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Bruce A. Leff MD

Lynn H. Spragens

Barbara Morano MSW, LCW, LCSW

Jennifer Powell

Terri Bickert MSN, RN

See next page for additional authors

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Authors

Bruce A. Leff MD; Lynn H. Spragens; Barbara Morano MSW, LCW, LCSW; Jennifer Powell; Terri Bickert MSN, RN; Christy Bond FACHE; Peter A. DeGolia; Michael L. Malone MD; Catherine M. Glew BM, BS, CMD; Sindy McCrystle ANP-C, MSN; Kyle R. Allen DO; and Albert L. Siu MD, MSPH

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By Bruce Leff, Lynn H. Spragens, Barbara Morano, Jennifer Powell, Terri Bickert, Christy Bond, Peter DeGolia, Michael Malone, Catherine Glew, Sindy McCrystle, Kyle Allen, and Albert L. Siu

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INNOVATION PROFILE

Rapid Reengineering Of Acute Medical Care For Medicare Beneficiaries: The Medicare Innovations Collaborative

Bruce Leff (bleff@jhmi.edu) is a professor of medicine at the Johns Hopkins University School of Medicine, in Baltimore, Maryland.

Lynn H. Spragens is president of Spragens and Associates, in Durham, North Carolina.

Barbara Morano is a program manager in the Department of Geriatrics and Palliative Medicine, Mount Sinai School of Medicine, in New York City.

Jennifer Powell is a health care consultant at Powell and Associates, in Chapel Hill, North Carolina.

Terri Bickert is associate vice president, nursing, at Geisinger Medical Center, in Danville, Pennsylvania.

Christy Bond is the founding director of the aging and complex care service line at Crouse Hospital, in Syracuse, New York.

Peter DeGolia is the Jack H. Medalie Endowed Professor in Home-Centered Health Care, Department of Family Medicine, Case Western Reserve University School of Medicine, and director of the Center for Geriatric Medicine, University Hospitals Case Medical Center, in Cleveland, Ohio.

Michael Malone is a professor of medicine at the University of Wisconsin School of Medicine and Public Health, in Milwaukee.

ABSTRACT In 2009 we described a geriatric service line or "portfolio" model of acute care–based models to improve care and reduce costs for high-cost Medicare beneficiaries with multiple chronic conditions. In this article we report the early results of the Medicare Innovations Collaborative, a collaborative program of technical assistance and peer-to-peer exchange to promote the simultaneous adoption of multiple complex care models by hospitals and health systems. We found that organizations did in fact adopt and implement multiple complex care models simultaneously; that these care models were appropriately integrated and adapted so as to enhance their adoptability within the hospital or health care system; and that these processes occurred rapidly, in less than one year. Members indicated that the perceived prestige of participation in the collaborative helped create incentives for change among their systems' leaders and was one of the top two reasons for success. The Medicare Innovations Collaborative approach can serve as a model for health service delivery change, ultimately expanding beyond the acute care setting and into the community and often neglected postacute and long-term care arenas to redesign care for high-cost Medicare beneficiaries.

There is wide recognition of the importance of improving systems of care delivery for Medicare beneficiaries. Under the Affordable Care Act of 2010, new approaches to the organization of health service delivery and payment are emerging.

One new approach is shared-savings mechanisms under accountable care organizations (section 3022). Another approach is Independence at Home (section 3024), a shared-savings mechanism that gives interdisciplinary care teams incentives to use a home-based primary care and medical house call model to provide care to Medicare's most frail patients with the most complex illnesses. Bundled payment and nonreimbursement for readmissions and for so-called never events—actions such as wrong-site surgery for which Medicare denies payment—will also help drive health service delivery change over the coming years.

Another key provision of the Affordable Care Act that has major implications for systemwide change—and that is particularly important for care delivery to older Americans—is the establishment of the Center for Medicare and Medicaid Innovation. The center is charged with testing innovative payment and service delivery

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models to improve health and health care and reduce health care costs.[1] Under the law, a variety of models may be tested. The center will rely largely on payment changes and other economic incentives to promote improvements in care delivery.

Innovative responses to the center's initiatives are likely to employ or build on evidence-based care models developed over the past two decades to improve the care of hospitalized older people with chronic illnesses. Numerous good models have been developed and studied, yet their implementation has been limited.[2]

In the context of developing successful strategies for the dissemination of care models, it is important to recognize that the highly controlled and restrictive conditions inherent in clinical research and necessary to study a care model differ greatly from the conditions under which it will be implemented more broadly.

Previously, we argued that from both a clinical and a business standpoint, there are compelling reasons to combine certain care models into a senior service line or geriatric "portfolio" model.[3] In this paper we address issues that arise when moving from research to the implementation and dissemination of care models in real-world clinical settings. We do so by reporting the early experiences of six health care organizations that participated in the Medicare Innovations Collaborative (http://www.med-ic.org), a private-sector initiative to implement a portfolio of geriatric service models into hospitals and health care systems.

Successful innovation in health service delivery will require greater understanding of how clinical service delivery models can be adopted, integrated into existing systems, implemented pragmatically, and more widely disseminated. Although payment reform is critical to inducing such innovation, there is also a strong need to develop and understand effective approaches to technical assistance in program implementation.

The work of the collaborative is particularly relevant to current policy discussions because it focuses on delivery system redesign for high-cost Medicare beneficiaries. Furthermore, it demonstrates how a hospital's expertise and resources can be applied in practice to rapidly re-engineer delivery systems to care for the most complex Medicare beneficiaries and deliver economic, safety, and quality benefits to the health system.

