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Nurses as intermediaries in the promotion of community health: Exploring their roles and challenges

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Executive Summary

An effective health care system needs to coordinate medical facilities with the behavioral and economic drivers in communities that are most related to good long-term health. Intermediaries can help this to happen by providing key skills and building trust between health care institutions and community organizations and residents.

Nurses are among the most important of such intermediaries. They not only provide skilled health care services, but tend to be the closest to the patient and their family caregivers, and the most aware of their broader psychosocial and health care needs. There is a broad range of nursing specialties that play this role, from Clinical Nurse Leaders to school and parish nurses.

A review of nurses as intermediaries indicates a number of lessons and reveals several challenges. Among them:

- Data silos can make it difficult for nurses to gain access to the information they need. These barriers need to be addressed.
- Scope-of-practice rules and other professional barriers prevent nurses from maximizing their effectiveness. States need to review such rules, and training needs to be appropriately designed.
- Budgets and payment systems often frustrate efforts to use nurses strategically. These need to be aligned to encourage the more effective use of nurses as intermediaries.

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Introduction

In the American health care system, the operations of health facilities often are regrettably disconnected from the behavioral and economic drivers in communities that are most related to good long-term health. For instance, education, housing, and other factors are critical determinants of an individual's likely health trajectory.[1] Although we are making progress in the collaboration among sectors, hospitals and other facets of the system face significant challenges in building partnerships with other sectors that affect health.[2] This siloed nature of the system contributes to many potentially avoidable readmissions, medical errors, and other adverse patient outcomes.

We can improve the coordination of health-influencing sectors in at least two ways. One way is to address obstacles to the direct cooperation of institutions, such as limitations in the data sharing needed for coordination. Several organizations are beginning to tackle some of the data concerns, such as the governance and technical concerns hampering local government agencies[3] and the lack of data at the neighborhood level needed to help community institutions work effectively with the health system in addressing social determinants.[4] Another sign of progress is the increasing attention to making fuller and more innovative use of the requirements of Community Health Needs Assessments (CHNA), which encourage nonprofit hospitals to investigate health conditions in their communities and explore ways of partnering with community organizations to improve their communities' health. Under CHNA, enacted as part of the 2010 Affordable Care Act (ACA), tax-exempt hospitals must analyze community health needs every three years and implement tailored strategies. By fine-tuning CHNA regulations it would be possible to encourage more effective partnerships to improve health.[5]

Another way to improve coordination is to use *intermediaries* to link health facilities with other institutions in the community, including nonmedical institutions that could foster better health, such as schools and housing authorities. Intermediaries are individuals or organizations that can provide critical information, key skills, and entrepreneurial functions and that can build trust between health care institutions and community organizations and residents. By carrying out these functions, intermediaries reduce the many obstacles that often make it difficult for individuals and organizations to work closely together. They are, in effect, the connective tissue linking many partnerships and helping them cooperate more smoothly. Intermediaries include such people and organizations as community health workers, community development financial

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1. Virginia Commonwealth University Center on Society and Health, "Health Care: Necessary But Not Sufficient"; and Matthew et al., "Re-Balancing Medical and Social Spending to Promote Health."
2. Butler and Diaz, "Hospitals and Schools as Hubs for Building Healthy Communities."
3. Grabinsky and Butler, "The Promise of Integrated Data Systems for Social Policy Reform."
4. Butler and Grabinsky, "Building Neighborhood Data to Inform Policy."
5. Rosenbaum, "Hospitals as Community Hubs."

institutions, and integrated social service organizations.[6] They can be independent, but they can also be individuals in a larger institution who are specifically tasked with developing collaborative arrangements.

Nurses are among the most important of such intermediaries, and they have enormous potential as bridge builders. Nurses not only provide skilled health care services, but tend to be the closest to the patient and their family caregivers, and the most aware of their broader psychosocial and health care needs. As patient advocates, nurses can be critical players in connecting disparate institutions and often unaligned communications and data systems, providing a crucial trusted link between individuals and the larger health care system. As appreciation for the importance of interdisciplinary care teams and collaboration across economic, social, and medical sectors has grown, the recognized value of nurses as leaders has also increased.[7]

In this report we review the roles of a variety of nurse specialties. We note the ways in which nurses function as intermediaries and the obstacles they face, and we suggest some steps to address those obstacles.

Why Nurses?

With roughly 3 million professionals in the field, nurses are the largest segment of the US health care workforce.[8] Employment in nursing is expected to increase approximately 9 percent more than employment in other job sectors from 2014 to 2024.[9] In a recent brief updating an earlier study, the Institute of Medicine (IOM)—now part of the National Academy of Medicine—underscored the critical importance of nursing, declaring nurses to be integral to promoting the triple aim of the ACA: improving quality, reducing cost, and adequately addressing public health.[10] The ACA seeks to increase the health system's focus on public health and prevention. With their extensive training in handling patient coordination and bridging clinical practices, nurses are seen as vital to the success of this national effort.

Nurses today are better equipped to supplement direct medical services with other important components of comprehensive health care, such as patient education and links to the community resources that physicians often do not provide.[11] They are trained more as "system thinkers,"

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6. Singh and Butler, "Intermediaries in Integrated Approaches to Health and Economic Mobility."
7. Bender et al., "Clinical Nurse Leader Impact on Microsystem Care Quality."
8. Institute of Medicine, *The Future of Nursing*.
9. GrantWatch, "Foundation Funding for the Nursing Profession."
10. Institute of Medicine, "Assessing Progress on the Institute of Medicine Report *The Future of Nursing*."
11. George and Shocksnider, "Leaders."

who can view the health of patients holistically and often have intimate insight into the patient experience.[12] They can function in the space between patient coordination, health care administration, community contexts, and clinical services. Equipped with knowledge of public health and experience working across sectors, nurses are often well positioned to cover many of the gaps in the continuum of care.[13]

It is true that there are other health workers, in addition to nurses, who are important both providing health services to individuals in their communities and linking those individuals to the wider health system. Examples include home health aides, pharmacy aides and occupational aides.[14] These workers build important relationships with patients as well as providing health services. Even closer to the neighborhoods of communities, community health workers are trained community members who can provide health education, connections to health services, and within the community help support the management of people with health conditions.[15] Nurses, however, are more highly trained, not only in their knowledge of medical care but also in leadership skills. They are also able and licensed, increasingly, to deliver health care services directly to patients. As such they are in a position to play an extremely valuable role in connecting patients, and other health workers in communities, to high-level medical services, hospitals and physicians.

