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High Value Care for Older Adults with Complex Care Needs: Leveraging Nurses as Innovators

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Structured Abstract

Background: Our health care system is facing unprecedented and complex challenges in caring for older adults and their families. A paradigm shift is needed that recognizes new roles and competencies for nurses to play a leadership role in the design and implementation of high value care models.

Purpose: The purpose of this paper is to introduce a series of recommendations for leveraging nurses to generate innovative tools and solutions for the delivery of value-based care for older adults living with complex health and social needs and their families.

Methods: These recommendations were generated by a Think-Tank of national experts based on review of current evidence and focus groups with older adults.

Discussion: The generated recommendations focus on positioning nurses to assume leadership roles in implementing evidence-based care models, preparing nurses to serve as health innovators and catalysts of system transformation, and fostering system-level infrastructure that leverages the contributions of nurses for current and emerging roles.

Conclusion: Nurses as innovators can address the challenges in providing high quality care for older adults with complex needs and their families. System-level infrastructure, including resources for training and implementation of well-established programs, is necessary to leverage the contributions of nurses and facilitate innovative approaches to care.

Abstract

Our health care system is facing unprecedented and complex challenges in caring for older adults and their families. A paradigm shift is needed that recognizes new roles and competencies for nurses to play a leadership role in the design and implementation of high value care models. The purpose of this paper is to introduce a series of recommendations for leveraging nurses to generate innovative tools and solutions for the delivery of value-based care for older adults living with complex health and social needs and their families. These recommendations were generated by a Think-Tank of national experts and the focus was on positioning nurses to assume leadership roles

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in implementing evidence based care models, preparing nurses to serve as health innovators and catalysts of system transformation, and fostering system-level infrastructure that leverages the contributions of nurses for current and emerging roles.

Introduction

Both nationally and globally, the number of older adults (people 65 years of age or older) is growing faster than any other age group. There were 49.2 million older adults in the United States in 2016 and by 2060, that number is projected to almost double to 98 million.¹ Most older adults in the United States have at least one chronic health condition, and close to half of this group are living with four or more chronic conditions.² The presence of multiple chronic conditions (MCCs) in the older adult population introduces many challenges. This population typically experiences complex health and social care needs, often resulting in adverse events and costly emergency department visits and hospitalizations. National expenditures for older adults with MCCs represent more than half of Medicare spending.³ Furthermore, older adults and their families interact with a fragmented health care system, commonly experience significant barriers to critical information and, thus, are unable to participate in decision making. Consequently, this population generally feels isolated and disempowered.^{4,5}

This demographic shift represents an unprecedented challenge to our health care system while introducing numerous transformative opportunities for societal and financial systems, clinical practice and health care services, and biomedical and health research. Health care providers and administrators are called upon to address and manage complexity as it relates to the delivery of care, namely the gap between a) *the needs of older adults* living with MCCs complicated by functional deficits (decreased ability to engage in basic activities of daily living) and *the needs of their family caregivers* (relatives or friends), and b) available, accessible and affordable health and social services.⁶ The desired outcome of a redesign of care delivery is that of value, reflected in approaches that improve outcomes in care recipients' experiences with care relative to the costs required to achieve such enhanced outcomes.⁷ Recognizing that existing fragmented systems of care are not designed to address current and emerging challenges in delivering value based care for older adults living with complex health and social needs and their family caregivers, new tools and approaches are needed that will introduce innovation.

Innovation is defined here as the process of "making changes, large and small, radical and incremental, to products, processes, and services" resulting in the introduction of something new for the organization that adds value to the care received by older adults and their family caregivers (the consumers) and contributes to the knowledge store within and across organizations.⁸ These changes require continuous adaptations to well-established but also unforeseen challenges promoting a learning health system, "one in which science, informatics, incentive and culture are aligned for continuous improvement and innovation, with best practices seamlessly embedded in the care process, patients and families as active participants in all elements and new knowledge captured as an integral by-product of the care experience."^{9,10}