Background

In 2007 the Atlantic Philanthropies funded a project to develop a strategy and implementation plan for a national technical assistance program to improve access to, and effectiveness of, geriatric care in the United States. The major objectives of this effort were to identify effective care models to disseminate; define a menu of technical assistance activities, tools, and delivery methods; define organizational, structural, and functional needs to carry out the work of technical assistance; and create a business plan to develop a center to carry out the work. In the pre–health care reform environment, the plan was to achieve these goals under then-current payment models within ten years.

This geriatrics improvement effort was led by authors Albert Siu and Bruce Leff, with business strategic consulting provided by Lynn Spragens, quality improvement consulting provided by Jennifer Powell, and program management by Barbara Morano, also authors of this paper. This leadership team conducted an extensive review of the literature in the areas of geriatric health service delivery models and the integration, dissemination, and implementation of care models.

In addition, the team conducted more than thirty stakeholder interviews around the United States with geriatricians, innovators, nurses, social workers, health care consultants, payers, health care executives, hospitalists, health system leaders, and representatives of key physician organizations.

The result of this process was the development of the concept to focus on improving inpatient hospital and transitional care as a vehicle to embed geriatrics more broadly into the health care system, over time, using a geriatric service line or "portfolio" model. This portfolio would consist of several evidence-based health service delivery models implemented simultaneously, as described below, to improve care for older adults with complex chronic illnesses.

The new national technical assistance center for geriatric care was to be patterned after the Center to Advance Palliative Care, which had widely implemented hospital-based palliative care using a robust program of technical assistance, business-case development, and social marketing.

Initially, the team focused on the development of a freestanding center to provide technical assistance and consultative support to hospitals and health systems. However, in late 2008 the team shifted its focus from the development of a physical center to real-time experimentation with interested hospitals and health systems that had the capacity to implement the portfolio model. The result of this shift in focus was the creation of the Medicare Innovations Collaborative.

Catherine Glew is chief of geriatric medicine at Lehigh Valley Health Network, in Allentown, Pennsylvania.

Sindy McCrystle is director of the Division of Aging, Department of Family Medicine, at Carolinas HealthCare, in Charlotte, and an assistant professor of family medicine at the University of North Carolina, Chapel Hill.

Kyle Allen is medical director, geriatric medicine and lifelong health, at Riverside Health System, in Newport News, Virginia.

Albert L. Siu is the Ellen and Howard Katz Chairman and Professor in the Brookdale Department of Geriatrics, Mount Sinai School of Medicine and the James J. Peters Veterans Affairs Medical Center, in New York City.

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The Medicare Innovations Collaborative

As noted, the Medicare Innovations Collaborative was developed to facilitate hospitals' adoption and integration of a portfolio of evidence-based models of geriatric care. The goals were to improve the safety and quality of care and to reduce overall health care spending. The theory guiding the collaborative's leadership team was that models of care could be implemented as a portfolio of senior services and that service bundling would be more effective, from both clinical and economic standpoints, than the piecemeal adoption of individual models.[3]

A portfolio approach more closely matches the service-line design and affects a sufficient critical mass of patients to justify investment and senior management attention. This service line would implement evidence-based programs to keep people out of the hospital who might be able to receive acute hospital–level care services at home. The service line would also combine known models of care to effectively and efficiently care for patients with complex chronic illnesses who need hospital admission and to transition patients out of the hospital.

Each of the component models described below has demonstrated savings. Thus, it was reasonable to expect that a portfolio approach would have at least a similar savings impact. Absent any changes in payment, the business case for the adoption of the models could be made on the basis of reductions in cost per case, lengths-of-stay, and readmissions.

GERIATRIC PORTFOLIO MODELS The Medicare Innovations Collaborative focused on a portfolio that included six geriatric service models, most of which were developed and tested beginning in the 1990s.

The Nurses Improving Care to Healthsystem Elders model is a program providing principles and educational modules with clinical and organizational tools to support a systematic change in the culture of health care facilities. The goal is to achieve patient-centered care for hospitalized older adult patients, with oversight by a nursing team.[4]

The Acute Care for Elders model combines geriatric assessment, quality improvement, a specially designed hospital environment (the Acute Care for Elders Unit), interdisciplinary team rounds, medical care review, and comprehensive discharge planning. The goal is to help hospitalized older adults maintain or achieve functional independence in basic activities of daily living.[5]

The Hospital Elder Life Program model is designed to prevent delirium among hospitalized older patients. The program uses lay volunteers to prevent delirium by keeping hospitalized older patients oriented to their surroundings; meeting their needs for nutrition, fluids, and sleep; and keeping them mobile within the limits of their physical condition.[6]

The palliative care consultation model targets hospitalized older adults with life-limiting illnesses. By focusing on establishing patient-centered goals of care and symptom relief, the model helps patients avoid unwanted medical interventions, improves quality of care, and reduces costs.[7]

The Care Transitions Intervention model provides patients with a transition "coach" who helps patients learn self-management skills important for people with chronic illnesses, to facilitate effective transition from hospital to home.[8]

The Hospital at Home® model provides acute hospital–level care in a patient's home to substitute for acute hospital care. Patients receive physician and nursing care and diagnostic and therapeutic interventions usually provided in the hospital, commensurate with their illness severity.[9]

STRUCTURE AND SELECTING PARTICIPANTS The Medicare Innovations Collaborative consisted of the leadership team and consultants who had developed each of the individual models in the portfolio. In August 2009 we invited forty hospitals and health systems to apply for membership in the collaborative. These organizations were chosen because they had demonstrated a readiness to develop a geriatric service line by having already implemented at least one of the portfolio models. Fourteen organizations responded.

