Top priorities for the next decade of nursing health services research

Catherine Crawford Cohen, PhD, RN[a*], Hilary Barnes, PhD, NP-C, FAANP[b],
Peter I. Buerhaus, PhD, RN, FAAN, FAANP(h)[c],
Grant R. Martsolf, PhD, MPH, RN, FAAN[g], Sean P. Clarke, PhD, RN, FAAN[d],
Karen Donelan, ScD, EdM[e], Heather L. Tubbs-Cooley, PhD, RN, FAAN[f]

[a]Behavioral and Policy Sciences, RAND Corporation, Santa Monica, CA
[b]University of Delaware, School of Nursing, Newark, DE
[c]Center for Interdisciplinary Health Workforce Studies, Montana State University College of Nursing, Bozeman, MT
[d]Rory Meyers College of Nursing, New York University, New York, NY
[e]Health Policy Research Center, The Mongan Institute, Survey Research and Implementation Unit, Harvard Medical School, Boston, MA
[f]Martha S. Pitzer Center for Women, Children, and Youth, The Ohio State University College of Nursing, Columbus, OH
[g]University of Pittsburgh School of Nursing, Department of Acute and Tertiary Care, RAND Corporation, Pittsburgh, PA

ARTICLE INFO

ABSTRACT

Background: The U.S. health care system faces increasing pressures for reform. The importance of nurses in addressing health care delivery challenges cannot be overstated.

Purpose: To present a Nursing Health Services Research (NHSR) agenda for the 2020s.

Method: A meeting of an interdisciplinary group of 38 health services researchers to discuss five key challenges facing health care delivery (behavioral health, primary care, maternal/neonatal outcomes, the aging population, health care spending) and identify the most pressing and feasible research questions for NHSR in the coming decade.

Findings: Guided by a list of inputs affecting health care delivery (health information technology, workforce, delivery systems, payment, social determinants of health), meeting participants identified 5 to 6 research questions for each challenge. Also, eight cross-cutting themes illuminating the opportunities and barriers facing NHSR emerged.

Discussion: The Agenda can act as a foundation for new NHSR − which is more important than ever − in the 2020s.

Cite this article: Cohen, C.C., Barnes, H., Buerhaus, P.I., Martsolf, G.R., Clarke, S.P., Donelan, K., & Tubbs-Cooley, H.L. (2020, xxx). Top priorities for the next decade of nursing health services research. Nurs Outlook, 00(00), 1−11. https://doi.org/10.1016/j.outlook.2020.12.004.

Introduction

The organization, financing, and delivery of health care in the United States (U.S.) face mounting pressures. An increasingly older population and rising chronic disease prevalence have resulted in higher demand for services and shifted the types of care required (Woolf & Schoomaker, 2019). Other pressures include increasing behavioral and mental health conditions, worsening maternal and neonatal outcomes, and persistent racial and ethnic disparities, all while costs of care are rising (Petersen et al., 2019). Each of these pressures impact health care delivery systems predominantly organized around high-cost specialty medical care for treating acute illnesses and curing diseases.

The importance of engaging nurses to address these challenges and shape the future of health care delivery cannot be overstated. As both the largest health care workforce and the most trusted profession in the country (Reinhart, 2020), nurses hold health care systems together. Nurses care for people throughout the lifespan and practice across all settings and types of health care delivery organizations, including hospitals, community settings, schools, prisons, and patients' homes. They deliver telehealth and implement health education for patients, families, and health care providers in-training. Further, they play critical roles in care delivery for society's most underserved populations —those who are without health insurance, Medicare and Medicaid dual-enrollees, disabled, incarcerated, members of racial and ethnic minority groups, or living in rural areas.

Evidence-based solutions are needed to strengthen the nursing workforce as well as nurses' education and practice in response to existing and emerging challenges to health care systems (World Health Organization, 2020). Fortunately, nurses also conduct rigorous health services research that addresses the delivery of health care to improve individual and population health outcomes. In particular, there is a strong and rich history of Nursing Health Services Research (NHSR), the subfield of health services research that focuses on the study of health care delivery and systems of care delivery involving nurses, the examination of structures, processes and outcomes of nursing care, and the evaluation of nursing practice innovations and new models of care delivery (Jones & Mark, 2005). Building on this history will be critical to improving outcomes and addressing the challenges facing health care delivery in the 2020s. The objective of this paper is to report on the development of an updated NHSR agenda that is fully situated within the current and future context of U.S. health care through 2030.

Brief History of Nursing Health Services Research in the United States

Over the past 30 years, the number of active scholars conducting NHSR in the United States has grown significantly. The quality and rigor of the research being produced reflects the efforts of early investigators in NHSR to develop programs and prepare scholars for NHSR careers. In 1989, Dr. Linda Aiken established the Center for Health Outcomes and Policy Research (CHOPR, https://www.nursing.upenn.edu/chopr/) at the University of Pennsylvania. CHOPR is internationally known for research on quality of care, patient safety, and the importance of nurses' work environment for improved patient outcomes and has developed strong training and educational programs to prepare a critical mass of scholars for NHSR careers.

In the late 1990s, Dr. Peter Buerhaus and others formed the Interdisciplinary Research Group on Nursing Issues (IRGNI) within AcademyHealth, the nation's largest association of health services and health policy researchers. IRGNI was one of AcademyHealth's first interest groups and remains the largest (Squires et al., 2019). IRGNI helped to grow NHSR and expand interdisciplinary networks for established and emerging scientists. IRGNI organizes annual meetings to disseminate the most current NHSR evidence; provide a venue for scientists to build interdisciplinary collaborations; improve the capacity of the nursing workforce to provide safe and effective care; and address gaps in health services research that would benefit from nurses' involvement (Squires et al., 2019).

