



Registered Nurses: Partners in Transforming Primary Care

Proceedings of a conference on Preparing Registered Nurses for Enhanced Roles in Primary Care

Chaired by

Thomas Bodenheimer, MD, MPH and Diana Mason, PhD, RN, FAAN

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Registered Nurses: Partners in Transforming Primary Care

Proceedings of a conference on Preparing
Registered Nurses for Enhanced Roles in Primary Care

**Thomas Bodenheimer, MD, MPH and
Diana Mason, PhD, RN, FAAN**

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PREFACE

GEORGE E. THIBAUT, MD

The 2016 Macy Conference, *Preparing Registered Nurses for Enhanced Roles in Primary Care*, represents the intersection of three important Macy Foundation themes. First, we have a long-standing interest in preparing health professionals for careers in primary care dating back to our 2010 Macy Conference, *Who Will Provide Primary Care and How Will They be Trained?*¹ The preparation of an appropriately sized and skilled primary care workforce is critical to the success of a reformed healthcare system that better meets the public's needs.

Second, we have had a long-standing interest in improving nursing education to prepare nurses for leadership roles in a reformed healthcare system. This has been expressed by our support for interprofessional education² and our promotion of the careers of nursing educators.³ This Macy Foundation theme also is very closely aligned with the recommendations of the Institute of Medicine's *Future of Nursing: Leading Change, Advancing Health*⁴ report and the follow up National Academy of Medicine study of the impact of the report.⁵

Third, we have been very interested in working at the intersection of healthcare delivery reform and health professions education reform, believing that the close alignment of education and delivery reform is absolutely essential to achieve the common goal of both education and delivery—that is, better health of the public⁶.

The idea for this conference was brought to us by the leadership of the American Academy of Nursing, and we will be partnering with the Academy in disseminating the recommendations to the nursing education community and the primary care practice community.

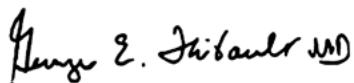
The commissioned papers and the exemplar practice descriptions in this report make the case for change and show that these changes are achievable. But to make these enhanced roles for registered nurses more universal we will need to make progress in all six domains of the conference recommendations:

1. Changing the cultures in both nursing schools and practices to place greater value on primary care and the role of nurses in it.
2. Redesigning practices to make full use of the expertise of nurses.
3. Rebalancing nursing education to elevate primary care content.
4. Promoting the career development of nurses in primary care.
5. Developing primary care expertise in nursing school faculty.
6. Increasing opportunities for interprofessional education and teamwork development in both education and practice.

The conferees felt strongly that there is great urgency in achieving all of these recommendations not only to meet patient needs, but also to enhance the professional satisfaction of nurses and all clinicians in primary care.

This conference was a great success because of the experience, enthusiasm, and engagement of all the conferees. We had an outstanding planning committee that provided oversight for the commissioned papers, conference planning and execution, and the writing of the recommendations. And we had extraordinary leadership throughout the process from Diana Mason and Tom Bodenheimer. None of this would have happened without the meticulous administrative support provided by Yasmine Legendre.

I am proud that the Macy Foundation has been able to make this contribution to nursing education reform and primary care transformation.

A handwritten signature in black ink that reads "George E. Thibault MD". The signature is written in a cursive style with a small circle at the end of the "MD".

George E. Thibault, MD
President, Josiah Macy Jr. Foundation



- 1 Cronenwett L, Dzau V, conference chairs. Who Will Provide Primary Care and How Will They be Trained? New York, NY: Josiah Macy Jr. Foundation; 2010.
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- 6 Cox M, Naylor M, conference chairs. Transforming Patient Care: Aligning Interprofessional Education with Clinical Practice Redesign. New York, NY: Josiah Macy Jr. Foundation; 2013.



INTRODUCTION

THOMAS BODENHEIMER, MD, MPH
DIANA MASON, PhD, RN, FAAN
CONFERENCE CO-CHAIRS

For primary care in the United States, it is the worst of times and the best of times. The gap is growing between the population's need for primary care and the capacity of primary care to meet that need. Soon, the number of retiring primary care physicians will exceed the number of primary care physicians entering the workforce.¹ The panel size of the average primary care physician is too large to allow for excellent acute, chronic, and preventive care. Physician burnout is widespread and increasing.

Yet a renewed enthusiasm and spirit of innovation can be found in primary care practices across the country. And nurses—nurse practitioners and registered nurses (RNs)—are poised to rescue primary care.

The number of nurse practitioners entering the workforce each year has mushroomed from 6,600 in 2003 to 20,000 in 2015. Nurse practitioners will increasingly be the primary care practitioners of the future. Of the approximately 222,000 nurse practitioners, 83.4% are certified in an area of primary care.² Yet the ratio of primary care practitioners (including physicians, nurse practitioners, and physician assistants) to the population will still decline. Thus other professionals will be needed to care for the growing number of US adults with chronic conditions, as well as to focus on health promotion and address social determinants of health.

Registered nurses, the largest health profession in the nation with over 3.5 million members, are ideally suited to provide the bulk of care for people with chronic illnesses. In primary care, RNs may assume at least four responsibilities: 1) Engaging patients with chronic conditions in behavior change and adjusting medications according to practitioner-written protocols; 2) Leading teams to improve the care and reduce the costs of high-need, high-cost patients; 3) Coordinating the care



of chronically ill patients between the primary care home and the surrounding healthcare neighborhood; and 4) Promoting population health, including working with communities to create healthier spaces for people to live, work, learn, and play.

The number of RNs available to function in these enhanced primary care roles should be plentiful; from 2001 to 2014, the number of new nurses taking the NCLEX RN licensing exam more than doubled, from almost 69,000 to 158,000 per year.³ Already, 43% of US physicians are working with nurse care managers for patients with chronic conditions.⁴ And studies clearly show that RNs are qualified to perform these enhanced roles. For example, in a randomized controlled trial, diabetic patients with elevated blood pressures cared for by RN care managers were more likely to reach their blood pressure goals than patients managed by physicians alone.⁵

Serious challenges face the widespread incorporation of RNs into these primary care roles. Public and private insurers are only beginning to pay for services performed by RNs; most RN work is viewed by practice administrators as an expense but not as a source of revenues. State boards of nursing are ambivalent about granting RNs authority to perform the medication management that is a key part of chronic disease management and some prohibit the use of standing orders developed by primary care practitioners for RNs to use when following a panel of patients.

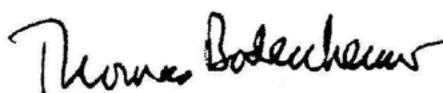
The 2016 Macy Foundation conference on preparing RNs for enhanced roles in primary care addresses perhaps the most difficult challenge: the paucity of primary care content in most nursing schools, including both didactic content and clinical experiences. RN education continues to emphasize in-patient hospital nursing and many nursing faculty are unfamiliar with primary care nursing. Some faculty and practicing RNs continue to recommend that new nurses spend a minimum of a year on a hospital medical-surgical unit before moving into community-based practices, even if the new nurse has no interest in such a position.

This is not a surprise given the nation's overinvestment in acute care, while failing to develop a robust primary care system. Nurses responded to the nation's call for expanding acute care with the Hill-Burton Act of 1946 that provided funds for building and expanding the nation's hospitals. The failings of this downstream system of care, however, have become evident as numerous studies document that the US spends more on health care than other peer countries but is last or

near-last on key indicators of health, such as maternal mortality.^{6,7} It's time for nurses to partner with others to transform our healthcare system into one that promotes the health of individuals, families, and communities, including preventing and better managing chronic illnesses.

The Macy conference brought together leaders in nursing education and primary care, working together to propose actionable recommendations for re-balancing nursing education to encourage RNs to become leaders in primary care teams, with the skills needed to improve the health of the American people. These recommendations include developing partnerships with primary care practices to develop and test expanded roles for RNs and all staff.

It will take all of us to push for this transformation. This report provides the direction for doing so. We hope that you will join us in disseminating these recommendations, using the report to trigger important conversations within and among schools of nursing, primary care practices, healthcare systems, and other organizations about how to rethink and redesign primary care with the help of the nursing workforce. Our nation's health is at stake.



Thomas Bodenheimer, MD, MPH
Conference Co-Chair



Diana J. Mason, PhD, RN, FAAN
Conference Co-Chair

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- 1 Petterson SM, Liaw WR, Tran C, Bazemore AW. Estimating the residency expansion required to avoid projected primary care physician shortages by 2035. *Ann Fam Med* 2015;13:107-114.
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 - 5 Denver EA, Barnard M, Woolfson RG, Earle KA. Management of uncontrolled hypertension in a nurse-led clinic compared with conventional care for patients with type 2 diabetes. *Diabetes Care* 2003;26:2256-2260.
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 - 7 National Research Council. *U.S. Health in International Perspective: Shorter Lives, Poorer Health*. National Academies of Science: Washington, DC; 2013. Available at <https://www.nap.edu/catalog/13497/us-health-in-international-perspective-shorter-lives-poorer-health>.

CONFERENCE AGENDA

WEDNESDAY, JUNE 15, EVENING

- 3:00 – 6:00 pm Registration
6:00 – 7:00 pm Welcome Reception
7:00 – 9:30 pm Dinner with Introduction of Conferees

THURSDAY, JUNE 16, MORNING

- 7:00 – 7:30 am Breakfast
- 7:30 – 12:30 pm **Session 1**
- 7:30 – 8:15 am Working breakfast with opening remarks
George Thibault, Thomas Bodenheimer, Diana Mason
- 8:15 – 8:50 am Discussion of themes from commissioned paper
The Future of Primary Care: Enhancing the Registered Nurse Role
Thomas Bodenheimer
Moderators: Joyce Pulcini, Steve Schoenbaum
- 8:50 – 9:25 am Discussion of themes from commissioned paper
Registered Nurses in Primary Care: Strategies that Support Practice at the Full Scope of the Registered Nurse License
Margaret Flinter
Moderator: Debra Barksdale
- 9:25 – 9:55 am Discussion of themes from commissioned paper
Expanding the Role of Registered Nurses in Primary Care: A Business Case Analysis
Jack Needleman
Moderators: Bobbie Berkowitz, Ellen-Marie Whelan

- 9:55 – 10:25 am** Discussion of themes from commissioned paper
Preparing Nursing Students for Enhanced Roles in Primary Care: The Current State of Pre-Licensure and RN-to-BSN Education
 Danuta Wojnar, Ellen-Marie Whelan
 Moderator: Beth Ann Swan
- 10:25 – 10:40 am** Break
- 10:40 – 12:15 pm** Plenary discussion: What are key components of the enhanced role of the RN in tomorrow's primary care practices?
 Moderators: Thomas Bodenheimer, Diana Mason
- 12:15 – 12:30 pm** Charge to breakout groups

THURSDAY, JUNE 16, AFTERNOON

- 12:30 – 1:30 pm** Lunch
- 1:30 – 5:30 pm** **Session 2**
- 1:30 – 3:00 pm** Breakout Sessions
- Breakout 1
How should pre-licensure and RN-to-BSN nursing education programs revise their curricula to better prepare their graduates for careers in primary care nursing?
 Moderator: Debra Barksdale
- Breakout 2
How are existing RNs, who want to change their careers to become primary care RNs or are already practicing in primary care, prepared for this enhanced role now; how could such professional development better prepare existing RNs for enhanced roles in primary care (consider potential barriers and facilitators); and what might the curriculum look like?
 Moderator: Beth Ann Swan

Breakout 3

What are the challenges/opportunities for education-service interprofessional collaboration to build up primary care practices that enable RNs and other health professionals to work in effective and cohesive teams?

Moderator: Bobbie Berkowitz

Breakout 4

What are the barriers/facilitators to changing nursing education to place greater emphasis on primary care nursing, and how might these be overcome?

Moderator: Joyce Pulcini

Breakout 5

What are the barriers/facilitators to changing primary care practice to enhance the RN role, and how might these be overcome?

Moderators: Ellen-Marie Whelan, Steve Schoenbaum

3:00 – 3:15 pm	Break
3:15 – 5:00 pm	Plenary Session Report out from Breakout Groups
5:00 pm	Adjourn

THURSDAY, JUNE 16, EVENING

7:00 – 9:30 pm Reception & Dinner at the Atlanta Botanical Garden

FRIDAY, JUNE 17, MORNING

7:00 – 7:30 am Breakfast

7:30 – 12:00 pm **Session 3**

7:30 – 8:30 am Working Breakfast, Brief recap of Day 1 and Charge to Breakout Groups

Thomas Bodenheimer, Diana Mason

- 8:30 – 11:30 am** Five Breakout Groups
- Breakout 1
The practice environment: the role and use of registered nurses in primary care.
 Moderators: Joyce Pulcini, Ellen-Marie Whelan
- Breakout 2
Pre-licensure education needed to prepare registered nurses in primary care.
 Moderator: Beth Ann Swan
- Breakout 3
Professional development of registered nurses for primary care.
 Moderator: Bobbie Berkowitz
- Breakout 4
IPE and team training.
 Moderator: Steve Schoenbaum
- Breakout 5
Faculty development and system changes.
 Moderator: Debra Barksdale
- 11:30 – 12:00 pm** Group Photo

FRIDAY, JUNE 17, AFTERNOON

- 12:00 – 1:00 pm** Lunch
- 1:00 – 5:00 pm** **Session 4**
- 1:00 – 3:00 pm** Plenary Session
 Report out from Breakout Groups
 Moderators: Thomas Bodenheimer, Diana Mason
- 3:00 – 3:15 pm** Break
- 3:15 – 5:00 pm** Response to reports from Breakout Groups and identification of missing themes and recommendations
 Moderators: Thomas Bodenheimer, Diana Mason
- 5:00 pm** Adjourn

FRIDAY, JUNE 17, EVENING

6:30 – 9:30 pm Reception & Dinner at Ray's in the City

SATURDAY, JUNE 18, MORNING

7:00 – 8:00 am Breakfast

8:00 – 11:45 am **Session 5**

Conference Conclusions and Recommendations

George Thibault, Thomas Bodenheimer, Diana Mason

11:45 – 12:00 pm Summary Remarks

George Thibault

12:00 pm Adjourn





CONFERENCE PARTICIPANTS

Carmen Alvarez,
PhD, RN, CRNP, CNM
Johns Hopkins University

Erica D. Arana,
DNP, RN, CNS, CNL, PHN
University of San Francisco

Cynthia C. Barginere,
DNP, RN, FACHE
Rush University College of Nursing

Debra J. Barksdale,
PhD, FNP-BC, CNE, FAANP, FAAN*
Virginia Commonwealth University

Kenya V. Beard,
EdD, AGACNP-BC, NP-C, CNE, ANEF
CUNY School of Professional Studies

Judith G. Berg, MS, RN, FACHE
HealthImpact

Bobbie Berkowitz,
PhD, RN, NEA-BC, FAAN*
Columbia University School of Nursing

Mary Beth Bigley,
DrPH, APRN, FAAN
*Health Resources and Services
Administration*

Thomas Bodenheimer, MD, MPH*
*University of California,
San Francisco School of Medicine*

Janice G. Brewington,
PhD, RN, FAAN
National League for Nursing

Peter I. Buerhaus, PhD, RN, FAAN
Montana State University College of Nursing

Ellen H. Chen, MD
San Francisco Health Network

Marilyn P. Chow, PhD, RN, FAAN
Kaiser Permanente

Pamela F. Cipriano,
PhD, RN, NEA-BC, FAAN
American Nurses Association

Jason Cunningham, DO
West County Health Centers

Malia Davis, MSN, RN, ANP-C
Clinica Family Health Services

Margaret M. Flinter,
APRN, PhD, FAAN, FAANP, c-FNP
Community Health Center, Inc.

Erin Fraher, PhD, MPP
*The University of North Carolina
at Chapel Hill*

Robyn L. Golden, MA, LCSW
Rush University Medical College

Andrew Harmon, BS
*Jefferson College of Nursing,
Thomas Jefferson University*

Susan B. Hassmiller, PhD, RN, FAAN
Robert Wood Johnson Foundation

Laura Hieb, MBA, BSN, RN, NE-BC
Bellin Health System

Anne T. Jessie, DNP, RN
Carilion Clinic

Gerri Lamb, PhD, RN, FAAN
Arizona State University

Diana J. Mason, PhD, RN, FAAN*
*The George Washington University
School of Nursing*

Peter McMenamin, PhD
American Nurses Association

Storm L. Morgan, MSN, RN, MBA
US Department of Veterans Affairs

Andrew Morris-Singer, MD
Primary Care Progress

Mary D. Naylor, PhD, RN, FAAN
University of Pennsylvania School of Nursing

Jack Needleman, PhD, FAAN
*University of California, Los Angeles
Fielding School of Public Health*

Camille Prado, BS, RN
University of California, San Francisco

**Joyce Pulcini,
PhD, RN, PNP-BC, FAANP, FAAN***
*The George Washington University
School of Nursing*

Lisa Rivard, RN, CDE
*Scripps Health and Neighborhood
Health Care Clinics*

**Sandra F. Ryan,
RN, MSN, CPNP, FCPP, FAANP, FAAN**
Walmart

Stephen C. Schoenbaum, MD, MPH*
Josiah Macy Jr. Foundation

Karla Silverman, MS, RN, CNM
Primary Care Development Corporation

Thomas A. Sinsky, MD
Medical Associates Clinic

Alice D. Smith, BSN, RN
*Harvard Vanguard Medical Associates,
Atrius Health*

Beth Ann Swan, PhD, CRNP, FAAN*
*Jefferson College of Nursing,
Thomas Jefferson University*

George E. Thibault, MD*
Josiah Macy Jr. Foundation

Donna Thompson, RN, MS
Access Community Health Network

Deborah Trautman, PhD, RN, FAAN
American Association of Colleges of Nursing

**Ellen-Marie Whelan,
PhD, RN, CRNP, FAAN***
*Center for Medicaid and CHIP Services
Centers for Medicare and Medicaid
Innovation*

**Danuta M. Wojnar, PhD, RN, MED,
IBCLC, FAAN**
Seattle University College of Nursing

STAFF

Peter Goodwin, MBA
Josiah Macy Jr. Foundation

Yasmine R. Legendre, MPA
Josiah Macy Jr. Foundation

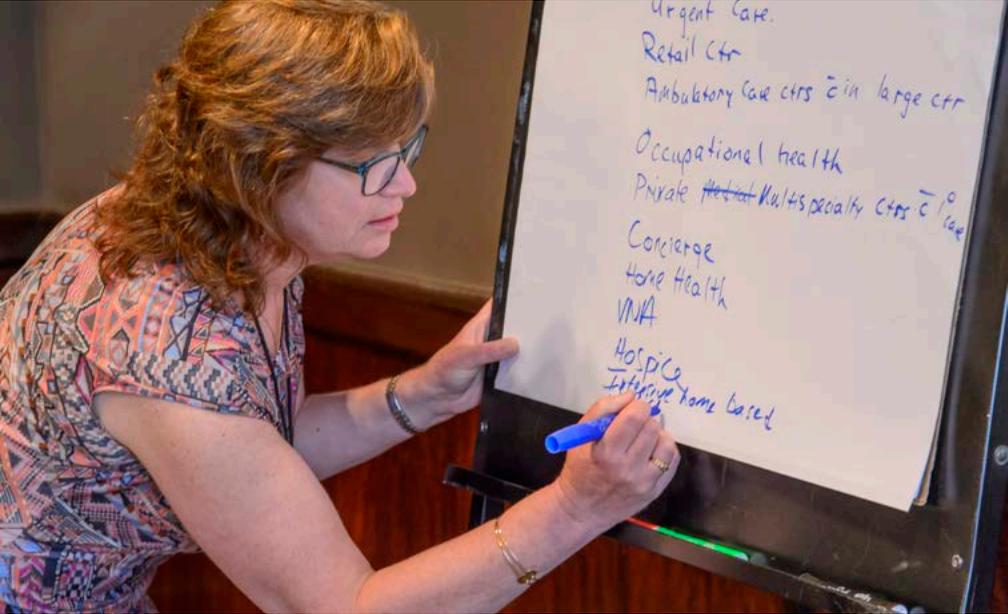
Cheryl Sullivan, MSES
American Academy of Nursing

Ellen J. Witzkin
Josiah Macy Jr. Foundation

Teresa Cirillo
EMCVenues

Teri Larson
Teri Larson Consulting

**Planning Committee Member*



CONFERENCE CONCLUSIONS AND RECOMMENDATIONS

REGISTERED NURSES: PARTNERS IN TRANSFORMING PRIMARY CARE

Primary care in the United States is in urgent need of transformation. The current organization and capacity of our primary care enterprise are insufficient to meet the healthcare needs of the public. The 2010 Affordable Care Act (ACA), which emphasizes the importance of primary care, has enabled millions more people to seek care at a time when more than half of Americans have at least one chronic condition and many have multiple illnesses and complex healthcare needs—trends that will continue as the population ages. However, resources currently allocated to primary care are inadequate. Strengthening the core of primary care service delivery is key to achieving the Triple Aim: improved patient care experiences, better population health outcomes, and lower healthcare costs.

These mounting pressures from external forces are shifting primary care toward new practice models staffed by high-functioning, interprofessional teams. Teams can increase access to care; improve the quality of care for chronic conditions; and reduce burnout among primary care practitioners, including physicians, physician assistants, and nurse practitioners. But this team-focused culture shift is nascent and, without enough appropriately trained healthcare professionals, primary care could falter under the increased demand.

Who can help alleviate the pressures on primary care? A tremendous, available resource is the 3.7 million registered nurses (RNs)—who comprise the largest licensed health profession in the nation. RNs are the ideal team members to help expand primary care capacity, yet they have been woefully underutilized in primary care settings. Practices that have deployed registered nurses in enhanced roles

have shown improved health outcomes, reduced costs, and enhanced patient satisfaction.

Registered nurses, appropriately prepared and working to the full scope of their licensure, can successfully implement and sustain patient-centered services for the aging and increasingly complex primary care population. They can increase access to care for all patients, and also assist in the management of patients with chronic diseases—such as diabetes, hypertension, chronic obstructive pulmonary disease, and substance abuse and mental health conditions—who require more services. They also can help improve transitional care, as patients move between hospitals, other care facilities, and home. Further, they can help improve patient engagement, quality scores, and team collaboration using health assessments, patient education, motivational interviewing, medication reconciliation, care planning, and more. This can occur through RNs following a panel of patients as well as through nurse-led individual and group visits.

While the large RN workforce has the potential to help meet the 21st century demands facing primary care, a number of barriers must be overcome. First, many RNs currently working in primary care spend much of their time on patient triage, sorting out who needs to be seen immediately and who can wait. This is an important function, but primary care practices need to balance RNs' time between traditional triage and the emerging chronic care management, care coordination, and preventive care. Second, some state laws limit utilizing RNs to the full extent of their education and training. Even when state law supports full practice authority, healthcare organizations sometimes restrict RNs from practicing to the full extent of their licensure.

Third, much of the work that RNs and other primary care team members currently perform is not directly reimbursable under the traditional fee-for-service payment model, meaning that new payment models are needed to facilitate the growth of primary care teams that include RNs. Finally, and perhaps most importantly, many RNs are not exposed consistently to the full range of primary care content in the classroom or through instructional clinical experiences, which overwhelmingly focus on inpatient and acute care. As a result, RNs may lack skills and competencies essential to functioning effectively in primary care.

The significance of these issues and their relevance to the mission of the Josiah Macy Jr. Foundation prompted the Foundation to focus its annual conference on

the topic of *Preparing Registered Nurses for Enhanced Roles in Primary Care*. The conference represented the intersection of three themes of importance to the Foundation in its efforts to help reform health professions education: improving primary care, preparing nurses for leadership roles, and linking education reform and healthcare delivery transformation.

The conference generated actionable recommendations around the potential for RNs to help meet the urgent needs of primary care. Participants at the two-and-a-half-day working conference—held June 15–18, 2016 in Atlanta, Georgia—included more than 40 leaders in primary care, representing academic nursing and medicine, healthcare delivery organizations, professional nursing associations, healthcare philanthropy, and more. Nursing students also were at the table.

“The forward momentum in primary care means we are moving in the right direction, toward higher value care that is focused on improving the health of the public,” said Macy Foundation President George Thibault, MD. “But we have a long way to go. We simply can’t meet the primary care needs of the nation unless registered nurses are part of the solution, and we must prepare them appropriately and then use them for this role.”

CONTEXT FOR THE CONFERENCE

Nursing has its roots in primary health care. Florence Nightingale, widely recognized as the 19th century founder of modern nursing, said: “Money would be better spent in maintaining health in communities rather than building hospitals to cure.” By the early 20th century, registered nurses were serving as autonomous primary care providers, particularly in urban centers and rural communities where the needs were greatest. In 1919, a nurse-run community health center regarded the hospital as a “repair shop, necessary only where preventive medicine has failed.”

Nursing, at its core, has a history of helping patients identify and improve their psychosocial and health needs. Nursing education, in contrast to other health professions education programs, includes a holistic approach to patients that is not solely based on organ systems or body parts. Nursing science includes an assessment of personal and familial health within a social and environmental

context, not just a focus on disease and treatments. This becomes even more important as the role of primary care in the US health system expands to acknowledge and address the role that social determinants of health play in achieving improved health status.

By the mid-20th century, health care's center of gravity shifted from homes and communities to hospitals, and the nursing profession followed suit. Approximately, 60% of registered nurses work in hospitals, and nursing schools focus on the skills needed for inpatient hospital care, with little attention paid to practice in primary care settings. Yet the costs of hospital-based care are too high and the health of Americans lags behind other developed nations. Today, the pendulum is swinging back toward community-based primary care. Changes in nursing education, regulations, and payment are critical to support and accelerate this shift.

The Institute of Medicine's *Future of Nursing*¹ report, released in 2011, echoed these themes: "[W]hile changes in the healthcare system will have profound effects on all providers, this will be undoubtedly true for nurses. Traditional nursing competencies, such as care management and coordination, patient education, public health intervention, and transitional care, are likely to dominate in a reformed healthcare system as it inevitably moves toward an emphasis on prevention and management rather than acute [hospital] care."

While significant progress has been made on the Future of Nursing recommendations concerning advanced practice nurses, particularly nurse practitioners, comparatively little attention has been paid to the report's implications for RNs. The American Academy of Nursing approached the Macy Foundation to raise the significance of this issue, and the Foundation now hopes to reignite the conversation on the enhanced role of registered nurses in transforming primary care to meet the needs of the nation.

1 Institute of Medicine. 2011. *The Future of Nursing: Leading Change, Advancing Health*. Washington, DC: The National Academies Press.

CONFERENCE DISCUSSION

To create a baseline from which to launch the conference discussion, the Macy Foundation commissioned four papers on topics related to registered nurses and primary care practice. Prior to the conference, participants read the commissioned papers as well as other suggested articles, and on the first day of the conference, discussions centered on themes from these papers.

The first paper, *The Future of Primary Care: Enhancing the Registered Nurse Role* by Conference Co-chair Thomas Bodenheimer, MD, MPH, and his colleague, Laurie Bauer, RN, MSPH, both of the University of California, San Francisco, described how the transformation of primary care in the United States is creating “favorable conditions” for growth in the number of RNs in primary care, particularly in larger practices and community health centers.

The paper also elucidated the likely roles of primary care RNs as focused around patients with chronic disease; patients with complex health needs and high healthcare costs; and patients whose care must be coordinated across many settings, including hospitals, skilled nursing facilities, ambulatory practices, and private homes. Barriers to more RNs working in primary care include the scarcity of nurses adequately prepared to perform primary care functions and payers not reimbursing for work performed by some members of the primary care team, including RNs.

Registered Nurses in Primary Care: Strategies that Support Practice at the Full Scope of the Registered Nurse License was the second commissioned paper. It was written by Margaret Flinter, APRN, PhD, FAAN, senior vice president and clinical director for Community Health Center Inc. (CHCI); Mary Blankson, APRN, DNP, chief nursing officer for CHCI; and Maryjoan Ladden, APRN, PhD, FAAN, senior program officer at the Robert Wood Johnson Foundation. This paper posits that achieving “better, safer, higher quality care that is satisfying to both patients and providers, and affordable to individuals and society” will require us to “effectively use every bit of human capital available in the primary healthcare system,” and presents a vision for the “blue sky” future of primary care and the role of RNs.

In this future, instructional programs offered by nursing schools, health systems, professional organizations, and others will help existing RNs transition their careers to other settings, and will offer learners opportunities to specialize in primary care,

community health, or public health nursing, including the option to complete a residency or similar clinical education program in community-based settings. In this future, in which all patients are served by primary care teams, registered nurses will take on prevention and health promotion activities, minor episodic and routine chronic illness management, and complex care management in conjunction with other team members. They also will possess skills in population management, quality improvement, and team leadership; will provide counseling and care services via telehealth; and will expand the reach of primary care into the community.

The authors conclude by stating: “This blue sky state requires much more than just changing educational preparation. It requires today’s leaders and providers to reorganize today’s primary care practices and systems to accommodate a truly collaborative model of team-based primary care.”

The third paper commissioned for the conference, *Expanding the Role of Registered Nurses in Primary Care: A Business Case Analysis*, was written and presented by Jack Needleman, PhD, FAAN, professor and chair of the department of health policy and management at the University of California, Los Angeles Fielding School of Public Health. The author describes new roles for RNs that achieve economic gains by engaging their expertise and reducing demands on primary care clinicians. These roles include RN co-visits; RN-only visits using standing orders; and increased responsibilities for RNs in care coordination, telehealth, patient education, and health coaching.

Through two case studies, the author describes how primary care practices have financially supported the expanded role of the RN. For example, in fee-for-service settings, increases in billable services can help pay for RNs in these new roles, while in capitated settings, additional RN-related costs can be offset by reduced use of other services, such as emergency department visits and hospital readmissions. Additional research is needed to examine the feasibility of these roles under emerging value-based payment structures and solidify the business case, but evidence suggests that increased engagement of RNs in caring for high-cost patients with chronic conditions will pay for itself and improve care.

The fourth and final commissioned paper discussed at the conference was *Preparing Nursing Students for Enhanced Roles in Primary Care: The Current State of Pre-Licensure and RN-to-BSN Education* by Danuta Wojnar, PhD, RN, FAAN,

professor and associate dean for undergraduate education at Seattle University College of Nursing, and Ellen-Marie Whelan, PhD, RN, CRNP, FAAN, chief population health officer at the Center for Medicaid and CHIP Services. The authors presented results from their survey examining primary care content in the curricula of the more than 500 pre-licensure (entry-level associate, baccalaureate, or master's degree) and RN-to-BSN education programs that responded to the survey. Though the authors acknowledged limitations regarding their findings, among survey respondents, only about 20 programs offered a robust primary care curriculum.

Findings from the survey focused on factors that facilitate and inhibit the implementation of primary care content in nursing curricula. Some of the factors facilitating primary care's inclusion in nursing schools are recognition of the emerging shift toward primary care; visionary leadership and forward-thinking faculty; increasing opportunities to learn with other health professions students; and mandates from state nursing commissions. Factors inhibiting the inclusion of primary care curricular content are lack of faculty buy-in and RN faculty preceptors; logistical challenges coordinating with community-based teaching sites; students' fear of not acquiring acute care skills; and the perception that primary care is not considered a significant content area on the National Council Licensure Examination for RNs (NCLEX-RN).

During conference discussions, participants agreed that registered nurses are well suited to both generalized and specialized roles within primary care. Examples of generalized roles include managing the care of panels of patients with chronic diseases, working with interprofessional teams to improve the care of patients with complex healthcare needs, and managing transitional care for patients between inpatient facilities, ambulatory care, and home care. Registered nurses who are experts in diabetes, heart failure, asthma, or behavioral health, or who are focused on populations such as children or women, might perform specialized roles. A body of evidence regarding the contributions of nurses in such roles has demonstrated improved health outcomes and reduced costs.

As discussions progressed, conferees also agreed that preparing registered nurses to serve in expanded roles will require exposing learners to all types of nursing, including caring for patients across their lifespans and across all kinds of settings, from hospitals to community health centers and schools, from private homes to homeless shelters. While RNs should not be limited to acute [hospital] care, neither should they be limited to primary care. Instead, they should be encouraged to

explore a variety of practice options to determine the best fit for their personal and professional needs and interests. Expanding educational options for nursing students, including the development of interprofessional, collaborative practice opportunities in a variety of community-based clinical settings, will require strong partnerships between leaders of academia and clinical practice.

Conferees also discussed how RNs can help address two other concerns that permeate many healthcare organizations: insufficient attention to eliminating persistent disparities in care, which harm vulnerable populations; and overemphasis on acute care while minimizing the social determinants of health. RNs trained in culturally responsive care, including developing the knowledge and skills to recognize and address implicit and explicit bias and racism, will be better prepared to care for diverse patients and address population health.

Essential to all of this, the conferees agreed, is changing the culture of health care in general, and nursing in particular, to place more value on primary care as a career choice. Nursing leaders within both academia and practice environments must assume responsibility for this culture change. In concert, primary care practitioners must embrace enhanced roles for RNs in primary care. The Macy conferees agreed that enhancing the role of RNs to serve as members of primary care teams will not only improve patient care, but also help reduce burnout and increase job satisfaction among all team members. Further, if primary care hopes to solve its capacity problem in caring for the 21st century population, primary care practices will need to attract RNs by empowering them to enjoy professionally rewarding jobs—caring for patients, promoting health, preventing illness, and addressing population health.

CONFERENCE THEMES

The second day of the conference built upon the discussion themes that emerged during the first day, and conferees broke into groups to begin crafting recommendations in the following areas.

1. Changing the Healthcare Culture
2. Transforming the Practice Environment
3. Educating Nursing Students in Primary Care
4. Supporting the Primary Care Career Development of RNs
5. Developing Primary Care Expertise in Nursing School Faculty
6. Increasing Opportunities for Interprofessional Education

CONFERENCE RECOMMENDATIONS

Over the course of the second day, specific recommendations and supporting or sub-recommendations were drafted in small groups and debated during plenary sessions. On the third day, the draft recommendations were reviewed and refined—a process that continued via phone and email following the conference. As a group, the conferees felt strongly that the following recommendations were urgently needed and possible to achieve.

- I. Leaders of nursing schools, primary care practices, and health systems should actively facilitate culture change that elevates primary care in RN education and practice.
- II. Primary care practices should redesign their care models to utilize the skills and expertise of RNs in meeting the healthcare needs of patients—and payers and regulators should facilitate this redesign.

- III. Nursing school leaders and faculty should elevate primary care content in the education of pre-licensure and RN-to-BSN nursing students.
- IV. Leaders of primary care practices and health systems should facilitate lifelong education and professional development opportunities in primary care and support practicing RNs in pursuing careers in primary care.
- V. Academia and healthcare organizations should partner to support and prepare nursing faculty to educate pre-licensure and RN-to-BSN students in primary care knowledge, skills, and perspective.
- VI. Leaders and faculty in nursing education and continuing education programs should include interprofessional education and teamwork in primary care nursing curricula.

RECOMMENDATION I

Changing the Healthcare Culture. Leaders of nursing schools, primary care practices, and health systems should actively facilitate culture change that elevates primary care in RN education and practice.

Changes in educational priorities and in the structure of primary care practices will not happen without leadership from educational institutions, primary care practices, and professional organizations. Their incentive to take on this leadership role comes from evidence that these changes will result in better patient care, improved utilization of resources, and enhanced professional satisfaction. The necessary policy and payment reforms and broad community support will also require leadership advocacy. In addition, while there is evidence of the value of RNs in primary care practices, building a strong business case for their use will accelerate the pace of change in both education and practice.

Actionable Recommendations

- 1. Leaders of all healthcare organizations should support a culture change that reimagines primary care and the enhanced role of RNs. This culture change should maintain academic rigor around the biomedical model while increasing the emphasis on the family, social, environmental contexts

of health and the importance of interprofessional teamwork in achieving better patient outcomes and greater professional satisfaction.

- 2.** Leaders of nursing schools and practice sites should advocate and allocate resources for a re-balancing of nursing education to give greater priority to the teaching of primary care knowledge, skills, and attributes to pre-licensure nursing students, to RNs considering transitioning to primary care careers, and to the continuing professional development of primary care RNs. This will mean providing more primary care clinical opportunities for all pre-licensure nursing students, professional development opportunities for RNs in primary care who want to take on enhanced roles, and continuing education for practicing RNs contemplating a move into primary care.
- 3.** Leaders of both educational and healthcare delivery systems should promote the academic-community partnerships that will be necessary to achieve the re-balancing of education and the higher visibility of primary care. Nurses should be in meaningful leadership roles in these partnerships, and the career development of nurses in these partnerships should be supported. These academic-community partnerships should also include patient, family, and community representation.
- 4.** Leaders of both educational and healthcare delivery systems should work with policy makers, payers, government agencies, large employers, and community leaders to advocate for the changes necessary to support the work outlined in this report.
- 5.** Leaders of all stakeholder organizations should help disseminate these recommendations, working with the American Academy of Nursing and the Josiah Macy Jr. Foundation.

RECOMMENDATION II

Transforming the Practice Environment. Primary care practices should redesign their care models to utilize the skills and expertise of RNs in meeting the healthcare needs of patients—and payers and regulators should facilitate this redesign.

Patient quality outcomes and the abilities of practices to build capacity can be improved using enhanced RN roles, but government and private payers must provide financial support for building primary care capacity. In addition, the practice environment must value enhanced RN roles and design care delivery and payment models to make best use of RNs' skills and competencies. Doing so will improve access, outcomes, care coordination, and satisfaction.

Some best practices in the optimal deployment of RNs in primary care already exist. Exemplary primary care practices² are using RNs to begin the appointments, take histories, engage patients, and set the stage for long-term relationships—with a primary care practitioner (PCP) coming in near the end of a visit to perform medical management. Others are utilizing co-visits with RNs and PCPs working side-by-side in the patient encounter. In these practices, an RN takes the lead role in patient engagement, education, and activation, and uses data to inform practice. The nurse also may take the lead on pre-visit planning and follow up after the visit, in collaboration with the PCP, as well in transitional care and disease management. In most documented cases, relying on RNs in these ways has enabled primary care practices to increase their volume and revenues to the extent that, at a minimum, the RN's salary is offset.

Actionable Recommendations

1. Primary care practices should evaluate the skill mix of current team members to ensure that their contributions are optimized, and either hire RNs into enhanced roles or reconfigure the roles of those already on the team. The RN roles should include care management and coordination for aging and chronically ill patients and those with increasingly complex health needs; promoting health and improving patients' self-management of prevention and behavioral health issues; and placing greater emphasis on transitional care, prevention, and wellness. Practices should optimize

2 Examples of exemplary primary care practices are included in this monograph.

the potential of RNs, allowing them to spend ample face-to-face time with patients.

2. Health systems and primary care practices should support the transformation from practitioner-dominated care models to team-based care models (“I to we”), with RNs leading the primary care team when appropriate given their expertise.
3. Payers should develop alternative payment models—such as shared savings for reducing expensive hospital admissions, re-admissions, and emergency department visits—so that the work of all primary care team members, including RNs, adds value rather than simply increases expenses. In fee-for-service systems, specific RN-visit types, such as Medicare wellness visits and care coordination, should be reimbursed at a higher level. RNs should be encouraged to acquire a National Practitioner Identifier (through the National Plan and Provider Enumeration System) for both payment and tracking purposes.
4. Nursing, primary care, and health services researchers as well as primary care administrators and chief financial officers should develop the business case for enhanced RN roles in primary care, with an emphasis on their impact on quality; costs; patient, family, and team member and staff satisfaction; and their contributions to addressing social determinants of health in primary care settings. The evidence-based Ambulatory Nurse-Sensitive Indicators provides a much-needed tool to assist in quantifying the value of RNs in primary care.
5. Healthcare systems, professional organizations, states, and other regulatory entities should identify barriers, real and perceived, that limit or impede enhanced roles in primary care for registered nurses. Of particular importance are strategies for reducing barriers presented by outdated state practice acts that may limit RNs’ abilities to utilize their skills to the fullest extent. State medical and nursing boards and health system leaders should rely on research that supports enhanced roles in primary care for RNs, and they should facilitate the adoption of evidence-based guidelines and standing orders that empower RNs to carry out these roles.

RECOMMENDATION III

Educating Nursing Students in Primary Care. Nursing school leaders and faculty should elevate primary care content in the education of pre-licensure and RN-to-BSN nursing students.

A multi-pronged approach that spans classroom and clinical instruction is critical to elevating primary care in nursing education. Interventions include developing the pipeline of students interested in primary care, re-balancing curricula between acute and primary care instruction, and supporting graduates in seeking RN roles in primary care. The re-balancing of curricula to incorporate primary care content should be informed by adult learning theory and educational scholarship. These efforts will create a movement to build a critical mass of RNs in primary care.

Actionable Recommendations

1. Nursing schools should work with the communities they serve to develop a pipeline of diverse students to meet the needs of diverse patient populations. Admissions criteria should be broadened to identify candidates with particular interest in and aptitude for primary care and community service.
2. Nursing faculty must broaden and deepen the primary care focus in the curriculum. Doing so includes enriching content on topics such as wellness, health promotion, and disease prevention; population health and risk stratification; motivational interviewing and health coaching; health equity; leadership, cost of care, delivery models and systems innovations; care coordination and care transitions; chronic care and complex care management with associated behavioral health concerns; longitudinal care throughout the lifespan; culture change and primary care practice transformation; informatics and data analytics; and telehealth and virtual delivery models.
3. Schools of nursing must reach out to primary care practices to develop innovative arrangements for meaningful clinical experiences for nursing students. Accomplishing this will require that schools create an inventory of primary care practices, partner with them to develop enhanced clinical experiences that can include longitudinal opportunities for students

to serve the same individual and family across settings, and adapt the designated education unit concept in high-performing primary care sites.

