Madison Family Medicine
Residency Program

Scholarly and Community Health Projects
from the Class of 2015
A “Family Practice Inquiry Network” article: “Does therapy for depression in teens decrease the likelihood of depression in adulthood?” Adolescence is a time of intense change, with various forms of development happening all at once. A prevalent response is depression; in fact, nearly 10% of our teens struggle with depression during this transitional period. A common modality for treatment is cognitive behavioral therapy. I strive to answer if therapy during the difficult, transitional period of adolescence influences mental health outcomes in adulthood. (Results/conclusion to be determined.)
COMMUNITY HEALTH PROJECT

Title: Girls on the Run: Allowing every girl to recognize her inner strength

Background: Girls on the Run is a physical activity-based positive youth development program, started in 1996 by a woman named Molly Barker. Molly, like many of the young female patients we encounter, struggled with self-doubt. She believed she was never thin enough, pretty enough, or smart enough, and turned to unhealthy habits that fed her negativity and self-perceived limitations. But then she found running: where she could be herself and focus on the CAN instead of the CAN'T. Unfortunately, the aforementioned feelings of shame and pessimism are often mirrored in many patients we see, not only of elementary or adolescent age, but females of all generations. I sought being involved in a community project that focused on establishing positive self-esteem; GOTR exuded the values I find to be integral in promotion of a healthy self-image. I was thrilled to become involved in a program that has shown to make a real difference in the lives of young girls.

Objectives: Girls on the Run strives to meet three basic components: 1) understanding self; 2) valuing relationships and teamwork; and 3) understanding how we connect with and shape the world at large. It promotes girls to develop self-respect and healthy lifestyles through running. Running is used to inspire and motivate, encourage lifelong health and fitness and build confidence through accomplishment. My job as a certified coach was to help the girls encompass GOTR’s core values: to recognize our power and responsibility to be intentional in our decision making; embrace our differences and find strength in our connectedness; express joy, optimism and gratitude through our words, thoughts and actions; nurture our physical, emotional and spiritual health; lead with an open heart and assume positive intent; and stand up for ourselves and others.

Methods: Girls on the Run has programs throughout the United States and Canada, with 65 established sites in Dane County. Teams meet twice weekly in small groups of 8-20 girls and 3 mentor coaches. I coached at Henry David Thoreau Elementary in Madison on Tuesday afternoons from 3:30-5p. Our team consisted of 15 girls in 3rd through 5th grade. We interactively discussed important topics and life lessons with assistance of a pre-set GOTR curriculum, set goals, and engaged in uplifting games and activities, including running.

Results: Important social, psychological and physical skills and abilities were developed and reinforced throughout the program. Girls on the Run collectively has empowered nearly 800,000 girls in 47 states and Canada, and 6,000+ girls in Dane County alone. I personally observed our girls developing positive attitudes, expressing gratitude, celebrating their uniqueness and diversity of others, slowing down to center themselves, cooperating with others, and overall aiming to become the best version of themselves. At season conclusion (12 weeks), girls and their running buddies complete a 5k running event, which will occur on June 6, 2015. This
gives participants a sense of achievement as well as framework for setting and achieving life goals.

**Conclusion:** Girls on the Run has not only given me the opportunity to work with young girls in the community, it has taught me much more than I expected to learn. I found myself looking forward to the time with the girls, and was floored by their mature, insightful minds. Their excitement and pride with accomplishment of their goals was energizing. Some of their quotes throughout the season included: “GOTR made me realize I can do anything… I learned how to be comfortable in my own skin… GOTR has taught me to be a more supportive friend… It taught me to always keep moving forward.”

**Acknowledgements:** I would like to thank Kathleen Carr, who encouraged my involvement in GOTR; the Verona Clinic, namely Dr. Brian Arndt, Mark Shapleigh, Kris Kuhn, and reception, for being flexible with my Tuesday schedule, allowing me to attend GOTR practices. I would also like to thank my fellow coaches at HDT, Lindsay and Margaret, for supporting me as a new coach in times of my own doubt. Most of all, thank you to the bright-eyed girls of HDT, whose enthusiasm and insight inspires me to be my best self.
COMMUNICATING WITH OUR PATIENTS IS THE MOST IMPORTANT PART OF OUR JOB AS PHYSICIANS. DEVELOPING INNOVATIVE TECHNOLOGIES TO COMMUNICATE WITH PATIENTS ENHANCES UNDERSTANDING, AND ALSO ALLOWS THEM TO READILY ACCESS INFORMATION. YOUNG, SUCCESSFUL EPIC EMPLOYEES FORM THE MAJORITY OF MY CLINIC POPULATION. MILD ANXIETY AND DEPRESSION ARE COMMON IN THIS POPULATION. MANY PREFER NOT TO TAKE SSRIs, AND THEIR TRAVEL OBLIGATIONS MAKE SEEKING GUIDANCE WITH A BEHAVIORAL HEALTH SPECIALIST DIFFICULT. I CREATED A WEBSITE FORMATTED FOR MOBILE DEVICES. IT CONTAINS SECTIONS DEVOTED TO DIFFERENT ASPECTS OF WELLNESS INCLUDING MEDITATION, GRATITUDE, SLEEP AND TENSION.

Acute Upper Extremity Injuries in Young Athletes

COMMUNITY HEALTH PROJECT:

UW ELECTRONIC WELLNESS RESOURCES -- COMMUNICATING WITH OUR PATIENTS IS THE MOST IMPORTANT PART OF OUR JOB AS PHYSICIANS. DEVELOPING INNOVATIVE TECHNOLOGIES TO COMMUNICATE WITH PATIENTS ENHANCES UNDERSTANDING, AND ALSO ALLOWS THEM TO READILY ACCESS INFORMATION. YOUNG, SUCCESSFUL EPIC EMPLOYEES FORM THE MAJORITY OF MY CLINIC POPULATION. MILD ANXIETY AND DEPRESSION ARE COMMON IN THIS POPULATION. MANY PREFER NOT TO TAKE SSRIs, AND THEIR TRAVEL OBLIGATIONS MAKE SEEKING GUIDANCE WITH A BEHAVIORAL HEALTH SPECIALIST DIFFICULT. I CREATED A WEBSITE FORMATTED FOR MOBILE DEVICES. IT CONTAINS SECTIONS DEVOTED TO DIFFERENT ASPECTS OF WELLNESS INCLUDING MEDITATION, GRATITUDE, SLEEP AND TENSION.
Sports are a major cause of injury to the upper extremity in children and adolescents. Acute sport-related injuries to the shoulder, elbow, wrist, hand, and fingers that need immediate evaluation and management in the emergency department (ED) setting are common. The following sections will describe acute sport-related injuries to the pediatric upper extremity with focus on injuries likely to be seen by pediatric emergency care providers.

**EVALUATION**

A comprehensive injury history should include details of the injury mechanism, specifically, type of impact and position of the limb at the time of injury as well as history of previous injury to the upper extremities. In addition, the athlete should be asked to identify the location of their pain and activities or motions that are painful. A good understanding of the relevant anatomy of the injured body part is essential to accurate diagnosis.

Physical examination of the entire limb should begin with inspection for deformity, asymmetry, swelling, ecchymosis, or injury to the skin, such as abrasions. Palpation to identify the point of maximal tenderness (PMT) can aid in diagnosis. Range of motion (ROM) should be assessed for the injured extremity including joints above and below the site of injury and then compared with the unaffected side. It is imperative to rule out a neurovascular injury with a thorough evaluation of motor and sensory function of the injured limb.

Plain radiographs are the most appropriate initial imaging study in the acute setting. All injuries should be assessed with 2 to 3 views...
ABFM Hypertension Performance in Practice Module -- The Hypertension Performance in Practice Module is an interactive quality improvement development process. Through questionnaires and review of clinical data, I determined I was not regularly discussing lifestyle measures with all of my patients with high blood pressure. To remedy this I designed patient handouts which pointed patients towards local resources for healthy eating such as the farmer’s market and local CSAs as well as a list of the gyms and exercises classes in Baraboo and their costs. This guide was paired with information about the particular benefits of healthy eating and exercise for hypertensive patients. Subsequently, I nearly doubled the proportion of patients with whom I was addressing lifestyle measures.

I can’t say enough to thank my patient and loving husband, Beau, who has faithfully supported me in my dreaming of big dreams and pursuit of fulfilling them, and to my other-other-half, Dr. Pfaff, who is clearly the best darn match the NRMP ever proposed.

— Rachel

After earning a B.S. in Biochemistry and Molecular Biology from Liberty University, Rachel Hartline completed her medical degree at Eastern Virginia Medical School. She comes to Family Medicine with a strong passion for global health and international justice. This passion has taken her to Nepal, where she volunteered at the Lalgadh Leprosy Service Center, and to an orphanage in Cameroon, where she performed checkups and helped implement a basic health records system. She also traveled to rural Honduras each year of medical school as part of a student-run medical brigade. In residency, she and her residency partner Rebecca Pfaff were able to travel together to Kenya to teach nurses cervical cancer screening techniques. Through these experiences, she observed first-hand the vital role of physicians who are comfortable treating any patient in need, whether male or female, young or old. She hopes to continue to play that role domestically through a traditional practice based in Dodgeville, and abroad through short-term educational opportunities after graduation. She has fallen in love with Wisconsin despite its long winters and put down roots here with her husband Beau, who manages a large potato farm near Spring Green. In her spare time, Rachel enjoys traveling, reading, watching too much TV, hiking with her dog Daisy, and snowshoeing.
Beyond the Band-Aid: Sustainability in Global Health

Rachel Hartline, MD, PGY-2
St. Clare CME
May 29, 2014

Objectives
❖ To review statistics on current healthcare provider involvement in global health projects
❖ To outline various models of healthcare provider involvement in global health
❖ To explore the advantages and disadvantages of short-term global health projects
❖ To explore options for sustainable global health involvement

... through the lens of my story

A Note On Terms: Global Health
AKA international medicine/health
AKA tropical medicine
AKA voluntourism
AKA short term missions
“an area for study, research, and practice that places a priority on improving health and achieving health equity for all people world-wide”

for the purposes of this talk, to primary care providers based in the USA:
activities toward improving health in a resource-challenged setting different from or our initial or primary setting of practice

A Note on Terms: the place(s) to which we travel
underserved communities/countries
global south
third world
developing countries
the majority world
low/middle income countries
How many people are involved in this stuff?

- a lot more than there used to be!
  - exponential growth in medical school
    - almost all schools offer a global health program
  - 25-30% of grads with global health experience
  - significant growth in residencies
  - some growth in attendings
- tough to say
  - almost 50% in some academic settings
  - more in primary care
  - estimate of 6,000 trips/year using the 3 biggest "clearinghouses"
- locally . . .

Why Do Healthcare Providers Get Involved?

- altruism/social responsibility
- global security
- to improve care for diverse populations at home
- an escape from coding/documentation
- to see the world
- evangelism

facts like these:
a smattering of facts mostly from the UN’s Millenium Development Goals Progress Website (and this is after the MDG progress)

- A woman in South Sudan is more likely to die in pregnancy or childbirth than to complete primary school.
- In sub-Saharan Africa, one in ten children die before the age of five.
- The maternal mortality ratio in developing regions is still 15 times higher than in the developed regions.

Models

- short term direct clinical care
- short term direct clinical care as an educational experience
- short term project
- short term research
- short term as a part of capacity building
- long term placement
- bidirectional exchange

long term

- Dr. Kuter
- Cindy Haq*
- Dave Gauss*
- USAID
- faith based NGOs/missionaries
- other NGOs
The Road Not Traveled. . .

global health?

short term direct clinical care: benefits

• you can go!
• appreciation for social determinants of health
• honed cross-cultural skills
• reaffirmation of medicine as a career choice
• reaffirmation of desire to work with underserved
• students: higher number choose primary care
• patients felt solidarity/someone noticed
• opportunities for teaching/skill transfer (especially surgical missions)

http://www.civilsociety.co.uk/images/thumbs/elephant_and_mouse250_1_250.jpg
short term direct clinical care: downsides

- poor quality of care
  - high volume of patients
  - limited lab/pathology capabilities
  - limited follow up
  - care out of context

- expensive
  - poor resource utilization?