To expand NHSR and examine where the community's contributions were most needed, Drs. Cheryl Jones and Barbara Mark at the University of North Carolina Chapel Hill convened an invitational meeting to develop a NHSR agenda in 2005. An interdisciplinary group of experts met to examine the intersection of nursing and health services research and identify research questions addressing the pressing issues of the time to guide researchers, identify capacity-building needs, and inform policy reform (Jones & Mark, 2005). However, the U.S. health care system has since changed considerably (e.g., health care reform through the passage of the Affordable Care Act, evolving population needs, and ever-rising health care costs), and there has been no updated NHSR agenda to guide research programs and training efforts. In 2019, a second meeting of NHSR experts was convened to again discuss the most pressing challenges facing health care delivery and develop a NHSR agenda for the 2020s.

In this paper, we review the key health care delivery challenges, the meeting process and discussions, and present the final agenda including the most "important and feasible research questions that need to be answered by NHSR...over the next ten years"

(Buerhaus et al., 2019). We also outline several cross-cutting issues that emerged from the conversations.

Developing a Nursing Health Services Research Agenda for the 2020s

In July 2019, 38 experts in health services research met in Bozeman, Montana to discuss the most pressing challenges facing health care delivery in the United States and to identify the most feasible research questions for NHSR to address in the next decade. Meeting participants included experts in nursing, medicine, policy, economics, education, informatics, health workforce, organizational leadership, and public health as well as survey and outcomes research (see Appendix). All authors of this article were on the Planning Committee. Meeting participants represented nurse and non-nurses, physicians, leaders in nursing education and public health, and nursing organization executives. The Planning Committee took care to ensure invited participants had a diversity of subject matter expertise and avoided overrepresentation from any particular university, organization, or research center.

Key Health Care Delivery Challenges

The Planning Committee selected and defined five key health care delivery challenges identified as the most pressing to address in the coming decade following the Committee's review of research agendas developed by public and private funders and health policy leaders that advocate for the support, funding, and dissemination of research and evidence (Institute of Medicine, 2011; Jones & Mark, 2005; Martsolf, 2020). During

the meeting, The Planning Committee used these challenges, examined in the context of select health care delivery inputs, to focus and guide discussions and to identify the most important and feasible research questions needed to generate evidence improving health care delivery (Figure 1). The five key challenges were: (a) Improve access to and effectiveness of behavioral interventions and services; (b) Improve access to and effectiveness of primary health care and systems; (c) Improve maternal health care outcomes and the delivery of maternal health care; (d) Improve the care provided to the nation's aging population, particularly frail older adults; and (5) Control health care spending, reduce costs, and increase the value of nurses' contributions to improving health and health care delivery.

Improve access to and effectiveness of behavioral health interventions and services. Health care delivery is challenged by increasing rates of and poor outcomes associated with substance abuse, behavioral health conditions, serious mental health disorders, suicide, and gun violence. Integrating behavioral and mental health care into the delivery of primary care, school health and geriatrics, as well as into accountable care organizations and emerging delivery systems is needed. Further, better use of advanced practice registered nurses (APRNs), registered nurses (RNs) and other nonphysician providers represent important opportunities to help improve access to behavioral health and effectiveness of interventions and services (Chapman, 2018; Delaney & Vanderhoef, 2019). Thus, improving mental and behavioral health delivery is a key area in which new NHSR-informed education and practice may provide substantial improvements.

Improve access to and effectiveness of primary health care and systems. Across the U.S., the need for primary care
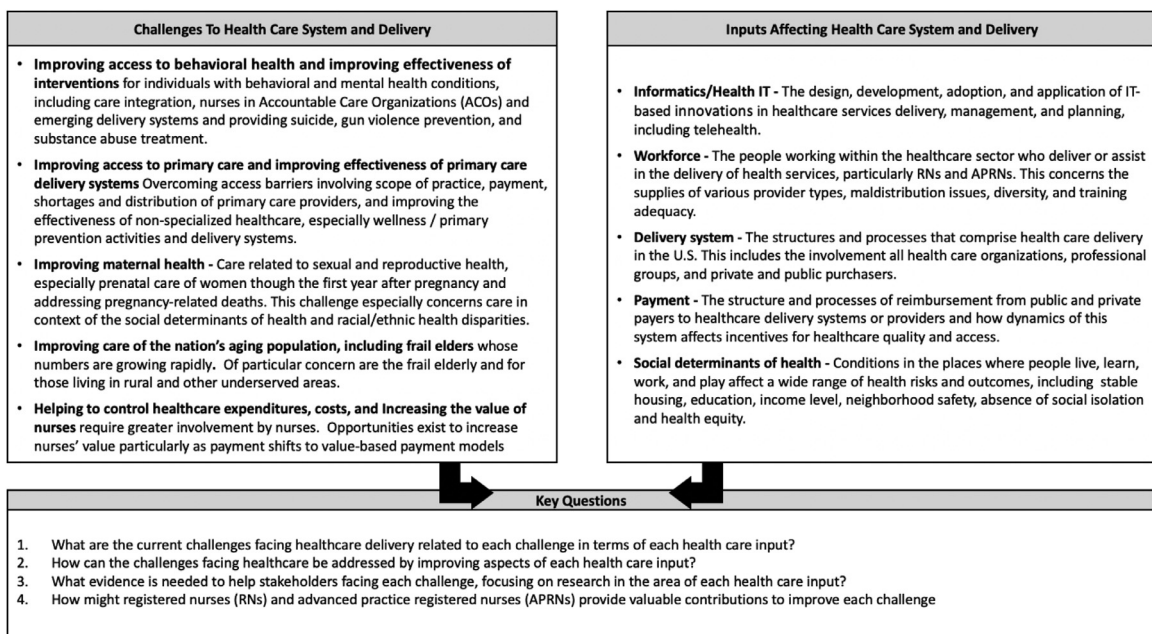