4. Nursing faculty must provide opportunities for students to have exposure to primary care outside of the curricular experiences. This exposure could include informing students of the opportunities to delve more deeply into issues in primary care through working with organizations that promote primary care, such as Primary Care Progress.
5. Nursing faculty should establish a strong evaluation and research component to improve on curricular changes and identify best practices in preparing pre-licensure and RN-to-BSN students for enhanced roles in primary care. This component could include examining the impact of curricular changes on licensure performance and career choices.

RECOMMENDATION IV

Supporting the Primary Care Career Development of RNs. Leaders of primary care practices and health systems should facilitate lifelong education and professional development opportunities in primary care and support practicing RNs in pursuing careers in primary care.

Registered nurses working in primary care practices or interested in transitioning into primary care will need to strengthen or build primary care knowledge and competencies in areas that include chronic disease management, care coordination, care transitions, prevention and wellness, interprofessional teamwork, and triaging. This skills acquisition will require a learning system designed to assure that the most recent knowledge for innovation, evidence, system design, leadership, and technology within primary care settings is available and accessible to practicing RNs. Educational modalities should be varied, flexible, and promote development of a diverse primary care RN workforce, including opportunities for academic-practice partnerships, residency programs, and engagement in the redesign of primary care practice.

Actionable Recommendations

1. Schools of nursing, health systems, and professional organizations should create opportunities for lifelong education and professional development in primary care for RNs, including nurse managers and executives. Potential partners who can help develop learning modules include professional nurses associations as well as national organizations focused on healthcare transformation.
2. The American Nurses Credentialing Center (ANCC) should establish a Magnet®-type recognition program for primary care practices, or incorporate a primary care focus into the existing Magnet® program. This would encourage primary care systems to create practice environments known for their excellence in nursing practice and high-quality care. The ANCC should convene leaders within professional nursing associations to develop an action plan.
3. Academic and practice leaders should develop academic-practice partnerships across primary care settings and schools of nursing to create residency programs in primary care; enhance RN development; co-design curricula and toolkits for implementing educational programs; and disseminate co-designed curricula to organizations supporting primary care transformation, such as health plans, foundations, and consultant agencies, as well as entities that provide continuing nursing education.
4. Primary care practices should establish opportunities to engage registered nurses in the redesign of primary care with foci on full RN practice authority, leadership, and interprofessional practice.
5. Primary care practices and organizations involved in training healthcare professionals should provide staff development and continuing education on enhanced RN roles at the practice level, prioritizing RN-led contributions to the specific needs of the community served by the practice and reflecting the culture, language, and values of the community.

RECOMMENDATION V

Developing Primary Care Expertise in Nursing School Faculty. Academia and healthcare organizations should partner to support and prepare nursing faculty to educate pre-licensure and RN-to-BSN students in primary care knowledge, skills, and perspective.

Although some nursing faculty teach primary care content in undergraduate programs, many are more comfortable teaching acute, inpatient hospital content in classrooms and clinical settings. To re-balance nursing education toward a greater primary care orientation, there is a need for considerable faculty development in the areas of primary care nursing knowledge, skills, and functions. Academia and ambulatory practices should work together in this endeavor.

A primary care perspective not only looks at an acute inpatient episode in a patient's life, but also concerns itself with the entire trajectory of a patient's illness throughout the lifespan. Moreover, while nursing care in acute settings has focused on RNs implementing the orders of practitioners (physicians, nurse practitioners, or physician assistants), RNs in ambulatory practice may make autonomous patient care decisions within their scope of practice and under standardized protocols.

Actionable Recommendations

1. Deans, other leaders of nursing education, and faculty should utilize an interprofessional model of RN faculty development. Faculty who achieve competence in primary care practice should be recognized and rewarded for their broadened knowledge, expertise, and skills.
2. Health systems and health insurers should help fund faculty development, including residencies and fellowships in primary care nursing, as they may benefit financially from the enhanced RN primary care roles. Further, schools of nursing should develop innovative partnerships with primary care practices to help them recruit faculty and develop instructional materials and other educational resources on the primary care nursing paradigm.
3. Nurses actively working as care coordinators, chronic care managers, and other enhanced roles in primary care should have joint faculty appointments to teach both didactic and clinical primary care competencies. Nursing faculty should spend time working in primary care

practices to enhance their own skills and close the gap between education and practice.

4. Nursing faculty should model an RN culture of equal partnership with physicians and other team members, such that RNs become comfortable caring for patients autonomously under standardized protocols as authorized by state nursing boards. Faculty should educate nurses to care for patients not only during an acute episode of illness but also throughout their lifespan and across acute care, primary care, and home settings, paying attention to socioeconomic, cultural, and environmental factors impacting the health of the population.
5. Partnerships should be developed between nursing schools, other health professions schools, and health systems to further the integration of RN education and interprofessional education with primary care clinical practice. Partnerships may be contractual, specifying the responsibilities of each party, or involve a health system partnering with a nursing school to create the strongest possible integration between RN education and practice.

RECOMMENDATION VI

Increasing Opportunities for Interprofessional Education. Leaders and faculty in nursing education and continuing education programs should include interprofessional education and teamwork in primary care nursing curricula.

Interprofessional teams are key to successfully transforming primary care to meet the healthcare needs of the public. Thus, opportunities for interprofessional education (IPE) and teamwork are essential in the preparation and continuing education of all primary care team members, including registered nurses. This theme cuts across all prior recommendations on education and faculty development, but conferees felt it was of such paramount importance that it should be reinforced as a separate recommendation.

Actionable Recommendations

1. All primary care nursing education curricula should incorporate core interprofessional competencies, such as those developed and disseminated by the Interprofessional Education Collaborative and the Quality and Safety Education for Nurses Institute. Additional foundational support for IPE curriculum development is available from the National Center for Interprofessional Practice and Education and from the Institute for Healthcare Improvement's Open School. Essential steps include:
 - Convene leading health professions education and practice groups, and patient and family representatives, to co-develop the curriculum;
 - Identify competencies to prepare registered nurses for expanded roles in primary care; and
 - Ensure that the curriculum is deployed in the continuum of education of current and emerging primary care professionals. One example of an educational tool that includes interprofessional elements is the American Academy for Ambulatory Care Nursing's modules for clinical care coordination and transition management.
2. Deans and faculty should position students from all professions to bridge and accelerate the connection of academia and practice and to drive change in practice sites. For example, have students from multiple professions work with a shared panel of high-risk primary care patients or engage in a classroom discussion about best practices in primary care.
3. Deans and faculty should leverage technology as a catalyst to spread innovative curricula and collaborative practice in primary care. Technology fosters better education and collaboration in primary care teamwork. For example, simulations may be used to model important resource management challenges. One scenario, for example, might require all team members to use the same electronic health record screens to record and integrate information about a patient.

CONCLUSION

Preparing registered nurses for enhanced roles in primary care is an urgent issue; exemplary practices show that these enhanced roles are achievable.

To succeed in this endeavor, primary care and nursing education need to undergo fundamental culture change, assisted by the engagement, support, and commitment of a wide variety of stakeholders. Patients will be the ultimate beneficiaries.







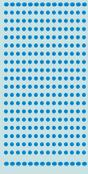
PRIMARY CARE EXEMPLARS

West County Health Centers, Inc. in California

JASON CUNNINGHAM

In California's Sonoma County, West County Health Centers, Inc., has moved strategically toward a care delivery model that focuses on relational, continuous, accessible, team-based care. In particular, West County has invested in the role of registered nurse (RN) care manager as a critical member of the primary care team. The approach provides both diagnosis and treatment across the spectrum of disease acuity and offers proactive preventive care, self-management support, care coordination, chronic disease case management, and focused behavioral modification support for complex outliers.

It is clear that patients require different levels of investment as they move through different life stages and health challenges and will need to be empowered to engage more fully in health solutions. Additionally, as patients develop more complex health needs, they require a more comprehensive, system-wide approach that maximizes traditional healthcare delivery and provides additional case management and care coordination. A smaller number of patients who utilize a disproportionate amount of resources in the current healthcare delivery system require a different approach to care delivery that focuses on behavioral interventions to change their clinical outcomes and move them toward more appropriate healthcare utilization.



Transformed Care Delivery Model

At the heart of West County Health Centers' care delivery model are two core principles: (1) the main product in primary care is the relationship with the patient and (2) effective primary care can only occur in the context of a highly effective and empowered team. As William Osler said, *"It is more important to know what sort of patient has a disease than what sort of disease a patient has."* All of health care is "relational," but within primary care, "trusting, long-term, healing relationships" are at the core of the product.

Understanding a patient's particular needs, interests, and approach to health within the context of his or her community allows a primary care team to move beyond the urgent need and become an effective enabler of health at all stages of a patient's life journey. The deep healing relationship with the patient is more effective if it is born out of many touches with the patient over a period of time, and where applicable, in the patient's home environment. This becomes increasingly important as primary care moves into caring for patients with multiple chronic illnesses, complex mental health needs, co-morbid addiction, and underlying history of trauma, and as it moves toward understanding and reducing inappropriate health system utilization and cost.

West County Health Centers, Inc., serves a socially and medically complex population in rural western Sonoma County in northern California. Between the four primary care clinic sites, the federally qualified health center cares for approximately 14,000 unique patients, 80% of whom are below 200% of the federal poverty level. The primary "care team" consists of a medical provider, an RN care manager, a medical assistant, and front office staff.

The team is empowered to care for a panel of patients throughout the continuum of patient care, including prenatal, obstetrical, preventive, and geriatric services. The team is accountable for clinical outcomes and each member of the team interacts and is incentivized based on role-specific population health data at a patient and aggregated level. The primary care teams are supported by an integrated behavioral health team that includes staff specialized in addiction services and community health resources. The ratios for one full-time equivalent (FTE) primary care provider are as follows: 1.75 medical assistant, 1.75 front office staff person, 1.2 RN care manager, 1.0 behavioral health staff member, and 0.3 community health worker. Each FTE panel cares for approximately 1,200 risk-adjusted patients.

The RN Care Manager Role

RN care managers are at the core of supporting patients with complex health needs or high-risk clinical events. While RN care managers provide traditional clinical triage and assist medical providers and the rest of the care team with patient tasks during office visits, West County has prioritized the unique skills and background of RN care managers to focus on care provided between office visits. This includes care coordination with other health systems, chronic disease care management for patients who are not meeting specific health targets, hospital and ER transitional care, high-risk disease and lab tracking, and care management for higher cost/higher utilization patients. RN care managers also coordinate services with other members of the care team, behavioral health staff, and community health workers for specific patient needs and provide an invaluable role in communication and coordination with patients.

West County Health Centers' staffing model is fully funded within the operating budget of the agency and does not rely on increased productivity or increased charge capture to remain solvent. Financial viability is achieved by a strong commitment from agency leadership to the current care delivery model, with very lean operational costs and overhead. West County has realized increasing financial reimbursement from its managed Medicaid health plan, fee-for-service reimbursement for hospital transition care, and an "Intensive Outpatient Care Management" grant for reducing costs and utilization for high-risk patients. Further, West County Health Centers, Inc., receives reimbursement for chronic care management from the Centers for Medicare & Medicaid Services and has partnered with four other community health centers to start an accountable care organization.

West County Health Centers has been on its current journey of care delivery transformation for the past 10 years. It recognized early that primary care redesign is complex, takes a significant amount of time, and requires a commitment to comprehensive team transformation. The role of the RN care manager has been the most complex in the redesign process, requiring high-functioning medical assistants as well as behavioral health and front office staff members to support work that would commonly compete for the time and priority of the RN. It also requires a strong commitment by agency leadership to focus on care that is not reimbursed in the traditional primary care environment. West County has committed to developing and staffing the role of the RN care manager, understanding that RNs will continue to play a critical role in a transformed primary care environment.

Community Health Center, Inc. in Connecticut

MARGARET FLINTER

Since its establishment in 1972, Community Health Center, Inc., (CHC) has grown from a free storefront clinic in downtown Middletown, Connecticut, into one of the nation's largest community health centers, providing comprehensive care to more than 145,000 patients through a statewide network of 14 primary care sites and more than 200 service delivery locations.

Innovative, Team-Based Care

As a patient-centered medical home, CHC provides fully integrated, team-based care. CHC's primary care providers (physicians, nurse practitioners, and physician assistants) are supported by highly trained registered nurses (RNs); medical assistants; behavioral health therapists; and extended care team members, including chiropractors, psychiatrists, registered dietitians, and others. Each team member contributes their unique role and skills, all practicing at the top of their license, training, or certification.

To ensure care is of the highest quality, CHC established the Weitzman Institute, a research organization with a staff skilled in quality improvement tools, sophisticated data management, and health information technology to develop and implement evidence-based solutions to improve primary care delivery.

To support advanced training for its providers, CHC developed its own Weitzman Institute Project ECHO® videoconference education program, based on the successful pilot by the University of New Mexico Health Sciences Center. Today, more than 600 participants from 91 organizations in 23 states have joined Weitzman Project ECHO clinics for training and support in management of chronic pain, hepatitis C, HIV, substance abuse, pediatric and adolescent behavioral health, LGBT health, and quality improvement. This model was then translated to support our registered nurses in developing the capacity to implement complex care management.

CHC and the Weitzman Institute also developed eConsults, a secure messaging system for consultations, reducing patient wait times from as much as a year to just a few days. eConsults now conducts teleconsults in cardiology, dermatology, endocrinology, gastroenterology, neurology, ophthalmology, orthopedics, and pain

management. CHC recently incorporated the Community eConsult Network to provide rapid consultations to primary care providers throughout the country.

Training the Next Generation

CHC has a deep commitment to training the next generation. To address the need for intensive preparation for practice careers as primary care providers in the safety net setting, CHC developed a model of postgraduate nurse practitioner (NP) training, and established the nation's first NP residency program in 2007. CHC also sponsors a postdoctoral clinical psychology residency and provides technical assistance to health centers across the country through its National Cooperative Agreement on Clinical Workforce Development. In 2016, CHC established the National Institute for Medical Assistant Advancement to ensure this vital role on the team also has the benefit of superior training that incorporates advanced skills not covered in traditional programs.

Participating in the Precision Medicine Initiative

CHC continues working to improve care with its selection as part of the National Institutes of Health Precision Medicine Initiative Cohort program, which aims to engage at least one million people in research to improve the prevention and treatment of disease based on individual differences in lifestyle, environment, and genetics. CHC's diverse patient population will provide a wealth of vital health information to this ambitious national project that will shape the future of healthcare delivery.

The Role of the Registered Nurse

CHC is dedicated to developing and advancing the role of the registered nurse in primary care, and as a critical member of the care team. Along with a primary care provider, every CHC patient has an RN on their team who is able to support the patient through virtual and office visits; actively manage chronic illness through standing orders and protocols; and assess and treat those health concerns that can be medically managed under standing orders but benefit from the added education, counseling, and support of RNs. RNs function as coaches, advocates, coordinators, and complex care managers as they approach population health by proactively co-managing patients with primary care and behavioral health providers, particularly those patients with multiple or poorly controlled chronic illness and complicating social determinants of health.

RNs at CHC have access to a variety of tools to support their work, including an RN-led Project ECHO focused on complex care management, clinical decision support in the form of data dashboards, and a personal clinical scorecard that enhances their ability to track the impact of their work on patient health outcomes over time. CHC is also accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

CHC's RNs are dedicated to training the next generation of nurses with the implementation, in January 2016, of a primary care-focused dedicated education unit. This innovative model ensures that senior-year nursing students in bachelor's programs acquire a firm understanding of the full continuum of care that patients travel through, along with a better grasp of what an integrated team-based model of care that emphasizes the critical role of RNs really looks like. Regardless of where these students work as nurses after graduation, they will be able to support more effective transitions of care, have an enhanced understanding of the various roles of nurses across the continuum, and may be more likely to choose primary care as their final career.



Clinica Family Health in Colorado

MALIA DAVIS

Clinica Family Health is a federally qualified health center (FQHC) that is a crucial piece of the medical safety net for low-income and uninsured residents in the southern Boulder and northwestern Denver metropolitan areas of Colorado. From its founding, in 1977, as a single nurse practitioner facility with 500 patients, Clinica has grown into a multi-site organization that provides comprehensive primary and preventive healthcare services to more than 47,000 people annually.

Clinica is the only organization in its service area that delivers a full spectrum of integrated medical, dental, and behavioral health care on a reduced-fee, income-based sliding scale basis to patients of all ages. It currently has five medical and two dental clinics that provide approximately 200,000 appointments annually, and 93% of its patients have incomes below 200% of the federal poverty guidelines and 29% are completely uninsured. More than 80% of Clinica's patients are from a minority group and it provides a medical home to more than 30,000 Latino patients each year. All direct medical care personnel are English/Spanish bilingual.

Innovative Methods

Clinica's innovative methods have drawn the attention of several major media outlets. *The New England Journal of Medicine* devoted a story to Clinica's "high-functioning" care delivery system in July 2011. PBS' *Newshour* aired a story about Clinica's advanced diabetes care model and *Health Affairs* featured Clinica in its "Innovations" series. The National Committee for Quality Assurance (NCQA) has awarded Clinica the highest level of Patient-Centered Medical Home (PCMH) certification as well as Diabetes Recognition Program certification for all its service delivery sites. Clinica also received Ambulatory Health Care Accreditation from the Joint Commission. In spite of its advanced service model, Clinica spends less per visit on average than other community health centers. In 2015, Clinica's average cost per visit was \$188.58, compared with the \$222.61 average statewide. The national average was \$207.21 per visit.

RNs in Primary Care

Recently, Clinica has continued to foster innovation with changes to its care delivery model, specifically through the development of the primary care RN role. Clinica's nurses lead its complex care management work and participate in co-visits, which

are patient visits shared between an RN and a medical provider. Using RNs on co-visits has helped Clinica improve patient access to same day care by making more appointments available every day and by reducing double booking while adding total visits. Co-visits also provide for more time for patient education and discharge instructions and decrease telephone triage and tasking. Clinica also has seen improved care team communication and team work, as well as improved patient and care team satisfaction. An article about Clinica’s co-visit model titled, “Enhancing the Role of the Nurse in Primary Care: The RN Co-Visit Model” was published in the *Journal of General Internal Medicine* in 2015.



Medical Associates Clinic in Iowa

THOMAS SINISKY

Thirty years ago, when Dr. Tom Sinsky first started his practice at Medical Associates Clinic in Dubuque, IA, his practice partner was a registered nurse (RN). Over the years, as the complexity and intensity of outpatient care have accelerated, the clinic's team model has evolved. Its current core team consists of one physician and three RNs working closely together to provide continuous complex care to a panel of patients. The larger "pod team" also includes another physician working with three RNs and a nurse practitioner teamed with one RN.

What do Patient Visits Look Like?

Depending on the nature of the appointment, the patient will spend the first 5–20 minutes with one of the three registered nurses. Prior to the appointment, an RN will review all lab results and will then discuss them with the patient during the visit. This is a time when the nurse will use her medical knowledge and teaching skills to help the patient engage more fully in his or her own care as the patient reviews the meaning of test results, such as HbA1c or cholesterol levels.

The RN also will gather information about the patient's other health issues. For instance, at the time of the annual Medicare wellness appointment, she will assess the patient's risk for falls, screen for depression, and provide information on advance directives. The registered nurse also will update the patient's immunizations as needed, and will discuss and schedule screenings, such as colonoscopies, bone density scans, and mammograms. For patients who are diabetic, the nurse will perform and document the diabetic foot exam and schedule the annual diabetic eye exam. In short, RNs attend to prevention-related tasks as well as management of the patient's chronic conditions before the physician enters the exam room.

Registered nurses also initiate discussions to explore any current family issues or social stressors in that patient's life. She might learn, for example, that the patient is dealing with the recent death of a family member or loss of a job. Or perhaps they might be excited by the arrival of a new grandchild or have just returned from vacation. This is important information because it helps us to get to know our patients as unique human beings and establish strong, trusting, long-term relationships with them.

For acute problems, the RN obtains the initial history of symptoms, and she also has standing orders for symptom-driven tests. So if the patient has chest pain or shortness of breath, using her own judgement, the RN might obtain an EKG or perform pulmonary function tests and obtain an oxygen saturation level.

For all visits, the RN performs the important task of medication reconciliation and also obtains weight, blood pressure, and pulse. This not only provides important information, but provides an opportunity for the nurse to touch the patient. That simple act of physical contact helps nurture a caring, trusting relationship. When she has completed all this work, the nurse checks in with the physician and they both return to the exam room to join the patient.

The nurse then provides an oral presentation of the patient's concerns, symptoms, vital signs, lab results, and social issues to both physician and patient, allowing the patient the opportunity to listen and elaborate or clarify if necessary. This approach becomes a three-way discussion between the patient, RN, and physician. The physician then performs a physical exam and makes necessary medical decisions and formulates a plan, which the RN enters into the electronic health record in real time.

The physician moves on to another patient, while the RN stays in the room and performs the crucial work of operationalizing the therapeutic plan. She answers any further questions that the patient might have, provides teaching and health coaching as needed, sends off prescriptions, and then escorts the patient to the receptionist for scheduling of future appointments. If the patient calls back later with questions, the RN is able to answer them because she was with the patient throughout the entire visit.

On any given day, when 30–35 patients may be seen in clinic, another 100 patient encounters may occur via phone calls, emails, and faxes. This volume of work requires a finely tuned, well-organized team. Almost all of this important complex personalized work between visits is performed by RNs. Whether performing face-to-face-work during a clinic visit or phone, fax, or email work between visits, the RN is engaged in work grounded in long-term, trusting, healing relationships and working at the top of their license using all of their medical, managerial, and communication skills in caring for patients.



THE FUTURE OF PRIMARY CARE

ENHANCING THE REGISTERED NURSE ROLE

Commissioned Paper

THOMAS BODENHEIMER, MD, MPH
UCSF Center for Excellence in Primary Care
and

LAURIE BAUER, RN, MSPH
and UCSF School of Nursing

INTRODUCTION

A vibrant national movement is sweeping primary care, spawning high-performing, patient-centered practices. The numbers of nurse practitioners and physician assistants are growing, adding to the primary care practitioner workforce. Discussions are intensifying on payment reform, supporting the evolution from a physician-does-everything model to team-based care.

The challenges are formidable. Society expects primary care practices to provide accessible and comprehensive care to the American population; yet, primary care is underpaid, receiving only 5% of the total healthcare dollar.¹ Panel sizes are large, making it difficult for practitioners to spend sufficient time with patients.² In addition to providing 20–25 daily patient encounters to an increasingly elderly population, primary care practitioners are supposed to track and improve upon a potpourri of performance measures. With these increasing demands and insufficient resources to meet them, primary care practitioner burnout is a serious and persistent problem.³

This paper explores the hopes and fears of primary care in the 21st century and examines the likelihood of expanded roles for registered nurses in primary care.

WHY PRIMARY CARE MATTERS

A large body of research demonstrates that more primary care is associated with improved outcomes and reduced healthcare costs.⁴ In a state-by-state analysis of 24 quality-of-care measures, states with more primary care physicians had higher quality and lower Medicare costs, while states with fewer primary care and more specialist physicians had lower quality and higher Medicare costs.⁵ Similar communities with an adequate supply of primary care have lower infant mortality and all-cause mortality, fewer hospital admissions, and reduced healthcare costs compared with those lacking sufficient primary care.⁶

PATIENTS' VIEWS OF PRIMARY CARE

Studies addressing what patients want from physicians suggest four things: I want my physician to know how to help me (competence); I want my physician to care about me (empathy); I want my physician to know me as a person (familiarity); and I want to see my personal physician when I need care (continuity).^{7,8}

Public opinion polls show that many patients do not universally experience these traits from their physicians. In 2012, 44% of patients were not satisfied with the treatment received during their last doctor visit.⁹ In 2008, only 56% of US adults ages 19–64 reported having a primary care practitioner who was easy to access in a timely fashion.¹⁰ In a study of 264 audiotaped visits to family physicians, patients making an initial statement of their problem were interrupted after an average of 23 seconds.¹¹

It is likely that these problems are related to primary care practitioners' large panel sizes and brevity of visits. A 2005 analysis of adult primary care visits found that the average visit time was 20.9 minutes, while the average number of clinical items addressed per visit rose from 5.4 in 1997 to 7.1 in 2005.¹² Research also found that 44% of primary care physicians are dissatisfied with the amount of time they are able to spend with patients.¹³ And, while nurse practitioners spend more time with patients, with greater patient satisfaction, they are being exhorted to provide more and faster visits.¹⁴

THE CENTRAL ROLE OF CHRONIC DISEASE IN PRIMARY CARE

Currently, 75% of primary care visits are for chronic illnesses.¹⁵ In 2012, 50% of US adults had at least one chronic condition, and 12% had three or more chronic conditions. Between 1980 and 2015, the US population 65 and older grew from 25.5 million to 47.8 million, and will add almost two million people yearly, reaching 74.1 million in 2030. Among elderly adults, 86% have at least one chronic condition and 33% have three or more chronic conditions.^{16,17} Over one-third of US adults are obese and over two-thirds are overweight. Without serious prevention efforts, the US prevalence of diabetes will grow from 41 to 61 million between 2015 and 2030.¹⁸ These realities underlie the widespread adoption of the chronic care model, which teaches that teams are essential to chronic disease management,¹⁹ and that registered nurses (RNs) in particular have a major role to play as chronic disease care managers.²⁰

TRENDS IN PRIMARY CARE PRACTICE

Historically, primary care was practiced by family physicians, general internists, and general pediatricians. During the last decades of the 20th century, the new professions of nurse practitioner (NP) and physician assistant (PA) appeared, and from 1999 to 2009, the number of physician offices with at least one NP, PA, or certified nurse midwife increased from 25% to nearly 50%.²¹ Primary care provides 55% of ambulatory care visits nationwide, but only 32% of physicians practice primary care.²²

In this paper, the phrase “primary care practitioner (PCP)” refers to physicians, nurse practitioners (NPs), and physician assistants (PAs)—those who are authorized to diagnose and treat and who currently can bill for their services. The broader term “clinician” includes PCPs and other professional team members, such as registered nurses, pharmacists, and behaviorists.

Over the past decade, practice size has undergone a major change. The percentage of physicians in solo practice declined from 41% in 1983 to 18% in 2014,²³ and primary care is experiencing similar trends. A high proportion of solo physicians are older, suggesting that solo practice may eventually disappear

entirely. The percentage of physicians in practices of 50 physicians or more grew from 3% in 2001 to 36% in 2011, with similar trends for primary care. Many primary care physicians are also in mid-sized practices of 6–50 physicians.^{23,24}

Practice ownership has also experienced rapid change. From 2002 to 2008, the percentage of practices owned by physicians dropped from 70% to 50% while the percentage owned by hospitals increased from 20% to 50%. This trend continues in 2015 and is more pronounced for primary care than for specialty practices.^{25,26} Three-fourths of physicians leaving residency begin their careers as employees of a hospital or medical group. Another practice ownership model is the nurse-managed health clinic (NMHC), led by an NP or other advanced practice nurse. In 2014, about 250 NMHCs were in operation; they are expected to provide 5% of US primary care in 2025.^{27,28}

The pillars of primary care are first contact care (access), continuity of care, comprehensive care, and care coordination.⁴ In the past, primary care physicians cared for their patients in both ambulatory and in-patient settings and regularly interacted with specialists in the hospital, allowing easy coordination of care between office and hospital. Patients generally enjoyed continuity of care and access to their personal physician because physicians worked full time.

Today, the primary care pillars are facing major challenges because of the trend toward part-time practitioners and the hospitalist movement, which grew rapidly after the 1990s, fracturing the natural familiarity between primary care physicians and specialists.²⁹ NPs and PAs, whose patients have healthcare outcomes equivalent to those of physicians, have played an essential role in improving both access and continuity, and some practices have hired RN care coordinators to assist patients in coordinating care within the medical neighborhood surrounding the primary care home.¹⁴

With the 21st century has come a flurry of even more changes in primary care practice. Today, primary care is expected to take responsibility not only for the care of individuals, but also for the health of its population of patients, requiring practices to empanel their patients and create registries to track quality measures. The federal government provided financial incentives to adopt electronic medical records (EMRs), which has pushed more work onto practitioners and added time-consuming documentation demands.

In 2015, only 52% of US physicians were satisfied with their EMR in compared with 86% in the UK, 77% in Germany, and 76% in the Netherlands.¹³ Primary care came under the scrutiny of government and private payers and the provider systems of which they were part, measuring performance in the areas of clinical quality, patient experience, and practice operations. Panel size for the typical primary care physician averaged over 2,000 patients, creating an almost impossible task; for one practitioner to provide excellent preventive and chronic care would take 16 hours per day for a panel that size.² With practitioners unable to provide the totality of services mandated to primary care, RNs are being asked to take on the population health and chronic care responsibilities of primary care.³⁰

PRIMARY CARE PRACTITIONER WORKFORCE TRENDS

Projections for PCP workforce shortages vary widely, though all analysts agree that 1) there is a growing gap between the population's demand for primary care and the number of primary care physicians available to meet that demand, and 2) NPs and PAs will narrow but not close that gap.

A simple way to think about supply projections is to start with the existing supply, estimate the number of new practitioners (physicians, NPs, PAs) per year, the number of practitioner retirements per year, and the number of full-time practitioners transitioning to part time per year. Projections vary widely because these estimates are difficult to make.

On the demand side, the population's demand for primary care is increasing because of population growth, the rapid growth of the elderly demographic, more insured people under the Affordable Care Act (ACA), and the diabetes and obesity epidemic.^{31,32}

Physicians

In 2010, there were 210,000 primary care physicians (family doctors, general internists, and general pediatricians) practicing in the US.²⁸ The number of primary care physicians per population increased only 14% from 1980 to 2012 while the total number of physicians increased 73%. About 8,000 primary care physicians (including doctors of osteopathy and international medical graduates) entered the workforce in 2015, only slightly up from 7,500 in 2005. Without an unlikely spike in

medical and osteopathic students entering primary care practice, the number of entrants is expected to plateau around 8,000.^{33,34}

The number of primary care physician retirements was about 6,000 in 2015 and is projected to increase to 8,500 in 2020.³³ Thus, in 2020, the number of retirements may equal or exceed the number of new entrants, which would cause the primary care physician workforce to decline in relation to a growing population.

The number of hours worked by primary care physicians has been dropping. In 2014, the average family physician worked 47 hours per week, down from 51 in 1998.^{35,36} Women physicians work about seven fewer hours per week than men, and by 2025, half of the primary care physician workforce will be women.³⁴

Based on projections of supply and demand, several organizations have estimated the future shortage of primary care physicians. The federal Bureau of Primary Health Care estimates a primary care physician shortage of 20,400 by 2020.³⁷ The Association of American Medical College's shortage estimates range from 12,500 to 31,100 by 2025.³² The American Academy of Family Physician's Robert Graham Center predicts a shortage of 17,000 in 2025.³³

Nurse practitioners

In 2012, an estimated 127,000 NPs were actively providing patient care in the US. Estimates of the proportion working in primary care vary, but it is probably about 50%.^{38,39} Data from 2010 estimate the number of primary care NPs at 56,000.²⁸

The number of nurse practitioners entering the workforce each year has increased rapidly from 6,600 in 2003 to 18,000 in 2014, giving the profession the distinction of being the fastest growing within primary care.⁴⁰ The number of primary care NPs is projected to reach 103,000 by 2025.²⁸

Physician assistants

In 2013, 93,000 certified physician assistants (PA-Cs) were in active practice with 32% working in primary care an average of 39 hours per week.⁴¹ The number of yearly PA-C entrants grew from 4,000 in 2002 to 7,500 in 2014, and is projected to reach 8,000 by 2020.³⁴ The number of primary care PAs is estimated to increase from 30,000 in 2010 to 42,000 in 2025.²⁸

Total primary care practitioners

The primary care physician, NP, and PA workforce trends portend a striking change in the composition of primary care practitioners. In 2010, there were about 210,000 primary care physicians, 56,000 primary care NPs, and 30,000 primary care PAs: a total of 296,000 primary care practitioners. In 2025, there will be an estimated 216,000 primary care physicians, 103,000 primary care NPs, and 42,000 primary care PAs: a total of 361,000. In 2010, physicians made up 71% of PCPs; in 2025, that percentage will drop to 60% while NPs as a percent of the PCP workforce will jump from 19% to 29%. In 2010, there was one primary care NP for every four primary care physicians; in 2025, there will be about one NP for every two physicians.²⁸

Primary care practitioner (PCP) workforce trends²⁸

	Number in 2010	% of total PCPs, 2010	Number in 2025	% of total PCPs, 2025
Physicians	210,000	71%	216,000	60%
NPs	56,000	19%	103,000	29%
PAs	30,000	10%	42,000	11%
Total	296,000	100%	361,000	100%

Will the primary care practitioner shortage continue? Even with many new NPs and PAs, the primary care practitioner to population ratio will fall by 8% from 2010 to 2025. In addition, the demand for primary care is growing faster than the population because of several factors, including the aging of the population, an increase in chronic disease, an epidemic of diabetes and obesity, and the expansion

of health insurance coverage. The US National Center for Health Workforce Analysis estimates a shortage by 2020 of 20,400 primary care physicians, but only 6,400 primary care practitioners.³⁷

At least three other factors will impact the shortage projection. First, primary care physicians are reducing their work hours.^{35,36} Second, 47% of primary care physicians, compared with 27% of NPs and PAs, report that they are considering early retirement.⁴² Third, the capacity for NPs to provide care equivalent to that provided by physicians depends on NPs being granted full practice authority. In 2015, 21 states and the District of Columbia had granted NPs full practice authority; the other states had varying degrees of restrictions.⁴³

In summary, there continues to be a demand-supply gap for primary care, but the growth in the primary care nurse practitioner and physician assistant workforce substantially ameliorates that gap. Currently, some primary care NPs are performing the roles of chronic care managers and care coordinators. In the future, however, primary care NPs will be increasingly indistinguishable from physicians, meaning that RNs will be needed to assume the growing chronic care management and care coordination responsibilities.³⁰

PRIMARY CARE FOR UNDERSERVED POPULATIONS

Many rural counties and low-income urban neighborhoods have been designated as Primary Care Health Professional Shortage Areas, with less than one primary care physician for every 3,500 people. Rural areas have 68 per 100,000, compared with urban areas, which have 84 per 100,000.⁴⁴ Among the 62 million Americans living in primary care shortage areas, 43% are low income, 28% live in rural areas, and 38% are racial/ethnic minorities.⁴⁵ Primary care NPs are more likely than primary care physicians to care for underserved populations in both urban and rural areas and are more likely to care for Medicaid recipients.⁴⁶

Community health centers play a major role in providing primary care to both urban and rural underserved communities. The number of community health centers has grown from 730 in 2000 to 1,300 in 2014, serving 23 million patients at 9,000 sites.⁴⁷ The average community health center has better rates of providing preventive care (immunizations, mammograms, colorectal cancer screening) and also has better rates of diabetes and hypertension control than average rates for

the US population.^{48,49} However, community health centers report shortages of primary care practitioners and registered nurses and have difficulty recruiting these professionals.⁵⁰

PRIMARY CARE PAYMENT REFORM (ALSO SEE APPENDIX)

For decades, health care reformers have tried to move the healthcare system away from fee-for-service—which rewards only volume—toward payments that encourage value (defined as better care at lower cost). Several recent initiatives, some of which are features of the Affordable Care Act, attempt to change payment for primary care and may impact the primary care RN workforce. Primary care practices paid under fee-for-service may provide unnecessary care and may not focus sufficiently on chronic and preventive care.⁵¹ High-value services performed by non-practitioner team members—RNs, for example, providing intensive management of patients with complex healthcare needs as well as health education and coaching, and care coordination—are rarely compensated under fee-for-service payment. In 2015, a number of alternative payment models that would support services provided by RNs are under discussion and are being piloted by payers and healthcare providers.

In January 2015, the US Department of Health and Human Services (HHS) announced plans to tie future Medicare payments to value. If such new payment models are broadly implemented, they may give primary care practices the flexibility needed to deliver team-based care, since payment will no longer be tied to the practitioner face-to-face visit.⁵²

The Appendix at the end of this paper displays the wide range of payment models and their possible impact on primary care nursing. Traditional fee-for-service does not support RNs in primary care settings since few of their services are reimbursed. In the past several years, Medicare has introduced some fee-for-service add-on payments: for wellness visits and complex care management, for example. In addition, some insurers and provider organizations have added lump-sum payments—pay for performance and patient-centered medical home rewards—on top of fee-for-service to support team care by non-practitioner clinicians. These add-on payment options can generate extra revenue to support RNs on the primary care team.⁵³

The trend toward accountable care organizations (ACOs) may usher in a more fundamental payment change through its promise of shared savings dollars, some of which could come to primary care if the ACO reduces costly hospitalizations while maintaining quality. Registered nursing skills that emphasize intensive ambulatory care for high-utilizing patients and improved coordination across primary care, acute hospital admissions, long-term care, and home care are well aligned with ACO goals.⁵⁴

Integrated and globally budgeted healthcare systems—such as Geisinger, Mayo Clinic, the Veterans Administration, and Kaiser Permanente—currently have the greatest flexibility to support team-based care, including enhanced roles for RNs. The most far-reaching primary care payment reform proposal provides risk-adjusted global payments for delivering comprehensive primary care, with additional payments for high performance.⁵⁵

Yet the road to payment reform may be long and winding.⁵⁶ In 2013, only 7% of physicians supported moving away from fee-for-service. Only 29% of physician-run ACOs and 20% of hospital-run ACOs have produced savings, and only a trickle of those savings came to primary care.¹

PRACTITIONER BURNOUT

Burnout among PCPs has become a disturbing phenomenon in primary care practice. Burnout is a syndrome of emotional exhaustion, loss of meaning in work, feelings of ineffectiveness, and a tendency to view people as objects rather than as human beings. In a 2014 national survey, 63% of family physicians, 60% of general internists, and 46% of general pediatricians reported symptoms of burnout, a significant increase from 2011.³ While research on burnout has focused on physicians, a recent study found that primary care nurse practitioners and physician assistants also experience burnout.⁵⁷ Physicians who have burnout are more likely to report making medical errors, score lower on instruments measuring empathy, and plan to retire early while their patients are less satisfied and have reduced adherence to treatment plans.⁵⁸ Major contributors to burnout include dysfunctional EMR systems, which greatly increase documentation time; insufficient time with patients; the quantity and pace of work; loss of control over practice conditions; and onerous rules from payers and regulators.⁵⁹

RN burnout has been studied in hospitals and nursing homes where it is a significant factor.^{60,61} Interviews with RNs in over 30 primary care practices revealed that RNs spending their entire day in triage and in-box message management had symptoms of burnout, whereas RNs empowered by standing orders to contribute meaningfully to patients' care generally enjoyed their jobs.³⁰

Group Health Cooperative in Seattle ameliorated physician burnout by reducing panel size and increasing visit length,⁶² however, those changes are difficult to sustain and spread because of the shortage of primary care practitioners. Well-functioning teams can also reduce practitioner burnout.⁶³ However, the most common response to burnout is the increase in part-time primary care practice.

THE SOCIAL MOVEMENT TO REJUVENATE PRIMARY CARE

Since the 1990s, a cluster of organizations, including the Institute for Healthcare Improvement (IHI), MacColl Center for Health Care Innovation, and the Robert Wood Johnson Foundation, have led efforts to assist primary care practices improve their patient-centeredness, access, chronic illness care, and overall practice organization.⁶⁴ In 2007, leaders at the IBM Corporation brought together the four primary care professional organizations—American Academy of Family Physicians, American College of Physicians, American Academy of Pediatrics, and American Osteopathic Association—to draft principles of the “patient-centered medical home (PCMH)”.⁶⁵

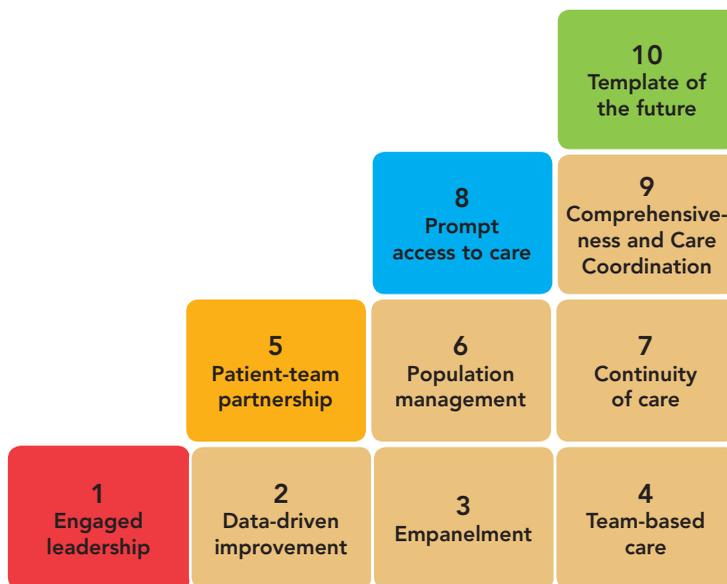
Further, national, regional, and state-wide collaboratives sprang up, bringing practices together to utilize the IHI's Model for Improvement, adopt elements of the chronic care model, and set up information systems to track performance.⁶⁶ By 2010, several organizations, including the National Committee on Quality Assurance (NCQA), MacColl Center, UCSF Center for Excellence in Primary Care, and others, created models synthesizing the common features of high-performing primary care. One such model, the 10 Building Blocks of High-Performing Primary Care [see figure], is based on observations made at 23 excellent primary care practices around the United States.⁶⁷

NCQA bestows public recognition upon practices that meet certain quality criteria.⁶⁸ Some payers offer financial rewards to practices gaining NCQA

recognition. Many practices initiated the integration of primary care and behavioral health. Some have added acupuncture, meditation, yoga, and other non-traditional services. Small practices with insufficient resources to qualify as a PCMH can utilize personnel in their medical neighborhood—for example, hospitals, health plans, or independent practice associations—to increase their capacity for improvement.⁶⁹

Primary Care Progress, with over 40 chapters at health science schools, spreads enthusiasm among students and residents to pursue primary care careers. The Comprehensive Primary Care Initiative is a multi-payer effort to strengthen primary care through revenue enhancements for practices that offer chronic care management, access and continuity, preventive care, and coordination of care across the medical neighborhood.