Applicants were required to commit only to planning the implementation of at least one additional portfolio model. Except for a very limited amount of funding for training, organizations did not receive any direct funding to participate in the collaborative. Member organizations were offered the opportunity to participate with the collaborative's faculty and experts who developed the portfolio models in a collaborative program that was intended to facilitate exchange of knowledge and best practices relative to the portfolio model.

In September 2009 the Medicare Innovations Collaborative chose six organizations to join the initiative: Aurora Health Care; Carolinas HealthCare System; Crouse Hospital; Geisinger Health System; Lehigh Valley Health Network; and University Hospitals Case Medical Center.

GETTING STARTED A Medicare Innovations Collaborative kickoff meeting was held in November 2009. Each organization was represented by a senior administrative sponsor, a

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clinical director, and one or more geriatric program representatives. The meeting focused on understanding each organization's goal for its efforts in the collaborative; engaging senior leaders to build the will to change health service delivery; developing an understanding of the collaborative approach to change; identifying and agreeing upon principles of working together; and identifying a starting point for each organization using one conceptual model.[10] Themes that emerged from the meeting were assigned to newly formed working groups, and initial working plans for each organization were established.

Following the kickoff meeting, the Medicare Innovations Collaborative leadership team worked with the six organizations to plan to implement one or more additional geriatric service models per organization. Technical assistance was customized to each organization and included access to experts who had developed the models. Coaching support for business planning, marketing and communication, staff and delivery models, and collaborative system change were also provided. The collaborative leadership team and the experts who had developed the models helped member organizations obtain the technical information they needed during testing and implementation.

LEARNING TOOLS The collaborative featured a combination of learning strategies to implement the geriatric service models, identify technology solutions, identify clinical decision support tools and resources, and engage senior leaders. The learning methods included webinars, conference calls averaging three per month with all organizations, site visits for training, and in-person meetings. (For a more detailed discussion, see the online Appendix.)[11]

SHARED OUTCOME MEASURES As the geriatric service models were being implemented at participating hospitals and health systems, the collaborative developed a set of shared outcome measures for the portfolio. Candidate measures were collected, and member organizations rated the outcome measures on their importance to patient care, model sustainability, and measurability. Using a consensus approach, organization leaders at each site chose the outcome measures deemed to be most important for future use by the collaborative.

LIMITATIONS There are limitations to our work. The successful adoption of geriatric service models occurred among organizations that were highly motivated to participate as early adopters of this initiative. We believe that our collaborative model approach would be effective in most health systems. However, those that are not early adopters may require more intensive technical assistance and longer start-up times.

Also, we did not study implementation in the context of a classic controlled study. However, in the context of studying implementation of multiple models at disparate organizations, our methods are reasonable.[12]

Finally, we do not report on traditional outcome measures here. The goal for the phase of the Medicare Innovations Collaborative documented here was to help organizations evaluate the geriatric service models and to implement those models, rather than to study the post-implementation results.

Study Findings

BASIC CHARACTERISTICS Collaborative organizations varied in composition from a solo hospital (Crouse) to hospitals that owned or operated skilled nursing facilities, hospice, and a home health agency (Lehigh Valley) (Exhibit 1). All organizations were operating at between 59 percent and 84 percent of inpatient capacity for acute care beds. Medicare discharges as a percentage of annual discharges ranged from 24 percent to 46 percent, compared with a national average of 37 percent.[13]

PORTFOLIO MODELS Exhibit 2 provides additional description of the participating organizations and depicts the geriatric service models that each organization had in place before the work of the Medicare Innovations Collaborative commenced and the portfolio models implemented or greatly expanded as a result of their participation in the initiative.

Most implementation and expansion of geriatric service models occurred during the first six to eight months of the collaborative's start-up. Prior to joining the collaborative, only one organization had a Nurses Improving Care to Healthsystem Elders model in place. Upon more detailed exposure to this model, all remaining organizations chose to implement it.

Two organizations had a Care Transitions Intervention model in place before joining the collaborative, and all remaining organizations chose to implement that model. Two organizations chose to implement the Acute Care for Elders model, and two organizations expanded it as part of the collaborative process. No organizations chose to implement Hospital at Home, so it is not shown in Exhibit 2. Exhibit 3 provides additional details about how the member organizations implemented and adapted the geriatric models to fit local circumstances.

ADAPTING THE MODELS Fueled by insights gained from the Medicare Innovations Collaborative leadership team and its activities, member organizations made substantial adaptations as

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EXHIBIT 1

Characteristics Of The Medicare Innovations Collaborative Organizations, 2008

	Aurora	Carolinas	Crouse	Geisinger	Lehigh Valley	Case
Number of staffed inpatient beds	235	167	440	397	783	775
Occupancy rate for acute care beds (percent)	60	59	67	84	81	77
Number of annual discharges	12,404	6,971	24,008	22,618	43,868	39,785
Medicare discharges as percent of total annual discharges	24	46	26	26	46	31
Percent of total discharges that are capitated or have significant "risk sharing"	< 5	0	0	26	0	0
Average length-of-stay (days) for Medicare patients	4.7	5.7	5.7	5.6	5.6	6.2
Percent of all admissions to acute care from emergency department that are Medicare	40	57	51	32	44	38
Hospital operates a skilled nursing facility	No	Yes	No	No	Yes	Yes
Hospital operates a hospice	Yes	No	No	Yes	Yes	No
Hospital operates a home care agency	Yes	Yes	No	Yes	Yes	Yes

SOURCE Authors' analysis. **NOTES** Aurora is Aurora Health Care. Carolinas is Carolinas HealthCare System. Crouse is Crouse Hospital. Geisinger is Geisinger Health System. Lehigh Valley is Lehigh Valley Health Network. Case is University Hospitals Case Medical Center. A more detailed version of this exhibit is available in the online Appendix; see Note 11 in text.

they integrated geriatric service models into their existing institutions.

