THE LEARNING HEALTH SYSTEM SERIES

EFFECTIVE CARE FOR HIGH NEED PATIENTS

OPPORTUNITIES FOR IMPROVING OUTCOMES, VALUE, AND HEALTH

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“Knowing is not enough; we must apply.
Willing is not enough; we must do.”

—Goethe

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PREFACE

The National Academy of Medicine's Leadership Consortium for a Value & Science-Driven Health System provides a trusted venue for national leaders in health and health care to work cooperatively toward effective, innovative care that consistently adds value to patients and society. Consortium member are leaders from stakeholder communities brought together by their common commitment to steward advances in science, value, and culture necessary for health system that continuously learns and improves in fostering healthier people

It has been known for some time that a small percentage of patients with complex health and social needs use a disproportionate share of medical care significant cost to them, the healthcare system, and broader society. There is als substantial evidence that the standard of care provided to these individuals, whil

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Boxes

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ACRONYMS AND ABBREVIATIONS

ACE

MEPS	Medical Expenditure Panel Survey
MIND at Home	Maximizing Independence at Home
NAM	National Academy of Medicine
OECD	Organisation for Economic Co-operation and Development
PAC	

SUMMARY

Today, 1 percent of patients account for more than 20 percent of health care expenditures, and 5 percent account for nearly half of the nation's spendin on health care (Figure S-1) (Mitchell, 2016). Improving care management for this population while balancing quality and associated costs is at the forefront of nationa health care goals, and reaching this particular goal will require active involvemen of a broad range of stakeholders at multiple levels. To advance insights and perspe tives on how to better manage the care of this population and to stimulate action on opportunities for improving outcomes and reducing the costs of health care, the National Academy of Medicine (NAM), through its Leadership Consortium for a Value & Science-Driven Health System (the Leadership Consortium), in partnership with the Harvard T.H. Chan School of Public Health (HSPH), the Bipartisan Policy Center (BPC), The Commonwealth Fund, and the Peterson Center on Healthcare—which funded this initiative—has undertaken a collaborative assessment on strategies for better serving high-need patients.

FIGURE S-1 | Distribution of personal health care spending in the US civilian noninstitutionalized population, 2014.

SOURCE: Dzau et al., 2017.

The NAM was tasked with bringing together experts and stakeholders over the course of three workshops held between July 2015 and October 2016 to consider and reflect upon the key issues for improving care for high-need patients and summarizing the presentations, discussions, and literature for publication. This publication reports and reflects on the following issues: (1) key characterreduce costs for this population. Rather, it will also be necessary to address a individual's functional, social, and behavioral needs, largely through the provision of social and community services that today are not typically the province of health care delivery systems (Blumenthal et al., 2016).

Understanding how to effectively care for high-need patients requires knowing

While this starter taxonomy is useful, additional work is needed to develop an ideal taxonomy that presents holistic guidance on how care and finite resources should be targeted and delivered to improve the health of high-need individu

BOX S–1

Care and Condition Attributes of Successful Care Models

- Assessment. Multidimensional (medical, functional, and social) patient assessment
- Targeting. Targeting those most likely to benefit
- Planning. Evidence-based care planning
- Alignment. Care match with patient goals and functional needs
- Training. Patient and care partner engagement, education, and coaching
- Communication. Coordination and communication among and between patient and care team
- Monitoring. Proactive tracking of the health status and adherence to care plans
- Continuity. Seamless transitions across time and settings

SOURCES: (Anderson et al., 2015; Bodenheimer and Berry-Millett, 2009; Boult and Wieland, 2010; Brown et al., 2012; McCarthy et al., 2015; Nelson, 2012)

