

## **P1 “Who Made the Decision Today?” Surveying Asthma Patients Level of Shared Decision Making in a Statewide RCT**

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**BACKGROUND:** Shared decision making (SDM) in the patient-provider interaction increases treatment plan adherence. However, several barriers prevent clinicians from incorporating SDM into daily practice. We previously implemented an evidenced-based asthma SDM toolkit across 6 practices in Charlotte, North Carolina and found that over 70% of SDM visits resulted in a shared decision. We evaluate SDM in a subsequent randomized controlled trial evaluating the effectiveness disseminating this evidence-based SDM toolkit. The objective of this trial was to examine whether a facilitated led (FLOW) approach to dissemination would result in a higher level of SDM than traditional lunch-and-learn approach.

**METHODS:** Clinics randomized to the FLOW dissemination arm (n=10) received 12-week rollout training between April and October 2014. The FLOW intervention involved customized training sessions with clinics to incorporate the SDM toolkit into workflows unique to each practice. In the traditional lunch-and-learn arm (n=10), the SDM toolkit was presented at one lunch time meeting with the providers and staff. Anonymous surveys were distributed to asthma patients that visited the FLOW and traditional clinics. The survey asked: Who made the decision in your meeting with the care team (health coach and provider) about what your asthma treatment would be? Responses were: (1) I alone made the decision; (2) I mostly made the decision, and the care team played a small role in the decision making; (3) The care team and I participated equally in the decision making; (4) The care team mostly made the decision, and I played a small role in the decision making; or (5) The care team alone made the decision. The proportion of patients in each study arm who shared equally in the decision was compared using the chi-square test.

**RESULTS:** Of the 251 surveys collected from the FLOW clinics, 75% indicated that “the care team and I participated equally in the decision making.” Of the 114 surveys collected from the traditional clinics, 59% indicated “the care team and I participated equally in the decision.” While the number of surveys only captures 25% of the actual surveys to be collected based on the estimate of 50 surveys per clinic, these preliminary results suggest that the FLOW clinics have a significantly higher percentage of asthma patient visits resulting in a shared decision when compared to traditional clinics (p=.002).

**CONCLUSION:** The FLOW approach to dissemination may be a better way to incorporate SDM into practices by helping providers overcome traditional implementation barriers, and has the potential for greater sustainability by considering unique practice characteristics. This may translate to better adherence to the care plan, a decreased number of asthma exacerbations, and lower overall costs.

**RELEVANCE STATEMENT:** A traditional lecture style delivery to providers of the shared decision making process does not always guarantee the process is fully implemented with a practice setting. A facilitated approach that customizes the shared decision making process with providers may result in higher proportions of shared decision making which may translate in fewer asthma exacerbations for patients than the traditional lecture style.

**ONLINE RESOURCE:**

## **P2 A Method of Studying Patients' Journeys in Decisions about Cancer Screening**

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**BACKGROUND:** It is clear to both clinicians and decision scientists that a variety of factors influence patients' decisions. Much research on the subject has come from data collected at specific points in time to examine how patients' priorities, information needs, and plans are patterned around socio-demographic, behavioral, or clinical factors. Researchers have recognized that these "snapshots" lack important temporal perspectives. The factors that influence decisions are fluid and evolve over time in the lives of individual patients, but frameworks for studying the "decision journey" of individual patients and aggregating the results to a population level have been poorly studied. A study of how patients make cancer screening decisions gave us an opportunity to test a new framework for conceptualizing the decision journey.

**METHODS:** The study involved 11 primary care practices in Virginia that use MyPreventiveCare, an interactive personal health record used by patients to keep up-to-date with preventive services. This tool has the added benefit of being integrated with the electronic medical record (EMR) of the primary care practices. For this study, users were invited to answer 17 questions (Informed Decision-Making [IDM] module) if they were (a) women age 40-49 who had not had a mammogram within two years, (b) men age 55-69 who had not had a PSA within two years, or (c) men or women age 50-75 who were not up-to-date with colorectal cancer screening. These questions, which were answered online ahead of office visits, asked patients to describe detailed preferences and concerns, including stage of awareness and readiness, desired next steps, preferred format for educational information and statistics, and key questions, concerns, and fears. Patients who indicated an interest in discussing the test at their next office visit were asked to list preferred discussion topics and desired locus of control, and consent to audio record the encounter. Audio recordings were performed on a subset (N=27) of these patients, which forms the sample for this analysis. This analysis joins IDM module responses from these patients with transcripts from the audio-recordings, responses to a patient and clinician post-encounter survey, and information on comorbidities and prior screening history from the EMR. This data set allowed us to track the decision journey. The IDM module asked patients to describe their stage in the decision-making process and the steps they would anticipate in making the decision including their priorities and concerns. The post encounter survey asked patients what they did prior to their appointment. From clinical/administrative EMR data, post-encounter survey responses, and audio recordings we learned about what transpired during the office visit. Key branch points in the process, including important branching questions posed in the surveys, were identified as nodes. We then used a new graphical design approach to map the trajectory of the 27 patients through the nodes.

**RESULTS:** The graphical depiction of the decision journey for the 27 patients revealed how trajectories were influenced by the level of awareness at baseline about the need to be screened and the baseline stage of change. The graphic visually mapped the individuality of patients, in terms of the unique combination of priorities and concerns they brought to the decision, their preferred next steps, and the events in their decision-making process that subsequently unfolded. Viewing the 27 pathways in aggregate identified how often the trajectories of patients share common concerns and priorities at certain stages of the decision journey and how often the patients transited key nodes where decision support interventions might achieve the highest yield.

**CONCLUSION:** Using new display methods as a temporal lens for studying the decision journey adds new insights into how patterns and determinants of decisions evolve over time. Decision science research that continues to rely on "snapshot" data rather than studying the process through which patients arrive at decisions will overlook opportunities to support and influence decisions in ways that meet patients where they are.

**RELEVANCE STATEMENT:** Understanding how patients approach decisions about cancer screening and other complex clinical options is essential for meaningful progress in shared decision-making and providing effective decision support in primary care.

**ONLINE RESOURCE:**

## **P4 Clinical Quality Measures for Prevention of Adverse Drug Events (ADEs) from High Priority Medications**

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**BACKGROUND:** The US Department of Health and Human Services “National Action Plan for ADE Prevention” called for enhanced attention to defining risk factors for and preventing ADEs from high priority medications (HPM). HPM, defined as anticoagulants, diabetes agents and opioids, have been associated with clinically significant and preventable ADEs. To date, few risk factors for ADEs from HPM have been translated into clinical quality measures (CQMs) relevant to primary care.

**METHODS:** The purpose of this project was to 1) clarify risk factors for ADEs from HPM in primary care and 2) develop a working set of ADE CQMs. These CQM will be assessed from electronic health record (EHR) data and implemented in audit and feedback reports for a group-randomized trial in PPRNet, a national PBRN. Risk factors for ADEs from HPM were identified from the “National Action Plan,” were augmented with findings from a literature review to derive CQMs which were supplemented by existing or proposed “EHR Meaningful Use” CQMs. Preliminary practice-level performance on these CQMs was assessed in two pilot practices as of March 1, 2015.

**RESULTS:** Risk factors for ADEs from HPM include: for patients on anticoagulants, lack of systematic follow-up for patients on warfarin, use of new oral anticoagulants (NOACs) in patients with impaired renal function; for patients on diabetes agents, implementation of aggressive glycemic targets in high risk patients; for patients on opioids, use of higher than recommended daily doses, co-prescription of other central nervous system depressants and for patients on chronic therapy, lack of systematic monitoring and coexisting substance use disorders. Preliminary CQMs include: routine INR monitoring for patients on warfarin; timely INR monitoring for patients on warfarin and interacting anti-infectives; renal function monitoring and appropriate dosing for NOACs; the proportion of older patients or patients with select comorbidities on sulfonylureas or insulin with recent hemoglobin A1C of more than 7%; for patients on opioids, daily use of less than or equal to 100 morphine equivalent doses, avoidance of concomitant prescriptions for benzodiazepines, muscle relaxants or sedative hypnotics, and, annual toxicology monitoring and screening for alcohol or other substance abuse in patients on chronic therapy. Preliminary performance across the pilot sample of practices ranges from 0% (timely INR in patients on warfarin and anti-infectives) to 94% (renal dosing for NOACs) for anticoagulant CQMs; 50 to 67% for diabetes agents CQM; and, 2% (annual toxicology monitoring in chronic users) to 95% (appropriate daily doses) for opioid CQMs. Performance data across 24 practices participating in the upcoming group-randomized trial will be summarized for presentation at the 2015 PBRN Conference.

**CONCLUSION:** Preliminary CQMs reflect potentially modifiable risk factors for ADEs from HPM in primary care and are feasible to calculate from EHR data. In the next phase of the project, providers from participating practices will complete a modified two-round Delphi survey in order to develop consensus on the validity and reliability of these CQMs.

**RELEVANCE STATEMENT:** The “National Action Plan for Adverse Drug Event (ADE) Prevention” calls for enhanced efforts to identify risk factors for and prevent ADEs from high priority medications of anticoagulants, diabetes agents and opioids. This purpose of this session is to describe risk factors for ADEs from HPM and corresponding clinical quality measures relevant to primary care practice.

**ONLINE RESOURCE:**

## **P5 Content of Patient Instructions Section of an EHR Generated After Visit Summary Affects Patient Satisfaction**

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**BACKGROUND:** Meaningful use (MU) objectives for electronic health records (EHRs) recommend that patients or their authorized representative receive a clinical summary after each visit. Most EHRs enable clinicians to produce such an “after visit summary” (AVS) from EHR data recorded during the visit. Proposed Stage 3 MU requires that the summary be more than a simple abstract from the medical record, and should include information pertinent to the visit. The AVS generated by one widely used EHR system has a patient instructions (PI) section that can be used to satisfy Stage 3 MU criteria. Little is known about how providers use this section and whether the content affects patient outcomes.

**METHODS:** We conducted a mixed methods secondary data analysis of PI sections from AVSs generated during a previous randomized clinical trial of the effects of varying selected content areas of the AVS. The PI sections were not experimentally manipulated. We first coded the PI sections to extract content categories, and then linked the categories with quantitative patient outcomes reported during telephone interviews 2-3 days and two weeks after receiving the AVS. The patient population was 50% Hispanic, and outcomes were measured in the language preferred by the patient. We used multiple linear and ordinal regression analysis to assess the relationship between PI section content and patient satisfaction with the AVS, recall of AVS content, and adherence to physician advice. All models were adjusted for age, sex, education, and clinic.

**RESULTS:** The major content codes identified in the qualitative phase were: referrals, information (e.g., lab results, patient education materials), treatment/prevention advice, instructions on how to perform a behavior, documentation of discharge actions taken by nursing staff, and absence of instructions. The codes were applied to 196 AVSs distributed to patients at 4 clinics. Patterns of content varied across clinics, with some clinics having no content category representation. Analysis was confined to content categories that were represented in at least three clinics—referrals, treatment advice, information, and absence of any content in the PI section. Thirty-nine percent of PI sections given to Hispanics included Spanish language content. AVSs with no PI section were omitted from analyses of specific content categories. Regression results indicated that inclusion of some content in the PI section (ordered log coefficient=1.75 ± .45, p<.001) and category “information” (ordered log coefficient=1.41 ± .53, p<.01) were associated with a 1-point increase in a 3-point “usefulness” rating. The information category, but not other content categories, was associated with higher overall satisfaction scores. Recall and adherence scores were not affected by any content categories.

**CONCLUSION:** The PI section content is not automatically populated from the EHR data. Thus the provider can customize content. In the randomized trial, we did not find any effect of varying the amount of automatically generated content included in the AVS on patient outcomes. However, it appears that use of the PI section and the type of content inserted affect how patients rate the usefulness of the clinical summary. Using the PI section to supply patient specific health information may improve patient satisfaction with the clinical summary.

**RELEVANCE STATEMENT:** Health care providers and policy makers are interested in how to use the capabilities of electronic health records to increase patient engagement in their care, and thereby improve outcomes. Clinical summaries provided to patients after their visit can potentially support patient engagement. This project reports on the effect of how providers use a “patient instructions section” of a clinical summary affects patient satisfaction.

**ONLINE RESOURCE:**

## **P6 Design and Implementation of the iSurvive Cancer Survivorship Curriculum for Rural Primary Care Practices in the High Plains Research Network**

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**BACKGROUND:** The number of cancer survivors is expected to increase by 30% in the next 10 years. Many patients have unique health needs due to their cancer and treatment. Primary care providers (PCPs) are a central source for care and information but may not have adequate training in survivorship needs. In rural areas, the role of the primary care practice is even more important for cancer survivors.

**METHODS:** Curriculum development: A multimodal curriculum was designed utilizing an appreciative inquiry approach and emphasizing cancer as a continuum of care, like many chronic diseases. The Boot Camp Translation process with the High Plains Research Network (HPRN) Community Advisory Council helped identify themes important to the community for inclusion in the curriculum. Components: Curricular components include in-person visits utilizing case based vignettes, asynchronous webinars delivered by content experts in cancer survivorship, and a website to emphasize important cancer survivorship concepts. Target population: All primary care practices of the HPRN (n = 54) and all practice staff are eligible to participate. Implementation: Rolling implementation design, using HPRN staff and two community nurse health educators. Outcomes: Outcomes include changes in cancer survivorship knowledge, increased evidence of survivorship care planning discussions, and curriculum satisfaction. A cancer survivorship knowledge survey is administered at baseline and at the conclusion of the in-person visits along with a curriculum satisfaction survey. Field notes collect qualitative feedback to refine implementation processes. Chart audits are utilized to assess changes in survivorship care over time.

**RESULTS:** To date, 19 primary care practices have started the curriculum, including 131 participants. No chart audits have yet been completed. Preliminary qualitative feedback indicates high levels of satisfaction with the curriculum, new concepts having been learned, and evidence of practice changes being made to better support cancer survivors. The HPRN Community Advisory Council developed the "iSURVIVE Service Manual" as a new resource for community members with a history of cancer and their caregivers.

**CONCLUSION:** A curriculum to enhance knowledge of cancer survivorship that is relevant to primary care practice can be successfully developed. This curriculum shows promise to successfully engage PCPs to actively participate in survivorship care planning. Community member participation increases the relevance of such a curriculum to local primary care practices and to patients.

**RELEVANCE STATEMENT:** Individuals with a history of cancer face significant fragmentation of care from the time of diagnosis moving forward. Primary care providers want to be more involved in supporting their patients with a history of cancer but may lack of knowledge and resources to successfully do so. A cancer survivorship curriculum tailored to rural primary care practices aims to better support individuals affected by cancer. A unique and meaningful feature of this study is the engagement of local community members in the development of the practice-based curriculum and their creation of a new resource for patients and caregivers.

**ONLINE RESOURCE:**

## **P7 Developing a provincial data infrastructure to support multiple PRBNs: the Ontario Data Safe Haven**

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**NEEDS & OBJECTIVES:** The current electronic medical records (EMR) landscape in Ontario involves multiple separate EMR data extractions using inefficient data extraction processes. Further, multiple organizations are asking for the same data in different ways. The University of Toronto Practice-Based Research Network (UTOPIAN) has established collaborative relationships with healthcare and research organizations to better serve the primary care community and patient population. The objective of this project is to improve and reorganize data flow (extraction, cleaning, storage, data return, and linkage) into a single, more efficient and effective Ontario Data Safe Haven to support research in multiple PBRNs across Ontario.

**SETTING & PARTICIPANTS:** Teams from UTOPIAN, CPCSSN, and EMRALD are working together towards a common goal. EMRALD – the Electronic Medical Record Administrative data Linked Database – is housed at the Institute for Clinical Evaluative Sciences (ICES) and consists of clinically relevant information derived from EMRs maintained by family physicians practicing in Ontario. CPCSSN – the Canadian Primary Care Sentinel Surveillance Network – is a primary care initiative and the first pan-Canadian multi-disease EMR surveillance system.

**DESCRIPTION:** Three interactive working groups have been formed: Governance, Technical and Stakeholders. Links have been developed with others interested in a common data repository, such as the Ontario Medical Association. Improved data extraction methods are being explored. Benefits of the Safe Haven: 1. A single EMR data extraction to improve efficiency; 2. Data will be available – with appropriate permissions and safeguards – to multiple organizations and researchers; 3. This level of collaboration is more sustainable than disparate entities extracting, cleaning and categorizing the same data.

**EVALUATION:** CPCSSN and EMRALD EMR case definitions for diabetes and hypertension have been compared and found to be reasonably similar (kappa .84 for first 6 practices). Secure storage at a provincial facility (ICES) are being explored. Funding is being sought.

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** Collaboration between different groups extracting EMR data to improve efficiency and effectiveness of data flow is feasible. Implementing the Safe Haven will require further work from the three working groups, as well as sustainable infrastructure funding.

**RELEVANCE STATEMENT:** A single, highly secure Ontario EMR data repository may be feasible. This could dramatically expand the use of primary care data for research and health care improvement.

**ONLINE RESOURCE:**

## **P8 Discordance between presumed standard of care and actual clinical practice: example from the National Dental PBRN**

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**BACKGROUND:** Use of a rubber dam (RD) during root canal treatment (RCT) is considered the standard of care because it prevents patient safety events and optimizes the odds of successful treatment. Nonetheless, not all dentists use a RD during this treatment, creating a disconnect between presumed standard of care and what is done in actual clinical practice. Little is known about dentists' attitudes about RD use and their relationship to actual use. Objectives: To: (1) quantify these attitudes; and (2) test the hypothesis that these attitudes are significantly associated with RD use.

**METHODS:** National Dental Practice-Based Research Network dentists ([www.NationalDentalPBRN.org](http://www.NationalDentalPBRN.org)) completed a questionnaire about their attitudes toward RD use during RCT. Three attitude scales comprised 33 items that used a 5-point ordinal scale to measure beliefs about effectiveness, inconvenience, ease of placement, comparison to other isolation techniques, and patient factors. Factor analysis, cluster analysis, and multivariable logistic regression analyzed the relationship between attitudes and RD use.

**RESULTS:** 1488 of 1714 eligible dentists participated (87%), of whom 697 (47%) reported always using a RD during RCT. All items had responses at each point on the 5-point scale, with an overall pattern of substantial variation across dentists. Five attitudinal factors and four clusters were identified. These factors and clusters were strongly associated with RD use.

**CONCLUSION:** General dentists have substantial variation in attitudes about RD use, which is significantly associated with RD use. These attitudes explain why there is substantial discordance between presumed standard of care and actual practice. Support: NIH-NIDCR-U19-DE-22516

**RELEVANCE STATEMENT:** Standard of care is not always based on an actual professional consensus. Large segments of a health care profession may believe that a standard of care exists, but this is not borne out when actual clinical practice is measured. Improving RD use may best focus on changing attitudes among low users.

**ONLINE RESOURCE:** <http://www.NationalDentalPBRN.org>

## **P9 Discutons Santé-Lets Discuss Health. Development and validation of a French language website to help chronic disease patients and their primary care providers engage in productive interactions**

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**BACKGROUND:** Communication interventions directed at patients, including self-learning websites, can increase patient participation. Communication skills training is part of most medical curricula. However there have been relatively few attempts at developing communication training materials for patients. Moreover, few communication educational websites are available in French. The aim of this project is to develop and validate a French language website intended to help patients and providers engage in more productive interactions within the primary care (PC) context.

**METHODS:** Phase 1 : Development of website materials. Patient training is based on Cegala's PACE model. Many formats are combined: texts, figures, graphs, video and audio excerpts and interactive exercises. Phase 2 : Construction of the website in collaboration with Capsana, a respected community organization specialized in the production of patient health education materials and websites. Phase 3 : Validation of the website with a group of patient test users, aged 45 to 72 years old, with a varied level of Internet literacy. The Discutons Santé website was studied in terms of content, relevance and usefulness, ease of use, and intention to recommend it by : a) observing a group of test users while they explored the website; b) self administered individual questionnaires after the visit of each section of the website; and c) focus groups to discuss the strengths and weaknesses of the website. Evaluation of three distinct methods to promote the visit of the website within PC practices: a) passive diffusion; b) website visit recommendation given to patients by the clinic receptionist (Discutons Santé bookmark); or c) website visit recommendation given to patients by the PC providers (Discutons Santé bookmark).

**RESULTS:** Validation data reveal that website presentation and content are relevant, useful and that the users intend to recommend it's use. Patients expressed enthusiasm and completed the site visit within 30 minutes on average with very little coaching. They suggested adding more instructions to improve navigation. Most suggestions were implemented in the final version of the website. We tested three methods to promote website use by patients. Passive diffusion (poster in the waiting room) was not effective in generating patient visits to the website. Although there were more Discutons Santé bookmarks distributed by the clinic receptionists compared to the HCP during the observation period, the proportion of visits to the website were higher when the bookmarks were distributed by HCP.

**CONCLUSION:** This is the first French language website aiming to improve patients' communication in the PC context. It has been deemed relevant and useful by the patients involved in its validation. Patients seem to appreciate a personal invitation by their HCP to use the website. Indeed HCP' recommendation to use the website was more effective in getting patients to use it which seems to indicate the importance for patients to perceive the Discutons Santé tools as part of their collaborative chronic disease management plan.

**RELEVANCE STATEMENT:** Health care providers (HCP) are trained to communicate effectively with their patients. However, French speaking patients have access to few communication tools to help them make sure they clearly present their reasons for consulting, ask questions, check their understanding and express any health concerns they may have. This project allowed our group to develop and validate such tools in the form of an interactive French language website

**ONLINE RESOURCE:** [www.discutonssante.ca](http://www.discutonssante.ca)



## **P10 Evaluation of practice facilitation in the Transforming Outcomes for Medical home Evaluation and reDesign trial**

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**BACKGROUND:** The Transforming Outcomes for Medical home Evaluation and reDesign (TOPMED) trial studied how to improve the quality of clinical care while reducing hospitalization and providing a high level of patient satisfaction. The TOPMED trial tested practice facilitation with high-value elements (HVE), health IT and financial incentives related to medical home recognition standards in Oregon. The generalist practice facilitator (PF) was supported by a team with expertise in primary care quality improvement, health services research, and medical home recognition.