- limited impact
  - detracts actual funds from root causes
  - detracts focus from root causes

detracts focus from root causes

"[Short-term medical work] does not, and cannot, address these primary health issues of Guatemala. We already have many surgeons and other physicians who are well trained to take care of all problems common in our country. The lack of healthcare in rural areas is not due to a lack of physicians; it is due to a lack of resources to provide clinics, hospitals, and supplies to these areas."

undermines local systems

"Many Guatemalan informants talked about a level of arrogance or elitism that they often see in visiting medical professionals. Most of these informants noted that when foreign providers work in coordination with the local healthcare providers, it reflects an acknowledgement that the local providers are competent. Working in isolation from the surrounding medical community was perceived to reflect the opposite sentiment. Furthermore, the respect shown to local providers by working alongside them is also perceived to be visible by the local patient population, which has a positive impact on the local provider’s relationship with their community..."
undermines local systems

“Guatemalan patients, especially those with less education, tend to put more faith in a blonde haired, blue eyed, white skinned foreign physician than their own Guatemalan physicians. These foreigners show up with their shiny new equipment and do their free surgeries without ever working with any of [the Guatemalan physicians]. US doctors come to Guatemala and practice medicine when and where they want. Guatemalan doctors may have a hard time even entering the US, let alone being able to practice medicine there. US physicians are not superior to Guatemalans. I am perfectly capable of taking care of my own people.”

undermines local systems

“The importance of short-term medical volunteers coordinating their activities with groups that have a long-term presence in Guatemala was by far the most frequent recommendation made by our informants. In fact, it was often more of a demand than a recommendation, with some informants commenting that short-term medical volunteer work that is not coordinated with a long-term presence is ‘the worst kind of care,’ or that those short-term medical volunteers ‘might as well stay home.’”

What are we trying to accomplish again?

- altruism/social responsibility
- global security
- to improve care for diverse populations at home
- an escape from coding/documentation
- to see the world
- evangelism

How do we get there?
features of sustainable short term projects

- aware of local context
- responsive to local desires/needs
- partnered with/investing in local resources
  - financially
  - capacity building

features of sustainable short term projects

- cognizant of the actual effects and not just desired effects
  - quality improvement
  - research

Toolkit for Evaluation

meta-goals and measurable outcomes (major and minor factors) identified and assessed via:

- host/local provider survey
- medical director survey
- patient survey
- personnel/provider survey
- mission administrator survey

Mostly multiple choice, Likert, yes/no, but high value as well in debriefing with open ended questions (in person or on paper)

options for sustainable short term trips

- PINCC
- International ALSO
- American International Health Alliance
- CMDA’s Medical Education International
additional resources

http://ethicsandglobalhealth.org

Poor Economics book
http://www.healthservicecorps.org/pdfs/Operating%20Responsible%20Healthcare%20Missions.pdf

When Helping Hurts book

Selected References

- Njajko, A. “Rating the Quality of Care During Medical Missions: A Survey to Assess the Need for Clinical and Anatomic Pathology Services in International Medical Missions,” Arch Pathol Lab Med 2012, 136:141.
- Rovers et al. “Expanding the scope of medical mission volunteer groups to include a research component,” Globalization and Health 2014, 10:7.
- http://encrypted-tbn1.gstatic.com/images?q=tbn:ANd9GcQvk1PfyeaNH2c5
A Family Practice Inquiry Network (FPIN) Help Desk Answer published in the September 2013 issue of Evidence-Based Practice: “What is the most effective treatment for molluscum contagiosum?” Though some treatment methods bring about more prompt resolution of the lesions, there is no single intervention that has proven most effective for treatment of molluscum contagiosum (MC). Commonly utilized methods include watchful waiting, physical destruction (curettage, cryotherapy, laser, needling), application of topical agents (cantharidin, imiquimod, podophyllotoxin, tretinoin, KOH), and systemic therapy (cimetidine, oral isoretinoin, antivirals). When determining therapy type, it is important to consider factors such as patient preference, pain tolerance, time and office limitations for procedures, and ability to arrange follow up.

Instituting a Plant-Based Nutrition Curriculum at Northeast Clinic

Scholarly Project:

A Family Practice Inquiry Network (FPIN) Help Desk Answer published in the September 2013 issue of Evidence-Based Practice: “What is the most effective treatment for molluscum contagiosum?” Though some treatment methods bring about more prompt resolution of the lesions, there is no single intervention that has proven most effective for treatment of molluscum contagiosum (MC). Commonly utilized methods include watchful waiting, physical destruction (curettage, cryotherapy, laser, needling), application of topical agents (cantharidin, imiquimod, podophyllotoxin, tretinoin, KOH), and systemic therapy (cimetidine, oral isoretinoin, antivirals). When determining therapy type, it is important to consider factors such as patient preference, pain tolerance, time and office limitations for procedures, and ability to arrange follow up.

Thank you to the DFM faculty and staff, for creating a residency that truly feels like a family. To my residency classmates and families, for remarkable friendship that is every bit as memorable as the education. To my family, for their wisdom. And to my wife Megan, for her patience and unflagging love.

— Patrick

After earning a B.A. in Biology from Williams College, Patrick Huffer spent a year in Madison working for the Pathology Department at the University of Wisconsin Hospital and Clinics. He attended medical school at the University of Vermont College of Medicine before returning to Madison for residency. Patrick’s medical interests include plant-based nutrition, rural practice, hospital medicine, and developing long-term relationships with patients. He has been involved with several trips to Ecuador and Guatemala over the past nine years, spanning his undergraduate, medical school, and residency years. Patrick enjoys Family Medicine for its versatility and overall usefulness in diverse settings, as well as for its focus on sensible, patient-oriented, and cost-effective care. Patrick looks forward to honing his teaching skills next year in Madison’s Academic Fellowship. In his off hours, Patrick is likely to be found outdoors fishing, bicycling, running, backpacking, canoeing, skiing, or combinations thereof. He also enjoys cooking, reading, drawing, playing music, and is excited to share parenthood with his wife Megan.
Community Medicine Project
Patrick Huffer, MD
Northeast Clinic, Madison WI

Title: Instituting a plant-based nutrition curriculum at Northeast Clinic

Background: Obesity, diabetes, heart disease, hypertension, hyperlipidemia, and numerous other illnesses are innately tied to patients' dietary habits and physical lifestyles, and make up the majority of the most commonly-encountered diagnoses at Northeast Clinic. Modern medicine increasingly focuses on pharmacologic and surgical remedies that help control or alleviate symptoms, but seldom prevent or reverse these diseases, and are associated with increasing health costs. A more cost-effective, simpler, and holistic approach is through dietary changes. Specifically, a plant-based diet has been shown to be effective in combatting many of these conditions.

Objectives: I sought to establish and promote a body of resources available to patients and staff at Northeast Clinic who are interested in improving their health through plant-based dietary means.

Methods: I created a set of handouts and educational materials for use at Northeast Clinic that is intended to educate patients, faculty, and staff about the benefits of a 100% plant-based diet. Materials included printed pamphlets, a 7-day menu with recipes and grocery lists, ideas for how to shop and stock a vegan kitchen, and links to online resources for more information. Through a small-grants clinic fund, I obtained 3 copies of the documentary Forks Over Knives, which patients and staff can check out from the clinic. Clinicians are able to refer patients to the front desk for a copy.

Results: I screened segments of Forks Over Knives and led a discussion at a Lunch and Learn session for nurses at the clinic, as well as at Diabetes Group Visits for patients. I also led vegan cooking demonstrations with Zack Thurman and Sagar Shah at Diabetes Group Visits. These sessions were positively received by nurses and patients. No patients of mine have made a full switch to plant-based nutrition, but several have incorporated small-scale changes such as switching from dairy milk to almond milk. To date, the clinic copies of Forks Over Knives have been checked out nine times, three of which were by Northeast staff members.

Conclusions: Convincing patients to adopt a plant-based diet is challenging; health benefits may be easily explained and grasped, but putting such a diet into practice requires concrete guidance that many patients do not receive. Combining health advice with practical information on how to shop for ingredients, read labels, prepare meals and snacks, and eat out at restaurants is likely to improve rates of experimentation and adherence to plant-based diets. Interactive lessons such as film screenings and cooking demonstrations can be used by health providers in an office setting.

Acknowledgements: Bill Schwab, MD; Russ Lemmon, DO; Deb Sands and Sara Johnson; Adam Rindfleisch, MD; Zack Thurman, MD; Sagar Shah, MD
Refractory Depression and MTHFR Mutation--

Methylenetetrahydrofolate reductase (MTHFR) gene codes for an enzyme, of the same name, which is a critical step in the conversion of amino acid homocysteine to methionine. Genetic variants of the MTHFR gene are known to decrease the efficacy of the enzyme and are related to a verity of medical conditions including homocystinuria, anencephaly, spina bifida, heart disease, stroke, high blood pressure, preeclampsia, glaucoma, and psychiatric disorders. Up to 60% of patients with depression have a mutation of the MTHFR gene. Evidence exists to support the practice of supplementing 5-methyltetrahydrofolate, bypassing the reaction that the MTHFR enzyme catalyzes, when treating depression is refractory to treatment with typical antidepressants. I sought to answer the following clinical question: should we be testing for MTHFR gene mutations in refractory depression? Although the mutation is common in depressed patients and 5-methyltetrahydrofolate has some evidence to be helpful in depression these two studies have not been combined. Until these studies have been combined it may be beneficial to trial supplementation with 5-methyltetrahydrofolate and determine if it is beneficial without performing genetic testing.

Thank you to my supportive family and residency friends, especially my buddy Erin Hammer; I couldn’t have done it alone. — Steve
Guidelines for the Community Health Project Write-Up

Title: Trails for Health: Verona Area

Background: The majority of the patients that are seen at the clinic do not meet the Center for Disease Control and Prevention’s recommendation of obtaining, at least, 150 minutes of moderate intensity aerobic exercise each week. Some of the reasons that patients cite for not meet recommendations, or not exercising at all, include not enjoying it, experiencing pain, and not having a safe area. The Verona Area has a great number of community, county, state, and even national parks which offer a number of outdoor activities. The majority of the local parks have trail networks that allow for a safe, enjoyable, and low impact way to improve and maintain health through aerobic activity.

Objectives: The objective of the project was to create information sheets for many of the local, Verona, trail networks to inform patients of the local resources of parks and trails. The long term goal is that patients will use the information to explore new areas and increase their aerobic activity.

Methods: Information was obtained by visiting the local parks and trails and from online resources.

Results: Many local trail systems were identified and an information sheets were created. Informal survey has, as of the time of writing this, not yet been conducted to assess the response of patients or the impact of the project. Expected results are that patients will appreciate the information and will hopefully take advantage of their local parks and trails.

Conclusions: Local trails are an excellent way to appreciate our natural resources as well as giving us a scenic, varied, safe, and unique way of improving health through exercise. Throughout the process of developing the information sheets I realized the extent of the local park and trail resources that are within 20 minutes from Verona. One challenge that I experienced was that initially my goal was to include a trail map with distances on each of the information sheets, but I found that many of the parks did not have this information available and it was difficult for me to create the maps myself. In the future I hope that additional information sheets can be created and that the current sheets can be modified to include trail maps with distances.

Acknowledgments: Dr Eugene Lee for proposing this idea to me and for just being a swell guy.
Adolescent Health from an Adolescent’s Perspective -- With respect to adolescent health, there are few recommendations about what providers should talk about and how to address adolescents. Several studies have shown poor evidence (Grade I or D recommendations by the USPSTF) for common things associated with teenage health, such as screening for drug use, alcohol use, or suicide risk. There are essentially no recommendations in discussing cyber-bullying, texting, and mental health in adolescents. In order to determine what adolescents want to discuss at well-visits and what would make adolescents most comfortable in discussing “adolescent topics” with their clinician, I distributed a survey amongst 3 Verona High School classes and summarized the results in my PCC presentation.

Scholarly Project:

Eugene Lee, MD
earned his B.A. in Biochemistry and Molecular Biology and his medical degree from Boston University. He has a strong interest in complementary and alternative medicine, as evidenced by his leadership role during medical school in the Preventive and Integrative Medicine Student Group and travel to China to study Traditional Chinese Medicine. He is also drawn to the intersection of medicine and the humanities. He pursued an optional medical anthropology course during his first year to learn more about how health and healing are viewed in various world cultures and religions. He also participated in a Literature in Medicine seminar and a Narrative Medicine discussion group, where participants discussed literary works about medicine and explored the impact of medicine in their own lives through the art of narrative. An additional area of interest for Eugene is mentoring and teaching. He has tutored in many contexts and served as a student leader and instructor for the first-year Introduction to Clinical Medicine class. In his free time, Eugene loves traveling and his adventures have ranged from road trips to the Badlands in South Dakota to explorations of the Australian Outback. He is also passionate about cooking and baking.
Promoting Health Information from Within the Community
Eugene Lee, MD

The purpose of my project was to promote a physician presence within the community in order promote correct medical information. To accomplish this, I took over from a prior resident in writing a column for The Verona Press on various medical topics. Also, I replaced another resident as a committee member on the STEM group (Project Lead the Way) at Verona High School. In addition to attending the meetings, I had added involvement by regularly guest lecturing the Principles of Biomedical Science course, which the teachers involved with the STEM group taught.

