2015 WREN Convocation of Practices
Developing a Road Map for Optimum Patient-Partnered Chronic Condition Management

October 14-16, 2015
Oshkosh, WI

This is not just another conference. It’s an opportunity to help set a forward-thinking agenda for managing, treating and curing chronic conditions.
Better Research through Engagement

The Patient-Centered Outcomes Research Institute (PCORI) is an independent institute authorized by Congress in 2010 to fund comparative clinical effectiveness research (CER) that engages patients and other stakeholders throughout the study process.

We support CER that is guided by patients, caregivers, and the broader healthcare community and focuses on the outcomes most important to them. This is also known as patient-centered outcomes research (PCOR).

HOW WE PROMOTE ENGAGEMENT

We collaborate with and involve a variety of stakeholders in everything we do, from identifying and prioritizing research topics to reviewing funding applications to helping share study results.

We require the studies we fund to focus on questions and outcomes that matter most to patients and those who care for them. We also require them to include patients or other healthcare stakeholders as partners throughout the study.

ENGAGEMENT MATTERS

Engagement helps ensure that the research we fund provides information needed by patients, their caregivers, and the broader healthcare community to help with the decisions they face each day.

Engagement:

- Influences research to be patient-centered, relevant, and useful
- Establishes trust and a sense of legitimacy in research findings
- Encourages successful uptake and use of research results
FUNDING TO STRENGTHEN ENGAGEMENT AND PCOR

We provide funding to support projects that focus on promoting patient-centered outcomes research and patients’ and other healthcare stakeholders’ engagement in the research process.

**Eugene Washington PCORI Engagement Awards**
pcori.org/content/eugene-washington-pcori-engagement-awards

Awards of up to $250,000 per project

Fund organizations to conduct projects to increase the meaningful engagement of patients, caregivers, clinicians, and other healthcare stakeholders in the research process by expanding their knowledge and skills to participate in CER and PCOR, and creating opportunities to build connections and share research findings. The awards also support CER and PCOR meetings and conferences.

**Pipeline to Proposal Awards**
www.pcori.org/content/pipeline-proposal-awards

Three tiers of awards: $15,000 to $50,000 per project

Enable individuals and groups that are not typically involved in clinical research to develop the means to produce community-led PCOR funding proposals that they could submit to PCORI or other research funders.

WAYS TO ENGAGE WITH PCOR

**SUGGEST A PATIENT-CENTERED RESEARCH QUESTION**
pcori.org/suggest-question

We welcome suggestions and offer guidance on how to craft a practical and useful CER question.

**PARTicipate in PCORI EVENTS**
pcori.org/pcori-events

Visit the Meetings & Events page of pcori.org to find a calendar of upcoming workshops, webinars, and other events.

**become a PCORI AMBASSADOR**
pcori.org/ambassadors

Patients, organizations, and other stakeholders who serve as PCORI Ambassadors share PCORI’s vision and mission with their communities, participate as full partners in research, and help ensure the sharing and use of research results.

**APPLY TO JOIN AN ADVISORY PANEL**
pcori.org/advisory-panel-review

Seven multi-stakeholder advisory panels bring voices from across the healthcare community into our work. Panel members help us prioritize research topics and questions for potential funding announcements.

**become a REVIEWER OF FUNDING APPLICATIONS**
pcori.org/reviewers

We seek patients, clinicians, and other healthcare stakeholders to help us review applications for PCORI funding to ensure the studies we fund are patient-centered.

**become a PARTNER IN Research**
pcori.org/engagementrubric

PCORI’s Engagement Rubric illustrates how engagement in PCORI-funded research can occur.
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Wednesday, October 14
5:30-7:00 pm  Convocation Registration ~ Convention Center North Concourse Hallway
7:00-9:00 pm  Opening Reception ~ Convention Center South Concourse – Lynch/Lefevre Meeting Rooms

Thursday, October 15
7:30-8:30 am  Convocation Registration ~ Convention Center North Concourse Hallway
   Continental Breakfast ~ Convention Center North Concourse – Paul L Meeting Room

   All Sessions (AM & PM)
   ~ Convention Center North Concourse – Paul L Meeting Room
8:30-9:15 am  Setting the Stage: Why Focus on Chronic Conditions?
   Donald E. Nease, Jr., MD, Green-Edelman Chair for Practice-Based Research, Associate Professor and Vice Chair for Research-Dept. of Family Medicine, Director of Community Engagement & Research-Colorado Clinical and Translational Sciences Institute, Director for Practice Based Research-ACCORDS, University of Colorado – Denver
9:15-10:00 am  Partnership, Patients and Research, OH MY!
   Martha “Meg” Gaines, JD, Director, Center for Patient Partnerships, Associate Dean for Academic Affairs and Experiential Learning, University of Wisconsin Law School
10:00-10:15 am  Break
10:15-11:15 am  International Learning: A Selection of PEARLs on Chronic Conditions from the NAPCRG Annual Meeting
11:15-12:15 pm  Self Management Support and Chronic Conditions
   Panelists: Joe Cech;
   Rodney Erickson, MD, Mayo Clinic Health System –Franciscan Healthcare in Tomah; LJ Fagnan, MD, Director, Oregon Rural Practice-Based Research Network
12:15-1:00 pm Lunch ~ Convention Center South Concourse – Leander Choate Meeting Room
1:00-1:45 pm  **Major Challenges & Opportunities in Asthma**  
Panelists: David Oshinsky;  
David Hahn, MD, MS, WREN Director, Retired, DeanHealth Family Practice;  
Christine Sorkness, PharmD, AsthmaNet Principal Investigator, Distinguished Professor, University of Wisconsin School of Pharmacy

1:45-2:30 pm  **Major Challenges & Opportunities in Diabetes and Chronic Kidney Disease**  
Panelists: Irma Cintron;  
John Hawkins, MD, UW Health Family Practice;  
David Feldstein, MD, Associate Professor of Internal Medicine, University of Wisconsin School of Medicine & Public Health

2:30-2:45 pm  **Break**

2:45-3:30 pm  **Major Challenges & Opportunities in Hypertension and Cardiovascular Disease**  
Panelists: Chuck & Joan Dorgan;  
Bradley Lepkowski, FNP, Milwaukee Health Services, Inc.;  
Barry Carter, PharmD, Professor of Pharmacy & Family Medicine, University of Iowa Carver College of Medicine

3:30-4:15 pm  **Major Challenges & Opportunities in Chronic Musculoskeletal Conditions**  
Panelists: Cecelia (Sis) Laurin;  
David Rabago, MD, Associate Professor, Department of Family Medicine, University of Wisconsin School of Medicine & Public Health;  
Neil Binkley, MD, Professor, Department of Medicine- Geriatrics, Associate Director, Institute on Aging, Co-Director, Osteoporosis Clinical Center & Research Program, University of Wisconsin School of Medicine & Public Health

4:15-6:30 pm  **Poster Session ~ Convention Center South Concourse – Leander Choate Meeting Room**
Friday, October 16

7:30-8:30 am  Continental Breakfast
~ Convention Center North Concourse – Paul L Meeting Room

All Sessions (AM & PM)
~ Convention Center North Concourse – Paul L Meeting Room

8:30-9:00 am  Recognition of Clinics Participating in Research Studies

9:00-9:45 am  Creating Quality Indicators that Matter to Clinicians and Patients
Julie Schuller, MD, MPH, MBA, Executive Vice President, Vice President Clinical Affairs, Sixteenth Street Community Health Centers

9:45-10:00 am  Break

10:00am-12:30pm  Developing WREN’s Research Agenda to Improve the Lives of People with Chronic Health Conditions
All Attendees – World Café-Style Approach

12:30-1:15pm  Lunch  ~ Convention Center North Breakout Rooms

1:15-1:45pm  Presentation of Research Agenda Outline

1:45-2:00pm  Conference Reflections & Closing remarks

This work is supported through a Patient-Centered Outcomes Research Institute (PCORI) Program Award (EA-1443-WREN)
Speaker Biographies

Neil Binkley, MD, Professor, Department of Medicine-Geriatrics, Associate Director, Institute on Aging, Co-Director, Osteoporosis Clinical Center & Research Program, University of Wisconsin School of Medicine & Public Health

Dr. Neil Binkley, a Wisconsin native, earned his undergraduate degree at the University of Wisconsin Eau Claire and his medical degree from the University of Wisconsin Medical School in Madison. He subsequently trained in Internal Medicine at the Marshfield Clinic after which he was a primary care internist in Marinette WI/Menominee, MI for approximately seven years. He then returned to the University of Wisconsin and completed a fellowship in Geriatric Medicine in 1990. Since that time he has been an academic “bonehead” with research and clinical interests in reducing fracture risk among older adults during which time he has published over 200 peer-reviewed papers. He is currently a Professor in the Divisions of Endocrinology and Geriatrics at the University of Wisconsin School of Medicine and Public Health where he is also Director of the UW Osteoporosis Clinical Research Program and Associate Director of the UW Institute on Aging. He is past President of the International Society for Clinical Densitometry. His current research involves evaluation of approaches to improve assessment of vitamin D status and evaluation of ways to enhance fracture risk prediction by consideration of functional status, sarcopenia and obesity, a syndrome that his group recently suggested be defined as “dysmobility syndrome.”

Barry Carter, PharmD, Professor of Pharmacy & Family Medicine, University of Iowa Carver College of Medicine

Dr. Carter is a nationally and internationally recognized expert in hypertension and multidisciplinary approaches to improving blood pressure control. He has published over 200 research papers, reviews and book chapters. Carter’s research team recently published the results of a randomized, controlled clinical trial of physician/pharmacist collaboration to improve blood pressure control in the journal *Circulation: Cardiovascular Quality and Outcomes*. He has received grants from the National Heart, Lung & Blood Institute (NHLBI) and the Department of Veterans Affairs (VA) as principal investigator for funds totaling over $30 million since 2003. He was a member of the NHLBI’s National High Blood Pressure Education Program Committee and he was a member of the 5th, 6th, 7th and 8th Joint National Committees on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNC-5, 6, 7 & 8).

Barry L. Carter received his B.S. in pharmacy from the University of Iowa (1978) and his Pharm.D. from the Medical College of Virginia (1980). He completed a postdoctoral fellowship in Family Practice at the University of Iowa (1981). Carter has served on the faculty at the University of Iowa, Pharmacy and Family Practice (1981-1988), University of Houston and the Department of Family Practice, Baylor College of Medicine (1988-1991), University of Illinois (1991-1995), and he was the Head of the Department of Pharmacy Practice at the University of Colorado (1995-2000). Carter rejoined the faculty at the University of Iowa to focus on research in 2000. He is currently the Patrick E. Keefe Professor in Pharmacy, College of Pharmacy and a Professor in the Department of Family Medicine, the University of Iowa.
Joe Cech

Joe earned his Bachelor of Science degree in Chemical Engineering from Michigan Technological University in 1978 and served in the U.S. Navy from 1971 -1975. After thirty six years in the plastic industry, where he held various positions as a Process Engineer and Technical/Environmental Manager for the Menasha Corporation and Applied Molded Products Company he started his own consulting company. Joe has since retired from Joe Cech Consulting; a plastic consulting engineering company. Since retirement, he enjoys having time for his favorite hobbies which include hunting, golf and traveling.

Joe has been associated with WREN over the last two years as a "Patient Advisor". He considers himself a "typical patient"; an overweight, out of shape, diabetic with arthritis and elevated cholesterol and blood pressure. However, he is a patient who is committed to improving all patient care by sharing his personal experiences and challenges.

Irma Cintron

One of six children, Irma was born and raised in Texas. Upon graduation from high school she attended college in the State of Washington on a scholarship. She holds a degree in psychology and worked a majority of her years in a medical setting.

When Irma lost her job due to downsizing, she found herself wondering, what next? Not only had she lost her job, but with it went her income and health insurance. Stress and anxiety took over. Her blood pressure went up and she was diagnosed as pre-diabetic. She had to do something. She was not going to sit back and let this consume her.

Irma joined a diabetic's class offered by St Joseph's free clinic in Waukesha. There she was taught how to prepare healthy foods, use portion control and choose foods that were better for her. She joined a gym to take some weight off and she is happy to say she is no longer considered pre-diabetic and her blood pressure is under control.

Now retired, Irma enjoys going to the gym, making jewelry, sewing and reading anything she can get her hands on. She is very curious person and what she doesn’t know or understand she looks up. Irma turned 64 this month and plans to be around a long time for her kids and grandkids.

Charles E. Dorgan

BS, MS, PhD: Kansas State, U of Pittsburgh, U of Wisconsin. Experience: Cessna, John Deere, Air Force (12 yrs), UW Professor in EPD and ME + several consulting engineering firms (42 yrs). Expertise in energy management, construction quality delivery process, air-conditioning and refrigeration. Retired in 2013, continuing to do engineering consulting.
Joan Marie Dorgan

BS UW-Platteville. Taught kindergarten and raised a family. Active in church (including chair of annual bazaar for many years), PTA, and scouts for many years. Likes to travel. Currently active in Red Hats and St. Andrews Church and lots of travel each year, with and without family on trips, about 10 weeks each year.

Rod Erickson, MD, Mayo Clinic Health System–Franciscan Healthcare

Dr. Erickson has practiced full-spectrum family medicine in rural communities for the past 31 years. In addition to his interest in rural medicine, his interests include Community Oriented Primary Care, geriatrics, practice-based research, and wilderness medicine. Active involvement has been a cornerstone to his family’s commitment to their communities and his roles have included local “team doctor”, school district medical advisor, multiple positions on the local hospital board, Wisconsin Academy of Family Medicine board, church counsel, local and council Scout boards, and state board of medical examiners.

For the past 33 years, Dr. Erickson has been involved in practice-based research including NAPCRG, ASPN, WREN (31 years), AAFP Research Network, and the Mayo PBRN. This tenure has included participation in dozens of studies and several publications and presentations at national meetings.

Lyle (LJ) Fagnan, MD, Director, Oregon Rural Practice-Based Research Network

Dr. Fagnan received his medical degree from the University of Oregon Medical School and following a rotating internship in Hartford, Connecticut, he joined the United States Public Health, Indian Health Service and practiced in Bethel, Alaska, for three years. He completed his family medicine residency training in Boise, Idaho, at the University of Washington Family Medicine Residency of Southwest Idaho. In 1977, LJ founded a medical clinic, Dunes Family Health Care, in Reedsport, Oregon, which was funded as one of thirteen model rural practices with the Robert Wood Johnson Foundation’s Rural Practice Project. He joined the Department of Family Medicine at Oregon Health & Science University in 1993. In 2002, LJ became the director of the Oregon Rural Practice-based Research Network (ORPRN). LJ maintains an active family medicine practice and was named as the "Family Doctor of the Year" by the Oregon Academy of Family Physicians in 2005. LJ's research portfolio includes studies and publications related to population-based health, dissemination and implementation of evidence-based medicine into practice, quality improvement, and rural health care systems.

David Feldstein, MD, Associate Professor, University of Wisconsin School of Medicine and Public Health, Department of Medicine

Dr. Feldstein is a General Internist. He graduated medical school at the State University of New York (SUNY) Stony Brook and then went on to do his training in Internal Medicine and a Chief Resident year at the University of Massachusetts. He came to the University of Wisconsin School of Medicine & Public Health (UWSMPH) in 2000 as a hospitalist, and after
completing an Institutional Clinical and Translational Science Award (KL2) in 2009, embarked on a research career.
David is an internationally known expert in evidence-based medicine (EBM) and has published and taught widely on the topic. This interest in EBM is what led him to a career in research. He has developed and studied novel EBM teaching and evaluation tools that are currently in use at medical schools and residency programs across the country. His main research interest is in implementation science and clinical decision support. However, he still has a passion for educational research and takes every opportunity to study new methods of education, most recently distance education. David still enjoys teaching all levels of learners and now does his clinical work in the outpatient setting.

