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# Population Health Matters Quarterly Publication

**GUEST EDITORIAL** •

## **The Population Health Revolution**

A quiet revolution is underway. It may not be televised, but it's happening on computer screens, in doctor's offices, hospitals, pharmacies, public parks, private homes and communities across the nation. Population health is a truly revolutionary means of tackling the twin dilemmas plaguing the US health system: high costs and poor outcomes. Like it or not, change is occurring, but we won't know the final outcome until the smoke clears.

The seeds of every revolution are sown years, if not generations, before they actually start. Here in Philadelphia, our nation's founders embraced and adapted a system of government born centuries earlier in the citystates of ancient Greece. Population health is a revolution born of the long-standing public health concept that collective community action improves health outcomes. It's also an old idea that dates back to the very dawn of civilization. Old Testament religious edicts mandating the specific management of people with leprosy and contaminated homes were the public health laws of the time; regulating individual behavior to prevent the spread of communicable disease.

Even though medical science has defeated many ancient scourges, we now face other challenges. The financial trajectory of our current health care system, driven largely by the increasing cost and volume of medical

treatment, is unsustainable. Unfortunately, McGinnis and colleagues estimate that improving clinical care will forestall only 10 − 15% of the preventable deaths. Better and more efficient doctors, hospitals and medicines are not enough to bridge the gap because the vast majority of premature deaths are influenced by ministrations not found in a treatment room or hospital ward. To achieve real change, we need to engage more powerful drivers of population health outcomes: lifestyle, living conditions and the social determinants of disease. Despite the potential impact, only about 5% of all health expenditures are dedicated to health promotion and disease prevention activities. However, the tide is turning.

The very name of the vast health reform bill – the Patient Protection and Affordable Care Act (more commonly known as the ACA or "Obamacare") – embraces the dual notions of effectiveness and efficiency, and includes many provisions designed to encourage providers to adopt a population health approach. The 2010 law realigns economic incentives to hold providers accountable for their patients' outcomes through new entities such as Accountable Care Organizations, Patient-centered Medical Homes and other shared-risk arrangements. Private insurers are also jumping on the accountable care bandwagon, building a critical mass for change.

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If you've been around awhile, it may seem like déjà vu. Similar approaches were tried in the 1990s when managed care was all the rage. Instead of charging an à la carte fee for each service rendered, primary care doctors were allocated a fixed amount for each patient under their care—capitation. It didn't stop medical inflation or improve outcomes. Neither did other cost-control mechanisms such as pre-certification, limiting specialist care, retrospective review, etc. The reason was simple: the main goal of managed care was to reduce cost. Improving overall health was an afterthought. Furthermore, under this system, the insurer reaped most of the benefits at the expense of both patients and providers.

This time it's supposed to be different. Providers will receive a piece of the savings from reduced costs, but—and this is an important distinction—they are also more accountable for their patients' health outcomes. The strong incentive to scrimp on care is counterbalanced by a loss if the patient's health status suffers. New care delivery structures allow doctors to coordinate and manage the patient's care more effectively as well as share in both the risk and rewards. The ACA's yin and yang will hopefully achieve economic nirvana: better outcomes at lower costs.

Population health is seen as a means to this end. But before we can act, we must first reconcile two different notions of the term itself. Kindig and Stoddart define population health broadly, consistent with the public health paradigm, as "the health outcomes of a group of individuals, including the distribution of such outcomes within the group." This is health from the 30,000-foot view.

Health care providers and the consultants helping them adapt and thrive under Obamacare view population health at ground level. Their "population" is limited to those under active care and the interventions are limited to services they already provide. For instance, the question is less about why the population has high rates of diabetes and more about how to ensure every person with diabetes in the practice receives timely and effective care. This narrow view of population health won't be enough to truly bend the cost curve. We must think beyond the walls of the clinic and address the underlying determinants of poor health, even if they seem unrelated to health care. Providers who can crack this code will be rewarded with healthier patients and, in this new era, greater income.

Adopting this new paradigm will not be easy. I see my students—especially the clinicians—struggle with this different way of thinking. It clicks when they realize they're in the business of improving health by any means necessary. In this new world, the emergency department physician helps local government identify unsafe routes to schools and the pharmacist profits by advising patients on healthy eating. They understand that providers can and should share in the gains from a reduction in health care costs they help to bring about.

The Population Health revolution is underway. Our opportunity and challenge is harnessing the momentum to build a financially sustainable national health system that promotes health, prevents disease and improves health outcomes for all Americans.

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### **Looking for Pharmacy CE Credit?**

The Jefferson School of Population Health and the Department of Pharmacy of Thomas Jefferson University Hospital have developed a series of Pharmacy CE programs for hospital pharmacists. These 1-hr on-demand programs, led by hospital pharmacists, feature key topics identified by hospital leaders and pharmacists as being essential for pharmacists.

Topic areas include: Cardiology, infectious disease, critical care, oncology, endocrinology, neurology, patient safety and pharmacy practice.