BOX S–2

Delivery Features of Successful Care Models

- Teamwork. Multidisciplinary care teams with a single, trained care coordinator as the communication hub and leader
- Coordination. Extensive outreach and interaction among patient, care coordinator, and care team, with an emphasis on face-to-face encounters among all parties and collocation of teams
- ResponsivenessSpeedy provider responsiveness to patients and 24/7 availability
- Feedback. Timely clinician feedback and data for remote patient monitoring
- Medication management. Careful medication management and reconciliation, particularly in the home setting
- Outreach. The extension of care to the community and home
- Integration. Linkage to social services
- Follow-up

A number of barriers currently previe833.5(r)-28.,57(a3.9(3(d.8(1y11 7))-25)1(n)n<</

- Establishing a small set of proven quality measures appropriate for assessing outcomes, including return on investment, and continuously improving programs for high-need individuals; and
- Creating road maps and tools to help organizations adopt models of care suitable for their particular patient populations.

While each stakeholder sector individually may impact a patient's life, a community, or even a regional health delivery system, one of the most expensive and challenging populations for the current health care system will remain underserved until there is a unified effort—rather than small, incremental steps—to improve care for the nation's high-need patients and to reduce the cost of delivering that care.

Abrams, M. 2016. Matching patients to tailored care models: a strategy to enhance
improve outcomes, and curb costs. Presentation at the October 21st NAM Models p5(e)-r.e

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Dale, S. B., A. Ghosh, D. N. Peikes, T. J. Day, F. B. Yoo... B. T, 2 Cru(s)-6.2(h)-

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INTRODUCTION AND OVERVIEW

The exceptionally high expenditures associated with providing care for a relatively small but growing number of individuals with significant medical needs disproportionately drive the escalating cost of medical care in the United States. This population of high-need individuals includes an increasingly heterogeneous group of people with multiple chronic diseases, members of an aging population, and patients with varying levels of medical, functional, social, and behavioral complexity. Today, 1 percent of patients account for more than 20 percent of health care expenditures, and 5 percent a(d em [(2(s)-4.4(5(n)-1I(r)-4

- How do utilization patterns differ between these segments and within the segments?
- What proportion of the spending and utilization might be reduced for each segment?

HSPH’s project team has attempted to identify characteristics of providers and health systems that are more effective at caring for high-need, high-cos patients and reducing the costs associated with preventable health care issu The project team, with the help of The Commonwealth Fund, examined data from the Medicare population and a set of commercial patients. The team has foster progress toward a continuously learning health system in which science, informatics, incentives, and culture are aligned for enduring improvement and innovation; best practices are seamlessly embedded in the care process; patient and families are active participants in all elements; and new knowledge is captured as an integral by-product of the care experience. Priorities in this respect include advancing the development of a fully interoperable digital infrastructure, the application of new clinical research approaches, and a culture of transparency on outcomes and cost.

Participants in the Leadership Consortium have set a goal that, by 2020, 90 percent of clinical decisions will be supported by accurate, timely, and up-to-date clinical information and reflect the best available evidence. The Leadership Consortium's approach to meeting this goal is to serve as a forum to facilitate the collaborative assessment and action around issues central to achieving its vision and goal. To address the challenges of improving both evidence development and evidence application, as well as improving the capacity to advance progress on each of those dimensions, Leadership Consortihp C p

clinical data as a public resource for health improvement; shared responsibility
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stak0.9(h)4.4(o)3.6(l)1.9(d)-6.8(e)-3.4(r i)-24.5(n)8(v)14.4(o)3.6(l)-2.4(v)13.3(e)-4

Hopkins Bloomberg School of Public Health), Tim Engelhardt (Centers for Medicare & Medicaid Services), Jose Figueroa (Harvard Medical School), Katherine Hayes (Bipartisan Policy Center), Frederick Isasi (National Governors Association), Ashish K. Jha (Harvard T.H. Chan School of Public Health), David Meyers (Agency for Healthcare Research and Quality), Arnold S. Milstein (Stanford University), Diane Stewart (Pacific Business Group on Health), and Sandra Wilkniss (National Governors Association).