Challenges To Health Care System and Delivery

- **Improving access to behavioral health and improving effectiveness of interventions** for individuals with behavioral and mental health conditions, including care integration, nurses in Accountable Care Organizations (ACOs) and emerging delivery systems and providing suicide, gun violence prevention, and substance abuse treatment.
- **Improving access to primary care and improving effectiveness of primary care delivery systems** Overcoming access barriers involving scope of practice, payment, shortages and distribution of primary care providers, and improving the effectiveness of non-specialized healthcare, especially wellness / primary prevention activities and delivery systems.
- **Improving maternal health -** Care related to sexual and reproductive health, especially prenatal care of women though the first year after pregnancy and addressing pregnancy-related deaths. This challenge especially concerns care in context of the social determinants of health and racial/ethnic health disparities.
- **Improving care of the nation's aging population, including frail elders** whose numbers are growing rapidly. Of particular concern are the frail elderly and for those living in rural and other underserved areas.
- **Helping to control healthcare expenditures, costs, and Increasing the value of nurses** require greater involvement by nurses. Opportunities exist to increase nurses' value particularly as payment shifts to value-based payment models

Inputs Affecting Health Care System and Delivery

- **Informatics/Health IT -** The design, development, adoption, and application of IT-based innovations in healthcare services delivery, management, and planning, including telehealth.
- **Workforce -** The people working within the healthcare sector who deliver or assist in the delivery of health services, particularly RNs and APRNs. This concerns the supplies of various provider types, maldistribution issues, diversity, and training adequacy.
- **Delivery system -** The structures and processes that comprise health care delivery in the U.S. This includes the involvement all health care organizations, professional groups, and private and public purchasers.
- **Payment -** The structure and processes of reimbursement from public and private payers to healthcare delivery systems or providers and how dynamics of this system affects incentives for healthcare quality and access.
- **Social determinants of health -** Conditions in the places where people live, learn, work, and play affect a wide range of health risks and outcomes, including stable housing, education, income level, neighborhood safety, absence of social isolation and health equity.

Key Questions

1. What are the current challenges facing healthcare delivery related to each challenge in terms of each health care input?
2. How can the challenges facing healthcare be addressed by improving aspects of each health care input?
3. What evidence is needed to help stakeholders facing each challenge, focusing on research in the area of each health care input?
4. How might registered nurses (RNs) and advanced practice registered nurses (APRNs) provide valuable contributions to improve each challenge

Figure 1 – Framework for identifying a nursing health services research agenda.

to address increasing patient demand and growing rates of chronic disease outpaces the capacity of primary care physicians alone (Bodenheimer & Bauer, 2016). In 2019, the federal government reported that 78 million people had inadequate access to primary care (Health Resources & Service Administration, 2020). To increase access to and improve the effectiveness of primary care delivery systems, public, and private policymakers have recommended greater use of nurses, both at the APRN and RN levels (Federal Trade Commission, 2014; National Governors Association, 2012). Preparing nurses to provide primary care has emerged as a national workforce priority (Bodenheimer & Mason, 2017). This includes increasing nurses' ability to participate as members and coordinators of efficient, interdisciplinary teams - either by adapting nurses' skillsets (Houtven, Hastings, & Colón-Emeric, 2019) or adjusting staffing models to achieve higher efficiency (Ku, Frogner, Steinmetz, & Pittman, 2015).

Improve maternal health care outcomes and the delivery of maternal health care. A key challenge facing the health of the overall U.S. population is achieving high-quality sexual and reproductive health care (Auerbach et al., 2012). This includes women's reproductive health across the lifespan including pre-, peri-, and postnatal care. Not only does the U.S. have high overall maternal mortality compared to other industrialized and nonindustrialized countries (Global Burden of Diesase (GBD) Maternal Mortality Collaborators, 2016), evidence shows maternal mortality is rising (Petersen et al., 2019). The burden of maternal mortality, however, is unequal; Black, Latina, and Indigenous mothers are at disproportionately higher risk of perinatal death and complications relative to white women (Petersen et al., 2019). Understanding and intervening on the causes and mechanisms of poor maternal health outcomes is critical, including the role of nurses and nursing care in both alleviating and exacerbating disparities. Numerous advocacy and policy coalitions and professional organizations have established maternal health research and policy priorities relevant to NHSR, creating opportunities for research partnerships to improve maternal health and health care.

Improve the care provided to the nation's aging population, particularly frail older adults. Older adults, including the nation's 77 million baby boomers, generally have a higher demand for health care services than younger individuals and often have multiple comorbid conditions that exacerbate their medical complexity and increase the intensity and cost of care they require (Rowe et al., 2016; U.S. Census Bureau, 2014). Determining how to meet the social and health-related care needs of older adults, particularly who are frail and those living in rural and in other underserved areas (Meit et al., 2014), will present formidable challenges to health care delivery systems and clinicians in the 2020s and well beyond (Donelan et al., 2019). The increased need for health care often falls upon family and other informal caregivers whose own financial,

physical and mental health are at risk (Institute of Medicine, 2011). Moreover, the nation's health care workforce is unprepared, both in supply and in educational competencies, to address their needs (Squires et al., 2019). Thus, this is a challenge in which contributions of NHSR and evidence-based nursing education and practice will be critical for the foreseeable future.

Control health care spending, reduce costs, and increase the value of nurses' contributions to improving health and health care delivery. As of 2017, health care constituted 17.9% of gross domestic spending or nearly 20 cents of every dollar spent in the United States (National Center for Health Statistics, 2017). Rising health care spending is a major problem facing individuals, families, public and private payers, and threatens to undermine the sustainability of health care delivery systems. Achieving efficiency and cost reduction are priorities. Consequently, there is increasing experimentation with new models of care delivery, payment systems, consumer incentives and modifying health insurance premium and coverage options to lower costs (Handley & Hollander, 2019). Also, efforts to increase the value of health care services provided to patients (i.e., achieving desired outcomes at the lowest possible cost) are likely to accelerate over the 2020s (Pronovost et al., 2016). Because nurse staffing and nurses' work environment have been linked to care value (Silber et al., 2017), and because millions of nurses provide patient care across the care continuum (National Council of State Boards of Nursing, 2019), it is essential to consider innovations that allow nurses to improve the value of health care services (Welton, 2016). To increase the value of nurses' contributions, it is crucial that nurses more deeply understand the factors that contribute to the costs of health care reimbursement and expenditures connected to nursing care (Rambur, 2020). During the 2020s, nurses can expect increasing pressure to measure and improve the value of nursing care in all practice settings, and that cost, price, and health care utilization will become increasingly transparent.