Nurses, the most trusted of all professional groups, are a vital part of the health care system and are integral in the delivery of services to older adults and their families.¹¹ Nurses have been described as natural innovators who can improve health care while controlling costs.¹² Several nurse-led initiatives have introduced a variety of innovations to address the challenges associated with the complex care needs of older adults and their families. One illustration of this is the establishment of *evidence-based models of care*. The Aging in Place framework¹³ is an example of a model that promotes the delivery of individualized services for older adults to enable them to stay independent at the residence of their choice for as long as possible. A second example is the Transitional Care Model¹⁴ which incorporates a nurse-led, team-based care delivery system innovation that aligns care services with the preferences, needs, and values of high-risk individuals and their family caregivers while achieving higher-quality outcomes at a reduced cost. Other nurse led innovations include the use of *hardware tools* such as wearable devices that accurately capture communication barriers and facilitators for caregivers of persons with dementia¹⁵ and *software tools* such as a decision-support software and underlying algorithm¹⁶ that identifies patients who need post-acute care, ensuring that high-risk patients receive adequate post-acute care plans at home. Innovation can also be found in the *redesign of processes or elements of the built environment* such as the conceptualization of the acuity-adaptable hospital room.¹⁷ Finally, innovations in curricular and educational initiatives have been led by nurses such as the efforts by the Hartford Institute for Geriatric Nursing sponsored by the John A. Hartford Foundation to advance geriatrics in nursing education and practice. These efforts are individual instances of innovative approaches that demonstrate nursing leadership in addressing significant challenges.

Despite numerous examples of innovations successfully implemented by nurses, barriers exists which prevent or slow the rate of innovation. A major barrier to innovation can be the organizational leadership style. Leaders who possess a transformational leadership style have been associated with encouraging the creativity of employees and organizational innovation.¹⁸¹⁹ Organizational leaders who do not empower nurses and provide support could stifle and deter innovation, particularly if nurses have a negative perception that they will “rock the boat” with bringing ideas forward.²⁰ Additionally, there is a gap in innovation competencies found among nurse leaders in both practice and academia. For nurse leaders pursuing professional development opportunities, training in innovation tends to fall short. Many programs focus on isolated, specific topics (e.g., finance, ethics), rather than providing a holistic curriculum that mirrors real-life situations to prepare students to be innovators with skill sets for problem solving and creating new processes and systems.²¹ Finally, barriers to the adoption and diffusion of successful innovation include cultural, operational, structural, and regulatory challenges.²²

In order for nurses to undertake the significant challenge of caring for older adults and their families, a paradigm shift is needed. This includes promoting and expanding nursing innovation within and across health systems and community-based organizations and reaching state and federal levels. To create this paradigm shift, training, continuing education and easily available resources are needed for nurses to acquire skills in innovation. Nurses with expertise in innovation will be able to implement models of high value care and system wide mechanisms to foster and reward innovation. The purpose of this paper is to

introduce a series of recommendations for leveraging nurses to generate innovative tools and solutions for the delivery of value-based care for older adults living with complex health and social needs while supporting their family caregivers.

Workgroup Process

In response to this urgent call for transformative change in the care of older adults with MCCs and their family caregivers, the University of Pennsylvania (Penn) School of Nursing initiated an almost yearlong process involving national experts representing health care systems, academia, industry, federal, state and private foundation entities to engage in various rounds of deliberations resulting in an in-person Think Tank that took place in May 2018 in Philadelphia, PA. The group consisted of 57 senior experts (16 academic geriatric researchers, 12 senior leaders in health care systems, 14 leaders in private foundations, 15 senior administrators in federal and state organizations) who were selected because of their expertise in gerontology research and practice, health care innovation, and evidence-based practice. The full list of participants can be found at <https://www.future-of-aging.org/members-1>. The charge for this group of experts was to identify bold, actionable recommendations to facilitate high quality seamless care for older adults with MCCs and their family caregivers and to advance care innovations. Participants were assigned to three workgroups: one examining acceleration of the use of innovative care models; the second on promoting partnerships with consumer-directed care initiatives, and the third on the advancement of the use of emerging innovations (including but not restricted to the use of technology). The work presented in this article results from the proceedings of the third workgroup. The process for deliberations included a literature scoping review to generate an initial set of core materials based on published white papers, evidence summaries and systematic reviews, a series of three 60 minute conference calls (that involved brainstorming, generation of user or scenarios and drafting of recommendations) followed by a two day in-person workshop where these recommendations were further considered and refined based on feedback from the other two work groups. Additionally, two focus group sessions were conducted prior to the workshop meeting with 12 community dwelling older adults coping with complex care needs to solicit their feedback and perceptions of the recommendations. The purpose of these focus groups was to validate identified priorities by older adults themselves and to solicit additional recommendations or unidentified challenges. Older adult participants were asked to describe challenges they face with the health care system and how they felt about identified priorities and challenges. A list of emerging themes with accompanying quotes was generated that was used during the workshop proceedings as the participants finalized recommendations.