The workshops brought together national experts and stakeholders to explore commonalities and differences among the subpopulations of high-need patients to consider the lessons learned from targeted intervention activities, to discus and inform the approach of the ongoing study by the HSPH on the high-cost Medicare population, and to review policy issues and options, including those suggested by the BPC.

The first workshop, held in July 2015, laid the groundwork for this project and the subsequent workshops. The presentations and discussions identifie the key characteristics of high-need patient populations and subgroups of thes approaches to support and accelerate the spread and scale of effective care models. An independent rapporteur prepared factual summaries of what occurred at the workshops. Statements, recommendations, and opinions expressed at the workshops were those of individual presenters and participants and have not been endorsed or validated by the NAM.

In addition to the three workshops, the planning committee initiated several

- Social services. Improving care for high-need patients usually requires engaging services outside of the care system and creating patient- and car partner-specific care plans.
- Service linkages. Coordination of care is critical for high-need patients, and success depends on alignment and cooperation between the health care syste and services delivered through social, economic, and behavioral programs.
- Targeting specificity and timeliness. Health care systems with effective and efficient approaches to sustaining and improving levels of function of

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KEY CHARACTERISTICS OF HIGH NEED PATIENTS

Fictional Patient vignette: Mark is a 54-year-old man with rheumatoid arthri and chronic heart disease. Many days he was reliant on a wheelchair to get because of chronic pain. His job didn't allow him to telework, yet it was difficu get to the handicap entrance in the back of the building and his schedule was fixed at 9 to 5. As a result, Mark spent more than an hour a day commuting his car (public transportation wasn't readily available). Everyday tasks like run errands and getting groceries were difficult. Between his pain and his heavy schedule, he was left with little time to visit with other people, both friends family, and it had left him feeling incredibly isolated and alone. He really mis having a pet, but he'd had to give his cat, Felix, away because Mark could longer take care of him properly. Mark felt he wouldn't mind his disease so if it didn't impact his life and relationships so heavily.

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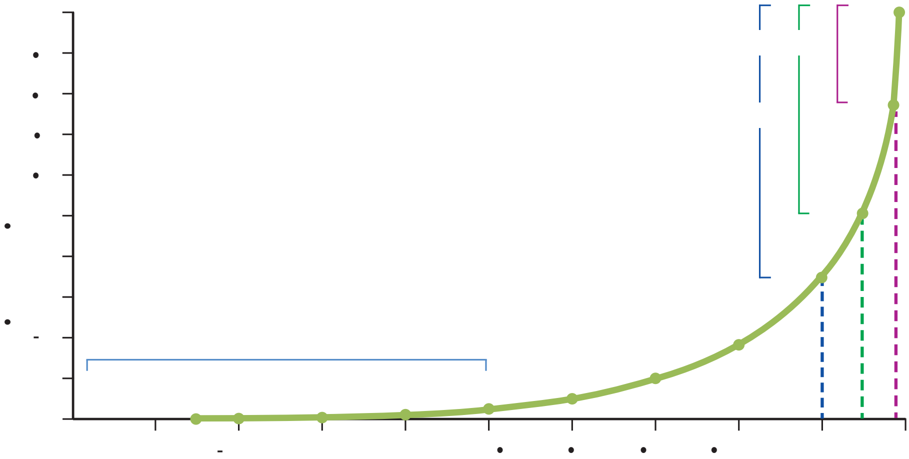
in spending in the second year, while 28 percent had episodic high spending with lower spending in the second year.



(i.e., 30 percent of the population) with three or more chronic conditions,[5] indicating—as was mentioned in the article—that simply counting conditions is an oversimplified approach, and additional factors must be taken into account.