Participants may register for courses individually. Multi-course subscriptions are available for hospitals and health systems. For more information please visit: http://www.jefferson.edu/population\_health/professional/continuing-pharmacy-education.html or contact Melissa Horowitz at Melissa.horowitz@jefferson.edu.

## JSPH Announces Population Health Certificate and Population Health Academy Programs

JSPH offers two very unique educational opportunities in Population Health specifically designed for busy health care professionals who want to lead the way in the evolving health care landscape.

#### Population Health Certificate

Jefferson's Graduate **Certificate in Population Health** is intended for current and emerging leaders who want to thrive under Health Reform and implement real world solutions. This is a 21-month long program that includes 5 online courses (15 credits).

#### The Certificate will enable you to:

- Define the population health paradigm and its relationship to the chronic care model.
- 2. Describe ways in which a population health perspective reorders existing healthcare priorities and establishes new priorities in areas such as prevention, evidence-based practice, comparative effectiveness, public health and health policy.
- Identify and address key determinants of population health outcomes.
- 4. Identify and characterize key stakeholders, including governmental and private sector institutions, and analyze how their complex relationships influence population health outcomes.
- 5. Analyze the impact of health care and health services on population health outcomes and identify strategies for improving healthcare quality and safety.
- 6. Analyze the relationship of population health outcomes to health economics and to value in health care.

#### Curriculum

- · Population Health and Its Management
- · U.S. Healthcare Organization and Delivery
- · Intro to Healthcare Quality and Safety
- · Chronic Illness Prevention and Chronic Care Management
- · Intro to Health Economics and Outcomes Research

#### **Admissions Considerations**

- · Bachelor's degree with GPA of 3.0
- · GRE *or* other graduate entrance exam *or* graduate degree *or* 9 graduate credits

## Click the Dates Below to Register for Population Health Certificate Upcoming Online Information Sessions:

**November 20, 2013** 12:00 pm – 1:00 pm

**February 12, 2014** 12:00 pm - 1:00 pm

#### **Population Health Academy**

As the only School of Population Health in America, JSPH's mission is to help prepare the next generation of health leaders for the dramatic changes occurring in our nation's health system. Our masters and doctoral curricula address key knowledge domains in population health, while our continuing education programs help practicing healthcare professionals thrive and progress along with the changes in this brave new world.

To this end, we have developed a five-day **Population Health Academy** designed for busy health system administrators and leaders who need a solid foundation in the subject. Sessions are scheduled for Spring and Summer 2014.

As a participant in our **Population Health Academy**, you will dive headlong into the key domains of Population Health:

- · U.S. Health Care Organization and Administration: A Rapidly Evolving Environment
- · Population Health Management: Moving from Volume to Value
- · Health Economics
- · Data Analytics
- · Health Care Quality and Safety
- · Prevention and Chronic Disease Management

In order to cover the broad landscape that is population health, the topics are linked through a set of comprehensive case studies about a community and its health care providers coming to grips with system changes and demands. You will work in teams to identify key health issues and design interventions that promote population health.

Click the Dates Below to Register for Population Health Academy Upcoming Online Information Sessions.

**November 20, 2013** 1:00 pm – 2:00 pm

**February 12, 2013** 1:00 pm - 2:00 pm

For more information on the Population Health Academy or Population Health Certificate program call **215-503-0174** or visit: http://www.jefferson.edu/population health/campus events.html

## **Empowering Rehabilitation Medicine Residents to Transform Healthcare with Quality Improvement and Patient Safety Curriculum**

As those of us passionate about quality improvement work know all too well, there is a sense of urgency for system improvements in both the way in which we deliver healthcare to our patients and how we educate healthcare professionals to work effectively in a complex environment. The Association of American Medical College's (AAMC) recent Integrating Quality (IQ) conference in Chicago, which I attended as a resident member of the IQ Steering Committee, offered more than just a glimmer of hope. Esteemed speakers provided transparent data hoping that others may learn from the successes and failures of their academic medical centers. Students, residents, and young faculty from various healthcare disciplines presented creative innovations in education, quality, and safety with evidence of both small and large successes of their initiatives. Although curricular change can be an uphill battle, it was remarkable to not feel so alone on this journey.

Physical medicine and rehabilitation (PM&R) residents at Thomas Jefferson University have been exposed to an augmented curriculum regarding patient safety and quality improvement. As described previously, 1 a curriculum addressing quality improvement and patient safety was launched in January 2011 after an administered needs assessment survey demonstrated many areas for targeted improvement in resident education. After only one year of small, incremental changes, repeat survey of the residents demonstrated a startling increase in a number of areas: confidence in setting up and conducting quality improvement projects; improvements in more important issues communicated at shift change; and an increase in the number of residents who felt they could identify a near miss event (Table 1).