Crouse functionally integrated its Acute Care for Elders model and Hospital Elder Life Program and linked them to its palliative care and care transitions programs using Nurses Improving Care to Healthsystem Elders as a foundation. Both the Acute Care for Elders model and the Hospital Elder Life Program rely on interdisciplinary team care and best-practice protocols. Thus, Crouse postulated that one interdisciplinary team could implement a program that combined both geriatric service models.

Patients followed by this team received clinical care recommendations by staff members in geriatrics and general medicine, nursing, physical therapy, pharmacy, care coordination, social work, respiratory therapy, and clinical dietary. Crouse's Hospital Elder Life Program coordinator attended rounds and ensured that patients were visited by volunteers who implemented the program's protocols. Patients with palliative care needs were linked to and then seen by the palliative care consult team. The team

EXHIBIT 2

Organization Description And Portfolio Model Implementation At The Medicare Innovations Collaborative Organizations

		Models in the portfolio				
Organization	**Description of organization**	**NICHE**	**Pall. care**	**Care trans.**	**ACE**	**HELP**
Aurora	Nonprofit network comprising 15 hospitals, more than 1,400 physicians, 150 clinics, and home care/home hospice agency.	[green]	[blue]	[blue]	[blue]	
Carolinas	Third-largest nonprofit public system in US with 30 hospitals. CMC-Mercy, a teaching hospital, served as a pilot site.	[green]	[blue]	[green]	[green]	
Crouse	Nonprofit freestanding community teaching hospital, 479 staffed beds. Operates in fee-for-service market.	[yellow]	[yellow]	[blue]	[green]	[yellow]
Geisinger	Integrated health system with 4 hospitals, more than 55 community sites, and 3 outpatient facilities.	[green]	[blue]	[blue]		
Lehigh Valley	Not-for-profit academic community-based system: 3 hospitals, self-funded employee insurance plan.	[green]	[blue]	[green]		
Case	Urban academic medical center, 4 on-campus hospitals plus several community hospitals. Reimbursement chiefly fee-for-service.	[blue]	[blue]	[green]	[blue]	

- (green) Model added de novo as part of the collaborative process
- (yellow) Model in use prior to the collaborative and not expanded
- (blue) Model in use prior to the collaborative and expanded greatly as part of the collaborative process

SOURCE Authors' analysis. **NOTES** Aurora is Aurora Health Care. Carolinas is Carolinas HealthCare System. Crouse is Crouse Hospital. Geisinger is Geisinger Health System. Lehigh Valley is Lehigh Valley Health Network. Case is University Hospitals Case Medical Center. NICHE is Nurses Improving Care to Healthsystem Elders. Pall. care is palliative care consultation. Care trans. is Care Transitions Intervention. ACE is Acute Care for Elders. HELP is Hospital Elder Life Program.

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identified patients' care transition needs and implemented the Care Transitions Intervention model for patients at the time of hospital discharge. The Nurses Improving Care to Healthsystem Elders tool kit provided the Crouse team with best-practice education, assessments, and protocols.

In two organizations, the Nurses Improving Care to Healthsystem Elders model was extended into care venues outside the hospital, even though the model had been developed solely with an acute care hospital nursing focus. Case extended Nurses Improving Care to Healthsystem Elders into its affiliated long-term care facilities. Aurora extended the program into its long-term care facilities and primary care practices. These expansions helped break down barriers across silos of care and provider types, thus helping in care transitions.

Implementation of the geriatric service portfolio provided a stimulus to transfer concepts and tools across clinical disciplines and build shared initiatives across sites of care. Carolinas created an interdisciplinary task force that adopted a common vision, mission, and goals for the geriatric service portfolio approach, fostering communication and collaboration across disciplines.

Several organizations noted that the educational and decision tools, although developed for one care setting or discipline, were easily used with others. The consistency of training was also cited as aiding in the development of continuity and teamwork.

DEVELOPMENT AND EXCHANGE OF CLINICAL TOOLS Medicare Innovations Collaborative members identified the need to develop or improve current versions of clinical tools to increase the effectiveness of the geriatric service portfolio (Exhibit 3). All organizations were interested in comparing and sharing, where possible, their approaches to integrating geriatric service models into their electronic health records.

Aurora, which had previously developed an Acute Care for Elders Tracker tool,[14] developed a readmission risk assessment tool that it embedded into that tracker tool. All sites adopted features and concepts from the Acute Care for Elders tracker. Considerable effort was put into developing a real-time tool that could identify appropriate hospitalized patients and direct them to a suitable geriatric service portfolio model while also identifying a patient's risk of hospital readmission.