**Martha E. “Meg” Gaines, JD, LLM, Distinguished Clinical Professor, Director, Center for Patient Partnerships, University of Wisconsin Schools of Law, Medicine, Nursing & Pharmacy**

Meg Gaines founded and directs the interdisciplinary Center for Patient Partnerships at the University of Wisconsin. The Center’s mission is to engender effective partnerships among people seeking health care, people providing health care, and people making policies that guide the health care system. The Center trains future professionals of medicine, nursing, law, health systems, industrial engineering, pharmacy and other disciplines together to provide advocacy services to patients with life-threatening and serious chronic illnesses in a transdisciplinary environment.

Ms. Gaines’ work focuses on consumer engagement and empowerment in health care reform where she has been privileged to collaborate with the Josiah Macy Jr. Foundation, the Robert Wood Johnson Foundation, the Kaiser Family Foundation, and the National Cancer Institute among others. She serves on the National Cancer Institute Council of Research Advocates, recently co-chaired the Josiah Macy Jr. Foundation annual conference on engaging patients in linking health care and health professional education reform, and co-authored the conference paper for the joint Arnold P. Gold & Schwartz Foundations conference on advancing compassionate, collaborative care. Her publications include “Engaging Patients at the Front Lines of Primary Care Redesign: Operational Lessons for an Effective Program,” “Alchemy: Medical Mediation at Its Best,” “A Social Compact For Advancing Team-Based High-Value Health Care,” and “Medical Professionalism from the Patient’s Perspective: Is There an Advocate in the House?”

A Distinguished Clinical Professor at the University of Wisconsin Law School, Ms. Gaines teaches courses related to consumer issues in health care, health care advocacy, health care reform, and patient-centered care to graduate students from law, medicine, public health, nursing, pharmacy, genetic counseling and others. Ms. Gaines earned her bachelor’s degree at Vassar College and holds Juris Doctorate and Master of Law degrees from the University of Wisconsin Law School. She is a long term survivor of metastatic ovarian cancer.
David Hahn, MD, MS, WREN Director, Retired, DeanHealth Family Practice

Dr. Hahn leads the Wisconsin Research & Education Network (WREN), providing research and educational opportunities for primary care physicians and other healthcare providers. Dr. Hahn was one of the founding members of WREN and was named Director in 2012. He has retired from a full career in family practice.

Dr. Hahn is a graduate of Stanford University School of Medicine, and completed his Family Medicine Residency at the University of Iowa Hospitals and Clinics. He received his Master of Science degree in Preventive Medicine & Epidemiology from the University of Wisconsin-Madison.

Dr. Hahn’s primary areas of research interest are asthma and the delivery of clinical preventive services. He has a proven track record of obtaining grant funding, conducting clinical trials within practices, and research productivity, with 32 peer-reviewed publications. Dr. Hahn currently serves as Chair of the Community Clinician Advisory Committee for the North American Primary Care Research Group (NAPCRG), and is a member of the NAPCRG Board of Directors.

John Hawkins, MD, UW Health Family Practice

John G Hawkins, MD practices full scope family medicine for UW Health. He is the medical director at the UW Health clinic in Sun Prairie. He also provides inpatient and obstetrical care at Meriter-UnityPoint Hospital in Madison. He is a graduate of University of Wisconsin School of Medicine and Public Health, and completed residency in family medicine through the University of Minnesota-St. John’s program.

John’s areas of interest include improving care of chronic diseases, and optimizing team based care.

Cecelia (Sis) Laurin

Sis was born in Menasha, Wisconsin on February 20, 1948; the only girl in a family of four brothers.

In 1968 she married her husband Dale and they had 3 children. Kelly, 47, has one son. Dale Jr, 46, has one son of his own, three stepchildren and three adopted foster children. Kerry Jo, 40, has three children. Their eleven grandchildren give Sis and Dale so much joy.

In 1980, Sis went back to work full time with Affinity Medical Group, working for two pulmonary specialists, two infectious disease specialists and a nurse practitioner. Some of the doctors left after a while, but she stayed on for 23 years with her pulmonary family. She was their receptionist, surgery scheduler, lab and x-ray scheduler and all around handy girl.
When the doctor she worked for retired, Sis spent the last seven years working for the clinic’s insurance company doing pre-certiﬁcations on all patients who were admitted to the hospital, making sure criteria were met. At that time, she worked with ﬁve case managers at the hospital, providing them with all the patient information needed for in-patient care or observations.

She loved working in the medical ﬁeld and misses it.

**Brad Lepkowski, FNP, Milwaukee Health Services, Inc.**

Bradley Lepkowski was born in Milwaukee, WI and obtained his BSN from the University of Wisconsin-Madison in 2006. Between 2003 and 2007 he started Knowledge Builders Instructional Development Corp and Virtual Reality Simulations where he developed electronic learning materials for health systems around the world as well as the Virtual Cadaver Anatomy Simulation System, designed to create a better mental model of anatomy for students. The prototype technology was sold to another developer.

Upon graduation he worked in trauma surgery & Emergency Medicine as a staff RN with Froedtert and as a travel RN working on the east and west coasts from 2006 through 2010. He completed his MSN Family Nurse Practitioner (FNP) with Concordia in 2012 and has been a National Health Service Corps scholar at the Milwaukee Health Services, Inc. Federally Qualified Health Center (FQHC) from 2012 to the present time. Bradley is currently focused on primary care in underserved populations with a special interest in both lifestyle management and regimen adherence strategies.

**Donald E. Nease, Jr., MD, Green-Edelman Chair for Practice-Based Research, Associate Professor and Vice Chair for Research-Dept. of Family Medicine, Director of Community Engagement & Research-Colorado Clinical and Translational Sciences Institute, Director for Practice Based Research-ACCORDS, University of Colorado – Denver**

Dr. Nease is Associate Professor of Family Medicine at the University of Colorado – Denver, where he serves as the Green-Edelman Chair for Practice Based Research, Director of Community Engagement for the Colorado Clinical and Translational Sciences Institute, Vice Chair for Research in the Department of Family Medicine and Director of the SNOCAP PBRN Collaborative at the Colorado Adult and Child Center for Outcomes Research and Delivery Science. He also serves as President of the International Balint Federation. He completed medical school at the University of Kansas, residency at the Medical University of South Carolina in Charleston and a Faculty Development Fellowship at the University of North Carolina. Dr. Nease’s work is dedicated to improving health from the level of individual doctor-patient interactions to community and population-based interventions. His research is conducted largely within communities and their primary care practices, most notably in the areas of Chronic Illness and Systems Change.
David Oshinsky

Dave has a Bachelors and Master’s degree in Electrical Engineering and Computer Science, from the University of Connecticut and MIT, respectively.

Dave is a software engineer, living in central New Jersey with his wife Judi, who is a psychotherapist in private practice. His two daughters, Mimi (married to Zach) and Rachel, have both graduated college and live in the Boston area.

His hobbies include working out at the gym, travel, photography, hiking, skiing, kayaking, playing with his cat Sandy, and working on his own music transcription software project.

David Rabago, MD, Associate Professor, Associate Research Director, University of Wisconsin School of Medicine and Public Health, Department of Family Medicine and Community Health

Dr. Rabago is a board-certified Family Medicine physician. After graduating medical school at UW Madison in 1997, he pursued a one-year post-graduate research year in epidemiological research at the UW Department of Population Health. David then began residency in Family Medicine at the UW Department of Family Medicine, Madison, from which he graduated in 2001. During his residency he continued to pursue both clinical medicine and clinical research, completing a randomized controlled trial of nasal irrigation for sinusitis. An assistant professor, Dr. Rabago maintains a full spectrum continuity and teaching practice at Northeast Family Medical Center. His research now focuses on assessing prolotherapy as a therapy for chronic musculoskeletal pain and on nasal saline irrigation for upper respiratory conditions.

Julie Schuller, MD, MPH, MBA, Executive Vice President, Vice President Clinical Affairs, Sixteenth Street Community Health Centers

Dr. Julie Schuller, a Milwaukee native, graduated with a Bachelor in Science from Notre Dame, obtained a medical degree at Northwestern University Medical School, and completed an Internal Medicine Residency at the Medical College of Wisconsin. While working on her medical degree, she also received a Master’s Degree in Public Health from Northwestern University. As her health care administration role grew, she obtained a Masters Degree in Business Administration from the University of Massachusetts, Amherst.

Dr. Schuller joined the Sixteenth Street Community Health Center in 1995, and has been there ever since. Dr. Schuller is currently the Executive Vice President and Vice President of Clinical Affairs. She continues to see patients, as well as being intimately involved in the management of the 16th Street Clinic, an integral member of the Executive Team, and supervisor to over 200 medical providers and adjunct staff. Her supervisory responsibilities also include oversight of all clinical areas, operations, facilities, health education programs, including diabetes, asthma, HIV, and obesity prevention, as well as Communications and Public Relations.
Dr. Schuller plays a leadership role in several national and state organizations devoted to excellence in provision of medical services and population health, with a focus on medically underserved and vulnerable populations. She is currently a member of the Board of Directors of the Wisconsin Collaborative on Healthcare Quality, the Wisconsin Primary Health Care Association (Treasurer), the Wisconsin Medical Society (Treasurer and Chairperson of the WMS Council on Access) and La Casa de Esperanza, as well as the Clinical Council of the Milwaukee Health Care Partnership and the Quality Committee of the Aurora Board of Directors. She is Past-President of the Medical Society of Milwaukee County. Nationally she serves on the Clinical Committee of the National Association of Community Health Centers.

Christine A. Sorkness, PharmD, AsthmaNet Principal Investigator, Distinguished Professor, University of Wisconsin School of Pharmacy

Christine A. Sorkness, PharmD, received the BS degree in Pharmacy (1973) and Doctor of Pharmacy degree (1975) from the State University of New York at Buffalo (SUNYAB). Dr. Sorkness was an Assistant Professor of Pharmacy and Neurology at SUNYAB from 1977-1979, and developed one of the first pharmacist-managed Anticoagulation Clinics in the United States, at the Erie County Medical Center in Buffalo, New York. She joined the University of Wisconsin faculty in 1979 and is currently Distinguished Professor of Pharmacy and Medicine (CHS). Dr. Sorkness is a preceptor and practitioner with the Anticoagulation Clinics at the William S. Middleton Memorial Veterans Hospital in Madison. In addition, she is a member of the faculty and investigator with the UW Allergy, Pulmonary, and Critical Care Division’s asthma clinical research program. Dr. Sorkness is co-PI for the Madison site for the National Heart, Lung and Blood Institute (NHLBI) AsthmaNet grant, as well as co-investigator with the National Institute of Allergy and Infectious Diseases (NIAID) Inner City Asthma Consortium. Dr. Sorkness’ asthma research focuses on the development and validation of patient-centered outcomes (Asthma Control Test, Childhood Asthma Control Test, Combined Asthma Severity Index) and the conduct of asthma pharmacotherapy trials across the lifespan, diverse populations, and disease severity.

She is the Senior Associate Executive Director of the UW Institute for Clinical and Translational Research, which houses the National Center for Advancing Translational Sciences (NCATS) Clinical and Translational Sciences Award. Dr. Sorkness serves as the Associate Director of the UW Collaborative Center for Health Equity, funded by a National Institute on Minority Health & Health Disparities (NIMHD) Center of Excellence P60 Grant. She is one of the investigators with the National Research Mentor Network, funded to develop and initiate efforts to diversify the biomedical workforce.
**Speaker Abstracts**

**Setting the Stage: Why Focus on Chronic Conditions?**
Don Nease, Jr., MD  
Green-Edelman Chair for Practice-Based Research,  
Associate Professor and Vice Chair for Research-Dept. of Family Medicine  
Director of Community Engagement & Research-Colorado Clinical and Translational Sciences Institute  
Director for Practice Based Research-ACCORDS  
University of Colorado – Denver

Chronic illness impacts nearly half of all Americans and represents 75% of total health care expenditures in the US. Beyond the financial costs, chronic illness exerts a special burden on patients’ lives. Practice-based research networks (PBRNs) have a unique role to play in addressing chronic illness. Just as PBRNs serve a convening function for practice clinicians and staff, they can also serve a similar function for these practices’ patients and members of the communities in which they serve and reside. During this presentation we will explore the burdens of chronic illness at the national, state and individual patient levels, and then explore how a PBRN can play a role in addressing chronic illness for the benefit of its practices, patients and their communities.

**Engaging Patients in Research: Reflections from a Patient Perspective**
Martha E. “Meg” Gaines, JD, LLM  
Distinguished Clinical Professor  
Director, Center for Patient Partnerships  
University of Wisconsin Schools of Law, Medicine, Nursing & Pharmacy

The establishment of the Patient-Centered Outcomes Research Institute (PCORI) created significant new funding opportunities for researchers who were already, or were interested in, improving the outcomes of their research by engaging patients fully in the research process. While this funding is a potential game changer, there are gaps in experience and knowledge about the “what, when, who, how and why” of engaging patients in research that constitute the proverbial “angel” (or “devil”) in the details. This presentation will explore these questions in the context of existing research and experience, through the patient lens.
International Learning: A Selection of PEARLs on Chronic Conditions from the NAPCRG Annual Meeting

David Hahn, MD, MS, WREN Director, Retired, DeanHealth Family Practice
LJ Fagnan, MD, Director, Oregon Rural Practice-Based Research Network

The North American Primary Care Research Group (NAPCRG) is a volunteer association of members committed to producing and disseminating new knowledge from all disciplines relevant to primary care (www.napcrg.org/AboutUs). Primary care researchers from many countries present their work at the annual NAPCRG fall meeting. The presentations deemed most relevant and interesting to primary care clinicians are chosen, condensed into a four slide set presentation and disseminated to clinical audiences throughout North America including Canada. Each presentation follows the same format: (1) The research question and why this study is important, (2) What the researchers did, (3) What the researchers found, and (4) Why it is important for clinical practice. This year at the WREN Convocation two primary care clinician-researchers (Drs. Hahn & Fagnan) will present six of their favorite NAPCRG “Pearls for Clinicians” chosen from the 2014 NAPCRG annual meeting held in New York City.

Dr. Hahn:
- PCMH Implementation and Primary Care Provider and Staff Burnout: A Process Analysis - Carvajal & PCMH Transformation - Hope (combined presentation)
- The Reduction in ED and Hospital Admissions From Medical Home Practices is Specific to Primary-Care-Sensitive Chronic Conditions – Green
- Clinical Effectiveness of Collaborative Care Management For Depression Over Time – Garrison

Dr. Fagnan:
- Shared Decision-Making in Palliative Care: Clinical Implications for the Practice of Family Medicine - Bélanger
- Continuity of Care: Does Having the Same Primary Care Provider Over Time Matter? - Wong
- Does an Increase in Opioid Dose Lead to an Increase in Depression? - Scherrer

Self-Management Support and Chronic Conditions
Rod Erickson, MD
Mayo Clinic Health System

The clinician’s role in assisting patients’ with self-management will vary from person to person. Understanding the patient’s knowledge base and knowledge gaps along with priorities and personal goals are important components of shared decision making. Once this baseline is established and the direction agreed upon, the clinician can help empower and encourage individuals to move towards these agreed upon goals. Research directed towards knowledge assessment and managing shared decision making may improve upon this process.
Self-Management Support and Chronic Conditions: Linking questions from communities to answers from communities

Lyle (LJ) Fagnan, MD
Director
Oregon Rural Practice-Based Research Network

Patients with chronic illness and their informal care caregivers spend two hours/day on health-related activities. The linkages between patients, practices and community resources to provide self-management support are not well understood. Three priority questions are suggested as an approach to provide new knowledge regarding self-management linkages.

Challenges & Opportunities in Asthma: A WREN clinician perspective

David Hahn, MD, MS
WREN Director

As a clinician I saw many people with asthma. Aspects of diagnosis, monitoring and treatment were problematic. Diagnosis: Documenting reversible airway obstruction is one of the hallmarks for diagnosis but there are barriers to getting meaningful lung testing. I also saw many patients who had asthma and other lung conditions like chronic bronchitis or COPD who tended to be more severe than average. It was hard to fit them into one of the existing diagnostic categories: I even encountered patients who started with just asthma and ended decades later diagnosed with COPD! Monitoring: I wasn’t trained in how to monitor patient progress and response to treatment, so that was a big problem for most of my career. Treatment: Some of my patients couldn’t afford the high cost of asthma inhalers; we were constantly being asked for samples of what we had on hand. Others didn’t like to take inhaled steroids because of side effects, or they were opposed to taking steroids. Because of the asthma work I did (with WREN support) I became a magnet for patients with severely uncontrolled asthma that didn’t respond to available asthma medications (“refractory” asthma). Refractory asthma accounts for an estimated 5-15% of all asthma (~2-3 million people in the US).