**METHODS:** The PF trained in medical home standards and quality improvement conducted 12 monthly visits with eight practice sites in paired arms with intervention practices receiving facilitation around HVEs compared to control clinics setting QI general medical home improvement goals. PF participated in QI meetings, tracked progress toward monthly goals and wrote descriptive field notes. Field notes and accompanying documentation were independently reviewed and scored by a multi-disciplinary evaluation team for appropriateness of QI goals, progress toward monthly goal, and practice engagement.

**RESULTS:** Progress toward monthly goals were measured as achieved, partially achieved, revised, not achieved, or unknown, with final assessment being granted after 3 months from initial goal setting. The multi-disciplinary evaluation team produced adjudicated monthly percentages of study progress. Averages ranged from 86-99% with the lowest achieving months occurring in months 2, 3, 5 and 7. Intervention clinics achieved scores at 2.69% above control practices.

**CONCLUSION:** Projects using practice facilitation can measure progress by measuring ability to achieve goals. Practices interacting with PF to achieve practice transformation QI goals may be more likely to reach goals with directed goal selection.

**RELEVANCE STATEMENT:** When working with practices on quality improvement projects where the practice can choose from a number of goals, it is challenging to uniformly measure progress. Use of a rating system for whether individual goals were achieved may be a successful way to track overall progress. In our project, we found practices given goal targets from a facilitator were more likely to reach them.

**ONLINE RESOURCE:**

## **P11 Fostering the development of practice-based research on women's health within the Veterans Health Administration: an exploratory study**

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**BACKGROUND:** Historically, Veterans Administration (VA) health services research has focused on investigator-driven studies and studies concentrating on male Veterans, who comprise the majority of the US Veteran population. VA-based research on gender differences and women's health has been challenged by low numbers of women Veteran patients at any given VA site, limiting researchers' ability to recruit sufficient numbers of women Veterans. The VA Women's Health Practice-Based Research Network (WH-PBRN) was funded to address these challenges and to advance practice-based research on women Veterans' health. The WH-PBRN seeks to foster collaboration among researchers and clinicians across VA sites and to provide opportunities for clinician-informed, practice-based research. While it is widely believed that stakeholder (e.g., clinician) involvement in research is important and can lead to superior products, guidance about the best ways to engage stakeholders in research is limited. As a first step toward learning how to engage VA stakeholders in the research process, WH-PBRN investigators conducted site visits at the four founder WH-PBRN sites to examine contexts of care, and to obtain clinician and other stakeholder perspectives on their experiences with and priorities for women's health research.

**METHODS:** Semi-structured interviews were conducted with clinicians and other stakeholders at the four founder WH-PBRN sites to learn about clinician and staff interests in and experiences with research and quality improvement. Data were analyzed using a team-based, consensus coding approach.

**RESULTS:** Frontline clinician and other stakeholder respondents (n=48) typically had minimally participated in research/QI activities in these busy clinical settings. Despite an overall lack of orientation to research, participants had several ideas about what would warrant research and topics that were of interest to them. For the most part, they expressed an interest in the research being done, but by others, not by them. Respondents mentioned several barriers to engaging in research and QI such as lack of training and research expertise and lack of protected time and/or compensation for research efforts.

**CONCLUSION:** Those providing direct care and other services to women Veterans were generally receptive to and found value in research, but face individual-and system-level barriers to engaging in research. Future practice-based research on women Veterans' health will need to incorporate stakeholder priorities and to address institutional parameters.

### **RELEVANCE STATEMENT:**

**ONLINE RESOURCE:** There are clear benefits in terms of researching questions of clinical importance and translating research findings into practice that could be realized if individual and system-level obstacles can be appropriately addressed and if practice-based partner

## **P12 Interprofessional collaborative care for chronic pain: A qualitative assessment of constraints and freedoms to enhance collaboration for primary care patients with chronic pain**

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**BACKGROUND:** Previous studies have examined relationship centered care with regards to patient and provider communication, however, few have focused on the relationships between providers themselves. Interprofessional collaborative care (ICC) has shown promise to improve outcomes in patients with chronic non-malignant pain (CNMP), yet is difficult to achieve for many primary care physicians, even those in patient centered medical homes. We sought to better understand the constraints and freedoms to such care.

**METHODS:** Semi-structured interviews were performed with a convenience sample of interprofessional pain providers in a Midwestern urban area beginning with primary care physicians (PCP) from the Cincinnati Area Research Interest Group (CARInG) PBRN (family and internal medicine), pain management (PM) (anesthesiology and physical medicine), integrative medicine (IM) (acupuncture, massage therapy, integrative physicians, chiropractor), physical therapy (PT) and behavioral medicine (BM) (psychiatry, psychology, social work). Interview transcripts were coded using the editing style and findings were assessed within D'Amour's framework of interprofessionalism, which states collaboration is made up of processes influenced by human relationships and organizational constraints.

**RESULTS:** There were 6 PCP, 5 PM, 7 IM, 5 PT and 5 BM interviews performed; mean age of participants was 48, 36% women. Our analysis was primary care centered, as this was our population of interest. Members of all professional groups expressed at least some desire for the PCP to be at the center of collaborative CNMP care. However, there were few personal professional to professional interactions between PCPs and any of the other pain professionals, leading to misperceptions about why referrals occurred. PCPs felt they referred to other pain professionals when it was appropriate, for second opinions, to improve treatment outcomes and when they felt uncomfortable with their own skills or knowledge. Other pain professionals, however, felt that PCPs referred as a last resort, to have someone else prescribe opioids, for patient education or to "dump patients." There was often a mismatch of desired information between the PCP and other professionals. PT and BM specifically noted that insufficient patient history accompanied referrals. PCPs desired brief notes from others, but either received nothing or felt patient summaries from others were overly-lengthy, where key clinical information was hard to find. Without trusting relationships to provide freedoms for enhanced collaborations, the external organizational constraints described by all the participants of high costs, restricted insurance coverage and limited appointment availability have created a system of poor collaborative care for patients with CNMP. All groups of professionals described having patients serve as de facto carriers of communication between the professionals.

**CONCLUSION:** ICC is difficult to achieve for many primary care patients with CNMP, potentially leading to inadequate pain improvement for patients and known dissatisfaction for PCPs. The lack of effective referral communication and misconceptions of interprofessional roles suggests that PCPs may benefit from improved collaborative frameworks and protocols for the care of CNMP patients.

**RELEVANCE STATEMENT:** Though interprofessional care has proved to be beneficial, but it is difficult to establish because of both: 1. poor communication due to a lack professional knowledge of each other's roles and contributions to a team care approach; and 2. factors outside of the office but related to the practice such as insurance coverage and high co-pays and out of pocket costs.

**ONLINE RESOURCE:**

## **P13 Leveraging PBRN Capacity to Foster an Academic-Community Research Collaborative in a Rural Regional Accountable Care Organization**

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**NEEDS & OBJECTIVES:** Practice-based research networks (PBRNs) are increasingly collaborating with community partners to address health and health care delivery. This session describes how one PBRN is leveraging seed grant opportunities to build community based research capacity.

**SETTING & PARTICIPANTS:** Oregon is in the midst of health care transformation, with sixteen regional Coordinated Care Organizations (CCOs) — Oregon’s equivalent of Accountable Care Organizations (ACOs) — redesigning health care delivery and coverage for people eligible for Medicaid. In the rural Columbia Gorge region the formation of the PacificSource Columbia Gorge CCO and its governing body, the Columbia Gorge Health Council, has catalyzed regional collaboration and health improvement activities. To help identify and address local health priorities concurrently with health care reform, a primary care provider and a PBRN investigator initiated a partnership to build a regional health research network of service providers, health system leaders, and community members who can design, implement and disseminate findings from research studies.

**DESCRIPTION:** With seed funding from the Patient Centered Outcomes Research Institute (PCORI) Pipeline to Proposal program, our foundational work assessed regional health priorities and established the relationships and infrastructure to form a robust academic-community partnership. We gathered information about local community health needs by attending monthly CCO meetings and interviewing 27 diverse community stakeholders. We also engaged with the boards of existing regional health and social services organizations to listen to their priorities and discuss the research network. We developed the multi-level network infrastructure which includes a core project team, governing board, Partner Agencies (i.e., collaborating organizations), and Research Ambassadors (i.e., individual community members who collaborate on specific research projects). During the first year of our partnership, our core team and partner agencies submitted and received three collaborative research applications. In the next year we will implement funded projects, continue to refine our partnership structure, conduct community-based capacity building research trainings, and develop the identified health priorities into targeted research questions and proposals.

**EVALUATION:** We collected process measures to assess partnership development, including the number of individual and organizational stakeholders engaged in the partnership and feedback received. In the first year we interviewed 27 individuals, attended 12 community me

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** Support for partnership development, like funding available through the PCORI Pipeline to Proposal program, provides a valuable opportunity to explore and develop the capacity for academic-community research collaborations. However, we found that the time and intensity of partnership development work often outpaces the available resources; building new capacity and local infrastructure required significant unfunded effort. The impacts of initial partnership development extended beyond the direct network activities, with at least four related projects developed and funded to support regional health improvement. We learned that community members are highly interested in social determinants of health and upstream interventions, which many funders do not support. As we move forward, this tension between community and funder priorities will require us to be strategic with research proposals while continuing to pursue community priorities.

**RELEVANCE STATEMENT:** Partnership development takes effort by both community and academic partners. Stakeholders can see how one community has used PBRN infrastructure to initiate development of a collaborative research partnership. Partnered research ideally leads to increased relevance and application.

**ONLINE RESOURCE:**

## **P14 MyPreventiveCare: Recruiting and engaging practices as stakeholders in designing and implementing a study to promote evidence-based preventive care**

Rebecca Aycock, PhD; Paulette Lail Kashiri, MPH; Jill Arkind, MPH; Christine Nelson RN, PhD; Crystal A. Krabbenhoft, BS CPS, Miria Kano PhD, Jennifer Devoe MD, DPhil, Robert Williams MD, E. Marshall Brooks MA, Alex Krist MD, MPH

**NEEDS & OBJECTIVES:** Practice Based Research Networks (PBRNs) help translate research findings into real-world clinical practice. To achieve this, PBRNs use community engagement principles when conducting research within communities of practices to ensure that the research is highly relevant to clinicians and patients. Engagement strategies include building trust with practices, recognizing and incorporating local expertise, understanding and respecting the history of local relationships, sharing decisions, and identifying locally relevant clinical questions. Through effective strategies PBRNs strive to create collaborative partnerships with practices spanning the entire research process from research question development to dissemination of findings. In addition, community based participatory research (CBPR) can also support the elimination of health disparities through partnerships with those with first-hand knowledge of the needs, barriers and facilitators of these patient populations. Previously, we developed an application (MyPreventiveCare – MPC) that functions within practices’ personal health records (PHR) to promote evidence-based guidelines for preventive and chronic care and more deeply engages patients in their care. MPC collects patient reported information and integrates it with the existing electronic health record (EHR). Then it translates clinical information into lay language and provides individualized, guideline-based clinical recommendations in order to facilitate patient action. We have demonstrated that implementing MPC in a small number of practices in Virginia improves preventive care, but whether this can be disseminated and implemented more broadly to other settings is unknown. Using this study as a case example, we will detail how CBPR strategies can help to better recruit and engage a diverse range practices from multiple PBRNs to better implement an intervention.

**SETTING & PARTICIPANTS:** This study is a collaboration between three PBRNs – the Virginia Ambulatory Care Outcomes Research Network (ACORN), OCHIN, and University of New Mexico’s Research Involving Outpatient Settings Network (RIOS Net). The three PBRNs consist of primary care practices in 15 states with a variety of locations, sizes, cultures, and patients. The culture and environmental contexts of the PBRNs and their practices are unique and have to be addressed in order to successfully recruit and engage practices in this dissemination and implementation study.

**DESCRIPTION:** This study employs a mixed-method, stakeholder-engaged design to evaluate the dissemination and implementation of MPC. Research staff used a variety of strategies throughout recruitment and implementation to build partnerships with practices. Due to the diverse geographical spread of our participating practices it was not feasible for the research team to travel to all the practices, therefore we used a combination of in-person, telephone, and virtual communications. Through a series of learning collaboratives, diaries, and practice meetings we elicited practices’ input regarding the study design and supported intervention implementation. Transcripts, field notes and diaries from interactions also served as data sources to measure outcomes including the Adoption and Implementation (workflow design, trainings, barriers, and facilitators of use) of MPC.

**EVALUATION:** Different strategies were used to recruit practices – email, telephone and in-person meetings. The overall rate of practices agreeing to participate was 49%. Personal contact strategies had higher rates of recruitment than email strategies (64% vs. 31%).

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** The time and resources needed to support a collaborative research relationship are significant, but using CBPR principles to engage practices has proven valuable in recruiting practices, refining the intervention, and guiding implementation.

**RELEVANCE STATEMENT:** In order to have effective research collaborations with community members, researchers need to be adaptable and responsive to partners’ perspectives and needs.

**ONLINE RESOURCE:**

## **P15 Navigating Institutional Review Board Challenges in a Clinical Pharmacy Practice-based Research Study**

Rachel Chennault, PhD; Daniel Touchette, PharmD, MA; Kimbal Ford, PharmD; Blair Capitano, PharmD Verna Welch, PhD, MPH  
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**NEEDS & OBJECTIVES:** Clinical pharmacists are increasingly recognized as advocates who influence vaccination policy, as well as healthcare providers who promote, administer, and in many cases, prescribe vaccines. The Pneumococcal Immunization Practices study was designed to assess the operational, resource, and attitudinal barriers from the clinical pharmacist's perspective as they relate to the adoption and implementation of clinical practice guidelines for the prevention of pneumococcal disease in immunocompromised adults 19 years of age and older.

**SETTING & PARTICIPANTS:** Using a cross-sectional survey administered to members of the American College of Clinical Pharmacy's Practice-Based Research Network (ACCP PBRN), clinical pharmacists were asked to serve as both: 1) site investigators by collecting institution-level data relating to the development, approval, implementation, and maintenance of local pneumococcal immunization protocols, and 2) study subjects by providing opinions about barriers to implementing national pneumococcal immunization guidelines in their respective clinical practice settings. A central institutional review board (IRB) provided expedited approval of the study along with guidance that the institutions wherein the clinical pharmacist site investigators reside were not engaged in human subjects research. Acceptance of this determination by 61 local IRBs, or administrations in the absence of a local IRB, was sought prior to any data collection.

**DESCRIPTION:** Descriptive statistics were used to analyze the outcomes related to IRB actions at these institutions, and feedback from 44 clinical pharmacists about their IRB experiences was obtained to identify common factors associated with IRB outcome.

**EVALUATION:** Although 37 local institutions' IRBs provided a determination that the involvement of their pharmacist(s) in this study did not engage the site itself in human subjects research (60.7%), 11 sites opted for an independent review of the study under either a

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** Overall, clinical pharmacist investigators and ACCP PBRN study staff committed significant time and resources to meet the IRB review challenges. As IRBs become more familiar with practice-based research and, specifically, study designs engaging participants as both investigators and human subjects, the number and complexity of challenges associated with the IRB review and approval of PBRN studies are likely to decrease.

**RELEVANCE STATEMENT:** Ultimately, improvements in IRB processes may encourage increased engagement of clinical pharmacists in practice-based research.

**ONLINE RESOURCE:**

## **P16 Patient Engagement: A WREN qualitative case study of Boot Camp Translation (BCT) in primary care settings (a report from the Meta-LARC INSTTEPP study)**

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**NEEDS & OBJECTIVES:** Engaging patients as part of the healthcare team is vital to improving healthcare delivery and outcomes. PBRNs and primary care practices need practical and evidence-based methods for engaging patients. The Boot Camp Translation (BCT) method has been successful in community settings to build partnerships between lay-people and medical professionals to develop culturally relevant health interventions for their communities. This study utilizes a modified BCT approach to engage patients as partners in primary care implementation teams.

**SETTING & PARTICIPANTS:** Implementing Networks Self-management Tools through Engaging Patients and Practices (INSTTEPP) was an 18 month long, AHRQ-funded trial through the Meta-LARC P30 consortium, which includes 4 US-based PBRNs: SNOCAP (Colorado), ORPRN (Oregon), IRENE (Iowa) and WREN (Wisconsin). A total of 16 practices participated in the study, 4 from each network. WREN engaged 4 clinics; each clinic recruited 2 patients to participate in the intervention.

**DESCRIPTION:** BCT is built upon principles of community engagement and has been successfully used by the Colorado-based SNOCAP PBRNs to implement interventions around asthma, colorectal cancer screening, diabetes, and PCMH. INSTTEPP translated the BCT methodology to primary care to include patients as part of the clinic implementation team around the topic of self-management support for chronic conditions. BCT consisted of an all-day, face-to-face, kick-off meeting and 3-4 conference calls over a two month time-frame lasting no longer than 30 minutes each. This is a qualitative case study focusing on the experiences within the WREN network, providing anecdotal and descriptive information on what patient engagement looked like as a result of the intervention.

**EVALUATION:** Four clinics from across the state of Wisconsin participated in the Boot Camp Translation (BCT) intervention. Each of the 4 clinics successfully recruited 2 patients to participate as members of the INSTTEPP practice team (8 patients total). All 8 patients

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** BCT is a promising method to engage patients as members of healthcare teams in primary care settings. WREN found that patients were actively engaged in project conversations during the initial kick-off meeting and in subsequent team phone calls, and that clinic staff were motivated to engage patients. After participating in INSTTEPP, one of the Wisconsin clinics sought WREN assistance to develop a standing clinic workgroup including patients to address clinic issues relevant to chronic disease management. Facilitators to patient involvement included strong communication early and often, accommodating the work schedules of employed patients when scheduling phone meetings, augmenting email communications with mailed copies of meeting agendas and materials, reimbursement for expenses, and nominal compensation for time.

**RELEVANCE STATEMENT:** Primary care clinics and health systems need tools to engage patients in a meaningful way that respects their time and incorporates their experience. "Boot Camp Translation" is a promising new method for creating a participatory environment with patients as critical members of the healthcare team.

**ONLINE RESOURCE:**

## **P17 Perspectives of Direct Support Professionals on Health Care Quality and Processes**

Carl Tyler, MD, MSc; Jeanmarie Muellner, MPA; Maureen Riley-Behringer, PhD; James Werner, PhD;

**BACKGROUND:** Community-based participatory research is vital to improving the health care of populations experiencing health disparities. One such population is that of individuals with intellectual and other developmental disabilities (IDD). Direct support professionals (DSPs) are paid caregivers who frequently accompany persons with IDD to their health care appointments, and could offer valuable insights into potential target areas for further improvement; yet, their opinions and perspectives are rarely solicited. The purpose of this study is to survey DSPs immediately following health care encounters involving their clients with IDD in order to understand their views on health care quality and processes.

**METHODS:** A brief “card study” survey, commonly employed in practice-based research, was designed by a community-based participatory research network called the Developmental Disabilities-PBRN, a multi-stakeholder group of self-advocates, advocates, service providers and health care professionals. The survey was comprised of 29 items, including questions about the patient with IDD, the DSP, the physician, and the health care encounter. Five residential service providers are participating, and we anticipate achieving our goal of collecting at least 300 surveys.

**RESULTS:** Survey collection will be completed by the end of April 2015 and full analyses will be presented. The main outcome of interest is DSP-rated satisfaction with the health care encounter. Descriptive statistics will be generated from surveys including measures of association between characteristics of patient, DSP, physician and processes of health care with DSP-rated satisfaction with the health care encounter.

**CONCLUSION:** Community-based participatory PBRNs generate research questions and develop study designs that reflect their unique perspectives on health and health care and their ideas about how to improve both. As a community-based participatory PBRN, the Developmental Disabilities-PBRN is investigating ways to improve the health care of persons with intellectual and other developmental disabilities by first understanding how direct support professionals view the health care encounter.

**RELEVANCE STATEMENT:** Many individuals with intellectual and other developmental disabilities rely on paid caregivers called direct support professionals to access health care and to implement health care recommendations. It is important to ask direct support professionals about their perspectives on the quality of health care services provided to persons with disabilities and their ideas about how that care can be improved.

**ONLINE RESOURCE:**



## **P18 Physicians' Assessment of Longitudinal Training in Health Behavior Change**

Rachel J. Martukovich MA; Carl V. Tyler MD, MS; James J. Werner PhD; Christina M. Delos Reyes MD; Sybil Marsh MD

**BACKGROUND:** Lifestyle behaviors including smoking, obesity, poor diet, and sedentary behavior are major drivers of chronic disease and healthcare utilization. Primary care physicians are tasked with addressing patients' lifestyle behaviors, which requires them to possess effective communication and behavioral skills that fit into brief encounters. The objectives of this multi-year training project were to develop tailorable skill-sets that assist patients in adopting healthy behaviors and effective methods for imparting these skills to primary care physicians. We report the perspectives of program participants on their adoption of skills, changes in styles of practice, and barriers to implementation.

**METHODS:** Focus groups were conducted with cohorts of Family Medicine faculty physicians (n=13) after the completion of a 10-month HRSA-sponsored fellowship at 10% effort. The program's curriculum focused on increasing healthy lifestyle behaviors and drew from evidence-based methods including solution-focused brief therapy, motivational interviewing, cognitive behavioral therapy, the 5 A's, and skills for patient engagement and patient-centeredness. The skills-based program utilized a combination of didactics, brief skills practice, video-recorded role-plays and real-plays followed by systematic critique, simulated clinical encounters with standardized patients, and observations of clinical practice followed by instructor feedback. Focus groups were audiotaped and transcribed for analysis. Transcripts were systematically coded using a theoretically driven, inductive method and predominant patterns and themes were identified.