Recommendations

We identified three broad recommendations that highlight immediate training needs for the current and future nursing workforce and target system readiness to promote nursing innovation, namely:

1. to position nurses to assume leadership roles in implementing evidence based high value care models for chronically ill older adults and their family caregivers;
2. to prepare nurses to serve as health innovators and catalysts of system transformation; and
3. to foster system-level infrastructure that leverages the contributions of nurses for current and emerging roles in the care of older adults coping with complex health and social needs and their family caregivers. While these recommendations are conceptualized as broad and high-level propositions, we highlight opportunities for various stakeholder groups to pursue specific action steps resulting from these recommendations as described below.

a) Infuse the nursing curriculum both at the undergraduate and graduate levels with essential innovation content

As Herzlinger states²³, skills in change management, communication and team building are key to innovation. Additionally, competencies in informatics, data science and design and system thinking equip learners with tools to conceptualize and implement innovative approaches. The recommendation is to integrate all these competencies at all levels of nursing education (undergraduate, graduate and post-graduate levels) facilitating appropriate exposure to nursing students and practicing nurses based on their respective roles in delivering care to older adults with MCC and their families.

Rapid advances in biomedical research and technology highlight the role of informatics in addressing societal challenges and opportunities. Informatics introduces the opportunity to overcome limitations such as a shrinking healthcare workforce, increasing geographic distances from available services, and the ability to unleash the potential of large data sets to improve care for and quality of life of older adults and their families. Similarly, students should be trained in data science, broadly defined as the interdisciplinary field that uses complex algorithms and tools to extract meaning from structured and unstructured data. Finally, in order to generate new ideas and approaches, in some cases even disruptive to the current workflow and set of procedures, design thinking is an essential component in the preparation of future nurses. Design thinking is a method for the creative solution of problems using strategies employed by innovators during the creative process of designing.²⁴ The process is often described as a system of “overlapping spaces” rather than a sequence of steps and includes the elements of inspiration, ideation, and implementation.²⁵

In order to advance innovative models of care, the next generation of nurse trainees who will become frontline staff nurses, clinicians, administrators and scientists need to be equipped with expertise in gerontology and informatics, data science and design thinking to provide further insight into aging and to design, implement and evaluate solutions to support older adults. For example, while some practicing nurses may not benefit from an in-depth exposure to the methods and tools used by data scientists, they can receive the appropriate training to be intelligent consumers of data science reports and effectively integrate existing data science elements in the design and delivery of innovative care models.

The integration of these competencies into nursing education can be informed by a broad ecological model of aging, such as that of Satariano,²⁶ which builds on other models used within gerontology, epidemiology, sociology, environmental psychology, developmental science, environmental design.^{27,28,29} An ecological model is based on the assumption that patterns of health, wellness and quality of life are affected by a dynamic interplay among biologic, behavioral, and environmental factors, which unfolds throughout the life course of individuals, families and communities.³⁰ This model is intended to illustrate the range of parameters at this broad spectrum that includes transitions in health until the end of life, and underscore interrelationships. The model calls for the consideration of the epidemiology of aging, health, functioning and longevity to be based on a multilevel perspective that includes biologic, behavioral, social and environmental interrelated levels. The model represents a heuristic device to guide the design and implementation of care services in aging, and as such it is appropriate to inform the education of the nursing workforce in order to effectively utilize informatics, data science and design thinking. Informatics tools and systems can be used to assess or continuously monitor the model's individual parameters as well as support interventions to address one or more of these parameters. Furthermore, data science methods can be used to study the trajectory of aging not only on the individual but also on the population level.

The infusion of innovation content in the nursing curriculum at all levels can be supported by successful case studies and curricular best practices and systematically expanded and implemented in collaboration with key organizations such as the American Association of Colleges of Nursing and the National League for Nursing.

b.) Expand progressive accreditation standards to drive inclusion of this vital content.