TABLE 2–1 | Complex and Noncomplex Chronic Conditions

COMPLEX CHRONIC CONDITIONS	NONCOMPLEX CHRONIC CONDITIONS
Acute myocardial infarction	Amputation status
Ischemic heart disease	Arthritis and other inflammatory tissue disease
Chronic kidney disease	Artificial openings
Congestive heart failure	Benign prostatic hyperplasia
Dementia	Cancer
Diabetes	Cystic fibrosis
Chronic lung disease	Endocrine and metabolic disorders
Psychiatric disease	Eye disease
Specified heart arrhythmias	Hematological disease
Stroke	Hyperlipidemia
	Hypertension
	Immune disorders
	Inflammatory bowel disease
	Liver and biliary disease
	Neuromuscular disease
	Osteoporosis
	Paralytic diseases/conditions
	Skin ulcer
	Substance abuse
	Thyroid disease

NOTE: Complexity designation is based on spending and morbidity.
SOURCE: Reproduced from Joynt et al., 2017

The most basic identifiers of high need are functional limitations. These include limitations in activities of daily living—self-care tasks that include dressing, bathing or showering, ambulating, self-feeding, grooming, and toileting—or instrumental activities of daily living that support an independent lifestyle, such as housework, shopping, managing money, taking medications, using-the telephone, or being able to use transpor-7.37a1(n).5(,r [(p)8.-33 (, s)-1(H1.6().65x)4

Likewise, by considering adults who have three or more chronic conditions and

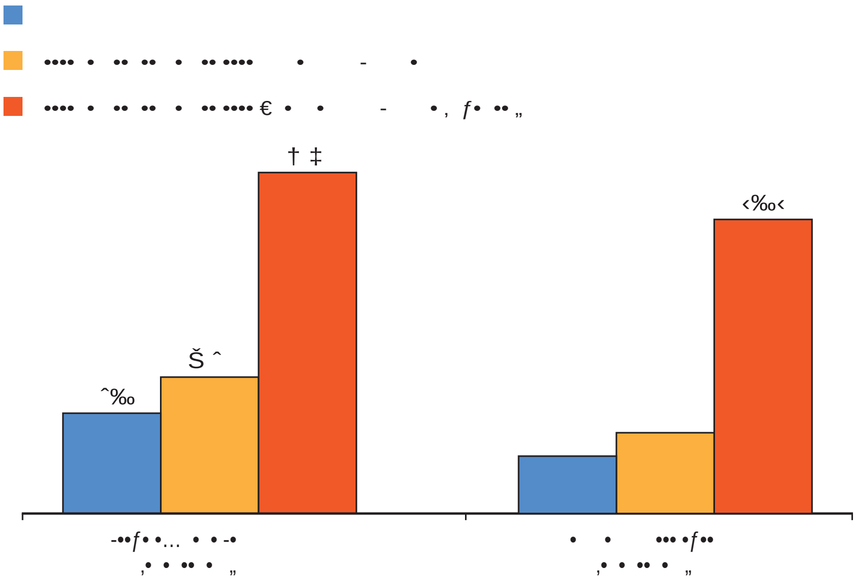


FIGURE 2–5 | High-need adults have more emergency department visits and hospital stays.
SOURCE: Reproduced from Hayes et al., 2016c.

FIGURE 2–6 | Demographic characteristics of high-need adults.
NOTE: FPL = federal poverty line.
SOURCE: Reproduced from Hayes et al., 2016c.

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A rough understanding of the demographics of the high-need patient population does emerge from the research. According to analyses by The Commonwealt Fund and by the Agency for Healthcare Research and Quality (Cohen, 2015), high-need adults are disproportionately older, female, white, and less educate

home in providing care that is comprehensive, accessible, and responsive to th patients’ needs. This finding is important, the authors wrote, because medical homes benefit all patients and may especially help high-need patients improve outcomes and reduce spending. They also noted that, while low, the proportion of high-need patients receiving care in a medical home model was greater tha the 36 percent of the general adult population who have a usual source of car meeting the definition of a medical home.