**RESULTS:** Participating physicians reported an increase in the degree of integration of health behavior change methods into encounters and raised confidence in addressing behavioral issues. They reported an increased tendency to pursue encounters from a patient-centered perspective, including more frequent assessment and consideration of the patient's stage of change. Participants also reported shifting to a more collaborative approach to practice that emphasized patient autonomy. Physicians stated that when addressing behavioral health issues, more time was spent on constructing solutions with patients rather than focusing on problems. An additional reported benefit was a decrease in stress, pessimism, and overall burden felt by physicians during and after patient visits. Finally, physicians reported the ability to integrate behavioral health skills into their encounters in brief increments of time, however, limited time was also the main barrier to skill usage.

**CONCLUSION:** Following participation in a 10-month behavioral health skills training program, physicians reported increased use of evidence-based skills for health behavior change. Participants also reported increased confidence in addressing patients' lifestyle behaviors, while reducing levels of stress during practice. Findings suggest that evidence-based patient counseling skills for brief primary care encounters can be successfully imparted to experienced physicians through a low-intensity training program.

**RELEVANCE STATEMENT:** Primary care physicians participated for 4 hours each week in a 10-month training program that was focused on helping patients adopt healthy lifestyle behaviors. After completing the program, they reported more collaborative partnerships with patients and had increased confidence in their ability to help people adopt healthy behaviors.

**ONLINE RESOURCE:**

## **P19 Preliminary Findings from the PRIMIER National Integrative Medicine Database: A BraveNet Project**

M. Diane McKee, MD, MS; Rowena Dolor, MD; Donald Abrams, MD; Jeffery Dusek, PhD; Bonnie Horrigan Ben Kligler, MD, MPH  
Rhonda Roberts, MSPH Claudia Lechuga, MS

**BACKGROUND:** PRIMIER (Patients Receiving Integrative Medicine Interventions Effectiveness Registry) is a multi-institution project designed to uniformly collect patient-reported outcomes and extracted electronic health record (EHR) data into a large national registry. The objectives are to evaluate whether patient reported outcomes (PROs) change over time, whether they differ by baseline characteristics of participants (e.g. demographics, clinical condition, patient activation measure score), and to compare the impact of various integrative therapies on patient reported and clinical outcomes.

**METHODS:** PRIMIER launched at 8 clinical sites in Fall 2013, and now has extended to 14 sites. Patients >18, who present for clinical care for any reason, are invited to complete a secure online survey in English or Spanish. A few sites also offer the option of paper and pencil surveys. Participants receive electronic reminders to complete follow up surveys at 2, 4, 6, 12 18 and 24 months. Measures include the PROMIS®29 (depression, anxiety, pain interference, pain intensity, fatigue, physical function, sleep disturbance, satisfaction with social role), Perceived Stress Scale (PSS-4), the Patient Activation Measure (PAM) in addition to questions about health concerns and integrative treatment and self-care modalities used. Every six months, EHR data (e.g. dates of clinical visits, procedure codes (CPT), and clinical diagnoses (ICD-9/ICD-10) are combined for analytic purposes.

**RESULTS:** As of March 2015, 1684 participants have completed at least one survey; the median age is 51, 77.4% are female, 79.2% are privately insured, 80% have a college degree or higher. The mean BMI is 28.4, and 5.4% are current smokers. To assess change over time, we limited the following analysis to 369 patients enrolled for at least 6 months who had completed at least 3 of the 4 surveys (baseline, 2-month, 4-month, and 6 month). This group has a statistically significant change in the proportion at patient activation level (Level 1 – Does not believe that he/she has an active or important role; Level 2 – Lacks confidence and knowledge to take action; Level 3 – Beginning to take action; Level 4 – Maintaining behavior over time). Over 6 months, the proportion in Level 1 and Level 2 decreases from 29% at baseline to 17% and the proportion at Level 3 and 4 increases from 71% to 83% (p= 0.01). Significant reductions in the PROMIS Depression (mean change score -0.95, p<0.05) and Perceived Stress Scale (mean change score - 0.57, p=0.001) over 6 months are also observed. A total of 179 patients, who reported chronic pain as their reason for seeking care, showed significant improvement over time (PROMIS pain interference mean change score -2.86, p < 0.0001).

**CONCLUSION:** Early results from PRIMIER demonstrate that patients seeking care in BraveNet integrative medicine centers report improvement in patient activation, perceived stress and depression; patients with chronic pain experienced improvement in pain over 6 months.

**RELEVANCE STATEMENT:** The PRIMIER registry is yielding important findings regarding the outcomes of treatment in integrative medicine centers; capacity to answer important questions and discover best practices in integrative medicine will only increase as recruitment continues.

**ONLINE RESOURCE:**

## **P20 Preventing Diabetes in the Los Angeles Safety-Net: a Los Angeles County Department of Health Services PBRN/Los Angeles Metro YMCA Collaboration**

Laura Myerchin Sklaroff, MA; Nina Park, MD; Alex Li, MD; Sandra Gross-Schulman, MD, MPH, RN Geoffrey Scheib, RN Khathy Hoang, MPH Jeffrey Guterman, MD, MS (presenter)

**BACKGROUND:** Residents of the Centinela Valley have more than double the rate of Diabetes Mellitus (DM) diagnoses compared to the rest of the county. Residents have a low socioeconomic status and nearly 60% of residents are African American and Latino; both of these factors are associated with significantly higher rates of DM and higher risk for the onset of adult DM. Residents have limited access to healthcare resources, lower levels of health knowledge, and face higher levels of psychological stress; all of which further contribute to adult onset DM. Nationally, 86 million adults are pre-diabetic but only 11% are aware. Left unmanaged, the majority of those diagnosed with pre-diabetes will develop irreversible DM within 10 years. Two PBRN members, the Los Angeles County Department of Health Services (DHS) and the Los Angeles Metropolitan YMCA (YMCA) have partnered to identify pre-diabetic patients and recruit and enroll them into a Diabetes Prevention Program (DPP). Objectives: 1) Develop an algorithm to identify patients with pre-diabetes in the Centinela Valley 2) Offer informational/education sessions to staff on the DPP 3) Track in the registry eligible pre-diabetic DHS patients in the Centinela Valley 4) 12 DPP cohorts will be active or completed in YMCAs 5) Increase participants' self-efficacy for exercise and eating habits from baseline to program completion The Centinela Valley is located in the south of Los Angeles County (LAC). Its population mirrors DHS as multicultural and diverse; approximately 15% are African American and 63% are Hispanic/Latino. A significant portion of patients have multiple chronic conditions, are non-native English speakers, and post Affordable Care Act, remain residually uninsured at higher rates than state or national levels. More than 40% of DHS patients have diabetes, heart failure, or asthma, and one or more other chronic conditions. Social problems (i.e., poor social/community support, chronic homelessness) compound the impact of disease in this population. There are more than 2,300 DHS continuity patients in the Centinela Valley identified as pre-diabetic. A significant number of residents beyond these patients will develop DM and are unaware of their risk factors.

**METHODS:** A partnership between DHS and YMCA ensures better access to high quality, patient-centered, cost-effective health care for LAC residents. Through direct services and collaboration with community and university partners, the two organizations empower communities to improve healthy spirits, minds and bodies. A four-step approach will improve access to the YMCA DPP for DHS safety-net patients: 1) electronic identification of DPP candidates from the DHS patient population, 2) DHS provider DPP education on the availability of the program, 3) referral of patients to the YMCA DPP, 4) reporting across a Patient-Provider-Educator loop. This program will cross multiple DHS freestanding clinics and YMCA facilities in the targeted geography, all of which are members of our PBRN. A key aspect of this project is the creation of a Project Advisory Group (PAG) that will strengthen and enhance the capacity of our community stakeholders to engage in a bi-directional and collaborative partnership that will prevent pre-diabetes from progressing to DM in the Centinela Valley. The PAG consists of patients, providers, and community members.

**RESULTS:** An independent team from the Claremont Evaluation Center at Claremont Graduate University will conduct an external evaluation focused on implementation and outcomes. Implementation includes attendance, engagement, and satisfaction (participants and DHS providers). Outcomes include health-related information, participant self-efficacy, emotional well-being, and quality of life data.

**CONCLUSION:** DHS and the YMCA have a mutual interest in preventing DM for indigent populations. Our collaboration provides each organization the opportunity to play to its strengths. If the Centinela program is successful, we expect to expand this program across LAC.

**RELEVANCE STATEMENT:** This project will implement a group health class, supported by family access to exercise facilities and regularly reported lab work. It will expand the primary care team to include access to a YMCA coach and the patient in the effort to prevent the patient's progression to DM. A multi-stakeholder advisory group including patients and community representatives ensures it is culturally relevant to the LA Safety-Net patient population.

**ONLINE RESOURCE:**

## **P21 Use of the Automated Remote Monitoring System (ARMS) in Los Angeles County: Wrapping our ARMS Around Chronic Disease and Prevention**

Laura Myerchin Sklaroff, MA; Nina Park, MD; Sandra Gross-Schulman, MD, MPH, RN; Geoffrey Scheib, RN Chien-Ju Wang, MS Khathy Hoang, MPH Jeffrey Guterman, MD, MS (presenter)

**BACKGROUND:** Structured telephonic support and telemonitoring are effective methods of patient outreach that result in improved health outcomes. Traditional methods utilize nurse-driven telephone contacts comprised of standardized, patient-independent clinical content. While effective, this process is costly and consumes limited resources. The Los Angeles County Department of Health Services (DHS) recognized the need for a low cost method for patient monitoring and, with a technology partner, successfully designed and implemented a remote monitoring approach. We have utilized the Automated Remote Monitoring System (ARMS) in three programs: 1. The Heart Failure Automated Remote Monitoring System (HF-ARMS), is a bilingual automated data collection tool that provides outbound and inbound communications, via phone calls with speech recognition, emails, or text messages, to patients on a scheduled and triggered basis. 2. The Depression Automated Remote Monitoring System (D-ARMS) is a bilingual system that gathers patient PHQ-9 scores, behavior responses, and information about antidepressant medication use, and cognitive behavior therapy activities. 3. The Immunization Outreach Automated Remote Monitoring System (IO-ARMS) is currently in development. Differing from earlier iterations of the ARMS, where patients were recruited and taught to interact with the system, the IO-ARMS will “cold call” DHS patients. It will contact eligible patients, provide a brief message on the importance of pneumococcal immunization and ask if the patient has received the immunization outside of DHS. It will also allow the patient to indicate they have a question, address patient immunization concerns, and prompt the patient to self-schedule an immunization appointment.

**METHODS:** DHS is the second largest safety net health system in the U.S. Our populations are multicultural and diverse; approximately 15% are African American and 63% are Hispanic/Latino. A significant portion of patients have multiple chronic conditions, are non-native English speakers, and post Affordable Care Act, remain residually uninsured at higher rates than state or national levels. Within DHS, more than 40% of patients have diabetes, heart failure, or asthma, and one or more other chronic conditions. Social problems (i.e., poor social/community support, chronic homelessness) compound the impact of disease in this population.

**RESULTS:** The ARMS is an automated speech recognition system that can provide multiple simultaneous outbound communications, and receive inbound communications, to patients on a scheduled and triggered basis. Communication results with details of patient interaction are made available via a secure web interface in real-time to care providers. Real time access to data collected from ARMS communications result in earlier detection, intervention, or management of deterioration from a stable chronic condition. ARMS technology works independently or in concert with an electronic registry or health record system. Over 92% of data collected by the HF-ARMS was clinically equivalent to data collected by human researchers. The HF-ARMS and human HF-telemonitoring under-triaged patients at approximately the same rate (3.81% and 3.69%, respectively). 80% of satisfaction survey respondents preferred the HF-ARMS calls to less frequent human monitoring. Patients reported protective effects of using the HF-ARMS, suggesting that calls reinforced their increased adherent health behaviors. On average, successful HF-ARMS calls lasted 2.34 minutes at a cost of \$0.85 per call. Patients randomly assigned to use the D-ARMS had significantly improved PHQ-9 depression scores (differences-in-differences ANOVA test,  $p < 0.05$ ) and were less likely to have sustained major depression (Pearson Chi-Square test,  $p < .01$ ), when compared to patients in Usual Care. The pilot of the IO-ARMS with DHS patients will begin in Spring 2015. An external evaluation will determine impact on pneumococcal vaccination rates and ARMS utility compared to earlier ARMS iterations.

**CONCLUSION:** The ARMS provides an operation solution to address unmet patient self management needs. Health systems can easily adopt this scalable, innovative, and patient-centric technology that has proven to be safe and cost effective.

**RELEVANCE STATEMENT:** The ARMS is a cost-effective, proven technique for improved clinical performance, with positive fiscal and satisfaction outcomes that have demonstrated efficacy for patients regardless of education and technology experience.

**ONLINE RESOURCE:**

## **P22 Selection of Resources from a Vaccination Standing Order Program Toolkit During a Randomized Trial to Improve Vaccination Rates in a PBRN**

Anthony Brown, MD; Valory Pavlik, PhD; Richard Zimmerman, MD; Lisa Danek MD, Frene' Lacour-Chestnut MD, Misba Lateef MD, Eric Lee MD, Kenya Steele MD,

**BACKGROUND:** This Practice Based Research Network (PBRN) project was conducted as a sub-contract of the University of Pittsburgh under a grant from the Centers for Disease Control within the Primary Care Multiethnic Network (PRIME-Net) by the Southern Primary Care Urban Research Network (SPUR-Net) organized through the Department of Family Medicine at Baylor College of Medicine in Houston, TX. Adult vaccination rates are typically well below the standards recommended by Healthy People 2020 goals. The Department of Family Medicine at University of Pittsburgh Medical Center developed a Standing Order Program (SOP) toolkit to improve adult influenza, pneumococcal, and Tdap/Td vaccination rates in primary care practices. We recruited six practices from our PBRN (SPUR-Net) to participate in a cluster randomized trial of the effectiveness of this toolkit. We evaluated the baseline immunization rates and utilization of toolkit resources of our six practices. An analysis of the baseline rates and their choice of resources can provide insight into overcoming barriers to adult vaccination in community health centers.

**METHODS:** The six community health clinics in our setting serve an ethnically diverse, uninsured and underinsured patient population. The toolkit was organized into 4 Pillars to support vaccination: Pillar 1 - Convenient adult vaccination services; Pillar 2 - Patient notification about the importance of vaccination and the availability of convenient programs; Pillar 3 - Enhanced office vaccination systems based on Standing Orders Programs; and Pillar 4 - Motivation by the office immunization champion tracking progress towards a goal aided by feedback. Resources available from within the toolkit includes a web-based Practice Transformation Dashboard; culturally competent immunization messages; designation of an immunization champion at each clinic, training for personnel in culturally sensitive communication about adult immunizations, online educational reinforcement (training video), and feedback on vaccines administered. Vaccination rates were obtained from de-identified data from the Epic electronic health record utilized at all of our sites.

**RESULTS:** At baseline the flu vaccination range was from 33% to 44%; Tdap vaccination of newly vaccinated eligible patients was 8% to 17%; and for pneumococcal vaccination of newly vaccinated eligible patients older than 65 years of age was 26% to 43%. Examples of resources selected/used from within the clinics included Pillar 1: planning for express flu clinics, using all patient visits for vaccination opportunities, having a dedicated vaccination station, extending the flu season; Pillar 2: encouraging staff to be vaccinated, discuss serious nature of vaccine preventable diseases, sending out mailing/email, hanging posters; Pillar 3: using standing orders, reviewing immunization needs as part of vital signs, Pillar 4: ensuring sufficient vaccine inventory monitor progress through sharing weekly with staff, offering rewards, and fostering clinic team competition.

**CONCLUSION:** Baseline immunization rates indicated room for improvement. Clinics differed in their chosen strategies and tools but in general implemented a variety of resources to improve immunization rates. Practices were able to successfully navigate the tool kit to individualize resources that would best suit the specific needs of their clinic.

**RELEVANCE STATEMENT:** Adult vaccination rates are typically well below the standards recommended by Healthy People 2020 goals. We recruited six practices that serve an ethnically diverse, uninsured and underinsured patient population in our PBRN (SPUR-Net) to test the effectiveness of a Standing Order Program (SOP) toolkit to improve adult influenza, pneumococcal, and Tdap/Td vaccination rates in primary care practices. An analysis of the baseline rates and their choice of resources can provide insight into overcoming barriers to adult vaccination in community health centers.

**ONLINE RESOURCE:**

## **P23 Successful Methods for Engaging Community in Research**

Linda Zittleman, MSPH; Don Nease, MD; Jack Westfall, MD, MPH; Montelle Tamez Elaine Belansky, PhD Paige Backlund Jarquin, MPH  
High Plains Research Network Community Advisory Council CCTSI Community Liaisons Julie Marshall

**NEEDS & OBJECTIVES:** Community engagement (CE) is essential to conducting effective and meaningful patient-centered outcomes research. CE is not a method but rather an approach to research. A dearth of specific evidence-based methods for engaging the community has been explored and defined. We offer two methods for successfully engaging the community in long term collaborations: Colorado Immersion Training in Community Engagement (CIT) and the Boot Camp Translation (BCT) process.

**SETTING & PARTICIPANTS:** Developed in a practice-based research environment, BCT utilizes the skills and expertise of academic researchers, medical professionals, and community members to translate health information and concepts, develop tools/products, and determine dissemination strategies in ways that maintain scientific integrity and assure they are locally relevant and culturally appropriate. ITCE is a multi-pronged training program that aims to introduce an expanded pool of academic researchers to community-based participatory research (CBPR) and CE.

**DESCRIPTION:** BCT is a process that involves shared expertise among community-academic partners, high level education on a topic, collaboration creation, and active facilitation. The process involves a full day kick-off retreat, followed by two additional half-day sessions and 4-8 telephone conversations to finalize intervention development. The result is a set of locally relevant messages, products, and dissemination plans. CIT targets academic researchers and team members who participate in a 4-week Directed Reading and Blog, 2) one-day seminar on CBPR and CE, 3) 4-day community immersion experience, 4) reflection, and 5) 5-month community of practice with peer mentoring.

**EVALUATION:** Developed by the High Plains Research Network Community Advisory Council, BCT has been successfully conducted with 14 other diverse communities around Colorado and the country. Topics included mental health, asthma, hypertension, infant oral health, depre

**DISCUSSION/REFELCTIONS/LESSONS LEARNED:** CIT and BCT offer different but very complementary methods to promote effective CE in research. CIT has increased the number of researchers with a fundamental understanding of community-engaged research and skills to develop community-campus partnerships. BCT offers a process to develop and strengthen community-academic relationships and conduct effective patient-centered outcomes research.

**RELEVANCE STATEMENT:** Community engagement (CE) is essential to conducting effective and meaningful research that matters to patients and community members. The demand for training in CE and specific CE tools is increasing. Colorado Immersion Training in Community Engagement and the Boot Camp Translation process offer two different but effective methods to successfully engaging the community in long term collaborations. Participating academic researchers and community members have reported positive professional and personal experiences with these methods.

**ONLINE RESOURCE:**

## **P24 The importance of a pre-visit assessment: engaging a multidisciplinary team in addressing barriers to care prior to diabetes clinic visits**

Madelyn Welch, BA; Shay Phillips, PharmD; Hazel Tapp, PhD; Madelyn Welch, BA; Shay Phillips, PharmD; Jamayla Culpepper, MD; Ambra Martin, RN; Yhenneko Taylor, PhD; Hazel Tapp, PhD

**BACKGROUND:** Barriers to care and cumulative stressors play a significant role in diabetes management. Previous research has shown that lack of access to quality care, inability to afford medications, and depression all contribute to poorer outcomes among patients with diabetes. As part of an ongoing research study to understand the impact of a multidisciplinary diabetes clinic on glycemic control, a Pre-Visit Assessment was implemented to understand the barriers and stressors for enrolled participants. This questionnaire is considered an integral part of the screening process for the research study and is highly utilized by the clinical team.

**METHODS:** This study involves adult patients with uncontrolled diabetes (A1C >8%) receiving care at Elizabeth Family Medicine, an ambulatory safety-net practice with a large Medicaid/Medicare population. Eligible patients are referred by their provider. A research assistant speaks with the patient via phone or during their office visit to explain the study and obtain a written consent. Consented patients are randomized to immediate enrollment or to 6-month delayed enrollment in a multidisciplinary diabetes clinic consisting of physicians, a clinical pharmacist, clinical care coordinator, registered nurse, behavioral health interns, and social worker. All enrolled patients complete the Pre-Visit Assessment, which includes open-ended questions designed to identify challenges with medication adherence, access to care, social support, depression symptoms, food acquisition or [lack of] nutritional education, self-care behaviors, and level of motivation in controlling diabetes. Questions are grouped by the clinical role responsible for addressing them: pharmacist, physician, social worker, nutritionist, and behavioral health counselor. Results are then documented in the electronic medical record (EMR), where members of the clinical team can view results and respond to patient needs.

**RESULTS:** To date, 86 patients have completed the Pre-Visit Assessment. The patient's primary care physician is engaged in resolving common barriers to care such as lack of access to medications. The provider utilizes EMR messaging to order additional glucometer test strips or a pharmacist calls to triage medication adjustments. Other barriers are addressed and resolved by members of the research team prior to the patient's first visit in the diabetes clinic. Many of the consented patients revealed inadequate access to meals and transportation to medical appointments. The multidisciplinary team leverages a social worker to address and alleviate patients' access issues. Questions about dietary habits, self-management of diabetes, and personal goals are managed by a pharmacist and behavioral health counselors as needed. Early feedback from participants suggests that interventions to address barriers identified through the Pre-Visit Assessment contribute to improved self-management behaviors.