During my time as a columnist, I promoted awareness on various medical topics while dispelling myths or explaining misconceptions. As a result, several community members have commented on my articles and patients have stated that they have chosen me as their physician, as they agree with the approach to medicine as described in my articles.

As a guest lecturer at the Verona High School, my goal was to make teenagers more aware of topics relevant to their health and to encourage communication with physicians. I learned that teens were not fully aware of decisions relevant to their health, that several teens had perception of doctors as intimidating individuals, and that teens felt more comfortable with doctors the more they knew about the doctor.

I learned that having a presence within the community can help to gain the trust of the people within that community and can forge positive connections within the community. At one point, when Verona had a resident interested in the clinic garden, I was able to help recruit students interested in agriculture through the connection I had made with the teachers involved in the STEM group.

My positions will be continued by current residents at Verona, and through continued participation and involvement with the community I hope that the clinic will be viewed as a positive and essential member to the community and serve as leaders in the coordination of a positive environment.
SAPAR Community Partnership -- The SAPAR Community partnership has been an attempt to build a relationship between UW Family Medicine residents and faculty with SAPAR, Madison’s school-aged pregnancy program. This consisted of joining the students for education sessions during “Baby Day,” where we discussed normal baby development and common questions new moms have about babies. We also conducted two ultrasound sessions, offering ultrasounds to the pregnant students and discussing common prenatal care questions during that time. One of the main goals in the future for this partnership would be to decrease barriers to health care for pregnant teens, and improve perceptions of health care and integration into the health care system. Another goal is to increase access to LARCs in this population through the LARC grant at Wingra Clinic.

Melissa has spent much of her time in service to others, both locally and globally. As an undergraduate, she traveled to Mexico and the Dominican Republic to assist with clinical work and promote health awareness in impoverished neighborhoods. Then, as a medical student, she volunteered in Costa Rica and southern India to help deliver health care to indigent populations in rural and urban communities. In addition to her international work, Melissa has also been an advocate for the underserved in Detroit. As part of Wayne State’s Fabric of Society program, she volunteered more than 150 hours during her first two years of medical school, and as co-leader for her local chapter of the Christian Medical Association she helped coordinate regular homeless outreaches. She also founded RunDetroit, an after-school running and mentoring program at a Detroit elementary school that is now in its third year of operation. Melissa’s other professional interests include integrative medicine and women’s health, and in her spare time she enjoys running, biking, yoga, and generally anything outdoors during the summer.
Title: Are home births associated with an increase in adverse neonatal outcomes?

Author: Melissa Mashni, MD; Lee Dresang, MD

Affiliation: University of Wisconsin Department of Family Medicine

Case: A 24yo G1P0@12 weeks by LMP sees you for a first prenatal visit. She is interested in a home birth but is concerned about its safety. What do you advise her?

Bottom line:
Though there is no strong evidence from randomized trials to favor either planned hospital birth or planned home birth for low-risk pregnant women, the quality of evidence in favor of home birth from observational trials seems to be steadily increasing. A large 2011 prospective cohort trial found increased risk of adverse neonatal outcomes in nulliparous women choosing home birth (SOR B, prospective and retrospective cohorts).

Evidence summary:
A 2010 meta-analysis included 12 observational trials, 9 of which were published before 2000.1 Looking at outcomes in planned home birth versus hospital birth, it showed no difference in perinatal mortality (stillborn or death of live born child within 7 days, OR 0.95, 95% CI 0.77-1.18), however did show an increase in neonatal mortality (stillborn or death of a live-born child within 28 days) from 0.09% in the hospital group to 0.2% in the home birth group (OR 1.98, 95% CI 1.19-3.28).1 A sensitivity analysis was done looking only at studies that included home births attended by certified midwives, and the increase in neonatal mortality in the home birth group disappeared (OR 1.57, 95% CI 0.62-3.98).1 Based on this meta-analysis, the 2011 ACOG Committee Opinion (reaffirmed in 2013) recommends hospitals and birthing centers to be the safest settings for birth.2 Of note, the older studies used in this meta-analysis relied on birth certificate data, which prior to 2003 did not distinguish between planned and accidental home births. Ninety-four percent of the data of this meta-analysis came from a 2009 population cohort study from the Netherlands (N=529,688) which did not show a significant difference in perinatal mortality or NICU admissions between planned home birth and planned hospital birth (adjusted RR 1.00, 95% CI 0.78-1.27).3 Neonatal mortality was not measured in this study, resulting in these births not being used for calculating neonatal mortality in the meta-analysis.

A 2009 prospective cohort study in Canada compared perinatal outcomes in three groups – planned home birth (n=2889), planned hospital birth by midwife (n=4752), and planned hospital birth by physician (matched 2:1 to the home birth group, n=5331).4 There were no significant differences of perinatal mortality between the three groups, with perinatal death rate per 1000 births being 0.35 (95% CI 0.00-1.03) in the home birth group, 0.57 (95% CI 0.00-1.43) in the planned hospital birth by midwife, and 0.64 (95% CI 0.00-1.56) in the planned hospital birth by physician.4 Furthermore, babies born in the home birth group were found to be less likely to have birth trauma (RR 0.33, 95%
CI 0.15-0.74), require resuscitation at birth (RR 0.56, 95% CI 0.32-0.96), or require oxygen beyond 24 hours (RR 0.38, 95% CI 0.24-0.61) compared to both other groups.4

A 2011 prospective cohort study in England compared outcomes of 64,538 births among low-risk women between 2008-2010 who gave birth at home, in midwife-led non-obstetric units, and in obstetric units.5 Overall, there was no significant difference in the primary outcomes – perinatal mortality and intrapartum related neonatal morbidities. On subgroup analysis by parity, nulliparous women had higher odds of primary outcomes (OR 1.75, 95% CI 1.07-2.86) for planned home birth.5 There was no significant difference in primary outcomes between groups in multiparous women.5 The 2014 NICE guidelines for intrapartum care included this study among others, stating that it is more suitable for multiparous women to give birth either at home or at a midwife-led unit, and it is more suitable for nulliparous women to give birth in a midwifery-led unit, but to advise nulliparous women of a small increase in the risk of adverse outcomes to baby in planned home birth.6

Different maternity care systems between European countries and the US make it difficult to generalize these results. As noted in a 2012 Cochrane review, there is no strong evidence from randomized trials to favor either planned hospital birth or planned home birth for low-risk pregnant women.7 The quality of evidence in favor of home birth from observational trials seems to be steadily increasing.7 The number of US home births, though still relatively uncommon, has increased by almost 60% since 2004 – from 0.56% in 2004 to 0.89% in 2012.8 It will be important to not only continue to study the safety of home births, but to work toward enhanced integration between out-of-hospital and in-hospital maternity care.

References:
6. National Collaborating Centre for Women's and Children's Health. Intrapartum Care: care of healthy women and their babies during childbirth. NICE Clinical


**CME Question:**
Which of the following is true:

a. According to the 2014 NICE guidelines on Intrapartum care, there is no increase risk of adverse neonatal outcomes for nulliparous women choosing a home birth.

b. According to the 2014 NICE guidelines, the safest place for multiparous women to give birth is either at home or in a midwifery-led unit, due to no increase risk of adverse neonatal outcomes and decreased interventions associated with these locations.

c. According to a 2010 meta-analysis, there is a two to threefold increase in neonatal mortality when looking only at planned home births attended by certified midwives.

d. According to a 2009 prospective study, babies in the planned home birth group are more likely to receive birth trauma and require resuscitation.

Answer: B
“Asthma in patients hospitalized with pandemic influenza A(H1N1)pdm09 virus infection, United States” -- This is a paper that I published from previous research conducted at the CDC.

Background: Asthma was the most common co-morbidity among patients hospitalized with pandemic influenza A(H1N1)pdm09 virus infection. The objective was to compare characteristics of hospitalized pH1N1 patients with and without asthma and assess factors associated with severity among asthma patients.

Conclusions: The majority of persons with asthma had an uncomplicated course; however, severe disease, including ICU admission and death, occurred in asthma patients who presented with pneumonia. Influenza antiviral agents should be started early in hospitalized patients with suspected influenza, including those with asthma.

I would like to thank my wonderful wife Kelly for being my partner in life and keeping our family healthy and happy. I am eternally grateful to my parents for instilling in me a love for learning and a commitment for serving my community. I’d also like to thank my brother Charlie who I often see in my patients. I feel so fortunate to have been able to be part of this wonderful residency program and am so grateful to the staff and faculty. – John

John McKenna grew up in the northern Wisconsin town of Antigo. Before entering the world of medicine, he spent six years with the U.S. Navy, including four years as a Nuclear Electricians Mate on a naval nuclear submarine. After his term of service, he moved to Madison to pursue his bachelor’s degree in biology and then his medical degree from the University of Wisconsin School of Medicine and Public Health. John has a strong interest in population health, and during medical school he completed a one-year research fellowship in applied epidemiology with the Center for Disease Control and Prevention. He has brought this population health perspective into residency training and has been passionate about smoking cessation and other preventive health measures with the goal of improving the care of his patients and the health of his community. In his free time, John enjoys spending time with his wife Kelly and son Miles. He is also an avid gardener and loves growing his own food.
Use of Smart Phone Application in a Clinic Setting to Aid in Smoking Cessation.

**Author:** John J. McKenna MD, UW-Madison Family Medicine Residency

**Background:** Tobacco use in the form of cigarette smoking is the leading cause of preventable death in the United States with about 480,000 deaths or about one in every five deaths annually [1]. About 96 billion dollars in medical costs is added to health care spending because of smoking each year [2,3]. The rate of smoking among Wisconsinites is 19.9% and the rate of smoking among patients at UW health Northeast family medicine center is 16.4%. It was estimated in 2012 that 11 million smokers owned a smart phone [4]. There are hundreds of smoking cessation apps available in both iOs and android platforms with android being the most popular platform. Smart phone applications for smoking cessation use interactive features to personalize a ‘quit plan’ and provide evidence based strategies and information along with some support directly to those trying to quit or cut back[4]. The Community Preventive Services Task Force, which was established by the U.S. Department of Health and Human Services to find evidence based population health interventions recommends the use of ‘mobile phone-based interventions’ for tobacco cessation. [5] There is little information on the desire for smoking cessation applications and the efficacy of these applications in helping patients cut back and quit smoking.

**Methods:**

**Objectives**

I performed a needs assessment in order to determine if a smoking cessation smart phone application would be desirable for patients in the clinic setting. I also performed a small trial of the smoking cessation smart phone application to determine if it was helpful for patients in their smoking cessation efforts.

**Patients**

Patients included are adult smokers, 18 and older who presented to UW Health Northeast Family Medical Center for their medical care.

**Ethics Statement**

IRB approval was not necessary

**Study Design**

We initially distributed a short survey to 500 patients prior to the intervention (pre-intervention survey) which included demographic information, smoking status, desire to quit, possession of a smart phone and desire for a
smart phone application to help with smoking cessation (see figure 1). Given the results of this survey we determined that there was sufficient desire in our patient population for a smoking cessation app via a smart phone. The clinic’s health educator and I then distributed a smoking cessation application informational sheet (figure 2) to patient’s who smoke and were interested in cutting back or quitting. The informational sheet included instructions on how to download and install the free smoking cessation app on a smartphone. We allowed the participants at least 8 weeks with the smart phone application (QuitNow app available in both iOS and android platforms.) We then called the participants and conducted a small post-intervention survey (figure 3) to determine if they used the smart phone application, had cut back or quit smoking and if they found the application helpful. We also asked if would consider using it or a similar smart phone application in the future for smoking cessation or other health issues.

Results: We distributed 500 pre-intervention surveys and had 451 surveys returned giving us a 90.2% response rate. Out of the 451 respondents, 119 or 26.4% were smokers. This compares with 16.4% smokers at our clinic based on coding information. Of the 451 respondents, 160 or 35.5% were males and 291 or 64.5% were females. Of the 119 smokers, 64 or 54% had a smart phone. Of the 64 smokers with a smart phone, 28 or 44% would be interested in an ‘app’ to help them cut back/quit. So there was a desire for a smoking cessation application among patients who smoke and have a smart phone at our clinic. The differences between the patients who smoked and the patients who did not smoke are shown below in table 1. Following the pre-intervention survey we conducted the intervention which involved providing the information sheet on the smoking application to 15 patients (participants) at our family medicine clinic. Of the fifteen participants, four patients were lost to follow up, leaving eleven patients who completed the post-intervention survey. Two participants (13%) used the smoking cessation application. One participant (7%) found the application helpful. Eight participants (53%) quit smoking or cut back on smoking. Of these five participants (33%) quit smoking and three participants (20%) cut back on smoking. Seven participants (47%) said that they would consider using the same or a different application in the future for smoking cessation or for other health issues.