I see opportunities for WREN investigating diagnosis, monitoring and treatment. Diagnosis: Is there a role for peak expiratory flow (PEF) monitoring in documenting reversible airway obstruction? PEF meters are available, inexpensive and portable, allowing self-monitoring. Barriers include (1) need for patient and clinic training and (2) PEF monitoring is not recommended for diagnosis by experts up to now. Monitoring: There is now a simple, inexpensive patient-reported outcome measure (PROM) called the Asthma Control Test (ACT) that is validated for monitoring asthma control. What is the best way to use the ACT in primary care? Treatment: There is much work to be done to optimize treatments for those who can respond; the presentation after mine will address this important area. I will focus on previous WREN research into macrolides as a promising treatment for refractory asthma and discuss future possibilities.
**Research Opportunities to Improve Hypertension Control**
Barry L. Carter, Pharm.D.
Professor
University of Iowa

Despite major efforts for over 40 years, Blood Pressure (BP) control has only been achieved in about 50% of hypertensive adults in the U.S. Many efforts to improve BP control have been effective. These include strategies to improve medication adherence or medication optimization. The most effective method from various meta-analyses has been the use of team-based care in which primarily nurses or pharmacists assist with patient management. This presentation will provide a brief overview of these strategies and review one study conducted in 32 medical offices throughout the U.S. (including 3 in Wisconsin).

This and other studies have identified several additional research questions that would be ideally suited for practice-based research networks (PBRNs) like WREN. Some examples would be to further explore the most efficient strategies to utilize various team members and cost-effectiveness analyses of team-based care. Other research questions could address emerging strategies to measure and improve poor medication adherence, strategies to overcome socio-demographic barriers and which BP measurement method should be used to diagnose, monitor and treat hypertension.

**It’s Time to Prevent Bone Attacks**
Neil Binkley, MD,
Professor, Department of Medicine-Geriatrics
Associate Director, Institute on Aging
Co-Director, Osteoporosis Clinical Center & Research Program
University of Wisconsin School of Medicine & Public Health

We all know that heart attacks signify artery disease and that they may cause disability and even death. However, many people do not appreciate that fractures (broken bones) in older adults, what we are calling “bone attacks,” similarly indicate underlying bone and muscle disease. A Bone Attack is a broken bone (fracture) occurring in an adult age 50+ from a fall or other minimally traumatic event. Bone attacks are common and occur in 1:2 women and 1:4 men over 50. Fractures of the spine, hip and forearm are the most common types, but rib, pelvis and upper arm fractures also occur. Bone attacks, like heart attacks, are serious health events that may cause disability and even death. Indeed, 20-30% of older adults who break their hip die within one year and approximately half of those who survive a hip fracture require assistance with everyday activities and approximately 1/3 require nursing home care, some permanently.

Bone attacks (fractures) result from osteoporosis (bone loss) and sarcopenia (muscle loss) in older adults. In essence, both our bone and muscle strength decline as we age. This combination increases our risk for falling and when falls occur onto weakened bones, bone attacks (fractures) result. The likelihood of these fractures is increased by obesity and diabetes. Despite the high prevalence of these bone attacks, they remain largely ignored by physicians, patients and the healthcare system. It’s time for a change.
Setting the Stage: Why Focus on Chronic Conditions?

Don Nease, MD
Green-Edelman Chair for Practice-Based Research
Associate Professor and Vice Chair for Research | Dept. of Family Medicine
Director of Community Engagement & Research | Colorado Clinical and Translational Sciences Institute
Director - State Networks of Colorado Ambulatory Practices & Partners (SNOCAP)
University of Colorado – Denver
President - International Balint Federation | balintinternational.com
Donald.Nease@ucdenver.edu | ucdenver.edu

What we’ll cover:

• What’s the burden?
• What’s the potential benefit?
• What about our patients’ perspective?
• How can a PBRN catalyze things?

Burden of chronic disease
some numbers…

• nearly half of all Americans have one or more chronic diseases
• at age 65 or older, the number is 85%
• chronic illness represents 75% of total health care expenditures

• Partnership for Solutions: Johns Hopkins University, Baltimore, MD for The Robert Wood Johnson Foundation (September 2004 Update). "Chronic Conditions: Making the Case for Ongoing Care"

2003 Milken Institute Report

reported cases in the united states, 2003
(and as % of population*)

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cases (2003)</th>
<th>(as % of population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancers</td>
<td>10,505,000</td>
<td>(3.7%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>13,729,000</td>
<td>(4.5%)</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>19,145,000</td>
<td>(6.8%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>38,791,000</td>
<td>(13.0%)</td>
</tr>
<tr>
<td>Stroke</td>
<td>2,425,000</td>
<td>(0.9%)</td>
</tr>
<tr>
<td>Mental Disorders</td>
<td>30,038,000</td>
<td>(10.7%)</td>
</tr>
<tr>
<td>Pulmonary Conditions</td>
<td>49,206,000</td>
<td>(17.4%)</td>
</tr>
</tbody>
</table>

* As % of non-institutionalized population. Number of reported cases based on patient self-reported data from 2003 NCHS. Excludes unknown and undiagnosed cases.

what about Wisconsin?

reported cases in wisconsin, 2003
(and as % of population*)

<table>
<thead>
<tr>
<th>Disease</th>
<th>Cases (2003)</th>
<th>(as % of population)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cancers</td>
<td>185,000</td>
<td>(3.5%)</td>
</tr>
<tr>
<td>Diabetes</td>
<td>190,000</td>
<td>(3.6%)</td>
</tr>
<tr>
<td>Heart Disease</td>
<td>266,000</td>
<td>(5.7%)</td>
</tr>
<tr>
<td>Hypertension</td>
<td>685,000</td>
<td>(12.0%)</td>
</tr>
<tr>
<td>Stroke</td>
<td>53,000</td>
<td>(1.0%)</td>
</tr>
<tr>
<td>Mental Disorders</td>
<td>812,000</td>
<td>(15.3%)</td>
</tr>
<tr>
<td>Pulmonary Conditions</td>
<td>629,000</td>
<td>(11.5%)</td>
</tr>
</tbody>
</table>

* As % of non-institutionalized population. Number of reported cases based on patient self-reported data from 2003 NCHS. Excludes unknown and undiagnosed cases.
Checkup Time: Chronic Disease and Wellness in America - 2014

Benefits of addressing chronic illness

The Economic Burden of Chronic Disease on Wisconsin (continued)

Two Paths, Two Choices — Chronic Disease in Wisconsin TOMORROW

On our current path, Wisconsin will experience a dramatic increase in chronic disease in the next 20 years. But there is an alternative path. By making reasonable improvements in preventing and managing chronic disease, we can avoid 752,000 cases of chronic conditions in 2023.
Patient perspectives

impact on life expectancy
impact on education

Chronic illnesses don’t just affect patients. Our culture is based on quick fixes, but for this, there is no easy way out.

multimorbidity

- UK based study of illness perceptions and impacts on self-management & outcomes
- Self-management behavior was predicted by illness perceptions of illness consequences
- Self-monitoring and insight was predicted by “haasles” in health services
- Health status predicted by age and patient experience of multi-morbidity

hassles?


• “After controlling for patient characteristics, primary care communication and coordination of care were inversely associated with patient hassles score: as communication and coordination improved, the reported level of hassles decreased.”

The role of a PBRN

• participatory
• engaging
• inclusive
• good at getting things done!
• catalysts
Chronic Care Model

Improved Outcomes

Informed, Activated Patient

Self-Management Support

Productive Interactions

Prepared, Proactive Practice Team

Delivery System Design

Decision Support

Clinical Information Systems

Health System

Health Care Organization

Resources and Policies

Community

Self-Management Support

Improved Outcomes

High Plains Research Network
Community Advisory Council

EvidenceNOW Southwest

CareNet
Patient Advisory Council

Instituted
PBRN’s bringing practices and patients together

- A different kind of “productive interaction” is in play
- Patients have expertise to offer
- Practice clinicians and staff listen differently
- Magic happens!

INSTTEP Patient Outcomes - quantitative

<table>
<thead>
<tr>
<th>Measure</th>
<th>Survey</th>
<th>Control</th>
<th>Intervention</th>
<th>Differential Intervention Effect</th>
</tr>
</thead>
<tbody>
<tr>
<td>PAM</td>
<td>1</td>
<td>66.45</td>
<td>66.28</td>
<td>F(1,843)=0.84, p=.3587</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>66.53</td>
<td>66.93</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>66.62</td>
<td>67.58</td>
<td></td>
</tr>
<tr>
<td>Process of Care (from PACIC)</td>
<td>1</td>
<td>30.98</td>
<td>30.45</td>
<td>F(1,800)=16.85, p&lt;.0001</td>
</tr>
<tr>
<td></td>
<td>2</td>
<td>30.43</td>
<td>31.52</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>29.87</td>
<td>32.59</td>
<td></td>
</tr>
<tr>
<td>Self-reported health</td>
<td>1</td>
<td>3.16</td>
<td>3.35</td>
<td>F(1,834)=4.86, p=.0278</td>
</tr>
<tr>
<td>(lower score is better)</td>
<td>2</td>
<td>3.16</td>
<td>3.26</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3</td>
<td>3.15</td>
<td>3.17</td>
<td></td>
</tr>
</tbody>
</table>
bootcamptranslation.org

discussion?
donald.nease@ucdenver.edu
Partnerships, Patients & Research, OH MY!: The Why, What, When, Who and How of Engaging Patients in Research

Martha E. “Meg” Gaines, JD, LLM
Distinguished Clinical Professor
Director, Center for Patient Partnerships
University of Wisconsin – Madison
School of Law, Medicine & Public Health, Nursing & Pharmacy

CPP & ME

- A funny thing happened on the way to my 40s...
- Alchemy: The birth of the Center for Patient Partnerships
- Our wheel house: The Patient Voice.
  - Advocacy + Transdisciplinary Education
  - Organization redesign
  - National initiatives
- I am a patient partner in research: NCRA, DOD Grant, Schwarze decisional tool, Safdar infection control, etc.

PCORI: A NEW WIND BLOWING

- Not all of you are PCORI funded, this applies more broadly
- New funding opportunity for those long committed to research that benefits patients
- But, engaging patients in the research process is new to many, complex and time consuming
- Many have already experienced frustration in the process, which is costly to researchers and patients: time, relationships, trust, spirit.
- How can we maximize the possibility of a successful, mutually satisfying collaboration?
- Why, what, when, who & how can we engage patients effectively?
PCORI’S MEANINGFUL ENGAGEMENT

“...(T)he meaningful involvement of patients, caregivers, clinicians and other healthcare stakeholders throughout the research process – from topic selection through design and conduct of research to dissemination of results...”

What does “meaningful involvement” mean to you? (“reasonable man...”)

PCORI: PATIENT ENGAGEMENT DEFINED

WHY ENGAGE PATIENTS IN RESEARCH?

Because it is essential to success.

Increases:
- Accuracy
- Relevance
- Representativeness
- Effectiveness
- Implementation
- Dissemination
WHAT CAN PATIENTS OFFER TO RESEARCH?

- Accurate definition of the problem.
- Identify relevant data.
- Suggest data collection methods, locations & populations.
- Help collect data.
- Offer diverse perspectives in data analysis and interpretation.
- Co-conceive and pilot interventions, interpret results.
- Help refine interventions.
- Suggest implementation strategies.
- Support publicity for implementation and dissemination.

WHEN SHOULD PATIENTS BE ENGAGED?

- From the start and all the way through.
- Getting to the right problem. (eg: the lateness problem)
- Getting the right data (eg: mosquito control gone awry)
- Data collection – represent broader patient demographic (eg: QoL survey revamp)
- Data interpretation (eg: why would they say that?)
- Designing the intervention (eg: “have you washed your hands?”)
- Testing the intervention (eg: mosquito netting vs. plug it in)
- Implementation (eg: the new clinic map snafu)
- Dissemination (eg: AAB newsletter, online gold mine...)

WHO: CHOOSING THE RIGHT PATIENT FOR THE JOB.

- The job description shapes the patient selection
- Choose those who understand this is a serious endeavor
- No one is "representative," but patients can become experts in broader patient perspective
- Add patient voices at various stages throughout the research (focus groups, surveys, PFACs, etc.) to achieve diversity
- The fear of speaking the truth and the challenge of cooptation
HOW: SOME CRITICAL INGREDIENTS

- Prepare, prepare, prepare.
- Vet staff hopes & concerns
- Take time discerning your job description
- Articulate your vision of a strong patient partner
- Circulate the job description widely
- Ask, invite
- Agree on goals, responsibilities, expectations and risks. Be specific! Is the patient in your care? How will challenges be handled?
- Welcome, intentionally
- Adapt your ways, change things up
- Create a new team with its own identity
- Appreciate; compensation takes many forms

JOB DESCRIPTION IDEAS

- Willing to develop expertise in broader patient perspective
- Willing to push the team to throw a wider net: how to engage patients in a variety of ways
- Interest in area of research broadly
- Able to understand own healthcare experience is separate from research activities
- Able to commit sufficient time to be full team member (team job description includes willingness to create new processes adopted by all members)
- Willing to be intrepid even when not feeling brave when in a forum outside your comfort zone

ALCHEMY: NOUN

The medieval forerunner of chemistry, based on the supposed transformation of matter. It was concerned particularly with attempts to convert base metals into gold or to find a universal elixir.

A seemingly magical process of transformation, creation, or combination…
Pearls from the North American Primary Care Research Group (NAPCRG)

DL Hahn, MD MS, Wisconsin Research & Education Network (WREN)
LJ Fagnan, MD PhD, Oregon Rural Practice-based Research Network (ORPRN)

What is NAPCRG?

• Multidisciplinary organization for primary care researchers
• Founded in 1972
• The world’s largest organization devoted to research in family medicine, primary care and related fields, including epidemiology, behavioral sciences, and health services research.
• NAPCRG provides a forum for presenting new knowledge to guide improvement, redesign and transformation of primary care.

Goals of NAPCRG

• Promote primary care research and quality
• Nurture novice researchers
• Develop and support practice-based research networks and the voices of community clinicians and patients
• Promote patient engagement in improving patient care and research
NAPCRG’s Community Clinicians Advisory Group (CCAG)

- NAPCRG committee representing primary care physicians in practice
  - Many are involved with primary care research networks
  - Many also attend NAPCRG annual meeting
- Pearls process
  - CCAG members review all abstracts and nominate all favorites
  - Nominated abstracts are then ranked 1-5 by CCAG members and scores are tallied.
  - Top 10 abstracts make the Pearls list

The Research Pearls

The Research Question

- Title: PCMH Implementation and Primary Care Provider and Staff Burnout: A Process Analysis
  Authors: Diana Carvajal MD, MPH, Elizabeth Alt MD, MPH, Claudia Leduc MS, Stephanie Neves BS, MA, Arthur Blank PhD, M. Diane Mckee MD, MS
- Question: What is the relationship between the PCMH implementation process (change in care processes & staffing levels) and staff & provider burnout?
- Relevance:
  - The PCMH is a model for advanced primary care, achieved through a team-based approach.
  - Implementation involves changes in care processes, staff roles, and staffing levels.
  - Implementation can directly impact provider and staff burnout.
What the Researchers Did

• PCMH implementation process evaluation of 2 primary care sites in the Bronx, NY:
  — Site 1: Internal Med/Peds; non FQHC; non-teaching facility; 90,000 unique pts/yr
  — Site 2: Family Medicine; FQHC; teaching facility; 52,000 unique pts/yr
• Methods: survey at 1 and 2 years post-implementation
• Measures:
  — Burn-out: survey utilized the Maslach Burnout Index: measures professional efficacy, cynicism, & exhaustion
  — Change in care processes: reflected in the # of care delivery workflows implemented
  — Staffing levels: obtained from Human Resources & site administrators

What the Researchers Found

• Many workflows created, moving toward team-based care.
• Implementation involved a planned increase in staffing:
  • Site 1 achieved and sustained the planned staffing levels
  • Site 2 briefly achieved but did not sustain planned levels

What This Means for Clinical Practice

• Lack of improvement in burnout is likely multifactorial, including:
  • Concurrent demands related to meaningful use
  • Increasing responsibilities (workflows) and workload without a matched increase in staffing ratios.
  • ***Maintenance of adequate provider and staffing ratios is crucial to mitigate burnout during PCMH implementation.
### The Research Question

**PCMH Transformation**  
- Rachel Hope, MD, The Christ Hospital/University of Cincinnati Family Medicine Residency  
- Miranda Moore, PhD, & Andrew Bazemore, MD, The Robert Graham Center

**The Question:** What is the cost to primary care practices of PCMH transformation?  
**Why this is important:** Although many studies have measured and calculated the long term cost savings of the Patient Centered Medical Home (PCMH), there is a lack of data on the estimated costs that primary care providers (PCPs) face in transforming how they deliver care to their patients.