**CONCLUSION:** The research team found that identifying and attending to barriers to care prior to the clinic visit allows the specialty clinic providers more time. In addition, the ability to document results in the EMR makes it easy for members of the care team to view and address barriers. Future analysis will determine whether amelioration of these barriers through the use of a multidisciplinary team leads to sustained improvements in glycemic control, A1C, and other surrogate markers for diabetes management.

**RELEVANCE STATEMENT:** A research study that enrolls patients in a multidisciplinary diabetes specialty clinic utilizes a Pre-Visit Assessment to identify patients' barriers to care prior to their first office visit. Resolving these barriers allowed specialty clinic providers more time to manage and treat uncontrolled diabetes and comorbidities, such as depression, during the office visit. Early feedback from participants suggests that interventions to address barriers identified through the Pre-Visit Assessment contribute to improved self-management behaviors.

**ONLINE RESOURCE:**

## **P25 The Northwestern University Small Practice Opportunities for Transformation (NU-SPOT) Project: A Collaboration to Improve Quality and EHR Use in Small Practices**

Susan LeBailly PhD; Matt Sakumoto MD; Susan LeBailly PhD; Kathy FitzGibbon RN,BSN,MS,CPHIT; Erik Orelind MD MPH, Theresa Walunas PhD, Mark Chein MD, Ami Desai MD, April Hadsaitong MD

**NEEDS & OBJECTIVES:** Small practices provide the majority of care delivered in the United States, yet they lack the infrastructure to conduct internal quality improvement initiatives and optimize their use of the EHR. Upcoming mandates for public reporting of quality metrics and pay-for-performance strategies will put many small practices at a disadvantage. Objectives: 1. To understand small practice capacity to change and barriers to QI efforts 2. To pilot strategies to assist small practices in implementing quality improvement initiatives 3. To assess the feasibility of collaboration between the REACH PBRN and CHITREC, the Chicago Regional Extension Center for HIT.

**SETTING & PARTICIPANTS:** Three small practices (2-6 physicians) in downtown Chicago that are members of the REACH PBRN, have mature EHRs and have achieved at least Meaningful Use Stage 1 are participating. This project leverages REACH PBRN infrastructure, including experience with research projects and an existing practice champion structure and CHITREC's expertise with clinical quality metrics and workflows.

**DESCRIPTION:** Practice champions from participating practices chose to address pneumovax vaccinations and colorectal cancer screening in the project. The Change Process Capability Questionnaire was administered to 18 physicians and two office managers. Baseline and periodic data reports were generated from aggregate practice data. Using the train the trainer model, CHITREC facilitators supported Physician Champions by providing them with educational materials on the importance of QI, workflows for the specific Quality Measures, and monthly performance reports for quality measures. The Champions led the effort at their own practice to improve EHR documentation. Practice Champions shared data with practice members. The Practice Champions met monthly to share best practices and to identify common obstacles.

**EVALUATION:** Practices are interested in quality, with all clinicians agreeing that high quality care is important, but 71% lacked experience with formal QI processes and documentation workflows. Major barriers include lack of time, problems extracting data from the E

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** 1. With support, small practices can implement QI efforts 2. Receiving feedback of their own data and comparison to colleagues can motivate small practices to change practice procedures 3. Even simple metrics are affected by obstacles not improved by improved documentation or patient outreach

**RELEVANCE STATEMENT:** Small practices that deliver the majority of care in the US lack the resources to compile their own EHR data reports and implement QI initiatives. Variability in EHR documentation, lack of time to conduct QI efforts and lack of technical resources hinder the small practice's capacity to improve care and transform practice. PBRNs can assist practices, serve as a voice for overarching issues identified and leverage capacity in the Regional Extension Centers for Health Information Technology.

**ONLINE RESOURCE:**



## **P26 Primary care physician characteristics associated with cancer screening: a retrospective cohort study in Ontario, Canada**

Aisha Lofters MD PhD; Ryan Ng; Rebecca Lobb;

**BACKGROUND:** Primary care physicians can serve as both facilitators and barriers to cancer screening, particularly for under-screened groups such as immigrant patients. The objective of this study was to inform physician-targeted interventions by identifying primary care physician characteristics associated with cancer screening for their eligible patients, for their eligible immigrant patients, and for foreign-trained physicians, for their eligible immigrant patients from the same world region.

**METHODS:** A population-based retrospective cohort study was performed, looking back 3 years from 31 December 2010. The study was performed in urban primary care practices in Ontario, Canada's largest province.

**RESULTS:** A total of 6303 physicians serving 1,156,627 women eligible for breast cancer screening, 2,730,380 women eligible for cervical screening, and 2,260,569 patients eligible for colorectal screening participated. Appropriate breast screening was defined as at least one mammogram in the previous 2 years, appropriate cervical screening was defined as at least one Pap test in the previous 3 years, and appropriate colorectal screening as at least one fecal occult blood test in the previous 2 years or at least one colonoscopy or barium enema in the previous 10 years. Just fewer than 40% of physicians were female, and 26.1% were foreign trained. In multivariable analyses, physicians who attended medical schools in the Caribbean/Latin America, the Middle East/North Africa, South Asia, and Western Europe were less likely to screen their patients than Canadian graduates. South Asian-trained physicians were significantly less likely to screen South Asian women for cervical cancer than other foreign-trained physicians who were seeing region-congruent patients (adjusted odds ratio: 0.56 [95% confidence interval 0.32–0.98] versus physicians from the USA, Australia and New Zealand). South Asian patients were the most vulnerable to under-screening, and decreasing patient income quintile was consistently associated with lower likelihood of screening, although less so for immigrant patients.

**CONCLUSION:** This study highlights certain physician characteristics that are associated with cancer screening for eligible patients, including immigrant patients, and that should be considered when designing physician-targeted interventions. We have also highlighted an ethnic community, South Asians, which requires particular attention, both among its patients and its primary care providers. Future research should further explore the reasons for these findings.

**RELEVANCE STATEMENT:** In this Canadian study, primary care physicians who attended medical school in certain parts of the world were less likely to screen their patients for cancer than Canadian medical graduates. South Asian-trained physicians were especially less likely to screen South Asian women for cervical cancer.

**ONLINE RESOURCE:** <http://onlinelibrary.wiley.com/doi/10.1002/cam4.358/full>

## **P27 Vaccine Reminder Messages and Direct-to-Adolescent Messaging: Does Gender Matter?**

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**BACKGROUND:** Reminder phone messages are routinely sent to parents about adolescents' need for vaccination or other office visits, but are generally not sent to adolescent themselves. Likewise, text messaging has been studied for vaccine reminders, but only to parents. Parents of females have expressed greater safety concerns about the human papillomavirus (HPV) vaccine than parents of males. The objective of this study is to determine parents' preferences about the type and acceptability of text message reminders and to determine if the adolescent's gender affects these preferences.

**METHODS:** We distributed a paper survey to parents of adolescents aged 10-17 during an office visit in each of 4 pediatric practices in the South Carolina Pediatric Practice Network (SCPPRN) and 4 practices in the Oklahoma Child Research Health Network (OCHRN). Questions identified whether adolescents had personal cell phones, whether those phones could receive text messages free of charge, and the age at which parents would allow their teen to receive messages directly from a physicians' office (or if allowed at all). We calculated frequency distributions and descriptive statistics. We compared messaging preferences and demographic characteristics using chi square.

**RESULTS:** To date, 172 surveys have been returned, 55% male. Most parents (97.1%) and adolescents (64.1%) have cell phones that can receive texts. Parents reported a strong preference for text message reminders (69.6%) compared to reminders via phone (17.6%), email (12.2%), or US mail (0.7%),  $p < .0001$ . Thirty-five percent of the entire sample would not allow their adolescent, regardless of age, to receive a text message directly from the physician's office. Of the parents who would allow direct text messaging to their child, 8.3% allowed them for children as young as 10, 57.8% in 11 to 15 and 34% allowed them at age 16 or 17. When stratifying by gender, parents of females were more likely to allow direct communication than males (74 v. 59%;  $p=.05$ ). The median age at which they considered it appropriate was 14 for girls and 15 for boys ( $p = .08$ ). In addition, the allowable age distribution demonstrated a plurality of 14 years for girls, and 16 years for boys. Females reported more frequently than males that they had text message enabled phones (69% v. 59%;  $p = .17$ ), were covered by Medicaid (65% v. 57%;  $p = .16$ ), and considered text messages to be helpful (91% v. 85%;  $p = .25$ ). Insurance status and race were not related to parental preference of reminder type or the likelihood of allowing direct-to-adolescent messaging.

**CONCLUSION:** Parents express a clear preference for text messaging over other communication modalities for vaccine reminders. Direct-to-adolescent messaging could be a viable option for up to 2/3 of families, especially for older adolescents and ¾ of female adolescents. Though not statistically significant there are additional indications in the data that parents of female adolescents are more accepting of direct texting than parents of males.

**RELEVANCE STATEMENT:** This study evaluates the acceptability of implementing a reminder recall system via text messaging. Most families are open to text messaging reminders for vaccines and up to 2/3 would allow direct messaging to their teen. There are indications that parents of females may be more receptive to direct-to-adolescent texting than parents of males.

**ONLINE RESOURCE:**

## **P28 Virtual practice engagement in the TRANSLATE-CKD Study**

Kris Neuhaus, MD, MPH; Victoria Hall, RN, MPH; Vanessa Nguyen, MPH; Angela Wisniewski, PharmD.

**BACKGROUND:** TRANSLATE-CKD is a pragmatic randomized controlled trial being conducted at 33 primary care practice sites throughout the United States. The objective of the study is to help practices implement guideline-concordant chronic kidney disease (CKD) care, using the TRANSLATE model. Sites were block-randomized at the organization level, into a control arm which receives only computer decision support (CDS), and an intervention arm, which receives both CDS and regular interaction with a facilitator and an academic mentor. Facilitation is done virtually, using videoconferencing, phone, and e-mail. The TRANSLATE model, first introduced by Kevin Peterson, comprises nine elements considered important to practice transformation. In the TRANSLATE-CKD study, some elements were consolidated or modified, and team-based care was added. Additionally, a rating system based on natural, incremental steps was introduced, creating a numerical score for each element.

**METHODS:** Design: Normalization Process Theory (NPT), developed by May et al. to explain the social processes by which new health technologies become embedded into routine practice the theoretical model, was selected by the study evaluation team as a helpful model to understand and analyze the processes involved in practice transformation for this study. The nine TRANSLATE elements have been preliminarily categorized by the study team into the following subsets of “roles”, “systems/tools/strategies” and “specific QI focus”. The first two categories correspond well to the NPT categories of “people” and “objects”. The third NPT category of “context” includes organizational culture and external drivers such as policy and payer initiatives which may influence the perceived value of engagement in a specific quality improvement activity. The NPT “context” category is much broader than the study team’s “specific QI focus” category, but the sub-elements in the related Translate rubric elements (Target measures and Educational activities) were designed to capture and track contextual factors deemed potentially relevant to engagement, such as an organizational culture which invests regular staff in-house education. Objective: As on-site facilitation involves regular, physical interaction with practice site personnel and usually also review and management of site data, it is presumed that in a virtual facilitation, a minimum requirement for effective transformation will be regular virtual interaction. The objective of this study is to examine the rate of practice engagement over the course of the first two and a half years of the intervention. To accomplish this objective, we used the aforementioned revised TRANSLATE model to examine correlations between key practice features and the rate of interaction with intervention practices. Both synchronous (live online meetings or calls) and asynchronous (email or text) communication are quantified and examined, in order to further understand which elements or sub-elements, if any, correlate with a higher rate of engagement.

**RESULTS:** TRANSLATE scores will be compared with engagement rates using routine statistical analyses for significant positive or negative correlations. It is anticipated that practices with higher “people/roles” TRANSLATE scores will have a higher rate of engagement with their study facilitator and academic mentor over the course of the study. Certain “context/specific QI focus” elements may also be important correlates of practice engagement.

**CONCLUSION:** Understanding correlates of virtual engagement may further the tailoring of conditions under which virtual facilitation may be most effectively employed in practice-based research projects. Facilitation improves outcomes, especially when the changes to be implemented are complex or require extensive contact between the study team and practice partners. Optimizing virtual facilitation will allow PBRN projects to be carried out across wider geographic regions, and should therefore improve the generalizability of study findings.

**RELEVANCE STATEMENT:** We want to better understand which factors are important to successfully facilitate a complex project with busy clinical practices who might normally not be able to participate because of distance.

**ONLINE RESOURCE:**

## **P29 What I wish the doctor knew about my life: Latino and Latina adolescents use Photovoice to explore barriers to health**

Tamera Coyne-Beasley, MD, MPH, FAAP, FSAHM; Kari Thatcher, BFA; Alexandra Lightfoot, EdD; Mimi Mimi Chapman, PhD, MSW; Florence M. Simán, MPH, Eugenia Eng, MPH, DrPH, Nelson Aldana, Laura Aldana, Angie Cadena, Francisco Daniel Hernandez Leyva, Ricardo Martinez, Alejandra Mendez, Jaime Raul Perez Gonzalez, Kevin Quesada, Karla Salgado, Rubén Suarez, Yesenia Merino, MPH, Tainayah Thomas, MPH, Robert Colby, PhD, Steve Day, MCP, William Hall, MSW, Kent Lee, MA, John McGowan, PhD, Keith Payne, PhD, Rachele McFarland.

**BACKGROUND:** North Carolina (NC) has experienced 943% growth in the Hispanic/Latino population over the last 20 years. Compared to whites in NC, Latinos face significant health care barriers, such as lack of insurance, access to care, and difficulty communicating with medical providers. Such barriers have potential lifelong implications for the health and well-being of Latino adolescents. Addressing implicit bias within patient-provider relationships may be one intervention point for reducing Latino health disparities. Our trans-disciplinary community-academic team developed and piloted an intervention, Envisioning Health, which used visual images (a photojournalism series documenting the migration journey of Latinos and adolescent-generated images through Photovoice) to engage pediatric residents in an exploration of Latino ethnicity and the experience of migration on health. Our purpose was to determine Latino adolescents' perspectives on what impacts their health in an exploration of Latino ethnicity and the experience of migration.

**METHODS:** We used the community-based participatory research (CBPR) method of Photovoice with groups of Latino adolescents from different communities and practices. The adolescents took photos and engaged in the facilitated SHOWED/VENCER dialogue process (in English and Spanish) focusing on "What I wish my doctor knew about my life." They also organized a forum with pediatric residents from these practices to discuss their Photovoice findings and prioritize next steps for enhancing equity in health care interactions and to improve the system of care.

**RESULTS:** Four themes emerged: • It's hard to develop a good relationship with doctors because teens can tell when doctors don't really care about our feelings, life, economic situation and besides that, the clinic switches our doctor each time we go; • Teens are very aware everyday of being judged, suspected, monitored, "up to no good," and expected to fail by people in authority (teachers, MDs, police) - causing teens to avoid interacting with them as normal persons; • Because our parents are excluded from many systems, Latino teens are stressed by our conflicting realities of having to play the adult role and advocate for ourselves in every arena, but adults don't listen to teens or accord the same respect or benefits as they would to other adults; • Having bilingual interpreters, or even native speakers serve as interpreters, doesn't necessarily make the communication problem go away because there is a difference between being bilingual and being bicultural. These findings engaged physicians and Latino adolescents in direct dialogue on how equity in quality of care is compromised by race-specific societal forces of migration and discrimination.

**CONCLUSION:** To improve the health and future opportunities of Latino/a adolescents it is critical to understand, from their perspectives, the ways their lives can be complicated by experiences of migration, racial stereotypes, and the challenges of cross-cultural communication.

**RELEVANCE STATEMENT:** Innovative methods to increase understanding and enhance patient-provider relationships are needed to improve quality of care and reduce Latino health disparities.

**ONLINE RESOURCE:**

### **P30 What if we could measure how comprehensive and patient-centered primary care is? First steps from Ontario**

Carol Mulder, DVM. MSc, CUTL, DBA (cand); Rick Glazier, MD, MPH; George Southey, MD;

**NEEDS & OBJECTIVES:** Performance measurement in primary care has been difficult for many reasons. Foremost among them is the lack of good data, although that is starting to be addressed by the increasing penetration of EMRs in primary care. A close second in terms of difficulty relates to measures. Unlike data, there is no shortage of measures. Instead, there is a shortage of consensus on measures that actually reflect what matters to primary care. The search continues for the measure(s) that reflect what Barbara Starfield identified as the critical characteristics of sustainable, effective primary care: relationship-based, comprehensive and patient-centered. This paper describes an approach that attempts to address this gap through the use of a patient-based composite indicator of quality, a measure of whole-system costs and a focus on potential access (ie capacity) to provide care.

**SETTING & PARTICIPANTS:** The nearly 200 members of the Association of Family Health Teams of Ontario, who together account for about 25% of Ontario's primary care sector. They are supported by approximately 35 Quality Improvement Decision Support specialists who are centrally coordinated by association staff and represent a critical enabler for this work.

**DESCRIPTION:** Novel features include: Comprehensive: Uses a "roll-up" composite indicator rather than a large number of individual indicators to ensure measurement covers a wide range of primary care (ie comprehensiveness) Focuses on the whole-system cost per patient vs just the "input" costs of primary care Extends the focus of access to the capacity of providers to deliver care, making it more possible for measurement to comment on sustainability and equity in primary care. Patient centered Incorporates patient input into the calculation of the composite indicator, rather than just including separate patient-centered measures such as those generated by patient surveys. Opportunity for practice based research Represents a valuable opportunity to explore and further refine the approach in real-time, based on feedback from a critical mass of frontline primary care providers (approximately 50 primary teams, and counting!). Incorporates and integrates multiple sources of routinely collected data, not just a single, purpose-specific or limited-focus administrative database. The sources include physician billing data, EMRs, patient surveys within the practices and team descriptives.

**EVALUATION:** milestones to date Extensive front line consultation resulted in selection of a small number of indicators considered to be both meaningful and possible to measure by AFHTO members which include overall costs, cancer screening, immunization, readmissions

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** Getting started (in addition to getting done) has an impact. The participation level in the first iteration motivated changes at the system level (ie changes to provincial measurement frameworks) as well as at the local level (ie increased consensus on patient surveys, consistency in EMR use and more QI conversations within teams). It appears possible to incorporate meaningful input about what patients want into quantitative "hard data" performance measurement through the composite indicator weighting. It appears possible to quantitatively measure what is important in the patient-doctor partnership. It may be possible to understand how many measures are needed to generate a stable, "roll-up" composite measure that reflects the comprehensiveness of care. Questions for discussion with participants: What is missing in this approach to measurement? And What are the potential advantages and disadvantages of this approach?

**RELEVANCE STATEMENT:** AFHTO is working to advance measurement of primary care that reflects the importance of the relationship between patients and their providers and the full range of services involved in truly patient-centered care. We hope it will help individual providers focus their efforts to improve and will support collective efforts to measure primary care performance in a way that reflects, rewards and thus incents the kind of primary care that really matters to patients and their primary care partners.

**ONLINE RESOURCE:**

## **P31 A Card Study that Doesn't Follow Suit: Answering a Complex Question with Registered Dietitian Nutritionists**

Rosa Hand, MS, RDN, LD; Jenica Abram, MPH, RDN,LDN;

**BACKGROUND:** Simple "card studies" in which a clinician records a short set of variables or characteristics about each patient visit in order to quantify the frequency of patient characteristics have been a traditional data collection method in many practice based research networks (PBRNs). They allow anonymous collection of data, and are considered low risk. To our knowledge this method has never been used by registered dietitian nutritionists (RDNs), prior to the study described here, during which cards were used to quantify the time required to provide nutrition care to inpatients.

**METHODS:** Facilities were recruited through the Academy of Nutrition and Dietetics Clinical Nutrition Management Dietetic Practice Group and Dietetics Practice Based Research Network. The main goal was to determine the number of hours of RDN time needed to staff an acute care facility, therefore facilities were the unit of recruitment. The facilities then asked their staff RDNs to participate. RDNs were given a "card" which they could print out each day and were trained via webinar in order to standardize the variable definitions. The "cards" were more complex than is traditional because data were recorded on every patient seen during the day, and on non-patient care activities. In another change, RDNs were asked to transfer the data from their card into an Excel file each day, which was then transmitted electronically to the researchers. Characteristics about the RDN and facility were gathered via electronic surveys using codes that allowed matching to "card" data.

**RESULTS:** Facilities across the United States participated (n=78), which represented data from 362 RDNs and 47,000 patient encounters. An additional twenty-seven facilities and 60 RDNs expressed interest in participating, but dropped out prior to study completion. Data collection and entry took a mean of 15 minutes per day. Data gathered on each patient encounter included whether the patient was <18 years of age, in the ICU and their nutrition complexity on a three-level scale, in addition to which of 9 nutrition care activities were performed and how long the encounter took.

**CONCLUSION:** Previous work on the topic of RDN staffing levels was more than 20 years old. This is a topic of great importance to the dietetics profession, so many facilities and staff were willing to mobilize and participate. The use of a card study model simplified data collection for a complex question and made it feasible for sites across the country to contribute data. Based on the data contributed, a predictive model was developed that hospitals can use to determine their RDN staffing needs, which fills a major gap within the profession. In an age of increasing study complexity, PBRNs must remember that simple collection methods can still contribute significant data. The use of mobile-enabled technology, such as RedCap, should be explored to decrease data entry time requirements and bring the card study into the 21st century.

**RELEVANCE STATEMENT:** Simple research methodologies can be used to engage many clinicians in gathering data about important and complex research questions.