Figure: The 10 Building Blocks of High-Performing Primary Care



Two diverging trends are buffeting primary care. On the one hand, stressors like large panel sizes, productivity demands to see more patients each day, EMR-induced documentation creep, and escalating pressure to improve performance metrics without additional resources are causing PCP dissatisfaction and burnout. On the other hand, practitioners are feeling the excitement and challenge of implementing a new team-based care model. Some practices tend toward the negative pole, others toward the positive, and many exhibit both tendencies at the same time.

NON-TRADITIONAL PRIMARY CARE MODELS

Several new models of primary care practice have emerged, including direct primary care, concierge practices, retail clinics, and nurse managed health clinics. The direct primary care model features smaller panels, longer visits, few or no non-practitioner team members, and low overhead expenses. Most of these practices do not accept insurance payments; instead, patients pay a monthly fee of \$100 on average. Some practices also charge per-visit fees, averaging \$15. Direct primary care patients often have high-deductible insurance to help cover specialty and hospital care. In 2014, an estimated 150 direct primary care practices with 275 locations were operating in 40 states.⁷⁰ The number of direct primary care physicians is growing rapidly, from 150 in 2005 to 4,400 in 2014.⁷¹

Concierge practices are direct primary care practices, but with high fees (ranging from \$200 to \$2,000 per month), panels as low as 500 patients, and 24/7 physician accessibility. Their growth is limited by the size of the population able to afford this luxury approach.⁷⁰ For physicians, this model is the perfect antidote to burnout. But for the general population, concierge practices—with their small panel sizes—exacerbate the primary care practitioner shortage. In addition, practices converting from a traditional model—with panels of 2,000 patients—to a concierge model discharge many of their patients, generally those who cannot afford the fees or whom the practice considers “difficult.” Discharged patients may have trouble finding nearby practices accepting new patients.

Another primary care model is the retail clinic, featuring pharmacies and other retail chains hiring nurse practitioners to work in their stores, seeing patients for uncomplicated respiratory or urinary tract infections, conjunctivitis, immunizations, and preventive care. Facing large insurance deductibles, patients can receive accessible care for relatively small sums in convenient locations. Those who present with more complex problems are sent to their primary care practice or an emergency room.⁷² The number of retail clinics grew from 300 in 2007 to 1,900 in 2015 and may increase to 3,000 by 2016.⁷³ The majority of retail clinics are operated by the CVS and Walgreens drug store chains. Walmart, with 4,500 stores nationwide, is planning a major expansion of retail clinics, including the care of hypertension and elevated cholesterol.⁷⁴ Increasingly, retail clinics are entering into partnerships with health systems such as the Cleveland Clinic and Kaiser Permanente, allowing coordination with primary care practices.⁷³

Yet another model is the urgent care center—generally staffed by a physician and/or physician assistant—which provides episodic walk-in services with extended hours, usually open seven days per week from 8 a.m. to 8 p.m. With x-ray services on-site, urgent care centers typically treat acute injuries such as lacerations, sprains, and fractures, but also provide laboratory services, immunizations, sports physicals, and pain management.⁷⁵ About 9,000 urgent care centers were functioning in 2012, owned by physicians, urgent care chains, or hospitals.⁷⁶

THE ROLE OF TECHNOLOGY

The adoption of electronic technologies is gradually transforming primary care. The following list is but a sampling of technologic opportunities for primary care:

- E-mail encounters through patient portals are replacing face-to-face visits and can be used for chronic disease management.^{77,78}
- Using mobile devices for patient education and self-monitoring of exercise and diet is starting to show promise.⁷⁹
- Routine clinical processes, such as prescription refills and panel management, can be performed using computer algorithms without taking the time of practitioners or other team members.
- Telehealth innovations allow practitioners and registered nurses to remain in their offices and check in regularly with patients at home with such conditions as congestive heart failure and hypertension.
- Patients taking and sending digital photos of skin rashes can receive dermatologic care from their homes.
- Telehealth interactions among practitioners allow PCPs to access specialists for such conditions as HIV/AIDS, hepatitis C, and mental health conditions.⁸⁰
- New Mexico's ECHO videoconferencing program hosts clinician education case conferences, bringing together remote practices with the university medical center.^{81,82}

THE FUTURE OF TEAMS IN PRIMARY CARE

Primary care practitioners are challenged to provide excellent care for their large panels of increasingly complex patients. Teams are needed to create more primary care capacity without increasing clinician work.⁸³ High-performing primary care practices are forging teams that share the care, reserving the time of PCPs to provide diagnosis and treatment while utilizing non-practitioner clinicians for chronic disease management, health coaching, care coordination with the medical neighborhood, EMR documentation (scribing), and panel management to ensure that all patients are offered all recommended routine preventive and chronic care services.^{84,85} In a number of practices, registered nurses play important team roles, in particular providing patient education and coaching to improve the health behaviors and medication adherence of patients with chronic conditions, and leading specialized teams for the management of complex patients with multiple diagnoses.³⁰

However, teams have been a major challenge for the majority of practices. The low level of reimbursement received by primary care and the predominance of practitioner-only fee-for-service payment makes it difficult for practices to hire sufficient staff to populate teams. In order to infuse primary care with a team-based paradigm, health professional schools will need to solidify a commitment to interprofessional education⁸⁶ such that young practitioners, nurses, pharmacists, and other team members enter their careers with competencies and attitudes allowing teams to prosper.

ENHANCED RN ROLES IN PRIMARY CARE

Registered nurses represent the largest health profession in the United States, almost three million in 2012, with 61% working in hospitals. Less than 10% of RNs work in ambulatory care. During the 1990s, the number of new RN entrants fell sharply, leading to projections of a serious RN shortage. Yet from 2000 to 2010, the number of RNs entering the workforce each year doubled.⁸⁷ The number of RN jobs is projected to grow by 16% from 2014 to 2024,⁸⁸ in particular because of the growth of the elderly and chronically ill populations.

As practice size continues to grow, as more practices are owned by hospital systems, and as the wave of chronic disease prevalence engulfs primary care, it is likely that registered nurses will play an increasingly central role in primary care. Small, physician-owned practices rarely hire RNs; personnel supporting practitioners are almost universally unlicensed medical assistants.⁸⁹ While practices in larger health systems and community health centers also utilize medical assistants, they are increasingly hiring RNs. Currently, primary care RNs spend much of their time triaging patients requesting same-day care; addressing EMR inbox messages; and performing office functions, such as injections, wound care, and patient education.³⁰

Practices initiating team models are beginning to engage RNs in four new major responsibilities: 1) managing chronic disease patients using protocols (e.g., titrating blood pressure medications or adjusting diabetes medications according to pre-approved algorithms); 2) leading complex care management teams to help improve the care and reduce the costs of high-utilizing, multi-diagnosis patients; 3) coordinating care between the primary care practice and the medical neighborhood surrounding the practice;⁹⁰ and 4) assisting practitioners to conduct acute patient visits for such conditions as respiratory infections and urinary tract infections (“co-visits” or “flip-visits”).⁹¹ In these delivery models, the responsibility for the health of a patient panel is shared among team members, who are empowered to provide care independently of primary care practitioners.^{92,93} In 2015, some of these enhanced roles were well on their way; for example, 43% of US physicians reported that their practice uses nurses or case managers to manage care for patients with chronic conditions.^{13,94}

The American Association of Ambulatory Care Nursing (AAACN) predicts that the decline in hospital admissions and the growing importance of ambulatory care are propelling a shift in health services, moving from the hospital to ambulatory care settings. The heightened complexity of ambulatory patients and greater expectations for quality require personnel with higher levels of clinical training than that possessed by medical assistants, and the new medical home models advocate for RNs to take on chronic care management and care coordination. The AAACN has created a core curriculum for ambulatory nursing.⁹⁵

Obstacles to the growth of enhanced RN roles in primary care are the continued predominance of fee-for-service payment, hospital systems’ overly cautious interpretations of scope of practice regulations, and the lack of adequate training

in primary care nursing.³⁰ In addition, with the growing importance of nurse practitioners as primary care practitioners, the precise roles of NPs and RNs need to be carefully delineated. Finally, because patient access to primary care remains a challenge, primary care RNs are spending a great deal of their time doing triage; to re-allocate their responsibilities toward chronic care management and care coordination, primary care practices will need to figure out how to relieve RNs of their triage duties.³⁰

CONCLUSION

Primary care is undergoing profound change in many areas: practice size and ownership; public expectations for quality, access, and patient-centeredness; the nature of the clinician workforce as NPs and PAs increase in numbers relative to physicians; the growth of chronic illness and particularly complex, high-cost chronic illness; the crisis in care coordination due to the separation of hospital and ambulatory physicians; the increase in primary care practitioner dissatisfaction and burnout resulting in part from the cascade of documentation demands brought on by the EMR; and the potential (though uncertain) of primary care payment reform that would facilitate team-based care.

Like the general population, primary care is expected to become increasingly stratified.⁹⁶ High-income people are likely to receive care in direct primary care/ concierge practices with small panel sizes. The middle class will receive primary care predominantly within large health systems that are increasingly swallowing up independent primary care offices. Such care will feature overly short primary care visits—necessitated by large panel sizes—often with NPs/PAs or other team members or through electronic patient portals, with continuity of care undermined by increasingly part-time clinicians and empathic care challenged by high levels of clinician burnout. Lower-income, vulnerable populations will likely receive primary care in busy community health centers and public hospital systems, a number of which provide excellent care because of engaged leadership and the social commitment of their practitioners and staff.

Particularly in larger practices and community health centers, the transformation of primary care creates favorable conditions for growth in the number of RNs, with their likely roles focused on chronic care management; the management of complex, high-utilizing patients; and the coordination of care among hospital, long-

term care, ambulatory care, and home. The barriers to such a development are the cost of RN salaries and benefits, the lack of RN reimbursement, and the reality that most RNs have not received education or training in primary care competencies. In order for RNs to become highly valued team members in primary care practices, nursing education will need to place greater priority on the training of RNs for primary care careers.

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Appendix

Payment Reform and Potential Impact on Primary Care Nursing

Payment Model	FFS-Based or Replaces FFS	Current/Projected Status of New Payment Methods	Likelihood of Primary Care Hiring Rns
FEE-FOR-SERVICE			
Fee-for-service (FFS)	FFS	Still the predominant payment mechanism. Practitioners are reimbursed for each service they provide and pay is not linked to outcomes. FFS is a well-recognized driver of health care costs and does not support team-based care, including registered nurses on the team.	Low likelihood of more RN hiring
FEE-FOR-SERVICE PLUS VALUE-BASED INCENTIVES			
Medicare wellness visits	FFS-based new code	In January 2011, Medicare introduced the annual wellness visit to promote wellness and care coordination through a health risk assessment, medical and family history, and functional status review. Licensed care team members other than PCPs can conduct the visit and bill for the service.	Increased likelihood of RNs
Medicare chronic care payments	FFS-based new code	New non-visit-based Medicare chronic care management payments took effect in January 2015. Simulation models show that practices can expect approximately \$332 per enrolled patient per year if a registered nurse delivers the care management. At minimum, 131 Medicare patients must enroll for practices to break even when hiring a full-time RN to provide these services. ⁵³	Increased likelihood of RNs

Payment Model	FFS-Based or Replaces FFS	Current/Projected Status of New Payment Methods	Likelihood of Primary Care Hiring Rns
FEE-FOR-SERVICE PLUS VALUE-BASED INCENTIVES (CONT.)			
Merit-based Incentive Payment System (MIPS) for physicians under MACRA	FFS-based Pay-for-performance	The Medicare Access and CHIP Reauthorization Act of 2015 (MACRA) gives physicians two options for payment under Medicare: the Merit-Based Incentive Payment System (MIPS) or an Alternative Payment Mechanism (APM). MIPS adjusts physician fees up or down based on measures of quality and resource use. The legislation is designed to be budget neutral and will increase or lower physician payments from 4–9% starting in 2019. ^{97,98}	May increase the need for registered nurses if they are used to increase quality
Hospital re-admission payment penalties	FFS-based penalties for unneeded readmissions	The Hospital Readmission Reduction Program (HRRP), started in October 2012, reduces payments to hospitals if they have higher than expected 30-day readmission rates for selected conditions. Interventions to reduce readmissions are primarily funded by hospitals through nurse care management programs. ⁹⁹	Primary care practices run by hospitals may hire RNs to help reduce re-admits. Many transitional care programs use RNs or advanced practice nurses.

Appendix

Payment Reform and Potential Impact on Primary Care Nursing (Continued)

Payment Model	FFS-Based or Replaces FFS	Current/Projected Status of New Payment Methods	Likelihood of Primary Care Hiring Rns
PATIENT CENTERED MEDICAL HOME MODELS			
Advanced primary care (APC) initiatives	FFS add-on or population-based payments	CMS is currently seeking input on initiatives to test innovations in advanced primary care, focusing on improving care of complex patients, facilitating care coordination, and moving away from encounter-based payments towards population based payments. ¹⁰⁰	APC payments support team-based care and could increase primary care RN hiring.
Comprehensive Primary Care Initiative	FFS-based care mgmt fee and shared savings	A 4-year multi-payer initiative (2012-2016) to strengthen primary care in 7 US regions. Participating practices receive funding through a \$20 PMPM care management fee and an opportunity to share in net savings to the Medicare program. Focuses on practice redesign for access improvement, planned chronic care, complex care management, patient engagement and care coordination.	If the care management fee payment and shared savings are large enough, these models may increase RN hiring in primary care
ALTERNATIVE PAYMENT MODELS FOR PHYSICIANS			
Alternative Payment Models under MACRA	Can be FFS or replace FFS	Under MACRA, physicians can choose to receive Medicare payments through an Alternative Payment Model (APM) rather than through MIPS (see above). The precise nature of the APMs are not specified, but they must reward value, not only volume of care provided. ⁹⁸	APMs can incentivize RN hiring in primary care

Payment Model	FFS-Based or Replaces FFS	Current/Projected Status of New Payment Methods	Likelihood of Primary Care Hiring Rns
ACCOUNTABLE CARE ORGANIZATION (ACO) MODELS			
Shared savings models (one-sided risk)	Can be FFS or replace FFS	Often combined with fee-for-service, P4P, bundled payments, global payments or capitation, HHS is encouraging the growth of ACOs, organizations that take responsibility for the care and costs of a population of patients. ACOs generally bring hospitals and physician practices under one organizational umbrella. ACOs that reduce total costs of care for its population of patients receive part of the savings, some of which could go to primary care as non-FFS payments. and can reward primary care practices as non-FFS payments. ^{52,97,99} ACOs assuming one-sided risk do not pay back money if their costs increase.	If payments to primary care practices are sufficient to pay for new team members, registered nurses could be used to support chronic care management, complex care management, and care coordination.
Shared savings models (two-sided risk)	Can be FFS or replace FFS	ACOs assuming two-sided risk receive a greater percentage of shared savings if their costs decrease, but must pay back money if their costs increase.	Two-sided risk provides higher potential for shared savings but also greater risk for losing money.

Appendix

Payment Reform and Potential Impact on Primary Care Nursing (Continued)

Payment Model	FFS-Based or Replaces FFS	Current/Projected Status of New Payment Methods	Likelihood of Primary Care Hiring Rns
BUNDLED PAYMENTS			
Bundled payment	Not FFS	As of 2013, providers can voluntarily apply for one of four CMS models for bundled payments for about 48 conditions under the Bundled Payments for Care Improvement Initiative (BPCI). CMS is proposing to launch its first mandatory bundled payment for joint replacements (hip and knee) in 75 metro areas starting in January 2016. ¹⁰¹	Has minimal impact on primary care since most bundled payments are for surgical and post acute care.
PARTIAL OR FULLY INTEGRATED SYSTEMS			
Provider-sponsored health plans	Not FFS	Provider networks, usually led by a hospital system, assume 100% of the financial risk for insuring the patient population. They collect premiums directly from employers or individuals, and have control and flexibility over how much is spent on delivering care. Examples are Geisinger Health Plan, Providence Health Plan, and Care Oregon.	This model has the highest amount of flexibility to support team-based care.
Integrated systems	Not FFS	Globally budgeted primary care practices ⁵⁵ and systems such as Kaiser, the Mayo Clinic and the Veterans Administration provide services through the health care continuum, and are incentivized to keep patients healthy to reduce high-cost specialty and tertiary care.	These systems may use RNs for complex care management and care coordination.





REGISTERED NURSES IN PRIMARY CARE

STRATEGIES THAT SUPPORT PRACTICE AT THE FULL SCOPE OF THE REGISTERED NURSE LICENSE

Commissioned Paper

MARGARET FLINTER, APRN, PhD

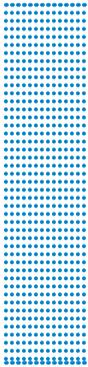
MARY BLANKSON, APRN, DNP

MARYJOAN LADDEN, APRN, PhD

A Message from the Authors: *Our interest and expertise in addressing this topic stems from our deep collective experience as nurses, leaders, and executives in primary care and primary care transformation. Mary Blankson is chief nurse officer for Community Health Center, Inc. (CHCI). Margaret Flinter is senior vice president and clinical director of CHCI, founder emeritus of its Weitzman Institute for Research and Innovation in Primary Care, and national co-director of the LEAP project. Maryjoan Ladden is a senior program officer at the Robert Wood Johnson Foundation, where she led the conceptual development of the LEAP Project. All three are doctorally prepared nurses, certified nurse practitioners, advanced practice registered nurses, and are engaged nationally to advance primary care transformation. Many of the innovations described in this paper reflect original work done at CHCI or practices identified in the LEAP project.*

INTRODUCTION

The United States is entering a new era of primary care inspired by greater access to care spurred by the passage of the Affordable Care Act (ACA). This increased access has led to the lowest number of uninsured Americans since records have been kept, and greater effectiveness of care made possible by new technologies,



science, and treatments. The aim of better, safer, higher quality care that is satisfying to both patients and providers, and affordable to individuals and society, may well be within our reach. To reach these goals, we must effectively use every bit of human capital available in the primary healthcare system. This is the backdrop against which we pose the questions: what strategies are most effective to support the full scope of registered nurse (RN) practice in primary care? And, how do we create a future state in which this RN role development will continue and flourish?

Over the past decade, the national conversation on access has expanded to include the question: access to what? This focus on the effectiveness of primary care in improving overall health, as measured by specific health outcomes, has primarily emphasized the contributions of primary care providers of all types (physicians [MDs]; physician assistants [PAs]; and advance practice registered nurses [APRNs]) and lamented the perceived shortage and maldistribution, as well as the widely reported dissatisfactions of primary care providers, particularly physicians. Despite the varied conversations focused on provider-level and provider-centric solutions and interventions to improve primary care delivery, the discussion is beginning to include the expanded care team, which, in fact, multiplies not just the hands doing the work, but broadens the skill base by expanding the variety of individuals on the team.

The patient-centered medical home (PCMH) movement has highlighted the importance of team-based care and the critical roles that all members of the team—providers; professional staff, such as registered nurses, behaviorists, pharmacists, and social workers; and other certified or non-certified staff, such as medical assistants, health coaches, and receptionists/patient service associates—play in a well-functioning PCMH striving to achieve the Triple (or quadruple) Aim. All of this has led many exemplar practices, particularly those that have sought and achieved PCMH status, with its emphasis on improved access, patient activation/self-management, education, empanelment, and chronic illness care, to reconsider the RN role in primary care. These practices have carefully examined how using interdisciplinary teams containing health professionals and other staff will help them achieve the quadruple aim. Increasingly, they have recognized the expertise and versatility of the RN and the value this role brings in increasing access, capacity, clinical depth, vitality, and even revenue generation.

THE EVOLVING RN ROLE IN PRIMARY CARE

The evolution and broadening of the RN role in primary care, not surprisingly, is also tied to the structure and organization of the practice from a financial/ payment perspective, such as the cost of investing in RNs as well as the potential savings that may accrue from RN care. In sites where the investment in RNs is a direct expense to the bottom line and impacts the personal compensation of an owner/group of owners, as is the case with physician-owned practices, there may be more reluctance to invest in the RN role. In community health centers, health maintenance organizations (HMOs), and accountable care organizations (ACOs), where all staff are salaried employees, there may be more willingness to employ and invest in RNs on the primary care team. In integrated care systems and HMOs, the financial savings achieved by decreased emergency room (ER) utilization or even modest reductions in hospital readmissions and effective chronic care management through an investment in expanded primary care nursing are a potential windfall, though they may not be directly attributable to specific care provided by RNs.

National nursing workforce trends and employment opportunities suggest a growing recognition of the opportunities for and value of RN roles in primary/ ambulatory care as well as in outpatient surgery, specialty care, long-term care, public health departments, and positions within the larger healthcare industry, such as insurers/payers. At the same time, based on 2012 data, there will be an actual projected excess of the RN supply relative to demand nationwide by 2025, although 16 states are still projected to have a shortage.¹ This excess of supply over demand persists even when taking into account the projected retirement of significant numbers of nurses, and reflects the near doubling of production of new RNs in recent years.¹ The ACA is designed to expand the number of people with health insurance coverage and to encourage new value-based models of care, but it is too early to know whether these emerging models will contribute to a new growth in demand for nurses, and new roles in prevention and care coordination.¹ This is an important addition to the conversation regarding nursing workforce as it could impact the validity of the published projections, particularly if new and expanded roles become the norm. It is prudent to not become distracted with the “good news” of adequate workforce and to instead continue to maintain focus on better molding the nursing workforce to fit the demands of the newly insured, and to continue to improve quality, safety, and efficiency, as was suggested by Buerhaus and his colleagues.²

The current state of nursing in primary care has been described qualitatively in practices that use RNs in new and different ways. A study of 16 exemplar practices using RNs in primary care focused on three major domains (episodic and preventive care, chronic disease management, and practice operations) that spanned functional areas of triage, documentation of health status, chronic illness management, hospital transition management, delegated care for illness, health coaching, supervision of other staff, and quality improvement (QI) leadership.³ Similarly, Bodenheimer and colleagues⁴ identified 21 potential exemplar practices and interviewed representatives at 13, including federally qualified health centers (FQHCs), integrated health systems, and county health systems. They identified many roles and domains in common with Smolowitz and colleagues.³ Their report identified key barriers to advancing the practice of RNs in primary care, and made recommendations for ameliorating practice restrictions, and for advancing role expansion for RNs in primary care.⁴ These barriers include the perceived high cost of RNs, perceived lack of opportunity to bill and generate revenue to support RN positions, lack of education and training in primary care at the university level to prepare RNs for practice, and failure to free RNs up from the constraints of managing triage.⁴

A Robert Wood Johnson Foundation (RWJF) initiative, The Primary Care Team: Learning from Effective Ambulatory Practices, or LEAP (www.improvingprimarycare.org),⁵ also studied exemplar team-based practices across the country in a wide range of settings and systems (rural and urban, large and small, solo practice, FQHC, academic practice, integrated health systems). Preliminary review of the data suggests agreement with the themes found in other studies, but also a wide variability in the advancement of RN practice in primary care.⁵ While in some practices, RNs were still tied to telephone triage; in others, RNs were more effectively engaged in delivering routine preventive and episodic care along with the primary care provider (PCP), delivering care independently through delegated and standing orders, and playing a strong leadership role in practice operations, team leadership, and QI.⁵

The RN role has also been qualitatively examined in community health center practices⁶ as well as the Veterans Administration (VA), which has advanced the role of RNs in primary care through the patient-aligned care team (PACT) model,^{7,8} and Kaiser Permanente.^{9,10} A common theme is that, while these very busy practices value RN care and have a commitment to RN care management and coordination, in reality, they have little time for these areas given the demands of daily practice.

These large practice systems argue for the significant impact and contribution of RNs in primary care, particularly in chronic disease management, transition management, and patient education, while recognizing that there are few data to demonstrate the specific role that RNs play in improving patient and/or practice outcomes. Recognizing the lack of specific data, a recent Canadian Nurses Association report recommended an up-to-date and comprehensive description of the number, characteristics, or practice patterns of Canadian nurses in primary care.¹¹

RNs have always played an important role in prevention, health education/health promotion, and family support. The very roots of community health/public health nursing in the US are based in this work. What is different today is the potential for these roles to be re-imagined and better scaffolded to be dynamic, interdisciplinary, data-driven, evidence-based roles and activities that can be measured in terms of their contribution to patient outcomes, cost savings, and team vitality.

In the following sections, we will 1) identify components of the effective RN role on the integrated primary care team; 2) identify the factors that will advance practice from isolated exemplars to an evidence-based national standard of effective RN primary care practice to which we train and educate the next generation; and 3) envision a future in which RNs in primary care will contribute in new roles to individual and population health outcomes and team vitality. Our work presumes that, at a minimum, primary care practices have evolved to include at least a rudimentary team-based approach to care, have an electronic health record, and are engaged in some level of monitoring of outcomes and improvement work either independently at the practice level or as part of a larger system.

MAXIMIZING THE RN ROLE IN PRIMARY CARE

Even as the national payment discussion focuses on paying for value rather than volume, those at the front lines of primary care know that “volume” is not just a marker for fee-for-service payment methodologies. It is a marker for very real people, populations, and communities in need of a primary care provider and primary care services. Volume can be expressed in terms of the numbers of individuals seeking access to a PCP for in-person and electronic visits, and “in-between visit” contacts for follow up and care coordination.

One study estimated that the standard panel size of 2,500 patients would take approximately 21.7 hours per day for a PCP to manage.¹² In our experience, a full-time PCP can, at best, meet the care demands of a panel of 1,500 patients, depending on the amount of care that is shared with other team members. In order to increase the provider's panel capacity, professional and lay staff must be trained and used effectively to deliver some of the visits completely and independently and to help manage the preventive, episodic, and chronic illness needs of the patients on the panel.¹³

It follows logically that practice systems that utilize the RN in primary care to the full extent of the RN's education and experience—and provide appropriate guidelines, supports, and supervision to ensure practice is within the scope of the RN license—create additional visit and patient engagement capacity, and thus panel size capacity. This enhanced participation by the RN contributes to increased access for existing patients, a more satisfying experience for patients, the potential for improved chronic illness clinical outcomes, cost savings through reduced ER encounters and hospitalizations, and ultimately, healthier communities. Several key roles—panel management, managing acute and chronic illness, complex care management, and QI—maximize the RN's impact on and value to the practice.

ACUTE AND CHRONIC “IN-BETWEEN” VISITS INDEPENDENTLY PERFORMED BY RNS

Empanelment is fundamental to a PCMH.¹⁴ All patients in a practice must be assigned to a PCP—whether an MD, APRN, or PA—and the practice must be able to reliably monitor the panel size and sub-populations within the panel, such as patients with specific chronic illnesses or high acuity needs. **Standing orders** help the team identify and manage specific health problems, complaints, or conditions that can be reliably, safely, and satisfyingly addressed and treated through application of guidelines to a particular population of patients. These are pre-determined by a licensed independent medical provider or by the consensus of a group of providers, and carried out on behalf of the authorized provider, and “as if” the provider were delivering the visit. Management of common episodic conditions, such as urinary tract infection (UTI), sore throat, and some sexually transmitted diseases (STDs), by standing order has been common in primary care practice. The list of conditions has now expanded to include healthcare encounters not just in which there is minimal differential diagnostic consideration, but also in which

patients stand to benefit from the RN's focus on education and self-management as well as treatment. These include contraceptive management and emergency contraception for unplanned pregnancies, latent tuberculosis treatment, chronic illness monitoring, and chronic pain assessment and medication surveillance. Another example is a more comprehensive visit, such as an annual diabetes visit at which all related measures are reviewed, or the prenatal care intake visit. These visits may last 45 minutes, be comprehensive in scope, provide both patient and practice team an opportunity for a full review, discussion of concerns, and update on preventive and periodic measures (diabetic retinal exam, vaccines, self-management goal setting, foot exam).

When developed by the appropriate clinician (chief medical officer in a large system; the supervising provider in a small system), standing orders must be clear in terms of explanations and expectations, reflect evidence-based practice, and finally, clearly state that the activity called for under the standing order is done by the RN, under the authority of the provider. The standing order is unique to a specific health condition or complaint, not to the individual patient. When RNs are able to practice using standing orders, the PCPs and other professional and lay staff can attend to other patient issues, and the PCP's panel and the practice size and capacity is increased as a result.

Compared with standing order sets, **delegated order sets** are specific to the individual patient, and allow the PCP to have his/her plan of action, adjusted by evolving data, carried out over a period of time, until the next needed PCP follow up visit. Delegated order sets are most often used in the management of chronic illness, particularly when treatment is being initiated or modified, and the patient's response—personal, clinical, and social—is of paramount importance.

An example of this would be the patient with diabetes for whom the PCP initiates insulin. Frequent visits with the RN are used to assess the patient's medication response and titrate dosing according to a pre-set plan; educate and support the patient/family in making the necessary changes; and spearhead coordination with other members of the team, such as a certified diabetic educator (CDE), registered dietician (RD), health coach, or outside specialty provider. Similarly the uncontrolled hypertensive patient would benefit from RN-supported medication monitoring and titration, organizational and tracking support for home monitoring of blood pressure, motivational interviewing and self-management goal support and, as with

diabetes, coordination with both internal and external specialists who can assist in the overall patient care plan.

In behavioral health care, nurses can assist both PCPs and psychiatry teams by monitoring for adherence and response to psychotropic medications in between visits. This not only increases patient support but also expands the panel size capacity that psychiatry MDs and APRNs can manage by increasing the time between direct prescriber follow-up visits. When a new medication is started, patients may encounter barriers, from difficulty purchasing the medicine to experiencing bothersome side effects. The primary care RN can intervene to alleviate barriers to initiating and adhering to the regimen, rectify and address early reactions or side effects in collaboration with the prescriber, and monitor early medication impact to the desired symptom as well as titrate dosage in accord with the delegated order set.

While RNs have the capability to multiply the impact of the PCP and other care team members by delivering evidence-based interventions that are specific either to the population (**standing orders**) or patient (**delegated orders**), many new RNs do not receive education and training specific to such domains during their academic preparation. Likewise, many experienced RNs are not prepared to assume these new, more proactive and independent roles since they come from an acute care framework, which is typically order driven. As the RN role continues to expand, practices must also take responsibility for ensuring that training, support, and ongoing education and coaching are in place to master both new roles, as well as content knowledge necessary to expertly execute these roles.

PREVENTIVE SERVICES AND POPULATION/PANEL MANAGEMENT

There are many definitions that describe the actions of “planned care” and “panel management.” They can be generally described as the act of making sure that all patients in the panel receive the required chronic and preventive routine evidence-based services, based on either their age, gender, chronic illness, or other defined category of risk. These services include things like routine cancer screening or even routine diabetes care, such as foot checks and retinal screening. This role certainly can be completed by RNs, but also generally can be completed by medical assistants (MAs). This is an important distinction given the goal of ensuring that RNs

are able to practice at the top of their license in order to expand access for patients to more comprehensive care without further stressing provider team members.

COMPLEX CARE MANAGEMENT AND TRANSITIONS OF CARE

In the same way, coordinating the care of patients is fundamental to the role of nursing, but also can be managed by many members of the team, including non-licensed case managers, social workers, and lay health workers. However, **complex care management (CCM)** is not about coordinating the details of care provided by numerous people, but about managing the care of a defined sub-population of one or more panels, and ensuring a solid grounding of the overall care plan in evidence-based clinical practice interventions. This population may, and often does, include patients experiencing a transition in care; patients with uncontrolled illness (chronic or acute); patients with multiple comorbidities; patients with severe social-environmental stressors, such as poverty, homelessness, low literacy or numeracy, high emergency department utilization; or simply those patients who the PCP or team have designated as in need of additional, intensive care from an RN in order to progress, stabilize, or avoid regression in their overall plan of care. The RN engaged in CCM typically provides intensive care management to a subset of patients, for a time-limited period. In some practices/organizations, the RN may integrate CCM into total panel support/team-based care, while in other settings, RNs may be devoted exclusively to complex care management.

Recruiting and training RNs to engage in care at this level is challenging as it requires a broad-based content knowledge in various chronic illnesses, deep understanding of pharmacology and medication management, skills such as motivational interviewing and self-management goal setting, a proactive approach to using data, and skill in collaborating with other team members. The use of standing orders is an important part of successful CCM. RNs are able to access other team members based not just on the PCP's order, but through their own decision of who may benefit from which services. For example, an RN engaging a diabetic patient in CCM should be able to access a certified diabetic educator, a dietician, and a behavioral health provider on an ongoing or as needed basis to help with treatment for that patient.

Integrated CCM for patients with comorbid medical/behavioral conditions is rooted in the idea that, as integral members of the care team, RNs are able to be coach, gatekeeper, liaison, leader, educator, navigator, and much more. In order for RNs to achieve successful CCM though, they must not only have electronic health record access and skills to enter and synthesize the data, but also have access to actionable data in dashboards and scorecards. The RN fingerprint in primary care documentation has been vague at best or anecdotal, compared with the structured and measurable entries made by the PCP and other team members.

There is a growing body of evidence that demonstrates RN care and intervention makes a difference in acute settings by highlighting the relationship between increased RN staffing levels and lower rates of certain adverse outcomes,¹⁵ but practices that have successfully embraced the role of the primary care RN have struggled to quantify the impact in a similar way. This has to be a priority in order to increase the pace at which this national transformation will take place. Data on impact is key not just to further shape the role of the primary care nurse, but also to deliver additional tools into the hands of frontline RNs to enhance their ability to allocate resources based on need (whether in terms of quantity of patients or complexity of patients) as well as to celebrate overall success.

RN care managers must have robust measures to outline overall performance. These could include many things, such as the hypertension and diabetes control rates for the panels they support along with other direct patient outcomes, transition management timeframes in terms of nursing follow-up contact, as well as overall tracking of motivational interviewing and self-management goal setting and follow up.

LEADERSHIP ROLES FOR RNS IN PRIMARY CARE: A FOCUS ON QUALITY IMPROVEMENT

Quality improvement in primary care has moved from the realm of what must be done to satisfy regulatory oversight imposed by others, to become a dynamic, data-driven, and problem-solving approach to improving efficiency, care, and outcomes. Exemplary practices use strategies, such as clinical microsystems, LEAN, Six Sigma, and others, to identify problems at the micro- or meso-levels, define the scope of projects, test interventions, develop playbooks, and implement and sustain change. However, as with independent nursing visits in primary care, the

entry-level preparation of registered nurses in QI science and methods has not kept up with the demands of new RN practice roles.

While quality and safety are now required competencies in the American Association of Colleges of Nursing (AACN) Essentials for Baccalaureate Nursing Education,¹⁶ the real question is how well prepared are the pre-licensure and graduate nursing faculty to teach quality and safety competencies and to model them in clinical precepting experiences? A recent (2005–2013) RWJF initiative, Quality and Safety Education in Nursing (QSEN), defined the essential pre-licensure and graduate nursing competencies for high-quality and safe nursing practice as patient-centered care, teamwork and collaboration, evidence-based practice, QI, safety, and informatics.¹⁷ The QSEN initiative also developed creative teaching tools and prepared hundreds of faculty around the country to teach these competencies to undergraduate and graduate students.¹⁷ While this effort has made a significant impact on preparing new RNs and APRNs, more training in quality improvement and implementation science methods is needed in continuing education programs. Otherwise, the primary care practice or organization must provide training and support to prepare RNs to meaningfully lead population health and QI efforts.

TO TAKE ON THESE NEW ROLES, WHAT CAN BE RELINQUISHED?

In order to move closer to these emerging RN roles, some traditional RN tasks or functions must be relinquished or the time devoted to them, reduced. If a task or function is essential, it may need to be reassigned to non-primary care RNs. Many practices have done this by increasing the skills and responsibilities of medical assistants, other lay health workers, and/or licensed practical or vocational nurses (LPNs or LVNs). Using all team members to work up to their potential allows for better access, shorter processing time for medication refills, and increased patient satisfaction. However making changes to the role of one person on the team has a definite impact on all other members of the team, as well as on the team functioning.

Some of the same strategies that allow RNs to participate more fully in the care of patients also apply to using other team members to work up to their potential. Two strategies that we have seen used most effectively are the development of clinical dashboards for “planned care;” giving medical assistants a set of “just-in-time” data

to deliver planned care; and ensuring that all a patient's routine health promotion, prevention, screening, and chronic illness monitoring needs are met, regardless of the reason for "today's" visit. In short, make automatic what can be automatic. In all but two states, MAs may administer medication, which further frees RNs for nurse visits and care management. Improved appointment guidelines and training for lay staff, along with increased appointment capacity, reduces the demand for triage, freeing up further RN capacity.

Realistically, we note that certain functions, such as triage/telephonic advice are, in fact, important elements of effective primary care. It is important to separate "high-value" and "low-value" triage. Low-value triage is a response to inadequate access/capacity for patients who need to be seen, want to be seen, but can't be seen because of inadequate provider capacity; in essence, the role becomes a frustrating exercise in convincing patients to accept that they can't have what they perceive that they need. Low-value triage also results when patients can't resolve their concerns on the first pass, such as getting a lab result, refilling a medication, or finding out the status of a pending or completed referral. Redesigning workflow and capacity is the answer, not investing primary care RN time.

We would define high-value triage as either dedicated or shared RN time spent in responding to requests for advice, guidance, and support in determining the right course of action (home care, ER, primary care visit). Based on the experience of one large primary care FQHC practice (CHCI) that sees approximately 85,000 patients in a year, the "steady state" demand for RN triage—for those issues that cannot be resolved by non-licensed staff in a call center—is approximately 80–100 calls per day, which requires approximately two full-time RNs to manage. While this function could be spread over all the primary care RNs (and has been in the past), the effectiveness, efficiency, and patient satisfaction of dedicated RN triage staff appears appropriate for large primary care practices. The healthcare industry has also responded with companies who specialize in providing such services to primary care practices both during practice hours and after-hours.

PREPARING RNS FOR THE PRIMARY CARE SETTING AND EVOLVING ROLES

Preparing RNs to work in primary care settings and to assume these new primary care roles is a three-pronged education challenge. The first challenge is preparing new RNs by educating today's RN students and new RN grads for the settings, competencies, and content of primary care practice. Second is providing staff/professional development for current primary care RNs to enhance their skills and take on new and more autonomous roles. Third is providing training and education to RNs with expertise in the in-patient or other non-primary care settings to practice effectively in primary care.

Preparing new RNs

First in the education continuum is educating new RNs—students in pre-licensure programs. The majority of clinical experiences in nursing programs continue to be in the in-patient care setting, with some limited exposure to public health, home care, or community health nursing roles. Few pre-licensure nursing programs provide ambulatory or primary care clinical experiences in their standard curriculum. Those nursing schools that run nurse-managed centers and/or mobile vans do provide some primary care and team-based care experiences for RN students, but this could be expanded.

Nursing educators often cite several reasons for maintaining the in-patient clinical education focus in pre-licensure programs. For example, the in-patient setting offers more opportunities for students to quickly master the required technical nursing skills. Further, achieving the required student-to-preceptor ratio is more challenging in the ambulatory/primary care setting as space and other constraints limit the number of students that can be in the clinic/team at any one time. Also the high-intensity pace of moving many patients through a three-hour session limits the preceptor's time with students, and thus the level of students appropriate for this setting. And, finally, there is a lack of nursing preceptors who have experience and feel comfortable teaching in the primary care setting. Unfortunately, then, most pre-licensure students have no exposure to ambulatory/primary care in their formative education years and thus little desire or preparation to work in these settings after graduation.

Training for the ambulatory/primary care nursing model, and particularly for the new RN roles, is challenging and requires dedicated time for practical experiences as the care delivery model is vastly different from the acute setting. Two strategies to prepare new RNs are nurse residency programs and dedicated clinical experience in the form of extended clinical rotations or a dedicated education unit (DEU). The American Association of Ambulatory Care Nurses (AAACN) has advocated for RN ambulatory residencies to develop RN skills in primary care.¹⁸ To the best of our knowledge, however, residency programs in primary care have not yet been developed for RNs who have completed a bachelor of science in nursing degree. Such programs could be modeled on the successful post-graduate residency training programs for new APRNs in FQHCs, which are now well established.¹⁹

The DEU, which began in acute care, is now being implemented in primary care at one FQHC with support from a HRSA initiative focused on improving interprofessional collaborative practice and education.²⁰ The DEU concept was originally developed in Australia at the Flinders University School of Nursing to address the issue of fragmented and time-limited training for RNs.²¹ In a primary care DEU, the RN student can experience all facets of the RN role, as well as experiencing a truly interprofessional collaborative practice environment. No matter where the RN decides to practice ultimately, he/she would have the tools to function on a team and to better understand this part of the continuum of care. A DEU allows for the exchange of hands-on clinical pearls from those currently delivering the care to those in the next generation. It provides the support and practice to develop therapeutic language when working with patients, and to master skills such as motivational interviewing when engaging the patient as a member of their own care team. This type of experience and support builds self-confidence, clinical competence, and critical thinking skills to function independently as an RN in primary care.