Based on the 2012 survey data, further opportunities for improvement were identified. For example, although handoff communication seemed to improve, it remains an area in which further improvement was desired such that

Table 1. Quality and Safety Curriculum Needs Assessment Survey and Resident Responses				
Resident Responses	Initial Needs Assessment Survey 2011	Survey After Changes in Patient Safety and Quality Improvement Curriculum 2012		
Residents <i>strongly agree</i> that they are confident in setting up an conducting a quality improvement project	36%	91%		
Residents felt that important issues were communicated during a shift change	61%	86%		
Residents felt that they could identify a near miss event	59%	91%		

important issues are *always* communicated. Thus, the handoff workshop was redesigned in a team-based learning format to engage residents in a more interactive session. This workshop style was adapted from a presentation I participated in as a member in the AAMC's Organization of Resident Representatives. Team-based learning has learners complete a prereading assignment and work individually to answer a short quiz on the topic. Next, small teams are formed of 3-4 learners to review quiz questions and develop consensus on the answers. Afterwards, the instructor goes over the quiz and reviews in detail any topic which less than about 80% of participants answered correctly. Finally, a group application exercise is done to practice the new skills learned. This workshop design eliminates redundant review of material in which students had already achieved mastery and instead focuses in depth on areas of deficiency followed by reinforcement of concepts through immediate application. Evaluations from the session included qualitative comments such as "I liked working in teams", "comprehensive", "very helpful", and "interactive... provided diverse methods of learning." There also was a resident suggestion to create a rehabilitation-specific handoff mnemonic like those created in other disciplines, such as PEDIATRIC for pediatric resident handoffs.2

The quality improvement and patient safety curriculum has also evolved as the Accreditation Council for Graduation Medical Education (ACGME) milestones are nearing implementation in PM&R residency programs. Recently, the author and the assistant program director worked on a pilot project with resident-led quality improvement projects. Residents were given an opportunity to determine an area of need and form teams to develop and implement improvement projects. Going forward, this will be fully integrated as a mandatory component of our curriculum so that residents are able to plan, implement, and study an improvement.

Ultimately, it is critical that we all learn from best practices in quality improvement curricula. Teaching methodology needs to evolve from the traditional lecturebased format to accommodate the interactive nature of this material. Also, interprofessional learning needs to be emphasized so we can learn to more effectively work in teams.

The hidden curriculum (that which is communicated informally through observing behaviors and practices) can be a significant barrier to cultural change in an institution. Beyond educating trainees, it is crucial that faculty adopt this vocabulary and model safety culture, so that the hidden curriculum at teaching institutions begins to reinforce

rather than undermine the teaching of the next generation of physicians in a way that empowers them to provide safer, higher quality care. The resources and personnel required to repair and transform healthcare exist within the system; we only need to nurture and support their development and use.

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Dr. Goldsmith recently completed her residency program in the Department of Rehabilitation Medicine at Thomas Jefferson University and is currently a member of the Association of American Medical College's Integrating Quality Steering Committee.

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## The Reality of Disaster: An Educational Template That Brings **Community into the Classroom**

The focus of nursing education in the 21st century is to prepare nurses to work with individuals and their families within a community setting and to develop skills in providing nursing care that stresses the community as the client.<sup>1,2</sup> Competencies stress inter-professional collaboration and partnering with community, and include disaster preparedness, planning, and management.<sup>3</sup> However, baccalaureate nursing curriculum continues to prepare generalists who function best in hospitalbased settings.<sup>3</sup> In the event of disaster, especially one that involves mass casualties and infrastructure disruption, the need for nursing care will not be limited to those victims transported to a hospital. There is a need to develop a specialized curriculum for nursing students to improve the overall response to a mass casualty event. With no established national consensus regarding a disaster preparedness curriculum and in response to these societal demands, Jefferson School of Nursing (JSN) set out to develop a community educational template designed to ready baccalaureate students for nursing practice in the event of disaster.

The topic of bioterrorism was first introduced in JSN's community health nursing course two years prior to the tragic events of 9/11. An RN from army intelligence presented on environmental, medical, and community health hazards associated with biological terrorism and the role of nursing in the aftermath of such events. The 9/11 terrorist attack on the World Trade Center reaffirmed the need to construct a more formal curricular approach to disaster preparedness and management.

An occupational health nurse and responder at Ground Zero assisted with expanding the disaster preparedness and management community curriculum by including the following learning objectives:

1. Identify and characterize the various types of disasters, both natural and terrorist events, and describe their effects on people and their communities.

2. Describe the disaster management phases of mitigation, preparedness, response, and recovery and explain the role of the community nurse in each phase, including working with various responding agencies.

This expansion in objectives led to the inclusion of a community disaster preparedness project. The purpose of the project was to empower students to become familiar with the health care system and its level of disaster preparedness in the community where they live, and work, and execute their own preparedness within that system.

In 2007, the disaster preparedness template expanded to include group community disaster poster projects and an interactive realistic disaster drill utilizing simulation manikins and on-site field resources. This experience provided students with a disaster reality in a community in which many of them lived and/or worked. This led to clinical rotations with community organizations involved in disaster preparedness.