Recent studies support the view that connecting patients and households with core elements of the health continuum, in the way nurses can, is vital to good overall health, and that nurses as connectors or intermediaries contribute significantly to outcomes and reduced costs. Studies have shown, for instance, that the quality of many medical services provided by nurse practitioners (NP) – nurses with advanced education and training – can often be the equal, or in some cases better, than services delivered by physicians.[16] Moreover, many patients with certain conditions prefer to be treated promptly by a nurse practitioner; for patients with such symptoms as severe, frequent headaches and a worsening cough, research found that most would prefer to be treated by a nurse practitioner or a physician assistant (PA) quickly rather than waiting to see physicians later.[17] Furthermore, making greater use of nurses is an important step to slowing health costs, both because their services cost less than those provided by most physicians, and because they are often able to reduce the need for expensive hospital admissions and physician treatment. Nurses are also well-suited to help achieve the transition of health care from the traditional fee-for-service medical treatment system to a system based more on prevention, value, and public health. But there are obstacles: Only 12.5 percent of employed registered nurses hold

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12. Johnson et al., "From Toyota to the Bedside."
13. Bender et al., "Interdisciplinary Collaboration."
14. Ross et al, "Part of the Solution."
15. Ross and Patrick, "Leaders Among Us."
16. Naylor and Kurtzman, "The Role of Nurse Practitioners in Reinventing Primary Care"; Mundinger et al., "Primary Care Outcomes in Patients Treated by Nurse Practitioners or Physicians"; Hopkins et al., "Context of Care or Provider Training"; and Swan et al., "Quality of Primary Care by Advanced Practice Nurses."
17. Dill et al., "Survey Shows Consumers Open to a Greater Role for Physician Assistants and Nurse Practitioners."

management titles indicating expertise in nursing profession, and almost half of that cohort is nearing retirement age.[18] While the rate of nurses pursuing graduate degrees has increased, opportunities for leadership training programs within health care facilities still lag. Thus, while nurses are becoming better positioned to deliver direct care and lead coordination efforts, they often receive inadequate institutionalized leadership training and lack a defined role as an advanced, interdisciplinary intermediary. So it will be important for medical institutions and accrediting bodies to encourage greater breadth and availability of relevant training and continuing educational opportunities.

To explore the potential of nurses to be valuable intermediaries in the health care system, we explore what can be learned from various ways in which nurses function as links between medical and other sectors in order to improve health. This report summarizes the activities and training of certain categories of nursing professionals, as well as their existing and potential roles in fostering an integrated approach to care delivery. It also highlights the key challenges that appear to impede the greater use of nurses as intermediaries and the possible reforms and steps that could address those challenges.

How Nurses Can Link Patients with Broader Services in the Community

The Institute of Medicine (now the National Academy of Medicine) issued a major report in 2011, *The Future of Nursing*, drawing attention to the importance of nurses as intermediaries between patients and community resources and as team leaders in the health care system.[19] The do this in a variety of ways and from many locations within the health care system. Primary care is a good example.[20] The U.S. Department of Veterans Affairs (VA), for instance, now uses registered nurses in ways that are gradually shifting the focus of the VA from a hospital network to a system based on primary care. For instance, registered nurses coordinate veterans care in person or through telehealth. The VA also employs Clinical Nurse Leaders (see below) in leadership positions within their primary care model. Meanwhile, Nurse-Family Partnership Agencies are part of a community support system; these partnerships are funded by a range of federal, state and local public funding sources, including Medicaid and grants from the Health Resources and Services Administration (HRSA).

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18. Sverdlik, “Who Will Be Our Nursing Leaders in the Future?”
19. Institute of Medicine, “The Future of Nursing.”
20. Robert Wood Johnson Foundation, “How Nurses are Solving Some of Primary Care’s Most Pressing Challenges.”

In the examples below we describe several of the specialties within nursing, and the ways in which nurses act as intermediaries and liaisons, connecting individuals and community organizations with the health care system.

Clinical Nurse Leaders and Clinical Specialists

As the health care system places a greater emphasis on quality outcomes and cost efficiency, there is a growing need for practitioners with a global perspective of the health system who understand how to facilitate interdisciplinary collaboration within care teams. The Association of Colleges of Nursing has recognized the need for adept guides to help patients navigate the fragmented health care landscape,[21] creating in 2004 the designation of Clinical Nurse Leader (CNL)—a master's-level nurse who serves as an "advanced generalist."[22] Upon completing a master's degree[23] from an accredited nursing program, candidates must pass the CNL certification examination to become a professional CNL. From the time of the 2006–2007 CNL certification pilot, more than 5,500 nurses have gained their credential as CNLs.[24]

The CNL's role, as the name suggests, is to act as a leader in integrating and overseeing the care of a group of patients. The CNL is the point of contact between the patient and other members of the interdisciplinary team, and has the authority to change care plans as required.[25] CNLs work closely alongside physicians to address health issues for their designated population of patients.[26] Most importantly, they are responsible for ensuring smooth communication between patients and providers in the health care system. In doing so, they help address the major concern stressed in a 2000 Institute of Medicine report that attributed most medical errors to poor communication across health professionals.[27]

Unlike Clinical Nurse Specialists (CNSs), who are advanced practice registered nurses (APRNs) with expertise in a nursing specialty, CNLs typically function as generalists within the hospital setting. CNSs practice in a wide variety of health care settings, including hospitals. As APRNs, Clinical Nurse Specialists diagnose medical problems, order medical treatments, and refer patients to community resources. CNSs have a longer history as a profession and number over 72,000.[28] Both the CNL and CNS function in tandem as part of a patient's health care team.