Building nurse residency programs and DEUs requires close partnerships between nursing education programs and primary care settings. While relationships exist between hospitals/health systems and nursing programs, they may not extend to the affiliated ambulatory/primary care practices or the independent primary care sites in the community. Nursing programs would benefit from concerted outreach to these types of practices to establish clinical teaching relationships beyond acute care.

Staff and professional development for new RN roles

The challenge is not only to prepare the next generation of new RNs to practice in primary care, but also to support primary care RNs who may now be practicing in a limited role and need to master new skills for new roles. For the RN whose role in the practice is continually evolving, the level of autonomy and independent judgement required may be, frankly, frightening and extremely uncomfortable. When one team member's role changes, the roles of all members change. This affects each staff member, not just the core and extended care teams, but also the patients and the lay staff, such as receptionists.

Many primary care practices have implemented their own formal staff development programs on-site for RNs and other clinical and lay staff members, while others have contracted with local community colleges or training programs. One innovative strategy for both role development and content knowledge expansion that has been pioneered at CHCI is Project ECHO—RN Complex Care Management (CCM).²⁰ Dr. Sanjeev Arora began Project ECHO at the University of New Mexico as a telehealth program to support primary care providers treating hepatitis C, without requiring the patients to travel to the university to see Dr. Arora and his team. The hope was to improve adherence and treatment support for patients through building PCP knowledge and self-efficacy in treating their own hepatitis C patients.²²

This model quickly grew to include other complex conditions such as HIV, endocrine, rheumatologic, and many others. CHCI replicated Project ECHO for hepatitis C and HIV,²³ but then quickly added chronic pain, pediatric behavioral health, and even treatment support for providers caring for patients on buprenorphine. Just as PCPs need additional support to take on complex cases into their own care, RNs had a similar challenge. Therefore, it was only natural that Project ECHO then be translated to fit a nursing model to support primary care RNs as a main focus, instead of the previously provider-centric model.

Once the initial training and competency is completed, ongoing support is critical since a key component of primary care nursing is the long-term relationship with the patient and family and maximizing opportunities to motivate and improve self-management. This is a much harder competency to teach because it involves developing advanced communication and facilitation skills, along with motivational interviewing. Through Project ECHO CCM, RNs receive smaller, more manageable

portions of content with specific didactic information over time, along with case-based feedback from expert, multi-disciplinary faculty. This allows for ongoing hands-on learning, along with a level of support and supervision to ensure the full integration of new skills.

Re-training RNs to move from in-patient to primary care

For the RN transitioning from the acute care setting, the transition from intensive responsibility and patient engagement for a few days with a specialized patient population, to caring for individuals and families over years and encompassing virtually every health condition, can be overwhelming. RNs coming to primary care often welcome a “return” to the nursing care they once aspired to: direct, hands on, highly engaged, family-involved, and holistic, with a focus on restoring health in the context of family and community. But the transition to a primary care role is a slow process. The combination of role change and content knowledge requirements necessitates learning in the practice setting with expert mentors and a planned curriculum. This takes time, faculty, planning, and ongoing assessment. While this can be done within the context of formal on-the-job training given appropriate time and resources (especially for current staff who are expanding their roles), we strongly advocate for the concept of residency, not just for new RNs but for RNs who are transitioning from the in-patient to the primary care setting.

Career ladders for RNs in primary care

If we aim to attract and retain the best and brightest RNs to primary care, what opportunities do we offer them for career advancement? Practices should clearly identify what the opportunities are for advancement, both at the current level of education/certification and with further education and training, hopefully supported by robust tuition reimbursement and other policies. Advancement may be within the practice of nursing or movement into other fields where such transitions would not be viewed as a loss. The trajectory from RN to APRN and on to further advanced degrees is obvious, but so is the potential for advancing within the primary care practice to greater responsibility or specialization within primary care, as well as management and leadership. Ideally, the primary care practices of the future will find RNs embedded at every level, from the primary care team to the c-suite, from the QI department to the business intelligence team, from the telehealth connection to the homeless shelter or school-based clinic.

FINANCIAL CONSIDERATIONS

The issue of financial reimbursement must be addressed squarely. The contributions, as well as the cost, of the registered nurse must be identified, quantified, and considered as part of the value proposition. RNs contribute to the overall revenue generation of a practice as well as its expenses, but they can also be drivers of RN-specific revenue generation in fee-for-service systems through the appropriate billing of nurse visits as allowed under most commercial insurance plans and some, if not all, Medicaid authorities. Unfortunately, Medicare recently eliminated the billing of nurse visits using the traditional 99211 code from FQHC-eligible reimbursement services. In the LEAP project, we found evidence of involvement of ACOs and insurers in either directly subsidizing the cost of RN care managers, or contributing to their support through per-member per-month payments to the practice.

The third category is the still relatively new Medicare payments for non-face-to-face services, specifically transition management and care coordination. While not the exclusive domain of nursing services, it is hard to imagine a primary care practice being able to capture these payments by delivering these services without the engagement of nurses. These payments might potentially be expanded to other payers, particularly Medicaid, if they demonstrate positive impact on cost. Since January 2015, Medicare has paid separately under the Medicare Physician Fee Schedule for non-face-to-face care coordination services provided to Medicare beneficiaries with multiple chronic conditions. These payments are available to FQHC practices as well. Care coordination payment (99490) requires conformity with a strict set of conditions and tracking, including time (minimum of 20 minutes of care management services per month of clinical staff time directed by a physician or other qualified healthcare professional); patient factors (chronic conditions place the patient at significant risk for death, acute exacerbation/decompensation, or function decline); and care management services and planning (comprehensive care plan is implemented and monitored).²⁴

Transition management services, clearly intended by Medicare to reduce readmission to hospital, have been available since January 2013. These codes (99495, 99496) require follow up communication (telephonic, electronic, or direct) with patients within two business days of discharge from the acute setting, medication reconciliation, and a face-to-face visit within 7–14 days with medical decision making of moderate or high complexity.²⁵ Each of these require specific

understanding of the quite stringent rules and requirements for care, service, and documentation and supervision. Payments are not made in the name of the RN but rather the supervising provider, but can be easily tracked and attributed to the RN using the electronic health record and practice management systems.

LOOKING AHEAD TO A “BLUE SKY” FUTURE OF THE ENHANCED ROLE OF THE RN IN PRIMARY CARE

From the vantage point of 2016, it is remarkable to look back to 2008 and see the progress that has been made on multiple fronts. We have broadened health insurance coverage through Medicaid expansion, employer-sponsored plans, and qualified health plans. Similar progress has been made in the expansion of team-based care and PCMH models; the penetration and sophistication of electronic health records; health information exchanges; and patient portals. Empanelment and clinical dashboards, embedded quality outcome measures, integration of behavioral health and primary care, patient engagement and activation, transition management and complex care management and coordination—all concepts once considered the province of the avant garde front runners of primary care are now considered fundamental, if not universal.

What then is the “blue-sky” future of primary care and the role of RNs in taking us closer to the “promised land,” to paraphrase Barbara Starfield, of better, more satisfying, and more effective care, close to where people live, work, play, and pray, in a manner and at a cost acceptable to the individual and the society?²⁶ We would suggest a future in which entry-level preparation of RNs offers the opportunity for specialization in primary care/community health and public health nursing so that the essential core knowledge, clinical experiences, and competencies associated with practicing as part of a collaborative team, in a community setting, with patients and families over a span of years can be developed. This would also be a future in which new RNs, or RNs transitioning from other settings, have the opportunity to elect to do a residency or other training program to better prepare for practice in this setting.

We envision a future in which every patient has and knows their primary care team, which includes an RN, a PCP, a medical assistant, and a behaviorist at a minimum, and that the RN be recognized by the patient and the team as the “go to” team member for prevention and health promotion activities; minor episodic and routine

chronic illness management; and complex care management, in conjunction with their PCP, behaviorist, and other team members.

We imagine a future in which all RNs are fully trained in population management, expert practitioners of the clinical microsystems approach to quality improvement, and can fluidly transition between team leader and team member as the situation demands. We recognize that telehealth will bring new opportunities and new challenges for all primary care, and that RNs will engage in teaching, assessing, counseling, monitoring, and treating patients via remote means.

We imagine a future in which an 'old' concept of the public health/community health RN, knowledgeable about families, neighborhoods, communities, and the people within them—not today's "skilled nursing for homebound patients"—might be updated and re-imagined to reflect an extension of the primary care office in which the primary care RN visited the newborn and postpartum mother at home, saw the recently discharged patients, and provided primary care to aging populations for whom getting into the primary care office is an enormous burden.

This blue-sky state requires much more than just changing educational preparation. It requires today's leaders and providers to re-organize today's primary care practices and systems to accommodate a truly collaborative model of team-based primary care. Today's exemplars must become tomorrow's status quo. The Center for Medicare and Medicaid Services' Transforming Clinical Practice Initiative, the HRSA-funded National Cooperative Agreement on Clinical Workforce Development, and other national initiatives offer the opportunity for those in the field today to learn, practice, and transform to tomorrow's environment. It will require that nursing leaders and nurses themselves recognize that taking on new roles and responsibilities means releasing control over domains once considered the prerogative of nursing, and that lay workers, LPNs, medical assistants, and health coaches be encouraged to develop new competencies and skills in areas once reserved to nursing.

We can't wait for the future to happen; it is here.

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EXPANDING THE ROLE OF REGISTERED NURSES IN PRIMARY CARE

A BUSINESS CASE ANALYSIS

Commissioned Paper

JACK NEEDLEMAN, PhD

UCLA Fielding School of Public Health

INTRODUCTION

Primary care is evolving in response to payment reform, new models of work organization, and changes in the primary care workforce. Advanced practice registered nurses (APRNs) are part of this evolution, but in this evolving landscape, the role of registered nurses (RNs) who are not APRNs or nurse practitioners (NPs) is also being re-examined and re-imagined. There is a growing literature describing these potential roles and their implementation in healthcare delivery. The issue of the financial viability of employing registered nurses in these new roles, however, has not been fully addressed. In this paper, I explore the business case and financial issues in this expansion of practice.

I begin by describing the current organization of primary care and the role of RNs in ambulatory care practices. I then discuss the factors encouraging change in RN roles, noting especially the growth of the patient-centered medical home (PCMH) as a model for primary care and the need to support its vision of care coordination and accountability. This section is then followed by a discussion of the strategies to support the shifting roles for RNs, describing changes primary care practices have proposed or implemented. Following this is a general discussion of considerations in analyzing the business case and financial feasibility of engaging RNs in a larger



role in primary care. This is followed by a discussion of several settings that have implemented expanded models, lessons learned in the expansion, and then a conclusion.

CURRENT STAFFING AND ORGANIZATION OF PRIMARY CARE

Primary care and office-based practice is carried out in a wide range of settings, including single-specialty practices, multispecialty practices, accountable care organizations (ACOs), academic medical center and hospital outpatient practices, and other distinct models (based on the employment relationship of physicians and revenue model) such as the Veterans Health Administration. In this paper, I will focus principally on freestanding practices, with some discussion of integrated delivery systems when considering the business case under capitation.

Office-based professional practices make extensive use of a wide variety of staffing options, including medical assistants, RNs and licensed practice nurses/ licensed vocational nurses (LPNs). In 2011, the Advisory Board Company reported benchmark staffing data for practices preparing to assume the role of a PCMH, as compiled by the Medical Group Management Association.¹ For each physician, these practices employed on average 1.4 medical assistants, 0.3 LPNs, 0.4 RNs, and 0.1 physician assistants (PAs).

There is wide variability in the use of office-based primary care staff (other than primary care providers, such as physicians, NPs, and PAs) based on variations in work allocation in practices and number of primary care providers, with some evidence of economies of scale. A survey by Peikes and colleagues of 496 primary care practices accepted to participate in the Centers for Medicare and Medicaid Services' (CMS) Comprehensive Primary Care Initiative found that nearly all practices employed administrative staff (98.4% on average) and medical assistants (88.5%), while less than half employed LPNs or RNs (46.6% and 35.9% respectively).² The proportion of practices employing RNs increased as practice size increased, from 29.2% in practices with two or fewer full-time equivalent (FTE) physicians to 88.9% in practices employing more than 13 FTE physicians. Care managers and coordinators, some of whom might be RNs, were employed in 24.0% of practices; and pharmacists, social workers, community service coordinators, health educators, and nutritionists were employed by fewer than 10% of practices,

although the proportion of practices employing these staff all increased with practice size, with one-fifth to one-third of large practices employing staff in each of these categories (other than community service coordinators).

Among practices that employed staff in these categories, there was considerable variation in the number employed, with the ratio of staff to primary care providers typically declining as practice size increased, reflecting potential economies of scale. The number of RNs employed varied from 1.04 per physician in the 29% of practices with 2 FTE physicians or fewer that employed any RNs, to 0.31 RNs in the largest practices, with an average ratio of RNs to physicians in practices employing RNs of 0.64. The ratios of RNs to physicians were lower than the ratios for medical assistants or LPNs across all practice sizes. Other studies report similar staff-to-physician ratios to those presented by Peikes.^{3,4}

The roles played by RNs differ from those played by medical assistants or LPNs. Registered nurses, with their broad training, extensive education in patient assessment and clinical care, and licensed scope of practice, have the potential to play the broadest role. Haas, Hackbarth, and colleagues, in a four-part 1995 series in *Nursing Economic\$*, analyzed survey data from RNs in different ambulatory care settings to characterize the roles nurses played in these organizations. While this study was done in all ambulatory settings, including specialty practices, surgery centers, cardiac rehab, oncology centers, drug and alcohol treatment centers, it was among the first to identify what nurses were doing beyond the hospital in-patient setting. The researchers identified eight dimensions to current clinical practice roles and three dimensions to their roles in quality improvement and research.⁵ The roles include enabling operations, such as setting up rooms and taking vital signs; technical procedures; nursing processes, including developing nursing care plans, nursing diagnoses, completing histories, and evaluating outcomes; telephone communication, including triage and calling clients with results; advocacy; teaching; care coordination; and expert practice within the care setting.

Bielamowicz and Berra report a narrower range of typical activities for RNs and a clear contrast with the roles played by medical assistants and LPNs. RNs were “tied up with incoming patient care triage,” while medical assistants and LPNs were used to room patients and perform basic administrative tasks.⁶

Roles in traditionally organized primary care practices are driven in part by the cost of different categories of personnel. The compensation analytic website

salary.com reported that, in February 2016, the average salary for a staff RN in outpatient care was \$65,412, contrasting with LPNs in outpatient care of \$43,397 and medical assistants of \$32,692. These salary differentials encourage common tasks in patient rooming and charting, taking vital signs, checking for allergies, EKGs, stocking supplies and refilling medications, and where allowed by state law, administration of drugs or vaccines, to devolve in many primary care practices to medical assistants or LPNs.⁷ Many practices have also sought to expand the role played by medical assistants in care coordination and monitoring, health coaching, and panel management.⁸ The effort to minimize costs has encouraged expanding the role of medical assistants and minimizing the role of RNs to areas such as triage, where their expertise in patient assessment is distinctively different from medical assistants and LPNs. As noted in one study, “Many recent recommendations about collaborative models of clinical care seem problematic when put into a context of the findings of current staffing patterns and use of personnel in family practices. Staff members often fulfill roles independent of training.”³

There has been growing recognition of the particular strengths of RNs in a variety of roles in primary care. More recently there have been a number of studies examining the roles of the RNs—specifically in primary care practices.⁹⁻¹³ These more recent studies identified additional roles less common two decades ago (transitional care, LEAN/QI practices, and telehealth) and that specifically enhance new primary care delivery models, including intensive care management, medication reconciliation, direct patient care, and health coaching.

Part of the reconsideration of RN roles has been a greater appreciation of the distinct competencies of RNs. One primary care system that has experimented substantially with the health coach role initially hired an RN, LPN, medical assistant, and psychologist in the initial four health coach positions. Over time, practice sites in the system have migrated to the use of RNs in these positions.¹⁴ This is discussed further in the next section.

FACTORS ENCOURAGING AN EXPANDED ROLE FOR RNS

While the roles of RNs in primary care have been limited and routine elements of shepherding patients through a primary care visit have devolved to medical assistants and LPNs, three factors are encouraging expanding the role of RNs

in primary care. First, the expansion of payment models beyond fee-for-service models, such as value-based payment, quality metrics that attribute costs of hospitalization and other institutional and non-institutional care to primary care physicians and groups, and expansion of bundled payment and capitation are changing the expectations for accountability of primary care practices and increasing the demand for coordination of care, continuity, and more effective patient management and engagement. Primary care practices are seeking cost-effective methods to achieve these goals, and looking for alternatives to employing or placing more demands on the time of primary care providers.

Second, even if primary care practices preferred to expand the engagement of primary care providers such as physicians, NPs, and PAs in patient care to achieve the goals of coordination, management, and education, the current and projected shortage of primary care providers due to lower incomes (relative to specialty care) and high workloads make this approach unlikely. Those looking to increase the professional satisfaction and incomes of primary care providers have identified increasing the staff support to these providers and shifting some work to other providers.^{12, 15-17} RNs, given the breadth of their education and licensure, have emerged as a key component in this strategy.

Third, it is increasingly recognized that many of the tasks in coordinating care, patient education, and engaging and empowering patients in their own care that are part of the redesign of primary care are areas that draw upon the skills RNs have in patient care.¹⁸ One systematic review of nurses in primary care concluded that while more evidence was needed, “Evidence presented in this review suggests that nurses in primary care and community settings can provide effective health care and that they are particularly effective in enhancing patient knowledge and patient compliance.”¹⁹ Similarly, a systematic review of general practitioner (GP) delegation to nurses concluded current evidence “appears to indicate that the delegation of GP tasks to a nurse in diabetes primary care is at the very least a promising option with respect to improving patient care.”²⁰

STRATEGIES TO ACCOMMODATE INCREASED ENGAGEMENT OF RNS IN PRIMARY CARE

As the new models of care have been evolving, and in response to primary care shortages, there has been increased attention to how an expanded role for RNs in

primary care can be developed and sustained. Much of this work has reimagined primary care as team-based, with expanded roles for the entire healthcare team.^{6, 8-9, 13, 21-27} Specific examples of alternative models of organization have been described, including papers by Sinsky and colleagues describing an Iowa primary care practice,¹² Reid and colleagues describing the Group Health medical home,¹⁷ and Anderson and Halley describing Anderson's implementation of doctor-nurse team-based system,²⁸ a review of 23 high-functioning primary care teams,²⁹ and a discussion of 15 case studies on building teams in primary care.²²

There are several common features of the vision of expanded team-based care. There is an expansion of roles for the entire primary healthcare team. Typically, this is cast in terms of maximizing the contribution of all team members—RNs, medical assistants, LPNs—to the full extent of their licensure and training, and in some cases expanding their training. There is also a shifting of some functions from the primary care provider to other team members, in order to reduce time demands on the primary care provider or allow team members with greater expertise to assume specific functions. In these expanded teams, the number of staff per FTE primary care provider is increased. This is explicitly discussed by Reid,¹⁷ Funk and Davis,³⁰ and in The Advisory Board Company benchmarking studies.^{1, 15}

A broad discussion of how the RN role in primary care might be expanded is presented in "RN Role Reimagined: How Empowering Registered Nurses Can Improve Primary Care" by Bodenheimer and colleagues of the University of California, San Francisco Center for Excellence in Primary Care.³¹ They identify 12 strategies for accomplishing this, drawn from the experience of primary care practices in community health centers, county health systems, and integrated care delivery organizations:

1. Provide RNs with additional training in primary care skills, so they can make more clinical decisions.
2. Empower RNs to make more clinical decisions, using standardized procedures.
3. Reduce the triage burden on RNs to free up time for other responsibilities.
4. Include RNs on care teams, allowing them to focus on their team's patients.

5. Implement RN-led new-patient visits to increase patient access to care.
6. Offer patients co-visits in which RNs conduct most of the visit, with providers joining in at the end.
7. Deploy RNs as “tactical nurses.”
8. Provide patients with RN-led chronic care management visits.
9. Employ RNs’ skills to care-manage patients with complex healthcare needs.
10. Train some RNs to take responsibility for specialized functions.
11. Schedule RNs to perform different roles on different days.
12. Preserve the traditional RN role and focus on training medical assistants (MAs) and licensed vocational nurses (LVNs) to take on new responsibilities.

Some of these strategies, such as providing additional training, changes in scheduling, or embedding nurses into teams with defined patient panels, are instrumental to making more extended use of RNs in care. The other strategies incorporate three broad approaches to an expanded RN role: first, incorporating RNs into the physician visit more actively to leverage primary care provider time; second, expanding billable RN-only services; and third, expanding RN activities in areas not necessarily directly billable.

Increasing the role of RNs in the physician or primary care provider visit to leverage the time of the provider is reflected in the concept of a co-visit. Currently in many primary care practices, medical assistants room patients, do vital signs, perform some ordered procedures following the physician examination of the patient, and may do some charting of the examination. The co-visit substantially expands on this set of tasks, with the RN taking the lead in taking the patient history and doing portions of the physical examination and making a provisional assessment of the patient. After these activities, the physician will join the visit, receive a structured report from the RN, complete the examination, make or confirm the diagnosis, and prescribe treatment. In many co-visit models, the nurse will complete the visit by providing additional information to the patient on the treatment and follow-up and complete the documentation. The service can be billed under one of the standard

evaluation and management codes. The primary care provider's time in direct contact with the patient is reduced and he or she can complete more billable visits during the same time period. The more extended time spent with the patient can also result in a legitimate increase in the time and intensity of the visit justifying coding the visit as a more intensive visit with a higher payment level.

Typically the need for the patient to see the physician is offset by a clear set of standing orders or established procedures under which the care is delivered. Anderson provides a detailed description of the process of care for a co-visit, which is reproduced in Table 1.²⁸

A second strategy for expanding billable services is a nurse-only visit. If this is done for an established patient, the physician is in the facility, and a standard procedure has been established, the practice may be able to bill for a nurse-only visit under billing code 99211. This code is for "Office or other outpatient visit for the evaluation and management of an established patient that may not require the presence of a physician. Usually, the presenting problem(s) are minimal and 5 minutes are typically spent performing or supervising these services." Payment is substantially lower than for other evaluation and management services.

Examples of services that can be billed under code 99211 by RNs include immunizations; prescription refills and adjustment of dosages of specific drugs, such as insulin based on laboratory or clinical findings; other diabetes management activities; and treatment of specific infections, such as streptococcus or urinary tract infections in uncomplicated patients. As with co-visits, a protocol embedded in a standing order is essential for allowing RNs to conduct these services without the patient seeing a primary care provider. An example of a standing order protocol for managing hypertension drugs is provided in Table 2. A fuller description of a standing order protocol is in Appendix A of "RN Role Reimagined."³¹

There are two other billable options for nurse-only visits incident to physician services. One is the annual wellness visit that provides personalized prevention plan services. CMS has defined components for both the initial and subsequent visits, including obtaining or updating the history, functional status, and risk factors that are part of a health risk assessment; identifying needed preventive services; and counseling patients and referring them to appropriate services based on the health risk assessment.³² The current national payment for the initial visit is \$173 and for a subsequent visit is \$117.

Another billable option for nurse-only services in Medicare is chronic care management services, which allows for 20 minutes per month of clinical staff time directed by a physician or other qualified healthcare professional (NP or PA) for patients with two or more chronic conditions that place the patient at significant risk for death or disability, and for whom a comprehensive care plan has been established. Payment is \$41. The regulation establishing this service permits clinical staff to provide these services under general supervision rather than direct supervision of the qualified healthcare professional.

As suggested above, the creation of standing orders is critical to accommodate the shifting roles of RNs; for without them, responsibility and decisions remain with the primary care provider.³³ State law may govern the creation and use of standing orders, including requirements for documentation of the approval process; specification of the information to be included in the standing order; specification of the training, experience, and education of the individual who can implement the standing order and procedures for evaluating their competence; requirements for notification or communication with the primary care provider regarding the patient condition; and methods for review of the standing orders. The use of standing orders to permit expanded RN-only visits can substantially change the mix of work done by RNs in a primary care setting.³⁴

The third element of the expansion of RN roles in primary care is increasing RN engagement in services that may not be directly billable, adding to the FTEs without obvious fee-for-service (FFS) reimbursement. Examples from the 12 strategies include RN-led new patient visits and RN-led chronic care management visits not billable under current contracts or rules. While not billable, these services can increase patient adherence to prescribed care and reduce other healthcare use and additional spending. They may be particularly important in capitated or shared savings environments where transitional services and home care can reduce the risk for hospitalization or readmission. In an environment in which practices are bearing the risk of additional care because they have accepted capitation or there are value-based penalties for higher cost patients, the costs of these unreimbursed services may be recovered through other savings. They can also be revenue enhancing with bonuses for pay-for-performance and other payment models build on improved patient outcome which can be very generous.^{35, 36}

CONSTRUCTING A BUSINESS CASE FOR AN EXPANDED ROLE FOR RNS IN PRIMARY CARE

An expanded role for RNs in primary care may require more RN staff. The business case question is whether the additional costs of staffing can be offset either with higher revenues or cost reductions in other areas. The answer to these questions will differ depending on whether the practice is operating under a FFS revenue model, a capitated model, or other value-based purchasing model. Practices increasingly operate under multiple models of payment and may tailor services provided depending on the financial incentives. For example, they may offer case management services to all patients, but aggressively promote these for patients seen under risk contracts. Similarly, they may focus hospital transition services intended to reduce readmissions on patients under capitation or shared savings contracts such as ACO agreements.

Fee-for-Service

In a fee-for-service environment, the cost of increased staffing needs to be supported by increased volume and higher billings. These could be from an increase in primary care provider billings from increased productivity through co-visits; increased visit intensity justifying a higher billing code; or increased billings from nurse-only visits, wellness visits, or care coordination. For example, it was noted above that the average salary for an RN in outpatient care was \$65,412. If fringe benefits and related costs are 30%, approximately the level reported on *salary.com*, the cost of adding one FTE RN to a practice would be approximately \$85,000. Average Medicare payment in 2013 for billing code 99214, a moderate (typically 25 minute) evaluation and management visit for an established patient is \$106.83; \$72.81 for billing code 99213, a low-intensity, 15-minute visit for an established patient; and \$20.41 for billing code 99211, the code most frequently used for an RN-only visit. Assuming a 220-day work year (allowing for vacations, holidays, and some in-service training and related activities), the salary and fringe would be recovered from a daily average of an additional 3.6 moderate intensity visits, 5.3 low intensity visits, or 18.9 nurse-only 99211 visits.

The balance of this section discusses specific strategies used by two large primary care organizations, including the clinical model used to increase nurse engagement in care, costs associated with the expansion of nurse staffing, and revenue gains realized from this expansion in a fee-for-service environment.

Clinica Family Health in Lafayette, Colorado

Clinica tested a co-visit model in 2014.³⁰ They did this for several reasons: provider burnout due to heavy use of double booking appointments to meet patient demand, dissatisfaction of RNs on staff with the bulk of their work being phone triage, and dissatisfaction with delays in getting patients in for service. They modified their primary care provider scheduling to eliminate double booking but provided for 1-2 co-visits for every two standard visits.

The Clinica Family Health staffing model is built around a medical pod, serving approximately 3,600 patients. Under its original model, a typical pod had three FTE primary care providers (MDs, DOs, APRNs, PAs), 1.24 medical assistants/FTE primary care provider (or approximately 3.7/pod), and 1.0 RNs/pod. In the tested model, the number of RNs was increased to 3.0 per pod, and medical assistants were increased slightly to 4 per pod to accommodate the increased number of visits. Roles within the pod and clinics were also changed. Phone triage was shifted off the pod, with nurses rotating into triage. Triage declined as more patients were accommodated on same-day visits. In the pod, one nurse provided traditional RN services such as wound care, patient education, case management, and monitoring visits for patients taking warfarin. The other two nurses conducted co-visits. At the annual national salaries, the cost of this additional staffing would be approximately \$195,000. Per-visit payment averaged approximately \$125/visit, from which the average cost of supplies/visit of approximately \$25 should be subtracted. With net revenue/visit after supplies of \$100, the additional staffing costs would be covered by 1,950 visits.

Table 3 presents the data from Clinica Family Health contrasting its staffing under the original pod model and the revised staffing to allow for an expansion of co-visits. Table 4 presents the estimated change in the number of visits, and the revenue and expenses associated with that expansion. The 6,059 additional visits, approximately two per day per primary care provider, and approximately six co-visits per day per nurse, expand visit capacity by 23% and generate a surplus over expenses, taking labor costs, additional direct costs of supplies, and training into account. The break-even number of visits is 1.53 additional billed visits per primary care provider per day, a number that can be accommodated into the visit grid used by Clinica Family Health under the co-visit expansion model. Clinica Family Health notes the model and business case analysis only are self-supporting if there

is sufficient demand for same-day visits that under traditional models are being triaged to later time periods.

In the article describing the implementation of the program, the authors report improved employee satisfaction and work/life balance. Patient satisfaction with the nurse co-visits was higher than the baseline for provider visits.³⁰

Mercy Clinics in Des Moines, Iowa

Mercy Clinics, Inc. is a 150-physician, multi-site group practice, with 70% of the physicians in primary care. It has expanded the use of what it calls “health coaches” in a variety of ways in pre-visit and inter-visit work. While the initial health coach model envisioned RNs, LPNs, and medical assistants potentially playing these roles, as the clinic has gained experience in using health coaches, almost all health coaches are now RNs.

The coaches work with primary care providers and patients to provide medical home and coordination services, review charts and disease directory data in the clinic to identify patients needing additional care or tests, and identify patients not meeting clinic-level quality performance goals. They are actively involved in patient education. The health coach model has been described in a number of publications by clinic leadership.^{14, 36, 37}

The coaches play significant roles in pre-visit, visit, and post-visit activities. The pre-visit work is a chart review in preparation for the visit. It identifies the need for specific services and follow up that is noted on a worksheet attached to the chart prior to the visit, and allows for pre-ordering of tests to be conducted during the visit using standing order sets. Other needed preventive services, such as mammograms and colonoscopies, can also be flagged in the pre-visit chart review. Coaches can increase the number of patient visits by doing reminder calls. In addition to increasing billable services, the pre-visit workup has also assured more complete care, enabling Mercy Clinics to obtain pay-for-performance payments based on process-of-care measures such as the proportion of patients receiving screening.

During visits, as in co-visits, the RN health coach may take patient histories and perform physical exams. For established patients with chronic conditions, this includes a discussion of adherence to medications and other treatments. Senior clinicians at Mercy Clinics commented in interviews that nurses were more effective

than physicians in eliciting information on adherence and problems in following the treatment plans. Coaches also meet with patients after they see their primary care practitioner to discuss the treatment plan and how it will be implemented. The nurses and coaches have more time for these discussions than the primary care practitioners.

Coaches may also follow-up when patients are referred to non-Mercy Clinics specialists to make appointments, follow up with patient immediately after appointments, and proactively offer to schedule any recommended imaging or other follow-up services ordered with Mercy Clinic facilities, retaining the revenue from those ancillary services.

This set of health coach activities can result in increased visits, increased proportion of visits at a higher visit level, and increased laboratory and imaging services as well as preventive services such as vaccinations for flu, shingles, tetanus, and pneumonia.

Mercy Clinics also uses RNs in nurse-only visits. They have limited the use of 99211 visits in part because of concerns over documenting compliance with the “incident to” rules but use them for such services as Coumadin clinics to monitor and adjust doses using standing orders. They have also made extensive use of nurses in wellness visits, which under the regulations can be delegated to RNs under standing orders.

Mercy Clinics has not conducted a full business case analysis of health coaches, but partial analyses have encouraged them to maintain and expand the role in a fee-for-service environment. Specifically, they examined the additional billings and services associated with health coaches in diabetes care. A summary of that analysis is presented in Table 5. After they introduced the equivalent of 1.6 FTE health coaches into a primary care clinic with 10 providers, they increased the number of visits for diabetes-related care, increased the proportion of visits billed at the 99214 level, and increased revenue from laboratory services associated with diabetes monitoring for Hb1Ac and microalbumin. With just these services considered, and with the 1.6 FTE health coaches costed at RN salaries and benefits, the clinic nearly breaks even. When additional services associated with the health coaches are considered (nurse-only Coumadin clinic visits, estimated at \$45,000 in revenue; increased primary care provider productivity, allowing for more visits per provider, estimated “conservatively” at \$15,000; and identification of additional appropriate

services for non-diabetic patients), the health coach model almost certainly generates a net profit for the clinics.

The analysis above does not take into consideration nurse-led annual wellness visits. Mercy Clinics estimated that nurses can conduct eight wellness visits/day, but generally schedule six per day, one new visit and five subsequent visits. Using national-level nursing salaries plus benefits of \$85,000 per nurse and a mix of one new and subsequent visits for an average national reimbursement rate for wellness visits of \$126 per visit, breakeven to cover salary and benefits would be realized at a rate of three visits per day, leaving approximately half time for the RN health coach to carry out other activities, revenue generating or otherwise.

The analysis above does not take into account pay-for-performance bonus payments from payers for achieving annual process performance standards along metrics such as the percentage of patients with diabetes receiving HbA1c screening or eye examinations. These bonus payments can be substantial, making the business case even stronger. The scope and focus of such programs vary from payer to payer, but the experience at Mercy Clinics suggests that practices should examine the bonuses being offered (or penalties being assessed), where they currently stand on the performance metric and the extent to which they would have to change to realize the bonus (or avoid a penalty), and the potential for nurse-staffed efforts to achieve these changes.

Based on their experience, Mercy Clinics is expanding the health coach staffing from approximately one coach per five primary care physicians, which was the basis of the partial business case analysis of diabetes presented above.

Alternative Payment Models

As noted above, we are in a period of changing payment, moving from fee-for-service to other forms of value payment or shifting risk from payers to providers. In addition to performance-based bonuses and penalties, there is increased use of capitation, bundled payment, and shared savings models such as ACOs. Incentives and business case models considerations under these systems differ from those under fee-for-service and the costs of additional RNs need to be offset by savings elsewhere.

One opportunity is to expand primary care capacity at a lower cost than hiring additional primary care providers. The Clinica Family Clinic experience offers some

insight into this. While the co-visit model was developed to ease high workloads and reduce delays in appointments, it achieved a 23% expansion of visit capacity and a net positive cash flow for the clinic. The break-even point of an additional 1.53 visits per primary care provider per day represented a 17% expansion of capacity.

Other opportunities involve offsetting the additional cost of primary care practice or additional registered nurses with savings in other services. The biggest opportunities for savings involve reduced hospitalizations and re-hospitalizations, which can be achieved through more active coordination of care and transition planning, and reduced emergency department use, which might be achieved through expanding access for patients at highest risk of emergency department use. Under capitated systems, there are also opportunities for changes in primary care practice itself, with greater use of telemedicine, email, phone, and electronic communication.

One study of the implementation of the Seattle-based Group Health medical home provides some evidence that the medical home model may achieve these savings.¹⁷ Reid and colleagues found that, in this model, use of electronic communication increased and risk-adjusted primary and specialty care costs increased, but emergency department and urgent care and inpatient costs decreased, for a net saving of \$10.31 per member per month. The Group Health medical home model is not a direct test of increased staffing with RNs and other ancillary staff. The model appears to be heavily oriented toward increased use of electronic communication and strengthening patient-primary care provider links. It does provide a framework for how the business case for a restructured RN-enhanced primary care practice could be constructed if data on changes in patient volumes and other outcomes can clearly be associated with the enhanced role of RNs.

While models for an increased role of RNs in ACOs have been described,¹¹ there has been no overall economic evaluation of these models similar to that done by Group Health of its enhanced communication models. The efforts by Mercy Clinics to adapt its health coach model to an ACO environment of shared savings suggests several partial business case analyses that can guide planning for expanded use of registered nurses under these types of payment.

Mercy Clinics's analysis of its cost sharing opportunities suggested substantial gains if emergency department use could be reduced by 30% and hospital admissions,

including readmissions, could be reduced by 12%. Its modeling included an increase in primary care visits of 30%, suggesting a substantial role for making care available in lieu of emergency departments, and increased care coordination services. Within this planning framework, Mercy Clinics' strategy was to segment its patient population by health risk, with healthy or low-risk patients receiving appropriate preventive health services and improved access for acute care; stable, chronically ill patients receiving targeted intensive services; and high-risk, chronically ill patients intensively managed.

In this system, the role of health coaches would shift. One change was to implement transition coaches in hospitals to do transition planning for post-hospital care. Mercy Clinics had hired three FTE coaches for this function for an ACO population of approximately 60,000 lives. The average cost of an RN with benefits in the Mercy Clinics region is approximately \$60,000 (lower than the national average), so the cost of the program, with some additional direct costs would be approximately \$200,000. Mercy Clinics estimated that the cost of a readmission was approximately \$10,000. Under a fully capitated system the cost of the program would be recovered with a reduction of 20 readmissions, and under a 50% shared saving program, 40 readmissions. The national hospital admission rate for the US in 2010 was 1,139/10,000 population, and if the Mercy Clinics population was hospitalized at this rate, there would be 6,800 hospital admissions/year for this population. This rate includes readmissions, which Mercy estimates at approximately 16%, implying 5,900 index admissions and 900 readmissions. Reducing readmissions by 40 would reduce the readmission rate by less than one percentage point, and Mercy Clinics believes it can reduce readmissions by three percentage points. A full business case analysis would also assess the changes in post-hospitalization services required to prevent readmissions.

A second change in the health coaching model for ACO patients involves coaches proactively initiating assistance to patients in implementing self-management services and increased coordination and transitional care services. Mercy Clinics has, as noted above, segmented its patient population by health status for planning purposes. Mercy's average cost per member per month is approximately \$400, but patients with multiple dominant or moderate chronic conditions (approximately 15% of its patients) cost approximately \$950 per member per month and patients with more extensive chronic conditions (approximately 1% of its patients) cost approximately \$2,300 per member per month. Mercy anticipates assigning approximately 50 high-risk patients to each health coach, although this would

not be the sole work of the health coaches working with these patients. If the mix of these patients matched the overall mix in the ACO, the total projected annual spending for these 50 patients would be approximately \$620,000.

As noted above, the salary and benefits of a health coach at Mercy Clinics is approximately \$60,000. A 10% reduction in health spending on these patients through more effective care coordination and reduced hospitalization would fully pay for the coach, not considering other services and savings achieved by the coaches with other patients, or other value-based bonuses for achieving targets for patient-reported experience, population-based immunization, screening and treatment targets, or readmission or admission rates. A 5% reduction would cover half the cost of the coach.

Fully-integrated business case analysis for capitated or shared savings programs can be difficult because there are multiple areas of costs and possible savings plus specific bonus and pay-for-performance goals that create a complicated planning environment. The analysis above suggests that organizations can make progress toward assessing the value of interventions by identifying specific targets for improvement (e.g., readmission rates, hospitalization rates, emergency room use), the magnitude of improvement that can realistically be achieved, the cost return or revenue associated with those improvements, and based on this, the costs for a program that would make pursuing those goals appropriate for the organization. The experience with medical homes and patient-centered primary care suggests the interventions to achieve improvement involve increased transition planning and care coordination, areas in which nurses excel. The costs of expanding nursing and engaging nurses in this work can be estimated and compared with the cost targets for the programs.

CONCLUSION

Several factors are encouraging efforts to expand the role of RNs in primary care. The shortage of primary care physicians and APRNs is creating a need to develop models of care that depend on a more limited pool of these primary care providers. Efforts to improve the effectiveness of care and increase the extent to which care is coordinated and integrated through such mechanisms as patient-centered medical homes are leading to a reorganization of care at the practice level, tapping the strengths of RNs in patient assessment, communication, and education. Associated

with this, tapping the clinical expertise of RNs may address the growing concerns about increasing the patient centeredness of care and patient engagement as critical to improving outcomes in such areas as obesity, diabetes, and hypertension control.

Models for achieving the increased engagement of RNs in primary care, tapping their expertise, and reducing the demands on primary care providers are being developed. These include such mechanisms as RN co-visits, nurse-only visits using standing orders, and increased roles for RNs in care coordination, telemedicine, patient education, and health coaching.

Because of cost considerations, RN employment in primary care has been limited, with a focus on triage and supervision of less-trained staff such as LPNs and medical assistants, and limited utilization of RN skills in assessment, treatment, and patient engagement and mobilization. The changing model of primary care and patient-centered care has increased demands for the RN competencies in assessment, treatment, communication, and patient engagement and education. Increasing RN involvement in these activities will require increasing the ratio of RNs to primary care providers from the current average of approximately 0.4 to 1.0. This will add to the direct cost of these practices, but there are ways to implement these models that appear to be feasible in business case terms.