**ONLINE RESOURCE:**

## **P32 Building Networks of Engaged Parents for Patient-Centered Pediatric Research**

Sarah Brewer MPA; Sean O'Leary, MD, MPH

**NEEDS & OBJECTIVES:** Practice-Based Research Networks (PBRNs) perform clinically relevant research that is designed to be immediately translatable to patient care. While PBRNs have great capacity for clinician engagement, few PBRNs have engaged parents in the development of research questions. Many PBRNs have seen the value in and have implemented patient advisory mechanisms through boards; however, we are aware of no PBRNs that use these patient advisory boards specifically in the development of research questions, and none that focus specifically on issues related to children. This poses a particular challenge for pediatric and family medicine practices where both patients and parents should ideally be engaged in meaningful conversations with providers and researchers about their most pressing healthcare questions. The purpose of our present project is to develop a sustainable collaborative of parents, providers and other stakeholders to develop and inform patient-centered outcomes research (PCOR) questions related to child and adolescent health issues. We will do this within the infrastructure of a large pediatric practice-based research network (PBRN).

**SETTING & PARTICIPANTS:** This abstract describes a recently funded PCORI Eugene Washington Engagement Award. The project is underway in the Colorado Children's Outcomes Network (COCONet), a pediatric PBRN covering the state of Colorado. Participants include patients and parents of patients, clinicians, academicians, policy makers, community stakeholders and PBRN staff.

**DESCRIPTION:** This project aims to leverage the community engagement expertise we have developed already through extensive local and regional collaborations to build a strong cadre of parents, clinicians, and stakeholders working together to achieve and inform future patient-centered child health research. Through interviews with patients, parents, caregiver and advocacy organizations, payers, policy makers, and other stakeholders, we (1) build a stronger understanding of parent/patient concerns and preferred methods of sustaining engagement from all stakeholders. We then (2) prioritize important topics and questions with input from all stakeholders. These priorities (3) inform the collaborative development of 2-3 Working Groups of parents, clinicians, and researchers to develop and refine specific research questions for future PCOR projects. In addition, the PBRN is creating (4) a 'workbook' describing the process for dissemination to other PBRNs.

**EVALUATION:** To measure engagement and collaboration, we will use and/or modify tools from prior work and assess these measures at a minimum after every major meeting in the project, including all meetings of the Network Advisory Board and all Working Group Meetings.

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** At the completion of this project, we expect to have a sustainable Network Advisory Board that will serve to guide our PBRN well into the future. In order to reach this ultimate goal, we anticipate we will have a number of outcomes that build on each other over the course of two years: • Parent Advisors: First we will engage two parents to serve in paid consultant roles on the Project Team. • Prioritized Research Issues: This set of prioritized research issues will serve as a guide for forming Working Groups around the topics of highest interest and need according to a broad set of stakeholders. • Research Agenda and Specific Research Questions for Inquiry: At the conclusion of this project, our stakeholders will have created a set of research questions as well as action plans to turn those questions into future funding proposals for PCOR projects. • PBRN Patient Engagement Workbook: Lessons learned from our project will be of direct relevance to others PBRNs with a focus on pediatrics and interested in pursuing PCOR projects. The resulting Workbook will help to ensure that these future research and engagement endeavors are executed in an efficient and meaningful ways. • Sustainable Network Advisory Board and Working Groups: The project will translate existing community engagement expertise and extensive local and regional collaborations to build a strong cadre and parents, clinicians, and stakeholders working together to achieve inform future patient-centered child health research.

**RELEVANCE STATEMENT:** This project provides a model for patient engagement in the research development process. While most PBRNs have developed engagement models for clinicians and researchers, this model provides a structure for engaging patients in research question and agenda development and overall PBRN guidance.

**ONLINE RESOURCE:**

### **P33 A Novel Method for Achieving Covariate Balance in Cluster Randomized Immunization Delivery Trials**

Sean O'Leary, MD, MPH; Jennifer Pyrzanowski, MSPH; Norma Allred, PhD MSN; Amanda F Dempsey, MD, PhD, Juliana Barnard, MA, Sarah Brewer, MPA and L Miriam Dickinson, PhD

**NEEDS & OBJECTIVES:** Immunization delivery research studies in primary care settings often randomize at the practice rather than the patient level, particularly when evaluating multimodal interventions. Practices are likely to vary on a number of characteristics, including practice size, patient demographics, and immunization operations at baseline. Imbalance in study groups can be a problem in cluster randomized trials, especially when there is imbalance in practice level variables that affects the implementation of the intervention. Our objective is to describe a method used for achieving balanced intervention and control groups in a cluster randomized trial testing a multi-modal immunization program in obstetric/gynecology (OB/GYN) offices.

**SETTING & PARTICIPANTS:** Eight urban/suburban and 4 rural private OB/GYN practices in Colorado were recruited to participate in a study testing a multimodal immunization program in OB/GYN practices. Interviews with a practice or clinical manager were conducted to assess practice size, patient demographics, payer type, and baseline immunization practices related to influenza vaccine, human papillomavirus vaccine and tetanus-diphtheria-acellular pertussis vaccine. Each interview was recorded and summarized by research staff.

**DESCRIPTION:** Two independent reviewers scored each practice's reported vaccine operations on 7 factors for each of the vaccines of interest and a composite immunization delivery score was calculated. A balanced criterion approach was used to evaluate all possible randomizations and identify a set of acceptable randomizations in which the differences between treatment groups on covariates was minimized.

**EVALUATION:** The randomization for the study was randomly selected from the set of acceptable randomizations and is shown below. There were no significant differences in intervention and control groups on any of the covariates ( $p>0.05$ ). Covariate Intervention

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** We present a novel method for balancing covariates in cluster randomized immunization delivery trials. Our method was effective at balancing covariates among a diverse group of private OB/GYN practices. Future immunization delivery research studies should consider use of this or similar techniques when randomizing.

**RELEVANCE STATEMENT:** This novel cluster randomization method achieves covariate balance in trials randomized at a practice level. While we employed this method for immunization delivery trials, similar methods could be employed on a variety of topics with a PBRN setting, where it may be particularly important to ensure balanced characteristics between practices rather than at the patient-level.

**ONLINE RESOURCE:**



### **P34 Avoiding EHR Alert Fatigue by exploring “Trigger Rates” of EBM tools**

Sundas Khan, MPH; Annie Press; Thomas McGinn, MD; Pal Grewal MD, Lauren McCullagh MPH

**BACKGROUND:** While well-validated Clinical Prediction Rules (CPRs) exist for determining risk of Pulmonary Embolism (PE) in the emergency setting, costly diagnostic tests such as CT-angiography remain overused by about 15%. CPRs implemented at the point of physician order-entry have been plagued by high rates of dismissal by the physician. It was hypothesized that triggering use of the CPR tool upstream of the physician order will result in higher rates of use and acceptance of these Evidence-Based Medicine (EBM) tools, given that the physician may not yet have made up his or her mind to order the test. In the Emergency Department workflow, the first point of entry into the electronic medical record is generally the nursing triage note, wherein the patient’s vital signs, chief complaint, and brief synopsis is entered by the registrant prior to the patient entering a room to be evaluated by a physician. This data was combined with historical data from the patient’s medical record, when available, to look for an optimal combination of chief complaint, vital signs, and history predisposing to PE (elements of Well’s criteria), such that the EBM-tool would not cause “alert fatigue” to the physician.

**METHODS:** After exclusion criteria, retrospective chart review of 58,491 consecutive anonymous ED visits was conducted, pulling chief complaint and Heart Rate data from the Triage Note. When available, past medical history data relevant to risk of pulmonary embolism (Well’s rule for PE) was also recorded. Inclusion criteria for “chief complaint” included multiple permutations of: Chest Pain, Cough, Coughing up Blood, Difficulty Breathing, Dyspnea, Fainted, Fainting, Hemoptysis, Shortness of Breath, SOB, or Syncope. Inclusion criteria for Well’s rule for PE included at least one of : Heart Rate  $\geq$  100, previously diagnosed venous thromboembolism (VTE), diagnosis of Cancer, or recently immobilized. These criteria were then referenced against whether or not a test for VTE/PE had been ordered for that patient, attempting to find “agreement” with the physician thought process. PE related orders included: Ddimer, CT-angiography of the chest, Ventilation-perfusion(VQ) scan, or Doppler ultrasound of the extremity.

**RESULTS:** Of 58,491 ED visits, a PE related test was ordered in 2089 patients, with a frequency of 3.57% of all ED visits. Overall trigger rate using only chief complaint would alert the physician 12549/58491 visits, or 21% of all visits. Trigger rate using only historical data for PE risk plus Heart Rate would alert the physician 18493/58491 visits, or 31% of the time. Combining the two would result in a trigger rate of 8%. When any element of Well’s rule for PE or relevant chief complaint was present, a PE-related test was ordered 6.07% of the time, for a sensitivity of 76% agreement with the physician. Sensitivity using either only chief complaint or only Well’s rule for PE was lower (66.6% and 28.9%, respectively).

**CONCLUSION:** Upstream triggers were explored to determine rates and frequency of alerting the physician to the possibility of PE, prior to the physician entering his/her orders. Using a combination of chief complaint and Well's criteria in PMH plus elevated heart rate resulted in the lowest trigger percentage (8% of visits), in the setting of 3.6% of visits having a test ordered for PE. Lower trigger threshold resulted in higher trigger percentages (21, 31, 45% of visits), which may result in higher decision fatigue. A trade off must be made in the future to balance acceptable trigger rates (under 10%) with upstream alerting of the physician to reduce CT-angiogram overuse.

**RELEVANCE STATEMENT:** Clinical Prediction Rules allow physicians to gauge a patient's individual risk of contracting a specific disease. By doing so, high-risk patients can be identified and proper diagnostic tests and treatments can be ordered. Incorporating CPRs into the electronic medical record has the potential to increase their usage. However, in order to maintain optimal efficiency, the tool must be placed in an ideal location for use in the EMR, one that is in agreement with a physician’s clinical reasoning and workflow. This study aims to increase the usage of a well-validated CPR for determining risk of pulmonary embolism, by decreasing the trigger rate of said rule. This study is an example of ways in which one can go about optimizing placement for tools into the EMR in order to decrease trigger fatigue and increase usability.

**ONLINE RESOURCE:**

## **P35 Developing a clinical prediction model for hospital-acquired C. difficile infections**

Anne Press; Lauren McCullagh, MPH; Thomas McGinn, MD; Reshmi Madankumar, Lauren Maltese

**BACKGROUND:** The healthcare burden of hospital-acquired Clostridium difficile infection (CDI) demands attention and calls for a solution. Clinical risk prediction models (CPR) allow for identification of patients at highest risk for developing a disease and provide a novel method of curbing infection by preventing primary infection of patients. This study uses initial univariate analysis to create a CPR to be used for all patients at initial presentation to the hospital to predict an individual's risk for developing CDI.

**METHODS:** A retrospective cohort model was used to identify risk factors associated with the onset of hospital-acquired CDI. Electronic medical records of all patients admitted to either North Shore University Hospital or Long Island Jewish Medical Center between January 1st, 2013 and January 1st, 2014 were reviewed. All patients diagnosed with CDI during their hospital stay were identified. The data was divided into a training dataset and test dataset. Using the training dataset, univariate logistic regression was used to model hospital-acquired CDI as a function of each potential risk factor and determine odds ratios for each risk factor. With this data, a multivariable model was built, and weight was assigned to each risk factor to examine the predictive ability of the scoring system using ROC curves. This model will be applied to a test dataset in order to assess its usability in predicting CDI.

**RESULTS:** 80,324 patients were included in the study. Out of the 80,324 patients, 53,549 were included in our training dataset observations. 321 of these patients received a CDI diagnosis during their hospitalization (0.6%). Results from logistic regression provide enough evidence to suggest a significant association between each of the following factors and odds of receiving a CDI diagnosis during hospitalization stay. Factors were: admission in past 60 days, or a diagnosis of Afib OR=1.98, 95% CI [1.49, 2.62], CAD OR=1.35, 95% CI [1.06, 1.74], CHF OR=2.38, 95% CI [1.81, 3.12], DM2 OR=1.57, 95% CI [1.23, 2.01], diverticulitis OR=1.92, 95% CI [1.24, 2.97], cerebral vascular disease OR=1.54, 95% CI [1.11, 2.14], COPD OR=2.04, 95% CI [1.40, 2.96], or CKD OR=3.76, 95% CI [2.88, 4.90] ( $p<0.0001$ ,  $p<0.0001$ ,  $p=0.0171$ ,  $p<0.0001$ ,  $p=0.0003$ ,  $p=0.0033$ ,  $p=0.0099$ ,  $p=0.0002$ , and  $p<0.0001$ , respectively). The greatest odds of CDI existed among patients with past medical history of CDI OR=51.44, 95% CI [37.71, 70.17] ( $p<0.0001$ ). Diagnosis of hypertension, however, was not a significant predictor of CDI diagnosis ( $p=0.13$ ).

**CONCLUSION:** The risk factors identified by our retrospective cohort analysis were significantly associated with hospital-acquired CDI and can be used to predict an individual's risk of developing CDI upon initial presentation to the hospital. By using these risk factors to develop a CPR, one can use the CPR score to identify patients at highest risk of acquiring CDI. Early implementation of infection prevention strategies in these high-risk patients will have a large impact on preventing this common and costly disease.

**RELEVANCE STATEMENT:** C. difficile infection, a bacterium that causes severe diarrhea and other intestinal disorders, can have a devastating impact on clinical course and quality of life. This study aims to create a clinical prediction rule (CPR) for C. difficile infection. CPRs allow physicians to gauge a patient's individual risk of contracting a specific disease. By doing so, preventative measures can be enforced in highest-risk patients, thereby shifting emphasis to preventing primary infection of patients

**ONLINE RESOURCE:**

## **P36 Usability Testing of a National Substance Use Screening Tool embedded in the Electronic Medical Records**

Catherine De Stio, MPH; Lauren McCullagh, MPH; Anne Press; Jeanne Morley, Sandeep Kapoor, NSLIJ SBIRT team

**BACKGROUND:** With the rise of the electronic health record (EHR) to improve the efficiency and quality of health care, there is an abundance of electronic tools integrated at the point of care. The Screening, Brief Intervention, and Referral to Treatment (SBIRT) tool is currently being implemented into health systems nationally via paper and electronic mediums. It is important to analyze SBIRT integration to guide national dissemination. The hypothesis for this study is an electronic SBIRT tool will seamlessly integrate into workflow versus the traditional paper version. The constructs evaluated for integration were systemic, clinical, and personal workflow.

**METHODS:** Cognitive distribution workflows were mapped with and without the use of the SBIRT tool to assess the impact on the system and clinical workflow. Medical Office Assistants (MOAs) who received trainings on both the paper and electronic versions were audio and video recorded using both versions of the SBIRT tool during a standardized patient visit. Following the visit, the MOAs participated in informant interviews regarding their experiences with the SBIRT screening tool. Recordings and answers were analyzed by two raters, for thematic similarities.

**RESULTS:** Delivery of SBIRT paper version was on average 48.5 seconds faster. Discrepancies in the EHR version's design and poor user interface were factors for delays. Furthermore, clinical workflow barriers of the electronic version include less patient interaction, potential to miss screens, and failure to submit screen into the EHR. Personal workflow barriers cited were the EHR tool was more cumbersome and disruptive to patient visit.

**CONCLUSION:** The importance of proper testing of all mediums of screening tools is highlighted by the results of this study. On the systemic level it is important to address critical workflow issues of the EHR, while understanding the capacity and functionality of the EHR system. Patient care is a key concept to consider in terms of clinical workflow. The electronic version created an environment with less patient interaction and therefore was less personable when incorporated into the clinical workflow. Also improper use of the electronic tool resulted in the screen not being documented in the patients' chart, which can result in missed follow-ups. Finally, it is necessary to consider the impact a service tool has on the user, in this case the MOAs. The electronic tool was reported as far less user friendly, being difficult to navigate and time consuming. Inconsistencies in the tool led to disruption of adoption across mediums.

**RELEVANCE STATEMENT:** It is necessary to understand the pros and cons of the system, clinical, and personal workflows of each generation of EHR screening tools. More importantly, EHR tools' usability should be compared to other mediums, before deeming it an augmentation in workflow. With the advances of health IT, progression of meaningful use, national dissemination of SBIRT, and implementation of EHR health systems, health systems are eager to implement IT solutions. This study demonstrates that IT tools, if implemented without usability testing, can result in poor workflow and could impede adoption rates compared to traditional means.

**ONLINE RESOURCE:**

## **P37 Central Appalachia Inter-Professional Pain Education Collaborative (CAIPEC)**

Jennifer Schilling, MPH; Roberto Cardarelli, DO, MPH; William Elder, PhD; Dana King, MD;

**BACKGROUND:** Rates of opioid and benzodiazepines prescription are disproportionately high in Appalachia. The targeted regions of West Virginia and Kentucky are both among the leading states for painkiller prescriptions: A 2012 report ranked Kentucky fourth in the country for the number of opioid pain reliever prescriptions (128.4 per 100 persons) and fifth for benzodiazepines (57.4 per 100 persons). West Virginia fares worse by ranking third for opioid pain relievers (137.6 per 100 persons) and first for benzodiazepines (71.9 per 100 persons).<sup>4</sup> West Virginia leads the nation in the number of drug overdose deaths at 28.9 per every 100,000 people; Kentucky suffers from a similarly high rate. At the core of these alarming statistics is the high prevalence of painful and disabling conditions in these states. In 2011, 15.8% of adults in Kentucky and 17.6% in West Virginia reported having a disability, compared with 10.4% of the U.S. population. And, while chronic pain is associated with a number of different medical conditions, arthritis is the most prevalent of diagnoses, found in 22.7% of the U.S. population with an even greater percentage in women. It is striking that Kentucky and West Virginia lead the nation in the percent of women with arthritis (both are more than 10% above the national average), and that these are the only two states in which both women and men are in the CDC's highest prevalence grouping. In addition, these states incur more heart disease, obesity, depression, COPD, and diabetes than the U.S. overall. This geographic variation is poorly understood, creating a tremendous need for regionally sensitive collaborative efforts in professional continuing education with an emphasis on team-based care. Addressing the health needs of these populations is not easy, however, since Central Appalachia also suffers from a primary care provider shortage. According to a 2014 Health Resources and Services Administration (HRSA) report, West Virginia and Kentucky have, respectively, 51 and 95 designated medically underserved geographical areas. Documentation of MUA shortages includes several factors addition to the availability of health care providers, but this latter factor alone is striking. With 106 designated primary care Health Professional Shortage Areas (HPSAs) in West Virginia and 132 primary care HPSAs in Kentucky, thousands of citizens in each state are impacted. However, the primary care provider landscape continues to change as more than half of all primary care providers work with advanced practice providers, such as nurse practitioners and physician assistants. Moreover, in a recent national study, adults are using chiropractic or osteopathic manipulation and massage as 2 of the top 4 complementary health approaches in both metropolitan and nonmetropolitan areas. These factors highlight the need for both inter-professional and interdisciplinary approaches in healthcare, including chronic pain management.

**METHODS:** CAIPEC is a multifaceted CE program focused on educating physicians, APPs, MT, BT, and PT about chronic pain management in Central Appalachia. The program includes live education venues and enduring web-based experiences. A compendium of electronic pain management resources derived from these and other existing activities will be electronically compiled and made available to providers in Central Appalachia through dissemination efforts of Area Health Education Centers as another form of enduring materials in this predominately rural region of the U.S. We also plan to disseminate the activities and developed resources to all health professional education programs in Kentucky and West Virginia. Educational activities include: case-based round tables, educational webcasts, and state-required chronic pain CME conference presentations. This study also includes a Chronic Pain Toolkit. The Toolkit will be a collection of resources and templates for clinics to adapt based on their specific needs. The Toolkit will align with the educational content of the CAIPEC chronic pain management program and will function as a "how-to" for providers. The collection includes adaptable clinic workflow designs delineating action items for initial visits and subsequent follow-up visits. Also, templates for risk management and assessment will be provided, such as controlled medication agreements. The Toolkit will have accompanying links to guidelines that may be pertinent for a specific profession. Learners who access and implement the Toolkit will be encouraged and guided to utilize it as a Quality Improvement (QI) project for their healthcare setting, and assisted with the processes for maintenance of certification (MOC) PI-CME credit. The CAIPEC Chronic Pain Toolkit program will: 1. Assist clinics with workflow design and adaptation with selected tools appropriate for specific practices, 2. Assist clinics in the implementation and trouble-shooting of the workflows and activities, and 3. Provide assistance and guidance to providers in completing the QI process and obtaining PI-CME through the MOC Part IV program.

**RESULTS:** Research in progress.

**CONCLUSION:** Research in progress.

**RELEVANCE STATEMENT:** Something needs to be done to decrease the amount of overdose deaths and other harm caused by opioid use in Central Appalachia. One way to decrease the amount of opioids that are available in the community is to educate clinicians (who treat chronic pain patients and prescribe opioids) about alternative methods of pain management.

**ONLINE RESOURCE:**

## **P38 Decision regret in decisions about treatments or screening: preliminary results of a systematic review**

Maria Margarita Becerra Perez, RN; Jamie Brehaut, PhD; France Légaré, MD, PhD; Matthew Menear, PhD

**BACKGROUND:** Decision regret is a negative emotion involving distress or remorse following healthcare decisions. In recent years, many studies have assessed decision regret as an important patient-reported outcome measure. The objectives are: to identify the mean level of decision regret in decisions about treatments or screening across diverse groups and to identify factors associated with this regret.