The most recent survey by The Commonwealth Fund included adults with two or more major chronic conditions, with or without functional limitations; individuals under 65 with a disability; and elderly individuals with multiple functional limitations (Ryan et al., 2016). The findings reiterated many of the conclusions from previous studies, but they also provided a focus on nonmedical aspects of care. For example, Ryan and colleagues (2016) stressed the so isolation and unmet social needs expressed by high-need patients, with nearl two-thirds articulating concern about such material hardships as housing, meal or utilities. Additionally, of those high-need patients who reported a need for assistance with activities of daily living, only slightly more than one-third (38 percent) responded that they usually or always had someone available. Emotion counseling services were also cited as difficult to access, with less than half o those who may have needed them in the past 2 years able to set up an appoin ment in a timely fashion.

As Blumenthal and his colleagues stated in a discussion paper for the Nation Academy of Medicine’s Vital Directions for Health and Health Care Initiativ (Blumenthal et al., 2016a), addressing just the health care needs—or, for tha matter, the social and behavioral health needs—of high-need patients in isolation is likely to be inadequate. As the authors of this paper concluded, “Health-

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3

PATIENT TAXONOMY AND IMPLICATIONS FOR CARE DELIVERY

selection from among care models. Therefore, serving this heterogeneous population more effectively and efficiently requires construction of a taxonomy that has groupings based on shared characteristics and functional needs.

Drawing from discussions and common themes throughout the workshop series and the published evidence, this chapter reports on current approaches in—and evidence for—the application of taxonomies to the management of high-need patients as a means of improving their care. In particular, it provides an overview of the taxonomies used by two organizations, the Harvard T.H. Chan School of Public Health and The Commonwealth Fund, and guidance on the adoption and application of their key elements in practice. Given the profound role of social risk and behavioral health factors on the health of high-need patients, the intersection of these factors with the clinical domain receives particular attention. This chapter has been informed by two main sources: the

2017). While claims data are often maligned, said Jha in the second workshop in his opinion they are currently the best way to draw a picture of high-need, high-cost individuals in the United States. Through a yearlong iterative process, with input from clinical leaders and working closely with a group led by Gerard Anderson at Johns Hopkins University, the Harvard team defined the subpopulations with a noniterative, hierarchical categorization that assigned patients to groups of increasing complexity. The resulting six subpopulations, in the order in which individuals are classified, are listed as follows: under-65 disabled who are not included in the non-Medicare under-65 population; frail, with two or segments into six subpopulations: under-65 disabled, advancing illness, frail elderly, complex chronic conditions, multiple chronic conditions, and children with complex needs.[6] At any given time, patients are assigned to just one of these six segments and their designation is determined by their medical needs that are driving their health care costs. For example, a frail elderly individual with multiple chronic conditions would be assigned to the frail elderly segment because the frailty indicators are what is driving medical needs and ultimately costs. However, over time, as their medical needs change, patients may shift between segments.

FIGURE 3–1 |

spinal injury, were not specifically designated as a segment. In addition, because identification of functional impairment is intrinsically tied to the clinical segments, the segments may not capture the complete diversity of functional limitations.

TABLE 3–1 | Clinical Group Features

CLINICAL GROUP	FEATURES
Children with complex needs	Have sustained severe impairment in at least four categories together with enteral/parenteral feeding or sustained severe impairment in at least two categories and requiring ventilation or continuous positive airway pressure[A]
Non-elderly disabled	Under 65 years and with end-stage renal disease or disability based on receiving Supplemental Security Income
Multiple chronic	Only one complex condition and/or between one and five noncomplex conditions[B,C]
Major complex chronic	Two or more complex conditions or at least six noncomplex conditions[B,C]
Frail elderly	Over 65 years and with two or more frailty indicators[D]
Advancing illness	Other terminal illness, or end of life

A Categories for children with complex needs are: learning and mental functions, communication, motor skills, self-care, hearing, vision

B Complex conditions, as defined in (Joynt et al., 2016), are listed in Table 2–1.

C Noncomplex conditions, as defined in (Joynt et al., 2016), are listed in Table 2–1.