In a fee-for-service environment, increased billable services through co-visits and nurse-only visits can pay for themselves. In a capitated environment, the additional costs will have to be offset by reduced use of other services, such as emergency departments and inpatient care. Evaluations underway of patient-centered medical homes and capitated payment models may shed light on this, but will need to closely examine the staffing model of the medical home relative to the control models. Evaluating the feasibility of expanding RN staffing in a value-based or mixed reimbursement environment will require determining if the time of the RNs can be focused on those activities that will generate higher volume and revenue from FFS patients and reduce emergency visits and hospitalizations for other patients and improved outcomes for all patients. Thus far, business case analysis of specific interventions such as those targeted at reduced hospital readmissions or at reducing admission risk for high-risk individuals with chronic conditions do suggest that increased engagement of nurses in these specific programs can repay the costs as well as improve care.

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Table 1: Description of primary care provider and clinical assistant (RN) responsibilities in a routine co-visit

CLINICAL ASSISTANT RESPONSIBILITIES IN A ROUTINE VISIT	
<p>The following description of responsibilities relates to routine follow-up visits, such as a routine diabetes check up. The responsibilities vary for other visit types. For example, physicals include greater emphasis on preventive services, while responsibilities for follow-up visits for minor illnesses and acute visits are much more abbreviated.</p>	
PART I. ASSISTANT ONLY	
A. HPI	
<p>Welcome patient and confirm patient's statement of current problems or symptoms.</p> <p>Ask appropriate questions for the problems or symptoms, using the "ODD IF HAPPY" mnemonic. (Note: The handbook¹ provides specific questions in this format for 116 symptoms and diseases.)</p> <p>O: Onset of symptoms – When did this episode start?</p> <p>D: Description of symptoms – Constant vs. intermittent, detail of the sensation, character of the pain, location of the pain, radiation of the pain, etc.</p> <p>D: Duration – How long does the symptom last?</p> <p>I: Intensity – Is it mild, moderate, severe, etc.?</p> <p>F: Frequency – Does it occur daily, weekly, etc.?</p> <p>H: History – Is this the first episode, or has it occurred before?</p> <p>A: Accompanying signs and symptoms – Do any other symptoms/signs accompany this symptom?</p> <p>P: Precipitating/alleviating factors – What makes it better or worse?</p> <p>P: Progression of the symptom – Is it getting better or worse?</p> <p>Y: You have finished the questions for this symptom.</p> <p>Review "plan" from previous two visits.</p> <p>Review any appended notes or recent phone notes since previous two visits.</p> <p>Collect the results of any recently completed diagnostic tests, lab results or emergency department visits.</p> <p>Review problem list and get patient's update on recent problems.</p> <p>Update the problem list with dates of important completed tests (colonoscopy, mammogram, etc.).</p>	<p>serve as a guide about which system to review depending on the problems or symptoms that necessitated the visit.)</p>
	E. PREVENTIVE CARE UPDATE
	<p>Ask briefly about last physical, well-woman exam, mammogram, lipids, etc.</p> <p>Recommend and document appropriate preventive care plan.</p>
	F. POSSIBLE PROCEDURES AND QUESTIONNAIRES
	<p>Administer pulse ox, peak flow, UA, etc., when appropriate.</p> <p>Administer MMSE, Epworth sleepiness scale, Zung scale, bipolar questionnaire, etc., when necessary.</p>
PART II. ASSISTANT AND PHYSICIAN	
	<p>Physician enters room, greets patient and, in the presence of the patient, obtains verbally from the assistant all the information already gathered.</p> <p>Physician adds to information as necessary, and assistant records this additional information.</p> <p>Physician performs pertinent physical exam and communicates findings for documentation by the assistant.</p>
PART III. ASSISTANT AND PHYSICIAN	
	<p>Physician writes down impressions and plan.</p> <p>Physician updates problem list if paper charts are used or communicates to assistant, in writing, problem list changes, which the assistant records in the electronic medical record. The problem list must contain information about pertinent tests and when they are needed.</p> <p>Physician reviews the impressions and plans with the patient and then politely exits, leaving the hard copy of the impressions and plan with the assistant.</p>
PART IV. ASSISTANT ONLY	
	<p>Document the impressions and plan of the physician.</p> <p>The plan includes tests and labs ordered, referrals initiated, new medications added, medications discontinued, suggested lifestyle changes, work notes with dates given and date expected to return to clinic.</p> <p>Document any treatments or tests refused by the patient, along with the patient's acknowledgement of possible poor outcome.</p> <p>Provide patient education concerning disease process, medications, tests ordered or lifestyle changes.</p> <p>Explain matters of referral process or obtaining further tests at other facilities.</p> <p>Provide all scripts and review them with patient.</p> <p>Obtain medication samples and review dosage schedule.</p> <p>Remind patient to call if necessary and to schedule any recommended return visits.</p> <p>Close the visit kindly or take the patient to appropriate area of the practice for further in-office testing.</p>
B. PAST MEDICAL HISTORY	
<p>Review and update medication list, removing completed medications.</p> <p>Determine if patient is compliant with medication schedule.</p> <p>Determine if patient needs refills.</p> <p>Ask about side effects from medications.</p> <p>Encourage patient to bring all current medications to each visit.</p>	
C. FAMILY HISTORY, SOCIAL HISTORY AND ALLERGIES	
<p>Review and update family history and social history.</p> <p>Review and update allergy list.</p>	
D. REVIEW OF SYSTEMS	
<p>Review all appropriate systems. (Note: The handbook¹ can</p>	

Table 2: Example of protocol for nurse management of hypertension medication

The PCP (primary care provider) completed a visit for a patient with hypertension (HTN), in which they started a new blood pressure medication, hydro-chlorothiazide (HCTZ) 12.5 mg once a day, with systolic blood pressure (SBP) target around 140 mm Hg based on the patient profile. The PCP requested that the patient return in one week for a nursing visit to follow up blood pressure and documented these follow-up orders in the EMR:

If SBP >180, conduct full HTN screening visit, order metabolic panel and EKG [electrocardiogram], increase HCTZ to 25 mg daily, and add benazepril 5 mg daily. Return in one week with PCP.

If SBP between 160 to 179, increase HCTZ to 25 mg daily. Return in one week with RN and check metabolic panel at that time.

If SBP between 140 to 159, repeat in one week and send results to PCP.

Source: Bodenheimer, T., L. Bauer, J. N. Olayiwola, and S. Syer. 2015. RN Role Reimagined: How Empowering Registered Nurses Can Improve Primary Care. Oakland, CA: California Health Care Foundation.

Table 3: Adjustments of staffing by Clinica clinics in revised RN staffing model

STAFFING UNDER PRIOR POD STRUCTURE

STAFF CATEGORIES	POD: 3 NIGHT CLINIC	POD: 2 NIGHT CLINIC	POD: 1 NIGHT CLINIC
Medical Provider	3.5-3.9/pod	3.2-3.6/pod	3.0-3.3/pod
Nurse Manager	1.0/pod	1.0/pod	1.0/pod
Clinic Nurse	0.5/pod	0.5/pod	0.5/pod
Float Nurse	1.0/site	1.0/site	1.0/site
Assistant Nursing Director			
Medical Assistant Manager	0.5/pod	0.5/pod	0.5/pod
Medical Assistant	1.24/In-Clinic Provider FTE	1.24/In-Clinic Provider FTE	1.24/In-Clinic Provider FTE
Pod Medical Assistant			
Float MA	1/Site	1/Site	1/Site
Behavioral Health Provider	1/pod	1/pod	1/pod
Case Manager	1.5/pod	1.5/pod	1.5/pod
Referral Case Manager	0.5/pod	0.5/pod	0.5/pod
Office Tech	2.3/pod	2/pod	2/pod
Medical Records	1/pod	1/pod	1/pod
Clinic Operations Technician	2-4 pods/1 COT 1 pod/0.50 COT	2-4 pods/1 COT 1 pod/0.50 COT	2-4 pods/1 COT 1 pod/0.50 COT
BASED ON BASED ON NUMBER OF PODS			
Clinic Operations Manager	4 pods/ 3 COMS, 3 pods/2 COMS, 2 Pods/1 COM, 1 Pod/0.5 COM	4 pods/3 COMS, 3 pods/2 COMS, 2 Pods/1 COM, 1 Pod/0.5 COM	4 pods/3 COMS, 3 pods/2 COMS, 2 Pods/1 COM, 1 Pod/0.5 COM
Admin Assist	4 pod site/1 AA	4 pod site/1 AA	4 pod site/1 AA

STAFFING UNDER REVISED POD STRUCTURE

STAFF CATEGORIES	POD: 3 NIGHT CLINIC	POD: 2 NIGHT CLINIC	POD: 1 NIGHT CLINIC
Medical Provider	3.5-3.9/pod	3.2-3.6/pod	3.0-3.3/pod
Nurse Manager	1.0/pod	1.0/pod	1.0/pod
Clinic Nurse	2.0/pod	2.0/pod	2.0/pod
Float Nurse	1.0/Site	1.0/Site	1.0/Site
Assistant Nursing Director	0.2/pod	0.2/pod	0.2/pod
Medical Assistant Manager	0.5/pod	0.5/pod	0.5/pod
Medical Assistant	1.0/In-Clinic Provider FTE/Pod	1.0/In-Clinic Provider FTE/Pod	1.0/In-Clinic Provider FTE/ Pod
Pod Medical Assistant	1.0/pod	1.0/pod	1.0/pod
Float MA	1/site	1/site	1/site
Behavioral Health Provider	1.0/pod	1.0/pod	1.0/pod
Case Manager	1.5/pod	1.5/pod	1.5/pod
Referral Case Manager	0.5/pod	0.5/pod	0.5/pod
Office Tech	2.3/pod	2.0/pod	2.0/pod
Medical Records	1.0/pod	1.0/pod	1.0/pod
Clinic Operations Technician	2-4 pods/1 COT 1 pod/0.50 COT	2-4 pods/1 COT 1 pod/0.50 COT	2-4 pods/1 COT 1 pod/0.50 COT
BASED ON NUMBER OF PODS			
Clinic Operations Manager	4 pods/3 COMS, 3 pods/2 COMS, 2 Pods/1 COM, 1 Pod/0.5 COM	4 pods/3 COMS, 3 pods/2 COMS, 2 Pods/1 COM, 1 Pod/0.5 COM	4 pods/3 COMS, 3 pods/2 COMS, 2 Pods/1 COM, 1 Pod/0.5 COM
Admin Assist	4 pod site/1 AA	4 pod site/1 AA	4 pod site/1 AA

Notes: Pods are groups of primary care providers (physicians, APRNs and PAs), around which care is organized. Pods vary in the number of evening shifts per week and therefore base primary care provider FTEs. Supervisory and management staff not included in table. No changes were reported for these categories of staff. Categories with changes in staffing bolded.

Table 4: Estimated initial visits, staffing, revenue, and expenses and change due to addition of RNs and expansion of co-visits, Clinica

Visits, Staffing, Revenue, and Expenses

	INITIAL	CHANGE	REVISED
VISITS	26,500	6,059	32,559
STAFFING			
FTE Physician	4.94		4.94
FTE NP PA	6.71		6.71
FTE Assist Nursing Director		0.60	0.60
FTE RN	6.12	5.00	11.12
FTE Medical Assistant*	14.55	0.76	15.31
REVENUE			
Net Patient Service Revenue	\$3,648,136	\$799,941	\$ 4,448,077
Pharmacy Revenue	-		\$ -
ACO, RCCO & Capitated Revenue	206,032	49,199	255,231
Grant Revenue	1,655,811		1,655,811
Contributions	407,825		407,825
Program & Other Revenue	54,704		54,704
TOTAL REVENUE	5,972,509	849,139	6,821,649
EXPENSE			
Personnel	2,609,828	417,301	3,027,130
Fringe Benefits	436,243	69,754	505,996
Travel & Training	14,994	2,952	17,945
Medical Supplies	586,301	134,052	720,353
Office Supplies	27,097	6,196	33,293
Educational Supplies	331	26	357
Contracts - Patient Care	136,965	10,647	147,612
Patient Related	13,280	3,036	16,316
Employee Related	12,920	2,544	15,463
Administrative Related	2,743		2,743
Building Related	20,284		20,284
TOTAL EXPENSES	3,845,992	646,507	4,492,499
OPERATING INCOME	2,126,517	202,633	2,329,149

Note: Increased visits estimated based on additional visits per FTE physician, NP, and PA per day. Net increase in medical assistants associated with reduction in staffing per FTE physician, NP, and PA and increase in float MA assigned to pod. Break-even is achieved at 1.53 visits per FTE physician, NP, and PA per day.

RCCO = Regional Care Collaborative Organization

Table 5: Visits, staffing, revenue, and expenses associated with care of diabetes patients before and after implementation of health coach program, re-analysis of Mercy Clinics data

	VISITS, STAFFING, REVENUE AND EXPENSES, YEAR BEFORE HEALTH COACH	VISITS, STAFFING, REVENUE AND EXPENSES, TWO-YEAR AVERAGE AFTER IMPLEMENTATION	CHANGE ASSOCIATED WITH HEALTH COACH PROGRAM
VISITS			
Diabetes related visits	881	1,390	509
Percent visits billed at 99214	58%	64%	6%
Average net revenue per visit	78	80	2
STAFFING			
FTE Primary Care Providers	10	10	
FTE Health Coaches	-	1.6	
REVENUE			
Net Patient Service Revenue	68,454	110,922	42,468
Laboratory Revenue			
Microalbumin	22,170	62,119	39,949
HbA1c	37,368	51,145	13,777
TOTAL REVENUE	127,992	224,186	96,194
EXPENSE			
Health Coach (assume all RN)		83,950	83,950
Cost of laboratory tests	15,028	28,575	13,547
DIRECT EXPENSES			
associated with Health Coaches	15,028	112,526	97,497
OPERATING INCOME	112,963	111,660	(1,303)

Notes: Numbers reported by Mercy Clinics for implementation at one clinic have been modified in this analysis by averaging experience in two years post-implementation, shifting staffing to all RN model, and re-estimating cost of laboratory tests based on volumes reported and Mercy Clinics estimate of costs.

Mercy Clinics business case analysis also credited program with increase in revenues of approximately \$45,000 from nurse-only 99211 visits, principally for Coumadin clinic, and substantial pay-for-performance bonuses from private insurers and CMS for achieving quality benchmarks in diabetes care.



PREPARING NURSING STUDENTS FOR ENHANCED ROLES IN PRIMARY CARE

THE CURRENT STATE OF PRE-LICENSURE AND RN-TO-BSN EDUCATION

Commissioned Paper

DANUTA WOJNAR, PhD, RN, FAAN

Seattle University College of Nursing

and

ELLEN MARIE WHELAN, PhD, RN, FAAN

Center for Medicaid and CHIP Services and Center for Medicare and Medicaid Innovation

INTRODUCTION

Over the past few decades, the costs of health care in the United States have dramatically increased while the health of populations has declined. Obtaining desired results and decreasing expenditures necessitates fundamental changes in how care is delivered.^{1,2} The growth of an aging population, the increase in number of individuals with chronic health conditions, and the passage of the Patient Protection and Affordable Care Act³ in the US collectively propel the need to shift the focus of health care from an acute care model to a preventive care model focused on population health.^{4,5,6} With the current emphasis on increasing access to and utilization of primary care services⁷ and improving satisfaction for both patients⁸ and primary care clinicians,^{9,10} experts across the country are re-imagining models of primary care delivery. Attention is being drawn to optimizing the roles of all healthcare professionals on the primary care team, including the role of registered nurses (RNs).^{1,7}

Some authors^{11,12} have long recognized the unique role RNs play in ambulatory care settings. Haas and Hackbarth^{13,14} proposed new models of nursing care delivery in ambulatory care based on nursing intensity measures, evidence-based standards of care, and quality improvement programs. Implementation of these models resulted in improved patient care outcomes and staff satisfaction. More recently, the Institute of Medicine (IOM)¹⁵ identified RNs as essential players in improving quality of care and the health of individuals, communities, and populations. Haas and Swan¹⁶ specifically offer that RNs play an essential role as care coordinators and transition managers in community-based care environments, while Donley⁸ and Fortier et al.⁵ assert that the role of RNs in a variety of community-based primary care settings will grow rapidly in the near future, contributing to the quality of care and improved population health. However, for this paradigm shift in health care to fully occur, a concerted effort of all stakeholders, including those in nursing education, must take place. In particular, nurse educators must be forward thinking and evaluate and revise nursing curricula in order to prepare new generations of RNs ready to assume expanded roles in the rapidly changing healthcare system of the 21st century.

LITERATURE REVIEW

At the heart of primary care is the provision of essential healthcare services to individuals, communities, and populations.^{17,18} This set of skills is at the very core of nursing. Nursing education in the United States emphasizes care of individuals, families, and communities with a goal to attain, maintain, or restore optimal health and quality of life, or to assist with the realization of a peaceful death. Originally trained mainly on-the-job and through religious orders, nurses have been at the patient's bedside and in the community, addressing the basic health care needs of individuals and families. These formal training programs granted diplomas for nurses, but no academic degrees.¹⁹ Over the second part of the 20th century, many graduate nursing programs emerged. In addition, a variety of academic pre-licensure pathways became available to nursing students (see Table 1). Currently, learners seeking to obtain their RN licensure within an academic setting may do so while obtaining their Associate Degree in Nursing (ADN), Bachelor of Science in Nursing (BSN), Master of Science in Nursing (MSN), or Master of Nursing (MN).²⁰

The attainment of a university degree by nurses has long been the preferred entry to practice.²¹ Students may enter nursing as traditional college students (entering

as “freshmen”), as transfer students (“upper division” programs of study), or as post-baccalaureate learners (students who have a bachelor’s or higher degree in another discipline and who seek nursing education as a second career). The IOM¹⁵ brought renewed attention to the importance of enhancing the education of nurses and recommended that 80% of RNs become BSN prepared by 2020. This recommendation resulted in rapid growth of RN-to-BSN programs across the country.²² Applicants to RN-to-BSN programs had their pre-licensure education in either an associate degree- or diploma-granting institution. Concurrently, with the rapid shift from acute to ambulatory, community-based, and population-focused models of care, it is essential that pre-licensure programs prepare students for expanded roles in these settings.¹

The American Academy of Ambulatory Care Nursing (AAACN), in particular, asserts that exposure of nursing students to ambulatory care nursing is essential for proper preparation of students for practice.²³ Haas, Swan, and Haynes²⁴ identify essential dimensions of the RN role for ambulatory care and suggest that these dimensions are easily transferable to other care settings, including primary care. It would seem reasonable to expect that this preparation of nurses begins while they hone new knowledge and skills in the pre-licensure nursing programs. However, because pre-licensure nursing programs have traditionally sought clinical learning experiences for students in acute, in-patient care settings, it is unclear to what extent they have shifted focus of student education in recent years. No published research exists that explores the current state of pre-licensure and RN-to-BSN online education in the United States with regards to the implementation of primary care content. This study was conducted to fill the gap in knowledge about this important issue for nursing education and practice.

PURPOSE

The purposes of this study were to (1) explore how nursing education currently incorporates primary care content in the curriculum; (2) examine curricular changes that enhance primary care content and clinical opportunities in pre-licensure (entry) and RN-to-BSN nursing programs; (3) describe challenges to including or expanding primary care content and clinical opportunities in pre-licensure and RN-to-BSN online nursing education programs; and (4) offer suggestions for continuing education needs of RNs to be ready to practice in enhanced RN roles in primary care.

METHODS

Procedure

Institutional Review Board (IRB) approval for protection of human subjects was obtained from Seattle University (available upon request). The list of Commission on Collegiate Nursing Education (CCNE) accredited BSN and Master's entry-to-practice nursing programs was obtained from the American Association of Colleges of Nursing (AACN) website. Likewise, a list of the Associate Degree in Nursing (ADN) Programs approved by the Accreditation Commission for Education in Nursing (ACEN) was obtained from the ACEN website. Additionally, a sample of the top 100 online RN-to-BSN programs was identified via an Internet search. The top 100 RN-to-BSN online programs invited to participate in the study were accredited by the CCNE and/or ACEN. A nation-wide email survey (Appendix A) was sent to the selected nursing programs to explore how nursing education currently addresses primary care content in the curriculum.

Sample

A convenience sample of 1,409 schools/colleges from across the United States was invited to participate in the survey (677 BSN and/or Master's entry-to-practice programs, 632 ADN programs, and the top 100 online RN-to-BSN programs). Of the 1,409 surveys sent, a total of 529 surveys were returned for an overall response rate of 37.5%. Most surveys were completed by the BSN and/or Master's entry level to practice programs (n=302, response rate=44.6%). Fewer surveys were returned by the ADN programs (n=179, 28.3%) and the online RN-to-BSN programs (n=48, 48%). A summary of sample characteristics and response rates across programs is listed in Table 2.

Some of the respondents (n=42, 7.9%) indicated their schools were undergoing leadership changes and declined to complete the survey. A small number (n=24, 4.5%) of respondents indicated they require an internal IRB and/or curriculum committee approval to complete the survey. Consequently, only three of these programs returned completed surveys. One of the schools invited to participate offers a Bachelor of Arts (BA) in Nursing rather than a Bachelor of Science in Nursing degree; hence, the school declined to participate. Moreover, some email contact information found via AACN and ACEN websites turned out to be undeliverable. Graduate Research Assistants (RAs) conducted Internet searches

to locate alternative contacts using information posted on the school/college websites and were able to enlist some participants using this method (n=32, 6.0%). As appropriate, surveys were completed by the school/college of nursing deans, directors, associate deans, assistant deans, or other designated personnel.

Method

Summative content analysis was used to analyze survey data.²⁵ According to Hsieh and Shannon, summative content analysis is most useful for analysis of written text such as manuscript content, journal articles, or survey data; hence, the method was deemed most appropriate to use in the current study.²⁵ Summative content analysis consists of two levels of analysis: (1) manifest content analysis, which involves reading and re-reading text to identify and quantify key words and phrases with the purpose of understanding their usage and context of use; and (2) latent content analysis, which is the process of summarizing and interpreting content to discover underlying meanings of the individual words and phrases and the text as a whole.

RESULTS

BSN and Master's Entry into Practice Programs

Teaching Primary Care Content

Of the 302 (44.6%) respondents in the BSN and MSN/MN entry-to-practice category, the majority (n=278, 92.0%) indicated they offer traditional, four-year Bachelor of Science in Nursing (BSN) programs or both the traditional and transfer program (a two-year program for students with completed non-nursing Bachelor of Science degree or required science prerequisites before entry to nursing program). Some respondents (n=22, 7.3%) indicated they have both BSN and Master's level entry to practice programs, while two (0.6%) offered Master's entry to practice programs exclusively. All the respondents provided general comments about pre-licensure nursing education in primary care, making it impossible to discern specific differences between the BSN and Master's level entry to practice programs. The majority of programs in this category (n=247, 81.7%) were medium-sized (between 200–400 students), fewer (n=44, 14.5%) were large (over 400 students), and fewest (n=11, 3.64%) were small (less than 200 students).

Most respondents in the BSN and Master's entry-to-practice program category (n= 232, 76.8%) indicated they have already implemented at least "some" primary care content in the curriculum, while admitting they should include more. Like others, one participant in this group reflected:

We have a dean and most faculty understanding the need to shift student education from acute to primary care. But we still teach primary care content only to a limited degree. Currently, we address it in two theory courses (Adult I and Elder Health I) and are only able to expose students to primary care in Community Health course, and some peds and OB clinicals. Clearly, we need to be more thoughtful and methodical about it, but at least we are doing "something" about it.

Respondents from 20 schools/colleges (6.6%) indicated they have implemented or are in the process of implementing primary care content across the curriculum in both the theory and clinical courses. Like others in this small group, one study participant described:

As appropriate, we implemented some primary care content in most theory courses and, where we could, also in clinical, a couple of years ago. When primary care clinical is not an option, we teach the concepts in simulated situations in the clinical performance lab (CPL). We are lucky to have a strong leadership and faculty willing to entertain the idea. I believe it is critical we do this if we are to meet the nation's Triple Aim goals and as we move from a fee-for-service payment system to a bundle payment/episodes of care/value versus volume/shared savings system with a wellness approach instead of a sickness approach. We are now listed as the most expensive system in the world and ranked #49 in quality of healthcare delivery. And, we are clearly the most obese country in the world. If nursing programs don't prepare the next generation of nurses to assume the expanded roles in community-based care settings, nobody will...

Positive Forces Behind Primary Care Content

Of 232 (76.8%) respondents who implemented "some" primary care content in their curricula, many identified consistent positive forces that allowed them to move in

that direction: (1) visionary senior leadership and progressive, “thinking out of box” faculty (n=128, 42.3%); (2) inviting/collaborative spirit of clinical partners (n=58, 19.2%); (3) current trends in health care (n=33, 10.9%); (4) insufficient number of acute, in-patient care sites that requires creative alternatives for clinical sites (n=28, 9.2%); (5) growing capacity to provide simulated learning experiences on primary care in clinical skills, clinical performance, and simulation labs to complement clinical learning (n=14, 4.6%); (6) synchronization of theory and clinical care content (n=12, 3.9%); (7) importance of primary care content (n=12, 3.9%); (8) having a theoretical framework that focuses on health promotion/disease prevention to guide the curriculum (n=3, 0.9%); (9) mandate from the state nursing commission (n=3, 0.9%); and (10) a combination of several forces (n=144, 47.6%). Like others who were successful in implementing some primary care content in their curriculum, one respondent stated:

The greatest catalysts for implementing the primary care content was supportive senior leadership, progressive faculty, and changing times. Ambulatory care sites evolved because we have nurse practitioners on our faculty who have relationships with these organizations. These relationships were crucial to allowing the school access to the sites. We have clinical placement partnerships with the county health department, a primary care group, and a provider for immigrant care. Some undergraduate students and all MN students rotate through these sites for their primary care, others for chronic care rotation. We also have community-based settings for mental health. For example, we may visit homeless shelters where clients with chronic mental illness may seek shelter. It isn't easy to do and it requires extensive resources, but, as I see it, it is essential in the 21st century.

Barriers to Primary Care Content

Across participating BSN and MN entry-to-practice programs, the greatest barriers to implementing primary care content in the curriculum included (1) lack of faculty buy-in (n=88, 29.1%); (2) too many students in need of primary care placements and too few available sites (n=74, 24.5%); (3) lack of RN role models in primary care to serve as preceptors (n=72, 23.8%); (4) student push back/expectation to receive clinical education exclusively in acute care settings (n=70, 23.1%); (5) student perception of ‘losing out on skills’ in primary care settings (n=67, 22.1%); (6) commonly held belief in the community at large that undergraduate programs

prepare students for work in acute care settings (n=54, 17.8%); and (6) primary care content not tested on NCLEX-RN licensure exam (n=52, 17.2%).

A number of respondents (n=50, 16.5%) indicated that, beyond a mere acknowledgement that primary care matters, they had not implemented any primary care content in their curriculum. Some of the respondents explained that primary care clinical sites don't exist in their community or that the sites are not interested in partnership. Others admitted they intentionally avoid primary care content in their programs, coming from a philosophical stance that the pre-licensure programs exist mainly to prepare nurses for work in acute care, in-patient settings while graduate programs exist to prepare nurses primarily for work in primary care. Like others in this group, one respondent indicated:

We introduced the concept of primary care in Nursing Fundamentals and Community courses, but our students have no exposure beyond that. We plan to keep it this way. There are just a few clinics in our community and even fewer employ RNs, making it impossible to find the role models for students in these settings. As I see it, the goal of undergraduate education is to prepare students for work in acute (in-patient) care and MN students for work in primary care and so we intend to keep it this way for now.

Another participant stated:

I still think that BSN students should mainly be educated to assume roles in acute (in-patient) care settings. With the current nursing shortage, it is more important than ever. I also believe that nurses should have at least one year acute care working experience prior to working in any community or primary care center so that they are more prepared to deal with any emergencies in those environments and/or so they are familiar with in-patient hospital experiences that follow up at primary care sites and with community care.

Like others, one respondent summed it up:

We understand this (primary care) is important in the 21st century but there are many barriers to implementing the content. In our region, my school competes for clinical sites with other BS programs, AD programs,

graduate programs, and RN-to-BS programs. This includes access to primary care and other community-based clinics. Moreover, many of the sites still don't employ RNs to serve as preceptors and role models to students. Scheduling logistics is a nightmare. We lack resources to efficiently schedule students and it falls on faculty; it is very time-consuming for course coordinators to make the contacts and schedule students in a myriad of sites given the size of our student population (main barrier). We do what we can but the picture is far from perfect.

Another participant added:

The biggest barrier in my mind is that faculty feel students will not learn the skills they need or have enough "clinical experience" to be competent practitioners. Many faculty, especially adjuncts, do not know how to "make the most" of these sites; how to build student interest, build relationships with providers, and create learning situations during "slow times." Others worry students may not pass NCLEX without strong acute care experience. This is why they tend to gravitate to hospital nursing. Likewise, students feel going to community-based settings gives them "less than" clinical experience and are pushing back. I would say, these are the greatest barriers.

Pushback from students also was associated with the lack of endorsement of community-based education. Similar to others, one respondent shared:

One of the students assigned to a women's health clinic for her OB/reproductive care clinical came to me at the beginning of the quarter very upset about her clinical placement. She works part-time as a nurse tech in one of the local hospitals. Apparently, she had a conversation about her clinical with nurses on the unit, and they were bewildered that we now offer 'less than' OB clinical and encouraged the student to protest. The student was told her clinical placement wouldn't be changed and was explained why. She left my office disappointed, but it turned out to be the best clinical learning experience she had.

Associate Degree (ADN) Programs

Teaching Primary Care Content

Of 632 surveys sent to ADN programs, 179 (28.3%) surveys were returned to the study. The majority of ADN programs (n=124, 69.2%) were of medium size, some (n=31, 17.3%) were large, while the fewest programs (n=24, 13.4%) were small. Consistent with the university-based pre-licensure program respondents, the majority of respondents in the ADN programs (n=131, 73.1%) indicated they teach “some” primary care content in their theory and clinical courses.

Positive Forces Behind Primary Care Content

Like others, one respondent summed it up:

We have a ways to go to fully embrace primary care content in our curriculum. Still, we already teach the content in community health nursing, pediatric, and mental health theory and clinical. It is a challenge to rotate large numbers of students through primary and ambulatory care settings, so shadowing experience is more commonly the case versus active learning of skills we provide in the acute care settings. Still, we believe it is important content to teach.

A unique feature of many Associate Degree programs, not mentioned by any of the university-based program respondents, is that the ADN programs are more likely to lack access to specialty units in the acute care settings, such as reproductive care or pediatric units. This was highlighted by 64 (35.7%) of the respondents. Driven by the necessity and motivation to provide comprehensive learning experiences for students, many nurse leaders in the ADN programs have long utilized community-based settings as clinical sites for these specialties. Like others, one respondent described:

Providing pediatric or OB clinical learning experience at local hospitals is off limits for my program. Thus, I have to be creative. Our pediatric theory course, in addition to common pathologies, focuses on healthy child development. This corresponds quite well with clinical experiences available to our program, such as the primary and ambulatory care settings and nurse-run clinics in the school system. It is a great challenge to rotate and supervise large numbers of students in primary

and ambulatory care clinics, so observational experience for students is the most common approach to teaching. Still, they have a great exposure to what nurses can do. Looking back, what happened out of necessity now seems to be the preferred location for clinical teaching. Who would have thought 10 or 15 years ago that we would all be competing for community-based sites?

Another participant reflected:

Preventive care is where nursing is and what nursing is. I think it is important for students to be exposed to both the acute and primary/ ambulatory care settings since they may find jobs in these settings upon graduation. This is why we are intentional about covering all content, including primary care in our theory and clinical courses.

Interestingly, according to the ADN program respondents, their students (n=77, 43.0%), in contrast to BSN students' apparent "push back" against the primary care clinical experiences, enjoyed clinical placements in primary care settings. Like others, one participant shared:

I think it is very important they like it and our students seem to like it a lot. As ADN nurses are increasingly being utilized in out-patient, community-based specialty care settings, it is important to provide some experience and knowledge in this area for graduates. The feedback from our students has been quite positive and many seek employment in areas outside of the acute care settings after graduation.

Some respondents (n=64, 35.7%) saw lack of access to various specialty in-patient units and insufficient number of in-patient clinic sites in general (n=38, 21.2%) as a positive force behind their schools' seeking community-based specialty clinical experiences. Still, others saw collaborative attitudes of community-based clinical partners as a very positive force (n=43, 24.2%). Interestingly, only a few respondents in this category (n=8, 4.5%) mentioned current trends in health care and the importance of primary care delivery as driving forces behind primary care curriculum development.

Barriers to Primary Care Content

The greatest barriers to teaching specialty clinical courses in primary care settings identified by ADN program leaders were (1) the complexity of coordinating clinical experiences and lack of necessary resources (n=45, 25.1%); (2) difficulty with student supervision (n=22, 12.2%), too few primary care sites available (n=22, 12.2%); and (3) lack of RN role models in primary care to provide proper precepted experiences (n=18, 10.0%). Interestingly, none of the respondents in this category mentioned the community perception that RNs are educated to work in in-patient settings, but many voiced concerns about the complexity of organizing clinical in primary care (n=45, 25.1%) and lack of resources in general (n=45, 25.1%). Moreover, some respondents (n=11, 0.6%) saw the amount of content that must be taught in the ADN and BSN programs along with the need to adequately prepare students for success on the NCLEX-RN licensure exam as a difficult barrier to overcome. Although nearly all ADN program respondents (n=167, 93.2%) agreed that it is important to expand primary care content to all theory and clinical courses, fewer saw it as a realistic goal (n=61, 34.0%) because of the lack of resources and the lack of sites. One ADN Program Director summed it up:

Supervision in a private primary care practitioner office is a nightmare for faculty. You have to let go of how you typically do your work. Most offices take only one student, which requires a great deal of faculty resources and great deal of clinical coordination. Still, I think it is important for students to be placed in these settings if we are to decrease the cost of health care and educate nurses to assume new roles in the 21st century.

RN-to-BSN Online Programs

Teaching Primary Care Content

The third group of programs surveyed was a convenience sample of the highest ranked online RN-to-BSN programs in the United States (n=100). All of these programs have some clinical component. Nearly 50% of nurse administrators (n=48, 48%) in this program category responded. Many of the RN-to-BSN program leaders reported that their programs are large (n=34, 70.8%), and the remaining schools (n=14, 29.1%) are medium in size. In general, respondents in this category reported

far fewer facilitators and barriers to implementing primary care content than the BSN and Master's entry and the ADN programs.

Positive Forces Behind Primary Care Content

All 48 respondents indicated they have already implemented the concept of primary care into their theory curriculum and saw it as a positive move toward an "enhancement of education" for students who received their RN education in the ADN programs. The majority of respondents (n=31, 64.5%) noted that a nursing course focused on community health/population health was an important centerpiece component of their online program because of the direction that health care is moving. Like others, one respondent explained:

As an educator and a community health educator specifically, I revised the curriculum for (our) RN-to-BS completion program to include two semesters of online classroom experiences in this area (primary care). I have the highest regard for the significance of this content and the experiences. Consequently, at (our school) we only hire faculty who share this belief and are enthusiastic to teach it.

Another respondent concluded:

I believe that teaching primary care content is critical to developing competent nurses who engage in critical thinking and high-level clinical reasoning. Only this kind of nurse will be able to practice to the top of their license in community-based settings. We are in the 21st century and we aren't producing 'robots' who simply execute orders or psychomotor skills, we are producing healthcare leaders for the 21st century. We must always keep this in mind when developing nursing curricula.

Similar to pre-licensure programs some respondents (n=11, 22.9%) saw visionary leadership, current trends in healthcare (n=21, 43.75%), and student enjoyment of learning the content (n=21, 43.75%) as positive forces behind the change.

Barriers to Primary Care Content

In the RN-to-BSN online programs, respondents noted the greatest and only barrier to exposing the students to primary care clinical experiences was program

design. Although the content is addressed in the didactic courses, there appears not to be a designated clinical component except for broadly defined and flexible “field experiences.” Like others (n=25, 52%) who reflected on it in the survey, one respondent explained:

Our community course has a two-credit field experience component. The field experience is very flexible. Students may do community assessment, simulated lab experiences, or a combination of both. There is no primary care clinical component per se for students in our program.

A summary of positive forces and barriers to teaching primary care content in the pre-licensure and online RN-to-BSN programs is displayed in Table 3 and Table 4, respectively.

DISCUSSION

The expanded role of RNs in primary care, as it is currently unfolding, includes several key areas of patient care: (1) care management of patients with chronic conditions; (2) complex care management of high-utilizing, multi-diagnoses patients; (3) care coordination for patients from hospital to home to primary care; and (4) RN-led co-visits for patients with uncomplicated conditions, such as contraception counseling, urinary tract infections, or well mother-baby care following discharge from hospital. The extent to which primary care is taught in pre-licensure and RN-to-BSN programs in the United States is evolving, taking multiple forms of didactic, simulated, and clinical learning experiences, and moving at variable speeds in response to available resources, institutional policies, and state regulations (some states mandate teaching primary care in nursing curricula). Also influential are the presence of progressive and visionary school leaders and faculty who recognize the changes in healthcare delivery and patient care needs and have blazed new trails in primary care education for RNs.

Findings from this study, consistent with Fortier et al.’s⁵ recommendations, suggest that in order to effectively equip the next generation of nurses “with the skills, knowledge, and attitudes necessary for the expanded nursing roles in primary care settings” deliberate actions of dedicated faculty are needed to develop or expand the primary care content in nursing curricula.⁴ This finding is also consistent with the

expert opinion of the AACN²³ that pre-licensure nursing programs, in particular, must shift their focus from an acute in-patient nursing care model to an ambulatory care nursing care model.

Interestingly, while the vast majority of respondents recognized the need for curriculum transformation to place greater emphasis on didactic and clinical courses offering primary/ambulatory care content in pre-licensure and RN-to-BSN online programs, many consistently identified obstacles, such as the resistance to change by faculty, students, and the nursing community at large as well as the unfortunate lack of appropriate clinical partnerships or sites. These findings are consistent with the challenges previously identified in the literature by Donley⁸ and Yang, Woomer, and Matthews.²⁶

Still, with the projected increase in the number of persons seeking primary care services as a result of improved access to care granted by the Patient Protection and Affordable Care Act,³ schools and colleges in the US must anticipate a need to fundamentally redesign their educational models to meet the needs of a greater number of patients in a systematic fashion. This will require further expansion of RN-to-BSN programs with a strong focus on community-based nursing²⁷ as well as professional development opportunities for faculty and staff nurses to enhance their buy-in and understanding of the enhanced role of the RN in primary/ambulatory care settings. The professional development opportunities might be offered at conferences and other meetings, as independent self-study modules, small group discussions, or webinars. Likewise, team-oriented, interprofessional clinical education of student nurses may mitigate concerns of job satisfaction and overwork voiced by healthcare providers currently employed in primary health care settings.⁹

The current state of primary care delivery models presents an opportunity for pre-licensure and RN-to-BSN nursing programs to instill in students a spirit of leadership and collaboration as well as other skills and knowledge essential to assuming roles of case managers, coordinators of care, and transition care managers in the re-imagined healthcare system.¹ New curricula and practice models will be required from nursing schools and colleges across the nation to prepare future nurses to function in primary/ambulatory care practice and ultimately serve as change management and transitional care leaders.

Findings from this study suggest that a number of nursing schools and colleges across the country have already implemented some primary care content in their curricula, particularly in the didactic courses. Fewer programs have also implemented some primary care clinical courses. Many respondents admitted that the clinical exposure of students to primary care is often limited by barriers that often are beyond the programs' control, such as the lack of primary care sites in the area or the lack of RN role models at the existing sites. Regardless, some colleges and schools participating in the study (n=20) have already implemented, or are in the process of implementing, innovative curricular models with primary care content at the heart. The following exemplar programs may serve as role models for nursing programs and other health professions seeking direct experiences in team-based primary healthcare settings.

Exemplar 1: Seattle University College of Nursing

Seattle University College of Nursing (SU CON) implemented a community/primary care focused BSN curriculum in spring 2015. Dr. Patricia Benner, based on the work published by Benner and colleagues²⁸ and three faculty taskforces in the CON (philosophy, content, and program architecture), led the process. Several sources of input were used to shape curriculum transformation, including in-depth literature review on the current trends in health care, and feedback from faculty, students, and community partners.

Consistent with SU's mission "to educate students to become leaders for a just and humane world," faculty embraced Ignatian philosophy to guide the curriculum. As such, in addition to skills and knowledge that would be expected from students in any nursing program, carefully cultivated academic-practice partnerships have led to the creation of clinical experiences for students to work with underserved populations located outside the in-patient care settings across the curriculum. Consistent with Ignatian philosophy, students are encouraged to engage in constant self-reflection and to apply the principles of social justice in all clinical encounters and didactic offerings.

The revised curriculum mandates that faculty embrace a well-balanced approach to addressing the concepts of common pathologies versus wellness, health promotion, and disease prevention across the lifespan. This approach encourages spirited classroom discussions between the students assigned to outpatient versus acute care in-patient settings, and thoughtful collaboration of mixed teams during simulated learning experiences in the clinical performance lab. For example, in the

population health course, students are required to complete relevant community-based projects. Additionally, while in all specialty courses across the curriculum, anywhere from 8 to 16 students are assigned to community-based clinical each quarter, which allows all students to have meaningful learning experiences in the community-based settings by graduation.