In 2009, an RN-BSN student completed her community clinical rotation at a weeklong disaster management and preparedness training program for hospital emergency responders in Alabama. She was educated on the principles of the National Incident Management System (NIMS) and the Hospital Incident Command System (HICS); chemical, biological, radiological, nuclear, and explosive (CBRNE) weapons of mass destruction; systematic decontamination of exposed patients prior to treatment in the emergency department; and specific monitoring and detection devices. She also completed hands-on training with Sarin and VX nerve agents.

Upon her return, the student developed an educational program for disaster management and preparedness for Jefferson pre-licensure nursing students by incorporating information regarding the various weapons of mass destruction. Her program included lecture, demonstration, and a take-home learning activity. Current

academic models of education promote the extension of education from the classroom out into the community. This student, through her community clinical course requirements, assisted with the development of an educational template that engaged the community into the learning classroom. We presented this template for oral presentation at the American Public Health Association (APHA) national conference that year.

Over the past four years, this disaster program grew to involve the second author of this article, Dr. Edward Jasper. A threehour slide, video, and pictorial lecture presentation was provided that included the authors' personal accounts of disaster training and participation. Pre-licensure nursing students participated in annual Philadelphia regional community-wide disaster exercises developed and run by Dr. Jasper as part of their end of semester Alternative Clinical Education (ACE) day. This annual exercise, while regional in scope, is the largest single hospital recurring exercise reported in the literature. In 2011, over 500 fully moulaged and trained simulated victims presented acutely to the Emergency Department of Thomas Jefferson University Hospital. These included approximately 250 Jefferson medical students, 200 Jefferson nursing students, 40 emergency medical services students, and 30 members of the medical reserve corps. In addition, over 50 hospitals and community organizations from the Greater Philadelphia region participated in this exercise.

In spring 2013, the disaster curriculum expanded to include several interactive iPad in-class activities to engage students in the lecture presentation and enhance their knowledge and understanding of their role in preventing, planning, and managing disasters. Moving forward, these authors are developing a pre- and post-program student survey to be implemented before the disaster program and after the annual community drill in Spring 2014. The authors have also discussed the creation of interactive and inter-professional laboratory disaster stations for nursing and medical students to aid them in preparing for and managing community disasters and mass casualties.

There is no doubt that future natural disasters and the possibility of terrorist attacks may occur. There is a need for a national consensus in developing an inter-professional disaster preparedness curriculum that includes collaboration with the community. This curriculum should engage health care students in the reality of disaster by bringing

community into the classroom through didactic presentations, hands on skills participation, and community partnerships and interagency involvement in the overall disaster response.

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## **Healthcare-Associated Infections - Is Targeting Zero a Global Reality?**

Healthcare-associated infection (HAI) is a global patient safety threat affecting hundreds of millions of people worldwide. In developed countries, HAI complicates up to 10% of hospital admissions. In limited resource countries the risk can be twenty times higher and the proportion of infected patients can exceed 25%.1,2 In the US it is estimated that over 1.7 million HAIs occur annually, resulting in 99,000 deaths and costing up to \$45 billion in added healthcare costs.3 In other words, every day, approximately 1 in 20 patients acquire an infection related to their hospital care. In addition, HAIs increase patients' morbidity and length of stay and can have devastating emotional consequences for patients and their family.

Historically, clinicians considered HAIs an inevitable consequence of care or the "cost of doing business." In developing countries other health problems and diseases often take priority. Over the past decade such notions have gradually changed as the scientific evidence indicated that many HAIs may be preventable, even in diverse, high-risk settings, when targeted interventions are successfully implemented.

As a result, numerous intensive care units have reported periods of a year or more with zero bloodstream infections in the sickest patient populations. Concurrently, US hospitals faced increasing external social, economic and regulatory pressure as states began to mandate HAI reporting and the Centers for Medicare and Medicaid Services no longer reimbursed the cost of "preventable" complications.

Central line-associated bloodstream infection (CLABSI) is among the most common HAIs and is included in the list of non-reimbursable HAIs along with urinary tract infections, and some surgical site infections. In 2005, the World Health Organization (WHO) launched the First Global Patient Safety Challenge, Clean Care is Safer Care, dedicated to raising global awareness and providing solutions to support HAI prevention.5 WHO and its partners provide member states with evidence-based guidelines and tools to implement HAI prevention activities, and strategies to promote the highest standards of practice and behavior, as well as to mobilize governments and stakeholders. As growing national and worldwide attention

was devoted to HAI prevention, it inspired and motivated clinicians, health care leaders and professional organizations to set more aggressive goals and targets to reduce the risks of HAIs, resulting in the "targeting zero" movement. Warye and Murphy suggested that a culture of targeting zero HAI included the following: <sup>6</sup>

- 1. Setting the theoretical goal of elimination of HAIs;
- 2. An expectation that infection prevention and control measures will be applied consistently by all health care workers, 100% of the time;
- 3. A safe environment for healthcare workers to pursue 100% adherence, where they are empowered to hold each other accountable for infection prevention;
- 4. Systems and administrative support that provide the foundation to successfully perform infection prevention and control measures;

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- 5. Transparency and continuous learning where mistakes and/or poor systems and processes can be openly discussed without fear of penalty;
- 6. Prompt investigation of HAIs of greatest concern to the organization and/or community; and
- 7. Focus on providing real time data to front-line staff for the purpose of driving improvements.