D Frailty indicators, as defined in (Joynt et al., 2016), are gait abnormality, malnutrition, failure to thrive, cachexia, debility, difficulty walking, history of fall, muscle wasting, muscle weakness, decubitus ulcer, senility, or durable medical equipment use.

This starter taxonomy can, however, provide guidance for health system leaders and payers on how to embed social risk factors, behavioral health factors, and functional limitations in a taxonomy for high-need patients. Patients would first be assigned to one clinical segment based on what medical needs are driving their health care costs, with follow-on assessment of behavioral health issues and socia services needs to determine the specific type of services an individual requires. For example, the major complex chronic conditions patient segment would include patients who simultaneously have diabetes, heart disease, and kidney disease, suggesting that a care team should include a complex care manager. I some of the patients also have severe depression, bipolar illness, or other behavioral health conditions, their care team would require someone with training in behavioral health issues. If the patient subpopulation also has unstable housing and sources of food, the care team would require personnel with expertise in addressing housing and food security. The model also assumes that the medical, behavioral, and social needs of patients will change. For example, an individua patient could move from frail elderly to advancing illness, which would suggest shifting resources from medical care to hospice care.

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Two important components of this starter taxonomy are the social risk and behavioral health factors that affect a patient's health and influence the specific needs of each individual in a particular segment defined by medical and functional status. A review of the literature on social domains that affect care insights from planning committee members and outside experts, and a surve of available resources (such as the National Association of Community Healt Center's Protocol for Responding to and Assessing Patients' Assets, Risks, a Experiences [PRAPARE], a tool for assessing their patients' social determinan of health)[7], produced a list of four high-impact variables in the social services domain which were determined to be the most likely to affect care delivery decisions (see Table 3–2).

TABLE 3–2 | High-Impact Social Variables

VARIABLE	CRITERIA/MEASUREMENT	SOURCES
1. Low socioeconomic status	Income and/or education	Adler et al., 1994; Bengle et al., 2010; Bisgaier and Rhodes, 2011; Metallinos-Katsaras et al., 2012; Vijayaraghavan et al., 2011
2. Social isolation	Marital/relationship status and whether living alone	

illness (such as schizophrenia) as one of their three or more chronic conditions. Salzberg also found that high-need individuals with behavioral health conditions made 27 percent more visits to hospital emergency departments, used 35 readily to clinical care. Some variables, such as race and ethnicity (Jackso et al., 2016; Larney et al., 2016; Morton et al., 2016; Segal et al., 2016) and incarceration (Wang et al., 2013), can affect health but are rooted in deepe systemic issues that are beyond the scope or purpose of this taxonomy. A var able such as health literacy can have a significant effect on health (Baker e al., 2007; Bennett et al., 2009; Institute of Medicine, 2004; Schillinger et al., 2002; Taylor et al., 2016), but the inventory of effective care models discusse in Chapter 4 does not directly address health literacy. As Abrams explained, th committee thoughiout aheoo40.6(e)-3.418ssf4ueoct hine.2(t7e)-19.1(h)4.4(e)-

———. 2014b. Capturing social and behavioral domains in electronic health Phase 1. Washington, DC: The National Academies Press.

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Defining a successful care model starts with the goals of the stakeholders involved. In general, successful care models foster effectiveness across three domains: heal and well-being, care utilization, and costs. The success of even the best care models depends on the particular needs and goals of the patient a model intends to serve, and those will vary even within segments of the high-need population. Dual-eligible patients, for example, are often considered a high-need group or segment as a whole, but as Randall Brown from Mathematica Policy Research explained at the second workshop, nearly 40 percent of this population does not need extensive services (see Figure 4–1). Even among those dual-eligible individuals who have severe chronic illnesses, only some require long-term support services that need to be integrated and coordinated. Each of these different dual-eligible subpopulations benefits from different managed care g0TEg programs or that there are common elements in each of the programs that addres the needs of these segments.”