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21. Wilson et al., "Evolution of an Innovative Role."
22. Bender et al., "Clinical Nurse Leader Impact on Microsystem Care Quality."
23. Practicing nurses need at least a diploma from an accredited hospital or an associate's degree in nursing from a community or junior college. In addition to an aforementioned level of certification, nursing candidates must also pass the National Council Licensure Examination (NCLEX-RN) before they can practice. Many will pursue advanced education, such as bachelor's or master's degree in nursing, to secure higher salaries and expanded opportunities.
24. American Association of Colleges of Nursing, "Directory of CNLs."
25. American Association of Colleges of Nursing, "Clinical Nurse Leader."
26. Wilson et al., "Evolution of an Innovative Role."
27. Kohn et al., *To Err Is Human.*
28. Summers and Bickford, *Nursing's Leading Edges.*

A Multifaceted Role. CNLs and CNSs can play a wide range of roles. They are trained as risk analysts, patient advocates, educators, communicators between physicians and families, and case managers. Thus, hospital administrators have many options for how—and to what degree—to incorporate the CNL role in health care management, including connecting patients more effectively with institutions and assistance outside the medical system. CNLs are also usually an active member in management and planning and so can provide considerable value to hospitals on multiple fronts. Moreover, use of CNLs is linked with improved rates of patient satisfaction.[29] Thus, as the health care system changes and as new partnerships and strategies are required to address the many elements of achieving good health, CNLs offer the skills and flexibility needed to help link together the different individuals and the organizations needed for their health.

Transitional Care. CNSs are experts in care transition, when patients move between heath care settings and providers during acute and chronic illness episodes. It is often during such transitions that problems arise if there is not a skilled professional managing the individuals and organizations needed for a smooth transition.[30] Multiple studies also demonstrate that CNSs reduce patients' lengths of stay in acute and community-based setting, reducing costs while improving quality.[31]

Public Health Nurses

According to the Association of Public Health Nurses (APHN), a public health nurse (PHN) "engages both the public and clinical health systems at multiple levels to produce community changes that undeniably and favorably impact a culture of health."[32] In functioning as intermediaries designed to influence community health, they need to be experts not only in clinical nursing practices but also in epidemiology and have the skills to navigate the broad range of social determinants influencing population health. Not all nurses who work in the community are considered PHNs. A PHN must hold at minimum a bachelor's of nursing degree and is required by certain states to have certificates in chosen areas of public health expertise.[33] Importantly, PHNs are not all employed by health-related institutions. They can be employed in a variety of sectors and can play an important role in linking them; while many PHNs are employed by health care facilities and public health organizations, others work for schools, research groups, correctional facilities, and other nonmedical institutions.

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29. Bender et al., "Clinical Nurse Leader Impact on Microsystem Care Quality."
30. National Association of Clinical Nurse Specialists. "Definitions of Transitional Care."
31. National Association of Clinical Nurse Specialists. "Impact of the Clinical Nurse Specialist Role on the Costs and Quality of Health Care."
32. Association of Public Health Nurses, "The Public Health Nurse."
33. American Public Health Association, "The Definition and Practice of Public Health Nursing."

To gain a sense of how PHNs function as intermediaries, consider two examples of public health nurses. One is an example from another country—the United Kingdom's district nurses—and illustrates how a nurse can be a critical connector within the local community. The other—school nurses—is an example of a primarily site-based nurse outside a medical facility who links together various sectors.

District Nurses (UK)

Leading health systems in the United States seek ways to make the outside walls of a hospital or physician's office less of a barrier between the health system and the daily lives of patients. That has led to growing interest in using nurses as "extenders," linking the health system directly to individuals in their communities.

While the systematic use of nurses in this way is still quite novel in the United States, it has been a feature of the British health system for more than a century. Indeed, the local district nurse is as much a central institution of most British communities as the local post office or church. In many respects, district nursing was the first form of public health nursing and is among the most successful in linking the health system to the community.[34]

According to the Royal College of Nursing (RCN), the primary goal of the district nurse is "the planning, provision and evaluation of appropriate programs of nursing care, particularly for people discharged from hospital and patients with complex needs; long-term conditions, those who have a disability, are frail or at the end of their life."[35] Such district nursing is widely practiced in the UK and Australia. District nursing is very much a product of the Victorian focus on health and community improvement and was first launched in the mid-19th century in 18 districts in Liverpool, England, with the support of William Rathbone, a wealthy individual.[36] Community-based nursing spread throughout the country and eventually became incorporated into the National Health Service (NHS), with district nurses becoming a critical link between individuals and the health system in the national model of care delivery. Now, all residents of the UK can receive free care from district nurses under the NHS. Similar systems have developed in other countries, particularly Australia.[37]

There are approximately 13,000 district nurses[38] in NHS system, and this number is expected to grow as nursing moves from a hospital-based to community-based practice. Between the 2012–13 and 2013–14 school years, the number of universities in the UK offering programs in district nursing increased by 25 percent.[39] District nurses are highly trained nurses. To practice as a district nurse in the UK, a nurse must be registered as an adult, child, mental health, or learning

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34. Kulbok, et al.,"Evolving Public Health Nursing Roles: Focus on Community Participatory Health Promotion and Prevention."
35. Royal College of Nursing, "District Nursing."
36. Queen's Nursing Institute, "William Rathbone and the Beginning of District Nursing."
37. Madsen, "Boundaries and Barriers."
38. Queen's Nursing Institute, "2020 Vision."
39. Queen's Nursing Institute, "Report on District Nurse Education in the United Kingdom."

disability nurse before applying for the district nurse-training program. The programs are at postgraduate certificate or master's level and take about 32 weeks to complete.[40]

District nurses are the key care coordinators within a community and are classic intermediaries. These senior nurses link at-home patients with their general practitioners, local hospital, and support workers.