Conclusions: The pre-intervention survey showed 26% of respondents were smokers compared with 16% smokers at our clinic using coding information. This difference might be accounted for by the fact that smokers may have been more likely to complete the pre-intervention survey compared with nonsmokers. It is also possible that we are
under-coding for smoking at our clinic. The majority of respondents to the pre-intervention survey were females. The majority of the respondents who smoked had a smart phone (54%) and a large portion of the smokers with a smart phone (44%) were interested in a smart phone application to aid in smoking cessation. Unfortunately, the intervention was performed with a only small sample of patients (fifteen participants). It was also conducted with patients who were interested in quitting or cutting back on smoking and this may have led to such a high rate of either quitting or cutting back (53%) among the participants. The smart phone application was only used by a small percentage of participants (13%), however 47% said that they would consider using the same or a different smart phone application for either smoking cessation or other health issues. It is not clear why so few people used the smart phone application, but one reason that I was told frequently was that informational sheet was lost. Patient’s may have benefited from a follow up call within one week of receiving the informational sheet. In conclusion smart phone usage is high among our patient population (50.2% of respondents) and there is a desire for smart phone applications for smoking cessation. I believe that smart phone applications will continue to be a useful tool for our patient population for smoking cessation and other health issues including obesity. I hope to continue to provide information on this and other smart phone applications through our health educator at UW Health Northeast Family Medical Center.

**Acknowledgments:** I would like to thank Christina Lightbourn (health educator/prevention specialist), Dr. Edgoose, Dr. Rabago, Deb Sands and the nursing staff at NE clinic for all of the help in distributing the pre-intervention surveys and informational handout and helping me complete this community health project.

**Tables/Figures:**

**Table 1: Demographic information of patients who smoke versus patients who don’t smoke**

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>Patients who smoke # (%) [n=119]</th>
<th>Patients who don’t smoke # (%) [n=329]</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sex</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>68 (57)</td>
<td>219 (67)</td>
</tr>
<tr>
<td>Male</td>
<td>50 (42)</td>
<td>110 (33)</td>
</tr>
<tr>
<td>Age group</td>
<td></td>
<td></td>
</tr>
<tr>
<td>0-17 years</td>
<td>0 (0)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>18-34 years</td>
<td>31 (26)</td>
<td>82 (25)</td>
</tr>
<tr>
<td>35-50 years</td>
<td>27 (23)</td>
<td>86 (26)</td>
</tr>
<tr>
<td>Age</td>
<td>0-17</td>
<td>18-34</td>
</tr>
<tr>
<td>-----------</td>
<td>------</td>
<td>-------</td>
</tr>
<tr>
<td>Ethnicity</td>
<td>Hispanic/Latino</td>
<td>Not Hispanic/Latino</td>
</tr>
<tr>
<td>Race</td>
<td>White</td>
<td>American Indian or Alaska Native</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do you use tobacco products?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Do you have a smartphone?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Are you interested in cutting back or quitting?</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Would you be interested in an ‘app’ to help you cut back/quit?</td>
</tr>
</tbody>
</table>

Figure 1: Pre-Intervention Survey

<table>
<thead>
<tr>
<th>&gt;50 years</th>
<th>49 (41)</th>
<th>143 (44)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ethnicity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-Hispanic</td>
<td>85 (71)</td>
<td>249 (76)</td>
</tr>
<tr>
<td>Hispanic</td>
<td>5 (4)</td>
<td>4 (1)</td>
</tr>
<tr>
<td>Race</td>
<td></td>
<td></td>
</tr>
<tr>
<td>White</td>
<td>89 (75)</td>
<td>262 (80)</td>
</tr>
<tr>
<td>Black</td>
<td>22 (18)</td>
<td>38 (12)</td>
</tr>
<tr>
<td>American Indian</td>
<td>1 (1)</td>
<td>1 (0)</td>
</tr>
<tr>
<td>Asian</td>
<td>0 (0)</td>
<td>10 (3)</td>
</tr>
<tr>
<td>Other†</td>
<td>5 (4)</td>
<td>4 (1)</td>
</tr>
</tbody>
</table>

†Other race and ethnicity includes Mexican, Black/white, American Indian/White or Native Hawaiian.
QuitNow! offers you real-time stats, anytime, to help you cope with anxiety:
- The time (days, hours, minutes) since the last cigarette of your life
- How many cigarettes you have avoided
- The money and time you have saved

**QuitNow! is social:** Share your stats and achievements on the very App.
- Create your profile and start chatting with other quitters
- Get help, tips and tricks from others, make friends, and offer your own support, any time, and always in your own

How to download it:
iPhone: [http://kcy.me/8xhe](http://kcy.me/8xhe) Windows Phone: [http://kcy.me/vc0s](http://kcy.me/vc0s)
BlackBerry: [http://kcy.me/ozod](http://kcy.me/ozod) Facebook: [http://fb.me/QuitNowApp](http://fb.me/QuitNowApp)

Other great apps:
*Apple:* Livestrong MyQuit Coach, My Last Cigarette, Buttout, Quitter, Craving to Quit
*Android:* Cessation Nation

**Figure 3: Post-Intervention Survey**

Post Intervention Survey:

1) Did you use the smoking cessation app or application at all? Yes___ No___
2) Did you find the app useful/helpful? Yes___ No___ N/A___
3) Have you cut back or quit smoking? Yes___ (cutback___ Quit____) No___
4) Would you consider using a smart phone app in the future for smoking cessation or other health issues? Yes___ No___
References:


Increasing Misoprostol Use for Cervical Ripening at St. Clare Hospital -- After performing a literature review and observing the practices of my attendings, I determined that this would best be done by allowing for oral administration of misoprostol. I presented the results of my literature review to the OB committee. I then pulled both financial and medication administration data for the year 2014 from St. Clare’s electronic medical record. I found that 59% percent of cervical ripening was done using dinoprostone, that dinoprostone costs $282.44 per dose (about $9,000/year) while misoprostol is $0.50 per dose, and that in our hospital the time from start of cervical ripening to delivery is 6 hours and 20 minutes longer when dinoprostone is used as compared to misoprostol. I also pooled other hospitals in our rural collective to determine which were administering misoprostol orally and collected sample order sets. Implementation of my proposed order set is pending approval of the OB committee at St. Clare.

I would like to thank Rachel Hartline, together we make a half decent doctor with an amazing wardrobe. I am also grateful to: my fellow residents who inspire me; the faculty of Baraboo and Madison who teach me; the nurses, social workers, and support staff who nurture me; the Madison Gay Hockey Association which helps me maintain my humanity and sanity; and of course my family without whom I would not be the me of yesterday, today, or tomorrow. – Rebecca
Title: Improving compliance with skin-to-skin recommendations at St Clare Hospital.

Background:
"Provision of mother’s breast milk to infants within one hour of birth is referred to as “early initiation of breastfeeding” and ensures that the infant receives the colostrum, or “first milk”, which is rich in protective factors. Current evidence indicates that skin-to-skin contact between mother and infant shortly after birth helps to initiate early breastfeeding and increases the likelihood of exclusive breastfeeding for one to four months of life as well as the overall duration of breastfeeding. Infants placed in early skin-to-skin contact with their mother also appear to interact more with their mothers and cry less.” World Health Organization

Multiple organizations, including the American Academy of Family Physicians, American College of Obstetricians and Gynecologists, American Academy of Pediatrics, and Academy of Breastfeeding Medicine, recommend one hour of uninterrupted skin-to-skin contact between the mother and new baby after all deliveries. Skin-to-skin is considered important to successful early initiation of breastfeeding and is mandatory in baby friendly hospitals. The nursing staff of St. Clare hospital asked that I help improve compliance with this recommendation when queried regarding possible projects. While I focused on compliance after vaginal deliveries, my partner Caitlin Hill, MD, will continue the project with a focus on compliance following cesarean sections.

Objectives: To begin removing barriers to compliance.

Methods:

1. Created knowledge assessment that was administered before and after presentations
2. With Child Birth Center nurse manager, identified order sets that do not support breastfeeding and made revisions
3. Gave two different 45 minute talks, one presented during nursing education and the other during hospital-wide continuing medical education series
4. Distributed dot phrase with skin-to-skin friendly H&P and delivery note
5. Worked diligently to change my own practice

Results: Only results pertaining to NSVDs are included here as Caitlin Hill, MD will be addressing skin-to-skin in the setting of cesarean sections as her project.

<table>
<thead>
<tr>
<th>Nursing Responses</th>
<th>What Percent of our vaginal deliveries comply with skin-to-skin recommendations</th>
<th>What Percent of our c-section deliveries comply with skin-to-skin recommendations</th>
<th>On a scale of 1-10 what is your level of knowledge regarding skin-to-skin</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average</td>
<td>52%</td>
<td>24%</td>
<td>6.8</td>
</tr>
<tr>
<td>Range</td>
<td>10-100%</td>
<td>0-90%</td>
<td>3-10</td>
</tr>
</tbody>
</table>
Conclusions:
While I did not measure the exact compliance before interventions, personally I struggled constantly with nurses and attendings to allow me to leave the baby on the mother’s chest for more than a few minutes. During residency, it was not until my final delivery that I had my first, truly compliant skin-to-skin time. Within the last 2 months an improvement has been made to EPIC and nursing is now required to document in a flow sheet whether skin-to-skin recommendations were followed and justify when they are not. This will allow for better monitoring of compliance in the future. Though much of the pre-test results for nurses showed a wide range of answers reflective of their varying experience, it was concerning that only one nurse knew that deaths had happened during skin-to-skin time. This suggests that even if complete compliance is not achieved, what skin-to-skin time does occur may be more safely performed. I did find it interesting how wide the estimations of compliance with skin-to-skin recommendations varied among nurses. I think that this was a reflection of their general lack of knowledge of the definition of skin-to-skin time, especially as high estimations correlated with generally poor scores. Unfortunately, this makes it difficult to compare pre and post intervention compliance based on this question response. The greatest strength of this project is that nursing requested that I undertake it and is very committed to improvements. I think I could have improved likelihood of success if I had convinced a faculty advisor to also become an advocate as many nurses rightly identified support only by residents as a barrier to change. In addition, I wish that I had collected better data before the interventions.

Acknowledgments:
Thank you to Caitlin Hill for joining forces and making all of this possible. Ann Eglash has spent a significant amount of time teaching me breastfeeding medicine. Dr. Hannah guides me with thoughtful comments and a twinkle in his eye. Without the help and support of the nurses at St. Clare this simply would not have been possible, especially Michelle Johnson and Rebecca Riesterer.

Appendix:

Pre/Post Test:
1. Crying throughout the first hour of life is important because it clears the lungs.
   False
   True
2. Skin to skin should last, uninterrupted until baby is done feeding or for 1 hour, whichever lasts longer
   False
   True

<table>
<thead>
<tr>
<th>Nursing</th>
<th>Physician</th>
</tr>
</thead>
<tbody>
<tr>
<td>-Difficulty in changing routine</td>
<td>Results pending presentation 4/30/15</td>
</tr>
<tr>
<td>-Health concerns with mother and/or baby</td>
<td></td>
</tr>
<tr>
<td>-Lack of education of mothers during prenatal care</td>
<td></td>
</tr>
<tr>
<td>-Lack of education of mothers and discussion after admission and before delivery</td>
<td></td>
</tr>
<tr>
<td>-Mother/Family’s desire for measurements of baby</td>
<td></td>
</tr>
<tr>
<td>-Physician desire to examine at warmer</td>
<td></td>
</tr>
<tr>
<td>-Physician lack of understanding of importance</td>
<td></td>
</tr>
<tr>
<td>-Other family members desire to hold baby</td>
<td></td>
</tr>
<tr>
<td>-Mother’s desire to have baby cleaned off before delivery</td>
<td></td>
</tr>
<tr>
<td>-Lack of attending physician champion</td>
<td></td>
</tr>
</tbody>
</table>
3. Which of the following organizations endorse the goal of skin-to-skin:
   Academy of Breastfeeding Medicine (ABM)
   American Academy of Pediatrics (AAP)
   American Heart Association (AHA)
   Neonatal Resuscitation Program (NRP)
   World Health Organization (WHO)
   American Academy of Family Physicians (AAFP)
   American Academy of Nurses
   American College of Nurse-Midwives
   Academy of Nutrition and Dietetics
   Association of Women’s Health, Obstetrics and Neonatal Nurses (AWHONN)
   Center for Disease Control and Prevention (CDC)
   National WIC Association
   U.S. Breastfeeding Committee
   U.S. Preventive Services Task Force
   U.S. Surgeon General

4. Babies who were placed skin-to-skin are ____ as likely to be breast feeding at 1-3 months of age
   Twice
   Thrice

5. It is important that an accurate weight be documented as soon as possible
   False
   True

6. How many stages have been identified that the baby goes through in first hour after birth
   6
   7
   8
   9
   10

7. If a baby is cold or mildly tachypnic it should be taken from the mother for closer observation and re-warming
   False
   True

8. Skin-to-skin requires more nursing time
   False
   True

9. Which of the following cares can be done while skin-to-skin
   Temperature
   Lung exam
   Cardiac exam
   Bathing
   APGARs
   Placing bracelet
   Trimming cord
   Measuring vital signs
   Hearing test
   IM injections
   Erythromycin in eyes
10. There have been reported deaths of babies while skin-to-skin
   False
   True

What percent of our vaginal deliveries comply with skin-to-skin recommendations: ____
What percent of our c-section deliveries comply with skin-to-skin recommendations: ____
On a scale of 1-10 (10 being expert) what is your level of knowledge regarding skin-to-skin: ____
What are barriers to making skin-to-skin available in the OR?
What are barriers to making skin-to-skin available after all vaginal deliveries?
Skin-to-Skin

Rebecca Pfaff, MD
Caitlin Hill, MD
Baraboo Rural Training Tack

What are the barriers?