At the third workshop, Arnold Milstein of Stanford University noted the profound changes that models of care have undergone over time. “It wasn’t that long ago that there were five boxes that defined America’s care models. You integrated care. In a synthesis review they conducted in 2009 (Berry-Millett and Bodenheimer, 2009), Berry-Millett and Bodenheimer found a similar categorization of care management by setting. Their categories included primary

reducing hospital use (Nelson, 2012). These interactions occurred in a variety of ways, such as meeting patients in the hospital or occasionally accompanyin patients on visits to their physician.

Effective care communication, through coaching and education, can play an important role in engaging the patient and family in sharing decision making, actively managing care, and developing a care plan that best reflects a give patient's goals and desires—all common attributes of successful care mode When describing Minnesota's Health Care Home (HCH) program at the first workshop, Bonnie LaPlante, HCH interim director and capacity building and certification supervisor in the Health Policy Division at the Minnesota Department of Health, explained that care coordinators develop relationships with the patients while physicians identify their panel of patients and commit to helping each one understand that better care results from choosing a primary care provider

Patient monitoring, strategic use of data to provide timely feedback to the care team, and facilitating transitions between inpatient and outpatient or nursing home care are other important attributes of successful programs. Transitiona care interventions have been shown, for example, to reduce hospital readmissio by as much as one-third (Englander et al., 2014; Feltner et al., 2014; Kansaga et al., 2015).

On the whole, there is convergence in the literature around many common care attributes. The eight attributes highlighted in the framework (see Box 4–2) are based on McCarthy and colleagues' (2015) synthesis, as well as oth pertinent literature.

BOX 4–2

Care and Condition Attributes of Successful Care Models

- Assessment. Multidimensional (medical, functional, and social) patient assessment
- Targeting. Targeting those most likely to benefit
- Planning. Evidence-based care planning
- Alignment. Care matched with patient goals and functional needs
- Training. Patient and care partner engagement, education, and coaching
- Communication. Coordination and communication among and between the patient and care team
- Monitoring. Proactive tracking of the health status and adherence to care plans
- Continuity. Seamless transitions across time and settings

SOURCES: (Anderson et al., 2015; Bodenheimer and Berry-Millett, 2009; Boult and Wieland, 2010; Brown et al., 2012; McCarthy et al., 2015; Nelson, 2012)

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The third dimension of the framework addresses delivery features. As with the evidence supporting common care attributes, there is substantial overlap in the indications supporting specific features. In the second workshop, for example, Brown highlighted two managed care plan models that show some evidence for improvement and that share many of the same features. The first model, Geisinger Health System's Patient-Centered Medical Home (ProvenHealth Navigator) (Maeng et al., 2015), embeds care managers with primary care providers to identify and work with the truly high-risk cases that are identified on a list the case managers receive. The care managers have links to physicians at other car sites and serve as the communication hub. The second model Brown discussed, the Comprehensive Care Physician model (Meltzer and Ruhnke, 2014), has eliminated hospitalists to improve the continuity of care for all of its high-risk patients and instead allocates these patients to specific physicians who have limits to their panel size to increase their interaction with their patients. This model uses interdisciplinary teams and data-driven meetings to improve care and care coordination. Both of these programs achieve meaningful shared savings.

Brown and colleagues' analysis of the Medicare Care Coordination Demonstration identified six practices of care coordinators that were common among the more successful programs for high-need individuals (Brown et al., 2012): Care coordinators had monthly face-to-face contact with patients; they built a strong rapport with physicians through face-to-face contact at the hospital or the office; and they acted as a communications hub for the many providers involved in the care of these patients and between the patient and those providers. In addition, the care coordinators used behavior-change techniques, not just patient education, to help patients adhere to medication and self-care plans; they also had reliable information about patients' prescriptions and access to pharmacists or medical directors. Finally, the care coordinators knew when patients were hospitalized and provided support for the transition home.