The Michigan Keystone Project provides a successful targeting zero prototype and clinicians around the world have taken notice. The project, funded by the Agency for Healthcare Research and Quality (AHRQ), reduced the median central lineassociated bloodstream infection (CLABSI) rate to 0 in 103 Michigan Intensive Care Units (ICUs) over 18 months. 4 This was accomplished by implementing an evidence-based bundle that consisted of 5 Centers for Disease Control and Prevention (CDC) recommendations combined with interventions to improve and support cultural, behavioral and systematic change. A 3-year follow-up study reported most Michigan ICUs continued to sustain reduced CLABSI rates.<sup>7</sup> Using a comparable approach, similar results have been reported by others in the US and around the world. For example, AHRQ funded a national initiative enrolling approximately 1,100 US hospitals and reported a 35%

reduction in CLABSI among adult ICUs from 350 participating hospitals in the first 22 states reporting. 8 England joined the targeting zero effort and conducted a 2-year 'Matching Michigan' initiative, which resulted in a 60% reduction in reported CLABSI in adult ICUs across the country. <sup>9</sup> A Saudi Arabian hospital found the use of bundles was associated with a significant decrease in device-related HAIs in their adult ICUs. 10

The International Nosocomial Infection Control Consortium (INACC) is a nonprofit, open, multi-center, collaborative healthcare infection control program with a surveillance system based on that of the US National Healthcare Safety Network.<sup>11</sup> INACC was established to control HAIs in hospitals in limited-resource countries and at hospitals in developed countries without sufficient experience in HAI surveillance and control, through the analysis of data collected voluntarily by its member hospitals in Latin America, Asia, Africa, and Europe. While prevention strategies are not titled "targeting zero," the INACC vigorously supports the use of reliable data to promote consistent implementation of simple, inexpensive, high-priority evidencebased infection control practices for prevention of HAI.

The concept of targeting zero HAI may seem an unrealistic goal or an impossible dream, especially in developing countries. We realize that reliable and systematic infection surveillance systems are essential for successful targeting zero HAI initiatives, that HAI surveillance is time and resource intensive, and that few developing countries have national HAI programs or surveillance systems. In addition to surveillance limitations, we recognize the global differences in terms of evidence-based guidelines and recommendations, regulations, and healthcare worker infection control education and training. We acknowledge that creating a targeting zero culture requires strong leadership and can be daunting even in the most resourced environments. However, we believe that targeting zero is a global possibility; there is significant and growing worldwide resolve and evidence to demonstrate that reducing – and, in some cases, eliminating - many serious HAIs has been achieved and sustained.

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Click on program titles to link to registration.

#### PhD in Population Health Sciences

November 14, 2013 4:30 pm - 6:00 pm

#### Master of Public Health (MPH)

November 20, 2013 5:30 pm - 7:00 pm

#### Master of Public Health (MPH)

January 23, 2014 5:30 pm - 7:00 pm

#### Master of Public Health (MPH)

February 18, 2014 5:30 pm - 7:00 pm

#### **ONLINE INFORMATION SESSIONS**

Click on program titles to link to registration.

#### Master of Public Health (MPH)

October 24, 2013 12:00 pm - 1:00 pm

#### Population Health Certificate

November 20, 2013 12:00 pm - 1:00 pm

#### Population Health Academy

November 20, 2013 1:00 pm - 2:00 pm

#### Master of Public (MPH)

December 9, 2013 12:00 pm - 1:00 pm Healthcare Quality and Safety and Healthcare Quality and Safety Management

December 11, 2013 12:00 pm - 1:00 pm

#### Applied Health Economics and Outcomes Research

February 11, 2014 12:00 pm - 1:00 pm

For more information visit: http://jefferson.edu/population health/campus events.html or call 215-503-0174.

## Models for Identifying Patients at Risk of Hospitalization:

#### Use in Medical Homes in Emilia-Romagna Region, Italy

In developed countries, health care delivery has been shifting from a passive, reactive model focused on patients with acute problems to a proactive model primarily devoted to managing an increasingly older population that has a greater prevalence of chronic conditions, often with multiple medical and social problems. This shift has resulted in a reorganization of the primary care delivery system, where coordination and cooperation among healthcare professionals is crucial.1

Despite differences in the structure of healthcare systems, the common experience shared by developed countries has been the establishment of primary care organizations that incorporate integrated teams of physicians and other healthcare workers that

"seek to increase the influence of primary care professionals, and in particular general practitioners (GPs), in health planning and resource allocation."2 One of the most prominent new models of primary care is the Medical Home, an organization in which a team of healthcare providers is engaged in delivering comprehensive, coordinated, patient-centered care to patient defined population.<sup>3</sup> To promote and practice population health in Medical Homes, there is a specific need to identify those patients who would benefit most from outreach efforts, in particular patients with chronic conditions.