Crouse extracted elements from its electronic

EXHIBIT 3

Additional Details On Model Implementations And Adaptations Made To The Care Models In The Medicare Innovations Collaborative

Organization	Model implementations and adaptations made to the care models
Aurora Health Care	ACE disseminated broadly, increasing from 32 to 43 programs. Deployed ACE Tracker software within the electronic health record. NICHE expanded to include ACE teams, primary care, and Visiting Nurse Association, and in system-affiliated skilled nursing facilities.
Carolinas HealthCare System	Initiated Steering Committee to guide collaborative efforts. Created "geriatric liaison role" encompassing NICHE, ACE, and palliative care. Developed risk stratification tool for NICHE/ACE—pulls key data from electronic health record admission assessments. Developed report card to assess "return on investment." Developing plans to roll collaborative out across 23-hospital system.
Crouse Hospital	Traveling ACE team throughout medical-surgical units. Used NICHE, HELP, Care Transitions Intervention, and palliative care to provide infrastructure to support ACE team. Patients seen by ACE team are all enrolled in HELP; appropriate ACE patients receive palliative care consults and care transitions.
Geisinger Health System	Systemwide geriatric initiative launched. Expanded palliative care consultation process. Established NICHE at multiple nursing units. Virtual ACE process with electronic health record planned.
Lehigh Valley Health Network	NICHE implemented in 5 units, including hospital-owned skilled nursing facility; implementation plan for network developed. Care transitions program extended to hospital-owned skilled nursing facility.
University Hospitals Case Medical Center	Extended ACE to 2 community hospitals. Took NICHE training modules and added long-term care-relevant teaching, integrated hospital-based nurses with long-term care facility-based nurses. Expanded NICHE to 3 community hospitals, 11 community nursing facilities, and a home health program.

SOURCE Authors' analysis. **NOTES** ACE is Acute Care for Elders. NICHE is Nurses Improving Care to Healthsystem Elders. HELP is Hospital Elder Life Program. A more detailed version of this exhibit is available in the online Appendix; see Note 11 in text.

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health record nursing assessments into a report used to identify appropriate patients for review in real time for each geriatric service portfolio model.

At Carolinas, an information technology team developed a risk stratification tool for hospitalized older adults and embedded it into the electronic health record (Cerner type), using standard nursing admission assessment data. The Carolinas health record tool allowed daily reports to be generated for Nurses Improving Care to Healthsystem Elders and Acute Care for Elders interdisciplinary rounds to guide care decisions and discharge planning.

FACTORS FACILITATING SUCCESS To increase understanding of the factors associated with success of the collaborative process, representatives of participating organizations were asked to review a menu of fifteen components and rank the five they felt were most important to the collaborative's success.

Five of the six member organizations indicated that the ability to use the perceived prestige of participation in the collaborative as leverage with their systems' leadership was among the top two reasons for the initiative's success. Five organizations also cited the ability to engage with the collaborative leadership team and consultant experts as among the top reasons for success.

Four organizations identified the collaborative kickoff meeting and the regularly scheduled conference calls as among the five most important factors facilitating success. Three organizations identified healthy competition to succeed between the collaborative organizations as among those five factors.

DEVELOPMENT OF SHARED OUTCOME MEASURES To identify possible outcome measures for the geriatric service model portfolio, collaborative member organizations reviewed and ranked seventy-seven possible outcome measures. Their rankings were based on overall importance to patient care and the sustainability of the geriatric service model, as well as measurability.

The member organizations agreed on a set of five top-priority outcome measures that they will use going forward. The outcome measures, for patients age sixty-five or older, were as follows: reduction in the thirty-day hospital readmission rate for patients, versus baseline period; reduction in the average length-of-stay, versus baseline period; improvement in patient satisfaction with care using the Consumer Assessment of Healthcare Providers and Systems survey; number of patients served, by organization and service in the portfolio models; and reduction in care costs, such as cost avoidance.

This process resulted in a more streamlined list of higher-level outcomes than was available from the prior measures used to evaluate each individual geriatric portfolio model by the adopting organizations.

Discussion

In this article we have described the purpose, process, and implementation effectiveness of the Medicare Innovations Collaborative for the rapid adoption of a geriatric service portfolio model. The clinical models included in the portfolio had all been developed using rigorous, evidence-based processes. We found that a collaborative approach bundled with direct technical assistance promoted the rapid adoption of multiple complex care models in less than one year.

FACTORS INFLUENCING ADOPTION Development and implementation of new health service delivery models depend greatly on the local health care environment. What might make sense in one organization might not elsewhere because of the local practice culture, local market issues, and existing programs. The most commonly adopted geriatric service models by Medicare Innovations Collaborative organizations were Nurses Improving Care to Healthsystem Elders, hospital-based palliative care, and Care Transitions Intervention.

Nurses Improving Care to Healthsystem Elders, with its emphasis on developing geriatric-appropriate nursing practices throughout a hospital environment, was seen as a model on which organizations could build a foundation to improve a hospital's culture of quality and safety of inpatient care for older adults. This model facilitates more-effective communication and collaboration in the care of elders, to stimulate changes in the culture of health care facilities with the goal of providing patient-centered care.

Organizations adopted hospital-based palliative care as a way to deliver patient-centered care to patients with life-limiting illnesses and to reduce medical costs. The Care Transitions Intervention model was viewed by collaborative organizations as a way to improve care and meet the needs of stakeholders focused on reducing hospital readmissions.

In this early phase of geriatric service-line development, neither the Hospital Elder Life Program nor Hospital at Home was newly adopted by any of the organizations. All organizations incorporated some of the Hospital Elder Life Program's principles for reducing delirium into other design work. Also, several organizations were interested in adopting Hospital at Home because of its proven clinical benefits and cost reductions.