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### What the Researchers Did

- **Design:** Studies detailing cost of transformation were selected from comprehensive searches in PubMed and WebScience, supplemented by reference lists. These studies were reviewed for minimum and maximum costs per practice.
- **Data Source:** PubMed and WebScience, supplemented by reference lists
- **Methods:** Lit review, NCQA PCMH elements divided into categories, min and max in each of 5 categories added together to define and a cost range of transformation.

---

### What the Researchers Found

- We grouped the 27 elements of the NCQA PCMH into 5 categories:  
  - Electronic Medical Records, After Hour Access, Culturally and Linguistically Appropriate Services, Quality Measure and Improvement, Reporting Performance
- 12 studies total that each fell into one of these 5 categories
- **Estimation of Cost of Transformation:** $119,000 - $419,000 (Median: $262,000)
What This Means for Clinical Practice

• This estimation does not include all 28 elements of the PCMH, so the range likely reflects a minimum cost to practices
• These results are helpful for determining the financial incentives needed for PCMH transformation

The Research Question

The Reduction in ED and Hospital Admissions From Medical Home Practices is Specific to Primary-Care-Sensitive Chronic Conditions
Green LA, Markowitz A, Chang HC, Paustian M

• Are the outcome improvements for the PCMH specific to what the PCMH does?
• Why this is important?
  – Much effort goes into transforming practices for the PCMH
  – Some studies find benefit, others not
  – Benefit could be just overall better management, improved access, attention or Hawthorne effect

What the Researchers Did

• 2218 primary care practices in Michigan participating in PCMH incentive program (5425 practice-years)
• Prospective intervention study
  – Scored practices on PCMH criteria (scale 0 to 1)
  – Adjusted for many covariates
  – Measured ED and hospital use and cost for PCMH-targeted conditions (COPD, asthma, CHF, DM, HTN, CAD) vs all other conditions according to practices’ PCMH scores
What the Researchers Found

- Typical patient population, averaging ~200 ED visits & ~75 admits per 1000 pts per year
- ED visits and hospitalizations decreased with increasing PCMH score
- Effect 3-4x as strong for PCMH-targeted vs other conditions
- For increase in PCMH score from 0.34 to 0.68:
  - Hospital admits decreased 13.9% for targeted vs 3.8% for other
  - ED visits decreased 11.2% vs 3.7%
  - Costs similar

What This Means for Clinical Practice

- There is a small general effect of PCMH on improving cost and quality
- Most of the PCMH effect is on PCMH-targeted conditions, supporting hypothesis that the PCMH has the specific effect intended
- Very large sample (10x most PCMH studies), “in the wild”
  - Private practices, not an HMO or centrally-managed integrated delivery system
  - This can work in your practice

The Research Question

Clinical Effectiveness of Collaborative Care Management For Depression Over Time
Garrison, GM; Angstman, KB; O'Connor S; Williams MD; Lineberry TW

- How much more quickly do depressed patients treated with Collaborative Care Management (CCM) improve when compared to usual care (UC)?
- Why this is important?
  - We know CCM is superior to UC at 6 and 12 months
  - But, patients care about how quickly treatments improve symptoms
  - Survival analysis can tell us how quickly patients treated with CCM vs. UC improve
What the Researchers Did

• Retrospective Cohort of 7,340 patients diagnosed with major depression or dysthymia from 3/08-6/13
  – Taken from primary care practice of over 100,000
  – Bipolar disorder excluded
  – Enrollment in CCM was patient/primary MD decision
• Survival Analysis of subsequent PHQ-9 scores
  – Remission: PHQ9 < 5
  – Persistent Depressive Sx: PHQ9 >= 10

What the Researchers Found

What This Means for Clinical Practice

• Patients care about how quickly they improve
• CCM shows improvement over UC within 1st month
• Non-randomized study may be biased due to self-selection and sampling
• Survival Analysis may be superior to Logistic Regression at fixed endpoint for comparison of many chronic disease treatments
The Research Question

Shared Decision-Making in Palliative Care: Clinical Implications for the Practice of Family Medicine

Bélanger E, Rodríguez C, Groleau D, Légaré F, & Marchand R.

• The Question: How do patients and health care providers construct patient participation in palliative care decisions through their discourse in a community hospital-based palliative care team?

• Why this is important?
  – Health care providers find end-of-life communication challenging.
  – Palliative care decisions involve uncertainty and are preference-sensitive.
  – Family physicians deliver a large part of palliative care in North America, yet few studies have directly observed their interactions with palliative care patients.

What the Researchers Did

• Methodology
  – Organizational ethnography (one year of participant observation) & discursive psychology

• Participants: 18 patients and 1 palliative care team (6 family physicians, 2 pivot nurses)

• Methods of data generation:  
  – Field notes, audio-recordings of consultations, field journal

• Methods of data analysis:  
  – how decision-making conversations are initiated in context  
  – how patient participation occurs in clinical conversations

What the Researchers Found

• Organization of care: early referral and discussions ensured patient opportunity to participate in decisions  
  – Re symptom control: direct questions, routine history  
  – Re patients’ death: indirect questions & explanations (patients retain control on whether to discuss end-of-life issues)

• Patient participation was facilitated by:  
  – exposing uncertainty (present options as equal/justifiable)  
  – co-constructing treatment preferences (discuss treatment modalities in daily life, prompt for opinions/experiences)  
  – affirming patient autonomy (state right to express opinion)  
  – and resisting patients’ attempts to uphold HCP authority (refer back to uncertainty/autonomy)
What This Means for Clinical Practice

- Examples of how to introduce decisions early and how to talk in a way that promotes patient participation
  - Explanations about the need to discuss end-of-life care options before patients can no longer participate
  - References to previous experiences and daily treatment modalities were part of patient expertise
- Promote awareness of the impact of discourse and better understanding of clinical communication guidelines
  - Use clinical discourse that enables patient participation if appropriate, coherence between ethical/clinical stance
  - Reflect on arguments that can achieve patient participation without abandoning vulnerable population

The Research Question

Continuity of care: does having the same primary care provider over time matter?

S.T. Wong, A. Katz, Peterson, S., & Taylor, C.

- Does high continuity of care predict:
  a) patient reported experiences of care?
  b) patient reported impacts of primary care?
- Why this is important?
  - Important measure of primary care performance
  - Previous data: Associated with lower health care costs and improved outcomes (e.g. fewer hospitalizations, better medication adherence, disclosure of behavioral concerns)

What the Researchers Did

- Population/Subjects:
  - 2176 adults aged 18-90 years who spoke English, French, Chinese, or Punjabi living across British Columbia and Manitoba
- Design: retrospective population-based cohort
- Methods:
  - Random digit dial survey (patient experience)
  - Linked survey to patient’s administrative data (to derive a continuity of care -CC- index), N=1609 agreed to linkage
What the Researchers Found

• Majority of patients have high CC; CC associated with older age, chronic conditions, higher score on ADG and female gender
• CC predictive of
  – doctor’s knowledge of patient
  – shared decision-making
  – confidence & satisfaction
• No predictive for interpersonal processes of care or patient activation

What This Means for Clinical Practice

• Higher continuity of care is important for influencing:
  – Some patient experiences
  – Confidence that people can obtain and use care when needed
• Higher continuity of care won’t necessarily help patients acquire the skills, knowledge, or confidence to manage their health on a day-to-day basis

The Research Question

Does an Increase in Opioid Dose lead to an Increase in Depression?

• Over a 2 year follow-up, do chronic pain patients who increase opioid analgesic use to >50mg morphine equivalent dose (MED) have a greater probability of depression over time?
• Why this is important?
  – Depression is associated with greater pain sensitivity
  – Depression is known to contribute to opioid use and misuse
  – One study reported that longer use of opioids increased depression risk
  – More knowledge of temporal associations of opioids and depression may inform pain management

3. Scherrer et al. JGIM 2014
What the Researchers Did

• Eligible patients: non-cancer chronic low back pain patients who used family medicine clinics in the Residency Research Network of Texas (RRNeT)
• Prospective cohort recruited from clinic patients
  – Baseline (2008-2009), n=362:
    – Wave 2: 12 month follow-up, n=337
    – Wave 3: 24 month follow-up, n=199
• Opioid data from chart abstraction
• Depression from survey using PHQ-2
• Statistical testing of change in dose and change in depression over time

What the Researchers Found

• Compared to no use, increasing opioid use to >50mg MED per day was associated with more than a 2-fold (OR=2.65; 95%CI: 1.17-5.98) increase in probability of depression over time
• An increase to 1-50 mg MED was not significantly associated with an increased probability of depression (OR=1.08; 95%CI: 0.65-1.79)
• (Adjusted for pain severity, pain duration, health related quality of life, # of comorbidities, anxiety, obesity and social support/social stress)

What This Means for Clinical Practice

• Providers and patients should consider examining the dose of opioids being used when chronic pain patients report depression and discuss risks before increasing dose
• Routine screening for depression among opioid using patients may detect depression at an early stage
What is Self-Management Support (SMS)?

**Self-management support** is the care and encouragement provided to people with chronic conditions and their families to help them understand their central role in managing their illness, make informed decisions about care, and engage in healthy behaviors.

Why is Self-Management so Important?

- Clinical outcomes are dependent on patient actions.
- Patient self-management is inevitable. "It is impossible not to self-manage." One can do it better, or worse." – Dr. Kate Lorig, Director, Stanford Patient Education Research Center.
- The health care team’s role is to be in partnership with the patient.
- Professionals are experts about diseases, patients are experts about their own lives.

Source: Improving Chronic Illness Care, [www.improvingchroniccare.org](http://www.improvingchroniccare.org)

Self-Management Takes Time

- Patients with chronic illness and their informal caregivers spend **two hours/day** on health related activities (HRA)
- The impact of the demands of HRA are not well understood
- How does this time burden impact people’s overall wellbeing, motivation, and access to medical care?

Source: Jowsey et al. BMC Public Health 2012
Self-Management and Support Chronic Conditions
WREN
October 15, 2015
Rod Erickson, MD
Mayo Clinic Health System
Tomah, WI

“A funny thing happened on the way to the Forum CLINIC”

People are different and have different perspectives
A patient’s knowledge is like Swiss cheese.

Fear Works

Chronic Illness Causes Grief
1. Denial
2. Anger
3. Bargaining
4. Depression
5. Acceptance
1. Knowledge
2. Attitude (Internalization-acceptance)
3. Behavior Changes

Shared Decision Making

Motivational Interviewing
Clinician’s Role

A. Knowledge Resource-Diagnose, Educate, Direct
B. Empower
C. Encourage
D. Shared Goals Ultimate Destination
Self-Management Support and Chronic Conditions: Linking questions from communities to answers from communities

Presentation to 2015 WREN Convocation
LJ Fagnan, MD
ORPRN Director
15 October 2015

The Reach of Research

- It is estimated that it takes an average of 17 years for 14% of original research to reach practice(s) and benefit the patients they care for.
  (Balas and Boren. Yearbook of Medical Informatics 2000:65-70)

- A 1998 review of published studies on the quality of care found that only 3 of 5 patients with chronic conditions receive recommended care.
  (Schuster M, McGlynn E, Brook R. How good is the quality of health care in the United States? Milbank Quarterly 1998;76:517-63)

Where Care Happens

113 : 1
Continuum Strategies to Support Self-Management

Questions for WREN Practices

- Who is primarily responsible for driving SMS in your practice?
- What SMS tools are you using?
- How are you using HIT to facilitate SMS?
- How are patients informing you about SMS?

Multidimensional Framework For Patient And Family Engagement In Health

Factors influencing engagement:
- **Patient** (beliefs about patient role, health literacy, education)
- **Organization** (policies and practices, culture)
- **Society** (social norms, regulations, policy)
Four SMS tools produced

Patient referral to community resources, a conceptual framework


Priority Questions

- How do the characteristics of primary care clinics, patients and community resources influence the effectiveness of linkages for the delivery of patient self-management support?
- What are the best methods, strategies, and settings for studying and improving clinical-community resource relationships for the delivery of patient self-management support?
- What are the best measures for evaluating the effectiveness of clinical-community resource relationships for the delivery of patient self-management support?
What is Asthma?

• Chronic airway disease
• Airways become inflamed, making it hard to breathe
• Can be mild, moderate or serious, even life threatening
• Cough, shortness of breath or trouble breathing, wheezing and tightness or pain in the chest

Asthma Burden in the USA

• Costs the US $56 billion each year
• 10.5 million missed days of school and 14.2 million missed days of work
• 18.7 million adults have asthma (1 in 12)
• 7 million children have asthma (1 in 11)
• 9 people die from asthma each day
One patient’s perspective on severe asthma

Dave Oshinsky
October 2015

Early mild asthma and allergies
• Fall seasonal hay fever from around age 5
• Mild asthma began at age 12
• Allergy testing around age 18, allergy shots for several years after that
• Mostly very mild symptoms through around age 22

Severe asthma onset
• Diagnosed with “pneumonitis” around age 23
• Terrible coughing, and severe wheezing
• One or two ER visits for severe asthma attacks
• Visited an allergy/asthma specialist, who put me on oral (and injected) prednisone briefly
• Eventually went on inhaled steroids (Flovent), along with Serevent
• Flovent dosage climbed to maximum over time, with poor asthma symptom control
No more severe asthma

- Discovered by accident that azithromycin temporarily improves my asthma symptoms
- Found asthmastery.com and had an email conversation with Jim Quinlan
- Discussed long-term use of azithromycin with my physician, who said it was fairly low risk, but declined to prescribe
- Decided after looking at the possible benefits, and seemingly low risks, to self-treat with azithromycin
- After 9 weeks azithromycin, and another 6 weeks, eventually able to stop all asthma medication
- No asthma symptoms for significant periods of time, but eventual re-occurrence and re-treatment on a periodic basis (see http://www.oshinsky.org/asthma.htm)

Unmet needs as an asthma patient

- Lack of treatment options for people with my kind of asthma (other than self-treatment)
- Research needed leading to better understanding of how to determine the true severity of disease, categorized by the likely root cause or causes
- Research needed into better treatments for these kinds of long-term, potentially persistent infectious conditions
Challenges & Opportunities in Asthma: A WREN clinician perspective
David L. Hahn, MD MS

Challenges
- Diagnosing asthma
  - Measuring reversible airway obstruction
  - Patients with other lung problems and asthma
- Monitoring asthma
  - Documenting progress
- Treating asthma
  - High cost of medications, steroid issues
  - People who don’t respond to treatment (refractory)

Opportunities for WREN
- Diagnosis
  - Use of peak flow meters and newer devices
- Monitoring
  - Asthma Control Test (ACT)
- Treatment
  - Optimizing current treatments
  - Macrolides for refractory asthma (azithromycin)
#1 - Diagnosis

- Reversibility is a hallmark of asthma
- Many patients are not tested
- Is there a role for peak flow measurements in diagnosing reversibility?
- Inexpensive and available
- Requires patient (and clinic) training

#2 - Monitoring

- Documentation of progress is often lacking
- What are the best and most practical methods for documenting progress?
- Asthma Control Test (ACT)
  - ACT being adopted as a quality metric

Asthma severity in an HMO setting

Adults aged 18-64

- Low Risk ("well controlled")
- High Risk-Low Adherent ("difficult")
- High Risk-High Adherent ("refractory")

Zeiger et al. Journal of Allergy & Clinical Immunology. 2015: in press

Note: excluded co-morbidities (e.g. COPD, chronic bronchitis)
#3 - Treatment

- Optimization of current treatments
  - Next presenter
- Refractory asthma
  - Role for macrolides (azithromycin)?