They also manage other nurses working in the community, and they are authorized to prescribe medications. The district nurse, moreover, provides in-home services to patients. Importantly, they are also the primary follow-up coordinators for discharged hospital patients and chronically ill individuals. Their role goes beyond delivering and coordinating medical care—they also assist in arranging non-health supportive services.

District nurses enjoy high patient satisfaction levels, likely due to their regular and comprehensive patient contact.[41] And as skilled professionals, district nurses have been widening their role in the UK health system more rapidly than is true of other nursing categories.

Advanced connectors. District nurses are the key point of contact for at-home patients, and they have the skills and status to work with hospitals, general practitioners, and the social services that are so important to recovery or ongoing treatment. The historical development of district nursing in the UK has ensured that these skilled professionals are embedded in the culture of the UK's service of health care delivery and the daily life of communities. District nursing has long prioritized the importance of building personal contacts and patient trust, as well as a broad network of professionals and organizations across medical and nonmedical fields. They are far more than just autonomous at-home health caregivers: They are highly skilled and well-respected health and community coordinators.

School Nurses

Schools are increasingly seen as institutions in a community that can contribute to prevention and public health objectives while advancing their primary objective of education.[42] A report by the Council of School Health emphasizes this point, calling schools the "second most influential environment in a child's life" after the home.[43] For many students, the school nurse is their entry point into the health system; this is especially true for low-income, minority, and underserved populations, which are at greatest risk for not having a quality medical home that can manage and coordinate their health services. These minority youth are most likely to have poorer health status and need careful health coordination.[44]

A study by the Health Research and Educational Trust found some of the most common drivers of community health needs were basic access to care, preventative and screening services, and

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40. UK National Health Service, "Health Careers."
41. Scott, "Development of Advanced Practice in the District Nurse Role."
42. Horn et al., "Schools as Community Hubs"; and Butler and Diaz, "Hospitals and Schools as Hubs for Building Healthy Communities."
43. American Academy of Pediatrics, "Role of the School Nurse in Providing School Health Services."
44. Keeton et al., "School-Based Health Centers in an Era of Health Care Reform."

chronic care management.[45] The school nurse system, established in the late 1890s to monitor students for contagious infections, is positioned to connect students, teachers, and parents to ensure that a child has access to necessary health as well as educational services. By linking together key local players, the school nurse can develop relationships that enhance the wellness of the surrounding community.[46]

School nurses account for just under 3 percent of all registered nurses (RNs), but address a wide range of health drivers in their daily practice, particularly when managing chronic disease.[47] Like the teachers they work alongside, the school nurse is involved in the comprehensive set of actions required to address the many determinants of student success and well-being. In a regular day, for instance, the school nurse may provide direct medical care to students; run the school-based health center;[48] communicate with student's parents, teachers, school administrators, and physicians; administer referrals; conduct screenings; and help eligible students sign up for federal programs such as the Children's Health Insurance Plan (CHIP).[49] As the school's expert in health care, the nurse undertakes health education for students and participates in reforming school health policies. The school nurse is also responsible for connecting the unique health plans of students with special needs to their customized learning goals, known as individualized education plans (IEPs).[50] This is a critically important feature of the school nurse's role; in 2015, some 13 percent of all K–12 students participated in an IEP.[51]

Studies suggest that employment of full-time school nurses leads to improved student outcomes and reduced health care costs. Pennington and Delaney determined that 13 percent fewer students were sent home for physical illness or injury when under the care of a school nurse rather than with unlicensed school personnel, pointing to the positive impact of school nursing case management. Other studies have also supported the effectiveness of school nursing programs.[52]

By addressing student health needs and relieving teachers and many parents of having to deal with those concerns, school nurses also improve the effectiveness of both parents and teachers. One case study on the cost-benefit of the Massachusetts Essential School Health Services found that the programmatic implementation of full-time nurses yielded a net benefit of $98.2 million to society and a $2.20 societal gain for every dollar invested.[53] Other studies on the impact of school nurses include time-savings for other school staff. For instance, a study by Baisch, Lundeen, and Murphy suggests that having a school nurse regularly present at a facility frees up

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45. Health Research & Educational Trust, "Hospital-Based Strategies for Creating a Culture of Health."
46. Lear, "Health at School."
47. Andrews, "School Nurses' Role Expands with Access to Students' Online Health Records."
48. Price, "School-Centered Approaches to Improve Community Health."
49. Mangena and Maughan, "The 2015 NASN School Nurse Survey."
50. American Academy of Pediatrics, "Role of the School Nurse in Providing School Health Services."
51. US Department of Education, "Percent Children with Disabilities."
52. Pennington and Delaney, "The Number of Students Sent Home by School Nurses."
53. Wang et al., "Cost-Benefit Study of School Nursing Services."

an extra 20 minutes of teachers' time per day, allowing them to deal with education instead of health-related matters.[54] Meanwhile, Hill and Hollis found that when school nurses spent an additional 1.6 hours a day managing health issues, teachers spent 34 fewer minutes doing so.[55]

For school nursing programs to be most effective, nurses need to be physically present in the school and routinely work daily with students, teachers and other school staff, and parents. Nurses who can work full-time at a school can fully immerse themselves in the school community, becoming familiar and trusted figures with the students, parents, and teachers. They can then act as front-line "spotters" of ill health and be the intermediaries who link parents, students, and the school community with the health care system. But due in many cases to limited budgets (see below), nurses often are assigned to more than one school, weakening their linking role. Indeed, in the 2015 survey of school nurses by National Association of School Nurses, the average respondent was responsible for covering three schools.[56] Another study suggested that schools employing part-time nurses instead of full-time nurses experienced a significant set of unmet student needs.[57]