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Organizations learned from each other and reduced adoption time and costs through structured support and voluntary exchange.

In this early stage of development, though, none of the Medicare Innovations Collaborative organizations implemented Hospital at Home, perhaps because it is complex and there is no payment mechanism for it in fee-for-service Medicare.

Technical assistance is important for program implementation because it makes critical implementation steps clear, accessible, and credible. Our experience suggests that the form of technical assistance is critical.

Our ability to link organizations to the experts who developed geriatric service models, to model-specific training, and to ongoing technical assistance was important in achieving implementation. Organizations learned from each other and reduced adoption time and costs through structured support and voluntary exchange.

Even for programs with established protocols, models need to be adapted, and adherence to the original specifications of the portfolio models detailed in the research literature—that is, model fidelity—may need to be loosened. For example, care models that can be implemented within a single department or unit will be more easily adopted; conversely, models that require major cultural change or resources are less likely to be adopted easily and are likely to require more technical assistance.

MODEL FIDELITY Issues of model fidelity were considerable both at the level of the individual geriatric service models and at the portfolio level. Each individual model had been found efficacious in research studies with carefully defined criteria for patient inclusion and exclusion. Such criteria are often difficult to operationalize outside of a research setting.

For example, some models in their research phase may have excluded patients with advanced illnesses because of theories regarding appropriate targeting or in an effort to maximize measured efficacy. In real-world implementations, strict fidelity to such criteria may be impractical, unwarranted, or both. This phenomenon has been noted previously in the implementation of the Hospital Elder Life Program across multiple units in a hospital.[15]

Effective implementation may necessitate broader inclusion criteria to screen patients effectively, to provide services consistently across hospital units, or to achieve economies of scale. In addition, the development and deployment of effective clinical tools, such as the Acute Care for Elders tracker, can help minimize the effort needed to identify appropriate patients for portfolio models in real time.

Finally, we observed that the disciplinary origin of a model, as a product of either nursing research or physician research, can greatly affect its adoption pattern. For example, Nurses Improving Care to Healthsystem Elders, a nurse-based and -originated model, is disseminated through nursing channels of communication, journals, and meetings. At the kickoff meeting, several physicians were exposed to the model for the first time. Their immediate reaction was that this model was "foundational" because of its ability to improve a hospital's culture of quality and safety of inpatient care for older adults, and that it would support the models they were more familiar with, such as palliative care and Acute Care for Elders Units.

The Medicare Innovations Collaborative's experience with Nurses Improving Care to Healthsystem Elders suggests that such deliberate cross-discipline exposure accelerates adoption and maximizes synthesis across models. One of the strengths of our approach was the inclusion of multidisciplinary planning teams mixing leadership roles of physicians, nurses, and administrators.

A different type of fidelity issue arose at the portfolio level. Before the Medicare Innovations Collaborative began, each geriatric service portfolio model was conceived, developed, and evaluated separately. Each was disseminated and adopted independently and in parallel.

However, even at the collaborative's kickoff meeting, it was clear to the leadership team and the member organizations that the geriatric service models overlapped and that synergies between models argued for their blending. For example, in implementing Acute Care for Elders, it made sense to incorporate elements of the Hospital Elder Life Program and Care Transitions Intervention. The Acute Care for Elders model's focus on improved functional outcomes during hospitalization is closely aligned and overlaps with the Hospital Elder Life Program's

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focus on delirium prevention and the Care Transitions Intervention's goal of successful hospital discharge. All achieve their goals in slightly different yet complementary ways.

Thus, we argue for adapting models to incorporate features that other models have shown to be effective in order to create a geriatric service line whose whole is greater than the sum of its parts. This can be achieved by bringing models together that share goals, values, and staff with similar training. For instance, in future iterations of the geriatric service portfolio, palliative care services could combine forces with Hospital at Home and care transitions programs for the segment of the population with advanced illness for whom hospice care is not appropriate but who may be too ill to meet the participation criteria of some transition models.

Such adaptation is critical to the pragmatic design of reliable systems of care. However, innovations will also require ongoing evaluation and the development of shared outcome measures. It is important to balance, on the one hand, model fidelity that helps ensure safe and effective care with, on the other hand, flexibility that acknowledges the variations in and the evolution of medical practice over time.

Policy Implications

In 2011 the Center for Medicare and Medicaid Innovation launched its Partnership for Patients program, designed to reduce inpatient harm and hospital readmissions for Medicare beneficiaries. In its solicitation for this program, the innovation center invited contractors to work with a group of hospitals to achieve improvement on a set of ten prespecified outcomes, including adverse drug events and catheter-associated urinary tract infections. Participating hospitals will need to specify an intention to improve performance on at least seven of these ten outcomes.

Partnership for Patients specifies outcomes and relies on Hospital Engagement Contractors to develop programs of technical assistance. The Medicare Innovations Collaborative, in contrast, focuses on systems of care that can affect multiple important outcomes and provides technical assistance that is specific to the clinical service delivery model. Such an approach could strengthen the change efforts of the Partnership for Patients and could result in more sustainable results while avoiding one-off "solutions" focused on narrow outcomes.

With the exception of hospital readmissions, none of the Partnership for Patients outcomes was on the list of selected collaborativewide outcome measures. Many of the Partnership for Patients outcome measures were of interest to individual collaborative organizations but did not make it to the common list of outcome measures because of challenges in measurability or the lack of importance of the outcome to multiple stakeholders at an organization.