**METHODS:** A systematic review was conducted following the Cochrane Handbook for Systematic Reviews and the PRISMA reporting guidelines. The search strategy was formulated with help from an information specialist and was conducted from inception until November 2014 for the electronic databases: EMBASE and Ovid MEDLINE; terms related to “decision” and “regret” were used. A reverse citation search was also conducted of key references in Google Scholar and Web of Science. Inclusion criteria: published studies of decision regret as assessed by the Decision Regret Scale (DRS) © AM O’Connor 1996. There was no restriction in study design. Eligible studies used data from the original unmodified 5-item version of the DRS to report on non-hypothetical decisions related to healthcare. There was no language restriction. Exclusion criteria: studies whose participants were not making a healthcare-related decision and whose participants were assessing decision regret in others. Two reviewers independently selected articles; full texts were retrieved and appraised for relevance. Data were extracted by one reviewer and verified for accuracy by another. The study quality was appraised using the Mixed Methods Appraisal Tool. Descriptive analysis was used to synthesize the results. The protocol was registered in PROSPERO (2015:CRD42015016396).

**RESULTS:** 372 unique references were screened, reviewed 87 full-text articles, and included 67 unique eligible studies. Studies were conducted between 1997 and 2014 in 12 countries and featured the DRS in 8 languages. All articles were published in English. The two most frequently used study designs were: cross-sectional (n=33) and randomized controlled trials (n=15). The two most frequent clinical settings were oncology (n=43) and family practice (n=4). Overall, DRS showed good internal consistency: Cronbach’s alphas ranged between 0.84 and 0.95 (n=26). Most studies presented data from descriptive statistics (n= 38), and some studies included multivariate analysis with decision regret as a dependent outcome (n=27) and an independent co-variable (n=2). DRS scores varied across studies: on a scale of 0 to 100, where a score of 100 means high regret, mean scores ranged from 0.88 to 88.3 (median=14.3), and the proportions of participants experiencing regret (DRS $\geq$ 1) ranged from 2% to 86% (median=40%). The factors most frequently associated with decision regret were related to: decision-making process (e.g. decisional conflict, satisfaction with information, patient involvement) (n=19), socio-demographic factors (e.g. age, education, ethnicity) (n=8), physical health (e.g. sexual dysfunction, incontinence) (n=7), psychological health (e.g. anxiety, depression) (n=7), and treatment complications (n=4). Sex was found to be a modifying factor (n=1).

**CONCLUSION:** The extent of decision regret assessed with the DRS in treatment or screening decisions varied widely across studies, although most studies reported low mean scores and low proportions of participants experiencing decision regret. The risk factors most frequently associated with regret were related to the decision-making process. Therefore, interventions that target improvement of the decision-making process could reduce decision regret.

**RELEVANCE STATEMENT:** Interventions that target improvement of the decision-making process during consultations could reduce decision regret and improve decisional comfort of patients who make decisions about treatments healthcare or screening.

**ONLINE RESOURCE:**

## **P39 Awareness of Medical Orders for Life-Sustaining Treatment and Non-Hospital Do-Not-Resuscitate Orders among Primary Care Pediatricians**

Tarek Zetoune, MD; Susana Rapaport, MD; Rohit Pinto, M.D.; Lily Quon Lew, MD, Dakshayani Guttal, MD

**BACKGROUND:** Resuscitation status discussions should be initiated during a period of stability rather than during an acute illness or when death is imminent. Medical Orders for Life-Sustaining Treatment (MOLST), Non-Hospital Do-Not-Resuscitate (NH-DNR) forms and New York State (NYS) DNR bracelets provided by the DOH are available and must be reviewed by physicians every 90 days.

**METHODS:** Descriptive cross sectional study by survey distributed in person or by email to PCPs affiliated with three urban teaching community hospitals. Physicians not practicing in primary care were excluded. Demographic data, awareness of MOLST, NH-DNR, NYS DNR bracelet and palliative care specialist were collected and analyzed using SPSS software and chi square test,  $p < 0.05$  was significant.

**RESULTS:** Of 45 physicians responding to the survey, 3 met exclusion criteria. PCPs were divided into G1 (12%) if issued NH-DNR and G2 (88%) if did not issue an NH-DNR. Gender, ethnicity, age and yrs in practice between groups were not significant. Only five PCPs were caring for >5 terminally ill patients and only one issued NH-DNR. Among G2, reasons for not issuing NH-DNR were not caring for any terminally ill patients (84%), unaware of NH-DNR (8%) and other (8%). Of participants, 83% were not aware of availability of NYS DNR bracelet,  $p=1.0$ . Over half (55%) would discuss DNR only when asked by a guardian, 21% with terminally ill patients, 12% with patients residing in long-term care services and 2% with their patients. None of the PCPs chose to review NH-DNR quarterly. G1 (40%) and G2 (70%) were uncomfortable conducting DNR discussion,  $p=0.313$ . G1 (80%) and G2 (81%) preferred to refer the patient to an outpatient palliative care specialist,  $p=1.0$ . G1 (60%) and G2 (76%) favored receiving formal training in conducting DNR discussion,  $p=0.593$ .

**CONCLUSION:** More than half of PCPs were not comfortable conducting DNR discussion and preferred to refer to outpatient palliative care specialist and most favored receiving formal training in conducting DNR discussion.

### **RELEVANCE STATEMENT:**

### **ONLINE RESOURCE:**

## **P40 Direct Observation of NP Care: Characteristics of Primary Care Visits by NPs Compared to Physician Visits**

Sharon Weyer, NP-C, DNP; Michelle Cook, PhD(c), MPH; Lydia Riley, MPH;

**BACKGROUND:** The number of nurse practitioners (NPs) licensed in the United States has nearly doubled over the past ten years, rising from approximately 106,000 in 2004 to 205,000 in 2015, and more than 15,000 men and women graduated from NP programs during the 2012-13 academic year. Approximately 86% of NPs are prepared in primary care, and the largest area of growth within the NP workforce in the last decade has been among family NPs; increasing from 41.9% of the workforce in 2003, to 54.5% by 2013-14. The NP philosophical focus of patient care emphasizes patient-centeredness, health promotion and disease prevention are well-positioned based on growth, quality and cost-effectiveness to provide care to the increasing number of insured under the Affordable Care Act. An understanding of how NP care is delivered is needed to better articulate the contributions of this proliferating and vital component of the primary care workforce. Therefore, the four objectives of the Direct Observation of NP Care (DONPC) study were: 1) to provide the first national direct observation and characterization of patient care delivered by NPs in the primary care setting, 2) to identify the composition of the patient-NP visit in the primary care setting, 3) to identify the use of “active listening” by the NP during the visit, and 4) to identify patient perception of “patient enablement” after the visit.

**METHODS:** The DONPC involved direct observation of a minimum of 10 NP/patient visits by a research NP, forms completed by the participating NP about each patient visit, an NP demographic and practice profile, and brief patient post-visit surveys to capture the patient perspective. On the day of observation, a research coordinator obtained verbal consent from patients scheduled to see the participating NP. Twenty-two family and adult NPs were visited over a two year study period and data were collected on over two hundred patient visits. Data from the DONPC’s adapted National Ambulatory Medical Care Survey (NAMCS) patient forms were analyzed and compared to the 2010 NAMCS physician office data.

**RESULTS:** NPs were more likely than physicians to be a patient’s designated primary care provider (85.1% versus 43.7%). NPs were less like than physicians to expect private insurance (46.5% versus 62.6%) and more likely to expect uninsurance as the source of payment for patient visits. Approximately 73.8% of NP patients had one or more chronic conditions compared to only 53.9% of physician patients. NPs delivered one or more health education service to 90.4% of patients compared to only 43.4% of patients seen by physicians.

**CONCLUSION:** Differences in patient and visit characteristics between NPs and physicians exist. NPs are more like to see established patients, who are more likely to be uninsured, to have one or more chronic conditions and to receive health education during a visit than physician patients.

**RELEVANCE STATEMENT:** With more than 205,000 licensed NPs in the United States, it is imperative to characterize the care provided by these professionals in the primary care setting. The NP philosophical focus of patient care emphasizes patient-centeredness, health promotion and disease prevention. How NP care is delivered in primary care is necessary to articulate the contributions of this growing healthcare field. Therefore, there were four objectives of the Direct Observation of NP Care (DONPC) study; to provide the first national direct observation and characterization of patient care delivered by NPs in the primary care setting, to identify the composition of the patient-NP visit in the primary care setting, to identify the use of “active listening” by the NP during the visit, and to identify patient perception of “patient enablement” after the visit.

**ONLINE RESOURCE:**

**P41 Discutons Santé-Let's Discuss Health. Implementing use of a website to help chronic disease patients and their primary care providers engage in productive interactions.**

Marie-Thérèse Lussier, MD, BSc, MSc; Élie Boustani, MD; Catherine Hudon, MD, PhD; Holly Witteman, PhD (Holly.Witteman@fmed.ulaval.ca); Claude Richard, PhD (ell4400@videotron.ca); Fatoumata B. Diallo, PhD (fabinta2@gmail.com); Marilou Croteau, MD; Corrine Audet, MD; Matthieu Savaria-Houde, MD; Stefan Patrascu, MD; Alain Gemme

**BACKGROUND:** Communication interventions directed at patients, including self-learning websites, can increase patient participation within healthcare encounters (HCE). Increased patient participation in HCE is associated with patient activation, which is at the heart of Wagner's Chronic Care Model. However, few patient communication educational websites are available in French. Our group developed and validated Discutons Santé, the only French language website intended to help patients and healthcare providers (HCP) engage in more productive interactions within the primary care (PC) context. The website provides three patient tools: 1) communication training based on Cegala's PACE model; 2) a visit preparation guide; and 3) a health booklet. The aim of this project is to study the adoption and implementation of Discutons Santé patient tools in primary care clinics of the Réseau-1 Québec PBRN Network.

**METHODS:** Design: Pilot multiple case study with both quantitative and qualitative data. Conceptual framework: RE-AIM (Reach, Effectiveness, Adoption, Implementation, Maintenance) will guide both quantitative and qualitative data collection and analysis. Setting: Three Family Health Teams of the Réseau-1 Québec PBRN Network. Participants: Five to ten HCP and 100 adult patients with two or more chronic diseases from each site. Intervention: Discutons Santé patient tools. Outcome variables: Facilitators and barriers to the adoption and implementation of the Discutons Santé patient tools within PC clinical routines; Patient and HCP perception of the Discutons Santé patient tools, their usefulness in the HCE; Patient and HCP satisfaction with the tools; Patient activation and confidence in their self-management skills. Quantitative data: Number of Discutons Santé bookmarks distributed by sites; Discutons Santé website visit metrics; Patient and HCP self-report questionnaires completed immediately after the first return-visit following use of Discutons Santé tools. Qualitative data: HCP focus groups and patient focus groups in all three sites to gain an in depth understanding of the implementation and adoption of the tools in clinical routines and their perceived usefulness in the management of chronic diseases.

**RESULTS:** No results will be available at the time of the presentation since this project has just received funding from Réseau-1 Québec. This poster will describe the research framework our project is built on and the complete study protocol.

**CONCLUSION:** Helping patients adopt an active role during HCE through the use of the Discutons Santé tools may lead to patients' activation and increased confidence in their chronic disease self management skills, both eventually leading to improved chronic disease outcomes.

**RELEVANCE STATEMENT:** Health care providers (HCP) nowadays are trained to communicate effectively with their patients. However, French speaking patients have access to few communication tools to help them make sure they clearly present their reasons for consulting, ask questions, check their understanding and express any health concerns they may have. This project aims at implementing such tools in routine chronic disease management within Québec primary care practices and to evaluate their perceived relevance, usefulness and impact on visit duration and organization.

**ONLINE RESOURCE:** [www.Discutonssante.ca](http://www.Discutonssante.ca)



## **P42 Establishing a Non-Traditional PBRN: A Massage Therapy Practice-Based Research Network**

Jeanmarie Muellner, MPA; Diane Mastnardo, BS, LMT; Amanda Ross, BA;

**BACKGROUND:** Many health providers believe that licensed massage therapists (LMTs) provide beneficial therapy and contribute to the overall wellness of their patients. However, these beliefs are based on anecdotal evidence due to minimal scientific research on the efficacy of massage. In order to improve the legitimacy of licensed massage therapy, there is a need for more scientific research in the field. Researchers have identified two significant barriers to conducting efficacy research in licensed massage therapy. The lack of formal research methods training among LMTs diminishes their ability to conduct and participate in efficacious research. Also, LMTs traditionally practice as individuals, which restricts collaboration and idea sharing. The formation of a practice-based research network (PBRN) of LMTs was identified as an avenue to both educate LMTs regarding the practice of research in their environment and to generate the necessary efficacy research in order to increase the impact of licensed massage therapy in general health care.

**METHODS:** In 2011, Diane Mastnardo, BS, LMT consulted the Center for Reducing Health Disparities (CRHD) about how to expand upon her personal massage research Case Report. The initial consultation led to the development of a pilot study on the Effectiveness of Intradialytic Massage on Muscle Cramping in Dialysis Patients. A major need of this pilot study was to train several LMTs in a common massage technique. The PBRN Shared Resource (PBRNSR) recommended funding such a pilot study in order to begin to build the capacity for a network of LMTs who could be called upon to conduct rigorous research in LMT practices. After thorough scientific review, the PBRNSR funded the pilot in 2012 and began moving forward with the concept of forming a non-traditional PBRN of LMTs. In 2013, the PBRNSR conducted an interest survey of LMTs in Ohio. The survey showed that LMTs were highly interested in forming a research group and a structural model and plan for establishing Massage Northern Ohio Practice-Based Research Network (MNO-PBRN) was developed by the PBRN Shared Resource.

**RESULTS:** The Massage Northern Ohio Practice-Based Research Network (MNO-PBRN) was launched in 2014 with the infrastructure and research support from the Practice-Based Research Network Share Resource and with collaboration from the Center for Reducing Health Disparities. The mission of MNO-PBRN is to improve access to massage therapy, conduct research on massage efficacy, and to educate the public, healthcare providers, and policy makers about massage therapy. Led by Diane Mastnardo and a steering committee, the network consists of privately practicing, licensed massage therapists who meet on a bi-annual basis to discuss best practices and opportunities for conducting research across a network, within their own practices.

**CONCLUSION:** With continued research consultation and infrastructure support from the PBRNSR the MNO-PBRN has the opportunity to conduct research at the same capacity as a traditional practice-based research network. This support model can be used as a guide for developing and encouraging practice collaboration in other non-traditional PBRNs or in forming PBRNs with practices where clinicians are highly individualized or isolated.

**RELEVANCE STATEMENT:** It is possible to create a network of non-physicians that can conduct research and impact patient care.

**ONLINE RESOURCE:** [www.mnopbrn.weebly.com](http://www.mnopbrn.weebly.com)

### **P43 Getting up to P.A.R: Creating a Patient Advisory Roundtable**

Alejandro Machuca; Walter L. Calmbach, MD, MPH

**NEEDS & OBJECTIVES:** Needs: Practice-based research networks depend on the active participation of member physicians, practice staff, and willing patients. In order to optimize patient participation in network activities, forward-looking PBRN's should find ways to solicit patient input on current and potential network projects. Objectives: The objective of this session is to describe a successful PBRN "Patient Advisory Roundtable" and share lessons learned from this positive experience.

**SETTING & PARTICIPANTS:** The STARNet Patient Advisory Roundtable (PAR) consists of patients recommended to network staff by current or former PBRN board members. Once nominated, patients were first contacted by an email from their primary care physician, inviting them to represent patient interests on the Patient Advisory Roundtable. Most nominated patients felt honored to be invited to take part in this patient-centered effort, while some felt they did not have time to participate.

**DESCRIPTION:** The STARNet Patient Advisory Roundtable meets quarterly to review current and proposed projects. The network director and coordinator prepare brief presentations to summarize projects, and highlight key points for patient input (e.g., patient-relevant research questions, outcomes important to patients, patient-friendly implementation, and patient-specific dissemination). The patient group also reviews planned patient surveys and questionnaires, helping shape them to better fit the needs of potential participants.

**EVALUATION:** We evaluate the success of the Patient Advisory Roundtable across several domains: a. # of sessions conducted; b. usefulness of information generated; c. activity and enthusiasm of PAR members; and d. feedback from STARNet collaborators on the value of th

**DISCUSSION/REFELCTIONS/LESSONS LEARNED:** Our experience with patient-level input from the Patient Advisory Roundtable has been very positive. The patient group immediately set the tone by insisting that we meet quarterly so they could maintain close supervision of STARNet projects. We have been consistently surprised by their insights, confirming the importance of soliciting patient input in all aspects of the research enterprise. We routinely ask the patient group to review proposals brought to STARNet, and review planned or potential patient surveys or questionnaires. "Lessons learned" from our experience with the Patient Advisory Roundtable include: a. maintaining close contact with patient members, b. using multiple means of communication (e.g., email, phone calls, in person meetings, US mail, etc.), c. keeping patient members busy, especially with meaningful work such as reviewing projects and/or questionnaires, d. providing positive feedback about the value of their input, both from STARNet staff as well as from external PI's whose projects benefit from patient-level input, e. teaching patient members about research principles (e.g., protecting human subjects, ethics, sample size calculations, etc.), f. allowing each member to pursue an element of the proposal that fits their interest and/or skillset, and g. sharing patient insights with STARNet board members, physicians, and practice staff. Input from the Patient Advisory Roundtable has greatly benefitted STARNet and any future projects the network may implement. The patient group has proven to be a important tool for designing surveys, implementing patient-friendly projects, and disseminating results to "real world" patients.

**RELEVANCE STATEMENT:** Creating and sustaining a Patient Advisory Roundtable is time-consuming and resource-intensive, but is very valuable to PBRN's and primary care researchers.

**ONLINE RESOURCE:**

#### **P44 Lessons learned from implementing health coaching in The Heart Healthy Lenoir Hypertension Study**

Katrina Donahue, MD, MPH; Jim Tillman; Jacqueline Halladay, MD, MPH; Crystal W. Cené, MD, MPH Alan Hinderliter, MD Doyle M. Cummings, PharmD Cassandra Miller, MPH Ziya Gizlice, PhD Beverly A. Garcia, MPH Jia-Rong Wu, PhD Emmanuelle Quenum, MPH Hayden B. Bosworth, PhD Thomas C. Keyserling, MD, MPH Darren DeWalt, MD, MPH

**BACKGROUND:** Health coaching in support of clinical patient care is becoming increasingly important in patient-centered medical home models. This study describes the implementation of a phone-based health coaching model in a primary care based hypertension research study and aims to identify correlates of patient engagement with phone coaching.

**METHODS:** A hypertension collaborative was formed among 6 primary care sites in a southeastern US county and surrounding area with high prevalence of heart disease and stroke. As part of this collaborative, twelve monthly health coaching phone calls were attempted over one year for a cohort of 478 participants with a history of uncontrolled hypertension. Phone call content focused on motivational interviewing techniques, goal setting strategies, medication adherence and lifestyle behaviors relevant to improving blood pressure control. Using bivariate analyses, a series of demographic and medical correlates of engagement (missing less than three consecutive calls for the study duration) were identified and subsequently used as covariates in logistic regression models (gender, education, literacy, number of anti-hypertensive medications) to characterize their independent relationship with successful engagement.

**RESULTS:** Contacting participants was challenging with 58.1% remaining engaged in coaching over twelve months. Engaged participants were older (60.1yrs vs. 54.8 yrs.,  $p < 0.001$ ), had uncontrolled systolic blood pressure (51.8% vs. 35.4%,  $p < 0.001$ ), low literacy (29.1% vs. 20.7%,  $p = 0.041$ ), took more than three anti-hypertensive medications (69.3% vs. 59.6%,  $p = 0.028$ ) and had more co-morbidities (3.7 vs. 3.1,  $p = 0.003$ ). After controlling for gender and education, African Americans were much more likely to be engaged compared to whites (OR 1.76, 95% CI: 1.17-2.65). In addition, participants were modestly more likely to be engaged with increasing age (OR 1.03, 95% CI: 1.01-1.05), increasing systolic blood pressure (OR 1.01, 95% CI: 1.004-1.024) and number of comorbidities (OR 1.17, 95% CI: 1.05-1.30) at enrollment. Patient activation, medication adherence were not significant. Bi-directional communication between the coach and provider was infrequent. Participating patients found the coaching valuable; 96.3% would recommend phone coaching to others.

**CONCLUSION:** Participants with risk factors for hypertension are more likely to engage in health coaching and find it valuable. Health coaching can be successfully implemented in rural hypertension care but a more tailored approach may improve engagement with counseling. Modifications could include focusing on higher risk individuals, housing the coach within the practice (as a familiar face), and electronic health record (EHR) communication between the coach and provider.

**RELEVANCE STATEMENT:** Hypertension health coaching requires a tailored approach and can be successful in populations with uncontrolled blood pressure. Continued engagement of patients over 12 months remains challenging. Future steps include focusing on higher risk individuals and better integration of the health coach within practices.

**ONLINE RESOURCE:**

## **P45 Identifying Primary Care Measures that Matter**

Rebecca Etz, PhD; E. Marshall Brooks, PhD; Martha Gonzalez, BA;

**BACKGROUND:** Primary Care clinicians are being buried by measures, yet these measures do not always reflect the quality and value of Primary Care. Simultaneous efforts exist in the US to develop incentive- and performance-based reporting systems supportive of Primary Care and the Triple Aim. More attention is needed to incorporate the experiences of front line clinicians in the development of a smaller, more relevant set of measures for Primary Care.

**METHODS:** We used a crowd-sourcing activity to engage thousands of clinicians in an effort to identify a limited set of measures able to assess quality and value in Primary Care. During an eight-week period, we distributed a short message regarding our project along with a link to an online-based brief survey. The message and link were initially distributed to four main populations: a random selection of practice-based research networks and their directors, a random selection of American Board of Family Medicine diplomates, a purposeful selection of primary care bloggers and tweeters, and a purposeful selection of known innovating Primary Care practices. Our survey was intended to collect a broad range of opinions regarding Primary Care measures that matter and asked three questions: 1) how do you know good care when you see it, 2) what would you ask members of a practice to know if they are helping to deliver health and wellness to their patients, and 3) what category best matches your position: clinician, clinician researcher, researcher, practice staff, patient, policy maker, payer, patient advocate, or other. Answers were collected anonymously.