Background

- Is asthma caused by an infection?
  - Cause may not be apparent in late stage disease
  - Best to study at the very beginning
- De novo wheezing - 10 cases*
  - 4 recovered without treatment
  - 5 developed asthma
  - 1 developed chronic bronchitis
- No further practice-based studies of de novo wheezing

*Annals of Allergy, Asthma, and Immunology; Oct 1998;81:339-344

Why Macrolides for asthma?

- Active against *C. pneumoniae* & others
  - Azithromycin is a macrolide with unique properties
  - Macrolides also have anti-inflammatory properties
- Meta-analysis of 12 randomized, controlled trials*
  - Effective in the long term management of asthma
    - Symptoms, quality of life, bronchial hyperreactivity, peak flow
- Limitations
  - Small pilot (preliminary) studies
  - Unclear who benefits most

Refractory asthma

- Could it be infectious and/or treatable with macrolides?
- Infectious causes on no organization's research agenda
  - not Pediatrics
  - not Environmental Health
  - not World Health Organization
  - not even Primary Care
- Guidelines recommend against macrolides
- Yet patients with refractory asthma are seeking macrolides

Summary

- #1 - Diagnosis
  - Role for office/home peak flow meters & newer devices?
- #2 - Monitoring
  - How best to use the ACT in practice/community?
- #3 - Treatment
  - How to address emerging evidence for macrolides?
  - Registry documenting shared decision making, diagnosis, treatment & monitoring of macrolide-treated patients?
Major Challenges & Opportunities in Asthma: The Research Perspective

What is Not Known?
How Can it be Addressed by Partnerships?
How Can Primary Care Specialists Respond?

Burden of Asthma in Wisconsin, 2010

- Asthma diagnosis in 14% adults, 10% children (2009)
- Racial disparities
  - African Americans 22% (2004-2009)
    - Hospitalized 5 x rate of whites
    - Mortality 4 x rate of whites
    - Native Americans have ↑ hosp. rates
- Milwaukee County
  - Highest hospitalization and ED visit rates
- Menominee Co. 2nd highest rates

http://www.dhs.wisconsin.gov/eh/Asthma/facts.htm

Burden of Asthma in Wisconsin, 2010 Age & Gender

- Children < 5 yrs. of age have highest hosp. & ED rates
- Males more severely impacted during childhood; females have more frequent adverse asthma outcomes in adulthood
- Lifetime asthma prevalence 14.5% in females vs 12.9% males
- Medical management of asthma in WI falls short of NAEPP Guidelines

http://www.dhs.wisconsin.gov/eh/Asthma/facts.htm
Prevalence of Current Asthma, 2009

![Chart showing prevalence of current asthma, 2009.]

Current Asthma, Ages 1-85 years, 2001-2009

![Chart showing current asthma rates from 2001 to 2009.]

Major Understanding of Asthma & Phenotyping

![Timeline showing major events in the understanding of asthma and phenotyping.]

Gauthier M et al. AJRCCM 192 (6): 661, 9/15
Asthma Phenotypes Related to Inflammatory Type

The GINA Asthma Strategy Report 2014: What’s New for Primary Care?

- A new look: “What” should be done, “why”, but also “how” it can be implemented effectively
- Key content changes:
  - A new practical definition of asthma (a heterogeneous disease)
  - Practical advice for diagnosing asthma and guiding Tx
  - Assess control and risk factors PLUS “future risk”
  - Algorithm for distinguishing uncontrolled asthma and severe asthma
  - 3 components of control-based management (assess, adjust Tx, review response)

The GINA Asthma Strategy Report 2014: What’s New for Primary Care? (cont’d)

- Key content changes:
  - Expanded indications for starting controller Tx
  - Tailoring asthma Tx for individuals
  - Asthma - COPD Overlap Syndrome
  - Continuum of care for worsening asthma, from early self-management, through to primary care and acute-care management
  - New approach to diagnosing asthma in children ≤ age 5.
Host & Seasonal Risk Factors for Asthma Exacerbations

- How best to ID patients at risk?
- Seasonal predictors and differences
- 7 important risks
  - Exacerbation history in previous season
  - ICS Tx step
  - FEV1/FVC ratio
  - FENO values
  - Blood eosinophil counts
  - Allergic sensitization
- How can these risks be practically incorporated into practice and will it make a difference?


Predictors of Difficult to Control Asthma

- Definition: ≥ Fluticasone 250 mcg bid +/- LABA
- Observations
  - Increased Sx and variability of these Sx over the seasons (day/night and fall/winter)
  - Increased exacerbations in fall/winter
- Distinguishing variables
  - FEV1 reversibility
  - FEV1 / FVC
  - FEV1 % predicted
  - Concurrent rhinosinusitis
  - Mold sensitivity
  - Total IgE
- What would happen if all patients had FEV1 ± reversibility, rhinosinusitis assessment, and an allergy evaluation?

Will the GINA Asthma Strategy Report 2014 Make a Difference?

- Will it be adopted and how can we increase the odds?
- How best can the “humanomics” principle in GINA be implemented, taking into account the behavioral, social, and cultural factors that shape outcomes for individual patients?
- How can we conduct trials to identify how best to individualize Tx?
- How can both primary care specialists and patients make it happen?
What is Diabetes?

• Blood sugar is too high because:
  - The body doesn’t make enough/any insulin and/or
  - The body doesn’t respond properly to insulin
• Long-term (chronic) condition
  - Type I: autoimmune disorder destroys insulin-producing cells
  - Type II: metabolic disorder leads to insulin resistance/insufficient insulin production
• Symptoms: frequent urination, extreme thirst/hunger
• Can be moderate or serious, even life threatening if untreated
  - Blindness
  - Gangrene in extremities (amputation)
  - Gum disease
  - Heart attack/stroke
  - Kidney disease

Diabetes Burden in the USA

• The number of people diagnosed with diabetes tripled between 1980-2011
• 29.1 million people have diabetes (1 in 8)
• 86 million people have pre-diabetes (1 in 3)
• 7th leading cause of death (under-reported)
• Costs the US $245 billion each year
• 15 million missed days of work

What is Chronic Kidney Disease (CKD)?

• Gradual loss of kidney function (blood-filtering) over time
• Diabetes prime cause
• Long-term (chronic) condition
• Symptoms: frequent urination, fatigue, poor appetite, night cramps, shortness of breath, swollen feet/ankles
• Increased risk of heart attacks
What is Chronic Kidney Disease (CKD)?

- Stages of disease:

<table>
<thead>
<tr>
<th>Stage</th>
<th>Description</th>
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</thead>
<tbody>
<tr>
<td>1</td>
<td>Normal kidney function (filtering) but urine findings, structural abnormalities or genetics point to kidney disease</td>
</tr>
<tr>
<td>2</td>
<td>Mildly reduced kidney function, and other findings (as for stage 1) point to kidney disease</td>
</tr>
<tr>
<td>3A</td>
<td>Mild to Moderately reduced kidney function</td>
</tr>
<tr>
<td>3B</td>
<td>Severe to Moderately reduced kidney function</td>
</tr>
<tr>
<td>4</td>
<td>Severely reduced kidney function</td>
</tr>
<tr>
<td>5</td>
<td>Very severe, or endstage kidney failure Often requires dialysis</td>
</tr>
</tbody>
</table>

CKD Burden in the USA

- 20 million people have CKD (1 in 10)
  - 1 in 3 people with diabetes; 1 in 5 with high blood pressure
  - African-Americans 3x, and Hispanics 1.5x more likely than whites to develop stage 5 disease
  - 9th leading cause of death
  - Costs the US $42.5 billion each year
The Challenges of Chronic Disease Management:
A Clinician’s Perspective

John Hawkins, MD
UW Health Sun Prairie

- Task completion
- Assessing a patient’s specific care
- Having a say in the “process”

- Task completion
  - “Real time” care
  - Pre-visit planning and workbench
  - Care coordination
The Challenges of Chronic Disease Management

• Assessing a patient’s specific care
  – Patients are often seen across different systems
  – Clarifying what therapies patient has had in the past
  – Patients’ perceptions about what is best for their health (influenced by multiple factors)

• Clinicians having a say in the “process”
  – Chronic Kidney Disease vs Diabetes
  – Organizational support
  – Processes applied to entire organization
  – Staffing models

• Other factors
  – (thoughts I have had while sitting here)
The Challenges of Chronic Disease Management

• There are many challenges in chronic disease management, but that just means many opportunities for improvement!
Opportunities in CKD Research

David Feldstein, MD
Associate Professor of Medicine
University of Wisconsin SMPH
df2@medicine.wisc.edu
No financial Disclosures

Outline

Gaps in CKD care
Opportunities
- Intensity of Care
- Clinical Decision Support
- Shared Decision Making

What Do We Know?

Many with CKD not even aware

KEEP Study
- 10,813 people at high risk of CKD
- 49 states
What Do We Know?

- If identified not receiving recommended tx

<table>
<thead>
<tr>
<th>Stage of CKD</th>
<th>ESRD (&gt;=3.5 mg/dL)</th>
<th>Stage 3a (&gt;=2.0–3.5 mg/dL)</th>
<th>Stage 3b (&gt;=1.5–2.0 mg/dL)</th>
<th>Stage 4 (&gt;=1.0–1.5 mg/dL)</th>
<th>Stage 5 (&gt;=0.7 mg/dL)</th>
<th>Total (&gt;=0.7 mg/dL)</th>
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<tbody>
<tr>
<td>gFR &lt; 60 ml/min</td>
<td>26.1%</td>
<td>10.5%</td>
<td>36.2%</td>
<td>38.7%</td>
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<td>Prescriber for ACR/ABP in last year</td>
<td>49.6%</td>
<td>60.7%</td>
<td>56.6%</td>
<td>41.7%</td>
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<td>LDL &lt; 100</td>
<td>43.0%</td>
<td>50.0%</td>
<td>50.1%</td>
<td>50.1%</td>
<td>45.7%</td>
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<td>NS/CD in chart past year</td>
<td>14.3%</td>
<td>17.3%</td>
<td>7.5%</td>
<td>7.9%</td>
<td>13.4%</td>
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PBRN with 120 practices in 38 states

What’s Important to Primary Care?

- 3 studies
  - Upstate NY/ UK/ Wisconsin
  - Focus groups or interviews

Barriers

- Guidelines
  - Lack of awareness of CKD guidelines
  - Guidelines not flexible for different patients
  - Lack of trust of guidelines

- Systems
  - Systems designed for acute not chronic care
  - Lack of decision support tools
  - Distribution of work within the practice team
  - Multiple physicians (specialists)
  - Access to Nephrology
Barriers

- Desire for more CKD practice guidance
- Variability in the treatment of complications
- Uncertainty of timing for nephrologist referral
- Identifying and discussing CKD in older people and patients with stage 3A

Patient/ Society

- Lack of recognition of importance of CKD
- Nonadherence to treatment plans

Opportunities/ Controversies

Labeling older patients with Stage 3 CKD

An Age-Calibrated Classification of Chronic Kidney Disease

Chronic Kidney Disease in Older People

Diagnosing Older Patients with CKD

Majority of older patients Stage 3

- Increased mortality with decreasing eGFR
- Relative increase in mortality lower with increasing age
- No evidence that treatment will decrease risk in older patients
Potential Questions

- Should the diagnosis of CKD change in older patients?
- What are the harms in diagnosing older patients with CKD?
- Should guideline recommendations for care change based on age?

Opportunities/ Controversies

- Role of clinical decision support/ EHR in improving CKD care

Clinical Decision Support

- Registries alone
  - Mixed results
- Integrated Solutions
  - Case managers
  - Computer decision support
  - Academic detailing/ audit and feedback
  - Improvement in process measures
- No evidence for improvement in patient outcomes
Potential Questions
- What is the best design of CDS to support CKD care?
- How do you best incorporate CDS into clinic workflow to maximize benefit?
- Who should use the CDS?
- Can e-consults improve care while minimizing nephrology visits?

Opportunities/ Controversies
- Shared decision making in CKD diagnosis and treatment

Shared Decision Making (SDM)
- Information Exchange
  - Physician informs patient about
    - Treatment options
    - Benefits and risk of each option
  - Patient provides physician with
    - Values, preferences, lifestyle, beliefs
    - Knowledge about illness and its treatment
- Deliberation
- Deciding on Treatment
  Charles, Social Science and Medicine 1999
SDM – Presenting Risk to Patients

- Avoid the use of qualitative descriptors – High risk, low risk
- Use event rates or natural frequencies to describe risks
- Express benefits in absolute terms – Absolute risk reduction
- Add graphical representations – Bar Charts or Icon Arrays

Zipkin, Annals of Internal Medicine 2014

SDM – Determining Quality of Decision

- Decisional conflict scale used in research
- Decisional conflict increases when person:
  1) feels uninformed about the alternatives, benefits and risks
  2) is unclear about personal values
  3) feels unsupported in making a choice or pressured to choose on course of action.
- Higher conflict scores correlates with delaying vaccinations or mammograms

b. Considering the options you prefer, please answer the following questions:

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<th></th>
<th>Strength Agree</th>
<th>Agree</th>
<th>Neither Agree</th>
<th>Disagree</th>
<th>Strength Disagree</th>
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Shared Decision Making

- What is the best measure to determine if a patient made the "correct" decision?
- At what point in the process should clinical decision aids be used?
- How will true shared decision making impact quality of care metric performance?

Summary

- Diagnosis of CKD in older patients
- Clinical Decision Support and the EHR to improve CKD care
- Shared Decision Making

References


References


What is Hypertension?

- Blood pressure is the force exerted by the blood against the walls of blood vessels
  - Magnitude of force depends on:
    - cardiac output
    - resistance of blood vessels
- Hypertension is defined as blood pressure greater than 140/90
- Pre-hypertension: 120-139/80-89
- Long-term (chronic) condition
- Can be mild, moderate or severe
- Untreated can lead to stroke, aneurysm, heart attack, kidney failure

Hypertension Burden in the USA

- 70 million adults have hypertension (1 in 3)
- About half (52%) of people with high blood pressure have it under control
- Pre-hypertension in nearly 1 in 3 adults
- Hospitalization rates 3-5x higher for African-Americans than whites
- Costs the US $46 billion each year
- 360,000 deaths/year

What is Cardiovascular Disease (CVD)?