Primary care has a central role in the Italian National Healthcare System. The 21 regional governments are responsible for ensuring

the delivery of a health benefits package through a network of geographically defined, population-based Local Health Authorities. Primary care physicians work for Local Health Authorities as independent contractors and act as "gatekeepers" for specialty and other referral services for their patients.4

With the belief that a strong primary care system is conducive to improving population health, in the last 15 years the Italian National Healthcare System initiated a restructuring which introduced reforms that encouraged primary care physicians to organize into collaborative arrangements. To this end, the Emilia-Romagna Region, a large northern

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region with a population of about 4.5 million, has recently launched a plan in its 11 Local Health Authorities to establish Medical Homes intended to better coordinate patient care. As of 2013, the Parma Local Health Authority, covering a population of about 450,000 individuals, has established 12 Medical Homes.

To assist these Medical Homes in identifying segments of their population most in need of proactive care, the Emilia-Romagna Region, in collaboration with researchers from Thomas Jefferson University, has developed models using the regional administrative healthcare database to predict patients at high risk of hospitalization (or death) for conditions that are potentially avoidable in patients who have diseases or problems amenable to programs of case/disease management.

Using historical utilization data, these models have demonstrated the ability to predict risk of hospitalization in the subsequent year in the 3.7 million adult residents of the region with high accuracy (c-statistic, 0.84). Based on the estimated risk of hospitalization, subjects were arbitrarily classified into 4 categories: very high risk, high risk, moderate risk, and low risk (Table 1). Using 2010 data to predict the hospitalization rate in 2011, in the very high risk category the predicted rate of hospitalization was 39.6% and the observed rate was 39.8%, while in the high-risk population the predicted rate of hospitalization was 19.2% and the observed rate was 19.5%. The subjects identified as at very high and high risk of hospitalization represented about 4% and 6% of the population, respectively, and are critical for the outreach goals of the Medical Homes as the most likely population segments that may benefit from proactive chronic care management programs.

Information about their high-risk patients is currently being provided to the GPs in the newly formed Medical Homes in

the Parma Local Health Authority; an evaluation of its use and usefulness is under way.<sup>5</sup> This information includes data about previous hospitalizations; use of referrals, medications, long-term care and home care services; and a number of process-like quality indicators for diabetic and cardiovascular patients, and for appropriate medication use in older patients. It has been organized in a socalled risk of hospitalization patient (ROH) "profile," a concise summary, delivered to primary care physicians via secure data transmission network. The ROH profile ends with an "action box:" through the review of the profile data combined with the clinical and social information, such as living arrangements and functional status, within the patient medical record, each primary care physician is asked to review the data and, via a checklist, decide which action or strategy, if any, he/she should take for that particular patient to improve the quality of care. As appropriate, this information is shared with colleagues, specialists, home healthcare workers, social workers and nurses associated with the Medical Homes. Potential actions would, for instance, include enrolling the patient in specific disease management programs (eg, congestive heart failure or diabetes programs), and/or contacting the patient to review the therapeutic approach or to check on his/her adherence to medications and routine diagnostic evaluation.

As of June 2013, the ROH profile has been introduced to all 12 active Medical Homes, involving 83 primary care physicians serving a total of about 100,000 patients. Although it is too early for a definitive evaluation, the ROH profile has been very well accepted by the physicians and the other healthcare professionals in the Medical Homes. For instance, after reviewing the profiles, one Medical Home has started a project targeting high-risk patients with chronic obstructive pulmonary disease, constructing a disease registry,

The Italian constitution guarantees the right to heath care for all. In Italy, as in other countries with a National Health Service model such as the UK, primary care is fundamental to the health care system. Every citizen chooses, and enrolls with, a primary care physician. In Italy, primary care physicians are paid per capita and are limited to a maximum of 1,500 patients. (By contrast, the average panel size in the US is about 2,300 patients.\*) Italy offers some major advantages in implementing a Medical Home system. There is an adequate supply of primary care physicians; every citizen has a primary care physician; patient panels are reasonably sized and very stable. As the Medical Home movement matures around the world it is important to assess its impact in the context of different health care systems

\*Alexander GC, Kurlander J, Wynia MK. Physicians in retainer ("concierge") practice. A national survey of physician, patient, and practice characteristics. J Gen Intern Med. 2005;20(12):1079-1083.

putting together an evidence-based clinical management protocol, and establishing a patient disease management program. Three Medical Homes, in combination with cardiologists from the university hospital in Parma, are organizing a disease management program for congestive heart failure patients, with the goals of reducing morbidity and mortality, while decreasing hospitalizations and emergency room use.

