Christopher Blanchette, PhD; Teresa Gaston, MSN, RN; Elizabeth Burton, BSN, RN Sveta Mohanan, MD; Cheryl Courtlandt, MD; Lisa Hebert, PA-C