**RESULTS:** Findings from this crowd-sourcing activity will be analyzed in May 2015. They will be grouped by the reported category of the respondent as well as by their alignment with known categories of interest (e.g., clinical measures, process measures, outcome measures, and measures of satisfaction, value and cost).

**CONCLUSION:** Primary Care clinicians are subject to hundreds of more measures than most specialties and are at particular risk of not being able to measure or report adequately. There is also growing concern that what Primary Care does best to improve value is not adequately assessed by disease-oriented measures. Our work uses the input of thousands of Primary Care clinicians to inform important gaps in the use of current measures and to develop a potential small set of surrogate measures able to ensure that the quality and value of Primary Care provided is not lost through an ill-fitting assessment process.

**RELEVANCE STATEMENT:** Our work uses the input of thousands of Primary Care clinicians to inform important gaps in the use of current measures and to develop a potential small set of surrogate measures able to ensure that the quality and value of Primary Care provided is not lost through an ill-fitting assessment process.

**ONLINE RESOURCE:**

## **P46 Increasing the Efficiency and Utility of the WWAMI region Practice and Research Network's Data Sharing Infrastructure for Research**

Laura-Mae Baldwin, MD MPH; Allison Cole, MD MPH; Kari Stephens, PhD; Hossein Estiri, PhD; Gina Keppel, MPH;

**NEEDS & OBJECTIVES:** Data sharing infrastructures are growing rapidly in a race to harness the vast data in primary care to spur meaningful, real-world research that shortens the lag from discovery to implementation. The WWAMI region Practice and Research Network (WPRN) has developed its own federated electronic data-sharing architecture, Data QUEST (Data QUery Extraction Standardization Translation), to provide easy access to research datasets that catalyze health discoveries and improvements in primary care practices in the Pacific Northwest. Realizing this objective requires the development of tools and methods for data handling, integration, and exploration to increase the efficiency and utility of Data QUEST for research.

**SETTING & PARTICIPANTS:** The Data QUEST architecture includes a dozen primary care practices serving rural and urban populations in Washington and Idaho. The Data QUEST Coordinating Center (DQCC), based at the University of Washington (UW), is a multidisciplinary team with biomedical informatics and primary care research expertise that is funded by the Institute of Translational Health Sciences (ITHS, UW's Clinical Translational Science Award), and collaborates with DARTNet Institute (a national partnership of PBRNs with data sharing infrastructure), to maintain Data QUEST. The DQCC is focused on developing tools and methods to increase the utility of Data QUEST for its researcher users and provides individual consultation to academic investigators interested in working with Data QUEST data.

**DESCRIPTION:** In the past year, with support from the ITHS, Data QUEST has expanded functionality via two new efforts: Development of FindIT, a web-based dictionary tool that can be used to explore the data shared across Data QUEST (<https://dataquest.iths.org/data/browse>). FindIT allows researchers to explore the types of data available (e.g., lab tests, medications, vital signs, procedures, immunizations) and the types of patients seen at the clinics by offering counts of patient lives by diagnostic (ICD-9) codes. In this way, FindIT can help investigators determine whether Data QUEST can be used to answer their research questions. Alignment of Data QUEST with a major national data model – OMOP (Observational Medical Outcomes Partnership). To ensure Data QUEST is poised to participate in national data sharing efforts and collaborative national research efforts, the DQCC has worked with national partners (SAFTINet, DARTNet Institute) to augment its current federated data structure to include data in the OMOP standard within a centralized, de-identified data repository at the UW. Practice partners have been receptive to developing the centralized OMOP model.

**EVALUATION:** We have launched our publicly accessible FindIT web tool via e-mail blasts, and have offered to subsidize the expense of an initial data pull to encourage use, leading to several investigator solicitations. Spikes in website usage have occurred after each

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** • Development of new Data QUEST tools and methods have been magnets for new solicitations from local researchers and new grant application opportunities with local, regional, and national researchers. • Strong collaborative and trusting relationships with our practice partners have been key to establishing the governance structures needed for a centralized rather than federated repository, and to launching a public website for Data QUEST. • Multidisciplinary collaborations between biomedical informatics, biostatistics, human centered design and engineering, and primary care have supported a web presence that allows researchers to more easily consider how to use community-based EHR data to facilitate their research. • The Data QUEST team is poised to collaborate on national, multi-site CTSA-, NIH-, AHRQ-, and PCORI-based efforts that require data sharing to support large scale clinical and pragmatic trials, comparative effectiveness research, patient-centered outcomes research, and development of advanced observational research methods.

**RELEVANCE STATEMENT:** It is important to develop tools that make it easier for researchers to understand and work with information from electronic health records in real world practices. These tools can speed the development of new research ideas, and ensure that these ideas and the results of this research are applicable to the diverse populations cared for in community settings.

**ONLINE RESOURCE:** <https://dataquest.iths.org/data/browse>

## **P47 Knowledge, Attitude and Practices of Vitamin Supplements Among Parents and Caretakers of Children Between Age Two and Five Years in an Urban Multiethnic Community**

Susana Rapaport, MD; Xin Ye, MD; Andrea Heras, MD; Lily Quon Lew, MD; Alice Li, MD, Dakshayani Guttal MD, Judith Eng

**BACKGROUND:** Adequate nutrition and vitamins (Vit) through diet in young children are essential for normal growth and a major concern for parents and caretakers. Few studies have been done to assess the nutritional knowledge, attitude and practices (KAP) among parents and caretakers on Vit supplements.

**METHODS:** Descriptive, cross sectional study of parents and caretakers of children between 2 and 5 yrs visiting Flushing Hospital Medical Center from July 1 to September 30, 2014 were enrolled. Exclusion criterion was presence of chronic GI disease. A questionnaire in English or Spanish was administered including demographics, items on knowledge of different Vit, attitude and use. Knowledge was scored from -25 to 25 points. Frequencies, means and SD between groups were compared using chi-square and t-test,  $p < 0.05$  was significant.

**RESULTS:** Of 100 participants, between 18-45 yrs with 75% female, 68% Hispanic, 20% Asian, 8% Africa America and 4% Caucasian. Mean knowledge score of participants with educational level at college and above ( $n=28$ ) was 12.59 compared to 3.27 of those with high school education or lower ( $n=72$ ),  $p < 0.05$ . Mean knowledge score of participants or child taking vit ( $n=56$ ) was 6.69 compared to 3.87 in those not taking Vit ( $n=44$ ),  $p < 0.05$ . There were no differences of knowledge among participants age  $< 35$  yrs and  $> 35$  yrs ( $p=0.165$ ), gender ( $p=0.232$ ), dominant ethnicity Hispanic and Asian ( $p=0.132$ ). Caretakers obtained information about Vit from friends (27%), TV (24%), internet (13%), newspaper (7%), PMD (4%). More than half (54%) of the caretakers would not ask about Vit information during the child's routine visit spontaneously. Caretakers (85%) were more willing to go to PMD for Vit supplement if deficiency was suspected.

**CONCLUSION:** Knowledge of Vit supplements correlated with caretakers' education level and Vit use. PMDs were not the primary source for knowledge. All groups were willing to go to the PMD for Vit supplement if deficiency was suspected.

**RELEVANCE STATEMENT:**

**ONLINE RESOURCE:**

## **P48 Helping Improve Culture of Community pharmacies for increased Patient Safety (HICCUPS) Feasibility Descriptives: a study from the Medication Safety Research Network of Indiana (Rx-SafeNet)**

Brandon Patterson, PharmD, PhD; Mary Ann Kozak, DrPH

**BACKGROUND:** Medication misadventures remain an elusive and costly burden to patients and payors in the US health care system. Organizations providing health care services to ambulatory patients, including community pharmacies, have received less attention in patient safety efforts relative to institutional settings. As many medications are provided to ambulatory patients in non-institutional settings there is a significant knowledge gap in assessment of and improvement in these settings. Pharmacies in practice-based research networks (PBRNs) can be utilized to assess this knowledge gap. The objective of this pilot project was to describe patient safety culture and transformational leadership in a community pharmacy PBRN.

**METHODS:** The Medication Safety Research Network of Indiana (Rx-SafeNet) served as the sampling frame. A purposeful sample of seven community pharmacies were selected to ensure coverage of rural, urban, and suburban patient populations along with chain, independent, and health-system affiliated pharmacy structures. All pharmacy staff were invited to complete an electronic survey administered via tablet. The 40-item Agency for Healthcare Research and Quality (AHRQ) Community Pharmacy Survey on Patient Safety Culture was used to measure overall patient safety culture, documenting of mistakes, and 11 composites of patient safety culture using a 5-point agreement or frequency scale, depending on item stem. The 7-item transformational leadership inventory was used to measure respondents' immediate supervisors' leadership behaviors using a 5-point frequency scale. Descriptive analysis of item and composite scores for patient safety culture were created. The percent of respondents indicating strongly agree/agree and most of the time/always responses for each item and each composite domain were used to create percent positive scores, as suggested by AHRQ. All study procedures were approved by the Institutional Review Boards of the investigators' institutions.

**RESULTS:** Forty respondents (55% technician, 40% pharmacists, 5% other; average length of current employment 5.7 years; and average worktime 35.1 hours/week) from 7 pharmacies (2 independent, 2 chain, 3 health-system affiliated; 3 urban, 2 suburban, 2 rural) completed surveys. Overall patient safety culture was rated positively by participants (75% very good/excellent). Patient safety culture items percent positive scores ranged from 12.5% for item, "We feel rushed when processing prescriptions [reverse coded]," to 100% for item, "Staff feel comfortable asking questions when not sure about something." Patient safety culture composite percent positive scores ranged from 50% for composite, "Staffing, work pressure, and pace," to 93.3% for composite, "Communication openness." Transformative leadership behaviors were reported as frequently experienced by study participants with direct supervisors (n=38) with percent positive scores ranging from 65% for item, "Gives encouragement and recognition to pharmacy staff members," to 80% for item, "Treats pharmacy staff members as individuals, supports and encourages their development."

**CONCLUSION:** Study participants reported mostly positive perceptions regarding patient safety culture, in-line with AHRQ benchmarked data, and leadership behaviors of immediate supervisors. Variation in responses suggests a capacity for improvement. PBRN infrastructure can support data collection and analyses of patient safety culture data in ambulatory pharmacy settings. Future research should evaluate strategies that increase leadership behaviors aimed at improving patient safety culture.

**RELEVANCE STATEMENT:** Patient safety in ambulatory settings are a priority area for AHRQ research and PBRNs are well-suited to fulfill evidence gaps in this area.

**ONLINE RESOURCE:**

**P49 Lessons learned in the growth and maturation phases of a community pharmacy practice-based research network: experiences of the Medication Safety Research Network of Indiana (Rx-SafeNet)**

Mary Ann Kozak, DrPH; Stephanie Gernant, PharmD; Heather Hemmeger, PharmD; Margie Snyder, PharmD, MPH;

**NEEDS & OBJECTIVES:** To discuss the "lessons learned" of a community pharmacy PBRN that has gone through the growth and early maturation phases of PBRN development.

**SETTING & PARTICIPANTS:** 5-year old community pharmacy PBRN

**DESCRIPTION:** Background: Community pharmacy practice-based research networks (CP PBRNs) have the potential to enhance patient care, improve medication usage including adherence, and foster collaboration among pharmacists and other healthcare providers. Despite this, the development of pharmacy PBRNs has remained somewhat slow compared to other PBRNs. Current literature to assist aspiring PBRNs focuses on development which may be illustrated as a step-wise progression across four phases: 1) conceptualization; 2) implementation; 3) growth; and 4) maturation. Methods: We are sharing techniques we have developed and utilized to overcome several challenges experienced during the growth and early maturation phases of our CP PBRN – the Medication Safety Research Network of Indiana (Rx-SafeNet), specifically: 1) Increasing Membership, 2) Staffing Needs, 3) Revisiting Policies and Procedures, 4) Relationship Building, 5) Member Engagement and 6) Achieving Maturation. Results: Increasing Membership: To stimulate additional interest in Rx-SafeNet and achieve greater attendance, we worked with our College's continuing education (CE) office to develop a 1-hour course for pharmacists and pharmacy technicians. We have plans to offer it as a face-to-face course with concurrent webinar streaming to reach even more pharmacists and technicians. Staffing Needs: Today, approximately 180 pharmacies and 325 pharmacists are Network members. This growth required more person hours to maintain Network productivity. Workload increased from the half-time network coordinator to a full-time network manager position with the responsibility to: a) Develop study protocols, b) Garner study support, c) Organize and manage studies, d) Add new network members, and e) Secure funding. Revisiting Policies and Procedures: Streamlining the workload by updating policies and procedure was needed for the Network to function efficiently. For example, we streamlined the work of the Project Review Team (PRT), tasked with reviewing all Network projects. The PRT policy was updated to insure that investigators submit a proposal in final form as well as an IRB application to ensure study clarity. Relationship Building: We have been successful in continuing relationship-building with pharmacists in the Network. In addition, we have solidified the need to maintain a positive working relationship and open communication with the IRB. Member Engagement: Ideas offered by several different groups propelled us into Network growth as we found that we needed to increase member pharmacies to share the activities required of an increasing number of projects. Achieving Maturation: To gain experience among our members and continue to grow as a Network, we have utilized our start-up funding to facilitate a few smaller studies. These have been kept purposefully small, with few study sites (six or less pharmacies) and a short data collection period (typically 3-6 months). Conclusion: Promoting sustainability will require a continued focus on clinician involvement in research, and further emphasis on the importance of identifying appropriate compensation for clinician members. We continue to focus on clarifying policies for collaborators as early as possible, anticipating this is an area for continued vigilance. Further, as we continue to make strides toward full maturation, more complex studies and larger investigative teams will likely result. Large, federally funded studies will be critical to achieve sustainability.

**EVALUATION:** Not applicable

**DISCUSSION/REFLECTIONS/LESSONS LEARNED:** Not applicable

**RELEVANCE STATEMENT:** The phases of development for PBRNs are important and include conceptualization, implementation, growth and maturation; there are lessons to be learned from the growth and maturation phases that will be discussed relative to a 5-year old community pharmacy PBRN known as Rx-SafeNet, the Medication Safety Research Network of Indiana.

**ONLINE RESOURCE:**



## **P50 The Psychiatric Burden in a Population of ED Super-Utilizers**

Jay Patel, MD; Hazel Tapp, PhD; Bright Dellyse;

**BACKGROUND:** At least one-third of all ED visits are “avoidable”, meaning, non-urgent or ambulatory care sensitive (ACS) and therefore treatable in primary care settings. Over \$18 billion dollars are wasted annually for avoidable ED visits that could have been managed in a primary care setting. Furthermore, psychiatric conditions such as major depressive disorder, anxiety disorder, and alcohol abuse are correlated with frequent utilization of healthcare resources, but it is unknown whether they contribute to frequent and inappropriate ED utilization. The goal of this study was to determine the prevalence of psychiatric conditions in frequent ED utilizers in a safety-net population in Mecklenburg County, NC

**METHODS:** Patient panels of resident physicians were pulled and retrospective chart reviews were performed amongst patients over 18 years of age in order to determine the frequency of ED utilization. Those patients who were seen in the ED at least four times in one year and were selected for the study. Demographic such as sex age, payor, and psychiatric conditions were measured.

**RESULTS:** Out of 1036 patients, 47 were identified as frequent and inappropriate ED utilizers. Approximately 51% of these patients had at least some type of psychiatric or substance use illness. The average number of ED visits per the patients selected was 6.65. The most common illnesses were generalized anxiety disorder and major depressive disorder.

**CONCLUSION:** Psychiatric illnesses may have a correlation with regards to inappropriate ED utilization. Further efforts to reduce frequent and inappropriate ED utilization may focus on behavioral or psychosocial interventions aimed at reducing the burden these patients have on acute care settings.

**RELEVANCE STATEMENT:** Psychiatric illnesses appear to be linked to inappropriate and frequent ED utilization

**ONLINE RESOURCE:**

## **P51 Moving the needle: Creating and sustaining action-oriented practice-based research partnerships**

Traci Jarrett, PhD, MPH; Jill Cochran, PhD, APRN, C-FNP; Kristie Grove Bridges, PhD; Adam Baus, MA, MPH

**NEEDS & OBJECTIVES:** For effective, sustained practice-based research partnerships, collectively defining and creating a mutual understanding of what partnership means is essential. Likewise, creating the necessary infrastructure addressing data systems, training, mentoring, staffing, work flow processes, dissemination, and funding are critical.

**SETTING & PARTICIPANTS:** State-wide West Virginia Practice-Based Research Network members comprised of primary care, academic, public health, local health, and community-based partners.

**DESCRIPTION:** The session will describe state-wide West Virginia Practice-Based Research Network members, with a case study format focusing on partnership with the West Virginia School of Osteopathic Medicine, Robert C. Byrd Clinic, as a means of discussing critical factors for engaging, sustaining, and growing action-oriented practice-based research partnerships.

**EVALUATION:** Measurable outcomes of practice-based research are more than publications, presentations, and grants awarded. Practice and policy change and health system redesign informed by practice-based research efforts are indications of truly sustainable partnershi

**DISCUSSION/REFELCTIONS/LESSONS LEARNED:** Practice-based research efforts are enhanced when built upon existing, multi-institutional and multi-organizational partnerships with overlaying missions and goals for health outcomes improvement. Leveraging the collective capacity, strengths, knowledge, skills and resources of all partners affords greater opportunity for achieving targeted outcomes. Engagement based on demonstrated trust, equability, and respect is essential.

**RELEVANCE STATEMENT:** The potential of practice-based research is best realized through partnerships which acknowledge and capitalize on collective capacity, create opportunity for action-oriented research, and are grounded on mutual respect and trust.

**ONLINE RESOURCE:** 1) West Virginia Practice-Based Research Network: [http://wvctsi.org/pages/Programs/Community-Engagement-Outreach-\(1\)/Practice-Based-Research-Network-\(PBRN\)](http://wvctsi.org/pages/Programs/Community-Engagement-Outreach-(1)/Practice-Based-Research-Network-(PBRN)) 2) West Virginia School of Osteopathic Medicine: <http://www.wvsom.edu/home> 3) West Virginia Unive

## **P52 PainNET: Impact of developing a chronic pain management online community of practice in the primary care setting**

Ianita Zlateva, MPH; Daren Anderson, MD; Martha Staeheli; Agi Erickson, Lauren Bifulco, Bridget Teevan, Ariel Guertin, Patti Feeney

**BACKGROUND:** The goal of this project is to establish an online professional learning community - PainNET - that will improve chronic pain expertise among primary care providers (PCPs) and stimulate collaboration and shared learning among a multidisciplinary team of healthcare providers. Participants will work individually and collaboratively to implement pain management best practices in Federally Qualified Health Centers and other safety-net practices caring for the medically underserved and members of ethnic and racial minorities.

**METHODS:** The Weitzman Institute at the Community Health Center, Inc. will lead the development and evaluation of PainNET, a web-based platform providing practice-level access to indexed recordings of didactics and case discussions from Project ECHO Pain Management; a resource library of best practices for pain management; tools and structured modules to support practice redesign and quality improvement initiatives; and bulletin-board forums for community discussion. Thirty-five additional practices from five states will participate in testing and further developing this platform. PainNET will increase interprofessional collaboration through discussion boards, chat rooms, and direct messaging between providers and specialists. PainNET is a scalable, system-level intervention guided by the needs of PCPs, and will improve the quality and safety of chronic pain management and opioid prescribing. The project will employ a cluster randomized design to evaluate the impact of PainNET at the knowledge level, practice level, and patient level. Project assessment will include an evaluation of the impact of PainNET on multidisciplinary chronic pain management strategies and best practices utilization. Project evaluation will specifically measure provider attitudes about interprofessional collaboration and adherence to evidence-based guidelines for management of chronic pain.

**RESULTS:** Quantitative and qualitative methods will be used in combination to provide greater validity and enhanced understanding of the results of the intervention. Specific PainNET outcome measures include the following: knowledge and competency scores, adherence to selected pain management guidelines, adoption of best practices for pain management, acceptance and understanding of the need for collaborative, interdisciplinary care for chronic pain. Participation in PainNET is anticipated to increase overall knowledge and competency scores as demonstrated by values and changes on: the Know-Pain 50 survey, Pain Care Beliefs survey and PainNET monthly survey and reports. Adoption and adherence to best practices and guidelines will be measured via the Weitzman Institute Pain and Opioid Management Collaborative Selected Pain Management Best Practices for Primary Care survey. It is anticipated that participating providers will express an increased acceptance and understanding of the need for interdisciplinary care for chronic pain, as demonstrated by increases in patient referrals to appropriate pain-related specialists (including behavioral health, Complementary and Alternative Medicine, physical therapy, etc.) and by values and changes on the modified extended RPLS, Attitudes Towards Health Care Teams Scale, the TTURC Researcher Survey, Attitudes and interprofessional collaboration of multidisciplinary care survey and the PainNET monthly survey and report.

**CONCLUSION:** The potential impact of PainNET will be to create new tools to promote interdisciplinary communication and adoption of pain management best practices and to expand access to expert clinical advice to a wider range of providers. Opportunities for interactions between providers from different disciplines and professions are increasingly limited in today's primary care practice environment. Few PCPs still round in hospitals and increased pressure for productivity limits opportunities for telephone consultation and case discussions. PainNET will capitalize on well-established online tools to support such communication in an asynchronous, highly efficient manner.