With regard to the more recent Innovation Challenge Grant Program sponsored by the innovation center, we believe that the collaborative can serve as a model for health service delivery change. It can form the basis for a model that can expand beyond the acute care setting and into the community and often neglected postacute and long-term care arenas.

Strengths Of The Collaborative's Approach

The Medicare Innovations Collaborative approach has several strengths.

First, we studied the simultaneous adoption and implementation of multiple geriatric service models in hospitals and health systems of various types and sizes in varied geographic locations, thus improving the generalizability of our results.

Second, the collaborative provided no external funding incentives. This suggests that there are health systems that understand the importance of innovation to improve the care of patients and are capable of change and willing to achieve it.

Third, we demonstrated the value of a collaborative model and focused technical assistance for the rapid implementation of complex clinical service delivery models.

Finally, we identified five outcome measures likely to be affected by the portfolio of geriatric service models. This approach combined direct exposure to model experts with peer-to-peer exchange and support. The rapid exchange among motivated team members across disciplines and organizations was an important contributor to success.

Next Steps

The Medicare Innovations Collaborative was conceived and implemented successfully in the pre–Affordable Care Act payment environment, in which payment models for acute care offered no economic incentive to incorporate aspects of ambulatory or postacute care. The geriatric service models included in the collaborative portfolio thus were focused on acute care, targeting high-cost Medicare beneficiaries with multiple chronic conditions.

Moving forward in an environment in which incentives to provide value-based care will exist—such as accountable care organizations, patient-centered medical homes, and bundled

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payments—we are focusing on opportunities for the collaborative organizations to expand the geriatric service portfolio approach beyond the hospital and to include the postacute and ambulatory realms. Our goal is to spread the Medicare Innovations Collaborative model to other hospitals within the participating organizations' health systems and to additional hospitals and health systems around the United States.

Conclusion

Efforts to reform health care have underemphasized bringing about changes in care processes and adoption and implementation of new models of care for Medicare beneficiaries with multiple chronic conditions who currently experience suboptimal care and incur particularly high costs. The Medicare Innovations Collaborative approach reduced barriers to the simultaneous adoption of multiple complex health service delivery models, creating a unique geriatric portfolio at each participating institution.

The collaborative process increased the expected potential for impact on financial and clinical outcomes and senior leadership engagement, while it permitted rapid, comprehensive model adaptation, integration, and implementation. We expect to report on clinical and financial outcomes in the near future. ■

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NOTES

1 Center for Medicare and Medicaid Innovation [home page on the Internet]. Baltimore (MD): Centers for Medicare and Medicaid Services; [cited 2012 Apr 3]. Available from: http://innovations.cms.gov/
2 Boult C, Green AF, Boult LB, Pacala JT, Snyder C, Leff B. Successful models of comprehensive care for older adults with chronic conditions: evidence for the Institute of Medicine's "retooling for an aging America" report. J Am Geriatr Soc. 2009;57(12):2328–37.
3 Siu AL, Spragens LH, Inouye SK, Morrison RS, Leff B. The ironic business case for chronic care in the acute care setting. Health Aff (Millwood). 2009;28(1):113–25.
4 Mezey M, Kobayashi M, Grossman S, Firpo A, Fulmer T, Mitty E. Nurses Improving Care to Health System Elders (NICHE): implementation of best practice models. J Nurs Adm. 2004;34(10):451–7.
5 Landefeld CS, Palmer RM, Kresevic DM, Fortinsky RH, Kowal J. A randomized trial of care in a hospital medical unit especially designed to improve the functional outcomes of acutely ill older patients. N Engl J Med. 1995;332(20):1338–44.
6 Inouye SK, Baker DI, Fugal P, Bradley EH, for the HELP Dissemination Project. Dissemination of the hospital elder life program: implementation, adaptation, and successes. J Am Geriatr Soc. 2006; 54(10):1492–9.
7 Morrison RS, Meier DE. Clinical practice. Palliative care. N Engl J Med. 2004;350(25):2582–90.
8 Coleman EA. Falling through the cracks: challenges and opportunities for improving transitional care for persons with continuous complex care needs. J Am Geriatr Soc. 2003;51(4):549–55.
9 Leff B, Burton L, Mader SL, Naughton B, Burl J, Inouye SK, et al. Hospital at home: feasibility and outcomes of a program to provide hospital-level care at home for acutely ill older patients. Ann Intern Med. 2005;143(11):798–808.
10 Institute for Healthcare Improvement. The breakthrough series: IHI's collaborative model for achieving breakthrough improvement. Boston: IHI; 2003. (IHI Innovation Series white paper).
11 To access the Appendix, click on the Appendix link in the box to the right of the article online.
12 Berwick DM. The science of improvement. JAMA. 2008;299(10): 1182–4.
13 DeFrances CJ, Lucas CA, Buie VC, Golosinskiy A. 2006 national hospital discharge survey. Natl Health Stat Report. 2008;5:1–20.
14 Malone ML, Vollbrecht M, Stephenson J, Burke L, Pagel P, Goodwin JS. AcuteCare for Elders (ACE) tracker and e-Geriatrician: methods to disseminate ACE concepts to hospitals with no geriatricians on staff. J Am Geriatr Soc. 2010;58(1):161–7.
15 Rubin FH, Neal K, Fenlon K, Hassan S, Inouye SK. Sustainability and scalability of the hospital elder life program at a community hospital. J Am Geriatr Soc. 2011;59(2):359–65.