The Meeting

Meeting participants addressed each of the five challenges by following the processes outlined in Figure 1. First, 2−3 participants with expertise in the subject matter made brief presentations that summarized what was known about each challenge, identified gaps in knowledge, and offered insights into the opportunities and barriers to conducting NHSR in this subject area. Following these presentations, participants were charged with identifying the most important and feasible research questions that NHSR can address in the coming decade. Participants were divided into five discussion circles - dubbed "breakthrough" groups to reflect the type of thinking we hoped would emerge - to discuss how specific inputs that influence health care systems and care delivery affect each challenge.

Each breakthrough group reported their work to the larger group, which then engaged in discussion before voting on an initial list of the most pressing 5−6 research questions. On the last day of the meeting, the full group reviewed the list of research questions for each challenge to ensure they still reflected group consensus in context of discussions throughout the meeting. Additionally, participants considered topics and ideas not covered in earlier sessions and identified target audiences for dissemination of the meeting report.

Research Questions

The most important and feasible research questions that came from the meeting are presented in Table 1 (in no particular order). Additional questions that received support among participants under each challenge can be found in the full meeting report (Buerhaus et al., 2019). The key questions for improving access to and effectiveness of behavioral interventions and services emphasized examining the emerging role for nurses in behavioral health care delivery, including functions and competencies within team-based models of care; and the role of nurses in addressing the social determinants of health (SDOH). Key questions for improving access to and effectiveness of primary health care and systems related to measuring the value and productivity of nurses in primary care settings; examining how organizational APRN practice restrictions affect access to and effectiveness of care delivery; understanding nursing's role within team-based primary care; and preparing nurses for primary care careers. Key questions for improving maternal health care outcomes and the delivery of maternal health care included identifying what is contributing to health disparities and poor outcomes, which outcomes to measure and the capacity of nurses to address these outcomes across different settings. Key questions for improving care provided to the nation's aging population focused on nurses' collaborations with public health and roles within caregiving teams, including working with informal caregivers; the education and skills needed for effective nursing in these roles; and incorporated learnings from the health care systems of other nations regarding caring for older adults. To control health care spending, reduce costs, and increase the value of nurses' contributions to improving health and health care delivery, key questions focused on variation in nurse productivity, innovations for care improvement, nurses' contributions under alternative delivery models, the impact of nurses on SDOH, and contributions of nurses to the elimination of waste in the health care system.

Cross Cutting Issues

During the small and large group discussions, repeated themes emerged. Eight "cross cutting issues" illuminated the tensions, gaps, opportunities, and barriers facing nursing researchers, clinicians, educators, and policymakers (Table 2). For example, participants

---

Table 1 – The Nursing Health Services Research Agenda for the 2020s: Key Research Questions

Improve access to and effectiveness of behavioral interventions and services

1. What are the emerging roles and functions of RNs and APRNs providing behavioral and mental health as health care delivery becomes increasingly value-based?
2. What are the behavioral health competencies needed for all nurses, RNs and APRNs?
3. What are the specific roles and functions of RNs and APRNs providing behavioral health care generally, and how do they vary by severity of behavioral health issues?
4. How is team-based care affecting the delivery of behavioral health care, and what is the role of the nurse? What is the optimal configuration of teams to provide effective behavioral health care, and what role(s) do nurses play in such teams?
5. How are hospitals and health care systems using nurses to address SDOH that negatively affect health and well-being? What is the role of nurses in addressing these SDOH?

Improve access to and effectiveness of primary health care and systems

1. How do we measure the value of primary care provided by nurses and measure their productivity in achieving desired primary care outcomes?
2. How do APRN scope of practice (SOP) restrictions imposed by organizations and health systems impact access to care and effectiveness of primary care delivery systems?
3. What are models of high-performing team-based primary care and how do RNs and APRNs contribute?
4. How can nurse practitioners' (NPs) transition into primary care practice be improved?
5. What are the innovations in training RNs for careers in primary care? How can effective innovations be replicated?

Improve maternal health care outcomes and the delivery of maternal health care

1. What is the current and future capacity of the nursing workforce to provide the full spectrum of women's health care along the reproductive life course (not just in the perinatal period)?
2. What are the maternal health outcomes that are directly and indirectly influenced by nurses and nursing practice?
3. How can evidence-based practices in maternal care be implemented consistently across care delivery settings?
4. Why are maternal mortality rates increasing overall in the U.S., and what accounts for the severe disparities in mortality rates between racial and ethnic groups?
5. What are the patterns and drivers of postpartum complications and deaths, and what can nurses do to address them?
6. What are the effects of hospital and obstetric unit closures on the delivery of maternal care and on the nursing workforce skilled in delivering this care?

Improve the care provided to the nation's aging population, particularly frail older adults

1. What are the roles and composition of teams caring for older people and frail adults? How do nurses contribute to team-based care serving this population?

(continued)

2. What are the knowledge and skills needed by nurses to work effectively with informal and unregulated care givers?

3. How do other countries care for their aging populations? What can be learned from other countries in how they use nurses to provide care for older adults? What is the SOP of nurses caring for older and frail adults in other countries?

4. How well educated and skilled are nurses in providing long-term care, home-based care, and care coordination? What can be done to prepare more nurses to work in nonacute settings?

5. How can collaboration be improved between nurses and public health and community partners to address SDOH?

Control health care spending, reduce costs, and increase the value of nurses' contributions to improving health and health care delivery

1. What are the drivers of variation in the productivity of individual nurses and can studying individual variation identify ways to improve nurse's contribution to value of services provided to patients and consumers?

2. What are examples of successful nurse-led innovations that improve the value of health care? What are the outcomes of such innovations? What are the elements of successful innovation models?