- Includes suite of conditions:
  - Coronary artery disease (narrowing of arteries)
  - Abnormal heart rhythms/ arrhythmias
  - Heart valve disease
  - Congenital heart disease
  - Pericardial disease
  - Vascular disease (blood vessel disease)
- Long-term (chronic) condition
- Can be mild, moderate or severe
- Untreated can lead to stroke, heart attack, heart failure, aneurysm
CVD Burden in the USA

- 71 million adults have CVD (1 in 3)
  - 62% < age 65
- Costs the US $400 billion each year – most costly disease to country
- 600,000 deaths/year – leading cause of death
  - 2x greater death rate for African-Americans than whites
Experiences, Challenges & Opportunities in Hypertension and Cardiovascular Disease

Chuck and Joan Dorgan

Overview

1970 - Lost Left Eyesight
1972-73 - Elevated Blood Pressure
2012 Chuck - Heart Surgery, Double by-pass
Under Control, with exercise and some weight loss

Today
Family

• Three Children, two in Wisconsin and one in California
• Four Grandchildren, 2- Wisconsin, 2- California
• Close Sister (Joan), daily phone calls

Grandparents and two California Grandchildren

Work and Travel

• Chuck continues to do engineering consulting and active in several professional engineering societies
• Forced to retire from UW three years ago, heart surgery was nine-months later
• Joan is active with Senior Center, St. Andrews, Red Hats and Family

Work and Travel

• Over the last 40 years travel to throughout US and 12 countries doing lectures and professional education courses
  – We believe this has been very good for controlling MS, keeping busy
  – Difficult to strictly vacation without MS flare-ups?
Cold day in Beijing

Warmer day in Paris

Health Care

• Why we are healthy?
  – Same primary physician for 35 years
  – Physician always available, either Dr. Beasley or someone else at the Verona Clinic
  – Always obtain required referrals
    • 2003, Uterine or Uterus cancer –INFO urologist at first sign of bleeding
    • Surgery within two months
Joan - Hypertension

- Started after Chuck was diagnosed “positively” with MS
- Maintained reasonably well with medication and exercise
  - 1972, Began with Vasotec (and Valium to handle stress of hypertension)
  - Currently:
    - 37.5 mg Triamterene, once a day
    - 20 mg Lisinopril, once a day
    - 50 mg Atenolol, twice a day
  - Currently, exercise three times a week at Verona Senior Center
  - In past walked several miles each day and yoga classes, until knee injury in 2011
- Blood pressure may be a little too low at present 65/110

Chuck

- Other than MS has been healthy. Began Betaseron in 1993
- Blood pressure has been typically 80/120
- About seven (7) years ago, it became elevated at home and sometimes in medical office. Not too high, but occasionally 100/150
- No medication
- In 2010, was having some chest pains, stress tests and other tests did not discover any problems

Chuck

- Pains continued over next couple of years, thought to be MS related
- In April 2012, called for an appointment at Verona Clinic
  - Nurse decided symptoms called for visit to hospital
  - By time EMS arrived, no pain
  - At hospital they thought it could be gall bladder
  - It checked okay, decided to investigate heart
  - Angiogram found blockage, estimated flow was 60%, versus 75% expected for age
  - Scheduled for triple by-pass, but only did two.
Concerns

- Too many Medication Prescription
  - Primarily they are from primary family physician
  - However, Chuck has some from neurologist, eye physician, cardiologist.
    In general trust pharmacist to review over-the-counter and prescription medication
  - Extavia pharmacist reviews all of these with Chuck once a year
  - Joan checks with Walgreen pharmacist, we trust our pharmacist

Thank You

Everything is Looking UP!
Research Opportunities to Improve Hypertension Control

Barry L. Carter, Pharm.D., FCCP, FAHA, FASH
The Patrick E. Keefe Professor in Pharmacy
Department of Pharmacy Practice and Science
College of Pharmacy and
Professor
Department of Family Medicine
Ray J. and Lucille A. Carver College of Medicine
University of Iowa

Limitations with many health services studies in hypertension

- Small sample sizes (low power or limited generalizability)
- Single site and single intervention pharmacist or nurse
- Bias in BP measurement
- Lack of control groups (pre- post- design only)
- No evaluation of key covariates
- Few were intention-to-treat analyses
- Did not adequately evaluate missing data (last value carried forward versus more sophisticated modeling or sensitivity analysis).


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<thead>
<tr>
<th>Meta-Analysis: Potency of individual components of team-based care</th>
<th>Median reduction in SBP (mm Hg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pharmacist recommended medication to physician</td>
<td>-9.3*</td>
</tr>
<tr>
<td>Education on BP medications</td>
<td>-8.75*</td>
</tr>
<tr>
<td>Pharmacist did the intervention</td>
<td>-8.44</td>
</tr>
<tr>
<td>Assessed medication compliance</td>
<td>-7.9</td>
</tr>
<tr>
<td>Counseling on lifestyle modification</td>
<td>-7.59</td>
</tr>
<tr>
<td>Nurse did the intervention</td>
<td>-4.8*</td>
</tr>
</tbody>
</table>

* - statistically significant

<table>
<thead>
<tr>
<th></th>
<th>Odds that BP was controlled (95% confidence interval)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Studies involving nurses</td>
<td>1.69 (1.48-1.93) [69% increased chance]</td>
<td></td>
</tr>
<tr>
<td>Studies involving pharmacists within physician offices or clinics</td>
<td>2.48 (2.05-2.99) [148% increased chance]</td>
<td></td>
</tr>
</tbody>
</table>

**Conclusion:** All were effective but interventions by pharmacists appear to be more potent than by nurses.


---

**Collaboration Among Pharmacists and Physicians To Improve Outcomes Now (CAPTION)**

Barry L. Carter, Pharm.D.  
Principal Investigator, CCC  
Department of Pharmacy Practice and Science,  
College of Pharmacy and  
Professor and Associate Head for Research  
Department of Family Medicine  
Roy J. and Lucille A. Carver College of Medicine

Christopher Coffey, Ph.D.  
Principal Investigator, DCC  
Professor and Director, Clinical Trials Data Management Center  
College of Public Health

* The study is being funded by NHLBI/NIH, R01 HL091841-01A1.

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**Physician/Pharmacist Collaborative Management**
CAPTION
(including 2 offices in Madison, 1 in Racine)

- 32 primary care offices randomized to evaluate a physician-pharmacist collaborative intervention
- Secondary aims addressed:
  1. What happens when the intervention is stopped?
  2. Can the intervention be sustained for 2 years?
  3. Does the intervention benefit patients from minority groups?

Blood pressure - 9 Months

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention Groups (N = 401)</th>
<th>Control Group (N = 224)</th>
<th>Model-Adjusted Difference - Intervention vs. Control (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBP Mean (SD)</td>
<td>131.6 (15.8)</td>
<td>138.2 (19.7)</td>
<td>-6.07 (-9.64, -2.50)</td>
<td>0.001</td>
</tr>
<tr>
<td>DBP Mean (SD)</td>
<td>76.3 (11.1)</td>
<td>78.0 (14.5)</td>
<td>-2.89 (-4.80, -0.99)</td>
<td>0.003</td>
</tr>
</tbody>
</table>


Results - Minority subjects

<table>
<thead>
<tr>
<th>Variable</th>
<th>Intervention Groups (N = 226)</th>
<th>Control Group (N = 111)</th>
<th>Model Adjusted Difference - Intervention vs. Control (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>SBP Mean (SD)</td>
<td>133.0 (16.3)</td>
<td>140.3 (21.4)</td>
<td>-6.42 (-10.97, -1.87)</td>
<td>0.006</td>
</tr>
<tr>
<td>DBP Mean (SD)</td>
<td>77.9 (10.7)</td>
<td>78.8 (15.9)</td>
<td>-2.98 (-5.76, -0.20)</td>
<td>0.036</td>
</tr>
</tbody>
</table>

How would the new 2014 Guidelines have changed the CAPTION results?

<table>
<thead>
<tr>
<th>Intervention BP Control</th>
<th>Usual Care BP Control</th>
<th>OR (95% CI)</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>61%</td>
<td>45%</td>
<td>2.03 (1.29, 3.22)</td>
<td>0.003</td>
</tr>
</tbody>
</table>

NOTE: These subjects likely were the minority who did not have BP control in the office before the study, but, can we do better in these patients???


Some Research Opportunities

• Reliability of office or EMR BP data for research:
  • 402/1053 (38%) consented CAPTION subjects were excluded due to BP control despite not controlled in EMR.
  • Timing of BP measurements in EMR may not be useful.

• Home vs. Office vs. 24 hour Ambulatory Monitoring

Some Research Opportunities

• Most efficient utilization of multiple team members (nurses, pharmacists, others) to achieve high BP control rates (include cost-effectiveness analyses).
• Strategies to overcome socioeconomic, demographic and cultural barriers to good BP control.
• Assessment of new medication adherence tools to measure and/or improve adherence:
  • Electronic devices
  • Therapeutic drug monitoring of drug levels
### What are Common Musculoskeletal Conditions?

- Rheumatoid arthritis — autoimmune disorder affecting lining of joints
- Osteoarthritis — break down of cartilage
- Osteoporosis — weakening of bones
- Carpal tunnel syndrome — pinched nerve in wrist
- Tendonitis — overuse syndrome
- Ruptured/herniated Disc
- Fibromyalgia — widespread musculoskeletal pain, fatigue, sleep/memory/mood issues
- Many more…

### Musculoskeletal Condition Burden in the USA

- Up to 1 in 2 adults affected
- Most common cause of severe long-term pain and physical disability
- Significantly affect psychosocial status
- Costs the US $796.3 billion each year
- Major cause of lost work/wages
It’s Time to Prevent Bone Attacks
WREN Conference
October 15, 2015

Neil Binkley, M.D.
University of Wisconsin School of Medicine and Public Health

Failing to Prevent Fractures is Not OK...

In her 50’s

In her 70’s

Age-related Fractures Reduce Quantity and Quality of Life

Why should you be concerned?
The consequences of a fracture due to osteoporosis can be severely serious:

- Nearly 20-24% of people who have had a hip fracture will die in the first year following the fracture, and many others experience a significant reduction in quality of life.
- 20-25% of women and 15% of men over the age of 50 have osteoporosis.
- Hip fracture rates increase with age, with 1 in 8 women and 1 in 18 men over 50 sustaining a hip fracture in their lifetime.
- Hip fractures are the most serious type of osteoporotic fracture, with a mortality rate of 20-25% in the first year after the fracture.
- Hip fracture repairs can be complicated, leading to pain, disability, and decreased quality of life.
- Hip fractures can also lead to loss of independence, requiring assistance or long-term care.

- Hip fractures are the most serious type of osteoporotic fracture, with a mortality rate of 20-25% in the first year after the fracture.
- Hip fractures can also lead to loss of independence, requiring assistance or long-term care.

www.sharenofbonehealth.org/WOD/2012
“Insanity: doing the same thing over and over again and expecting different results.”

We are failing in our mission to deliver healthcare for those at high risk.
~80% of Those Who Break Their Hip Receive NO Treatment to Reduce Future Fracture Risk (and it’s getting worse)

Adapted from Solomon, et al., J Bone Min Res, 2014. DOI: 10.1002/jbmr.2202

The Osteoporosis World Has Historically Focused ONLY on Treating the Bones, Not the Person

To Prevent Bone Attacks; In Addition to Exercise and Optimization of Nutrition, Classical Osteoporosis Medications Are Often Recommended for People at Risk

“But I have heard so much bad about osteoporosis medications....”

Some of it is the Reporting of Bad News

“Touting rare side effects of medications and bashing pharmaceutical companies has become a popular media pastime that strikes fear and distrust in the hearts of patients, but is not good science and does not contribute to good patient care.”


http://www.fda.gov/Drugs/DrugSafety/SafeUseInitiative/ucm230396.htm

89
It is Time to Change the Focus From Bone to Keeping People Independent by Preventing Bone Attacks

Consider the Heart Attack Analogy
Treatment is Directed at Various Conditions to Reduce Risk For a Potentially Catastrophic Outcome

Metabolic Syndrome
Hyperlipidemia  Hypertension  Diabetes  Obesity

Advancing age  Family History  Toxins, e.g., tobacco

Heart Attack → Reduced QOL  Healthcare Cost  Death

The Same Approach Makes Sense for Bone Attacks
Treatment Should be Directed at Various Conditions to Reduce Risk For a Potentially Catastrophic Outcome

Dysmobility Syndrome
Osteoporosis  Sarcopenia  Diabetes  Obesity

Advancing age  Family History  Toxins, e.g., tobacco

BONE Attack → Reduced QOL  Healthcare Cost  Death
Taking “Bone Attack” to the Clinic…

In Addition to Your Usual “Osteoporosis” Evaluation

How many times have you fallen in the past year?
- Did any of these falls cause injury?
Would you please stand up for me?

If history of falls, particularly injurious falls and/or cannot arise without use of arms:

Has sarcopenia or dysmobility (or whatever title you wish) and is at increased risk for bone attack

So Once We Have Diagnosed Sarcopenia or Dysmobility Syndrome (Or Whatever the Terminology Becomes)

What Are We Going to do About it???

Seems Likely That We Will Follow the Current “Osteoporosis” Paradigm of Exercise, Nutrition and Medications
“The good physician treats the disease; the great physician treats the patient who has the disease.”

Sir William Osler
Primary Hyperparathyroidism: A Case Series

Nathaniel Schwartz, Jensena Carlson, Sarina Schrager

University of Wisconsin School of Medicine and Public Health, Madison, WI

Primary hyperparathyroidism (PHPT) is an uncommon endocrine disorder characterized by overproduction of parathyroid hormone (PTH) by a parathyroid gland that has lost its normal negative feedback which causes hypercalcemia. Here we report four cases of PHPT and review the epidemiology, diagnosis, and treatment of PHPT as well as discuss a potential association between PHPT and autoimmune disease.

After IRB approval and patient consent was obtained, a chart review of the four patients was performed. All four cases were white females, with ages ranging from 34-65. 3 out of 4 of the patients had an autoimmune diagnosis (juvenile rheumatoid arthritis and Crohn's disease, Graves' disease, and Sjögren's syndrome).

An anonymized search of the electronic health record was also performed to find the total number of yearly cases across our clinics. The average yearly incidence was 34.4 PHPT cases/100,000 patients. There was no clear trend seen over the five year period. This rate falls in the range reported in the literature of 26.1-59.1 PHPT cases/100,000 patients. The reported incidence is 2-3 times higher in women than men. Racial disparities also exist, with black patients being affected at higher rates than other races.

PHPT is often first detected with an asymptomatic elevation in serum calcium. A history and physical exam should be done with a focus on signs and symptoms of hypercalcemia such as kidney stones, osteopenia, indistinct abdominal symptoms and neuropsychiatric manifestations. PTH levels should be checked. If PTH is low, other causes of hypercalcemia should be considered, such as malignancy. If PTH is high, PHPT is likely and a referral to an endocrine surgeon is appropriate or to an endocrinologist if the diagnosis of PHPT is less clear.

A link between PHPT and autoimmune disease has been reported in the literature with prevalence of PHPT 3-4 times higher in patients with autoimmune diseases. More research is needed to learn more about this possible link.
Geodemographic Features of Human Blastomycosis in Eastern Wisconsin

Megan E. Huber¹, Dennis J. Baumgardner², Jessica JF. Kram³, Kiley A. Bernhard³

¹Aurora Health Care, Milwaukee, WI, ²Aurora UW Medical Group and Center for Urban Population Health, Milwaukee, WI, ³Center for Urban Population Health, Aurora Health Care

Introduction: Blastomycosis is an endemic, systemic fungal infection. In rural Northern Wisconsin, home addresses of blastomycosis cases are associated with certain geologic and geographic features including close proximity to waterways. Other studies have associated blastomycosis cases with levels of certain heavy metals and possibly chemicals in nearby soils. Significant numbers of blastomycosis cases occur in more urban/suburban regions of Wisconsin.

Objective: This study aimed to explore the geodemographic associations of blastomycosis cases in urban/suburban Eastern Wisconsin.

Methods: We conducted a retrospective study of 238 laboratory-identified blastomycosis cases among patients in a single Eastern Wisconsin health system, 2007-2015. Controls were 250 randomly selected cases of community-diagnosed pneumonia from a similar time period in this system. Geographic features of home addresses were explored using Google Maps. Categorical variables were analyzed with Chi-square or Fisher exact tests, continuous variables by 2-sample T-tests.

Results: Adult cases of blastomycosis were younger (49 vs. 55 years) and more likely to be male (67% vs. 46%) than controls (p values < 0.001). Cases were not significantly more likely to be within a mile of a waterway than controls (52% vs. 49%, p=0.62), but were significantly more likely to be within a mile of an automobile repair facility or junkyard (54% vs. 29%, p<0.0001).

Conclusion: Eastern Wisconsin blastomycosis cases were younger and more apt to be male than pneumonia cases (similar to previous observations). Cases in this region were not more likely than controls to be near a waterway, unlike Northern Wisconsin, perhaps due to the more urban/suburban nature of this region. The novel association of blastomycosis cases with auto repair/junkyard facilities should be further explored.
Geographic Distribution of Infant Death during Birth Hospitalization and Maternal Group B Streptococcus Colonization: Eastern Wisconsin

Dennis J. Baumgardner¹, Jessica JF. Kram², Kiley A. Bernhard², Melissa A. Lempke³

¹Department of Family Medicine, Aurora UW Medical Group/Center for Urban Population Health, Milwaukee, WI, ²Center for Urban Population Health, Aurora Health Care, Milwaukee, WI, ³Center for Urban Population Health, TRIUMPH, UW-Madison, Milwaukee, WI

Introduction: In the United States, neonatal and infant death rates are 4/1,000 and 6/1,000 live births, respectively. Maternal Group B Streptococcus (GBS) may be transmitted from a colonized mother to newborn during vaginal delivery, and may contribute to infant death.