Training and Funding. To become a school nurse, an individual must first be a RN. Additional qualifying requirements vary by state. Some states require a nurse to hold a national certificate in school nursing administered by the National Board for Certification of School Nurses or a state-specific certificate. Survey data from 2015 collected by the National Association of School Nurses (NASN) found 22.7 percent of surveyed school nurses had a national certificate and 55 percent held a state certification. NASN supports high levels of education for school nurses.[58]

The 2016 NASN survey found that 22.4 percent of schools nurses had associate's degrees, 51.3 percent had a bachelor's degree, and 12.5 percent had a master's degree.[59]

School nurses are funded in a variety of ways. According to the NASN survey, 83 percent of respondents were employed by a public school district, 5 percent by a parochial/private/boarding school, 4 percent by public health departments, and 1 percent by hospitals.[60] Some 57.6 percent reported that they or their employer billed Medicaid for reimbursement. Maintaining these funding streams can be a challenge for school nurses, however. When school nurses are funded by education dollars provided by the school district, for instance, nursing positions must compete with teachers and others directly involved in education and thus are often cut or required to serve several schools when budgets are short. Sometimes school nurses are replaced with lower-paid, untrained employees. Some 25 percent of public schools do not employ a nurse in any capacity—either full-time or part-time—while only 45 percent have a full-time, on-site nurse.[61]

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54. Baisch et al., "Evidence-Based Research on the Value of School Nurses in an Urban School System."
55. Hill and Hollis, "Teacher Time Spent on Student Health Issues and School Nurse Presence."
56. Mangena and Maughan, "The 2015 NASN School Nurse Survey."
57. Telljohann et al., "Effect of Full-Time versus Part-Time School Nurses."
58. Mangena and Maughan, "The 2015 NASN School Nurse Survey."
59. National Association of School Nurses, "School Nurses in the U.S."
60. Mangena and Maughan, "The 2015 NASN School Nurse Survey."
61. Wang et al., "Cost-Benefit Study of School Nursing Services."

The "wrong pocket" problem. In poorer areas, school nurses may be the only connection with the health care system. In addition, they work with teachers and other school staff to identify and address many issues facing the student. Thus, the school nurse functions not only as an intermediary within the health system, connecting students to an array of health providers, but also as an intermediary between a student's educational and health professionals, often connecting the student with social services as well. However, the benefits generated by school nurses often accrue in ways beyond the primary focus of the agency providing funds for school nurses. School nurses generally are not paid to serve or communicate with family members, for instance, and the impact of nursing services on the educational progress of their students is rarely identified and measured.

This partial separation of benefits and the costs of school nurses is an example of what economists call the "wrong pocket" problem—when the sector benefiting from a significant part of a service is not the same as the funder. This typically leads to underinvestment and is a common problem with intermediaries who work between sectors. Thus, improving the measurement of the broad impact of school nurses is needed to enable jurisdictions to identify the true value added when making budget decisions. The Community Health Needs Assessment (CHNA) could help identify the cross-sector value of school nurses, especially those employed by hospital systems.[62]

Nurses as part of the team. To be most effective, intermediaries should to be an integral part of a team. According to NASN Executive Director Donna Mazyck, school nurses should be able to collaborate with a "student services team" of non-instructional professionals, such as counselors, psychologists, and social workers employed by the school and working with the instructional staff. Organizations such as Communities in Schools[63] have taken positive steps by placing highly trained coordinators in schools to evaluate student needs and connect them to appropriate resources, including school nurses, through their extensive network of local agencies and volunteers.

To be full members of a team, school nurses need to have access to a range of student data, not just medical records. But school nurses typically face barriers in obtaining the data they need to assess the full circumstances of a student and their families. Federal privacy statutes are often a concern, in particular regulations related to the Family Educational Rights and Privacy Act (FERPA) and the Health Insurance Portability and Accountability Act (HIPAA). Depending on whether they are employed by the school district or hospital system, either HIPAA or FERPA can be a barrier to gaining the full picture of a student.

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62. Missouri Kids Count, "School Nurses and the State School Nurse Consultant."

63. Communities in Schools, "About Us."

Faith Community or Parish Nurses

Parish nursing, also referred to as "faith-community nursing," has a long history but came into prominence in the early 1980s. It is practiced by many different religions, and the terminology varies, among them, crescent nurse, health ministry nurse, and health and wellness nurse. The American Nurses Association officially recognized parish nursing as a nursing specialty in 1997.[64]

According to the International Parish Nurse Resource Center, a parish nurse "seeks to foster physical, emotional, spiritual, and social harmony leading to healthy and healing relationships with God, family, faith communities, culture and creation."[65] They do this through advising and educating on health, connecting parishioners (and their families) to health resources, leading support groups, and generally acting as a point of contact for outreach by other medical professionals and systems.

***Training*.** Parish nurses are licensed nurses who receive special training to practice in a congregation, usually their own, and have at least two years of experience.[66] Most hospitals have some connection to a parish nursing practice, either by employing the nurses or acting as liaisons connecting the nurses to community resources and training opportunities. There are approximately 15,000 parish nurses in the United States and many more throughout the world. Approximately 90–95 percent of parish nurses are *unpaid* professionals who volunteer their services.

While ministry-delivered health care is an ancient practice, parish nursing is not usually a religious initiative. Rather it is seen as part of a holistic approach to the delivery of services, provided by a registered nurse to members of a congregation in the community. Church-sponsored services are seen as augmenting the medical needs of vulnerable, aged, confused, or underserved populations by connecting those services with a trusted institution. Parish nurses are members of a congregation, and most of the nursing care is provided in the parishioner's home or the religious facility. Consistent with the idea of care through a trusted organization in the community, parish nurses routinely participate in community health fairs and serve on mobile health units and in community clinics.[67] The specific roles and responsibilities of parish nurses vary by congregation; each has its own set of needs and resources.