Using the administrative database of the Emilia-Romagna Region, it is possible to identify patients at high risk for hospitalization. This information appears to be an appealing, promising organizational tool for the regional Medical Homes to develop and implement proactive disease management programs. The Emilia-

Table 1: Results of the models 2010 data predict hospitalization or death in 2011 - observed and expected hospitalization or death by risk categories.					
Hospitalization or death risk group	% of the adult population	% of patients hospitalized or dead in 2011			
Trospitalization of death risk group		Observed	Expected		
Very high risk (≥25% in the following year)	4.1%	39.8%	39.6%		
High risk (15% - 24%)	5.7	19.5	19.2		
Moderate risk (6% - 14%)	15.5	9.6	9.5		
Low risk (≤5%)	74.7	1.9	2.0		

Romagna Region is reviewing the results of the pilot project in the Parma Local Health Authority regarding the use of ROH profiles to adopt and expand these models to the Medical Homes in development in the other Local Health Authorities in the region.

The Patient Protection and Affordable Care Act contains various provisions that encourage the widespread adoption of the Medical Home model. The approach developed in Emilia-Romagna could be taken into account by policy decisionmakers and healthcare organizations alike during the Medical Home implementation. Vittorio Maio, PharmD, MS, MSPH,1 Giuseppina Rossi, MD,<sup>2</sup> Stefano Del Canale, MD, PhD,<sup>2</sup> Massimo Fabi,MD, <sup>2</sup> Ettore Brianti, MD<sup>2</sup> Stefano Sforza, MS,<sup>3</sup> Mary Robeson, MS, 4 Scott Keith, PhD<sup>5</sup> Joseph S. Gonnella, MD, Daniel Z. Louis, MS4

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Jefferson School of Population Health invites you to join the *Grandon Society*, a membership organization for individuals and organizations focused on advancing population health. The Grandon Society is designed for leaders throughout the healthcare sector who are dedicated to transforming the US health care system through collaboration, education and innovation.

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Become a member today and join us for our next webinar, on Tuesday, November 19 from 12-1pm featuring a discussion with Jeffrey C. Brenner, MD, Executive Director of the Camden Coalition of Healthcare Providers. Dr. Brenner was recently awarded a MacArthur Genius Award because of his groundbreaking efforts to bring Camden residents better health care at a lower cost. His work and New Jersey's Medicaid ACO legislation is featured in a special supplement to Population Health Management. Dr. Brenner will also be featured at our Spring 2014 Population Health Colloquium during a special session on Super Utilizers.

Contact Amanda Solis for more information about the Grandon Society or to register for the webinar.

For more information visit: http://www.jefferson.edu/population\_health/GrandonSociety.html.

Questions? Contact Amanda Solis at (215) 503-6871 or amanda.solis@jefferson.edu

### **Population Health Forum**

#### Pathways for Successful Accountable Care Organizations: Physician Engagement

James E. Barr, MD

Medical Director

Optimus Health Partners and Atlantic Health Systems Accountable Care Organizations

September 11, 2013

The first Forum of the 2013 academic year featured James E. Barr, MD, Medical Director of Optimus Healthcare Partners and Atlantic Health Systems Accountable Care Organizations. He is also a family physician at Pleasant Run Family Physicians, a practice that has achieved recognition from NCQA (National Committee for Quality Assurance) in the Physician Practice Connections program (PCP®). His presentation primarily focused on two missing links in healthcare: physician engagement and patient engagement. He discussed these two crucial items in the context of the Accountable Care Organization (ACO) Triple Aim.<sup>2</sup>

Barr began his presentation with a clear message that health care needs to take a bottom-up approach, because the topdown approach has not worked. He shared his personal experience as a participant in a pilot project examining claims data for his patients with diabetes, where he was surprised to discover that the care he provided was compliant with evidencebased guidelines only 40% of the time. As Barr described the improvements necessary to achieve the ACO Triple Aim, he also discussed the difficulty in engaging physicians to make these changes. Barr emphasized the need to help physicians

understand the linkages between 'structure, process, and outcomes', concepts in which physicians are not formally trained as part of their medical education. A key principle to creating a high performance physician network is leveraging the natural competitive spirit so many physicians possess. Full data transparency through registries and data sharing, and appropriate financial incentives and disincentives associated with specific metrics will encourage every provider to strive to be a high performer. By creating PCMH and ACO contracts with providers within Atlantic Health System, Barr offered practices a per member/per month payment boost on top of the typical fee for service on over 50% of patients seen. Moving toward these models means practices can gain revenue by taking advantage of the financial incentives available, but also from the increase in productivity that accompanies higher quality care. Barr warned that physicians who do not provide value will not remain a part of the delivery system.