• Develop list of concerns
• Informational Session
• Review list of concerns and brain storm together

Concerns

The Fourth Stage

“The process of childbirth is not finished until the baby has safely transferred from placental to mammary nutrition.”

World Health Organization

Organizations Endorsing Skin-to-Skin Immediately After Birth

Academy of Breastfeeding Medicine (ABM)
American Academy of Pediatrics (AAP)
American Heart Association (AHA)
Neonatal Resuscitation Program (NRP)
World Health Organization (WHO)
American Academy of Family Physicians (AAFP)
American Academy of Nurses
American College of Nurse-Midwives
Academy of Nutrition and Dietetics
Association of Women’s Health, Obstetrics and Neonatal Nurses (AWHONN)
Center for Disease Control and Prevention (CDC)
National WIC Association
U.S. Breastfeeding Committee
U.S. Preventive Services Task Force
U.S. Surgeon General

The Ten Steps to Successful Breastfeeding

• Have a written breastfeeding policy that is routinely communicated to all health care staff.
• Train all health care staff in the skills necessary to implement this policy.
• Inform all pregnant women about the benefits and management of breastfeeding.
• Help mothers initiate breastfeeding within one hour of birth.
• Show mothers how to breastfeed and how to maintain lactation, even if they are separated from their infants.
• Give infants no food or drink other than breast milk, unless medically indicated.
• Practice rooming in - allow mothers and infants to remain together 24 hours a day.
• Encourage breastfeeding on demand.
• Give no pacifiers or artificial nipples to breastfeeding infants.
• Foster the establishment of breastfeeding support groups and refer mothers to them on discharge from the hospital or birth center.
What is Skin-to-Skin

- Traditionally describes the placement of a naked infant, occasionally with a diaper or hat on, on a mother’s bare skin, with the exposed/back side of the infant covered by a blanket or towel.

- Current recommendation is for at least one hour of uninterrupted skin-to-skin after vaginal delivery, or until after the first feed, whichever lasts longer.

All infants should have access to immediate SSC after a cesarean section if a spinal or epidural anesthetic is used.

After general anesthesia, the newborn should be placed skin-to-skin as soon as the mother is alert and responsive.


Skin-to-Skin

- Support head and cover it with a hat
- Cover with blanket or towel
- The position should be flexed (fetal position) with maximal skin-to-skin contact
- Cheek to mother’s chest
- Insure airway clear
  - The chin should be kept horizontal to the body, the neck flexed slightly less than the sniffing position
  - Remember obligate nasal breather!!
- Cup buttocks

Cares

- This first period of contact should never be interrupted for the convenience of the staff. Procedures such as vitamin K or erythromycin administration and weighing can be delayed until after the first feeding. There is no indication for bathing or other non-clinical infant-care routines to occur at a given time. Bathing the infant or removing the vernix should be postponed. The scent of the amniotic fluid on the baby’s skin helps the baby to find its way to the mother’s breast, which has the same scent. In addition, bathing unnecessarily exposes the baby to heat loss. An infant’s ability to regulate temperature is undeveloped in the first 24 to 48 hours after birth

- Baby can usually locate the nipple on her own
- Mother may need to move the baby closer to the areola and nipple to start suckling.
- Unnecessary washing of the breast or of the baby’s hands may impede the newborn infant from using its sense of smell to locate the breast.
- All cares can be done on mother
9 Instinctive Stages of Newborn Behavior while Skin-to-Skin

1) birth cry
2) relaxation
3) awakening
4) activity
5) resting
6) crawling
7) familiarization
8) suckling
9) sleep

Stage 1: The Birth Cry
This distinctive cry occurs immediately after birth as the baby's lungs expand.

Stage 2: Relaxation
Newborn exhibits no mouth movements and the hands are relaxed. This stage usually begins when the birth cry has stopped. The baby is skin to skin with the mother and covered with a warm, dry towel or blanket.

Stage 3: Awakening
Newborn exhibits small thrusts of movement in the head and shoulders. This stage usually begins about 3 minutes after birth. May exhibit head movements, open his eyes, show some mouth activity and might move his shoulders.

Stage 4: Activity
Newborn begins to make increased mouthing and sucking movements as the rooting reflex becomes more obvious. This stage usually begins about 8 minutes after birth.

Stage 5: Rest
At any point, the baby may rest. The baby may have periods of resting between periods of activity throughout the first hour or so after birth.
Stage 6: Crawling
The baby approaches the breast during this stage with short periods of action that result in reaching the breast and nipple. This stage usually begins about 35 minutes after birth.

Stage 7: Familiarization
Baby becomes acquainted with the mother by licking the nipple and touching and massaging her breast. This stage usually begins around 45 minutes after birth and could last for 20 minutes or more.

Stage 8: Suckling
Takes the nipple, self attaches and suckles. This early experience of learning to breastfeed usually begins about an hour after birth. If the mother has had analgesia/anesthesia during labor, it may take more time with skin to skin for the baby to complete the stages and begin suckling.

Stage 9: Sleep
The final stage is sleep. The baby and sometimes the mother fall into a restful sleep. Babies usually fall asleep about 1½ to 2 hours after birth.

5 benefits of early postpartum skin-to-skin contact

1) Improves physiologic stability for mother and baby
2) Increases maternal attachment behaviors
3) Protects baby from negative effects of separation
4) Supports optimal infant brain development
5) Increases breastfeeding rates and duration

• https://www.youtube.com/watch?v=ZcG_lGwpXk4 --- medicated versus non-medicated
• https://www.youtube.com/watch?v=m5RLcaK9BYg --- natural c-section
Physiologic Stability

“While in contact with the mother, the infant’s systems are kept at a regular tempo. But apart, the newborn must work doubly hard to maintain physiological harmony.”

Physiologic Stability

- Stabilizes
  - Respiration, oxygenation, blood pressure
- Maintains
  - Glucose levels
  - Temperature
    - Temperature of the mother’s chest will increase by 2 degrees Celsius if the baby is too cool
    - Decrease by 1 degree Celsius if baby is too hot
- Reduces stress hormones through less crying

Physiologic Stability

Observations of Anesthesiologists:
- Mother’s vital signs are usually more stable
  - Temperature
  - Blood pressure
  - Oxygen saturations
- Mother requires less medication:
  - Focused on baby – not surgery
  - Reduced pain and anxiety

“Thank you for bringing the baby to mother so soon after birth. It makes my job so much easier.”
Anesthesiologist, LLUMC-Murrieta

5 benefits of early postpartum skin-to-skin contact
1) Improves physiologic stability for mother and baby
2) Increases maternal attachment behaviors
3) Protects baby from negative effects of separation
4) Supports optimal infant brain development
5) Increases breastfeeding rates and duration

Increases Maternal Attachment Behaviors

- Hormones increased by skin-to-skin:
  - Endogenous opioid peptides
  - Estrogen and progesterone
  - Prolactin
  - Vasopressin
  - Dopamine
  - Oxytocin
Increases Maternal Attachment Behaviors

If baby suckles within first hour, on average the mother has baby in room 100 minutes more each day. At three months post-partum mothers spent more time kissing and looking at the faces of their babies and their babies smiled more and cried less.

5 benefits of early postpartum skin-to-skin contact

1) Improves physiologic stability for mother and baby
2) Increases maternal attachment behaviors
3) Protects baby from negative effects of separation
4) Supports optimal infant brain development
5) Increases breastfeeding rates and duration

Protects Baby from Negative Effects of Separation

• Mother and offspring live in a biological state that has much in common with addiction.
• When they are parted the infant does not just miss its mother. It experiences a physical and psychological withdrawal from a host of her sensory stimuli…not unlike the plight of a heroin addict who goes “cold turkey.”

Protects Baby from Negative Effects of Separation

• Protest - universal infant response to separation
  – Being in the wrong place
  – Outside the newborn’s natural habitat
• Loud cries and intense activity
  – Purpose: attract mother’s attention
  – Instinctive
  – The cry is different and resolves when placed with mother.

Protects Baby from Negative Effects of Separation

<table>
<thead>
<tr>
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<th>Skin-to-Skin</th>
<th>Separate</th>
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<td>Number of Cries</td>
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<td>41</td>
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<tr>
<td>Time Crying</td>
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</tbody>
</table>

5 benefits of early postpartum skin-to-skin contact

1) Improves physiologic stability for mother and baby
2) Increases maternal attachment behaviors
3) Protects baby from negative effects of separation
4) Supports optimal infant brain development
5) Increases breastfeeding rates and duration
Supports Optimal Infant Brain Development

• The baby brain matures by touch.

“The child is using the output of the mother’s right cortex as a template for the imprinting, the ‘hard wiring’ of circuits in its own right cortex, that will come to mediate its expanding affective capacity.”

Supports Optimal Infant Brain Development

• Infants who spend 1-2 hours skin to skin after birth
  – More positive mother-infant interaction 1 year later
  – Better self-regulation 1 year later.

5 benefits of early postpartum skin-to-skin contact

1) Improves physiologic stability for mother and baby
2) Increases maternal attachment behaviors
3) Protects baby from negative effects of separation
4) Supports optimal infant brain development
5) Increases breastfeeding rates and duration

Increases Breastfeeding Rates and Duration

• Decreased time to first suckling
• Improved first latch
• Increased duration of breastfeeding
• Reduced risk for delayed milk production

Increases Breastfeeding Rates and Duration

• Twice as likely to still be breastfeeding at 1-3 months
  – 58% of the participants in the extra-contact study were breastfeeding their babies at three months postpartum, as compared to 26% in the control group.
• Breastfed for an average of 42 days longer

In first 9 months of intervention
  – Increased STS in OR to 60%
  – Increased STS in first 90 minutes to 70%
  – Increased STS in first 4 hours from 60% to 91%
Increases Breastfeeding Rates and Duration
San Francisco General Hospital
15 minutes of Skin-to-Skin in Operating Room

- Supplementation rates
  - 33% - STS in the OR
  - 42% - STS within 90 min but not in OR
  - 74% - No STS within 90 min
- Exclusive breastmilk feeding rates
  - 67% - STS in the OR
  - 58% - STS in recovery room within 90 min (not OR)
  - 26% - No STS within 90 min (not OR or recovery room)

Increases Breastfeeding Rates and Duration
Cesarean-Delivered Newborns
2 hours uninterrupted skin-to-skin initiation mean 51 minutes post-delivery

- More likely to be breastfeeding at discharge
- More likely to be breastfeeding at 3 months
- Mothers in the skin-to-skin group expressed higher levels of satisfaction

Increases Breastfeeding Rates and Duration
Large-scale study in a sub-Saharan African region (rural Ghana)
- Neonatal mortality increased in a dose-response fashion with an increased delay in the initiation of breastfeeding from one hour to seven days.
- 16% of neonatal deaths could have been avoided if all infants were breastfed from day one
- 22% could have been avoided if breastfeeding had been initiated within the first hour after birth.

Increases Breastfeeding Rates and Duration
Famous Observational Study by Righard & Alade
At 2 hours of life:
- 24/38 infants in skin-to-skin group suckling correctly
- 7/34 infants in separation group suckling correctly

What are the barriers?
- Develop list of concerns
- Informational Session
- Review list of concerns and brain storm together

Solutions
• http://www.boba.com/the-second-nine-months

Reach Out and Read and Language Development in Children -- A literature review was conducted to query a Family Physicians Inquiries Network question of whether the office based literacy intervention provided through the Reach Out and Read program promotes language development in children. There was some evidence supporting Reach Out and Read’s ability to improve receptive language development in preschool children. (SOR B, base on limited quality evidence). There was conflicting evidence for improvement in expressive language development. (SOR B, base on limited quality evidence).