Objective: This study aimed to explore the geographic distribution and associated risk factors for maternal GBS colonization and infant death prior to discharge, in Eastern Wisconsin births.

Methods: We conducted a retrospective study using birth registry data on women >18yrs with a livebirth(s) at Aurora Health Care, 2007-2013. Categorical variables were analyzed with Chi-square tests; ordinal or continuous variables by Mann-Whitney or T-tests. Binary regression was used for multivariate modeling.

Results: N=99,305; mean age 28, pre-pregnancy BMI 27, 59% married, 64% White, 42% government insured, 39% nulliparous, 26% C-section rate, gestational age 39w, and birth weight 3,296g. Maternal GBS colonization (22.3%) was higher in Blacks (34% vs. Whites 20%, p<0.000), unmarried women (26% vs. 20%, p<0.000), with increasing BMI (27.3 vs. 26.6, p<0.000), and based on ZIP code group (p<0.000). In multivariate analysis, all were predictive of GBS colonization. Rate of infant death was 0.57% (N=558), and varied by ZIP code group. GBS colonization was negatively associated with infant death (0.25% vs. 0.66%, P<0.000; lethal anomalies and stillbirths excluded, N=98,065). In multivariate analysis, one ZIP code group, no prenatal care, preterm labor, vaginal bleeding, NSVD, hydramnios, oligohydramnios, lower gestational age and no maternal GBS were associated with infant death.

Conclusion: Geographic characteristics were associated with infant death and maternal GBS colonization; demographic characteristics only associated with GBS. It is unclear if GBS colonization is "protective" against infant demise due to increased surveillance or treatment.
Poster #4

Path to Resistance: Risk factors associated with Carbapenem-resistant Pseudomonas aeruginosa

Kushal R. Patel, Jessica J. Kram, Dennis J. Baumgardner

Aurora Health Care, Milwaukee, Wisconsin

Introduction: An estimated 51,000 healthcare associated Pseudomonas aeruginosa infections occur in the US. More than 13% are secondary to non-carbapenem multidrug resistant (MDR) strains, which result in 400 yearly deaths. Traditional risk factors for resistance include ICU stay, mechanical ventilation, previous hospitalization, and major co-morbidities. As microbes evolve, risk factors may also evolve.

Objective: This study aimed to determine if traditional and/or new risk factors for P. aeruginosa resistance are valid and predictive of infection with carbapenem-resistant P. aeruginosa.

Methods: Retrospective study of inpatients and outpatients 18 years or older who have presented to an Aurora Health Care facility with a positive P. aeruginosa culture, 2014. Cultures were obtained from ACL laboratory database and patient medical records were reviewed in EPIC. Chi-square with Yates correction and 2-sample T-tests were performed on categorical and continuous variables, respectively. Binary regression was used for multivariate modeling. Significance was associated with P<.05.

Results: N=1763; mean age 68, BMI 30, 51% female, 89% White. Resistance to imipenem or meropenem (14%) on univariate analysis was associated with younger age, hospitalized patients, male sex, Black/mixed race, respiratory culture, history of MDR, as well as recent transfer from institution, surgery, Foley catheter, vasopressor treatment, central/PIC lines, mechanical ventilation, ICU admission, and bedridden status. In multivariate modeling mixed race, respiratory culture, recent transfer, vasopressor use, and central/PIC lines were significant. Only 0.05% of strains were resistant to the six traditional non-carbapenem drugs and both carbapenems.

Conclusion: Demographic and traditional risk factors, as well as respiratory cultures, were predictive of carbapenem resistance. Such information may guide initial antibiotic treatment of P. aeruginosa. Fortunately, <1% of strains were resistant to all drugs tested.
Sustaining and Expanding Directly Observed Therapy (DOT) for Latent Tuberculosis Infection (LTBI) at Community Clinics in Milwaukee.

Lawrence M. Moore¹, Paul Hunter², Sarah Bleything³ Marcus Lacey⁴

¹University of Wisconsin School of Medicine and Public Health, Madison, WI, ²City of Milwaukee Health Department, Milwaukee, WI, ³Sixteenth Street Community Health Centers, Milwaukee, WI ⁴Medical College of Wisconsin, Milwaukee, WI

Introduction. A previous study compared completion of treatment of latent tuberculosis infection (LTBI) with 12 weekly doses of isoniazid (INH) plus rifapentine (RPT) administered as directly observed therapy (DOT) to 9 months of daily self-administered INH. Study participants were patients seen in 2012 and 2013 at a community health center serving low-income Hispanics. Overall completion rates were 77.8% (35/45) for INH-RPT combination therapy and 52.1% (49/94) for INH monotherapy.

Objective. To determine the logistic characteristics of LTBI program that may contribute to the high completion rates, with the long-term goal of implementing similar programs at other community clinics in Milwaukee.

Method. With the same statistical methods used for patients seen in 2012 and 2013, we compared completion rates for INH-RPT vs INH monotherapy for patients seen in 2014. One author (LMM) interviewed key program personnel to learn history of LTBI program development and implementation at the community health center and visited other community clinics to determine need for targeted TB testing.

Results. Among patients who agreed to treatment, INH-RPT combination therapy was still associated with higher completion rates (79.7%) when compared to INH only (0%). Operational practices unique to the study clinic are associated with high completion rates. Interviewees suggested that improved BadgerCare+ TB enrollment may support completion, whereas off-site radiology may undermine completion.

Conclusion. The DOT strategy and shorter regiment contributes to high treatment completion rates. Shortening the interval between patient agreeing to treatment and receiving the first dose of medication may increase and maintain high completion rates by reducing patient loss to follow-up.
Poster #6

Helping Hands: An HIV Peer Mentoring Program at Sixteenth Street Community Health Centers

Raymundo Garcia

University of Wisconsin School of Medicine and Public Health, Madison, WI

Background: There are approximately 1.1 million people living with HIV/AIDS (PLWHA) in the US. The incidence of HIV has remained stable despite increased preventative efforts. Studies demonstrate that poor engagement in medical care lead to HIV/AIDS-related morbidity and mortality. In Wisconsin, more than 50% of new HIV infections in 2014 occurred in Milwaukee County with racial and ethnic minorities being disproportionately affected. The HIV Department at Sixteenth Street Community Health Centers (SSCHC) has been actively involved in reducing this disparity.

Goal: The purpose of this project is to increase the quality of the services that the HIV Department at SSCHC provides its HIV patients by creating a peer-mentoring program called Helping Hands for PLWHA. The ultimate goal is to prevent HIV infection.

Methods: An internal assessment of the HIV Department's most recent client base was performed to determine patient baseline characteristics. This was followed by a Community Readiness Assessment (CRA), which included combination of interviews and focus groups focused on input from the HIV community about the prospect of a peer-mentoring program.

Results: The internal assessment using patient information from 2013 showed that most HIV patients were Latino and that more than 70% were virally suppressed. These results as well as the HIV community's understanding of the impact of poor engagement in HIV care (as determined from the CRA) were intended to increase the HIV Department's knowledge regarding the needs of PLWHA at SSCHC, and to use the suggestions from patients to guide the development of Helping Hands.

Conclusion: Incomplete engagement in HIV care is common in the US. Helping Hands is a peer-mentoring program envisioned to guide untreated HIV patients towards engagement in care with the help of peers that have been through similar HIV-related experiences. The implementation of Helping Hands will be key in involving unengaged patients with the health care system.
African American Patient Experiences: An Appreciative Inquiry

Jonas Lee¹, Jeffrey Mahlum²

¹ACHC Wingra Family Medical Center. Department of Family Medicine and Community Health, UW--Madison School of Medicine and Public Health, Madison, WI, ²School of Medicine and Public Health, UW--Madison, Madison, WI

African Americans in Madison and Dane County experience profound disparities compared to whites in virtually every measure of well-being, including health outcomes, even after accounting for other socioeconomic factors. Dane County has adequate resources to provide outstanding health services to this population. Previous studies suggest that mistrust and subtle bias are an important factor driving these outcomes. We used an appreciative inquiry approach to determine what African American patients feel providers are doing well that lead to an outstanding experience. In July 2015, subjects were recruited from our FQHC associated residency population for qualitative interviews, focusing on positive interactions with providers. Preliminary data suggest that patient’s value developing a relationship with providers through knowledge of social context, evidence of care and competence, and adequate time for participation in decision making and health education. Subjects also identified the importance of patient behaviors, including self-advocacy and willingness to develop a relationship with a provider.
Poster #8

*Mindfulness for Medical Students: Increasing Empathy and Decreasing Bias*

Jay Luthar¹, Steven Weisman¹, Jesse Foy², Sheri Johnson¹

¹Medical College of Wisconsin, ²Rooted in Mindfulness

**INTRO:** Disparities in health care can be perpetuated through implicit biases held by physicians towards marginalized groups, leading to deficits in care quality or decision making. Increasing empathy and reducing automatic associations are hypothesized methods to reduce implicit bias in the social science literature. One process that has been shown to prevent a decline in empathy during medical training, and decrease implicit biases in the general population is Mindfulness Based Stress Reduction training. By addressing both empathy and cognitive control over automatic associations, it is a unique intervention that might address bias, improving the quality of patient care.

**METHODS:** This project seeks to examine the effects of a six-week Mindfulness elective on medical student empathy (Interpersonal Reactivity Index) and perceived stress (Perceived Stress Scale), as well implicit bias (Implicit Association Test) towards marginalized groups. Students in a quasi-control group will be compared to students participating in the course through the surveys administered before and after the course. We anticipate the course to run and data collection to occur from October-November of 2015. Previously, from January-March 2015, a pilot Mindfulness class was conducted with positive student feedback helping to inform study design, curricular development and providing qualitative assessment of the impact of the course.

**DISCUSSION:** Based on other studies, we anticipate that participants in the mindfulness course will show a reduced implicit bias, and increased parameters of empathy and well being. The conclusions drawn from this study will help to inform curricular changes that will improve the quality of future physicians and their interactions with patients.
Involving Community Partners in Integrated Mental Health Research

Zaher Karp, Natalie DeCheck

University of Wisconsin School of Medicine and Public Health, Department of Family Medicine and Community Health, Madison, WI

Background: Community opinions from diverse populations are beginning to inform more interventions with the advent of organizations like the Patient-Centered Outcomes Research Institute. This project sought opinions on integrated primary care to inform further research on the outcomes of two prominent integrated mental health models, Primary Care Behavioral Health (PCBH) and Collaborative Care.

Objective: To describe the community engagement process and results of utilizing a video vignette survey and focus groups to gather community opinions on integrating mental health care into a primary care setting.

Methods: Vignette scripts were developed in collaboration with multiple partners. Scripts and video surveys were tested through interviews and a focus group. The final surveys were disseminated in-person via tablet computers and online. Dissemination was aided by partnering with community organizations, such as mental health advocacy groups and community radio. Respondents answered three questions regarding their likes, dislikes, and desired outcomes as a result of experiencing the model. Results were qualitatively coded and major themes were prioritized by focus groups consisting of individuals who had experienced the PCBH model.

Result: Surveys (n=381) were answered in clinic waiting rooms, online, and at community events, with nearly half of respondents identifying as having a mental health diagnosis. Themes identified in participant responses included personal well-being, access to care, care experience, future services, and dignity.

Conclusions: A community engagement strategy that incorporates opinions from a diversity of stakeholder groups is necessary as patient-centered research remains at the forefront, such as the individuals, general public, and collaborations with advocacy and community agencies. Video vignette surveys and focus groups are effective methods for gathering multiple perspectives within the community to inform intervention design.
**Poster #10**

**Boot Camp Translation in Primary Care Settings: A WREN Qualitative Case Study**

Kate Judge, Amanda Hoffmann, and David Hahn

Department of Family Medicine and Community Health, University of Wisconsin School of Medicine and Public Health

**OBJECTIVES and DESCRIPTION**

Engaging patients as part of the health care team is vital to improving health care delivery and outcomes. This study utilizes a modified Boot Camp Translation (BCT) approach to engage patients as partners in primary care implementation teams. BCT is a practical, evidence-based method that builds partnerships between laypeople and medical professionals to develop culturally relevant health interventions for their communities.

Four practice-based research networks took part in Implementing Networks’ Self-management Tools through Engaging Patients and Practices (INSTTEPP) at 4 clinics in each network (16 clinics total): Wisconsin Research and Education Network (WREN), Shared Networks of Colorado Ambulatory Practices & Partners (SNOCAP), Oregon Rural Practice-based Research Network (ORPRN), and Iowa Research Network (IRENE).

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, 30 minutes conference calls, over a two-month period. This is a qualitative case study focusing on the experiences within the WREN network, providing anecdotal and descriptive information on patient engagement as a result of the intervention.

**OUTCOMES**

Each of the 4 Wisconsin clinics successfully recruited 2 patients to partake as members of the INSTTEPP practice team. The 8 patients’ participation in the all-day kick-off meeting and phone calls remained strong throughout the study, with the number of patients on each call ranging from 5-7. The themes identified through BCT were strongly influenced by the patient voice. Themes surrounding self-management support included (1) quality of life, (2) patient versus provider responsibilities, (3) informed decisions, (4) peer support, and (5) written plans. New relationships were established between WREN clinics and patients. For example, three INSTTEPP patient participants attended the WREN annual conference; all participating clinics were interested in continuing workgroups including patient voices and patients met with clinic staff between required meetings to advance project goals.

**DISCUSSION and LESSONS LEARNED**

BCT is a promising method to engage patients as members of health care teams in primary care settings. Patients were actively engaged in the initial kick-off meeting, in team phone calls and clinic staff were motivated to engage patients. After participating in INSTTEPP, one clinic sought WREN assistance to develop a standing clinic workgroup including patients to address issues relevant to chronic disease management. Integral to success are strong communication early and often, scheduling phone meetings around patient work demands, 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 health care team.

Poster #11

*Vibrant Health Family Clinics Chronic Care Management*

Rose Breslin, Jodi Wagner, Rosanne Matzek

Vibrant Health Family Clinics, River Falls, WI

Our chronic care management program has taken great strides towards high quality care and we have found that in order to produce this type of care, it must be patient centered and team focused. It could be as simple as sending out reminder letters to remind patients of important health visits to weekly care coordination, follow-up on blood sugars, blood pressures, volume control, and lab monitoring. We work with our providers to manage our patients care outside of a 20 minute office visit. We have implemented several different tools/processes to manage our chronic disease patients: Management of monthly chronic disease reports for our diabetes, ischemic vascular disease and hypertension patients. Clinical teams meet monthly to discuss our chronic disease patients. We have also created protocols for hypertension, medication management and chronic disease lab schedule. In 2009, the patients with chronic diseases were not in optimal control of their disease condition. We therefore implemented a chronic care management program to assist our patients to get healthier. Since implementing our chronic care management program; we have seen our patient quality numbers for diabetes and ischemic vascular improve dramatically. Minnesota Community Measurement historical trend shows a 42.55% increase in optimal vascular care and we are listed as one of the top 5 clinic systems in the state. We have also seen a 31.33% increase in optimal diabetes care. In conclusion, we have found that having a firm grasp on chronic disease management by utilizing multiple tools, guidelines, protocols, and close management not only positively affects our clinical data and outcomes but most importantly benefits our patients overall prognosis and well being. When we see excellent patient care we also see excellent quality numbers.
Poster #12

**Developing Medical-Dental Integrated Care Models (ICM) to Manage Diabetes**

Amit Acharya¹, Ingrid Glurich¹, Kelsey Schwe¹, Neel Shimpi¹, Matthew J. Jansen², John J. O'Brien³, Teresa A. Kleutsch³, Eric R. Penniman⁴, Gregory Nycz⁵

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**Background:** Periodontal disease (PD) is an early complication of diabetes mellitus (T2DM) and bidirectional disease exacerbation is well established. Despite pathogenic overlaps, integrated dental/medical care is lacking. Development/implementation piloting of strategic evidence-based, integrated care model(s) (ICMs) is proposed.