Equally valuable to changing the behavior of a physician in this model is securing ACO support staff who will track down a no-show patient, stay in contact with hospitals involved with care of their patients, and serve as the link to community services. This truly captures the essence of coordinated care. Limited access to care is another barrier that can be overcome by implementation of the American College of Physicians PCMH Neighbor model.<sup>3</sup> By incentivizing communication among patients, family physicians, specialists, and community services, the use of emergency departments for non-acute care will decrease. Barr reports that in one study, 40% of emergency department visits in New Jersey could have been dealt with in a doctor's office

Barr finished his presentation by highlighting the importance of leadership. As a physician leader, he was able to implement the structure and process that led to better outcomes for his practice and health system. His take-home message was that the current healthcare system is failing its patients, and will only be exacerbated as the baby boomer generation ages. To combat this, it is important to focus on moving away from serving as a 'gatekeeper' restricting access and moving toward serving as a 'gateway to care'.

To listen to Forum podcasts and access presentations visit: http://jdc.jefferson.edu/hpforum/

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## **Upcoming Jefferson School of Population Health Forums**

#### **November 13, 2013**

#### The Role of Employers and Business Coalitions in Improving Health Care

#### Neil Goldfarb

Executive Director

Greater Philadelphia Business Coalition on Health (GPBCH)

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#### A Continuous Quality Improvement Approach to Organizational Cultural Competence

#### Cheri Wilson, MA, MHS, CPHQ

Program Director, Culture-Quality-Collaborative

Faculty Research Associate, Department of Health Policy and Management

Johns Hopkins Bloomberg School of Public Health

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#### **January 8, 2014**

#### Improving Patient Safety Outcomes Through Adaptive Approaches

#### Jeffrey Cohn, MD, MHCM

President, Plexus Institute

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## **JSPH Publications**

Clancy Z, Scott KW, Rabinowitz C, Ceccarelli M, Gagne J, Maio V. Statins and colorectal cancer risk: a longitudinal study. Cancer Cause Control. 2013;24(4):777-82. DOI: 10.1007/s10552-013-0160-x.

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**Nash DB.** Key questions ACOs must answer. MedPage Today. July 29, 2013.

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Nash DB. Cost savings right under our noses. MedPage Today. September 30, 2013.

Nash DB. Ahead of the curve. Popul Health Manag. 2013; 16 (Suppl 1):S1.

Skoufalos A, Cecil K. The journey to creating a safety net Accountable Care in New Jersey. Popul Health Manag. 2013;16(Suppl 1):s-12-s-16.

**Skoufalos A.** "Mom, Dad, am I fat?": talking to your kids about weight and health. Philly.com. October 16, 2013. http://www.philly.com/philly/blogs/ healthy kids/

## **JSPH Presentations**

**Lieberthal R**. Evaluating approaches for health economics and outcomes research. Presented at: 48th Actuarial Research Conference, August 3, 2013, Philadelphia, PA. Joint work with Jessica Lopatto, Kate Cecil, Joseph Jackson, and Tony Amos.

**Lieberthal R.** Validating the Pridit method for determining hospital quality with outcomes data. Poster presentation at: American Risk and Insurance Association Annual Meeting, August 7. 2013, Washington, DC. Joint work with Dominique Comer.

Lopatto J, Lupattelli M, Aristei C, Bellavita R, Jereczek-Fossa B, McAna J, Showalter T, Maio V. Adjuvant and salvage radiation treatment after prostatectomy: comparing Italian and United States radiation oncologists' practice attitudes. Presented at: 18th Annual Meeting of the International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, May 2013, New Orleans, LA.

Lopatto J, Scott KW, Del Canale S, Templin M, Maio V. Are quality improvements sustained? Long-term effectiveness of a physician-focused intervention to reduce potentially inappropriate medication prescribing in the elderly in Italy. Presented at: 18th Annual Meeting of the International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, May 2013, New Orleans, LA.

Sikirica S, Marino M, Gagne JJ, De Palma R, Maio V. Evaluating the Emilia-Romagna region database for investigating treatment outcomes: the case of antipsychotics and mortality. Presented at: 18th Annual Meeting of the International Society Pharmacoeconomics and Outcomes Research Annual International Meeting, May 2013, New Orleans, LA.

**Simmons R**. Health literacy from a US perspective. Presented at: International Union for Health Promotion and Health Education (IUHPE) World Conference, August 25, 2013, Pattaya, Thailand.

**Simmons R.** Healthcare and community approaches to improving health literacy: training healthcare providers and patient activation. Presented at: International Union for Health Promotion and Health Education (IUHPE) World Conference, August 26, 2013, Pattaya, Thailand.

Simmons R. Advocacy training for health promotion students, faculty and professionals: lessons learned from 16 years of the Annual Health Education Advocacy Summit in the US. Presented at: International Union for Health Promotion and Health Education (IUHPE) World Conference, August 26, 2013, Pattaya, Thailand.

**Simmons R.** The Health literacy/health Promotion "Tango, Back to Basics While Forging Ahead." Presented at: International Union for Health Promotion and Health Education (IUHPE) World Conference. August 28, 2013, Pattaya, Thailand.

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