Help Desk Answer: Reach Out and Read and Language Development in Children -- A literature review was conducted to query a Family Physicians Inquiries Network question of whether the office based literacy intervention provided through the Reach Out and Read program promotes language development in children. There was some evidence supporting Reach Out and Read’s ability to improve receptive language development in preschool children. (SOR B, base on limited quality evidence). There was conflicting evidence for improvement in expressive language development. (SOR B, base on limited quality evidence).

Christa Pittner-Smith hails from Sheboygan, WI. She earned her bachelor’s degree in Biochemistry from UW-Madison, and went on to complete her medical degree at the University of Wisconsin School of Medicine and Public Health. She is drawn to family medicine for its continuity of care, and she completed a Family Medicine Externship at the Aurora Clinic in Plymouth, WI, where she was able to observe the Patient-Centered Medical Home model of healthcare. She is also attracted to Family Medicine for its emphasis on the health of communities. In her role as Student Director for the Wisconsin Academy of Family Practice, she was inspired by family physicians who were making changes not only at a patient level in their individual clinics, but who were also working towards community changes at a state and national level. As a medical student, she volunteered and served as the Referrals Coordinator for the student-run MEDIC clinics, which provide healthcare to underserved populations in Madison. She also gave presentations on health and anatomy to elementary and middle school students through the organization Doctors Ought to Care. Outside of medicine, Christa enjoys spending time outside with family and friends. She also enjoys distance running, biking, swimming, playing the piano, and reading.

I am thankful for the opportunity to have trained with such exceptional mentors, colleagues, and staff. Thank you to my husband, family, and friends for their continued support!

— Christa
Title: Quality Improvement of Reach Out and Read

Background:

Reach Out and Read (ROR) is a national program that promotes early literacy exposure via distribution of age appropriate books and reading advice at well child visits age six months to 5 years. Reach Out and Read was established in the UW Belleville Clinic in late 2012. For the past two years, I have served as the provider coordinator for our site. In addition, for a six month period during 2014, I co-lead a MOC-qualified Quality Improvement project for ROR.

Objectives:

The objective of the ROR QI project was to educate all providers at our clinic about the mission of ROR, achieve 100% books given at eligible well child checks, achieve 100% reading advice given at eligible well child checks, and increase parental reports of reading to their child at home. I partnered with David Deci, MD to chair this QI project at our clinic. The project was structured over a 6 month period. Each month, I met with our clinic group, employing a plan-do-study-act method to work towards the above stated goals. We also attended month webinars were we shared ideas with other clinics participating in this project across the country. Finally, each month data was collected via a parental survey and analyzed by our group.

Methods:

Each month, surveys were collected from parents at well child checks, tracking parents whose child received a book, parents that received reading aloud advice, and parents who read aloud to their child at least 4 days a week. In addition, number of eligible well child visits and number of books distributed where tracked during the study period. Our work group made the following changes to our reach out and read process: (1) front desk staff made a note on the schedule for all well child visits that were reach out and read eligible (2) doctors and medical assistants (MAs) discussed ROR visits during morning huddles (3) ROR books were placed in clear plastic bags and hung outside of exam rooms by MAs as a visual reminder to providers to hand out books and give reading advice upon entering exam rooms. Reminders regarding ROR and our process changes were shared with all staff and providers at our clinic. In addition, we partnered with the Belleville library to promote their “1,000 Books Before Kindergarten” program by distributing a flyer about this program with ROR books. The library program provided tracking of books read by families with incentives as they worked towards a 1000 book goal.
**Results:**

As seen in the figures below, with our interventions we achieved 100% in distributing books and reading advice during well child visits. We also noted increased number of parents who reported reading to their child more than 4 days a week.

![Graphs showing data on book distribution and reading advice](image)

**Conclusions:**

Through completion of this QI project, our work group learned the value of the plan-do-study-act model to implement quality improvement. Through fine tuning of our ROR process we were able to reinforce the importance of the ROR program to early childhood literature exposure, which has been shown to improve school outcomes and literacy skills throughout childhood. The changes we implemented allowed us to ensure book and reading advice distribution at well child checks. We also saw a modest increase in the number of parents who were reading regularly to their children at home.

**Acknowledgments:**
Reach Out and Read  
David Deci, MD  
Belleville Library
Ecuador Rotation Guide and knee & shoulder exam in Spanish -- As the first group to travel to Santa Domingo, Ecuador to participate in this rural international rotation, we thought it was necessary to develop a rotation guide for future residents. The guide details information about preparation, travel, and specifics of the rotation schedule. It also gives suggestions about activities to do in Ecuador. During our rotation we prepared a lot of teaching for our fellow Ecuadorian residents. One area they requested additional help with was the musculoskeletal exam. Therefore, we prepared in Spanish two videos to leave with them including the knee and shoulder exam. These were reviewed by Dr. Kathleen Carr to ensure accuracy.

Scholarly Project:

Ecuador Rotation Guide and knee & shoulder exam in Spanish -- As the first group to travel to Santa Domingo, Ecuador to participate in this rural international rotation, we thought it was necessary to develop a rotation guide for future residents. The guide details information about preparation, travel, and specifics of the rotation schedule. It also gives suggestions about activities to do in Ecuador. During our rotation we prepared a lot of teaching for our fellow Ecuadorian residents. One area they requested additional help with was the musculoskeletal exam. Therefore, we prepared in Spanish two videos to leave with them including the knee and shoulder exam. These were reviewed by Dr. Kathleen Carr to ensure accuracy.

Trisha Schimek, MD

Projects Completed During Residency:

Community Health Project:

Eat Well to Live Well

Scholarly Project:

Ecuador Rotation Guide and knee & shoulder exam in Spanish -- As the first group to travel to Santa Domingo, Ecuador to participate in this rural international rotation, we thought it was necessary to develop a rotation guide for future residents. The guide details information about preparation, travel, and specifics of the rotation schedule. It also gives suggestions about activities to do in Ecuador. During our rotation we prepared a lot of teaching for our fellow Ecuadorian residents. One area they requested additional help with was the musculoskeletal exam. Therefore, we prepared in Spanish two videos to leave with them including the knee and shoulder exam. These were reviewed by Dr. Kathleen Carr to ensure accuracy.

Originally from Rochester, Minnesota, Trisha completed her B.A. in Neuroscience and Spanish and her M.S.P.H. in Tropical Medicine from Tulane University in New Orleans. She then headed east to Philadelphia where she earned her medical degree from Jefferson Medical College. Trisha brings to Family Medicine a strong commitment to the underserved and a deep love of Latin American culture. Before entering medical school, she spent 6 months as a volunteer with Doctors for Global Health in Chiapas, Mexico. Alongside a supervising physician, she trained Health Promoters in remote communities to perform basic first aid and manage common patient complaints. Then, as a medical student, she volunteered in Guatemala to provide health education classes in Spanish to elementary children, and then later organized a trip back to the country with seven of her fellow students to build stoves and provide medical care to a small rural village. In addition to her global health work, Trisha was a strong advocate for the underserved in Philadelphia. Among other activities, she was a regular volunteer at the student-run free clinic, and she created a weekly health and fitness program for women at an addiction recovery home. When Trisha finds herself with some free time, she loves traveling, volleyball, Latin Dancing, spinning, running, and yoga.
**Background:** Included in the top diagnoses at Wingra are obesity, hypertension, diabetes, and dyslipidemia, all of which are majorly affected by our diet. A group of undergraduate students and two residents worked together to prepare and present monthly nutrition classes held in our clinic’s community room. Classes were advertised among Wingra patients but were also open to anyone from the Madison community.

**Objective:** As a family physician many of the illnesses we treat are a result of poor nutrition and thus the key treatment is learning to eat healthy. However, it can be quicker during a 15-minute visit to prescribe metformin to a diabetic rather than focus on proper nutrition, even though it is an essential part of our patient’s treatment. Thus, the idea of nutrition classes for our patients was to supplement their knowledge and to encourage healthy eating. The undergraduate students were instrumental in helping prepare and advertise the classes. We worked with them to prepare presentation materials, and we were also present during the classes to answer patient’s questions.

**Methods:** Our goal was to make the classes engaging and interactive. Prior to starting them, patients were surveyed on the best times for session and suggestions of topics. Examples of nutrition sessions included eating with diabetes, reducing sugar, non-animal sources of protein, and healthy fats. PowerPoint presentations were used for guidance of the topic, but we encouraged everyone to sit in a circle and share his or her experiences. All sessions had healthy snacks available, some of which correlated with the presented topic. There were also take home brochures with key topics discussed, recipes, and community resources. Sessions concluded with personal goal setting.

**Results:** As a result of our classes being informal and interactive, there was a lot of good discussion and sharing among the participants. I particularly remember a time that we were discussing the health benefits of nuts when one participant said he had bad teeth and thus avoided nuts, to which another participant without any teeth responded that she solved this problem by grinding the nuts up in a coffee grinder. We had many repeat attendees that would then bring family or friends to future sessions. In the beginning, we tried to measure what people learned by having pre and post quizzes, but we found this took away from discussion time and was intimidating for our patients that had poor reading skills.

**Conclusions:** By researching nutrition topics, my knowledge expanded. It was helpful to listen to participants identify common nutrition pitfalls or myths they had about nutrition. This knowledge made my future advice for patients more realistic. We utilized motivational interviewing techniques and helped them identify changes they could make to their current regimen. The biggest challenge we faced was attendance at some sessions. The students worked really hard in advertising during patient visits and calling interested patients with reminders. Overall though, it was clear that people are interested and appreciative of group sessions. They often commented that they wish they had
known or had time to talk with their doctors about how nutrition affected their condition. One direction for future sessions would be to expand on the personal goal setting and to have a formal way to check in with patients about their nutrition goals. Another direction would be to start doing clinic group visits with patients who have the same conditions, such as hypertension or diabetes, so even more time could be spent on education and nutrition.

**Acknowledgments:** Particular thanks to the Wingra health coaches and Jessica O'brien for all their help in session preparation and advertising.
Understanding family medicine in an international context: an exchange program between US and Ecuadorian family medicine residents -- With the support of Dr. David Gauss and the UW Department of Family Medicine, three other senior residents and I traveled to Santo Domingo, Ecuador to work in a newly established teaching hospital for one month. We treated patients in the inpatient, outpatient, and emergency room setting, and we enhanced our medical Spanish skills in the process. In addition, we gained a better understanding of the Ecuadorian health system and provided our Ecuadorian colleagues with a basic understanding of the American health care system. While working with both US and Ecuadorian Family Medicine residents, we attended many educational events and, in turn, headed both informal and formal educational sessions to highlight important topics in medicine including management of heart failure, comprehensive diabetes management, how to utilize medical resources in the clinical setting, and how to perform the musculoskeletal exam. We used multiple media to accomplish these tasks, including chalkboard discussions, powerpoint presentations, handouts, and instructional videos in Spanish. After returning to the United States, many of us are still in contact with our Ecuadorian colleagues, and we hope to continue to learn from each other as we develop our various interests in family medicine.

I would like to thank my wonderful family, close friends, colleagues, DFM faculty and staff, patients, and my partner, Emily Quetel, for supporting me throughout residency and helping make this journey an unforgettable experience. –Sagar

Sagar Shah’s diverse and global interests are apparent in his bachelor’s degrees in history, world religion, and creative writing. As an undergraduate at Northwestern University, his passion for human rights led him to volunteer with the International Rescue Committee, teaching ESL and job-training skills to Colombian, Russian, Afghani, and Somali-Kenyan refugees. During the summer before his senior year, he also traveled to India as a research fellow to study the initial response of NGOs to the tsunami disaster. Sagar then continued his work with refugee populations in Atlanta, Baltimore, Washington D.C., and Philadelphia. As a medical student at Jefferson Medical College, he assisted with the formation of a new student-run Refugee Health Clinic in Philadelphia. He also received an international grant to document the experiences of victims of torture among refugees and internally displaced Burmese citizens in Mae Sot, Thailand. During his residency in Family Medicine, Sagar continued to show interest in refugee health while also developing a new passion for understanding food insecurities in his local community and nutrition education. Following residency, Sagar will be pursuing a fellowship in Integrative Medicine through the University of Wisconsin and a master’s in public health through Emory University. In his free time, Sagar’s hobbies include photography, billiards, traveling, kayaking, hiking, cooking vegetarian food, watching movies, and following all Chicago sports.
Project title: Weekend backpack: a focus on improving food insecurities in elementary school children

Background: A recent WHO health impact assessment determined that “low education is linked with poor health, more stress, and lower self-confidence.” The WHO assessment further explained that greater educational achievement is associated with longer life, better health outcomes, and increased health-promoting behaviors. In fact, it was estimated that social determinants of health such as education and poverty have a larger impact on overall well-being than conventional medical intervention through office and hospital visits to health professionals. The importance of focusing on social determinants of health has especially become apparent in Madison following the release of the Race to Equity report, which highlighted startling gaps in educational achievement, incarceration rates, and overall health outcomes between different races in the city. Based on this data, the Northeast Family Medicine Clinic has established a long-term community partnership with the Lakeview Elementary School, a socially and racially diverse school located just minutes from the clinic. With greater than seventy percent of the children in the school living below the poverty line, and seven percent of the children categorized as homeless for up to eighteen months, food insecurity has become the primary focus of our community project.