3. What are the contributions of nurses under a shared/ alternative savings model of care delivery?

4. What impact do nurses have on addressing the SDOH that negatively affect health and well-being?

5. How are nurses contributing to or helping eliminate waste in the health care system? What are the financial, resource, ethical, and environmental dimensions of waste reduction? What forms of waste are of concern to nurses and how can systems empower nurses to reduce waste?

Note: RNs, Registered Nurses; APRNs, Advanced Practice Registered Nurses; SOP, Scope of Practice; SDOH, Social Determinants of Health.

identified the mismatch between the skills that nurses need and the content of their nursing education. In particular, skills to serve diverse communities, address public health in diverse settings, and conduct NHSR are needed. Additionally, there is the need to increase efficiency in health care systems by determining optimal multidisciplinary care team structures; integrating behavioral health into primary care across multiple settings; improving collaboration between nursing, stakeholders and community partners; and removing harmful regulations that negatively affect cost and access to care. The consideration and inclusion of these issues and related research questions in NHSR will be critical to advancing the research and nursing practice over the next decade.

Stakeholders and Dissemination

It is anticipated that the Agenda will be used by researchers, educators, students and postdoctoral fellows in nursing, the social sciences, and health services and outcomes research to guide programs of research and maximize the impact of their work. The Agenda will also be useful to stakeholders seeking to build awareness and support for NHSR among government and private organizations that fund health services research. Therefore, The Planning Committee developed and is currently implementing a dissemination action plan to increase awareness of the NHSR agenda among these stakeholders. To date, the Committee has shared the report with over 60 leaders of foundations and associations concerned with healthcare delivery, services, outcomes, quality, research and policy, presented the agenda at meetings of IRGNI (AcademyHealth), and the Eastern Research Nursing Society and published a postsummarizing the agenda in AcademyHealth's blog (Barnes, Riman & Buerhaus, 2020). Further, the Committee anticipates disseminating this article to leaders of U.S. nursing doctoral programs, and to leaders of non-nursing doctoral programs focused on health policy, health services, and health outcomes and quality of care research.

Nursing Health Services Research: One Year Later

Events in the year since the Bozeman meeting demonstrate and emphasize the relevance of the NHSR Agenda's current contents and highlight tangential considerations. Most notably, the emergence of the COVID-19 pandemic has been a major shock to the U. S. health care landscape (Dorsett, 2020) and to all social and economic structures. The pandemic has underscored the significance of each of the health care system problems discussed at the Bozeman meeting. For example, as of this writing in August 2020, more than 160,000 Americans have died from COVID-19, the majority of whom have been older adults (National Center for Health Statistics, 2020). Executive orders at the state and federal levels to address the crisis have expanded telehealth delivery and provided reimbursement for these services, yet APRN scope of practice regulations are still inconsistent across state lines, limiting ability of APRNs to move to and deliver care in the most affected areas (Bachtel, Hayes, & Nelson, 2020). Addressing inconsistencies in scope of practice could improve system efficiency mentioned above, but these policies also have wider implications for the preparedness of the U.S. nursing workforce to cope with mass casualty events and other emergencies (Jones and Mark, 2005), for instance. As another example, the COVID-19 pandemic has highlighted health disparities, especially among racial, ethnic, and linguistic minorities (Hond, 2020). While the NHSR Agenda focused on racial and ethnic disparities in maternal care in particular, the pandemic underscored the pervasiveness of these disparities in the United States As further confirmation of the relevance of the

Table 2 – Cross-Cutting Issues and Questions That Emerged During Discussions of the Nursing Health Services Research Agenda for the 2020s	
Issues	Questions
• *Skills mismatch* - There is a mismatch between the skills that nurses need and the content of their nursing education. For example, nurses continue to be overly prepared for inpatient acute care and underprepared with the skills needed to provide primary, behavioral, and geriatric care in nonhospital settings, particularly in community and home settings. • *Improved services to diverse communities* - The need to develop a diverse nurse workforce with the knowledge, skills, and competencies and cultural humility to serve an increasingly diverse public. • *Increasing NHSR capacity* - The continuing need to produce a larger and more diverse community of nurses conducting NHSR. • *Public health nursing* – Encouraging the re-emergence of the public health nurse, and preparing nurses for roles in community, home, and skilled nursing facilities as well as in providing palliative and hospice care. • *Team configuration* - The need to identify the configuration of highly performing teams that include social workers, pharmacists, physicians, community workers, informal caregivers, and identify the areas in which nurses make the most important contributions to such teams. • *Care integration* - Behavioral health needs to be integrated not just within the delivery of primary care, but within maternal, community, home and geriatric care. • *Harmful regulations* - The ongoing negative impact on the efficiency, costs, and access to care associated with state, employer, and insurance restrictions placed on APRNs' scope of practice. • *Stakeholder collaboration* - The need for increased collaboration between nursing, public health systems, and community partners.	• Historically, the nursing curriculum has been compartmentalized, with adult acute care dominating and other content considered "specialty". In today's context, what does the evolution of health care delivery systems suggest about adding content to nursing curricula that was once thought of as postgraduate/specialist knowledge but now needs to be incorporated into training for generalists (i.e., for all clinicians)? • What is the role of the nurse in a value-based delivery and payment environment? What new roles will emerge? What is the value of a nurse as new health care delivery systems emerge? • How can we measure the value of a nurse's contribution to health care from societal and organizational perspectives? • What is the nursing profession's and the individual nurse's role in addressing SDOH? • How can and how should nurses address health disparities? • How can nurses better position themselves to influence the development of health technologies for the benefit of patients and health care delivery? • What will be the impact of health systems reorganization and consolidation on access to care, the cost and price of health care, and the nursing workforce? • How can those conducting NHSR become familiar with international approaches and experiences to generate new and innovative solutions for the U.S. context? • How can NHSR move to more consortium-based and collaborative research models to answer critical questions that cannot and should not be answered in a disciplinary silo? • How can NHSR better engage with research stakeholders—including communities, health care delivery systems, professional societies, and educational programs—to generate evidence that stakeholders need and want the most?
Note. NHSR, nursing health services research. SDOH, Social Determinants of Health. APRNs, Advanced Practice Registered Nurses.	