In order to make a significant and sustainable impact on nursing education it is important for accreditation bodies to formally recognize the importance of integrating these elements of leadership, informatics, data science and design thinking into the nursing curriculum. There is already emphasis placed on integrating information systems and technology in specific levels of nursing education (for example, the American Association of Colleges of Nursing emphasizes information systems and patient care technology as part of Essential IV in the Essentials of Doctoral Education for Advanced Nursing Practice³¹). Similarly, significant efforts have led to formulation of competencies in nursing informatics at the graduate level. This recommendation calls for a broader and wider integration of these content areas and tools into nursing education at all levels. Gerontological nurse experts have the opportunity to initiate this dialogue with accreditation bodies and academic programs.

c.) Advocate for state regulatory changes to expand the definition of required clinical practica to include health innovation experiences across settings and platforms.

Currently there is diversity in the requirements imposed by states to the definition of a clinical experience. This can be best demonstrated in the use of simulation (high-fidelity simulation or use of standardized patients for clinical experiences) which currently may be used only in some states for a portion of the clinical experience requirements.³² We believe that a comprehensive re-examination of what a clinical practicum should entail and what competencies need to be covered, may lead to redefined clinical experiences that promote

the use of newly acquired skills in generating innovative solutions in clinical practice. This calls for a national dialogue with representation of academic institutions, the Accreditation Commission for Education in Nursing, the Commission on the Collegiate Nursing Education, the National Council of State Boards of Nursing and the American Association of Colleges of Nursing as well as others (such as the International Nursing Association for Clinical Simulation and Learning) to redefine the clinical practicum in the context of health innovation.

d.) Promote continuing education opportunities for nurse professionals to acquire, refine and expand innovation skills at the workplace.

Most of the practicing nurse workforce has not had formal innovation training. Therefore, it is essential to facilitate nurses' acquisition of knowledge and skills for innovative thinking and promote their ability to use tools (hardware and software) that can promote innovation and the implementation of new high value models of care. Organizations need to provide the appropriate infrastructure and incentivize their nurses to assume leadership roles in designing and implementing innovative solutions. Continuing education opportunities can support this objective by allowing the existing nursing workforce to acquire, refine and expand skills not only in the classroom but at the workplace and in a tailored mode to capitalize on existing work experience and organizational structures. This opportunity needs to be explored by health care systems and organizations based on a dialogue between academic institutions and national organizations that represent various health systems and networks such as the American Hospital Association and the American Organization for Nursing Leadership.

e.) Support the development of a repository of existing educational offerings/ exemplars that are successful curricular initiatives to address health innovation.

An innovative idea brings change to the current landscape by introducing new or different roles for people, different workflows or processes, new tools or existing ones that have been used in other settings or all the above. The change can be instant or require long-term implementation. In this process, stakeholders, available funding, policy implications, technology considerations, customer buy-in and acceptance, and accountability can become both facilitators and barriers to the adoption of this change. We propose the development of a structured repository that highlights existing efforts and initiatives to successfully integrate health innovation competencies in the nursing curriculum. Additionally, a repository of successful disruptive innovations that have advanced the delivery of high value care to older adults with MCCs and their family caregivers can provide a set of exemplars that may further inform the design of training opportunities and extract lessons learned and best practices. The repository could be initiated at a small scale and expanded over time with contributions by academic and clinical partners. It can be maintained initially by a volunteer academic site or potentially more centrally by a leading authority such as the American Academy of Nursing.

f.) Build a coalition to leverage nursing's contributions.

This effort requires forming local, regional and national partnerships between nursing and health system leaders, patient and caregiver groups and other stakeholders who commit to

advance the contributions of nurses in the care of older adults with complex needs and their family caregivers. Currently the Champion Nursing Coalition exists in which organizations enlisted in the coalition, several of which are geriatric focused, exemplify their understanding of nurses' contributions to healthcare delivery. While formidable, we believe these organizations lack the support and actionable charge to outwardly promote the critical work of nurses. A clearer emphasis on nurses as drivers of older adult care delivery and the tools to move this notion forward is eminent. To start, coalition members need to be equipped with consistent messages to advance nursing's contributions with this population (e.g., advocate for health systems to support new roles for nurses as innovators). Prioritizing the placement of nurses in key positions within these organizations is especially important to leverage the unique skillsets and contributions nurses can make to the care delivery of older adults. Partnerships between coalitions such as Nurses on Boards may be formed to identify geriatric nurse leaders for such posts. Resulting from these efforts may be the creation of a compendium of the diverse areas and venues where geriatric nurses can be impactful (e.g., listing of opportunities for geriatric nurses to be positioned as leaders in health care organizations). We additionally recognize that nurses themselves must be empowered with resources, opportunities, and limited restricted power to innovate and create change in the healthcare system. The participants of the workshop were committed to supporting the creation and contributing to such a coalition and this may serve as a first step initiative to leveraging nursing's contributions.