**Objectives:** We will develop: 1) clinical context/frameworks for ICM; 2) health information technology (HIT) framework/infrastructure for ICM implementation; 3) interdisciplinary provider training and patient education strategies/tools; 4) designs for quality tracking of compliance/clinical impact assessment, and cost impact evaluation; 5) ICM pilots to test dissemination/translation statewide across various practice settings.

**Approach:** Environmental scans, including literature review and survey methodology of medical/dental practitioners statewide will establish current knowledge/attitudes/practice behaviors, which will inform implementation of educational initiatives, followed by re-survey to measure efficacy. HIT will be developed for integrated clinical tracking, clinical decision support (CDS) provision and quality assessment. ICMs will be piloted across various practice settings statewide.

**Expected Results:** 1) Definition of system challenges/practice gaps to ICM adoption; 2) Provision of multi-disciplinary provider education modalities and guidelines for early disease recognition, risk assessment and prevention/reduction of comorbidities; 3) interdisciplinary provider and patient education tools/initiatives; 4) Creation of CDS tools, ICM care? Coordination resources, and assessment tools for quality, health outcomes, and cost analysis; 5) Ascertainment of ICM portability across various practice settings statewide; 6) Patient and provider satisfaction assessment, and evaluation of ICM efficacy of implementation pilots.

**Conclusions:** Delivery of effective ICMs to improve diabetic care in diverse practice settings is expected. ICM adoption is projected to add value and reduce cost of care.
Poster #13

Assessing the Effectiveness of Implementation of Unified Workflow in Improvement of Medication Reconciliation for Aurora St. Luke’s Family Practice Outpatients

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Introduction: Medication errors are the most common errors occurring in hospitals. Preventable adverse drug events are linked with 1/5 injuries or deaths. 23% of medication errors in primary care occur due to inaccuracies in the medication list. Quality improvement projects designed to improve accuracy of outpatient medication reconciliations may decrease the number of medication errors.

Purpose: To determine whether a unified workflow for medication reconciliation improves accuracy of ambulatory, electronic health record based patient medication records.

Methods: Retrospective study of random sample of patients from Aurora Family Medicine Residency Clinics before (prior to 3/31/14) and after (12/10/14) improvements to the medication reconciliation process, N=80 and N=77 respectively. Aurora pharmacy medication lists were compared to that of the electronic medical record (EMR). To preserve patient and caregiver confidentiality, charts were assigned arbitrary identifiers. 2-sample t-tests were used to compare pre and post medication reconciliation. An additional patient chart audit on pre (N=51) and post (N=45) workflow implementation was done to assess utilization of workflow; Fisher exact tests were used to gauge changes (P < 0.05).

Results: When comparing pre and post medication reconciliation implementation, there was a significant decrease in the number of EMR medications not on the pharmacy list (mean 0.475 vs. 0.208, p=0.022). Number of providers reviewing the EMR medication record improved significantly by 30.4% (p=0.045). A downward trend in the number of unintentional medication duplicates was also observed by 13.3% decrease (p= 0.07).

Conclusion: Implementation of systematic workflow and care team education led to overall improvement in accuracy of EMR medication reconciliation. Future areas of focus would include continued education around current workflow and additional attention to medication compliance via out of date prescriptions.
Clinics and Pharmacies use the Wisconsin Immunization Registry (WIR) to Increase Vaccination Rates

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The overarching goal for Immunize Milwaukee! (a community wide coalition) is to increase vaccination rates. In 2014 a needs assessment was conducted in which 68% of interviewees stated that work on immunization information systems should be a high priority for Immunize Milwaukee! Then, in 2015 an online, anonymous survey was conducted in order to determine how healthcare professionals utilize the Wisconsin Immunization Registry (WIR). Survey participants included clinicians and clinic staff who were known to be interested in vaccinations, as well as members of the Pharmacy Society of Wisconsin in the metro-Milwaukee area. Responses from 136 individuals showed that the majority of physicians are made aware that a patient needs a vaccination through their electronic medical record (EMR) while the majority of pharmacists and other healthcare workers directly login to the WIR. Furthermore, physicians also made up the majority of those who were not sure how the WIR is updated. Among all of the respondents 15% of them look up immunization records only through their EMR. Among these EMR-only users the majority of them believe that the WIR is as accurate or more accurate than their EMR and many of them would like to use the WIR. Overall, most individuals have a positive perception of the WIR and feel as though the registry is enhancing vaccination rates in Milwaukee. In order to address the clinics' lack of access to WIR, Immunize Milwaukee! should encourage clinics to send multiple staff members to free WIR training by the state.
Poster #15

**Prescription Opioid Abuse Behaviors: Exploitation of System Weaknesses**

Gabrielle Waclawik, Cindy Burzinski, Aleksandra Zgierska

University of Wisconsin School of Medicine and Public Health, Department of Family Medicine & Community Health, Madison, WI

Despite expansion of the electronic health record, the prescription drug monitoring programs, and the use of abuse-deterrent medication formulations, the majority of abused prescription-based opioids are obtained through a prescription, inferring clinicians can play an important role in reducing the epidemic of prescription opioid abuse and related overdose deaths and heroin abuse. Little is known, however, how patients utilize gaps in the existing system to procure prescription opioids that fuel drug abuse.

Design: Multi-perspective, qualitative study that interviewed 12 participants (two clinical substance abuse counselors, seven individuals in recovery, pharmacist, law enforcement officer, and needle exchange program director), representing perspectives of five stakeholder groups. Methods: Semi-structured in-person interviews were conducted, audio-recorded, transcribed, and openly coded to identify emergent themes. Through inductive reasoning and consensus approach, data was categorized into domains and subthemes.

Results: Qualitative analysis identified three major domains, endorsed by at least four of five groups, related to procuring prescription opioids: "outsmarting" behaviors such as manipulating/lying to clinicians and utilizing user-networks to access information about how to procure prescription opioids; exploiting system weaknesses such as the barriers to sharing of medical information and inconsistencies in clinicians' prescribing practices; and inadequate patient counseling by clinicians about the harms of and alternatives to prescription opioids.

Conclusion: Patients who abuse drugs continue to "outsmart" clinicians and utilize healthcare system weaknesses to procure prescription opioids, however risky. Clinicians play a vital role in preventing further growth of the opioid abuse epidemic through detailed patient education about opioid related harm, and increased awareness of characteristics and behaviors of patients affected by opioid use disorders.
Poster #16

**Opioid Use in Chronic Non-Cancer Pain Management**

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Introduction: Chronic non-cancer pain (CNCP) is highly prevalent and can have significant impact on quality of life. Despite controversial efficacy of opioids for CNCP, use has dramatically risen over the past decade. Given that inappropriate opioid use is associated with harmful health and social-related consequences, adherence to guidelines is essential for safer, more appropriate CNCP management.

Objective: To provide a baseline assessment of current CNCP management in two academic primary care clinics.

Methods: A retrospective baseline assessment of 50 adult CNCP patients on opioids for at least 90 days seen at Aurora Sinai or St. Luke's primary care clinic was conducted from 8/2014-3/2015. Demographic and health information were collected. An opioid appropriateness score was calculated based on documentation of nine items. A focus group explored major challenges providers face diagnosing and treating CNCP. Basic statistical analysis was performed using SPSS and MiniTab; multivariate models were analyzed with ordinal logistic regression.

Results: Of CNCP patients using opioids (mean age 55yrs and morphine equivalent dose 35mg/day), 22% used more than one chronically. Psychiatric conditions, severe COPD, and OSA were reported in 74%, 8%, and 32% of patients, respectively. The median opioid appropriateness score was 5/9. Only 6% and 18% of patients had opioid agreements and urine drug screens documented, respectively. Providers reported lack of multidisciplinary collaboration and training as significant challenges. Univariate analysis demonstrated that age and location were predictive of opioid appropriateness (p=0.005 and p=0.048, respectively); only age remained significant in multivariate analysis.

Conclusions: Overall, opioid use in CNCP lacks consistency and adherence to recommended guidelines. It is unknown if specific clinic populations confound the correlation between age and appropriateness. Provider education may help ensure safety, homogeneity, and more appropriate management of CNCP patients.
Poster #17

UpTic -- Understanding Primary care Teamwork: Interaction and Cognition

Tosha B. Wetterneck¹, John W. Beasley¹, Randi Cartmill², Paul Smith, Lindsay Steege³, Abby Wooldridge², Pascale Carayon²

¹UW SMPH, Madison WI, ²CQPI, UW College of Engineering, Madison WI, ³UW School of Nursing, Madison, WI

We will examine the work of primary care clinicians and their clinic staff teams do as they conduct patient care visits. We are interested in the cognitive or 'thinking' work that the team does, as well as the work that we can see happening when we do observations. Using a process called "Goal Directed Task Analysis" we will analyze your work goals related to patient care.

The results will be used to design better workflows including the use of Health Information Technology, and the actual display designs of Electronic Health Records. In the second part of this study we will actually test various workflows and display designs to look for potential improvements in the quality and efficiency of patient care.

Funding: for the Agency for Healthcare Research and Quality (PA-11-198) entitled, "Understanding Primary Care Teamwork in Context: Implications for HIT design."
I-PrACTISE: Involving Industrial Engineering Science and Methods in PBRN Research

John W. Beasley¹, Tosha B. Wetterneck¹, Pascale Carayon², Erkin Otles³

¹UW SMPH, Dept of IE, ²UW Center for Quality and Productivity, ³UW Dept of Industrial Engineering

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

I-PrACTISE is a national collaborative to improve primary care through Industrial and Systems Engineering (ISyE). Members have a 14 year history of productive collaboration. This unique and productive collaboration can be utilized by PBRNs to help them in their work. It links practicing clinicians with ISyE experts in methodology to develop funded projects that help networks and their patients.

I-PrACTISE members have competed successfully for R-01 funding, 3-year conference funding, and have published over 80 papers. Their work has had impact on the policies of state and national organizations.

Several of these projects, including a large RCT designed to test a method to reduce Information Chaos, have involved PBRN Members, specifically the Wisconsin Research and Education Network (WREN).
Poster #19

*How I-PrACTISE Researchers Work with WREN to Inform Policy and Practice in Wisconsin*

John W. Beasley, David L. Hahn, Paul Smith, and Tosha B. Wetterneck

1UW SMPH, Madison WI, 2CQPI, UW College of Engineering, Madison WI, 3UW School of Nursing, Madison, WI

The collaboration between the primary care specialties and the Department of Industrial and Systems Engineering that has evolved into I-PrACTISE has a 15 year history of very productive work exploring the “basic science of primary care” and disseminating the results to professional organizations and policy makers.

This poster highlights the transdisciplinary research facilitated WREN and WREN Members which has included studies of: Workforce satisfaction, the causes and reporting of medical errors in Wisconsin, the nature of Information Chaos, the effectiveness of a practice intervention to reduce the chaos, the myth of workflow in primary care, and an analysis of the cognitive support needs of primary care clinicians and their staff (the UpTic study).

Our affiliated researchers have published more than 60 papers in the medical and engineering literature and received over $4.5 million in grant funding. Moreover there has been direct impact on policy through adoption of our “Electronic Health Records: Design, Implementation, and Policy for Higher-Value Primary Care” as policy by the Wisconsin Medical Society.
Patient Story: My 'Treatment Refractory Asthma' Story by Andrew Drummond

My asthma was first diagnosed at age 12; I suffered from allergies prior to this. My asthma was under very good control. My main symptoms were sport/allergy induced, but controlled extremely well and virtually unnoticeable on a day-to-day basis due to successful treatment with Inhalers.

I’m now 27, but back in September 2013, my breathing started to deteriorate. I was treated for a chest infection. After the coughing and sputum subsided I was left with a very loud, high pitched audible wheeze and my upper airways felt extremely sensitive (the wheezing was not and still is not detectible via a stethoscope - it can be heard very easily with the naked ear). This continued, however every couple of months I had a good spell when my symptoms cleared, so I thought it was just my asthma and I continued conventional treatment.

In 2014, my health deteriorated rapidly. My inhalers began to have no effect and the wheezing became more prominent. Finally, in December 2014, I caught another serious bacterial chest infection that left me in a bad way. The coughing and sputum production was so aggressive I felt like I was choking trying to bring it up. My infection 'cleared' according to my asthma specialist in March 2015, but the sensitivity in my upper airways & constant high pitched whistling remained and has severely impacted my quality of life. I've always played football twice a week and run marathons (well above average time) and since December I cannot climb a flight of stairs without being out of breath and wheezing very loudly.

My treatment program continued to escalate according to the guidelines.

Here is a breakdown of some of the medicine that I was prescribed:

- Flutiform (2 puffs, twice daily)
- Seritide (replaced by Flutiform)
- Amoxicillin (A number of short courses over the period)
- Singulair/Montelukast
- Zafirlukast
- Atrovent (2 puffs, twice daily)
- Spiriva (1 Pill- twice daily)
- Prednisolone (60mg when it was at its highest dose. Course lasted 6 months starting from Dec 14)
- Ventolin (2 puffs as required)
- Salbutamol Nebulizer, as required
- Amitriptyline (issued a 10mg daily dose in an attempt to settle nerve endings in upper chest as ENT specialist thought that wheezing could have been 'hypersensitivity')
- Fexofenadine (180mg)
- Lansoprazole (in an attempt to reduce symptoms of reflux)

None of the above treatments had any impact on my symptoms. Due to lack of response to any of this treatment, I now only take:

- Flutiform: 4 puffs daily, 2X2
- Atrovent: 4 puffs daily 2X2
- Ventolin: as required
- Fexofenadine: 180mg daily
Here are some of the tests that were carried out:

- ECG, CT scan, Spirometry, Lung function (All good/clear)
- Histamine test (Provoked reaction proving that I had mild/moderate asthma)
- Bronchoscopy (Clear, did however have some sputum.) **Important finding was that my airways were found to be very 'twitchy and reactive'.**
- Laryngoscopy (Clear. Vocal Cord Dysfunction [VCD] ruled out at this stage).
- Liver function tests were normal in Jan 2014 but became elevated 6 weeks later.
- Tests for Hepatitis B/C & other relevant conditions were performed- nothing found.
- ALT levels then rose to 70; ultrasound showed no damage to liver so GP is unsure what has caused this.

I've always felt that I've been carrying some sort of virus throughout my difficulties over the last 2 years. Doctors have brushed off the fact that I could have been carrying an infection due to their being no sign of this in my blood work. It is extremely difficult as a patient to sit through appointments and try to articulate the way that your body feels at times. I have had to deal with a huge amount of frustration and despair over the time that I have been ill, purely as it has always felt as though the wrong thing has been focused on. I have tried to articulate the feeling of some underlying issue that has prevented my body from responding to logical Asthma treatment as it always used to. Furthermore, my Asthma has always been kicked into control with much more modest doses of medication, meaning that increasing the dosage/volume has done nothing other than increased the side effects.

I understand that there are guidelines for asthma treatment and they are set by various societies. This leads me to my 'unmet needs' and further suggestions:

I believe doctors should have the power to deviate from the 'logical' asthma treatment framework once patients have been treated under the guidelines for a significant length of time, with no improvement or if symptoms actually worsen.

Doctors should be careful when mentioning things like 'stress' and should present these factors as potential underlying aggregators rather than actual causes of 'asthma' symptoms. (I believe there is a potential for patients to walk away from surgery upset and confused; that something very real and physical could be entirely blamed on stress/anxiety)

Doctors should watch closely when patients are returning frequently with zero progress. This is surely a sign their current treatment program needs to be revised as opposed to just telling them 'time will heal' or prescribing even more aggressive treatment targeting the same, unresponsive symptoms.

For people with refractory Asthma, it seems as though time may not heal at all, in which case, at what point currently does a doctor make the decision to think outside of the box and consider whether a long term 'bacterial' lung disease could be causing the issue? This would save a lot of pain and discomfort for the patient.

Many thanks,

Andrew
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