NHSR Agenda, The National Academy of Medicine decided to delay release of The Future of Nursing 2020-2030 report and issued an updated statement of task that includes nurses' role in emergencies and impact on health equity (National Academy of Medicine, 2020). Therefore, during the 2020s, the NHSR Agenda can act as a foundation for new NHSR − which is more important than ever − albeit we expect this Agenda to be reassessed and modified regularly as needed to address emerging societal health challenges.

Challenges to Delivering on the Agenda

Three major challenges will limit progress on this ambitious agenda: Federal funding stagnation, limited NHSR training sites, and low representation of racial and ethnic minorities in the NHSR workforce. They are interrelated and complex; and it is beyond the scope of this paper to elaborate causal mechanisms and solutions. However, we call attention to them to sound a warning that the work ahead will be limited by inaccessibility of high-quality NHSR training and a lack of critical perspectives from underrepresented trainees and faculty. Further, these challenges will be compounded by funding shortages that threaten the stability of NHSR research and training.

Conclusion

The Bozeman meeting was organized to bring leaders from a variety of disciplines and health care backgrounds together to discuss five key challenges facing health care delivery in the United States, and to develop a NHSR agenda to address these

challenges. Although this meeting took place months before the COVID-19 pandemic, it is clear that the pandemic exacerbated conditions but did not fundamentally change the key pressures facing the U.S. health care system (Dorsett, 2020). As the 2020s unfold, a follow-up meeting will be convened to assess what has changed, whether and how the agenda is advancing NHSR, examine whether material improvements are being made to help address the five challenges, and update and modify the agenda to guide future NHSR. Finally, this agenda is a call to action to build greater awareness of NHSR among stakeholders, convey the urgency to scholars in the field of a number of key health system problems, and clarify priority areas for support by government and private organizations that fund health services research. The Planning Committee encourages researchers and students in nursing, the social sciences, and in health services and outcomes research to adopt the *NHSR Agenda for the 2020s* and use it to focus their program of research.

Credit Statement

Catherine Crawford Cohen: Conceptualization, Methodology, Writing - Original Draft. *Hilary Barnes:* Conceptualization, Methodology, Project administration, Writing - Original Draft. *Peter I. Buerhaus:* Conceptualization, Methodology, Project administration, Funding acquisition, Writing - Review and Editing. *Sean P. Clarke:* Conceptualization, Methodology, Project administration, Writing - Review and Editing. *Karen Donelan:* Conceptualization, Methodology, Project administration, Writing - Review and Editing. *Heather L. Tubbs-Cooley:* Conceptualization, Methodology, Project administration, Writing - Review and Editing. *Grant R. Martsolf:* Conceptualization, Methodology, Project administration, Writing - Review and Editing.

Appendix. Meeting Participants, Position(s) and Organization

Name	Position and Organization
*Hilary Barnes, PhD, NP-C	Assistant Professor, University of Delaware School of Nursing
Angela Beck, PhD, MPH	Principal Investigator and Director of the HRSA-funded Behavioral Health Workforce Research Center at the University of Michigan School of Public Health, Clinical Assistant Professor of Health Behavior and Health Education, and Assistant Dean for Student Engagement and Practice
Ragnhildur Bjarnadottir, PhD, MPH, RN	Assistant Professor, University of Florida College of Nursing
Marion Broome, PhD, RN, FAAN	Dean and Ruby F. Wilson Professor of Professor of Nursing, Vice Chancellor for Nursing Affairs, & Associate Vice President for Academic Affairs, Duke University
Anne Brown, RN, MS	Assistant Professor, Montana State University College of Nursing
*Peter Buerhaus, PhD, RN, FAAN, FAANP(h)	Professor of Nursing and Director of the Center for Interdisciplinary Health Workforce Studies at the College of Nursing, Montana State University
*Sean Clarke, RN, PhD, FAAN	Executive Vice Dean and Professor, New York University Rory Meyers College of Nursing
*Catherine (Katie) Cohen, PhD, RN	Full Policy Researcher, RAND Corporation
Sally Cohen, PhD, RN, FAAN	Clinical Professor, New York University Rory Meyers College of Nursing
*Karen Donelan, ScD, EdM	Senior Scientist, Health Policy Research Center, The Mongan Institute, Associate Professor of Medicine, Harvard Medical School, and Director Survey Research and Implementation Unit
Jose Escarce, M.D., PhD	Distinguished professor of Medicine, David Geffen School of Medicine at UCLA, Distinguished professor of Health policy and management, UCLA Fielding School of Public Health, & Executive Vice-Chair for Academic Affairs in the Department of Medicine
Erin Fraher, PhD, MPP	Associate Professor, Department of Family Medicine at the University of North Carolina, Director of the Carolina Health Workforce Center
Christopher Friese, PhD, RN, FAAN	Elizabeth Tone Hosmer Endowed Chair, Professor of Nursing, Health Management, and Policy, University of Michigan
Bianca Frogner, PhD	Associate Professor, Department of Family Medicine at the University of Washington, Director of the University of Washington Center for Health Workforce Studies, & Deputy Director of the Primary Care Innovation Lab
Hayley Germack, PhD, MHS, RN	Assistant Professor, Department of Acute and Tertiary Care, University of Pittsburgh School of Nursing

(continued)

– (Continued)