While unpaid, parish nurses may receive support from hospitals to cover their costs. Hospitals typically work closely with parish nurses in the community, in part to improve their ability to connect with neighborhood residents. Many nonprofit hospitals also see working with parish nurses as a way to strengthen community connections in line with the requirements of their tax-exempt status. For example, Washington Adventist Hospital (WAH) in Montgomery County,

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64. Hadley and Stavrevsky, "An Introduction to Parish Nursing."
65. International Parish Nurse Resource Center, "Parish Nursing Fact Sheet."
66. Ibid.
67. Dandridge, "Faith Community/Parish Nurse Literature."

Maryland, employs a coordinator for their parish nurse program. The coordinator stays in communication with the nurses and congregations and connects them to resources they might need to facilitate their parish programs. As part of this program, WAH partners with and trains parish nurses to achieve a wider reach into the community.[68] The hospital also partners with parish nurses to train lay people in their congregation to assist others in improving their health, including promoting health services such as diabetes classes, walking teams, depression recovery programs, and cardiovascular and skin cancer screenings. The parish nurses liaise between the hospital, the congregation, and the wider community services. In addition, the hospital trains registered nurses, faith institutions, and community organizations in how to implement their own health ministry program.

Data Restrictions. While parish nurses can review certain data provided by the patient—such as insurance documents—and help parishioners prepare questions for their doctor appointments, parish nurses face HIPAA restrictions and normally cannot share the health status of an adult patient with other parishioners (including family) without the patient's consent. While there are often ways to avoid legal issues, overly cautious interpretation of HIPAA laws often limits the parish nurse's collaboration with a hospital.

Importance of Consistent Documentation and Licensure. The amount and sophistication of the documentation associated with parish nursing activities vary widely from congregation to congregation. That can be problematic, since appropriate and consistent documentation of nursing activities in the congregation is important for two reasons: first, to monitor and record patient services for hospitals and other providers and, second, to reduce the liability risk to the parish nurse.

Limited Funding and Site-Based Resources. The full potential of parish nursing is limited because of its volunteer nature. Although parish nurses have some of the same community purposes as the UK's district nurses, most places of worship do not have the financial resources to provide significant funding for nurses, and while some congregations make space for on-site nursing services, many cannot afford to have designated rooms for parish nurses to conduct private meetings or examinations with parishioners.

Lessons and Challenges

While nurses have the potential to improve the effectiveness of health system within communities, they face several factors that inhibit their roles of nurses as intermediaries between providers, patients, families, and community institutions. These obstacles need to be addressed if

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68. Butler et al., "Hospitals as Hubs to Create Healthy Communities."

nurse intermediaries are to reach their full potential as intermediaries between patients, the health system, and community institutions. These obstacles include:

1. Information Silos: The Lack of Access to Data

Access to and sharing of information is critical for intermediaries to play their full role, but barriers to the availability and sharing of information impede nurses from functioning as intermediaries. As noted, privacy rules often make it difficult for nurses to act as liaisons for patients to other providers or community organizations. This is particularly true in the school context, where school nurses may have little or no access to a child's medical providers in that child's health care plan or to school performance information that may provide clues to an underlying health problem. Without a parent's permission, important information about medical encounters outside the school, such as the details of a child's emergency room visit, is typically unavailable to school nurses. Even when the school nurses receive parental permission and access to the child's pediatrician, for example, persuading the physician to share up-to-date information can be difficult.[69] In addition, school nurses commonly find it difficult or impossible to obtain crucial socio-environmental information, such as the student's housing and family conditions, that they need to be most helpful in identifying social determinants of a student's health condition.

Parish nurses face similar and often more frustrating data problems. Although trusted by parishioners, parish nurses cannot routinely obtain medical information on their parishioners from hospitals or physicians, which often makes it difficult for the nurses to provide prompt and effective services. Fortunately, many hospitals are trying to address this. Many hospitals now have parish nursing programs and are making efforts to better connect their own care with that provided by parish nurses. Washington Adventist Hospital in Maryland, for example, shares anonymized Chesapeake Regional Information System for our Patients (CRISP) data with congregations, providing them general health and demographic information for their area (such as high alcohol use). CRISP is a health information exchange (HIE) serving Maryland and the District of Columbia. These data help the congregations to better understand the patterns affecting their neighborhoods. WAH is hoping to introduce a protocol that will ask patients upon admission if they are part of a congregation, so the hospital can alert the appropriate parish nurse when their parishioner has been admitted and when they are about to be discharged. In addition to helping the parish nurses keep track of their parishioners, such sharing of information benefits hospitals as well by improving post-discharge care more effectively and, in the case of elderly discharged patients, reducing readmission penalties.

The challenge of obtaining and sharing nonmedical information, including socioeconomic and home environment factors, enervate a nurse's ability to address

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69. Andrews, "School Nurses' Role Expands with Access to Students' Online Health Records."

health issues that result from influences outside the clinical setting. Elsewhere, we have recommended a number of ways to improve data collection and sharing across sectors and with intermediaries.[70] For example

- Hospitals should consider designating certain nonhospital nurse intermediaries (such as school or parish nurses) as HIPAA-compliant, so that they become registered recipients of data and medical information under HIPAA regulations—essentially having privileges as hospital employees.

- The federal government, states, and cities should accelerate steps to establish "data warehouses," HIEs, and other forms of integrated data system so that nurses and other intermediaries can gain better access to data. Private philanthropy can also help by building up the capacity of local organizations, such as parish nurse programs and schools, to collect and manage data.