Objectives: Our project focuses on accomplishing two goals. In the short term, we hope to provide food for five homeless families on weekends and holiday breaks for the remainder of the school year. Our long-term objective is to establish a self-sustaining food pantry within the school by the beginning of the 2015-2016 academic year and complement food provisions with basic nutrition education. We have formed a team which includes three generations of residents at Northeast Family Medicine Clinic, two medical students supported through a DFM summer research grant, and two faculty members (Drs. Sarina Schrager and Jennifer Edgoose). Rachel Lee and I served as the primary liaisons between the clinic and the school for the project. We both drafted grants to help raise funding for food on weekends, purchased and delivered food, and provided educational presentations to the clinic about the project.

Methods: In order to establish a partnership between the clinic and elementary school based in mutual trust and support, we attended monthly “family nights.” During these school-based, educational themed nights, we assessed the needs of parents and school personnel, and at the first family night, we learned that food insecurity on weekends and holidays was a primary concern among children in the school. Following this realization, we met with multiple community members including a local grocery store, food shares, school social workers, and other community groups who have already carried out our objective with other schools in the area, and we started to create a long-term sustainable food service plan. We complemented this approach by creating a database of articles and studies on the topic of food insecurity, and our medical student teammates were very helpful in providing ample information about successful school-based interventions. Finally, we took advantage of existing crowd-sourcing platforms to raise additional funds for weekly food provisions.

Results: Thus far, we have provided five families with supplementary food for multiple weekends and two long holidays since December of 2014. We have received excellent feedback from these families stating the additional food source has been beneficial. We believe that this project has also helped create a stronger bond between the clinic and the elementary school and may facilitate additional projects for residents working with Lakeview in the future. On a personal level, I have become more aware of the stress created by poverty and food insecurity, and I will make this topic a focus of my practice in the future.

Conclusions: Based on the information gathered in our database of articles and through meetings with community members, we believe that we are closer to creating a sustainable food provision service for the school. Along the way, we faced multiple challenges, including effectively communicating with community members, establishing long-term donors, completing grants in a timely manner, and allotting time during residency to buy and deliver food. In the future, some of these challenges can be overcome by expanding the scope of the team to include other health professionals and community members rather than relying on erratic residency schedules for free-time to complete the project.

Acknowledgments: I would like to thank Rachel Lee, Jennifer Edgoose, Sarina Schrager, Northeast Family Medicine Clinic, Lakeview Elementary School, UW Department of Family Medicine, UW medical school, and the many generous donors to our project for helping impact the health of the Lakeview community.
“Do probiotics decrease the frequency of URI’s in young children?” Evidence-Based Practice (EBP) Help Desk Answer (HDA)

Community Health Project:

“Stretch, Breathe, Relax”: Starting a Yoga/Meditation Class for Patients at Wingra Clinic – At Wingra Clinic, we serve many patients who are struggling with illnesses affected by mental, emotional and/or physical stress. Healthful stress management involves practices that will calm the nervous system in a sustainable, balanced way that supports “whole health.” Techniques from yoga and meditation are highly effective in this regard, and are supported by a growing body of scientific research. However, the majority of our patients do not have access to convenient and/or affordable ways to learn these techniques. In an effort to address this disparity and provide patients an opportunity to learn and practice mind-body techniques for managing stress, I am starting a pilot class at Wingra, titled, “Stretch, Breathe, Relax,” open to both patients and staff on a drop-in basis. My initial plan was to have this well underway by now, but it took several months to receive administrative and legal approval from our various parent organizations; thus, things are just now getting started. My plan is to gather some preliminary data/feedback from these pilot classes to inform a more extensive and thorough project involving mind-body classes during my Integrative Medicine Fellowship.

I am grateful for the inspiration and guidance of the mentors I’ve been so fortunate to learn from during my residency training. Thank you to my wonderful residency-mates/friends for being so awesome. Many, many thanks to my wife, Jen, and daughter, Elsa, for their loving support, patience, and tolerance of the long days and nights spent working at the hospital, staying up late finishing clinic notes, and otherwise just working so much of the time during these past 3 years. I love you! —Jonathan
FPIN “Help Desk Answer” article, submitted 2/15/2015:

Do probiotics decrease the frequency of URI’s in young children?

Authors: Jonathan Takahashi, MD, MPH; David Rakel, MD
Institution: University of Wisconsin Department of Family Medicine

Bottom Line:
Daily probiotics administered during cold/flu season have the potential to decrease the incidence of URI’s in healthy preschool- and kindergarten-age children. (SOR: B, multiple RCT’s of moderate quality).

Case Example:
During a well child visit, the mother of a 5-year-old boy and a 3-year-old girl laments that her kids “are always getting colds during the winter,” and she wonders if there is a medicine she can give them “to make them catch colds less often.”

Evidence Summary:
In a 2009 RCT, 326 healthy children in a Chinese preschool were given powder containing either a single strain of L. acidophilus (10^{10} CFU’s), a combination of L. acidophilus and Bifidobacterium lactis (10^{10} CFU’s), or placebo mixed with milk twice a day, 7 days/week, for 6 months. Data was recorded by the child care centers (weekdays) or parents (weekends). Statistical analysis required adjustment for several factors unequally distributed between groups, including average age (approximately 4-5 months older in placebo group). 24% of participants were lost to follow-up. While the adjusted odds ratio (OR) of the composite frequency of ever experiencing a URI symptom over the 6-month period (fever, rhinorrhea, cough) did not reach statistical significance for L. acidophilus alone vs. placebo, for the combination probiotic it was 0.55 (95% CI 0.28, 0.99).\(^1\)

A 2010 RCT involved 638 healthy children ages 3-6 in daycare/schools in the Washington, D.C. area. Participants were randomized to a probiotic dairy drink, DanActive, containing Lactobacillus paracasei (10^8 CFU’s), Streptococcus thermopiles, and Lactobacillus bulgaricus (min. 10^7 CFU’s); or an identically-flavored and appearing placebo drink 5 days/week for 90 days. Data was collected by health-related symptom reports by parents on a weekly basis. The intervention group had 94% without significant missing data, and the control group had 90%; analysis was by intention to treat, and data were presented in as episodes of URI per 100 person-days. The incidence rate ratio (IRR), favoring the probiotic group, was 0.82 (95% CI 0.68, 0.99).\(^2\)

In a 2010 RCT, 281 children ages 13-86 months (mean 51.9 months) in four day care centers in Croatia were given randomized to either L. rhamnosus GG (10^9 CFU’s in fermented milk product) or the same fermented milk without probiotic, every day for 3 months. Respiratory infections were confirmed by local general practitioners. 41.7% of the probiotic group experienced a URI compared to 66.9% of the control group, relative risk (RR) 0.66 (95% CI 0.52, 0.82), NNT 5.\(^3\)

A 2012 RCT involving 523 children ages 2-6 attending day care centers in Finland compared 3 times daily for 5 days weekly administration of milk containing L. rhamnosus GG (10^8 CFU’s) and normal milk over 28 weeks. Outcomes were measured by questionnaires completed by physicians during visits that parents deemed necessary based upon the child’s symptoms. The number of URTI episodes per month was 0.59 (95% CI 0.55-0.63) in the probiotic group versus 0.55 (95% CI 0.52-0.59) in the placebo group, for an IRR 1.06 (95% CI 0.96-1.16). Compliance monitoring using fecal samples found that, while 95% of the children in the intervention group had GG detectable in their stool at the end of the trial, 31% of the control group did, as well; the authors hypothesize that this may be due to the wide availability and use of products containing GG by the general population in Finland.\(^4\)
Overall, there is moderate-quality evidence to suggest that a daily probiotic supplement in a milk beverage containing *Lactobacillus rhamnosus GG* or combination probiotic, such as with multiple strains of *Bifidobacterium* and/or *Lactobacillus*, in a total concentration of at least $10^8$ CFU’s or greater, has the potential to decrease the incidence of URI’s in healthy young children. Of note, these strains and/or concentrations are not necessarily included among traditional yogurt cultures, so such a supplement is not equivalent to simply “eating yogurt.” The one trial described above that did not find positive results, the 2012 RCT in Finland, did not exclude patients with pre-existing conditions and/or who were previously consuming probiotics. While this has implications for future research and literature reviews, it is not possible to determine which, if any, of these factors may have impacted the outcome of this trial.4 The precise mechanism for how probiotics may function to prevent URI’s remains unknown, but hypotheses include mediation through the gut mucosal system to modulate immune responses.1,4

References:


CME Question:

There is specific evidence to suggest that daily probiotics during cold and flu season may reduce the frequency of URI’s in which population?

A. Adults with COPD  
B. Children with asthma  
C. Unvaccinated children with history of recurrent otitis media  
D. Healthy preschool-age children
Clinical question:
Is exercise an effective intervention for preventing falls in community dwelling older adults?

Authors: Zachary Thurman, MD; Irene Hamrick, MD
Institution: University of Wisconsin Department of Family Medicine

Case Example:
A 68 year-old female with well-controlled diabetes and hypertension presents with her daughter to talk about preventing falls. They are curious to find out if there is anything they can do to prevent her risk of “falling, breaking a hip and stopping that downward spiral.”

Evidence Based Answer:
Exercise as a single intervention or as a part of a multifactorial program has been proven to decrease falls in the elderly. [SOR: B, based on multiple systematic reviews of RCT].

Evidence Summary:
Adults 65 years or older represent the fastest growing portion of the US population. This is also the age group in which falls are most likely making their prevention an especially important issue to address. Several studies have investigated the strategies to help prevent falls with mixed and oftentimes inconclusive results.

A 2012 Cochrane review examined 159 randomized controlled trials of interventions for preventing falls in 79,193 older, community-dwelling adults. Exercise as single intervention (59 trials) or multifactorial programs (40 trials) were compared with control groups consisting of either ‘usual care’ or placebo interventions not expected to reduce falls. Group and home-based exercise significantly reduced number of falls (eg. Falls per person year) (n=3622, RaR 0.71 95% CI 0.63-0.82; n=951, RaR 0.68, 95% CI 0.58-0.60, respectively) and risk of falls (Eg. Number of patients falling) (n=5333, RR 0.85, 95% CI 0.76-0.96 and n=714, RR 0.78, 95% CI 0.64-0.94, respectively). Six trials also investigated the role of Tai Chi and it was found that while rate of falls was not significantly reduced (n=1563, 95% CI 0.52-1.0), the risk of falling was (n=1625, RR 0.71, 95% CI 0.57-0.87).1

The 2010 U.S. Preventive Services Task Force systematic review of 61 articles that included 16 trials on exercise, found that there was a small but statistically significant impact on risk for falling high intensity exercise (RR 0.85, 95% CI 0.78-0.92).2

The current CDC guideline on falls and their prevention recommends regular exercise as a means to preventing falls. Particularly, the guideline suggests that exercise be aimed toward strength and balance training that increase in difficulty over time.3

There have been many studies conducted to evaluate fall risk modification in older adults but the aggregate data is difficult to compare. Of the studies examined, no single type of exercise or therapy was recommended; but there is moderate quality evidence that simply doing some amount of routine exercise or therapy has repeatedly shown to reduce fall risk.1-3

References:
CME Multiple Choice Question
In a 68 year old patient with mild frailty but no other significant co-morbid conditions, what is the most effective method to reduce falls?

A. Vision screening
B. Footwear modification
C. Routine exercise regimen
D. Tai Chi
E. Vitamin E supplementation
A Family Practice Inquiry Network (FPIN) Help Desk Answer: “Is exercise an effective intervention for preventing falls in community dwelling older adults?” -- Adults 65 years or older represent the fastest growing portion of the US population. This is also the age group in which falls are most likely, making their prevention an especially important issue to address. Several studies have investigated the strategies to help prevent falls with mixed and oftentimes inconclusive results. However, exercise as a single intervention or as part of a multifactorial program has proven to decrease falls in the elderly most reliably. Strength and balance training seem to be the most effective types of exercise to prevent falls in older adults.