Name	Position and Organization
Marcy Hanson, RN, MN	Assistant Professor, and Assistant Campus Director, Montana State University, Missoula, & Center for Disease Control Ambassador to Montana for the Early Childhood Intervention Program
Susan Hassmiller, RN, PhD, FAAN	Senior Scholar-In-Residence and Senior Advisor to the President on Nursing at the National Academy of Medicine, & Senior Advisor for Nursing at the Robert Wood Johnson Foundation
Jordan Harrison, PhD, RN	Health Services Researcher, RAND Corporation, Pittsburgh, PA
Kristin Hittle Gigli, PhD, RN, CPNP-AC, CCRN	Post-Doctoral Scholar, University of Pittsburgh Department of Critical Care Medicine CRISMA Center
Sherry Glied, PhD	Dean of New York University Robert F. Wagner Graduate School of Public Service
Monica O'Reilly-Jacob, PhD, RN, FNP-BC	Assistant Professor, Connell School of Nursing, Boston College
Linda Lacey, MA	Director, South Carolina Office for Healthcare Workforce
Audrey Lyndon, PhD, RNC, FAAN	Professor and Assistant Dean for Clinical Research New York University Rory Meyers College of Nursing
*Grant Martsolf, PhD, MPH, RN, FAAN	Professor, University of Pittsburgh School of Nursing, & Affiliated Adjunct Policy Researcher at the RAND Corporation
Matthew McHugh, PhD, JD, MPH, RN, CRNP, FAAN	Independence Chair for Nursing Education & Professor of Nursing, University of Pennsylvania School of Nursing, & Associate Director of the Center for Health Outcomes and Policy Research
Monica McLemore, PhD, MPH, RN	Associate Professor, Family Health Care Nursing, School of Nursing, University of California San Francisco, Affiliated Scientist with Advancing New Standards in Reproductive Health, & member of the Bixby Center for Global Reproductive Health
Benjamin McMichael, PhD, JD	Assistant Professor, University of Alabama School of Law
Jean Moore, DrPH, FAAN	Director of the New York Center for Health Workforce Studies School of Public Health, SUNY at Albany
Patricia Pittman, PhD	Professor of Health Policy and Management, Milken Institute School of Public Health, Secondary Appointment, School of Nursing at George Washington University, & Director of the Fitzhugh Mullan Institute for Health Workforce Equity
Lusine Poghosyan, PhD, MPH, RN, FAAN	Stone Foundation and Elise D. Fish Associate Professor of Nursing, Columbia University School of Nursing
Betty Rambur, PhD, RN, FAAN	Professor and Routhier Endowed Chair for Practice, University of Rhode Island
William Sage, MD, JD	James R. Dougherty Chair for Faculty Excellence in the School of Law & Professor of Surgery and Perioperative Care Dell Medical School, University of Texas at Austin
Joanne Spetz, PhD, FAAN	Professor, Institute for Health Policy Studies, University of California San Francisco & Associate Director for Research, Healthforce Center (UCSF)
Deborah Trautman, PhD, RN, FAAN	President and Chief Executive Officer of the American Association of Colleges of Nursing
*Heather Tubbs Cooley, PhD, RN, FAAN	Associate Professor, Ohio State University Colleges of Nursing and Medicine, & Principal Investigator in the Center for Perinatal Research Nationwide Children's Hospital
Dawn Vanderhoef, PhD, DNP, PMHMP-BC, FAANP	Associate Professor of Nursing & Director, Psychiatric Mental Health Nurse Practitioner (Lifespan) Specialty
Antonia Villarruel, PhD, RN, FAAN	Margaret Bond Simon Dean of Nursing, University of Pennsylvania School of Nursing
Ying Xue, DNSc, RN	Associate Professor, University of Rochester School of Nursing
Olga Yakusheva, PhD	Associate Professor, University of Michigan's School of Nursing and Associate Professor, Health Management & Policy, School of Public Health

*Member of the Planning Committee

REFERENCES

Auerbach, D. I., Pearson, M. L., Taylor, D., Battistelli, M., Sussell, J., Hunter, L. E., ..., Schneider, E. C. (2012). *Nurse practitioners and sexual and reproductive health services: An analysis of supply and demand.* Retrieved from https://www.rand.org.

Bachtel, M. K., Hayes, R., & Nelson, M. A. (2020). The push to modernize nursing regulations during the pandemic. *Nursing Outlook,* 1–3. https://doi.org/10.1016/j.outlook.2020.05.006.

Barnes, H. G. H., Riman, K., & Buerhaus, P. I. (2020). *Nursing Health Services Research: Developing an agenda to address the nation's top health care challenges in the 2020s.* Retrieved from https://tinyurl.com/yymloc8o.

Bodenheimer, T., & Bauer, L. (2016). Rethinking the primary care workforce — an expanded role for nurses. *New England Journal of Medicine, 375*(11), 3.

Bodenheimer, T., & Mason, D. (2017). *Registered nurses: Partners in transforming primary care.* Retrieved from New York, NY ww.macyfoundation.org.

Buerhaus, P., Martsolf, G., Donelan, K., Clarke, S., Barnes, H., Cohen, C. C., & Tubbs Cooley, H. (2019). *Nursing health services research agenda for the 2020s.* Retrieved from https://www.montana.edu/nursing/research/FINAL%20BLUE%20NHSR%20Nov%202019.pdf.

Chapman, S. A. (2018). Utilization and economic contribution of psychiatric mental health nurse practitioners in public behavioral health services. *Am J Prev Med, 54,* S243—S249.

Delaney, K. R., & Vanderhoef, D. (2019). The psychiatric mental health advanced practice registered nurse workforce: Charting the future. *Journal of the American Psychiatric Nurses Association, 25*(11), 11–18, doi:10.1177/1078390318806571.

Donelan, K., Chang, Y., Berrett-Abebe, J., Spetz, J., Auerbach, D. I., Norman, L., & Buerhaus, P. I. (2019). Care management for older adults: The roles of nurses, social workers, and physicians. *Health Affairs, 38*(6). https://doi.org/10.1377/hlthaff.2019.00030.

Dorsett, M. (2020). Point of no return: COVID-19 and the U. S. healthcare system: An emergency physician's perspective. *Science Advances, 6,* doi:10.1126/sciadv.abc5354.

Federal Trade Commission. (2014). *Policy perspectives: Competition and the regulation of advanced practice nurses.* Retrieved from https://www.ftc.gov/system/files/documents/reports/policy-perspectives-competition-regulation-advanced-practice-nurses/140307aprnpolicypaper.pdf.