- Congress should review the HIPAA (health care) and FERPA (education) statutes to make it easier for intermediaries and partnerships (such as between a hospital and a school or parish nurse programs) to share information. The federal government's Office of the National Coordinator for Health Information Technology could also step up its guidance.

- Hospitals, school districts, unions, and nurse associations can provide greater guidance and training to nurses and their employers on their legal ability to share data; this would be a critical step to strengthen the role of nurses as key intermediaries. Slightly over half of schools (56.6 percent) have electronic record keeping of student visits to the school nurse.[71] Realizing the importance of shared data, schools and health systems are beginning to work together to ensure nurses and schools understand how this information can be used. For example, Delaware, which houses a nurse in each school, introduced Student Health Collaboration in 2011, a pilot program between the Nemours health system and the school nurses through the Delaware School Nurses Association and the Delaware Department of Education. Nemours families gave student nurses permission to access pediatricians' health care records for the children, and by 2014, Delaware school nurses had access to 1,500 student medical records. The pilot was so successful that Delaware has implemented it statewide. Nurses can now see recent information, such as lab results. The goal is to create a two-way loop that will allow nurses to update the health records as well.[72]

2. Professional Barriers

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70. Butler and Diaz, "Hospitals and Schools as Hubs for Building Healthy Communities."
71. HHS and CDC, "Results from the School Health Policies and Practices Study 2014."
72. Andrews, "School Nurses' Role Expands with Access to Students' Online Health Records."

Certain professional barriers, including scope-of-practice rules, also limit the role of nurses. For instance, such restrictions prevent nurse practitioners from practicing as independent leads in multidisciplinary care teams, thus blunting their ability to be the primary intermediaries between patients or communities and the wider health system.

Some barriers are simply due to professional culture, rather than regulatory. Given salary scales, historically limited educational paths, and hierarchical traditions in the health system, nurses are often not regarded by leaders in health institutions as equal and able partners to physicians. This cultural and professional barrier is often reinforced through organizational procedures. For instance, nurses often are not given the financial, academic, or institutional support to advance to a leadership role in the health care system. Limited in authority and autonomy in this way, many nurses are inhibited from playing a prominent role as a connector across the health care continuum and with patients in communities. Other barriers are more tangible, and need to be addressed with policy steps.

State Licensing Laws. State-based scope-of-practice laws regulate and limit the rights of registered nurses to prescribe and administer certain services without a physician's oversight. Many states have even restrict nurse practitioners, despite a "consensus model" recommended by the National Council of State Boards of Nursing and National Academy of Medicine, which recommends all states to unilaterally "license APRNs [advanced practice registered nurses] as independent practitioners with no regulatory requirements for collaboration, direction or supervision" with the authority to prescribe medication. Florida even bars nurse practitioners from prescribing medication under physician provision. Many registered nurses and nurse practitioners have been trying to obtain the right in their states to prescribe independently or at the very least under the supervision of a physician.

- States should review scope-of-practice rules and take steps to ease them, in line with the evidence that appropriately trained nurses can play a key role in coordinating services and treating patients. Fortunately, some states are beginning to recognize that scope-of-practice rules impede the ability of nurses to work closely with patients in the community. These states are taking steps to increase the rights of nurses under their scope-of-practice laws. For instance, Nevada expanded its scope-of-practice law in 2013 and has since seen a 36 percent increase in state-registered nurse practitioners and a significant increase in quality of care.

Training and Education Requirements. Improved education and training for nurses can open doors for nurses but it can also present barriers. As nurses seek broader skillsets to advance their careers, some states are raising their requirements on the qualifications for more elevated nursing roles. For instance, while restrictions on practice by nurse practitioners have declined over the past decade, some states have required higher levels of education to become a nurse

practitioner.[73] This has the advantage of improving their acceptance as leaders within the medical community, but limits the number and range of nurses who can qualify as intermediaries. Traditional nursing generally has required an associate's or bachelor's degree, but this is proving insufficient under new laws and the evolving complexity of nurse responsibilities. For example, all nurse leaders and managers in magnet hospitals must hold a bachelor of science in nursing (BSN) or higher, and by 2020 some 80 percent of all magnet hospital nursing staff must hold at least a BSN.[74]

Increases in educational requirements—such as acquiring degrees or certifications in public health—certainly would better equip nurses to function as intermediaries by gaining skills beyond traditional clinical training. According to Barbara Sverdlik, the skills of modern nurses must include "effective communication, human resource management, financial management, quality improvement and metrics, information management, strategic planning, and regulatory requirements."[75] To play a lead role, nurses require training to enable them to progress from regular clinical settings to broader community-based positions.[76] But it is also important to remember that raising educational requirements, like licensing, can end up becoming a barrier to entry for talented individuals and driving up costs; it is important that increased educational requirements are closely aligned to enhanced roles that will improve outcomes and value.

As training levels for nurses are raised in these ways, it will equip them better for leadership and intermediary roles. But it is important that such training produces more nurses who are indeed better able to identify and help address social determinants of health and have the skills to establish more effective partnerships with other sectors and community institutions.

- Nursing schools could help ensure nurses have the needed skills by including elective academic "rotations" with schools of social work and education. In this way nurses with an interest in a broader community role could obtain greater expertise in social programs, community dynamics, pedagogy, and so forth.

- Hospitals can support rotations or provide a less formal version by encouraging their graduate medical and public health student volunteers to assist with hospital-based partnerships focused on social determinants of health. Washington Adventist Hospital, for example, uses student volunteers to help run its partnership with SeedCo, a nonprofit organization that helps patients identify and sign up for social services and benefits for which they are eligible.[77]

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73. Gadbois et al., "Trends in State Regulation of Nurse Practitioners and Physician Assistants."
74. American Association of Colleges of Nursing, "The Impact of Education on Nursing Practice."
75. Sverdlik, "Who Will Be Our Nursing Leaders in the Future?"
76. George and Shocksnider, "Leaders."
77. Butler et al., "Hospitals as Hubs to Create Healthy Communities."