As previously stated, most community-based sites are located in medically underserved communities across the Seattle metropolitan area and include primary care clinics, ambulatory care clinics, school clinics, and public health and homecare agencies. Students have an opportunity to learn care management of patients with complex chronic health conditions, such as chronic kidney disease, through participation in care coordination of such patients from hospital to home, home visits with the RN, and the subsequent referral to primary care. Others, such as the students assigned to women's health clinics, may have an opportunity to learn various aspects of nurse-managed prenatal care, mother-baby care after discharge from hospital, and contraception counseling. Moreover, every effort is made to place students who develop particular interest in primary/ambulatory care nursing in the appropriate sites for their senior practicum. Because the need for RN skills set in many community-based agencies is rapidly growing, it is anticipated that all strong performing students will be hired by these agencies upon successful completion of BSN program in 2016. Some community-based sites have already secured funding to offer residency programs for new graduates or are actively seeking sources of funding.

Exemplar 2: Jefferson College of Nursing at Thomas Jefferson University

The Jefferson College of Nursing (JCN) at Thomas Jefferson University designed an innovative, forward-thinking 21st century baccalaureate nursing concept-based curriculum. This faculty-led initiative is based on Jefferson's mission, which is "Health is All We Do," and JCN's curriculum, which is described as: "H.E.R.E. – Humanistic, Evidence-based, Reflective, and Excellence in clinical leaders." The curricular framework that guides the newly designed concept-based baccalaureate curriculum is "Promoting Health and Quality of Life Along the Care Continuum." This framework emphasizes the promotion of health and quality of life in a variety of populations during transitions of care from one setting to another and is guided by the curricular themes of innovation, population health, interprofessional collaboration, and practice excellence.

Central to the curriculum is the need to leverage partnerships to support the new course offerings; immersion experiences (formerly clinical experiences); service learning; and experiential opportunities in interprofessional, community-based primary care. These partnerships are mutually beneficial to promote health and “foster cross-sector collaboration to improve well-being.”

The curriculum for nursing students’ didactic content and immersion experiences is more closely aligned with the evolving role of RNs beyond the hospital walls. Students engage in integrated didactic learning and immersion practicums that promote a culture of health and multiple new and emerging roles of RNs rather than a disease-based, acute care focused curriculum. Nursing students learn content related to safe and effective primary care services delivered in community-based settings, preparing them with knowledge and skills in care coordination; chronic disease prevention; population health; and team-based, interprofessional care.

Specific courses address: 1) health promotion across the lifespan; 2) professional practice; 3) discovery and evidence-based practice; 4) healthcare informatics and innovation; 5) population health, cultural awareness, and health disparities; 6) care coordination and care transitions; and 7) clinical reasoning. The curriculum uses a multidimensional approach that focuses on establishing and expanding upon academic-practice partnerships with community-based primary care sites, and assigning dedicated RNs with community-based primary care experience to act as roles models and preceptors.

Exemplar 3: Western North Carolina School of Nursing

Western North Carolina School of Nursing has partnered with Mountain Area Health Education Center to offer, as of spring 2016, a highly interactive online certificate in Primary Care for BSN-prepared nurses. The certificate adds value to a BSN degree by preparing nurses to work at the top of their license in a primary care setting. The program is designed to broaden students’ perspectives on population health, to hone care coordination skills across interdisciplinary teams, and to enhance leadership abilities. There are six courses that prepare students for roles in primary care: (1) primary care in the 21st century; (2) safety and quality in primary care; (3) population health; (4) informatics in primary care; (5) role of RN in primary care; and (6) leader and educator in primary care.

CONCLUSIONS AND RECOMMENDATIONS

Although results from the current study provide an insight into the existing state of primary care in pre-licensure and RN-to-BSN online education programs, they should be used cautiously because the sample was of convenience (N=529), with the overall response rate of 37.5%, and, thus, may not be representative of all nursing curricula in the country. Findings indicate that many pre-licensure and RN-to-BSN programs are undergoing some curricular transformation with increased awareness of the rapid evolution of the RN role necessitated by healthcare delivery shifting from inside hospital walls to homecare and community-based sites. However, the overall magnitude of curricular transformation of nursing programs to address primary care content is difficult to discern based on the findings from the current study. Specifically, it is difficult if not impossible to make definite conclusions whether nursing programs—including those that have recently undergone or are in the process of undergoing relevant curricular transformation—address the key RN activities in primary care consistently. Moreover, the extent to which nursing programs are able to expose students to the full scope of the RN role in primary care appears to vary greatly depending on site availability and the extent to which RNs are utilized at these practice sites.

Nursing faculty must be aware of the trends in healthcare delivery and prepare to respond to the rapidly growing market for nurses in primary care to meet the healthcare needs of people seeking primary care. Although the majority of the pre-licensure and RN-to-BSN programs participating in this survey have implemented some primary care content in their didactic and clinical courses, many found it challenging to thread primary care content throughout the curriculum. Rationalizing that the sites are insufficient or that only a small percentage of nurses will ever be needed for work in the primary care, some have demurred from incorporating primary care learning experiences. It is imperative, however, that nursing schools/colleges prepare future clinicians for roles in the growing primary care market.

Beyond making curricular changes, efforts will need to focus on changing the mindset of faculty and students, including prospective students. As care continues to shift from the acute to outpatient and primary care settings, awareness must grow regarding the essential roles in chronic illness management, prevention, and transitional care nurses can assume in these settings. Faculty must increase their awareness of the current roles of RNs in professional practice and be less reliant on long-held, untested assumptions that primary care practice is strongest when

based on acute care nursing experiences. Nursing programs need to emphasize accountability for decision making, active participation in team-based care, and leadership in care coordination to prepare nurses for employment outside of the acute care setting. Hence, education will need to emphasize physiology, pathology, and care across the continuum with a specific focus on leadership.

The primary reason for including theory and clinical content on primary care in pre-licensure programs is to teach students to holistically consider the needs of patients and their families and to creatively work with families and other care providers to meet those needs. Similarly, because many nursing jobs may no longer be offered in acute care, students need to learn these new skills and be able to apply them at hire to better meet the healthcare needs of patients seeking primary care services across the nation. Ensuring students have educational opportunities to experience nursing practice in settings across the healthcare continuum, from primary to tertiary care, is essential to their education. Learning to provide care in primary, community, and ambulatory settings provides new and exciting opportunities for the development of higher order skills such as enhanced communication skills, care coordination, problem solving, and interdisciplinary collaboration across the care continuum.

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Appendix A

Survey Sent to 1,049 BSN, ADN, and RN-to-BSN Programs

1. In what State is your school located?
2. Which of the statements below best describe your pre-licensure nursing program(s)?
 - a) traditional BSN program
 - b) transfer BSN program
 - c) Master's level entry to practice program

What is the size of your pre-licensure program?

- a) small (less than 200 students in the pre-licensure program total)
- b) medium size (200-400 students total)
- c) large (more than 400 students)

Please explain as needed:

3. Which of the statements below best describe your RN-to-BSN program (if applicable)?
 - a) online
 - b) traditional

What is the size of your RN-to-BSN program?

- a) small (less than 200 students in the pre-licensure program total)
- b) medium size (200-400 students total)
- c) large (more than 400 students)

Please explain as needed:

4. Have you implemented primary/ambulatory care content in your theory and clinical courses in the pre-licensure nursing curriculum? RN-to-BSN curriculum?
 - a) Theory: (please describe)
 - b) Clinical: (please describe)

5. If yes, what were the facilitators to implementing the primary and ambulatory care content in your program? (please describe)
6. What were some important barriers you had to overcome to make it a reality?
7. If you don't offer the theory and clinical content on primary and ambulatory care in your curriculum, what are some important reasons? (please describe)
 - a) theory
 - b) clinical
8. As a nursing leader in academia, what is your opinion about the importance of including theory and clinical content on the primary and ambulatory care in the pre-license and RN-to-BSN nursing programs?

Table 1. A Summary of the Pre-Licensure Pathways to Taking the RN License

ASSOCIATE DEGREE IN NURSING (ADN)

Programs are typically offered by community colleges.

Primary pre-requisite courses vary somewhat, but typically include:

- English Composition
- Introductory College Chemistry (100 level) or two semesters of high school chemistry within the past 10 years
- Introduction to Psychology
- Human Anatomy & Physiology I (must be taken within the last 5 years)

ADN program typically takes two academic years to complete and covers college math, pathology, pharmacology, psychology, nutrition, human growth and development, ethics, and a series of nursing didactic and clinical courses that cover common pathologies and health promotion across the life span.

The final course is called 'senior practicum' and the length of this clinical experience varies somewhat.

****Graduates from ADN programs are encouraged to enroll in the RN-to-BSN program***

BACHELOR OF SCIENCE IN NURSING (BSN) TRADITIONAL PROGRAM

Programs are offered by colleges and universities; students enter the program as 'freshmen.'

The list of pre-requisite courses varies somewhat:

- Science courses, such as math 1000, chemistry 1200, nursing anatomy and physiology (two parts, typically with lab), introduction to psychology, pathophysiology (3000 level), microbiology (2000 and 3000 level), and lower division elective courses typically taken in freshman and sophomore year
- Nursing theory and clinical courses typically begin in the last quarter/semester of sophomore year or at the beginning of junior year.
- Material covered includes professional nursing, pharmacology, health assessment and intervention, promoting care of older adults (theory and clinical), population health (theory and clinical), promoting mental health (theory and clinical), promoting reproductive health (theory and clinical), promoting health of children and families (theory and clinical), promoting health of adults (theory and clinical), senior synthesis, and transition to professional nursing course, and senior practicum (clinical), statistics and research. Leadership and ethics can be offered as stand-alone courses or concepts threaded throughout the curriculum. Students also are often required to take some elective courses from other disciplines, such as philosophy and ethics.

Traditional BSN program typically takes 4 years to complete.

BACHELOR OF SCIENCE IN NURSING (BSN) TRANSFER PROGRAM

Students with completed science prerequisites enter as 'upper division' students.

Students with bachelor or higher degree in other fields and completed science prerequisites are also admitted.

Coursework typically begins with nursing theory and clinical courses. Material covered includes professional nursing, pharmacology, health assessment and intervention, promoting care of older adults (theory and clinical), population health (theory and clinical), promoting mental health (theory and clinical), promoting reproductive health (theory and clinical), promoting health of children and families (theory and clinical), promoting health of adults (theory and clinical), senior synthesis, and transition to professional nursing course, and senior practicum (clinical), statistics and research. As in the 4-year nursing program, leadership and ethics are offered as stand-alone courses or concepts are intentionally threaded throughout the curriculum. Students also are often required to take some elective courses from other disciplines, such as philosophy and ethics.

Transfer BSN programs typically take 2 years (typically 7 or 8 quarters)

MASTER OF SCIENCE IN NURSING (MSN OR MN)

Students with completed science prerequisites, extensive volunteer work experience, and degrees from other fields are admitted to this intensive, accelerated RN program

Admission is typically very competitive

It typically takes students 5 quarters to complete all pre-licensure courses offered in the transfer BSN program, and continue on with graduate studies to attain MSN or MN degree and/or ARNP license in selected specialty over the next 2–3 years.

Table 2. Summary of Sample Characteristics

Participating Nursing Programs N=529

	Number of Surveys Sent	Number of Surveys Returned
BSN & MASTER'S ENTRY		
Number	677	302
Response Rate %		44.6%
ADN ENTRY		
Number	632	179
Response Rate %		28.3%
RN-TO-BSN ONLINE PROGRAMS		
Number	100	48
Response Rate %		48%
TOTAL		
Number	1409	529
Response Rate %		37.5%

Table 3. Summary of Positive Forces that Encourage Teaching Primary Care Content in the Pre-Licensure and RN-to-BSN Online Programs

Participating Nursing Programs N=529

Positive Forces	BSN & Master's Entry (n=302 / *RR 44.6%)	ADN Entry (n=179 / RR 28.3%)	RN-to-BSN Online (n=48 / RR 48%)
Combined 'pressures'	144 / 47.6%	- / -	- / -
Visionary leadership	128 / 42.3%	63 / 35.1%	11 / 22.9%
Students like it	- / -	77 / 43.0%	21 / 43.7%
Lack of access to in-patient units	- / -	64 / 35.7%	- / -
Collaborative clinical partners	58 / 19.2%	43 / 24.2%	- / -
Trends in healthcare	33 / 10.9%	8 / 4.5%	21 / 43.7%
Insufficient in-patient sites	28 / 9.2%	38 / 21.2%	- / -
Increased *CPL capacity	14 / 4.6%	- / -	- / -
Harmony btw theory/clinical	12 / 3.9%	- / -	- / -
Important	12 / 3.9%	8 / 4.5%	31 / 64.5%
Theoretical frameworks	3 / 0.9%	- / -	- / -
State Mandate	3 / 0.9%	- / -	- / -
Field experience flexible	- / -	- / -	32 / 66.6%

*Table legend: RR = Response Rate, CPL = Clinical Performance Lab

Table 4. Summary of Barriers to Teaching Primary Care Content in the Pre-Licensure and RN-to-BSN Programs

Participating Nursing Programs N=529

Barriers	BSN & Master's Entry	ADN Entry	RN-to-BSN Online
	(n=302 / *RR 44.6%)	(n=179 / RR 28.3%)	(n=48 / RR 48%)
Lack of faculty buy-in	88 / 29.1%	35 / 19.5%	- / -
Too many students to place	74 / 24.5%	22 / 12.2%	- / -
Too few primary care sites	74 / 24.5%	22 / 12.2%	- / -
Lack of RN role models	72 / 23.8%	18 / 10.0%	- / -
Student pushback	70 / 23.1%	- / -	- / -
Perception RNs work in-patient	54 / 17.8%	- / -	- / -
Complexity coordinating	- / -	45 / 25.1%	- / -
Lack of resources	54 / 17.8%	45 / 25.1%	- / -
Difficult to supervise	- / -	22 / 12.2%	- / -
Content not tested on NCLEX	52 / 17.2%	11 / 0.6%	- / -
Program design	- / -	- / -	25 / 52%

*Table legend: RR = Response Rate



HIGHLIGHTS FROM THE CONFERENCE DISCUSSION

In this chapter, we have carefully synthesized the thoughtful discussions that took place during the two-and-a-half-day Macy Foundation conference on *Preparing Registered Nurses for Enhanced Roles in Primary Care*. During the conference, participants were fully engaged in both large plenary discussions and small breakout conversations that enabled them to jointly draft, consider, refine, and ultimately agree to a set of recommendations intended to increase opportunities for registered nurses to help meet the urgent needs of our currently overwhelmed primary care system. The final recommendations are detailed in the “Conference Conclusions and Recommendations” chapter of this monograph, and below is a day-by-day overview of how those recommendations were crafted by the conferees.

During the first full day of the conference, participants discussed four Macy-commissioned papers, which are included in this monograph. The papers, along with several published articles, all of which participants read prior to the conference, provided the baseline from which the group discussion was launched. On the second day, discussions became more focused on identifying the major themes, challenges, and opportunities on which to base recommendations. At the close of day two, the conference planning committee worked late into the night, drafting a preliminary set of recommendations based on the two days of discussions. The third day, a half day, was devoted to achieving initial consensus around the draft recommendations, which were then revised, refined, and finalized via conference calls and emails in the weeks following the conference.

DAY 1: THURSDAY, JUNE 16, 2016

Opening Remarks and Introductions

The first full day of the conference began at 8:00 a.m. on Thursday, June 16, following a reception and dinner the previous evening, during which conferees introduced themselves and described their connection to the conference topic. The 44 conferees included leaders in nursing education and primary care from a variety of settings and playing a variety of roles. Nursing students also were at the table.

Macy Foundation President George Thibault, MD, began his opening remarks by explaining that the Foundation hosts one major conference each year, and choosing the topic is a very serious decision. “We look at issues that are ready for some attention and that would benefit from a consensus statement from a prestigious group of experts,” he said. He went on to say that the Foundation chose “enhancing the role of registered nurses in primary care” as this year’s topic because it represents the intersection of three very important themes.

The first theme is the importance of primary care and the need to shift our healthcare system more fully in that direction to better meet the health needs of the public in a more effective and financially sustainable way. The second theme is the need to improve nursing education to enhance the status and effectiveness of nurses as leaders in aligning health professions education with the growing importance of primary care. An important part of this is promoting the role of nurses in interprofessional education to teach all health professionals to work together in teams, particularly in primary care. And third, is the importance of aligning education reform and delivery reform so that both are moving collaboratively in the same direction.

Conference Co-Chair Thomas Bodenheimer, MD, MPH, from the University of California, San Francisco (UCSF) Center for Excellence in Primary Care, then spoke about the importance of the conference topic for him. During site visits to primary care practices, Bodenheimer said he saw registered nurses being used ineffectively. “They were unhappily sitting at computers, doing phone triage all day long,” he said.

His impression was that RNs performing triage rarely get to see patients face-to-face, which he believes is a terrible waste of highly skilled professionals.

Bodenheimer went on to describe the few examples of primary care practices in which RNs are “doing really wonderful work, mostly chronic care management, health coaching, care coordination, and they were much happier than RNs doing only triage.” He explained that the personal experiences interacting with RNs in these contrasting situations is what drew him to the Macy conference.

Conference Co-Chair Diana Mason, PhD, RN, FAAN, a professor emerita at Hunter College Bellevue School of Nursing of the City University of New York, then provided her thoughts. She spoke first about how she, as then president of the American Academy of Nursing (AAN), was initially connected by colleagues to Dr. Thibault and the Macy Foundation and they quickly began exploring primary care nursing as a possible conference topic. “We were all very much interested in building on the impact of so much important work that had come before,” she said, including the Institute of Medicine’s report and follow-up work on the *The Future of Nursing*.

Mason then spoke about a personal healthcare experience that she ended up blogging about for the *Journal of the American Medical Association*. She explained that, after her husband had surgery that left him temporarily incapacitated and her as sole family caregiver, they were disappointed with various aspects of care in the hospital, during the discharge process, and from their primary care practice. She said that even though they enjoyed access to excellent care, they needed more information, more clarity, and more care coordination.

“I’m hoping that we come out of this meeting with a strong set of recommendations that don’t just sit on the shelf,” Mason said. “The Academy [AAN] is going to work very hard on conference follow up and dissemination, try to increase the impact of the work, and we’re really interested in your thoughts about how to increase the impact of this work.”

Following these opening remarks, the conferees began discussing the commissioned papers, which were presented briefly by their authors and then discussed by the full group of conferees.

Overview and Discussion of Commissioned Paper: The Future of Primary Care: Enhancing the Registered Nurse Role

Conference Co-Chair Thomas Bodenheimer presented the first commissioned paper, which he co-authored with his UCSF colleague, Laurie Bauer, RN, MSPH. The paper, *The Future of Primary Care: Enhancing the Registered Nurse Role*, described how the transformation of primary care in the United States is creating “favorable conditions” for growth in the number of RNs in primary care, particularly in larger practices and community health centers.

These conditions include the current shortage of and professional burnout among primary care practitioners—physicians, nurse practitioners, and physician assistants—resulting from increased demand for their services; changing patient demographics, such as the aging of the population and the increasing prevalence of chronic conditions; the fact that nurse practitioners, who used to focus more on chronic care management, are working more and more like physicians, leaving a need for other providers to perform chronic care management; and the increased size of primary care practices and the change in primary care ownership from physician-owned practices to hospital-owned practices, which may make them more likely to hire RNs.

The authors also elucidated the likely roles of primary care RNs as focused around patients with chronic disease; patients with complex health needs and high healthcare costs; and patients whose care must be coordinated across many settings, including hospitals, skilled nursing facilities, ambulatory practices, and private homes. Barriers to more RNs working in primary care include scope of practice limitations imposed by some states and professional organizations; the scarcity of registered nurses adequately prepared to perform primary care functions; and payers not reimbursing for work performed by some members of the primary care team, including RNs.

Following presentation of the paper, Joyce Pulcini, PhD, RN, PNP-BC, FAAN, of The George Washington University School of Nursing and the Macy Foundation’s Stephen Schoenbaum MD, MPH, co-moderated a conversation about it. The discussion initially centered on the need to think broadly about where primary care is going in the future and how best to align the education of RNs with that future. “We are in an environment where the change happening is so overwhelming, but so are the opportunities,” said a conferee. “Healthcare services are moving

outside the walls of the clinic or office and into the community, into peoples' homes, and onto the internet. That combined with our need to expand our thinking and embrace the social determinants of health. This is what our healthcare future depends on. If we can start with a re-envisioning of primary care very much aligned with the changing needs of our society, then we have a terrific opportunity to also re-envision the role of registered nurses in that context."

Also during this discussion, the need to develop a value proposition around employing RNs in primary care was first raised. "Since quality is such a driving factor in health care, demonstrating the quality that registered nurses can provide—making that case regardless of cost—is really important," said another conferee. "As our models change, and we know we don't have a mechanism to pay nurses for the work that they do from a billing perspective, at least not fully, we have to think about identifying the quality that RNs can provide. And there is a lot, but we have to document it better."

This need to build an evidenced-based argument around the value of RNs in primary care came up repeatedly during the conference because there are many who need to be convinced, including payers, other professions, and even nurses themselves because acute care nursing is more highly valued. In addition to building cost and quality arguments in favor of primary care nursing, conferees also mentioned patient experience as a metric that could be improved by integrating RNs more fully into primary care practice.

One conferee summed it up by saying, "We need to articulate clear talking points so that we can respond convincingly when someone asks, 'What do registered nurses bring to primary care that nobody else does, and why should they be members of the team?'" Another took it further, reminding conferees that they should also be thinking in terms of systems change: "When you think about changing the scope of practice, well then you also have to think about what systems do we need to impact and how do we effectively impact those systems?"

Another topic touched on during the discussion of the first paper was the need to find joy in work. For nurses and other healthcare providers, that often means building relationships with patients as well as colleagues and teammates. For RNs who triage all day, they may find more joy and satisfaction working directly with patients and being part of the care team, but their expanded roles and increased patient interactions may end up impacting the roles of other providers on the team,

including medical assistants. The point was made that expanded roles for RNs should be thought about in terms of the needs of patients and who on the team is best equipped to meet each of the various needs.

Dr. Schoenbaum wrapped up the discussion of the first paper by identifying the themes that stood out for him. “One of the early themes was focusing on the opportunities, and it kept coming back in different ways. I interpreted that as opportunities not just for expanding roles, but also for building better teams. Another theme was reorienting education so that it’s not so acute-care focused. And a third big one was that this is ultimately about better patient care.”

He suggested two questions that are very important to answer: what kinds of teams are needed in primary care? And who might play the major roles that fulfill six core primary care responsibilities to patients, including first contact, accessibility, continuity, comprehensiveness, coordination, and accountability for the whole person? He also reiterated the need to keep job satisfaction in mind, “because frankly you cannot get to the Triple Aim unless you have engaged, excited, proactive people involved in providing the care.”

Overview and Discussion of Commissioned Paper: Registered Nurses in Primary Care: Strategies that Support Practice at the Full Scope of the Registered Nurse Licensure

Margaret Flinter, APRN, PhD, FAAN, senior vice president and clinical director for Community Health Center Inc. (CHCI) presented the next paper on behalf of her co-authors Mary Blankson, APRN, DNP, chief nursing officer for CHCI and Maryjoan Ladden, APRN, PhD, FAAN, senior program officer at the Robert Wood Johnson Foundation. The paper, *Registered Nurses in Primary Care: Strategies that Support Practice at the Full Scope of the Registered Nurse Licensure*, posits that achieving “better, safer, higher quality care that is satisfying to both patients and providers, and affordable to individuals and society” will require us to “effectively use every bit of human capital available in the primary healthcare system,” and presents a vision for the “blue sky” future of primary care and the role of RNs.

In this future, instructional programs offered by nursing schools, health systems, professional organizations, and others will help existing RNs transition their careers to other settings, and will offer learners opportunities to specialize in primary care, community health, or public health nursing, including the option to complete a residency or similar clinical education program in community-based settings. Also

in this future, in which all patients are served by primary care teams, registered nurses will take on prevention and health promotion activities, minor episodic and routine chronic illness management, and complex care management in conjunction with other team members. They also will possess skills in population management, quality improvement, and team leadership; will provide counseling and care services via telehealth; and will expand the reach of primary care into the community.

In summarizing the paper for conferees, Dr. Flinter outlined five overarching themes.

1. The need to ensure that RNs in primary care are practicing to the full scope of their licensure because “they are key to our ability to meet the demand for care.”
2. The need for leadership around changes in primary care practices that would allow for the creation of a pathway—such as the use of standing orders and dedicated order sets—that enables RNs to engage with patients around medical regimens, such as adjusting medication dosages.
3. The need to recognize the critical role primary care RNs can play in complex care management.
4. The need to consider the roles of nurses in relation to other members of the interprofessional team and not in isolation.
5. The need to improve nursing education and training by, for example, adapting the concept of the dedicated education unit for primary care. This would give undergraduate nursing students practical primary care experiences such as conducting independent nurse visits, managing complex care, and being part of a team.

The conversation around this paper began with conferees being asked by the moderator, Debra Barksdale, PhD, FNP-BC, CNE, FAANP, FAAN, of Virginia Commonwealth University, to, among other things, describe what the “blue sky” future of nursing might look like as well as the barriers to achieving it. A conferee responded by stressing the need to, in partnership with patients, reframe primary care around the concepts of prevention and patient-centeredness because “we are

not delivering on that.” She held up international examples of primary care nursing, in which registered nurses serve as the primary point of contact with families and community members.

The international theme was picked up by another conferee, explaining that she currently is studying New Zealand’s approach to workforce planning, which involves assessing care pathways. “They take, for example, diabetic patients and figure out workforce needs from the patients’ care pathways, from home perhaps into primary care to acute care,” she said. “They don’t ask ‘how many nurses do we need?’ They ask, ‘What are the patients’ needs for care in each of those places and how can we redesign the workforce to meet those needs along a care pathway?’” The conferee went on to explain that this approach could be used to plan the “blue sky” future of primary care nursing in the United States.

The conversation was then expanded to include the need to identify factors that could help drive the changes being discussed. “What are the leverage points?” a conferee asked. “Where and who is this change going to come from? We see in these commissioned papers a variety of leverage points already mentioned—the shortage of primary care providers; the shift to team-based care and being held accountable for population health; the shift to larger, hospital-owned practices, etc. But I think we ought to be thinking about adding to the list. And fundamental in this is whether we push specifically for an increased role for RNs or push to improve primary care and let the role of the RN evolve accordingly.”

Isolation among primary care nurses was the first of the barriers raised by a conferee, who said, “I come from an acute-care setting attached to an ambulatory care setting, and we see a lot of turnover among our primary care nurses because they feel alone and disconnected; there’s no strong culture of nursing in primary care. So it’s not just about how do we get them into these new roles, but how do we create primary care environments where they want to stay, where they can thrive?” She mentioned the American Nurses Credentialing Center’s Magnet® recognition model as an example of a way to create a supportive environment for nurses within a primary care organization.

Another barrier raised was payment, which came up repeatedly throughout the conference. In this instance, a conferee expressed concerns about the conversation so far setting up impractical paradoxes. He noted that conferees were, on one hand, discussing the need to hire RNs to add primary care capacity without a

clear mechanism for receiving reimbursement for their work, while on the other hand, also discussing bringing in RNs not only to help reduce the workload, but to actually have them take on new roles and provide new services, also without a clear reimbursement mechanism. “I just think we need to be realistic and think about what’s feasible,” he said.

In response, a conferee who said his community health center has a 1 to 1.2 ratio of doctors to registered nurses, explained that the shifts being discussed—toward team-based population health, toward social determinants of health, toward care management and coordination, toward RNs in primary care, toward community engagement—have already happened. “We’ve already waded in there,” he said. “We’re in it. And, just like in this room, we still have a lot of questions, but we’re figuring it out. It’s working. We need more RNs. We have grants now helping with the payment issues, but I think we’ll find answers to the cost issues around caring for the most expensive patients and changing the payment models.”

Overview and Discussion of Commissioned Paper: Expanding the Role of Registered Nurses in Primary Care: A Business Case Analysis

The third paper discussed at the conference, *Expanding the Role of Registered Nurses in Primary Care: A Business Case Analysis*, was written and presented by Jack Needleman, PhD, FAAN, professor and chair of the department of health policy and management at the University of California, Los Angeles Fielding School of Public Health. The paper describes new roles for RNs that achieve economic gains by engaging their expertise and reducing demands on primary care clinicians. These roles include RN co-visits; RN-only visits using standing orders; and increased responsibilities for RNs in care coordination, telehealth, patient education, and health coaching.

Through two case studies, Dr. Needleman describes how primary care practices have financially supported the expanded role of the RN. For example, in fee-for-service settings, increases in billable services can help pay for RNs in these new roles, while in capitated settings, additional RN-related costs can be offset by reduced use of other services, such as emergency department visits and hospital readmissions. The author calls for additional research to examine the feasibility of these roles under emerging value-based payment structures and solidify the business case, but also explains that the evidence suggests increased engagement

of RNs in caring for high-cost patients with chronic conditions will pay for itself and improve care.

The discussion around this paper was co-moderated by Bobbie Berkowitz, PhD, RN, FAAN, of Columbia University School of Nursing, and Ellen-Marie Whelan, PhD, RN, CRNP, FAAN, of the Center for Medicare and Medicaid Innovation at the Centers for Medicare and Medicaid Services (CMS).

Dr. Whelan opened the discussion: “There are several things happening that are helping us to look at this question of return on investment (ROI),” she said. “The first is the movement away from fee-for-service, and I might be more optimistic than most. I’m at CMS, and we’re working on trying to move away from fee-for-service, and in that new payment model, there are some huge opportunities. We are paying for patient outcomes now (or hoping to), not the services that are being delivered.

“Also, there are the social determinants of health,” she said. “We’re moving in that direction. Medicaid, for example, pays for housing services and care delivered in schools. And there’s the question of where will care be delivered? Not necessarily in clinics anymore. Eight-five percent of our healthcare dollar is spent on people with chronic conditions and most of what keeps them healthy is at home or at schools or in their workplaces—places that nurses are very comfortable.”

A few conferees pushed back on the tensions and assumptions raised in Dr. Needleman’s paper—concerned about how hard it is to measure ROI around provider competencies and patient outcomes and that efforts to do so have been around for decades.

A conferee summed up her federally qualified health center’s (FQHC’s) experiences with primary care nursing. “We continue to struggle to justify the cost of RNs in an FQHC with a fiscally constrained budget,” she said, “but we have, as an organization, continued to prepare our nurses and believe in our nurses’ ability to share care on our care teams. With co-visits, for example, when patients see a physician or other practitioner in addition to an RN, the value of that co-visit for a patient is 15 or 20 minutes of face-to-face time with a care team member. They got seen the day they wanted to be seen, which was today. And we’ve measured a bunch of this around nurse tasks, volume of work.”

Other conferees spoke about successful examples of RNs providing care in their own practices, including those with fee-for-service payment models. “The payment structure is something that must be figured out, but let us innovate around it and it will get figured out. It is already being figured out,” said one conferee. While another, a physician, spoke about registered nurses leading his practice. “There are three of them, and one of me,” he said. “That’s a ratio that really works for us. They are in charge. They keep things running smoothly and pull me in when needed. There’s no triaging; they don’t spend their time on the phone in front of a computer. They’re making decisions. They’re consulting with and supporting each other. They have relationships with patients and often know the patients better than I do.”

Another commenter wrapped up this discussion saying, “These handful of bright spots being discussed—these examples of primary care clinics that have hired more RNs, that have changed their role, and are succeeding in financing it—learning from these bright spots is where the business case for RNs in primary care starts.” (Profiles of these exemplar primary care practices are included in this conference monograph.)

Overview and Discussion of Commissioned Paper: Preparing Nursing Students for Enhanced Roles in Primary Care: The Current State of Pre-Licensure and RN-to-BSN Education

The final commissioned paper discussed at the conference was *Preparing Nursing Students for Enhanced Roles in Primary Care: The Current State of Pre-Licensure and RN-to-BSN Education*. Presented by authors Danuta Wojnar, PhD, RN, FAAN, of Seattle University College of Nursing, and CMS’ Ellen-Marie Whelan, the paper offered results from a survey examining primary care content in the curricula of the more than 500 pre-licensure (entry-level associate, baccalaureate, or master’s degree) and RN-to-BSN education programs that responded to the survey. Though the authors acknowledged limitations regarding their findings, among survey respondents, only about 20 programs offered a robust primary care curriculum.

Findings from the survey focused on factors that facilitate and inhibit the implementation of primary care content in nursing curricula. Some of the factors facilitating primary care’s inclusion in nursing schools are recognition of the emerging shift toward primary care; visionary leadership and forward-thinking faculty; increasing opportunities to learn with other health professions students; and mandates from state nursing commissions. Factors inhibiting the inclusion of

primary care curricular content are lack of faculty buy-in and RN faculty preceptors; logistical challenges coordinating with community-based teaching sites; students' fear of not acquiring acute care skills; and the perception that primary care is not considered a significant content area on the National Council Licensure Examination for RNs (NCLEX).

The discussion around this paper was kicked off by moderator Beth Ann Swan, PhD, CRNP, FAAN, of Thomas Jefferson University College of Nursing. In terms of changing nursing education to more fully incorporate primary care, Dr. Swan asked conferees to think about how to change the minds of students, faculty, practitioners, administrators, and others so that they better understand what primary care is, that it can be viewed as complex, as possibly more complex than acute care. She asked them to also think about primary care beyond the expanded role discussed at the conference so far—case management, chronic care management, social determinants of health—to also include behavioral health. And to think about care being delivered in new locations, not just in clinics and offices outside the hospital, but in homes, homeless shelters, schools, churches, and more. “We really need to deliver care at the point of living,” she said. Finally, she suggested that nursing students be educated in health policy and financing.

With that introduction, several conferees described some of the barriers around educating nursing students in primary care, including nursing faculty who were trained exclusively in acute care and are focused on educating the next generation exclusively in acute care, practical challenges inherent in integrating nursing students into very busy primary care practices, and the need for visionary leaders to help change the culture of healthcare and nursing schools.

One barrier that stood out as new to the conference discussion so far: racism. “If we don’t have conversations about how race, power, and privilege intersect in health care, then we’re not going to get to that ‘blue sky promised land’ we talked about earlier,” a conferee said. “We talked a little bit about power, a little bit about privilege. But the race factor, we just don’t talk about that. We have to start having that conversation with nursing students who will be fulfilling these new primary care roles, but our faculty are not prepared to have those conversations.”

Solutions and opportunities also were raised, such as the need to expand the “Beyond Flexner” social mission movement in medicine to include nursing and other health professions. A conferee suggested that curriculum changes happen

when accreditation and licensing bodies change their expectations (for example, by expanding the NCLEX to focus more on primary care). Another conferee mentioned the master's direct entry program at Columbia University School of Nursing, where they focus on caring for families and communities with a population health perspective, including care management, chronic care, care transitions, social determinants of health, cultural competency, and more. "Beth Ann mentioned how primary care is as complex as acute care," the conferee said, "and I can think of nothing more complex than caring for someone in their home."

And, while acknowledging the challenges ahead, another conferee said, "While there are still some 'old guard' educators around, I think there's also tremendous energy within the academic community to move this agenda forward."

Plenary Overview: What are the Key Components of the Enhanced Role of the RN in Tomorrow's Primary Care Practices?

Following the presentations and discussions of each commissioned paper, the floor was then turned over to Dr. Bodenheimer, who led the conferees through an exercise to define the enhanced role that RNs could play in primary care. "I want you all to pretend that you have a few minutes to describe to a very busy nursing school dean what an enhanced role in primary care for RNs would look like," he said. "What are the skills they would need, what are the functions they would perform, what would their responsibilities be, and what are the roles they need to be prepared for?"

Below is a sampling of the conferees' responses. Nursing schools should educate students about:

- *Coordinating care and managing patients' transitions across settings.* Within these, the skill sets that need to be developed include how to engage a patient in self-care management; determine what's important to a patient; set mutual goals with patients, families, and caregivers; provide effective health coaching; develop a patient-centered care plan; and manage populations of patients within the context of where they live, work, play, and pray.
- *Caring for patients with chronic conditions and complex needs.* This includes learning to care for high-utilization patients with multiple chronic

and/or complex conditions, such as diabetes, heart disease, kidney disease, mental health needs, and more.

- *Understanding the social determinants of health, including the roles of poverty and racism as well as the fundamentals of population health and empanelment.*
- *Talking to patients about setting and achieving personal health goals.* How can nurses help patients envision their personal health goals and determine their current capacity to achieve those goals? Also what health-related needs can they address or not address within their own abilities?
- *Evidence-based practice and working with data and quality measures.* This includes how to gather, analyze, and apply data to decisions, and how to identify trends and use data to encourage positive outcomes among patients and populations.
- *Managing multiple patients across settings and over time.* This includes interprofessional and experiential learning in community-based settings.
- *Teamwork and collaboration.* This includes classroom and clinical experiences learning alongside and in partnership with students from medicine, social work, pharmacy, dentistry, and other health professions. It also includes partnering with patients, families, and communities within those teams.
- *Coaching, mentoring, motivating, and empowering others.* This includes building trusting relationships with patients, families, and communities as well as team members, colleagues, peers, support staff, and learners.
- *Leadership of interprofessional healthcare teams and leadership within healthcare systems.* This includes skills in creative problem solving, critical thinking, teamwork and team building as well as knowledge of healthcare financing and policy, quality improvement, patient safety and satisfaction, and more.

This plenary discussion concluded with a charge to the conferees, whose next assignment was to break into pre-assigned small groups to discuss relevant themes

in more detail. The five topics under consideration by the five breakout groups were:

1. How should pre-licensure and RN-to-BSN nursing education programs revise their curricula to better prepare their graduates for careers in primary care nursing?
2. How are existing RNs who want to change their careers to become primary care RNs or are already practicing in primary care prepared for this enhanced role now? How could such professional development better prepare existing RNs for enhanced roles in primary care and what might the curriculum look like?
3. What are the challenges/opportunities for education-service interprofessional collaboration to build up primary care practices that enable RNs and other health professionals to work in effective and cohesive teams?
4. What are the barriers/facilitators to changing nursing education to place greater emphasis on primary care nursing, and how might these be overcome?
5. What are the barriers/facilitators to changing primary care practice to enhance the RN role, and how might these be overcome?

Plenary Overview: Reports from Breakout Groups and Discussion of Themes from Day One

The afternoon plenary discussion featured brief reports from each of the five breakout groups and a general conversation about the primary themes of the conference so far.

The first breakout group to summarize its discussion had focused on issues related to revising the curricula of nursing education programs to better prepare their graduates for careers in primary care nursing. When reporting out to the larger group of conferees, a representative from this group first provided some context for the discussion: “We thought it important to acknowledge that the payment model has not shifted yet to reimburse registered nurses in primary care fee-for-service, so there is a risk in moving mass numbers of nurses in that direction,” she said.

The representative went on to explain that the group's conversation ranged across several topics. They spent time, for example, identifying the specific functions that are unique to primary care nursing and what teaching those functions would mean in terms of transforming the didactic and clinical curricula for pre-licensure nursing students. They also talked about the challenges of adding primary care content and clinical experiences to an already full nursing curriculum, especially when the majority of questions on the NCLEX exam focus on acute care nursing and students need to be adequately prepared for the exam. They also discussed the need to create longitudinal educational experiences across settings.

One conferee commented that the NCLEX exam is evolving and that questions are now being included that touch on topics outside of acute care, including community health, chronic care, life planning, advocacy, case management, and more. According to another conferee who has prepared students to take the NCLEX, many of the questions are not setting-specific so the NCLEX should not be an obstacle. Another clarified the group's discussion around creating a primary care curriculum: "We all agreed that there are knowledge and skills that all RNs should learn regardless of what type of nursing they want to do, and the conversation focused on how might we integrate more primary care," he said. "Is it something that students could choose to specialize in during their senior year? Is it a track that they choose? We didn't reach a conclusion other than acknowledging the importance of expanding primary care learning experiences."

Another conferee pointed out the importance of strengthening the links between provider organizations and nursing schools as a means to determining what is needed in practice and what should be taught. "We need robust partnerships that go beyond teaching hospitals and nursing schools to include health centers and primary care practices," she said. "Maintaining ongoing conversations among those in expanded academic-service partnerships is a way to figure this out."

The second breakout group discussed the professional development of practicing RNs—either those who want to transition into primary care or those who are already there. The conferee who presented for the second group said it will be important to identify two levels of practice—advanced and basic—depending on whether or not an RN is already practicing in primary care or wants to transition to primary care from a different setting.

“For the nurse who’s already in primary care, professional development would need to focus at an advanced level on broadening the scope and working to the full extent of that scope,” she said. “Whereas, a registered nurse who is wanting to change to primary care practice or maybe a newly graduated registered nurse choosing primary care, then there would be a basic level of orientation.” She went on to provide the example of quality improvement, something all RNs should understand the basics of, but should also be understood on a deeper level by advanced-level primary care nurses.

She also mentioned currently existing competencies that could be customized to basic and advanced professional development in primary care nursing, including the QSEN competencies, the IPEC competencies, the public health competencies. She said the group also identified some other skill sets that could be leveled at both a basic and advanced level, including primary care, change management, negotiation, optimizing teams, and understanding the financial environment. The group also identified faculty development training needs in teaching, coaching and mentoring students, and research.

In reacting to the group presentation, several conferees raised the idea of RNs who might otherwise retire from the acute care setting as candidates for primary care roles, because, while they may be tired of the physical demands of working in a hospital setting, they have a deep passion for nursing and years of valuable experience. Another mentioned an innovative effort at Cincinnati Children’s Hospital to hire RNs in pairs that take turns rotating through shifts in both acute and primary care settings.