Zack Thurman, MD

Projects Completed During Residency:

Community Health Project:
Starting the Conversation: Long-Acting Reversible Contraception and Preconception Counseling

Scholarly Project:
A Family Practice Inquiry Network (FPIN) Help Desk Answer: “Is exercise an effective intervention for preventing falls in community dwelling older adults?” -- Adults 65 years or older represent the fastest growing portion of the US population. This is also the age group in which falls are most likely, making their prevention an especially important issue to address. Several studies have investigated the strategies to help prevent falls with mixed and oftentimes inconclusive results. However, exercise as a single intervention or as part of a multifactorial program has proven to decrease falls in the elderly most reliably. Strength and balance training seem to be the most effective types of exercise to prevent falls in older adults.

Zack Thurman, MD earned his B.A. in Zoology from Miami University in Ohio and completed his medical degree at the University of Cincinnati College of Medicine. He brings to family medicine a defining commitment to caring for the underserved. During college, he spent eight weeks in Belize as a pre-medical volunteer, where his eyes were opened to global disparities in health. Then, after graduation, he volunteered as a summer intern in inner-city Detroit, working as lead instructor at a kids day camp and living in the impoverished “Third Street” neighborhood. Zack carried these formative experiences with him into medical school, where he has been an active volunteer at community health fairs, free clinics, and local initiatives to combat poverty and health inequality. His most sustained advocacy work has been with the Walnut Hills Fellowship, a Christian neighborhood ministry focused on community support, family advocacy, and affordable housing. In addition, he completed an eight-week internship at a Federally Qualified Health Center in Cincinnati, and he participated in a week-long project focused on serving rural homeless populations in and around Athens, OH. When taking a break from his work on the front lines, Zack enjoys running, bicycle commuting, reading, fishing, and going on adventures with friends.

Wow, we’ve all made it. It’s hard to believe that our journey starting during our undergraduate years has finally come to an end as we complete residency training. My journey has not been alone and for that I am so grateful. I owe a lifetime of gratitude to my parents who have excitedly listened to the latest developments along the way and freely offered their love and support without question. And for the last five years, God has introduced a new and incredible source of love, support, companionship and grounding in my wife, Brittany. Anyone who has had the privilege of spending time with her will agree that she is truly a bright spot in the oftentimes grey of residency (let’s be honest, first year is really hard; I don’t think I would have made it without her). Lastly, I am honored to have gone through this journey with my dynamic and ever-supportive residency classmates, faculty and staff. In particular, I am grateful to the bike gang and the never-ending adventures we have shared. What a gift it was to spend these formative years in such a place with such people! It is with heavy hearts we will leave Madison for Cincinnati -- thank you all for being a part of our story. —Zack
Community Health Project
Zack Thurman

Title: Starting the conversation: long-acting reversible contraception and preconception counseling

Background: There is a large population of women between the ages of 18-45 at Northeast (NE) Clinic, for nearly all of whom fertility and contraception are important issues. A multidisciplinary team including receptionists, an office manager, lab staff, licensed practical nurses, medical assistants, a nurse practitioner and several physicians composing the Orange Team at NE clinic noticed a need for more conversation on the topic of family planning.

Objectives: Our goal was to increase awareness and discussion surrounding family planning and contraception. I created handouts on both long-acting reversible contraception (LARC) and preconception counseling to be disseminated to patients who met criteria for the One Key Question.

Methods: The created forms were given to women 18-45 presenting to clinic for physical exams. Nursing staff would ask the “One Key Question” as proposed by the Oregon Foundation for Reproductive Health to all patients who met these criteria. The question was simply: “Would you like to become pregnant in the next year?” If yes, a preconception handout was given; if no, a handout on LARC options was given. The patients’ responses were documented in Epic and a conversation was then initiated between patient and provider based on response.

Results: This project was valuable for the education of support staff and the nurses about the nuances and indications of various forms of LARC. Furthermore, although the project is still in its infancy, numerous patients have been provided more pointed counseling on these two topics. It was found that very few women in this age group present for physical exams so total number of handouts given were similarly few.

Conclusions: This project provides two valuable handouts that can be used by providers when addressing these issues of great importance. Oftentimes it is easier to promote discussion with such a tool and in the end, more women will be more informed about their options. In the future, it would be interesting to see if instituting the One Key Question into well-woman exams influences rates of unplanned pregnancy and LARC placement. The obvious obstacle is the process of starting this conversation so we have considered expanding the question into more than physical exam visits.

Acknowledgements: I would like to thank Dr. Sarina Schrager for her help with initial planning and idea generation. Furthermore, I am indebted to all of the members of the Orange team including Jo Ann Wagner-Novak, APNP and Lisa Anderson, MA who were instrumental in the revision and layout of the handouts.
If you plan to try getting pregnant in the next year or if you are not using birth control, there are a number of things to think about in planning for a baby.

1. **Reproductive History**: Have you been pregnant before? How did that pregnancy go? Share any problems or hard things about previous pregnancies.

2. **Medical History**: Do you have any health problems? Do any sicknesses run in your family? A few examples are diabetes, high blood pressure, or bleeding problems.

3. **Medications**: Do you take any medicines? How about herbs or supplements?

4. **Substance use**: Do you smoke? Use alcohol? How about other drugs? Any of these are extremely harmful to a growing baby and should be avoided at all costs as you prepare to become pregnant.

What you can do now to make sure you are as healthy as possible before you become pregnant:

- Talk to your healthcare provider about any health problems you have or medications you take to make sure these are safe for pregnancy.
- Start taking a daily multivitamin with 400-800 micrograms of folic acid – this helps with baby spinal cord development.
- Begin an exercise routine. Walking, running, swimming, bicycling are all good options.
- Follow a healthy diet.
  a. At least three servings of vegetables
  b. At least two servings of fruit
  c. Increase your water intake to no less than 8 cups daily
- Work to stop smoking, this is one the MOST IMPORTANT things you can do before becoming pregnant. Your provider or our health educator can help!
- Stop drinking alcohol and using other illegal drugs.
- Look for new ways to decrease your stress level. Meditation, yoga, prayer and journaling can all help.
Long acting reversible contraception (LARC) is a way to prevent pregnancy that is not permanent. These are the most effective forms of birth control. There are two kinds: the IUD and the implant.

Other kinds of birth control work well too, but it is easy to forget to take you pill or remember to come in on time for your Depo shot. You still need to remember that LARC will not protect you from sexually transmitted infections (STI) or HIV. Both of these LARC methods are available here at Northeast.

**IUD:** The IUD (intrauterine device) is a small T-shaped device that fits in the uterus and prevents pregnancy. There are two kinds: hormonal and non-hormonal. These both prevent pregnancy by keeping sperm from fertilizing eggs and by keeping fertilized eggs from implanting. An IUD is placed in the uterus during a pelvic exam and takes about 10 minutes to place. The most common side effects are cramping with placement and a change in menstrual (period) bleeding. If you decide later that you would like to become pregnant, the IUD can be taken out and your ability to get pregnant will not decrease.

- **Hormonal (Mirena)**
  - 99% effective
  - Releases small amounts of the hormone levonorgestrel
  - Can be left in for 5-7 years

- **Non-Hormonal (Paragard)**
  - 98% effective
  - Contains copper rather than hormone
  - Can be left in for 10-12 years

**IMPLANT:** The implant (Nexplanon) is a small plastic rod about the size of a matchstick. It is placed under the skin in the upper arm. Numbing medicine is used before the implant is placed. It only takes about 5 minutes to put in and can be done during an office visit. The most common side effect is a change in menstrual (period) bleeding. The hormone in the implant stops pregnancy by stopping ovulation and stopping sperm from reaching the egg.

- **Implant**
  - 99% effective
  - Releases small amounts of hormone (etonogestrel, a type of progestin)
  - Can be left in for 3 years

- Northeast clinic also offers vasectomies for male partners as a non-reversible option.¹

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¹ Fact Sheet: Copper IUD [http://www.reproductive.access.org/fact_sheets/factsheet_iud_copper.htm]
Fact Sheet: Progestin Implant [http://www.reproductiveaccess.org/fact_sheets/factsheet_implant.htm]
Fact Sheet: Progestin IUD [http://www.reproductiveaccess.org/fact_sheets/factsheet_iud_progestin.htm]
Mirena [www.mirena-us.com](http://www.mirena-us.com) and Nexplanon [www.drugs.com/pro/nexplanon.html](http://www.drugs.com/pro/nexplanon.html)
My scholarly project is an FPIN Help Desk Answer (HDA) with Dr. Lee Dresang examining the following question: How much of a discrepancy between the estimated date of confinement (EDC) by last menstrual period and by ultrasound indicates using the ultrasound EDC. Our HDA (which is still in progress) summarizes a guideline for redating a pregnancy based on gestational age range and discrepancy between LMP and ultrasound dating presented in the ACOG Committee Opinion “Method for Estimating Due Date” (October 2014). Additionally, our HDA reviews an article reporting decreased rates of post-term induction for pregnancies dated by early gestation US rather than LMP.

Thank you to my wife, Meghan Salmon, who has provided so much support for me during residency, and who has been an amazing mother to our daughter Audra (particularly during many long weeks of nights and inpatient when I was not always able to provide as much support as a father as I would have liked). — Aistis

Aistis Tumas, MD grew up in rural communities in Idaho, Wyoming, Colorado, and Wisconsin, where he witnessed early on the pivotal role a committed family physician can play in medically underserved areas. After completing his B.A. in Chemistry from Carleton College, he worked as an Environmental Educator in Southeast Michigan for two years before entering medical school at the University of Wisconsin School of Medicine and Public Health. He naturally gravitated towards Family Medicine as the best fit for his diverse interests in obstetrics, hospital medicine, end-of-life care, wilderness medicine, and care for the underserved. During medical school, he served as the Community Coordinator for Doctors Ought to Care, a group that promotes health and wellness to K-12 students through presentations by medical students. He also spent five weeks in southern India volunteering in a clinic for HIV positive patients. When not in the hospital or clinic, Aistis enjoys photography, writing, and spending time outdoors, whether training for a Nordic ski race, rock climbing, playing ultimate Frisbee, or going on a long bike ride with friends. He has also completed three wilderness medicine races and served as a student leader for UW’s Wilderness Medicine elective course.
Aistis Tumas - Community Project

Title: Encouraging Healthy Eating Choices and Community Engagement Through a Clinic Garden

Background: Belleville Family Medicine has two raised beds built by community volunteers with donated materials. I partnered with two teachers at Belleville High School to engage high school horticulture students in planning and planting these raised beds over two growing seasons. Additionally, I recruited a Master Gardener from the community to provide planning expertise, and involved staff, residents, and faculty at the clinic in watering and maintaining the garden with donated time. Produce from the garden was distributed for free to patients in the clinic waiting room.

Objectives: The main objective of this project is to model and encourage the eating (and growing) of healthy produce while sustainably building a partnership with community volunteers. Additional objectives include providing healthy produce to patients, promoting healthy eating choices, and engaging volunteers in educational activities (garden planning and planting, raised bed building).

Methods: I conducted an Internet and literature search to identify other clinics with gardens and learn from these pre-existing models. I communicated with community gardening organizations in Madison for advice on building and maintaining garden projects. I advertised in the Dane County Master Gardener newsletter to recruit volunteers, and recruited one volunteer Master Gardener who provided advice on plant selection and planting dates and drafted a blueprint for an expansion of the current community garden if desired in the future. I organized a schedule for clinic staff, faculty, and residents to water and maintain the garden. I partnered with two Belleville High School teachers and their horticulture class, whose students planned and planted the existing raised beds and are currently exploring building a wheelchair accessible raised bed for the clinic garden.

Results: The Belleville High School teachers and students have been enthusiastic about the project and plan on remaining involved in future years, which is a valuable partnership for Belleville Clinic. Produce was provided to patients for free in the clinic waiting room, and clinic staff have shared some encouraging and warming stories: children munching on carrots and beans prior to well child visits, an elderly couple excited to cook beets for a dinner (they reported beets were a favorite food they had not had in several years), patients expressing gratitude for produce.

Conclusions: Engaging and partnering with community volunteers to promote gardening and healthy eating was the most gratifying aspect of this project. There were many challenges I encountered, including initially planning too large an expansion of the garden (which I had to table in 2014 due to time constraints; this growing season we are planning a wheelchair accessible raised bed build) and under-alloacting volunteer time dedicated to weeding the raised beds (some plant crops were lost as a result). An additional goal I have for the future is to develop educational handouts (perhaps as part
of a high school health class project) such as recipes or produce calendars to be given out to patients as a supplement to the produce.

**Acknowledgments:** Melissa Knudson, Belleville High School, and her horticulture class students; Eric Schmidt, Master Gardener; Peggy Soehnlein, Clinic Manager, Belleville Family Medicine; and the staff, faculty, and residents at Belleville Family Medicine who donated time watering and weeding in the clinic garden.