- Health systems can also take steps to help nurses obtain the skills they need to be effective intermediaries. For example, the Geisinger Health System in Pennsylvania has created a year-long Nurses Emerging as Leaders program to train nurses in leadership and appropriate skills so that they will be well equipped when higher positions open.[78]

3. Budgets and Payment Systems

For intermediaries such as nurses to be most effective they must be appropriately funded in line with the value they create within a community and for patients. That means public and private payment systems and budgets need to align to this goal. Regrettably, this is often not the case. For example, the impact of a school nurse or parish nurse straddles different sectors with usually separate budgets and payment procedures or sources of funding, such as the school system, a hospital, or a church. These different sectors or institutions, and their funders, are normally focused on their direct costs and benefits rather than the wider benefits an intermediary may create for other sectors and institutions. This wrong-pocket problem often leads to insufficient investment and flexibility in advancing health in communities through intersector activities and intermediaries.

A common example of the wrong-pocket problem is when school districts that employ school nurses respond to tightening school budgets by eliminating school nurse positions, even though the nurses create significant value in improved student and family health. For instance, the Philadelphia school district cut school nurse positions in 2011 due to a mounting budget shortfall in its education budget. By the end of the 2011–12 school year, the district had lost more than 100 school nurses, resulting in reports of medical errors and complaints of insufficient care for children with chronic diseases or intellectual disabilities who were legally required to receive school nursing management. According to a survey by the Education Law Center, a public interest law firm, approximately 70 percent of respondents reported that their children were now receiving medications and/or treatments by nonclinical school personnel.[79]

Reforms in payment models and more integrated budgets are needed to address perverse budget incentives and create a more appropriate financial system for nurses functioning as intermediaries. This is no easy task, but some steps would help:

- Within the health sector, action is needed to better align the remuneration of nurses functioning as intermediaries with the broader health-sector value they create. Currently, nurses are generally reimbursed at only 75–85 percent of what physicians receive from Medicaid and Medicare for similar services, despite research showing the equivalent value of care across both providers.[80] They sometimes receive more equitable

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78. West et al., "Evaluation of a Nurse Leadership Development Programme."
79. McInerney and McKlindon, "The School Nurse Shortage in Philadelphia."
80. Chapman et al., "Payment Regulations for Advanced Practice Nurses"; and Naylor and Kurtzman, "The Role of Nurse Practitioners in Reinventing Primary Care."

reimbursement if they administer the care while a physician is present.[81] The congressionally established Medicare Payment Advisory Commission (MedPAC) has conducted studies that found no basis for setting unequal payment rates for nurse reimbursement, yet laws and regulations have yet to reflect that finding.

- The multisector benefits of nurses are not well reflected in the budget and payment rules of the federal-state Medicaid program. For instance, although school nurses can often bill Medicaid for their services, billing issues can still often hamper school nurses and school-based health centers (SBHCs).[82] The federal government also needs to provide greater encouragement to states and school districts to support school-based health services, enabling school nurses to play a greater role in improving the health or students and their families.

- The federal government can also encourage hospitals and schools to make greater use of nurses as key intermediaries in local partnerships through the creative use of its community benefit rules and programs. For example, in issuing future guidance for Community Health Needs Assessments (CHNA), the Internal Revenue Service rules requiring nonprofit hospitals to explore ways of partnering with community organizations to improve their community's health. The federal government could encourage the use of nurses as intermediaries in working with community-based organizations.[83] Similarly, the Every Student Succeeds Act (ESSA), the 2015 statute governing federal K–12 programs, requires states and school districts to examine community conditions that may contribute to failing schools, such as chronic absenteeism and other problems known to often be related to underlying health and social conditions. Federal guidance for this ESSA provision could also encourage making greater use of nurses as intermediaries between schools, the community, and health services. In addition, the Centers for Medicare and Medicaid Services' new Accountable Health Communities Model seeks to encourage experiments in linking health services with social needs, such as food insecurity and unstable or adequate housing, to use money creatively to improve overall health.

- States and the federal government can also take steps to address wrong-pocket budget problems by encouraging agencies to plan together to serve certain populations, such as children or the elderly. About half the states, for instance, have established "children's cabinets,"[84] in which senior officials from different agencies meet to collaborate and coordinate budgets. In addition, the federal government can make it easier to braid or

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81. Ibid.
82. Price, "School-Centered Approaches to Improve Community Health."
83. Rosenbaum, "Hospitals as Community Hubs."
84. Forum for Youth Investment, "Children's Cabinet Network."

blend federal funds together through waivers that allow state and local governments to use funds more flexibly to invest in cross-sector initiatives that are currently underfunded. The federal government, for instance, has been using its waiver authority to explore ways to permit more closely coordinating different income streams, such as for Medicare and housing, to achieve better health for the elderly.

- These misaligned payment systems affecting nurses underscore the general problem of fee-for-service payments and the importance of transitioning towards capitated, managed care approaches, which allow greater flexibility in both the use of and payment for professional services. Medicaid Managed Care Organizations and similar plans have more incentive to make more use of nurses to organize or provide "connective tissue" services to achieve better patient results at lower per-patient cost.

Conclusion

Our understanding of the connection between social conditions and health is growing. We are also learning that an effective health system requires teams that not only coordinate medical services but also do a much better job in connecting patients with supports in their community. That requires making greater use of intermediaries who can work more directly and consistently with individuals and who have the flexibility and connections to link individuals with medical and other services.

As we point out in this report, nurses have enormous potential to function as key intermediaries; many are doing so already, and the training and responsibilities of nursing specialties increasingly recognizes this role. But much more needs to be done to empower nurses as intermediaries by addressing data concerns, strengthening the training and professional roles of nurses, and aligning budget strategies.

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