The third breakout group focused on the challenges and opportunities for education-service interprofessional collaboration to build up primary care practices that enable RNs and other healthcare professionals to work in effective, cohesive teams. The reporter for this group began by summarizing the challenges that the group identified, including limited availability of team-based practice sites that align with a school’s interprofessional education (IPE) curriculum; limited availability of faculty prepared to advocate and lead around IPE; assessment and evaluation challenges; student buy-in challenges (with limited bandwidth to take on more, they may question the value/quality of the IPE experience); challenges related to the traditional healthcare culture, including power and gender dynamics; and risks associated with the few available practices getting burned out on serving as education/training sites.

The reporter then presented relevant opportunities identified by the group, including increased use of simulation and narrative medicine among IPE teams; nursing students following not just other RNs in practice, but other health professionals, such as social workers and dieticians, to learn about their roles and functions; students participating in immersion and capstone projects; and developing a primary care pipeline for new hires as a result of these partnerships. Also discussed was the idea of collaborative partnerships in which practices provide adjunct faculty to serve as preceptors while schools provide professional development for practice staff, such as medical assistants.

The fourth breakout group identified and discussed the implications of the barriers and facilitators to changing nursing **education** to place greater emphasis on primary care. The reporter for this group presented the barriers identified by the group, including lack of a common understanding of the enhanced roles that RNs can play in primary care; few faculty role models; difficulties getting students into primary care clinical experiences; and curricula that are not oriented toward primary care. Additional barriers: policy challenges related to state practice acts and lack of research into the impact and effectiveness of RNs in primary care, especially related to patient outcomes and costs.

At one point during this group's presentation, a discussion bubbled up among the conferees about whether or not the recommendations from this meeting should include a call to nursing schools to "revolutionize" their curricula. One conferee recommended against that, saying that many schools have been deeply engaged in significant curricula reform in recent years and that the recommendations should acknowledge this fact.

Other conferees disagreed, saying that while some schools had done significant and inspiring work, too many schools remain out of step regarding primary care. A friendly compromise was reached with conferees agreeing that the recommendations should focus on the importance of core concepts necessary to practice in all care settings as well as considering opportunities for students to focus more on primary care.

The fifth group also discussed barriers and facilitators, but to changing primary care **practice** to enhance the role of registered nurses. A representative for this group reported first on the barriers identified by the group, which included the current culture of the physician-dominated healthcare system; the limitations of

the fee-for-service payment model, which rewards episodes of care rather than quality or outcomes and currently does not reimburse for RN-provided care; the preponderance of job opportunities for RNs in acute care; lack of faculty support for primary care and curricular change and lack of role models for learners; real and perceived scope of practice limitations on RNs; and few resources available to implement needed changes.

The group also identified a variety of possible solutions or opportunities that could facilitate practice change. These included opportunity to undertake more research and demonstration projects that evaluate impact of RNs in primary care and demonstrate RNs unique contributions to primary care; the trending shift toward team-based care and IPE supports the integration of RNs in primary care; primary care is looking for ways to bring patient, family, and community voices onto healthcare teams, and RNs can help develop those relationships; there is an opportunity to clarify varying interpretations of scope of practice laws and remove inconsistencies; there is an opportunity to create roadmaps or blueprints for successfully integrating RNs in primary care by promoting exemplary practices; and integrating RNs into primary care creates another impetus for value-based payment reform.

Dr. Thibault wrapped up the first day of the conference by thanking conferees for working hard all day and challenging them to begin thinking about bold action steps that should be considered for inclusion in the final recommendations report.

DAY 2: FRIDAY, JUNE 17, 2016

The second day of the conference began with Conference Co-Chair Diana Mason reflecting on the primary themes from day one. One of the most important points she said she heard was the need to create a movement around increasing the value of primary care, to make it an exciting career option for RNs and other healthcare professionals. One way to do this is to promote exemplars of high-performing practices (such as those featured earlier in this monograph). Another theme: the tension between the current and desired state in both primary care and nursing education.

“Someone asked if we risk preparing RNs for roles that don’t exist; will the jobs be there?” Mason said. “And the response was to look at the history of nurse

practitioners, the jobs weren't there at first, but they are now. So I came away with: if you build it, they will come. We are talking about an ideal or preferred state here, not something that already exists."

She also heard "a lot of talk about payment, a lot of talk about scope of practice." At this point, she turned the microphone over to Storm Morgan, MSN, RN, MBA, of the US Department of Veterans Affairs (VA), to describe research into differences across states regarding RNs' scope of practice. They found enough inconsistencies across participating states in terms of what RNs are permitted to do that the VA, which employs thousands of RNs around the nation, views it as a problem that is only going to get worse as more and more technology, including telehealth, is used in health care.

Dr. Mason then returned to identifying themes from the previous day, another of which was the importance of building and strengthening academic-service partnerships—to the point that incentives from HRSA and others are needed to jump start the effort. Another significant theme focused on defining the roles of RNs in primary care. Dr. Mason thought there was some consensus among the conferees that the skills needed in primary care are the skills that all nurses need in all settings. It also is important, she said, to clarify for everyone the roles of the different team members on a healthcare team.

Following additional discussion of the themes, conferees then fanned out to their assigned breakout groups to continue the discussion and begin the process of developing recommendations. The five breakout groups were focused on the following topics.

1. The practice environment: the role and use of registered nurses in primary care
2. Pre-licensure education needed to prepare registered nurses in primary care
3. Professional development of registered nurses for primary care
4. Interprofessional education and team training
5. Faculty development and system changes

Reports from Breakout Groups

After spending the morning in their breakout groups, the conferees reassembled in a plenary session to hear summary reports from each group.

Group 1: The practice environment: the role and use of registered nurses in primary care

The group's reporter described their agreed upon "blue sky" vision for the role of RNs in primary care as follows: registered nurses can be true partners in primary care (as defined by the World Health Organization as better health for all). The group went on to describe RNs as the next vehicle for the transformation of primary care. They recognized that there are hurdles to be cleared in order to achieve this vision, but given the number of practices that have successfully integrated the RN, the group believes there is a clear path forward.

The group noted that the culture change—including a shift toward agility, innovation, flexibility, and transformational leadership—is critical to successfully integrating the RN role and transforming the primary care delivery model. They also talked about the need to place patients, families, and communities and their safety and satisfaction at the center of healthcare culture. Teams and team-based care also are integral to the culture as well as an expectation that there is joy and job satisfaction to be found in this work.

The group also said that the RN role in primary care needs "to be clearly defined, but also remain flexible because we don't want to limit it by a definition that needs to evolve over time." The group also discussed the importance of articulating the business case for RNs in primary care, for their contributions to improved quality and outcomes, so that their value to both patients and the bottom line becomes clear to administrators. The group also agreed that nursing education should find ways to support primary care in the curriculum and expose students more broadly to primary care practices. One way to do this is to create post-baccalaureate residencies in primary care practice sites.

In terms of policy changes, the group decided that policies inhibiting both the practice of primary care nursing as well as team-based care must be revised. These policies impediments are "buried all over the place" and must be identified and updated. This includes policies created by federal and state regulators and policymakers as well as licensing organizations, payers and insurers, provider

organizations, professional groups, and more. For example, some electronic medical records systems require providers to enter orders for even the simplest of procedures, such as an ear lavage, before nurses or anyone else on the team can do them. Another example: payment policies, both current and future, need to recognize the work of entire healthcare teams, including RNs, across all types of settings, including those in the community.

Group 2: Pre-licensure education needed to prepare registered nurses in primary care

According to the group's reporter, members of the second breakout group also agreed to an overarching vision or concept to begin their discussion: "We believe RNs can be seminal leaders in transformative change in primary care and play an essential role on interprofessional teams to facilitate and sustain both career and practice optimism." The group also identified the following goal for pre-licensure and RN-to-BSN nursing education programs: to educate graduates to contribute to leadership and provide services in primary care to improve the health of the nation.

The group then identified two overarching strategies to support their goal. The first was that curricular transformation be informed by engaged scholarship—engaging with end users, individuals, families, communities, teams, partners, and systems—to understand what the real issues are, test them in living laboratories, and apply to nursing education in primary care as well as a variety of primary care practices. The second was that curricular transformation be informed by appreciative inquiry—nurses will be empowered to share their voices during the iterative and ongoing curricular reform process that will include new evidence, best practices, national reports, as well as a strong evaluation and research component.

The group then identified points of intervention along the educational continuum, beginning with nursing program admissions policies and recruiting procedures, which they believe should be made more holistic to better identify students who are a good fit for the future of healthcare. The next point of intervention is the actual student experience, where the group recommended creating special spaces, both co-curricular and extracurricular, for students interested in primary care, including students who want to engage in real-world action leadership projects or IPE projects. An example of an extracurricular experience would be encouraging students to participate in the activities of Primary Care Progress, an organization that welcomes students and faculty to engage in work that revitalizes primary care.

Another intervention point would be around the development of actual immersion experiences in primary care, involving teamwork in both traditional and nontraditional settings. These could be elective or required, and ideally would involve longitudinal experience caring for the same individual or family.

The next point of intervention was graduation placement and better understanding where graduates are going so that programs that help them find placements and/or transition to primary care can be developed.

In response to a question about adding on to an existing curriculum versus reforming a curriculum, the group's reporter said that, since nursing education programs are in different places with their curricula and also functioning in differing communities and health systems, the goal would be to develop guiding principles so that programs could choose how best to proceed. The group also landed on a preference for integrating primary care into a balanced curriculum that serves all nursing students regardless of their career choices, rather than seeking to develop tracks or programs to produce primary care specialists.

Group 3: Professional development of registered nurses for primary care

The third breakout group was charged with developing recommendations focused on the professional development of RNs in primary care. The group's reporter said that they first spent some time thinking about the audiences for their recommendations as well as the populations that primary care RNs work with and the settings in which they work.

The group then identified the following content areas that would need to be part of a professional development curriculum in primary care.

- Communication, including having crucial conversations, giving and receiving feedback, the art of handoffs across the continuum, huddles, use of a tactical nurse to communicate throughout the course of the work, and how to effectively present patients to providers.
- Teamwork and collaboration, including team roles and responsibilities, time management, panel management, managing unlicensed assistive personnel and clerical staff, and accountability.

- Informatics, including effective use of electronic health records (EHRs), adapting workflows to the EHR system, using quality metrics, assessing and adopting emerging technologies.
- Quality improvement and patient safety, including implementing, monitoring, and adjusting quality improvement processes.
- Evidence-based practice, including assessing and integrating evidence-based practices as well as strategic thinking and leadership.
- Patient-centered care and care planning, including engaging with patients and families around values, goals, preferences; building relationships; motivational interviewing; shared goal setting; mentoring, coaching, and advocating; developing care plans; and clinical knowledge around symptom management, managing chronic conditions, family planning, palliative care, end of life care, and more.
- Choosing Wisely, including appropriate use of testing along with helping patients make informed decisions.
- Understanding business models, including knowledge of payment models, managing costs, allocating resources, and identifying and articulating value.
- Population health management, including care coordination, transition management, and longitudinal care, episodic care, integration of health and social services, and integration of behavioral health within primary care.

The group also outlined a number of recommendations aimed at jumpstarting professional development for RNs in primary care. These included the following actions: develop learning collaboratives, engage with stakeholders such as healthcare plans, employers, and unions; establish a leadership academy for RNs in primary care; create a primary care corps program, similar to the National Health Service Corps, but that rapidly retrain healthcare professionals in primary care; establish a Magnet® recognition program in primary care; create a certification program to acknowledge individual expertise in primary care; implement a campaign to attract RNs to primary care; develop a certification recognition system for exemplar career development for RNs in primary care practices; and disseminate information on the current and evolving role of the RN in primary care.

Group 4: Interprofessional education and team training

The fourth breakout group, which focused on IPE and team training, spent some time identifying what is already known, what research has been done, what the best practices are, and then developing recommendations specific to primary care nursing. The foundational work discussed as a starting point by this group included the IPE competencies developed by the Interprofessional Education Collaborative (IPEC), some of the work of the Institute for Healthcare Improvement, ongoing work at the National Center for Interprofessional Practice and Education, and the Robert Wood Johnson Foundation's Promising Practices study. The group then presented recommendations in several areas: leadership, technology, students as catalysts, competencies and programs to prepare nurses for enhanced team-based functioning, academic-clinical partnerships, and professional education across the continuum. Within these areas, specific recommendations included the following:

1. Embed nursing leadership in the governance of current and emerging delivery systems. "Often we don't have nursing leadership that moves across academe and practice," said the group's reporter, "and we think it is important to look at the governance models of emerging systems like the ACOs and ACCs that are under development right now."
2. Use technology as a catalyst to spread innovative curriculum models that reflect real-life practice and require EHRs to integrate cross-disciplinary information about patients. According to the reporter, with these recommendations, the group is proposing that integrated delivery systems/ integrated care plans be required.
3. Leverage students to serve as catalysts, bridges, accelerators in connecting academic practice and IPE. There are many existing examples of students serving in this role with capstone projects, working with high-risk populations, and sharing caseloads.
4. Develop competencies and programs that prepare nurses for enhanced team-based functions in primary care. As an example, the group proposed linking the American Academy of Ambulatory Care Nursing's care coordination competencies to certification.
5. Expect academic-clinical partnerships to build context-driven, patient- and family-engaged, teamwork-based curricula using students and community

representation. The group suggested that students and community members co-lead, with academic and clinical leaders, the work of these partnerships.

6. All providers should use common performance metrics for high-quality teamwork. Currently, the various health professions are developing their own metrics for team performance, IPE, etc. and should instead move toward common teamwork performance metrics.
7. Nursing, both academic and professional practice, should hold itself accountable for cultural change, education, and practice. This means supporting nurses to step into leadership roles within systems and for nurse leaders to provide coaching and mentoring to others.
8. Develop and adopt a core curriculum on interprofessional collaboration to operationalize all IPEC competencies. The group suggested that this would require convening the leading nursing education and practice groups along with physician, patient, and family representation.

Group 5: Faculty development and system changes

The fifth breakout group tried to address the question: “How are we going to develop the faculty and create the necessary systems changes” to prepare registered nurses for enhanced roles in primary care? Over the course of the morning, the group agreed to the following nine draft recommendations.

1. Nursing school faculty should be prepared to teach all pre-licensure students and existing RNs in transition in the core content—such as motivational interviewing, health coaching, population health, risk stratification, team-based care, end-of-life care, and basic health policy—we believe all nurses should understand. Further, RN faculty should model an RN culture in which RNs are equal partners on care teams and able to care for patients independently under standardized procedures as authorized by state nursing boards.
2. Nursing school faculty should, in addition to core content, be able to teach primary care content, such as proactive planning, chronic and complex care management, care coordination and transitional care, and family planning

and well-baby care. Faculty should educate nurses to care for patients across their lifespans, not just during acute episodes of illness.

3. Create a new group of faculty who work in primary care and who understand primary care concepts and content. These clinical experts should be made familiar with adult learning methods and be partnered with current faculty and examine primary care competencies, both the didactic as well as the experiential. This will require removal of barriers related to sharing nursing faculty and nursing staff in practice and in the academy.
4. Leaders of nursing educational organizations and primary care practices as well as healthcare organizations need to come together and advocate and provide resources focused on the above changes and on making primary care a priority.
5. Health professional organizations, including influential nursing education organizations, should advocate for and commit resources to supporting curriculum changes and creating academic-service partnerships focused on primary care nursing.
6. Develop various models of partnerships between nursing education organizations and primary care systems to allow integration of didactic and clinical nursing education. These may be contractual partnerships specifying the responsibilities of each or a merger between a nursing school and a health system to create the strongest possible partnership.
7. Faculty from all health professions should be involved in nursing faculty development so that all possible expertise can be incorporated into the effort. This includes experts in adult learning theory, primary care practitioners, medical specialists, behaviorists, nurse care managers, social workers, and more. A re-envisioned faculty would be able to teach pre-licensure RN students, existing RNs who wish to move into primary care, and primary care RNs who need to learn enhanced roles. Health systems and insurers should fund faculty development, and faculty with this level of training should be eligible to receive special certification.
8. Some nursing faculty should be developed as experts in certain portions of the curriculum, and should teach within their areas of expertise.

9. Materials and resources (such as curricula, syllabi, and instructional materials) developed by nursing education programs that are more advanced in preparing RNs for primary care should be shared (through the possible creation of a clearinghouse or resource center) with programs looking to advance their own efforts, and faculty from model programs should be invited to present and educate faculty at other institutions.

During the discussion following Group 5's presentation of recommendations, several conferees commented on the overlaps between several breakout groups, specifically regarding core nursing content and primary care nursing content and also relative to academic-service partnerships. These comments focused on aligning the recommendations but also raised questions regarding the level of specificity and prescriptiveness within the recommendations.

Plenary Discussion of Conference Themes and Initial Breakout Group Recommendations

Following presentation of the breakout group recommendations, the plenary discussion began with Dr. Thibault being asked to identify the audiences for the Macy recommendations document. "We always hope the audience is everyone with a stake in health professions education and health care," said Dr. Thibault, "but I would say the principal audiences are the leaders of nursing educational institutions and the leaders of primary care practices. If we don't get them, then all the other audiences we reach are probably superfluous. But in addition to them, I hope we will get policymakers and regulators who will say, 'look at this movement that is going on and the Macy Foundation has this report from all of these prestigious people. We better pay attention to it.' But the people whose attention I most want to grab are the people leading nursing schools and the people leading primary care practices."

After clarifying the audiences, the group began discussing recommendations. A conferee said, "One area we have not talked about is the woefully inadequate evidence base, research base, around what RNs contribute in terms of patient and family caregiver experience, health outcomes, health resource utilization, and costs. I think we should consider, as a group, a specific recommendation around—and it might be under one of the buckets we already have—that the National Institutes of Health and the Patient-Centered Outcomes Research Institute as well as private foundations prioritize generating, disseminating, translating evidence related to

the role of the RN in primary care.” Many in the group readily agreed with this and discussed where it might fit within the recommendations.

The group also discussed a recommendation regarding development of a primary care nursing residency or similar service-side mechanism for preparing new nursing graduates as well as practicing RNs transitioning into primary care. Dr. Thibault pointed out that this was similarly recommended in the IOM’s *Future of Nursing* report and has a lot of support, but needs more advocacy and promotion to push it along. The group agreed that it should be included in the Macy recommendations.

The majority of the group also agreed that the recommendations should include reference to policy making and financial incentives that are needed to support the changes called for, including a call for payment reform that enables reimbursement for RNs in primary care. Although there was some hesitancy around “calling for the inclusion of a million more people in the fee-for-service payment structure,” the group floated a variety of alternatives around this concept, including provider-based incentives, tax incentives, and the possibility of hospitals considering this as part of their community benefit requirement. The group also discussed the possibility of extending CMS national provider identifier (NPI) numbers to RNs. Again, in keeping with the understanding that many other groups are working on this in more detail, the conferees agreed to keep their recommendations around this topic more general, recognizing that more substantive work is needed than what is possible at the Macy conference.

Another broad area that drew significant support among the group was the need to engage patients, families, and communities in the redesign of nursing curricula and primary care practice. The group felt strongly that patients, families, and communities should not be engaged sporadically, but instead must be integrated fully into all points of the health system, including in aligning education and practice. The conferees agreed that this must be reflected in the recommendations.

The group then moved on to discuss the knowledge and skills that RNs will need—including students, practicing nurses, and faculty—to function in primary care settings and serve as leaders in healthcare transformation. There was considerable overlap around this topic among the various breakout groups that needed to be dealt with, with many conferees speaking to their own nursing education and what was missing from it and what knowledge and skills they have had to acquire on the job or through other means.

Many feel the need for some level of specificity around this in the recommendations, while others preferred a focus on the full range of nursing skills needed for practice across all settings in which patients are seen. Dr. Thibault weighed in, expressing the need to balance the nursing curriculum more fully across the many different settings. The group felt that these details would need to be worked out in the writing and editing, with some conferees calling for a recommendation around the use of dedicated education units (as opposed to clinical rotations) in nursing.

The group then moved into a lengthy discussion about whether or not IPE should be integrated across existing recommendations—particularly those focused on changing or balancing the curricula of nursing schools—or should stand alone as a recommendation. A conferee argued, “It is a national agenda item for all of health care. I would not want to see it integrated for fear of losing its importance. It also is absolutely integral to achieving the enhanced nursing functions because most of them are team-based.” The decision was made to leave it separate for the time being and see how well it stood up as a separate recommendation in the draft document.

A discussion then rose up around the need for culture change as a precursor to and supporter of the recommendations that emerge from the Macy conference. The conferees agreed that the need for culture change in health care—culture change that values primary care and enhanced roles for RNs in primary care—should be front and center in the recommendations document, threaded throughout the introduction and the recommendations, and expressed with a sense of urgency. They also discussed the need to identify the various types of leaders who must buy into, promote, and model this culture change.

Conferees were then told that if they did not get to express a point they felt strongly about, they should talk to, email, or write a note to a member of the conference planning committee, who would be meeting that evening to begin the work of creating a first draft recommendations document.

Day 3: Saturday, June 18, 2016

At the close of day two, committee members worked on drafting recommendations from the breakout groups that they had facilitated and/or participated in, while Macy staff worked on the introduction and conference overview sections.

Overnight, these different sections were combined into one complete first draft and distributed to the conferees for review. Everyone came together in the morning on day three to share their feedback on the draft document.

Conference Conclusions and Recommendations

While generous in their praise, the conferees also shared many thoughtful and substantive comments intended to strengthen the draft document. It was immediately noted, for example, that the document needed to recognize the impact of the influential work in this area that led to the Macy conference on primary care nursing, most importantly the Institute of Medicine's *Future of Nursing* report and its more recent follow-up to that report.

This dovetailed with a discussion about the need to provide more background and context regarding challenges in America's healthcare system. The conferees felt the draft introduction needed to convey more urgency around this issue while keeping the overall tone of the document positive, focused on opportunities for change that both improve the delivery of primary care and enhance the role of RNs in providing that care.

A conferee stated, "I'm hoping that when people read this, they say to themselves, 'wow, this is a real solution for our overwhelmed primary care system. It helps keep the people in this country healthy and cared for, and this is a great role for RNs.'"

The conferees also wrestled with questions regarding the optimal grouping and ordering of the recommendations as well as the total number of recommendations, which needed to be combined and consolidated. They also weighed in on the specificity of the recommendations—how prescriptive versus suggestive to be and creating consistency across recommendations—as well as the need to be clear about which audience(s) each recommendation is targeting.

The conversation continued throughout the morning, moving from comments about the overall tone and organization of the draft to more granular suggestions regarding specific sections and important points that required additional work.

During the discussion, the conferees called for more consistency in language, clearer definitions of specific words, more details about the value of RNs in primary care (including what evidence do we have and what evidence is still needed?), better integration of the concept of interprofessional education throughout, and much more. Following the editorial discussion, the conferees also spent some time briefly discussing ideas for broad and effective dissemination of the final product.

The writing committee was charged with revising the draft recommendations document based on the feedback provided by the conferees. In the weeks following the conference, the committee revised and reviewed numerous versions of the draft via email and phone meetings, with two iterations, including a semi-final draft, distributed to all conferees for review and comment. The final, consensus document appears in this monograph.

During his final remarks upon concluding the conference, Dr. Thibault said, "So now we go back to our places of work and our incredibly busy lives, but I don't want you to forget what work you did here. The conversations we have had here have uplifted us and reminded us why we are in the profession we're in and about the social mission that we all have. We have also been excited about the opportunity to change and to improve, because that's what keeps us going every day. Take these ideas back with you and think about where you can help implement change in your own organization, and in the people that you touch and influence."





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BIOGRAPHIES OF PARTICIPANTS

Carmen Alvarez, PhD, RN, CRNP, CNM, is Assistant Professor in the Johns Hopkins University School of Nursing. Her work focuses on decision support, patient activation, and risk reduction for improving safety and self-management behaviors among underserved women—particularly those who are living with a chronic disease and survivors of trauma. Her research activities also explore the role of health services and providers in facilitating decision support and patient activation for survivors of trauma. Dr. Alvarez teaches both graduate and undergraduate nursing—women’s health, public health nursing, as well as health promotion and disease prevention. Dr. Alvarez has served in forums to inform nursing practice as well as health services for child survivors of trauma—she was a NAM committee member for Assessing Progress on the Institute of Medicine (IOM) *Future of Nursing* report and was part of a World Health Organization expert group to propose recommendations for non-specialist health service providers in low- and middle-income countries to respond to child maltreatment.

Erica D. Arana, DNP, RN, CNS, CNL, PHN, has been an RN for over 14 years. She has worked in the areas of geriatrics and pediatrics, and specializes in community health nursing. She has a BSN degree and DNP in Health Care Systems Leadership from the University of San Francisco (USF). She also has an MSN in Advanced Community Health and International Nursing with a minor in Education from the University of California, San Francisco. She currently works as a Nurse Manager for the Alameda County Public Health Department, where she coordinates a unique health and wellness transitional program for incarcerated adolescents. She has been teaching nursing for the last 12 years, and is currently teaching full-time as an Assistant Professor at USF. At USF she coordinates a clinical program designed to train MD, PsyD, and Masters-level nursing students to work in primary care settings.

Cynthia C. Barginere, DNP, RN, FACHE, joined Rush on Monday, May 16, 2011, as Vice President for Clinical Nursing and Chief Nursing Officer, Rush University Medical Center, and Associate Dean for Practice, Rush University, College of Nursing.

Cynthia has 27 years of experience in nursing, which includes a number of accomplishments, such as being named a Robert Wood Johnson Nurse Executive Fellow, a Johnson & Johnson Nurse Executive Fellow, and serving as president of the Alabama Organization of Nurse Leaders. She is also a Fellow in the American College of Healthcare Executives.

Cynthia received her doctorate in nursing practice in 2012 from Samford University in Birmingham, Alabama. She has a Master of Science in nursing administration and a Bachelor of Science in nursing from the University of Alabama.

Cynthia was recently appointed as Senior Vice President and Chief Operating Officer for Rush University Hospitals in June 2015.

Debra J. Barksdale PhD, FNP-BC, CNE, FAANP, FAAN, is Professor and Associate Dean of Academic Affairs at Virginia Commonwealth University. Dr. Barksdale holds a PhD from the University of Michigan, an MSN from Howard University, and a BSN from the University of Virginia. In addition, she obtained a post-Masters Certificate in teaching from the University of Pennsylvania School of Nursing. Dr. Barksdale is certified as a family nurse practitioner (NP) and a nurse educator. She is a Fellow of both the American Academy of Nurse Practitioners and the American Academy of Nursing. In addition, she is also a former Department of Health and Human Services Primary Health Care Policy Fellow. Dr. Barksdale is a past President of the prestigious National Organization of Nurse Practitioner Faculties (NONPF). Additionally, she is a Robert Wood Johnson Foundation Executive Nurse Fellows Alumna. By appointment, she served as a member the Veteran's Choice Act Blue Ribbon Panel in 2015. Dr. Barksdale is a member of the Patient-Centered Outcomes Research Institute (PCORI), appointed by the US Government Accountability Office under the Obama Administration. She is the only nurse appointed to the PCORI Board. She chairs the Engagement, Dissemination, and Implementation Committee, one of the organization's three strategy committees.

Dr. Barksdale's research focuses on stress and cardiovascular disease in Black Americans. Her work explores the underlying hemodynamic determinants

of hypertension, particularly sleep blood pressure and sleep total peripheral resistance, and the cortisol awakening response. Her study "Hypertension in Black Americans: Environment, Behavior, and Biology" was funded by the National Institutes of Health. For eight years (prior to moving to Richmond, VA, in 2016), Dr. Barksdale practiced as a volunteer family nurse practitioner at the Robert Nixon Clinic for the homeless in Chapel Hill, NC. Dr. Barksdale has been quoted in the *New York Times* and appeared live on the national news program *Al Jazeera America* regarding the salary gap between male and female nurses. Additionally, she delivered a highly motivational TEDx Talk entitled *Rising From the Mud*, which can now be found on YouTube.

Kenya V. Beard, EdD, AGACNP-BC, NP-C, CNE, ANEF, is a 2012 Josiah Macy Faculty Scholar. She recently joined the faculty at City University of New York, The School of Professional Studies as Associate Professor to assist with the inaugural Masters in Nursing Education and Organizational Leadership programs. During her tenure at Hunter College School of Nursing, she founded the Center for Multicultural Education and Health Disparities and disseminated research and best practices to move the needle on diversity, inclusion, and health equity. Dr. Beard is a Faculty Scholar for the Harvard Macy Institute Program for Educators in Health Professions and a Senior Fellow at the Center for Health, Media & Policy where she co-produces HealthCetera segments for WBAI-FM. She also co-leads the National Organization of Nurse Practitioner Faculties Leadership Mentoring Program to strengthen the racial and ethnic diversity of nurse leaders.

Dr. Beard is a specialist on diversity and inclusion. Her research addresses critical issues surrounding race, implicit bias, and health care disparities. Her publications speak to the complexities of diversity and emphasize best practices that support inclusive environments, promote equity in nursing education, and foster academic excellence among diverse learners. As a Macy Faculty Scholar, she adopted a multicultural education framework that has advanced the capacity of nursing and health care institutions to support diverse and inclusive environments.

An advocate for social justice, Dr. Beard is nationally recognized for her ability to provide meaningful ways to safely address difference and improve the quality of health care. She was called upon to help create the National League for Nursing's 2016 *Diversity Vision Statement*. As Chair of the New York State Action Coalition Committee for Diversity, she led the team in producing the 2014 *Workforce Diversity Toolkit for New York*. Her work has earned her numerous awards and

honors including the National Black Nurses Association's *Nurse Educator of the Year* award, the *Witten Presidential Award for Excellence in Teaching* at Hunter College and the *Dowling College Alumni Recognition Award for Leadership & Service*.

Dr. Beard is a fellow in the New York Academy of Medicine and the Academy of Nursing Education. She serves on the editorial board for the *American Journal of Nursing* and is a member of the Future of Nursing New York State Action Coalition steering committee. She earned her undergraduate degrees in nursing from Phillips Beth Israel School of Nursing and Excelsior College in New York. She received her Doctorate in Education in Educational Administration from Dowling College and her Master of Science degree in adult health from Stony Brook University.

Judith G. Berg, MS, RN, FACHE, is the Executive Director and President of HealthImpact (formerly the California Institute for Nursing and Health Care), California's nationally recognized nursing workforce center. HealthImpact works closely with government entities, schools of nursing, healthcare providers, professional organizations, and foundations to address statewide nursing issues that impact the health of all Californians. Ms. Berg has led state-wide initiatives related to identifying new roles for nurses as health care transforms, developing a nursing education plan for California to prepare nurses for a changing future, and creating clarity around the value of nursing's contributions to health. Previously she was the chief nursing executive with Kaweah Health Care District in Visalia, CA, followed by Cottage Health System in Santa Barbara, CA, where she provided system-wide strategic and operational leadership for nursing and patient care services. She has also served as Vice President & Nurse Executive for Gannett Healthcare Group, publisher of *Nurse.com*.

Ms. Berg holds a BSN and MS from the University of Minnesota. She is also a Wharton Fellow and a Fellow in the American College of Healthcare Executives. She has received both the Leadership Excellence and the Contributions to ACNL awards from the Association of California Nurse Leaders, and the Media Journalist Award from the National Association of School Nurses. Ms. Berg is the president of the National Forum of Nursing Workforce Centers. She is a past president of the Association of California Nurse Leaders, a former Board Member of the American Organization of Nurse Executives and the California Hospital Association.

Bobbie Berkowitz, PhD, RN, NEA-BC, FAAN, is Dean and Mary O'Neil Munding Professor of Nursing at Columbia University School of Nursing and Senior Vice

President of the Columbia University Medical Center. She holds the title of Professor Emerita at the University of Washington where she was the Alumni Endowed Professor of Nursing and Chair of the Department of Psychosocial and Community Health and Adjunct Professor in the School of Public Health and Community Medicine. In addition, she served as a Consulting Professor with Duke University and the University of California at Davis. Dr. Berkowitz was the principal investigator (PI) on the NIH/NINR-funded Center for the Advancement of Health Disparities Research and PI and Director of the National Program Office for the 10-year Turning Point Initiative, funded by the Robert Wood Johnson Foundation. Prior to her role at the University of Washington, she served as Deputy Secretary for the Washington State Department of Health and Chief of Nursing Services for the Seattle-King County Department of Public Health. Dr. Berkowitz was a member of the Washington State Board of Health, the Washington Health Care Commission, Washington State Academy of Science and chaired the Board of Trustees of Group Health Cooperative. She currently serves as President of the American Academy of Nursing, and as a member of the boards of the Public Health Foundation and the New York Academy of Medicine. She is on the Editorial Boards of *Public Health Nursing*, the *Journal of Public Health Management and Practice*, and *LGBT Health*. Dr. Berkowitz is an elected Fellow in the American Academy of Nursing, elected member of the National Academy of Medicine, and elected member of the New York Academy of Medicine. She holds a PhD in Nursing Science from Case Western Reserve University and a Master of Nursing and a Bachelor of Science in Nursing from the University of Washington. Her areas of expertise and research include public health systems and health equity.

Mary Beth Bigley, DrPH, APRN, FAAN, is the Director for the Division of Nursing and Public Health in the Bureau of Health Workforce at the Health Resources and Services Administration (HRSA). In this role, she provides leadership on policies and program initiatives that promote education and practice as well as the supply, skills, and distribution of qualified personnel needed to improve the health of the public. These efforts include increasing the diversity of the workforce to improve access to health care in underserved and rural areas. She also serves as the Chair of the National Advisory Council on Nurse Education and Practice.

Dr. Bigley joined HRSA from the Health and Human Services' (HHS) Office of the US Surgeon General, where she was the Director of the Division of Science and Communications. She oversaw the work of the National Prevention Council, which

includes publishing the National Prevention Strategy and serving as the Acting Editor for *Public Health Reports*, the official journal of the US Public Health Service.

Dr. Bigley received a doctorate in Health System and Policy at The George Washington University School of Public Health and Health Systems. Prior to joining the Office of the Surgeon General in 2008, Dr. Bigley was the Director of Nursing Programs at The George Washington University, Department of Nursing, where she currently holds an adjunct faculty position.

Thomas Bodenheimer, MD, MPH, is a general internist who received his medical degree at Harvard and completed his residency at University of California, San Francisco (UCSF). He spent 32 years in primary care practice in San Francisco's Mission District—10 years in community health centers and 22 years in private practice. He is currently Professor Emeritus of Family and Community Medicine at UCSF and Founding Director of the Center for Excellence in Primary Care. He is co-author of *Understanding Health Policy, 7th Edition, 2016*, and *Improving Primary Care, 2006* (both McGraw-Hill). He has written numerous health policy articles in the *New England Journal of Medicine*, *JAMA*, *Annals of Family Medicine*, and *Health Affairs*.

Janice Gilyard Brewington, PhD, RN, FAAN, is currently Chief Program Officer and Director for Center for Transformational Leadership at the National League for Nursing. For three years, she previously served as chief program officer and senior director for research and professional development for the National League for Nursing in New York. She also served as a consultant for the National League for Nursing. Dr. Brewington was provost and vice chancellor for academic affairs at North Carolina Agricultural and Technical State University (NC A&T). While at NC A&T, she had a unique opportunity to be an "executive on loan" for 18 months with The Gillette Company in Boston, where she was employed as the manager for university relations in talent acquisition, human resources, global shared services, North America.

Her educational background includes a BSN degree from NC A&T, an MSN degree from Emory University; and a PhD degree in Health Policy and Administration from the School of Public Health and a minor in Organizational Behavior from the School of Business at The University of North Carolina at Chapel Hill. She also received a certificate from the Management and Leadership Institute at Harvard University.

During her career, she has held numerous positions such as staff nurse, pediatric nurse practitioner/supervisor, director for center for women and health, assistant and interim dean for nursing, and associate vice chancellor for academic affairs for institutional planning, assessment and research.

Dr. Brewington has conducted research projects nationally and internationally on violence prevention, health care for women and children, health promotion and disease prevention for the elderly, and leadership development for women and nurse educators. She has acquired over \$15 million in grant funding for projects such as addressing access to health care, health promotion and disease prevention, preparing students for careers in STEM disciplines, cancer prevention, and leadership.

Dr. Brewington is a fellow in the American Academy of Nursing. She belongs to several organizations, including the American Nurses Association (ANA), Sigma Theta Tau International Nursing Honor Society, Inc., North Carolina Nurses Association, the National League for Nursing, and the A.K. Rice Institute. She has received numerous awards.

Peter I. Buerhaus, PhD, RN, FAAN, is a nurse and a healthcare economist and is well known for his studies and publications focused on the nursing and physician workforces in the United States. He is Professor of Nursing and Director of the Center for Interdisciplinary Health Workforce Studies at the College of Nursing, Montana State University. Prior to this position Dr. Buerhaus was Professor of Nursing and Professor of Health Policy at Vanderbilt University (2000–2015), and Assistant Professor of Health Policy and Management at Harvard School of Public Health (1992–2000). During the 1980s he served as assistant to the Vice Provost for Medical Affairs, the chief executive officer of the University of Michigan Medical Center. In 2003, Dr. Buerhaus was elected into the Institute of Medicine and since 1994 has been a member of the American Academy of Nursing. Professor Buerhaus has published nearly 120 peer-reviewed articles, with five publications designated as “Classics” by the Agency for Healthcare Research and Quality (AHRQ) Patient Safety Network. He currently serves on the Board of Directors for AcademyHealth, the nation’s premier association of researchers conducting health services and policy research. On September 30, 2010, Dr. Buerhaus was appointed Chair of the National Health Care Workforce Commission. Created under the Affordable Care Act, the Commission (once funded) will advise Congress and the Administration on health workforce policy.

Ellen H. Chen, MD, is interested in improving primary care systems for diverse and low-income populations. She serves as Primary Care Director of Quality Improvement, promoting practice transformation across 15 clinics within the San Francisco Health Network (SFHN), the delivery arm of the SF Department of Public Health. She also serves as the Medical Director at Silver Avenue Family Health Center, where she has led the implementation of team-based care models, EHR adaptation, and patient advisory councils to improve both quality and patient experience. Before SFHN, she worked as faculty within the UCSF Department of Family and Community Medicine, where she taught curricula in quality improvement and chronic illness care. As Associate Director of the UCSF Center of Excellence in Primary Care, she co-led quality improvement (QI) initiatives and research projects focusing on health coaching and panel management within primary care teams. The health coaching program she led at the San Francisco General Hospital Family Health Center has been recognized by AHRQ and the CDC/CMS Million Hearts initiative as a featured innovation. She has published work on team-based care in the *Annals of Family Medicine*, *Health Affairs*, the *Journal of General Internal Medicine*, and the *Permanente Journal*. Ellen received her BA at Swarthmore College and trained at Harvard Medical School and the UCSF Family and Community Medicine residency program. She lives in San Francisco with her partner and two rambunctious children.

Marilyn P. Chow, PhD, RN, FAAN, is the vice president of National Patient Care Services and Innovation at Kaiser Permanente, where she works to enable the delivery of the highest-quality and most safe patient-centered care. She has made significant contributions to nursing through her scholarship, leadership, and civic involvement. She is recognized for her expertise in innovation, regulation of nursing practice, and workforce policy. Dr. Chow is committed to incorporating innovation and technology to reduce waste and improve workflows within the health care industry. She was the driving force in conceptualizing and creating the Sidney R. Garfield Health Care Innovation Center, Kaiser Permanente's living laboratory, where ideas are tested and solutions are developed in a hands-on, simulated clinical environment.

She was the inaugural Program Director for the RWJF Executive Nurse Fellows Program and chaired the Institute of Medicine's Standing Committee on Credentialing Research in Nursing. In 2003, Dr. Chow participated on the IOM Committee that produced the report, *Keeping Patients Safe: Transforming the Work Environment of Nurses*.

She is a past board member of The Joint Commission, Joint Commission Resources, American Academy of Nursing, Asian American Pacific Islander Nurses Association (founding board member), Asian Health Care Leaders Association (founding board member), and ThunderRoad (adolescent treatment center).

She is a current board member of HealthImpact, the Innovation Learning Network, and the Kaiser Permanente Sidney R. Garfield Health Care Innovation Center.

She is the recipient of numerous awards, including the American Organization of Nurse Executives (AONE) 2013 Lifetime Achievement Award; the 2013 HIT Men and Women Award, presented by *Healthcare IT News*; and the national *Nurse.com* 2011 Nursing Excellence, National Nurse of the Year. She also was selected one of the distinguished 100 graduates and faculty of the UCSF School of Nursing for the Centennial Wall of Fame and in 2015 was inducted in the Nurse Leader Hall of Fame for the Alpha Eta Chapter at UCSF School of Nursing.

Pamela F. Cipriano, PhD, RN, NEA-BC, FAAN, is the 35th president of the American Nurses Association (ANA), the nation's largest nurses' organization representing the interests of the nation's 3.6 million registered nurses.

A distinguished nursing leader and Fellow of the American Academy of Nursing, Dr. Cipriano has extensive experience as an executive in academic medical centers. In 2016, she was named one of the "Top 100 People in Healthcare" by *Modern Healthcare* magazine for the second year in a row. In 2015, the publication also named her as one of the "Top 25 Women in Healthcare."

Prior to becoming ANA president, Dr. Cipriano was senior director for healthcare management consulting at Galloway Consulting and served in faculty and leadership positions at the University of Virginia Health System. She was also the 2010–11 Distinguished Nurse Scholar-in-Residence at the Institute of Medicine.