Global Burden of Diesase (GBD) Maternal Mortality Collaborators. (2016). Global, regional, and national levels of maternal mortality, 1990-2015: a systematic analysis for the Global Burden of Disease Study 2015. *Lancet, 388* (10053), 1775–1812, doi:10.1016/S0140-6736(16)31470-2.

Handley, N., & Hollander, J. E. (2019). *Opportunity cost: The hidden toll of seeking health care.* , 2019/05/01/, 2019. Retrieved from https://www.healthaffairs.org/do/10.1377/hblog20190429.592190/full/.

Health Resources & Service Administration. (2020). Shortage areas. *data.HRSA.gov.* Retrieved from https://data.hrsa.gov/topics/health-workforce/shortage-areas.

Hond, P. (2020). How COVID-19 exposed the ugliness of health injustice. *Columbia Magazine.* Retrieved from https://magazine.columbia.edu/article/how-covid-19-exposed-ugliness-health-injustice.

Houtven, C. H. V., Hastings, S. N., & Colón-Emeric, C. (2019). A path to high-quality team-based care for people with serious illness. *Health Affairs:* (pp. 934—940)38.

Institute of Medicine. (2011). *The future of nursing: Leading change, advancing health.* Washington, DC: The National Academies Press.

Jones, C. B., & Mark, B. A. (2005). The intersection of nursing and health services research: An agenda to guide future research. *Nursing Outlook, 53*(6), 9.

Ku, L., Frogner, B. K., Steinmetz, E., & Pittman, P. (2015). Community health centers employ diverse staffing patterns, which can provide productivity lessons for medical practices. *Primary Care, 34*(1), 1.

Martsolf, G. (2020). Contemporary issues in government. In D. J. Mason, E. L. Dickson, G. A. Perez, M. R. McLemore (Eds.), *Policy & politics in nursing and health care* (8 ed.). St. Louis MO: Elsevier.

Meit, M., Knudson, A., Gilbert, T., Tzy-Chyi Yu, A., Tanenbaum, E., Ormson, E., & Popat, S. (2014). *The 2014 update of the rural-urban chartbook.* Retrieved from https://ruralhealth.und.edu/projects/health-reform-policy-research-center/pdf/2014-rural-urban-chartbook-update.pdf.

National Academy of Medicine. (2020). *A consensus study from the national academy of medicine.* Retrieved from Washington DC https://nam.edu/publications/the-future-of-nursing-2020-2030/.

National Center for Health Statistics. (2017). *Health expenditures.* Retrieved from https://www.cdc.gov/nchs/fastats/health-expenditures.htm.

National Center for Health Statistics. (2020). Provisional death counts for coronavirus disease 2019 (COVID-19). *Weekly Updates by Select Demographic and Geographic Characteristics.* Retrieved from https://www.cdc.gov/nchs/nvss/vsrr/covid_weekly/index.htm.

National Council of State Boards of Nursing. (2019). The NCSBN 2019 environmental scan: 40th anniversary edition. *Journal of Nursing Regulation, 9*(4), 40.

National Governors Association. (2012, December 20). *The role of nurse practitioners in meeting increasing demand for primary care.* Retrieved from https://www.nga.org/center/issues/health-issues/the-role-of-nurse-practitioners-in-meeting-increasing-demand-for-primary-care/.

Petersen, E. E., Davis, N. L., Goodman, D., Cox, S., Mayes, N., Johnston, E., . . . Barfield, W. (2019). Vital signs: Pregnancy-related deaths, United States, 2011—2015, and strategies for prevention, 13 states, 2013—2017. 68(18), 7.

Pronovost, P. J., Austin, J. M., Cassel, C. K., Delbanco, S. F., Jha, A. K., Kocher, B., . . . Santa, J. (2016). *Fostering transparency in outcomes, quality, safety, and costs.* Retrieved from NAM.edu/Perspectives

Rambur, B. (2020). Health policy brief: MACRA, MIPS, and why it matters. *Nursing Outlook,* 380–382. Retrieved from https://www.nursingoutlook.org/article/S0029-6554(19)30761-4/pdf.

Reinhart, R. J. (2020). *Nurses continue to rate highest in honesty, ethics.* Retrieved from https://news.gallup.com/poll/274673/nurses-continue-rate-highest-honesty-ethics.aspx.

Rowe, J. W., Berkman, L., Fried, L., Fulmer, T., Jackson, J., Naylor, M., & Stone, R. (2016). Preparing for better health and health care for an aging population: A vital direction for health and health care. *National Academy of Medicine.* (pp. 1—9). Retrieved from https://nam.edu/wp-content/uploads/2016/09/Preparing-for-Better-Health-and-Health-Care-for-an-Aging-Population.pdf.

Silber, J. H., Rosenbaum, P. R., McHugh, M. D., Ludwig, J. M., Smith, H. L., Niknam, B. A., . . . Aiken, L. H. (2017). Comparing the value of better nursing work environments across different levels of patient risk. 19.

Squires, A., Germack, H., Muench, U., Stolldorf, D., Witkoski-Stimpfel, A., Yakusheva, O., & Martsolf, G. (2019). The interdisciplinary research group on nursing issues: Advancing health services research, policy, regulation, and practice. *Journal of Nursing Regulation, 10*(2), 55–59.

U.S. Census Bureau. (2014). *65+ in the United States: 2010.* Retrieved from Washington, DC https://www.census.gov/content/dam/Census/library/publications/2014/demo/p23-212.pdf

Welton, J. M. (2016). Nurses and the ethics of Big Data. *Nursing Economic, 34*(5), 4.

Woolf, S. H., & Schoomaker, H. (2019). Life expectancy and mortality rates in the United States, 1959-2017. *JAMA: Journal of the American Medical Association, 322*(20), 1996–2016.

World Health Organization. (2020). *State of the world's nursing report.* Retrieved from https://www.who.int/publications/i/item/9789240003279.