**RELEVANCE STATEMENT:** Chronic pain is a widespread problem, and most primary care doctors have little expertise in managing complex pain cases, or do not have access to a pain specialist, particularly in FQHC or safety-net primary care practices. PainNET will create a learning community so that these providers can develop this expertise through a combination of case presentations, resource libraries, community forums, and expert consultations. The goal will be to increase providers' knowledge, help primary care practices to manage chronic pain more systematically, and to ultimately serve patients more effectively with quality pain management expertise.

**ONLINE RESOURCE:**

## **P53 Personalized health planning in shared medical appointments for individuals with Type II diabetes pilot study**

Connor Drake, MPA; Sharon Hull, MD, MPH; Ralph Snyderman, MD

**BACKGROUND:** The primary aim of this pilot study is to study the feasibility of implementing an intervention designed around personalized health planning and educational modules for individuals with type II diabetes in a shared medical appointment. The secondary aim of this study is to collect preliminary efficacy data and cost effectiveness data on this specific approach to shared medical appointments in a primary care setting.

**METHODS:** The Shared Diabetes Medical Appointments at Duke Family Medicine consist of eight 90-minute sessions over the course of a year. The first four sessions will meet monthly for the first 4 months, with the remaining 4 sessions occurring approximately once every 2 months. Each SMA consists of eight to ten patients. For this pilot study, there will be three groups. Patients will be randomly assigned to a 1.) usual care group, 2.) a standard shared diabetes medical appointment that mirrors the design and curriculum of the SMAs that are currently being held at the Duke Family Medicine Center, and 3.) a shared diabetes medical appointment with personalized health planning integrated into the curriculum. The usual care group will see their provider as they normally would, with a clinic visit at the beginning and end of the one-year study. The standard shared diabetes medical appointments will be structured the same as the shared diabetes medical appointments that are currently held at the Duke Family Medicine Center on Erwin Road. These groups include group discussion, basic health goal setting, and educational modules on diabetes. The personalized health planning group will be a modified version of the standard shared diabetes medical appointment. These modifications include: a self-assessment of health status, greater emphasis on a collaborative patient-provider health goal-setting process, a plan to meet goals, a mindfulness practice included in each session, and the creation of a 'personalized health plan' participant binder for each individual to document health goals and track progress to review at each session. Participants in all three groups will receive a physical exam and health evaluation to collect the following health data: A1C score, LDL levels, BMI, blood sugar test, and a plasma glucose test. In addition, psychosocial parameters will be measured including the individual's Patient Activation Measure (PAM) score, a measure of a patient's knowledge, skills, and confidence to manage their own health and healthcare, a diabetes self-efficacy scale, a PHQ-9, and a health-related quality of life measure (SF-36).

**RESULTS:** Research is still in progress. No results to report yet.

**CONCLUSION:** The pilot study will investigate two different approaches to structuring SMAs for individuals with Type II diabetes to compare to the traditional one on one clinical encounter with a primary care provider. Our hypothesis is that if patients are willing to participate in the shared diabetes medical appointments programs that we have designed, then they will experience better health outcomes and result in a more engaged patient with higher levels of self-efficacy than the usual care group. Furthermore, preliminary cost-effectiveness data will indicate whether the approach is financially viable or sustainable.

**RELEVANCE STATEMENT:** This research pilot study is the first time the chronic disease management process known as 'personalized health planning' has been implemented in a SMA with diabetic patients. This study examines patient engagement, self-efficacy, and self-reported health related quality of life as outcomes which is of critical importance to enable self-management of diabetes. Furthermore, this work will help determine best practices for diabetes SMAs by comparing different SMA educational curriculum components.

**ONLINE RESOURCE:** <http://www.dukemedicine.org/locations/duke-family-medicine-center>

## **P54 Supporting Male Patients Engaging in Positive Healthy Practices: A Research-Driven Implementation Process**

Jalila Jbilou MD, PhD; Sarah Pakzad; Alain Gauthier; Salaheddine El Adlouni;

**BACKGROUND:** Statistics show that the most prevalent men-related chronic health conditions such as obesity, diabetes, high blood pressure and cancer have been on the rise over the last two decades in Canada and worldwide. What is troublesome is that these conditions are influenced by a small set of well-established, modifiable causes such as an unhealthy diet, and lack of physical activity. Community-based health education interventions (HEI) seem to have better impact on increasing men's health literacy and motivation for healthy style behavior adoption. However, few studies have explored the effectiveness of these interventions using the MAPPING INTERVENTION framework.

**METHODS:** Objectives: 1) to assess the acceptability and feasibility of a community-based HEI aiming to promote healthy practices among men; and 2) to provide recommendations for men-sensitive community-oriented primary care services. Study design: Qualitative study using semi-structured interviews with health professionals and primary care managers and focus groups composed exclusively of overweight/obese men. Verbatim were analysed using a thematic content analysis. Fifteen interviews and three focus groups (25 men) were completed.

**RESULTS:** Men-sensitive HEI have to be : Gendered culture sensitivity: perception of need among men in regards to healthcare is greatly conditioned by hegemonic masculinity; Involvement of social support: peer and family support, especially from one's partner, are crucial in fostering motivation; Adaptability of interventions: easily integrated into daily life, thus suggesting the inclusion of workplaces and availability of flexible hours; Accessibility/Usability of health information: easily retrievable, action-oriented and delivered into simple and concise terms; Openness to management changes: rethink resources allocation, adapt printed material, tools and services delivery; Adequacy of clinical support: shared decision making, comprehensiveness of care, informational continuity, support and humanity were considered most important within clinical practice; and Professional education and training: educational sessions on men's health need to be delivered on site for health professionals and managers.

**CONCLUSION:** Strategic implementation and adherence to men-sensitive HEI plan need to be developed and has to integrate adequately the organizational and the professional perspectives as well as the men's needs and expectations .

**RELEVANCE STATEMENT:**

**ONLINE RESOURCE:**

## **P55 M-Health for sexual and reproductive health education in youth: Building an evidence-based Smartphone Application**

Jalila JBILLOU MD PhD; Sarah Pakzad LPsy, PhD; Homayoon Jazebizadeh MD; Lise Gallant MSc (c);

**BACKGROUND:** Background: The expansion of new communication systems provides opportunities to promote sexual and reproductive health (SRH) in youth. Mobile devices have become a part of the everyday life of young adults. Objective: This paper summarizes the current research examining mobile-based interventions (m-Health) and describes the specifications of a primary care useful application (app) that can be used in mobile electronic devices to promote SRH and educate youth. These findings are used to develop a new app for primary care clinicians.

**METHODS:** A systematic review was conducted through an electronic-based research for relevant studies published between January 2005 and February 2014. Studies were included in the review if they: (1) assessed an intervention regarding SRH promotion delivered via mobile or web-based communication technologies; (2) were based on an RCT (Randomized controlled trial) design; and (3) were published in English and in a peer-reviewed journal.

**RESULTS:** We identified 18 relevant studies and we reviewed the applications. Knowledge and beliefs outcomes and intention to get tested and to adopt safer sex behavior were observed in most studies. Youth-centeredness, interactivity, and positive messages were found to be the most important determinants of effective m-Health interventions and applications (apps).

**CONCLUSION:** This systematic review revealed that almost all of the current SRH-related apps have been developed by non-medical, technology professionals. These apps are not comprehensive (do not include different aspects of sexual health) and are not suitable for conveying the correct and practical information and messages to young adults. We designed an evidence-based app according to our findings and expect to test its clinical feasibility and acceptance in primary care clinical settings.

**RELEVANCE STATEMENT:** Sexual and reproductive health education for youth has to include their preferred medium of communication i.e. smartphones and tablets Health communication in primary care has to be age and gender sensitive to support health literacy improvement and healthy behavior adoption

**ONLINE RESOURCE:**

## **P56 Unlocking Better Health Outcomes: Disease Knowledge and Motivation. An RRNeT Study.**

Colleen Dolan, MA; Colleen Dolan, MA; Ronya Green, MD; Sarah Holder, MD; Nina Torkelson, MD; Sandra Burge, PhD for the Residency Research Network of Texas.

**BACKGROUND:** Many patients with chronic disease are resistant to making changes that would improve their health status and functioning. Our objective is to examine the correlations between patients' understanding of their disease, their readiness to self-manage their disease, their self-management behaviors (adherence and activation), and their disease outcomes.

**METHODS:** This is a cross sectional design study performed at 9 family medicine residency programs in Texas. The sample size includes 409 adult patients with diabetes or hypertension. During a routine visit, patients were surveyed regarding knowledge of their diagnosis, health literacy, motivation, medication adherence, and patient activation. The outcome measures were drawn from medical records: diastolic and systolic blood pressure, most recent A1C, and body mass index. Multilevel linear and logistic regression analyses determined the relationship between predictor variables and disease outcomes.

**RESULTS:** Of 409 patients, 57% had diabetes and 43% had hypertension. Most were female (60%) and Hispanic (59%). Among all patients, 14% had normal BMI and 82% had normal blood pressure. Among patients with diabetes, 33% had A1c less than 7. In a linear regression of 402 patients, younger age, lower education, female gender, white nonhispanic ethnicity, lower precontemplation (lower denial), and higher importance (higher motivation) were significant predictors of BMI. In a logistic regression of 400 patients, younger age, lower knowledge, higher importance (higher motivation), and use of a statin predicted high blood pressure. In a linear regression of 211 subjects with diabetes, younger age, nonwhite race/ethnicity, and insulin use predicted higher A1c.

**CONCLUSION:** Even when controlling for demographic characteristics, patients' knowledge of their disease and motivation predicted BMI and blood pressure outcomes. Older patients showed better outcomes. Disease knowledge and motivation are key to patient self-management. Identifying sources of patients' resistance to self-management will inform clinicians' interventions to enhance health outcomes in patients with chronic disease.

**RELEVANCE STATEMENT:** Patients' understanding of their disease and their motivation to manage their condition are key to staying healthy.

**ONLINE RESOURCE:**

## **P57 A County Health Extension-Based Outreach Model for Facilitating Sustainable Preventive Care in Rural America**

Zsolt Nagykaldi, PhD; Dewey Scheid, MD; Daniel Zhao, PhD; Tracy Greever-Rice, PhD James Mold, MD, MPH

**BACKGROUND:** A number of evidence-based preventive services have been recommended by the USPSTF, ACIP, and guideline developers, but delivery of most of these services remains suboptimal, especially in rural areas. The IOM has urged closer alignment of primary care and public health. ACOs and other payment reform concepts call for better collaboration between primary care clinicians, hospitals and public health.

**METHODS:** Our primary care research team at the University of Oklahoma Health Sciences Center has initiated a 4-year, AHRQ-funded study in 2014 to implement, evaluate, and spread a sustainable, rural county-based outreach model for preventive care that will reach about 70,000 individuals in 20 primary care practices within 3 Oklahoma rural counties. Through this new system, wellness coordinators (WCs), working with primary care practices (PCPs), county health departments (CHDs), and hospitals, help patients obtain evidence-based preventive services. These entities are linked by County Health Improvement Organizations (CHIOs) that are being developed as part of the state's primary care health extension system.

**RESULTS:** No results to report yet, but lessons were learned. The WCs use a population-based preventive services registry connected to a patient portal and health risk appraisal tool that are also linked to practice EMRs through health information exchange. The registry tracks delivery of preventive services and estimates individuals' life expectancies and changes in life expectancies in response to suggested interventions. In addition to the WCs and registry functions, the project also helps PCPs develop systematic processes to address tobacco use and physical inactivity using established implementation strategies. Project staff documents a variety of contextual variables, measures the delivery of preventive services, and tracks changes in estimated life expectancies both at the individual and population level. A Financial Analysis Team gauges the costs and financial benefits in each organization and produces detailed reports. At the end of the 4-year study, we will develop a guidebook for other counties that wish to replicate the model.

**CONCLUSION:** We expect that the new delivery system will increase the receipt of preventive services by 10-40%, depending on their baseline, increase average estimated population life expectancy by 3-6 months per year of participation, and produce a financial return on investment of 2.5 to 1 for CHDs, hospitals, and PCPs.

**RELEVANCE STATEMENT:** We are developing and testing an innovative, county-level outreach system for improving preventive care in rural Oklahoma. Through partnerships with many local and regional organizations, we intend to accelerate the improvement of health and wellness in three rural counties.

**ONLINE RESOURCE:** <http://www.okprn.org>



## **P58 Using brief videos to improve children's inhaler technique**

Delesha Carpenter, PhD, MSPH; Tamera Coyne-Beasley, MD, MPH; Dan Reuland, MD, MPH; Susan J. Blalock, PhD, MPH; Charles Lee, MD Lorie L. Geryk, PhD, MPH; Mark Weaver, PhD; Betsy Sleath, PhD

**BACKGROUND:** Proper inhaler technique is critical for delivery of asthma medications to the lungs. Our goal was to determine whether a brief video intervention can improve the inhaler technique of children with asthma immediately and 1 month after a pediatric asthma visit.

**METHODS:** Children (n=91) ages 7-17 with persistent asthma were recruited at 2 nonurban pediatric practices that were part of the Expanding Networks for Latinos through Community Engagement (ENLaCE) in North Carolina. Eligible children demonstrated their inhaler technique for metered dose inhalers (MDIs) either with or without a spacer. Using a validated inhaler technique checklist, a trained research assistant recorded whether the child correctly performed each inhaler step. After a regularly-scheduled office visit, children then were randomized to watch either a 3-minute-long asthma inhaler technique video (intervention group) or a nutrition video (control group). Children's technique was assessed again after their office visit and 1 month later. We assessed change in the number of inhaler technique steps performed properly using a linear mixed model that included fixed effects for intervention group, time (pre-visit/post-visit/1-month follow-up), group-by-time interactions, whether or not a spacer was used, and practice site. The model also included separate random effects to account for correlation between responses from the same subject over time as well as within time for those children who demonstrated technique both with and without a spacer.

**RESULTS:** Children were primarily male (56%) and 27% identified as Hispanic/Latino. Mean child age was 10.8 years. Pre/post inhaler technique improved by a mean of 1.12 steps and 0.03 steps in the intervention and control group, respectively. The mean difference in inhaler technique (1.08 steps) between the intervention group and control group was significant ( $p<0.01$ ). At 1 month follow-up, the mean difference in inhaler technique between the intervention and control group was 0.55 steps, which was not statistically significant ( $p=0.056$ ).

**CONCLUSION:** When compared with the control group, children in the intervention group demonstrated significant improvements in their inhaler technique immediately after watching the inhaler technique video; however, there was less evidence of an effect at 1 month.

**RELEVANCE STATEMENT:** Watching short videos can help children with asthma use their inhalers better in the short-term. Children may need to receive booster training sessions to maintain improvements in their inhaler technique.

**ONLINE RESOURCE:**

**P59 Utilizing virtual care visits to improve access in an uninsured diabetic patient population refractory to traditional primary care: a randomized controlled trial.**

John Emerson MD; John Emerson MD; Andrew McWilliams MD, MPH; Madelyn Welch; Hazel Tapp PhD, Michael Dulin MD, PhD, Vicki Gardin Pharm D, Shay Phillips Pharm D, Tamera Curtis, Whitney Rossman, Laquisha Martin MSW, Allison Bickett MS

**BACKGROUND:** Population health interventions have a growing evidence base and 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 study, we examined the effectiveness of a multidisciplinary team based approach utilizing virtual care visits and cloud-based glucose monitoring on improving healthcare access. The control group received standard population health outreach interventions. Secondary outcomes include improvement in diabetes control based on hemoglobin A1C and patient satisfaction.

**METHODS:** Uninsured patients that accessed two primary care safety net clinics at Carolinas Healthcare System in the preceding 18 months were identified. We developed a risk assessment model to identify poorly controlled diabetic patients who were “refractory” to traditional primary care but ready to change. Refractory was defined as patients who were poorly controlled (A1C >9) without a trend toward improvement or had delayed follow up compared with standard of care. For the entire population meeting these criteria, we conducted pre-consent randomization into either a control or intervention group, stratified by geographic clusters. Using chart review, we then further excluded patients who no longer met inclusion criteria based on new clinical data (improved A1C since initial data pull) or required interpreter services. We obtained permission to contact the patients from their primary care providers (PCPs). All patients who were successfully reached by phone completed a three question survey evaluating their “readiness to change.” Patients who screened in were consented by phone and then enrolled into the control or intervention group they had been randomly assigned prior to outreach. Baseline blood pressure, hemoglobin A1C, and surveys were obtained for patients in both groups at an initial visit to the research clinic. Control patients were encouraged to schedule an appointment with their PCP for ongoing diabetes management at the time of their intake assessment. The intervention group patients were supplied a cloud-based glucometer and assigned to a health coach. All virtual visits were conducted in the patient’s home and were facilitated by the health coach using an iPad with video software platform and a 4G wireless hotspot. Each intervention patient received an intake virtual visit with a primary care provider (an ambulatory intensivist), and either a telephone call or virtual visit with a social worker, pharmacist, and behavioral health counselor for patients with positive depression or anxiety screens. Patients in both groups were followed for approximately 3 months. The multidisciplinary team met biweekly to review the management goals and progress of each intervention patient. Clinical documentation from the virtual visits was forwarded to patient’s PCP, who continued to see the patients as needed during the three month intervention.

**RESULTS:** Five patients were enrolled in both the control and intervention arm for a total of 10 patients. Primary outcomes are pending, but will include; comparison of access to a medical physician (defined as contact with physician via standard office visit, virtual visit, or telephone), access to healthcare professional (defined as contact with physician, clinical social worker, health coach, clinical pharmacist, behavioral counselor via virtual visit or telephone). Secondary measures will include disease specific outcomes (Hemoglobin A1c, blood pressure, PHQ-9, GAD 7), pre/post self-reported health status (VR-12, PAM 13), visit frequency, visit duration, and patient/provider satisfaction.

**CONCLUSION:** Preliminary results indicate a trend towards improved access. Key lessons learned from assessing patient engagement, coordinating a multidisciplinary team for population outreach, and utilizing a health coach to facilitate virtual care visits will also be shared.

**RELEVANCE STATEMENT:** An outreach project to provide care for vulnerable diabetic patients with barriers to accessing traditional primary care using advanced technology.

**ONLINE RESOURCE:**

## **P60 What's in it for me? Direct and indirect benefits of participating in a state-wide dissemination project as seen through monthly participatory calls**

Madelyn Welch, BA; Lindsay Kuhn, MHS, PA-C; Tamara Hege, MSPH; Madelyn Welch, BA; Tamara A. Hege, MSPH; Lindsay Kuhn, MHS, PA-C; Kelly Reeves, BSN, RN; Thomas Ludden, PhD; Sveta Mohanan, MD; Yheneko Taylor, PhD; Andrew McWilliams, MD, MPH; Jacqueline Halladay, MD, MPH; Paul Bray, MA; Andrew Gunter, MD; Caroline Halfmann, RN; Melissa McCullum; Hazel Tapp, PhD

**BACKGROUND:** ADAPT-NC is a state-wide multi-PBRN project examining methods of disseminating an asthma shared decision making (SDM) intervention. The 30 participating practices were randomized into 3 different arms based on dissemination strategy: control, traditional lunch-and-learn, and a Facilitator Led-participant OWned (FLOW) approach. FLOW participants engage in facilitated monthly conference calls. The objective of the calls is to serve as a venue for problem-solving and sharing of best practices around implementation.

**METHODS:** Practice facilitators from each PBRN identified convenient days and times for their FLOW practices to participate in a monthly one hour conference call. The moderator leads each call with a standardized agenda based on participants' suggestions. Each month, practice stakeholders give general updates and discuss strategies relating to that month's topic, which include: how to 1) identify eligible patients, 2) collect patient survey responses, 3) recruit patients for SDM visits and focus groups, and 4) best document and bill for SDM visits. The monthly conference calls are recorded and transcribed. Call transcripts are analyzed to identify themes and subthemes using the immersion and crystallization method of thematic analysis.

**RESULTS:** Analysis of the FLOW calls revealed three main themes: 1) future sustainability of the intervention, 2) maintaining provider productivity, and 3) enhancing group knowledge through participatory sharing and collaboration. All practices are invested in developing a long term model of future sustainability of the intervention. Participants considered that a typical sustainability plan relies heavily upon a strong, flexible team dynamic with open communication. Maintaining provider productivity levels is a frequently discussed challenge. Solutions for maintaining productivity include leveraging staffing resources to recruit and see more patients, increasing frequency of asthma clinics to develop continuity, and re-evaluating the process to improve future clinics through sharing innovative scheduling systems. Lessons learned around billing to maximize reimbursement include sharing a standardized template for documentation of asthma SDM visits with specific language for the EMR and awareness about insurance policies and deductibles. Creating this communication forum for engaged and collaborative discussions is key to enhancing knowledge through participatory sharing and collaboration. Participants actively collaborate by sharing experiences about recruitment, sustainability, and productivity and are open and willing to learn new strategies from each other. The calls assist with the sharing of successes and tips for completing other practice priorities, such as applying for Patient Centered Medical Home certification. Notably, discussions emerging from project-specific problems with navigating insurance issues and different electronic medical records (EMR) systems were also considered to have broader applications beyond the scope of the project.

**CONCLUSION:** The monthly FLOW conference calls facilitated by the ADAPT-NC research team provide an invaluable forum for open discussion relating to the implementation and sustainability of the project. Early feedback from transcript analysis suggests that these calls are a useful method of engagement for PBRN interventions that span a wide geographic area. Participants are able to solicit advice and direction from one another as well as the research team, share ideas and resources, and troubleshoot challenges in an engaging, participatory, and collaborative environment.

**RELEVANCE STATEMENT:** Transcript analysis of monthly conference calls reveals that the intervention participants are able to solicit advice and direction from one another as well as the research team, share ideas and resources, and troubleshoot challenges in an engaging, participatory, and collaborative environment.

**ONLINE RESOURCE:**