Dr. Cipriano is known nationally as a strong advocate for health care quality, and has served on a number of boards and committees for high-profile organizations, including the National Quality Forum and the Joint Commission.

Dr. Cipriano has been active in ANA at the national and state levels. In addition to serving two terms on the ANA Board of Directors, she was the inaugural editor-

in-chief of *American Nurse Today*, the official journal of the American Nurses Association, from 2006–14.

Jason Cunningham, DO, is Medical Director of West County Health Centers, a federally qualified health center caring for patients in western Sonoma County. West County Health Centers has become a thought leader and innovator in re-designing primary care around the principle that a “trusting, long-term relationship” is the most important product of health care and the most influential in improving health. Dr. Cunningham’s leadership has focused on the use of video and communication technology to improve care coordination, team-based care for patients with complex medical and social stressors, and the use of data to drive innovation.

Dr. Cunningham is interested in leadership within healthcare delivery and participates in multiple boards and committees with local, regional, and state organizations.

Dr. Cunningham is a Family Physician and remains dedicated to patient care. He received his Bachelor of Science from the University of Michigan and medical degree from Kirksville College of Osteopathic Medicine.

Malia Davis, MSN, RN, ANP-C, is Director of Nursing Services and Clinical Team Development at Clinica Family Health. Prior to her work at Clinica, Malia was Clinical Services Director at Stout Street Clinic in Denver, Colorado, an organization dedicated to comprehensive health care for the homeless. In July 2014, Malia was selected as a Robert Wood Johnson Foundation Executive Nurse Fellow for the years 2014–2017. Malia has a deep appreciation and commitment to work in primary care that supports interprofessional practice and nurse leadership, especially regarding innovations in care delivery. Prior to her nursing career, Malia worked for the Colorado Outward Bound School as a wilderness instructor and course director for six years, where she discovered her deep interest in the human capacity to overcome adversity and challenge in order to heal, strengthen, and change. Malia completed her undergraduate degree in Sociology and Women’s Studies at The Colorado College. She earned her master’s degree in nursing at Yale School of Nursing in 2002. Malia received a Yale School of Nursing Distinguished Alumna award in 2014. Malia lives in Denver, Colorado, with her husband and two young sons.

Margaret M. Flinter, APRN, PhD, FAAN, FAANP, c-FNP, is Senior Vice President and Clinical Director of the Community Health Center, Inc. (CHCI), a statewide federally qualified health center (FQHC) serving 150,000 patients from its primary care centers across Connecticut, while leading practice transformation initiatives across the country. A family nurse practitioner since 1980, she has held progressive roles in the organization as both primary care provider and executive leader as CHCI transformed from a free clinic to one of the country's largest FQHCs. In 2005, she founded CHCI's Weitzman Center for Innovation, now the Weitzman Institute, which is CHCI's research, innovation, and quality improvement arm. Margaret also serves as the national co-director of the Robert Wood Johnson Foundation's Primary Care Teams: Learning from Effective Ambulatory Practices (LEAP) project, which is studying exemplar primary care practices across the country. Margaret has led the national development of a model of post-graduate residency training programs for new nurse practitioners and established the National Nurse Practitioner Residency and Fellowship Training Consortium as an independent organization to serve as an accrediting organization for such programs. Margaret is the Principal Investigator for HRSA's National Cooperative Agreement on Clinical Workforce Development. Since 2009, she has co-hosted a weekly radio show, *Conversations on Health Care*, which connects people with issues of health policy, reform, and innovation; and speaks widely on topics related to primary care transformation.

Margaret received her BSN from the University of Connecticut, her MSN from Yale University, and her PhD from the University of Connecticut. She is a fellow of the American Academy of Nursing and the American Academy of Nurse Practitioners, and an alumna of both the National Health Service Corps Scholars and the Robert Wood Johnson Foundation Executive Nurse Fellows Programs.

Erin Fraher, PhD, MPP, holds a joint appointment as Assistant Professor in the Department of Family Medicine and Research Assistant Professor in the Department of Surgery. She is Director of the Carolina Health Workforce Research Center, one of five national health workforce research centers funded by the Health Resources and Services Administration to provide impartial, policy-relevant research that answers the question, "What healthcare workforce is needed to ensure access to high quality, efficient health care for the US population?" Dr. Fraher is well known for her ability to communicate complex research findings in ways that are easily understood and policy-relevant. She has published extensively in peer-reviewed journals, but her ability to publish policy briefs, fact sheets, data summaries, maps,

and other documents that convey information in ways that reach diverse audiences has allowed her work to have broad impact. She is often called upon by state and national legislators, policy makers, government officials, health professional organizations, and other workforce stakeholders to provide expertise on a variety of issues related to the education, regulation, and payment of health professionals. Dr. Fraher is an expert on comparative health workforce systems, having worked for the National Health Service in England and the College of Nurses of Ontario and having served for many years as a member of the International Health Workforce Collaborative, a consortium of health workforce researchers/policy analysts in the United States, Canada, United Kingdom, and Australia.

Robyn L. Golden, MA, LCSW, serves as Director of Population Health and Aging at Rush University Medical Center in Chicago where she also holds academic appointments in the Departments of Preventive Medicine, Geriatric Medicine, Nursing, Psychiatry, and Health Systems Management and in the College of Nursing. She is responsible for developing and overseeing health promotion and disease prevention, mental health, care coordination, and transitional care services for older adults, family caregivers, and people with chronic conditions. She is Principal Investigator for the HRSA-funded Geriatric Workforce Enhancement Program and the Commonwealth-funded Primary Care Redesign Project. For over 25 years, Ms. Golden has been actively involved in service provision, program development, education, research, and public policy aimed at developing innovative initiatives and systems integration to improve the health and well-being of older adults and their families. In 2003–04, she was the John Heinz Senate Fellow based in the office of Senator Hillary Rodham Clinton in Washington, DC. Ms. Golden is also a past chair of the American Society on Aging and currently co-chairs the National Coalition on Care Coordination. She also is a fellow of the Gerontological Society of America. Ms. Golden holds a Master's degree from the School of Social Service Administration at the University of Chicago.

Andrew Harmon, BS, is a nursing student at Jefferson College of Nursing in Philadelphia, PA. He currently serves as a student representative on the college's curriculum committee and as a nurse extern in the ICU of Jefferson's Hospital for Neuroscience. As a member of the curriculum committee, Andrew has developed a keen appreciation for the challenges associated with modifying curricula and looks forward to navigating the coming changes with fellow conferees. Andrew comes to nursing after working as an ER technician at Mount Auburn Hospital in Cambridge, MA. As a student, he will provide the unique perspective that comes with being immersed in a curriculum in transition.

Susan B. Hassmiller, PhD, RN, FAAN, who joined the Robert Wood Johnson Foundation (RWJF) in 1997, is presently the Robert Wood Johnson Foundation Senior Adviser for Nursing. In this role, she shapes and leads the Foundation's nursing strategies to create a higher quality of care in the United States for people, families, and communities. Drawn to the Foundation's "organizational advocacy for the less fortunate and underserved," Hassmiller is helping to assure that RWJF's commitments in nursing have a broad and lasting national impact.

In partnership with the AARP, Hassmiller directs the Foundation's Future of Nursing: Campaign for Action, which seeks to ensure that everyone in America can live a healthier life, supported by a system in which nurses are essential partners in providing care and promoting health. This effort across 50 states and the District of Columbia strives to implement the recommendations of the Institute of Medicine's report on the *Future of Nursing: Leading Change, Advancing Health*.

Hassmiller served as the report's study director. She is also serving as Co-Director of the Future of Nursing Scholars program, an initiative that provides scholarships, mentoring and leadership development activities, and postdoctoral research funding to build the leadership capacity of nurse educators and researchers.

Hassmiller served with the Health Resources and Services Administration as executive director of the US Public Health Service Primary Care Policy Fellowship. In this role, she addressed national and international primary care initiatives. Her work has also included service in public health settings at the local and state level, and she taught public health nursing at the University of Nebraska and George Mason University in Virginia.

Previously, she was a member of the National Board of Governors for the American Red Cross, serving as chair of the Disaster and Chapter Services Committee. She is now a member of the national nursing committee, and is immediate past Board Chair for the Central New Jersey Red Cross.

Hassmiller is a member of the Institute of Medicine, a fellow in the American Academy of Nursing, and sits on other advisory committees and boards. She is the recipient of many awards and two honorary doctorates, but most notably the Florence Nightingale Medal, the highest international honor given to a nurse by the International Committee of the Red Cross.

Laura Hieb, MBA, BSN, RN, NE-BC, has been Chief Nursing Officer of Bellin Health since February 2006. She holds a Bachelor of Science in Nursing from the Bellin College of Nursing, received her Master in Business Administration-Health Care Executive Focus from Cardinal Stritch University, received her certification as a Nurse Executive through the American Organization of Nurse Executives, and has completed a Fellowship in Healthcare Leadership from The Advisory Board in Washington, DC.

In March 2016, Laura added CEO of Bellin Health Oconto Hospital to her responsibilities. This rural critical access facility offers emergency services, inpatient and swing bed units, surgical services with three operating rooms, dental clinic and family medical clinics, and multiple specialty provider services.

Prior to this she was Team Leader of Bellin Health Home Care Services for nine years and since 1992 has served as a Nurse Manager/Homecare Administrator, a Nurse Clinician and Clinical Sales Specialist, and a Medical/Surgical Registered Nurse.

Bellin Health is an organization with more than 1,000 registered nurses in the acute and ambulatory settings. When the Institute of Medicine (IOM) released its 2010 report *The Future of Nursing: Leading Change, Advancing Health*, Laura developed plans with leaders across the organization, including the system-wide Nursing Professional Development Council, to work towards achieving the IOM's goal of 80% of our nursing workforce to be BSN prepared. In 2014, she collaborated with Bellin College on an RN-BSN Completion Program, where a heavy focus is placed on team-based care projects as part of their curriculum. There are two cohorts in place, with another starting in January 2017. An Advancement Program for nurses has been in place since 2007. The Program has three professional tracks and last year, 240 nurses participated. Participants receive incentive dollars based on the track and level achieved to use toward their personal and professional development.

She currently serves on the Board of Directors for the Wisconsin Association of Nurse Executives and the N.E.W. Community Clinic in Green Bay. Laura facilitates the Brown County Alcohol & Drug Task Force, which comprises non-profit organizations, community members, local colleges, health departments, and the area's health systems in Green Bay and De Pere to collaborate in creating awareness and to change the culture of unhealthy alcohol use. She also served on

the Board of Directors for Encompass Day Care in Green Bay. She is a member of the Wisconsin Nurses Association, the American Organization of Nurse Executives, and Sigma Theta Tau Nursing Honor Society.

Anne T. Jessie, DNP, RN, is Senior Director of Ambulatory Nursing for both primary care and specialty nursing practice at Carilion Clinic, a large, integrated healthcare system in southwestern Virginia. Dr. Jessie received her BSN from the University of Virginia, her MSN in nursing leadership from Jefferson College of Health Sciences, and her DNP from Loyola University, Chicago, with a focus on quality, patient safety, outcomes, and informatics. Her nursing career spans 36 years with progressive leadership positions in a variety of primary care and ambulatory specialty practice settings. These include experience in OB/GYN, Maternal Fetal Medicine, Infertility, Rheumatology, General Surgery, Bariatric and Trauma Surgery, Orthopaedics and Orthopaedic Specialties, Internal Medicine, Medical Education, Neurology, Pulmonology, Gastroenterology, and Family and Community Medicine. In addition, Dr. Jessie has experience as an ambulatory workflow analyst for her organization's electronic medical record (EMR) implementation.

Dr. Jessie's academic work focuses on the role of the RN in ambulatory care, exploration of innovative models of care delivery, and care coordination and transition management. Her primary work responsibility centers on maturation of the patient-centered medical home within her home organization, defining the organization's medical neighborhood, and the expanding role of the care coordinator. Additional areas of professional interest include working to license, how nursing and primary care support pay-for-performance and quality initiatives, telehealth, and population health management. Her experience and continued interest in nursing informatics allows for participation in the EMR design of a unified care plan that spans the continuum of care.

In addition, Dr. Jessie is an active member and volunteer leader of the American Academy of Ambulatory Care Nursing, as well as a physician specialty organization, contributing to evidence-based scholarly projects and publications. Her interests extend to planning for and sustaining a nursing workforce that supports care coordination, population health management, and managing transitions in care for high-risk populations.

Gerri Lamb, PhD, RN, FAAN, is Professor at Arizona State University's (ASU) College of Nursing and Health Innovation. She directs ASU's Center for Advancing

Interprofessional Practice, Education and Research and teaches leadership, health systems, and innovation in ASU's graduate programs. Dr. Lamb is the immediate past chair of the American Interprofessional Health Collaborative (AIHC) and for the past five years directed a cross-institutional, interprofessional primary care project funded by the Josiah Macy Jr. Foundation. She leads the Arizona Nexus Innovations Incubator with the National Center for Interprofessional Practice and Education, a state collaborative to advance evaluation of teamwork and patient outcomes.

Dr. Lamb also is a recognized expert in care coordination and community-based nursing care management. She has conducted several funded projects to define and evaluate the impact of care coordination on patient outcomes. She is the editor of the 2013 book *Care Coordination, the Game Changer*, which places care coordination in the context of national quality goals. She has co-chaired each of the National Quality Forum's standing committees on care coordination and serves as a content expert on the Post-Acute/Long-Term Care Measures Application Partnership. She serves as a content expert for care coordination on NQF, CMS, NCQA, and AHRQ workgroups. Dr. Lamb is a graduate of the University of Rochester's nurse practitioner program and the University of Arizona's doctoral program.

Diana J. Mason, PhD, RN, FAAN, is Senior Policy Service Professor and Co-Director of the Center for Health Policy and Media Engagement at The George Washington University School of Nursing; and the Rudin Professor Emerita and Co-Founder and Co-Director of the Center for Health, Media, and Policy (CHMP) at Hunter College. She is the immediate past President of the American Academy of Nursing and served as Strategic Adviser for the Campaign for Action, an initiative to implement the recommendations from the Institute of Medicine's *Future of Nursing* report, to which she contributed. Dr. Mason served as Co-President of the Hermann Biggs Society, a health policy salon in New York City, from 2012–2015.

Dr. Mason is also a journalist who has produced and moderated a weekly New York City radio program on health and health policy for 30 years. Since its inception, she is a member of the National Advisory Committee for *Kaiser Health News* and an advisor to WNYC radio in New York City. She served as editor-in-chief of the *American Journal of Nursing* for over a decade. Her leadership in transforming the journal resulted in numerous awards for editorial excellence, her editorials, and dissemination, culminating in the journal being selected by the Specialized Libraries Association as one of the "One Hundred Most Influential Journals of the Century in

Biology and Medicine”—the only nursing journal to be selected for this distinction. She is the author of over 200 publications and blogs for the CHMP and for the *JAMA News Forum*.

She is the lead co-editor of the award-winning book *Policy and Politics in Nursing and Health Care* and of *The Nursing Profession: Development, Challenges, and Opportunities*, part of the Robert Wood Johnson Foundation Health Policy Book Series. Dr. Mason has received numerous awards for her writing and dissemination of health-related information.

She is the Principal Investigator on a grant from the Robert Wood Johnson Foundation to explore how nurses address building a culture of health in their innovative models of care; the study is a collaboration between the American Academy of Nursing and the RAND Corporation.

She is the recipient of numerous awards and honors, including an Honorary Doctorate of Humane Letters from Long Island University and an Honorary Doctorate of Science from West Virginia University; fellowship in the New York Academy of Medicine; the Lillian Wald Service Award from the American Public Health Association; the Rose and George Doval Award for Excellence in Nursing Education from New York University; and the Pioneering Spirit Award from the American Association of Critical Care Nurses.

Peter McMenamin, PhD, is a PhD health economist. His career spans more than 43 years of both private market and government experience in healthcare financing research, policy analysis, and advocacy.

At American Nurses Association (ANA), he has collected data from BLS, CMS, and a wide variety of other sources on compensation and employment of RNs/APRNs. He has worked on APRN issues including scope of practice restrictions and credentialing of APRNs by private health insurers. He has posted blogs in ANA's *One Strong Voice* regarding the history of Title VIII, the impending tsunami of nurse retirements, men in nursing colleges, and future trends affecting registered nurses.

As both a former Fed and expert consultant on health economics issues Dr. McMenamin has worked in, with, or for virtually all the government's civilian health agencies: ASPE, OASH, HRSA, CMS (formerly HCFA), NIH, CDC, OTA, CBO, CRS, VA, PROPAC, and PPRC (now MEDPAC). In the late 1970s, he held joint

appointments in the Department of Economics and the School of Public Health at The University of North Carolina at Chapel Hill. He has an undergraduate degree from Brown University, and he studied for one year at the London School of Economics and Political Science. His Master's and PhD in economics were earned at the University of California at Berkeley.

Storm L. Morgan, MSN, RN, MBA, is the Clinical Program Manager for Office of Nursing Services at the Department of Veterans Affairs (VA), VA Central Office in Washington, DC. As the nursing leader for primary care services, Storm promotes the advancement of nursing practice and team-based care through the implementation of the Patient-Aligned Care Team (PACT) model. In addition to earning undergraduate degrees in nursing, she received an MSN from Walden University in 2013 and an MBA from Brenau University in 2003. She is a Doctor of Business Administration in Healthcare Management degree candidate.

Storm has over 30 years of broad nursing and healthcare experience in a wide variety of practice settings, including as a healthcare entrepreneur, and 12 years at VA. She is a nursing subject matter expert for PACT design and implementation, ambulatory care, and nursing practice and licensure. In 2009, she co-led a VA national group to develop the nursing roles in primary care. Since that time, she has led and participated in numerous PACT-related workgroups and committees, served as the PACT Collaborative Co-director for the Southeast Region, and championed development and revisions of VA policies, Handbooks, and Directives, and practices to facilitate PACT implementation and spread. She also represents VA as a primary care subject matter expert in federal and private sector partnerships. In addition, she has authored several chapters in nursing books on the subjects of care management and care coordination in primary care nursing, nursing roles in the outpatient setting, and information technology and assessment system tools and approaches in primary care.

Andrew Morris-Singer, MD, is board-certified in internal medicine, is President and Founder of Primary Care Progress (PCP), and is a clinician, medical educator, leadership consultant, and primary care advocate.

A former community organizer with more than 15 years of advocacy experience, Dr. Morris-Singer writes and speaks on the value of primary care, Relational Leadership, personal narrative, and the use of community-organizing strategies to advance innovations in care delivery. He is a frequent blogger, and has been featured

in a number of national media outlets, including NPR, CNN, and the *New York Times*. He also regularly speaks at academic medical institutions and professional conferences across the country.

Dr. Morris-Singer is a lecturer in Global Health & Social Medicine at Harvard Medical School, Assistant Professor in the Department of Family Medicine at Oregon Health & Science University, and Adjunct Professor in the Department of Family & Preventive Medicine at the University of Utah. He earned his medical degree at Harvard Medical School and completed his residency at Brigham and Women's Hospital in Boston. He currently sees patients in Portland, Oregon.

Mary D. Naylor, PhD, RN, FAAN, is the Marian S. Ware Professor in Gerontology and Director of the NewCourtland Center for Transitions and Health at the University of Pennsylvania School of Nursing. For more than two decades, Dr. Naylor has led a multidisciplinary team of clinical scholars and health services researchers in generating, disseminating and translating knowledge designed to enhance the care and outcomes of chronically ill adults and their families. She is the architect of the Transitional Care Model, an evidence-based care management approach designed to improve the quality of care, decrease unnecessary hospitalizations, and reduce healthcare costs for vulnerable community-based older adults. Dr. Naylor is the 2016 recipient of AcademyHealth's Distinguished Investigator Award, in recognition of significant and lasting contributions to the field of health services research through scholarship, teaching, advancement of science and methods, and leadership. Dr. Naylor was elected to the National Academy of Medicine (NAM) in 2005; she is a member of NAM's Leadership Consortium on Value & Science-Driven Health Care and co-chairs the Care Culture and Decision-making Innovation Collaborative. Dr. Naylor also is a member of the RAND Health Board of Advisors and the Agency for Healthcare Research and Quality National Advisory Council. In 2016, she completed her six-year term as a member of the Medicare Payment Advisory Commission.

Jack Needleman, PhD, FAAN, is Fred W. and Pamela K. Wasserman Professor and Chair of Health Policy and Management at the UCLA Fielding School of Public Health. Dr. Needleman received his PhD in Public Policy from Harvard University. For over a decade, Dr. Needleman's research has focused on studies of quality and staffing in hospitals and on the economics of nursing. Other research has focused on the evaluation and design of performance improvement activities in hospitals, insurance market reform, hospital, physician and nursing home payment, and

provider responses to changing health care markets. Three of Dr. Needleman's first-authored publications on quality of care and nurse staffing are designated patient safety classics by the US Agency for Healthcare Research and Quality (AHRQ). His paper on the business case for nursing was the most frequently downloaded *Health Affairs* article in 2006. Quality measures he developed have been adopted by AHRQ, Medicare, the Joint Commission, and National Quality Forum, and his expertise developing, testing, and refining quality measures has been tapped by these and other organizations. He was lead evaluator for the Robert Wood Johnson Foundation initiative Transforming Care at the Bedside and serves on the Steering Council for the NIH-funded Improvement Science Research Network. He was the first recipient of the AcademyHealth Health Services Research Impact Award for his work on staffing and quality. He is an elected member of the National Academy of Medicine and an honorary Fellow of the American Academy of Nursing.

Camille Prado, BS, RN, received her nurse training from the University of California, San Francisco. She is currently studying to become an advanced practice nurse and plans to work as an adult nurse practitioner in the primary care setting. She currently works at a community health center, La Clinica De La Raza, as a telephone triage nurse. Ms. Prado holds a BS in Biology from University of California, Davis.

Joyce Pulcini, PhD, RN, PNP-BC, FAAN, FAANP, joined The George Washington University School of Nursing as Professor in 2012 and is the Director of Community and Global Initiatives. With a career of over 30 years as a pediatric nurse practitioner (PNP), educator, and author, Dr. Pulcini directed three nurse practitioner programs and has consistently been a leader in health care and nursing policy at local, state, and national levels. She is a Fellow of the American Academy of Nursing, serving as Chair of the Expert Panel on Primary Care; a Fellow of the American Academy of Nurse Practitioners; a Distinguished Practitioner in Nursing, National Academies of Practice; and a former Primary Care Policy Fellow. She is a senior associate editor for *Policy, Politics and Nursing Practice*, and served for several years as the Policy and Politics Contributing Editor for the *American Journal of Nursing*. Dr. Pulcini has authored more than 70 peer-reviewed articles, chapters, policy papers, and two editions of a well-known textbook on pediatric primary care. Her research and expertise is on the evolving nursing roles of advanced practice nurses nationally and internationally, specifically focused on nurse practitioner education, reimbursement, and political advocacy, and on removal of practice barriers for nurse practitioners. She led a team conducting survey research on education, practice, and regulation of advanced practice nurses internationally.

Lisa Rivard, RN, CDE, has served as the lead clinician for Project Dulce, a diabetes outreach program associated with Scripps Health and Neighborhood Health Care Clinics, San Diego, California, since 1998. Lisa is integrated into the Neighborhood Health Care System in primary care, and is part of the team responsible for managing one-on-one diabetes care and group medical visits. Currently she manages thirteen group medical visits and over seven hundred patients in one-on-one visits annually. She has had multiple articles published in professional publications regarding diabetes and diverse populations. She currently trains medical staff on clinical and case management of patients with diabetes. She works collaboratively with medical providers at various sites to improve patient care. Lisa was named Scripps Health Nurse of the Year in April 2014.

Lisa has vast clinical knowledge in diabetes, hypertension, and dyslipidemia, related to her clinical experience in endocrinology as an inpatient/outpatient diabetes nurse at Harbor UCLA Medical Center in Torrance, California, from 1993 to 1998. Previously, she served as a medical/surgical RN and also worked on a step-down unit. Lisa is committed to helping patients with diabetes improve their lives, and has been successful, in part, because of the personal connection she makes with each and every one of her patients.

Sandra Festa Ryan RN, MSN, CPNP, FCPP, FAANP, FAAN, is Vice President, Walmart Care Clinics, leading efforts to support Walmart's mission to deliver quality healthcare at an everyday low price. Sandra leads the information technology, business development, quality, operations, and medical management aspects of the clinic business.

Sandra has served as a strategic senior health care executive with more than 25 years of healthcare and leadership experience in various settings. Prior to joining Walmart, Sandra served as the Chief Clinical Officer for CareCam Health Systems, a digital health company focused on using innovative mobile technology to drive decreased healthcare costs and improved clinical outcomes. Sandra was responsible for all clinical aspects in the development and design of a systems platforms to meet the needs of patients, providers, and healthcare systems.

Before that, she was one of six founding officers of pioneering retail health clinic operator Take Care Health Systems, which was acquired by Walgreens in 2007. Sandra was responsible for operational and clinical leadership of over 400 convenient care clinics nationally. At Walgreens she played an integral

role in the development and implementation of integrated technology, quality assurance programs, and evidenced-based guidelines to create a consistent and unprecedented patient-focused experience for those who sought treatment. Sandra was the first chief nurse practitioner officer in the convenient care industry.

Sandra is a highly decorated retired Air Force nurse corps officer. She has been recognized for her leadership as the recipient of the Nancy Sharp Cutting Edge Award by the American College of Nurse Practitioners; as the first NP inducted as a Fellow of the Philadelphia College of Physicians; through her inductions as a Fellow of the American Academy of Nurse Practitioners, a Fellow of the American Academy of Nursing, a 2011 Robert Wood Johnson Foundation Executive Nurse Fellow Alumna; and by the Convenient Care industry as the recipient of the Loretta Ford Life Time Achievement Award for her contributions to NP practice and the retail industry.

Sandra earned a BSN from Niagara University and an MSN from Arizona State University.

Stephen C. Schoenbaum, MD, MPH, is Special Advisor to the President of the Josiah Macy Jr. Foundation. He has extensive experience as a clinician, epidemiologist, and manager. From 2000–2010, he was Executive Vice President for Programs at The Commonwealth Fund and Executive Director of its Commission on High Performance Health Systems. Prior to that, he was Medical Director and then President of Harvard Pilgrim Health Care of New England, a mixed-model HMO delivery system in Providence, RI.

He is an adjunct professor of healthcare leadership at Brown University, and a founder of what is now the Department of Population Medicine at Harvard Medical School (formerly the Department of Ambulatory Care and Prevention). He is the author of over 175 professional publications. He is the chair of the International Advisory Committee to the Joyce and Irving Goldman Medical School, Ben Gurion University, Beer Sheva, Israel; an honorary fellow of the Royal College of Physicians; and was the vice-chair of the board of the Picker Institute.

Karla Silverman, MS, RN, CNM, is Program Director at Primary Care Development Corporation (PCDC). She leads large-scale capacity-building projects that support the delivery of care coordination, care management, and team-based care in primary care and community-based organizations. She also leads and manages

PCDC's care coordination training program that develops innovative, interactive trainings that strengthen healthcare staff's ability to engage and build relationships with the individuals they care for.

Karla co-authored *Delivering Team-Based Chronic Care Management: Overcoming the Barriers* and *Who's Going to Care? Analysis and Recommendations for Building New York's Care Coordination and Care Management Workforce* and led the writing, and piloting of the nationally recognized Care Coordination Fundamentals course created in partnership with 1199SEIU.

Previously, Director of Clinical Services at Planned Parenthood Hudson Peconic, Karla also led a groundbreaking reproductive rights initiative at Planned Parenthood New York City to increase access to reproductive health services for women in medically underserved areas. As a certified nurse midwife, she provided primary care, prenatal care, and family-planning services for nine years at Community Healthcare Network in New York City. Karla received her bachelor's degree from Brown University and her master's degree from Columbia University.

Thomas A. Sinsky, MD, is a general internist at Medical Associates Clinic and Health Plans, in Dubuque, IA. Dr. Sinsky is a co-author of "In Search of Joy in Practice," an American Board of Internal Medicine Foundation (ABIMF) study of high-functioning primary care practices. He has spoken widely across the country on practice redesign and professional satisfaction. Dr. Sinsky has also worked with ABIMF and the American Academy of Nursing on the role of nurses in primary care. Dr. Sinsky is a member of the Society of General Internal Medicine Clinical Practice Committee.

Dr. Sinsky received his BS and MD degrees from the University of Wisconsin, Madison, and completed his residency at Gundersen Medical Foundation/La Crosse Lutheran Hospital, in LaCrosse, Wisconsin, serving as chief resident.

Alice D. Smith, BSN, RN, first realized the tremendous potential of primary care nursing during her undergraduate years at Boston College. As a new graduate, she began her career in critical care on a cardiac interventional care unit at Beth Israel Hospital in Boston, MA. As a nurse at Beth Israel, Alice pursued opportunities to engage in research, through the Robert Wood Johnson Foundation's Study to Understand Prognoses and Preferences for Outcomes and Risks of Treatments

(SUPPORT) at Beth Israel Hospital and, later, through the Families in Recovery From Stroke (FIRST) Study at Harvard School of Public Health in Boston.

It was Alice's firsthand "sandwich generation" experience—caring for elder family members in diverse care settings while working and raising her school-aged children with her husband— that gave her pause to reflect: *How can I prevent illness? How can I empower individuals to manage chronic disease? How can I support patients and families experiencing illness and transitions in health?*

These inquiries led Alice to pursue a career in primary care nursing at Harvard Vanguard (HVMA) in Medford, MA. At Harvard Vanguard, she has embraced opportunities to promote interdisciplinary collaboration and top-of-license practice by participating in LEAN workshops and by developing standard work, evidence-based protocols, nursing documentation tools, and educational materials. Alice's diverse responsibilities include triaging patients; providing acute care; managing chronic diseases using medication protocols; educating patients and families; following up with patients regarding sick visits, hospital admissions, and ED visits; and incorporating best practices of nursing—including motivational interviewing—into patient care and institutional changes.

HVMA Medford's Internal Medicine department was recently recognized by the LEAP (Learning from Effective Ambulatory Practices) Project-Robert Wood Johnson Foundation as one of 31 leading sites in the country for innovation in care related to RN-led medication protocols for diabetes, hypertension, and hyperlipidemia. Demonstrable impacts of these interventions, including the fact that HVMA-Medford's HEDIS measures remain at target or above goal across each domain of care, have resulted in organization-wide changes.

Through these projects, Alice has fostered a passion for supporting excellent patient care through nurse-led innovation in creating standard workflows. Alice continues to participate in the LEAP project, as they edit the *improvingprimarycare.org* website resource.

Beth Ann Swan, PhD, CRNP, FAAN, is Professor and former Dean at the Jefferson College of Nursing and Senior Fellow in the Jefferson College of Population Health at Thomas Jefferson University. Dr. Swan is a Fellow of the American Academy of Nursing. She is past president of the American Academy of Ambulatory Care Nursing and a 2007–2010 Robert Wood Johnson Foundation Executive Nurse

Fellow. She served as a member of the Steering Committee of the National Quality Forum for Standardizing Ambulatory Care Performance Measures from 2005–2008, and is a member of the Care Coordination Steering Committee for the Care Coordination Measure Endorsement. In addition, Dr. Swan was a member of the Veterans Health Administration Choice Act Blue Ribbon Panel and member of the Clinical Advisory Committee for the Health Share Exchange of Southeastern Pennsylvania. Dr. Swan has published and presented nationally and internationally on topics related to ambulatory care, care coordination and transition management, and technology applications for education and practice. She is Co-Editor of the text *Care Coordination and Transition Management Core Curriculum*. Dr. Swan was funded by the Agency for Healthcare Research and Quality (AHRQ) and HRSA's Bureau of Health Professions. She co-authored the book *Evidence-based Nursing Care Guidelines: Medical-Surgical Interventions*, which received a 2008 *American Journal of Nursing (AJN)* Book of the Year Award. In 2009, Dr. Swan received the Nightingale Award of Pennsylvania for Excellence in Nursing Research. Dr. Swan is the author of the November 2012 *Health Affairs'* Narrative Matters Feature, *A Nurse Learns Firsthand That You May Fend for Yourself After a Hospital Stay*.

George E. Thibault, MD, became the seventh president of the Josiah Macy Jr. Foundation in January 2008. Immediately prior to that, he served as Vice President of Clinical Affairs at Partners HealthCare System in Boston and Director of the Academy at Harvard Medical School (HMS). He was the first Daniel D. Federman Professor of Medicine and Medical Education at HMS and is now the Federman Professor, Emeritus.

Dr. Thibault previously served as Chief Medical Officer at Brigham and Women's Hospital and as Chief of Medicine at the Harvard-affiliated Brockton/West Roxbury VA Hospital. He was Associate Chief of Medicine and Director of the Internal Medical Residency Program at the Massachusetts General Hospital (MGH). At the MGH he also served as Director of the Medical ICU and the Founding Director of the Medical Practice Evaluation Unit.

For nearly four decades at HMS, Dr. Thibault played leadership roles in many aspects of undergraduate and graduate medical education. He played a central role in the New Pathway Curriculum reform and was a leader in the new Integrated Curriculum reform at HMS. He was the Founding Director of the Academy at HMS, which was created to recognize outstanding teachers and to promote innovations in medical education. Throughout his career he has been recognized for his roles

in teaching and mentoring medical students, residents, fellows, and junior faculty. In addition to his teaching, his research has focused on the evaluation of practices and outcomes of medical intensive care and variations in the use of cardiac technologies.

Dr. Thibault is Chairman of the Board of the MGH Institute of Health Professions, Chairman of the Board of the New York Academy of Medicine, and he serves on the boards of the New York Academy of Sciences and the Institute on Medicine as a Profession. He serves on the President's White House Fellows Commission and for twelve years he chaired the Special Medical Advisory Group for the Department of Veterans Affairs. He is past President of the Harvard Medical Alumni Association and past Chair of Alumni Relations at HMS. He is a member of the Institute of Medicine of the National Academy of Sciences.

Dr. Thibault graduated summa cum laude from Georgetown University in 1965 and magna cum laude from Harvard Medical School in 1969. He completed his internship and residency in Medicine and fellowship in Cardiology at Massachusetts General Hospital (MGH). He also trained in Cardiology at the National Heart and Lung Institute in Bethesda and at Guys Hospital in London, and served as Chief Resident in Medicine at MGH.

Dr. Thibault has been the recipient of numerous awards and honors from Georgetown (Ryan Prize in Philosophy, Alumni Prize, and Cohongaroton Speaker) and Harvard (Alpha Omega Alpha, Henry Asbury Christian Award, and Society of Fellows). He has been a visiting Scholar both at the Institute of Medicine and Harvard's Kennedy School of Government and a Visiting Professor of Medicine at numerous medical schools in the US and abroad.

Donna Thompson, RN, MS, joined Access Community Health Network (ACCESS) as Chief Operating Officer in 1995. She was very familiar with the difficulties patients faced due to their lack of access to primary and preventive care because for more than 30 years, Donna has been on the front lines of patient care delivery. Now CEO of ACCESS, a post she has held since 2004, Donna demonstrates daily how a focused commitment to high-quality community health care can save lives, revitalize communities, and preserve the possibility of a healthy life for hundreds of thousands of patients across the Chicagoland area. In her 12 years as CEO, Donna has led ACCESS to become one of the largest Federally Qualified Health Center (FQHC) organizations in the country.

Keeping the focus on providing solutions to health inequities, ACCESS has invested in long-term partnerships for teaching and research. ACCESS' broad partnerships enable community-based research to address health disparities and to share those best practices within the community. In 2015, ACCESS opened its NIH-funded ACCESS Center for Discovery and Learning in Chicago's Englewood community alongside a community health center and an integrative services center.

Donna was named a Robert Wood Johnson Foundation Executive Nurse Fellow in 2003. She was recognized as one of Chicago United's 2007 Business Leaders of Color. She is a co-founder of the Metropolitan Chicago Breast Cancer Task Force. Currently, Donna is Chairwoman of the Board of Directors of The Chicago Network. She is also a 2010 graduate of the Kellogg School of Management's CEO Perspectives program. She received the National Medical Fellowship Leadership in Healthcare Award in 2015.

Deborah Trautman, PhD, RN, FAAN, is President and Chief Executive Officer of the American Association of Colleges of Nursing (AACN). As the national voice for baccalaureate and graduate nursing education, AACN serves the public interest by setting standards, providing resources, and developing the leadership capacity of member schools to advance nursing education, research, and practice. AACN strives to provide strategic leadership that advances professional nursing education, research practice, and policy; develop faculty and other academic leaders to meet the challenges of changing healthcare and higher education environments; and leverage AACN's policy and programmatic leadership on behalf of the profession and discipline.

Dr. Trautman assumed the position of AACN President and CEO in July 2014. Prior to AACN, Dr. Trautman served as the Executive Director of the Center for Health Policy and Healthcare Transformation at Johns Hopkins Hospital. She served in other leadership positions at the Johns Hopkins Medical Institutions, and the University of Pittsburgh Medical Center.

Dr. Trautman has authored publications on health policy, nursing education, Ebola, intimate partner violence, pain management, clinical competency, change management, cardiopulmonary bypass, and consolidating emergency services.

Dr. Trautman is a member of several professional societies and serves on a number of high profile boards and advisory groups, including the Department of Veterans Affairs' Special Medical Advisory Group, which advises the Secretary of

Veterans Affairs on matters related to healthcare delivery, research, education, and related areas. In addition, the Robert Wood Johnson Foundation named her program director of the New Careers in Nursing project, and her colleagues with the Interprofessional Education Collaborative elected her to serve as the group's Treasurer/Secretary. She also serves on the National Academies of Science, Global Forum, Envisioning the Future of Health Professional Education.

Dr. Trautman is a 2007/2008 Robert Wood Johnson Health Policy Fellow who worked for the Honorable Nancy Pelosi, then Speaker of the US House of Representatives.

Dr. Trautman received a BSN from West Virginia Wesleyan College, an MSN from the University of Pittsburgh, and a PhD in health policy from the University of Maryland, Baltimore County.

Ellen-Marie Whelan, PhD, RN, CRNP, FAAN, is Chief Population Health Officer for the Center for Medicaid and CHIP Services (CMCS) providing clinical input and guidance for the health coverage for over 70 million people who are served by Medicaid and CHIP and a Senior Advisor at the Center for Medicare and Medicaid Innovation (CMMI), coordinating the pediatric portfolio across the Center. In both positions Dr. Whelan assists in the design, implementation, and testing of delivery system transformation and payment reform initiatives.

Before CMS, Dr. Whelan was the Associate Director of Health Policy at the Center for American Progress (CAP). Her research, publications, and speaking engagements focused on the development and passage of the Patient Protection and Affordable Care Act, system delivery and payment reform, safety net providers, primary care, and health workforce policy.

Prior to joining CAP, she was a health policy advisor in the US Senate for five years—working for both Senate Democratic Leader Tom Daschle, as a Robert Wood Johnson Health Policy Fellow, and Senator Barbara Mikulski, as Staff Director for the Subcommittee on Aging to the US Senate Committee on Health, Education, Labor and Pensions. Before coming to Capitol Hill, Dr. Whelan was a health services researcher and faculty member at the University of Pennsylvania and Johns Hopkins University and practiced as a nurse practitioner for over a decade. She has worked in a variety of primary care settings and started an adolescent

primary care clinic in West Philadelphia. For this effort, she received the Secretary's Award for Innovations in Health Promotion and Disease Prevention, presented by US Secretary of Health and Human Services, Donna Shalala, and was one of the first nurse practitioners in Pennsylvania to obtain an independent Medicaid provider number. In 2011, the American Association of Colleges of Nursing (AACN) honored Dr. Whelan with their Luminary Award, acknowledging her contributions in public policy, and from 2012–2015 she was a Robert Wood Johnson Foundation Executive Nurse Fellow.

Dr. Whelan holds a bachelor's degree from Georgetown University, a master's degree and PhD from the University of Pennsylvania and The Leonard Davis Institute of Health Economics, and completed a postdoctoral fellowship in primary care policy with Barbara Starfield, MD, at the Johns Hopkins School of Public Health.

Danuta M. Wojnar, PhD, RN, MED, IBCLC, FAAN, received a PhD in Nursing Science from University of Washington School of Nursing and MSN and BSN degrees from Dalhousie University, Halifax, Nova Scotia, Canada. She also holds a Master's in Education and Master of Arts in Russian Philology degrees from Yagiellonian University of Krakow, Poland. Dr. Wojnar is an alumna of the Robert Wood Johnson Foundation Executive Nurse Fellows Program (cohort of 2012). Throughout her career, Dr. Wojnar has held leadership roles in healthcare and nursing education in Canada and US. Currently, Dr. Wojnar is Professor and Associate Dean for Undergraduate Education at Seattle University College of Nursing. In this role, she led curriculum transformation to better prepare undergraduate students to assume expanded RN roles in primary and ambulatory care upon graduation and thus, contribute to meeting the nation's healthcare needs in the 21st century. Dr. Wojnar's contributions on the national level include service as the CCNE site visitor for accreditation of nursing programs, work on the American Academy of Nursing's Expert Panel on Primary Care, and the International Board of Lactation Consultant Examiners' Lactation Education and Accreditation Committee. Dr. Wojnar's program of research has been driven by her personal life experiences as a political immigrant and her strong commitment to social justice. Through research, policy, and practice, she has had a local, national, and international impact on improving the health and access to health care for childbearing families from diverse ethnic and cultural backgrounds, especially those who are marginalized and underserved.

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