g.) Prepare systems to equip nurses with competencies in implementation of proven care models and in design of new solutions.

As new competencies among existing and emerging workforce are identified to implement care models and foster innovation, we must develop tools and resources needed for health systems and educational programs to prepare the nursing workforce with these new competencies. For example, to support successful implementation of the Transitional Care Model, the architects of this innovation based at Penn have tested and refined a set of processes and tools. These include position descriptions for the Advanced Practice Registered Nurses (APRNs) who will implement this nurse-led, team-based model, APRN orientation plans and competency assessments; web-based webinars to prepare the sites for TCM implementation; screening tools and scripts to identify and engage the target population, and the TCM Playbook[®] that includes patient and caregiver assessment tools, intervention protocols, tools to assess fidelity; performance metrics and improvement processes. Aligned with the programs and resources to position nurses to implement proven models, options for health care systems to incentivize new competencies are essential. To facilitate the uptake of the TCM by local health systems and communities, for example, the Penn team will collaborate with nurses in these contexts to make the case for implementation of the model as well as with health system leaders to engage payers in supporting this innovative approach to care. This demonstration will hopefully serve as proof of concept to motivate similar efforts for systems to implement transformative, evidence-based models of care.

Discussion

A paradigm shift is critical to address and respond to the growing gap between the needs of the rapidly growing older adult population with high-level of care needs and their family caregivers and availability, accessibility and affordability of health and social services. Shifts in the population landscape warrant immediate change in how health and social services are delivered to this high-risk group. In this article, we present recommendations and actionable strategies derived from thoughtful and considerable deliberation among national experts that will prepare nurses to be leaders of system transformation in the care of older adults coping with complex health and social needs and their family caregivers.

The set of recommendations recognizes new roles and competencies for nurses to play a leadership role in the design and implementation of high value care models for older adults coping with complex health and social care needs while supporting their family caregivers. These roles will allow nurses to link values and preferences of older adults and family caregivers across systems, settings of care and communities, and to effectively advocate for an infrastructure to ensure data and knowledge transfer in an otherwise fragmented health care system. The proposed training, at all levels of nursing education and practice, will equip nurses with skills to be both generators and consumers of innovation. Nurses will be able to function not only as navigators for patients in meeting complex health needs, but also in the appropriate use of new tools by patients and family caregivers (addressing barriers to adoption and challenges around digital literacy, and tailoring tools to promote patient engagement).

There is increased recognition that competencies in informatics, data science and design thinking can facilitate the role of nursing as health innovators. For example, the National Institutes of Health (NIH), and the National Institute of Nursing Research (NINR) more specifically, have identified biomedical informatics as one of the cornerstones in transforming the biomedical clinical and translational research enterprise. NINR emphasizes in its strategic plan the significance of informatics-based solutions that promote health, including comprehensive high-throughput technologies. A similar vision pertains to the integration of data science in the nursing curriculum.

In order to generate significant and sustainable change, this endeavor warrants support from all key stakeholders, including but not limited to, patients and their families, nursing and health system leaders, governing and accrediting bodies, and payers. We need a clear goal and unified message to advocate for nurses as innovators to advance the contributions of nurses in the care of older adults with complex needs and their families. System-level infrastructure, including resources for training and implementation of well established programs, is necessary to leverage the contributions of nurses and support this innovative approach to care. A smaller group of experts from our workshop participants is exploring ways to champion the recommendations in this paper and facilitate the implementation of the identified action steps. Now more than ever, we need to support nurses with the ability to play a leadership role in implementing effective models of care while translating and advancing methods and models from the computing, information and behavioral sciences

into solutions that address challenges and opportunities faced by care providers, older adults with complex care needs, their family caregivers and researchers.

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