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ABOUT THE AUTHORS: BRUCE LEFF, LYNN H. SPRAGENS, BARBARA MORANO, JENNIFER POWELL, TERRI BICKERT, CHRISTY BOND, PETER DEGOLIA, MICHAEL MALONE, CATHERINE GLEW, SINDY MCCRYSTLE, KYLE ALLEN & ALBERT L. SIU

Bruce Leff is a professor of medicine at the Johns Hopkins University.

In this month's *Health Affairs*, Bruce Leff and coauthors report on early results of the Medicare Innovations Collaborative, a program of technical assistance and peer-to-peer exchange to promote adoption of multiple complex care models by hospitals and health systems. Collaborative members successfully adopted a number of these models, suggesting momentum behind devising new ways to deliver acute and other care to high-cost Medicare beneficiaries in particular.

Leff is director of the Center on Aging and Health–East and the Program in Geriatric Health Services Research at the Johns Hopkins University School of Medicine, where he is a professor of medicine. He also has a joint appointment in the Department of Health Policy and Management at the Johns Hopkins Bloomberg School of Public Health. Leff holds a medical degree from New York University.

Lynn H. Spragens is president of Spragens and Associates.

Lynn Spragens leads a private consulting practice, Spragens and Associates, that focuses on building business plans that support the spread of innovation, particularly in palliative care and geriatrics. She has a master's degree in business administration, with a concentration in finance, from the University of North Carolina at Chapel Hill.

Barbara Morano is a program manager in the Department of Geriatrics and Palliative Medicine, Mount Sinai School of Medicine.

Barbara Morano is a licensed clinical social worker with more than thirty-five years of clinical and administrative experience in the field of aging, and she is a project manager for the Medicare Innovations Collaborative. She has a master's degree in social work from Barry University.

Jennifer Powell is a health care consultant at Powell and Associates.

Jennifer Powell is a health care consultant with a background in population health, continuous quality improvement, and ambulatory clinic work redesign. She serves as an adviser for seven alliances that are part of the Robert Wood Johnson Foundation's Aligning Forces for Quality Initiative and four state chapters of the American Academy of Pediatrics Chapter Quality Network Asthma Project. Powell holds a master's degree in business administration, with a concentration in finance, and a master's degree in public health, with a concentration in community health, both from the University of Rochester.

Terri Bickert is associate vice president, nursing, at Geisinger Medical Center.

Terri Bickert is associate vice president, nursing, at Geisinger Medical Center, in Danville, Pennsylvania, with responsibility for adult critical care, geriatric services, and nursing education and research. She holds a doctorate in nursing practice from Thomas Jefferson University and a master's degree in nursing from Bloomsburg University.

Christy Bond is the founding director of the aging and complex care service line at Crouse Hospital. She led her hospital's participation in the Medicare Innovations Collaborative and in Stop CAUTI (Catheter-Associated Urinary Tract Infections). She holds a master's degree in education from the State University of New York at Oswego.

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Peter DeGolia is the Jack H. Medalie Endowed Professor in Home-Centered Health Care, Case Western Reserve University School of Medicine.

Peter DeGolia is the Jack H. Medalie Endowed Professor in Home-Centered Health Care, Department of Family Medicine, Case Western Reserve University School of Medicine, and director of the Center for Geriatric Medicine at University Hospitals Case Medical Center. Board certified in family medicine, geriatric medicine, and hospice and palliative medicine, DeGolia received his medical degree at Rush Medical College.

Michael Malone is a professor of medicine at the University of Wisconsin.

Michael Malone is the medical director of Aurora Senior Services for Aurora Health Care, where he led the implementation of Acute Care for Elders programs in forty-three medical-surgical units in thirteen hospitals. He is also the medical director for the Aurora Visiting Nurse Association of Wisconsin. He is a professor of medicine at the University of Wisconsin School of Medicine and Public Health. Malone received his medical degree from Texas Tech University, and he completed his internal medicine residency and then a geriatrics fellowship at the Mount Sinai Medical Center and the University of Wisconsin Medical School in Milwaukee.

Catherine Glew is chief of geriatric medicine at Lehigh Valley Health Network.

Catherine Glew is chief of geriatric medicine at Lehigh Valley Health Network. She received her medical degree from the Nottingham University School of Medicine, in the United Kingdom.

Sindy McCrystle is director of the Division of Aging, Department of Family Medicine, Carolinas HealthCare, as well as an assistant professor of family medicine at the School of Medicine, University of North Carolina at Chapel Hill. A certified advanced nurse practitioner, McCrystle received her master's degree in nursing from Simmons College.

Kyle Allen is director of geriatric medicine and lifelong health at Riverside Health System.

Kyle Allen is the director of geriatric medicine and lifelong health at Riverside Health System, in Newport News, Virginia. Board certified in internal medicine, he also holds a certificate in added qualifications in geriatric medicine from the American Board of Family Medicine. Allen received his medical degree from the Ohio University College of Osteopathic Medicine and completed a fellowship in geriatric medicine at the University of Cincinnati.

Albert L. Siu is the Ellen and Howard Katz Chairman and Professor at the Mount Sinai School of Medicine.

Albert Siu is the Ellen and Howard Katz Chairman and Professor in the Brookdale Department of Geriatrics at the Mount Sinai School of Medicine and the James J. Peters Veterans Affairs Medical Center. He serves on the US Preventive Services Task Force as well as on the board of directors for the Visiting Nurse Service of New York. Siu has a master's degree in public health from the University of California, Los Angeles. He received his medical degree from Yale University and completed his residency in internal medicine at the University of California, Los Angeles, where he was a Robert Wood Johnson Clinical Scholar.

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