In his presentation at the second workshop, Rahul Rajkumar, deputy director at the Center for Medicare & Medicaid Innovation (CMMI), noted that after 5 years of studying various approaches for change, CMMI has developed an abstract understanding of some of the common delivery features of successful models. Among those features are using team-based approaches, providing enhanced access to providers, proactively using continuous data to improve care, working across the medical neighborhood with a very select group of medical subspecialists, engaging patients in shared decision making, and stratifying patients based on risk.

The common delivery features highlighted in the framework (see Box 4–3) represent these more granular activities that are required to realize the commo attributes.

BOX 4–3

Delivery Features of Successful Care Models

- Teamwork. Multidisciplinary care teams with a single, trained care coordinator as the communication hub and leader
- Coordination. Extensive outreach and interaction among patient, care coordinator, and care team, with an emphasis on face-to-face encounters among all parties and collocation of teams
- ResponsivenessSpeedy provider responsiveness to patients and 24/7 availability
- Feedback. Timely clinician feedback and data for remote patient monitoring
- Medication management. Careful medication management and reconciliation, particularly in the home setting
- Outreach. The extension of care to the community and home
- Integration. Linkage to social services
- Follow-up. Prompt outpatient follow-up after hospital stays and the implementation of standard discharge protocols

SOURCES: (Anderson et al., 2015; Bodenheimer and Berry-Millett, 2009; Brown et al., 2012; Hasselman, 2013; McCarthy et al., 2015; Nelson, 2012; Rodriguez et al., 2014)

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McCarthy and colleagues' (2015) synthesis of common attributes, in which they separate the feature content (i.e., the what) and the method (i.e., the how), inspired the fourth dimension of the framework: the incorporation of organizational culture.

A study of 18 successful complex care management programs for high-nee high-cost patients with multiple or complex conditions—often combined with behavioral health problems or socioeconomic challenges—recommended

home- and community-based waiver programs in reducing long-term nursing home use, especially for those individuals with cognitive impairments. PACE

that it combines a safety net hospital, a large federally qualified health center (FQHC), a public health department, an emergency 9-1-1 call center, and several school-based health centers. Though the work he discussed in his presentation took place in Denver Health's FQHC, it impacted the rest of the organization. The goal of this CMMI-funded project was to improve the experience of care, improve the health of populations, and reduce per capita costs of health care.

includes more pharmacotherapy management and emphasizes transitions of ca
to reduce readmissions.

FIGURE 4–3 | Denver Health's use of Clinical Risk Groups to assign patients to care programs.

NOTE: This is an example of risk stratification. It does not map directly on to the taxonomy proposed in Chapter 3.

SOURCE: Hambidge presentation, January 19, 2016.

back and forth between meeting and not meeting those criteria. This analysis, he said, shows the importance of developing a population-based stratification system even though individuals are getting care. “You have to step back and look across the population to see who is coming into and going out of your system.”

These data also show the importance of taking a population-based, actuarial approach when conducting financial analyses. As Hambidge explained, the natural tendency for high-utilizing patients to become less so over time would lead to an overestimation of cost savings based on individual reswtseve(H71.6(e)115.9(a)-3

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5

POLICY TO SUPPORT THE SPREAD AND SCALE OF CARE MODELS

Fictional patient vignette: Andy is a 75-year-old man whose arthritis, anxie and heart disease make it difficult for him to be on his feet and out of the h for long periods of time. He has frequent doctor appointments, and he feels that between his Medicare and Medicaid benefits, most of his costs—for his g practitioner, pain management specialist, psychiatrist, and cardiologist—are c Often, the most difficult part of his health care routine is trying to figure out wh is covered under Medicare and Medicaid, and by whom. Even though the st his various doctors' offices are willing to help him, Andy still spends hours tr to figure out what he is eligible for, and whether Medicare or Medicaid or both pay for it. Andy doesn't understand why his Medicare and Medicaid coverag so separate. They're both part of the federal government, aren't they?

While a range of programs have been shown to improve care for high-

Though the challenges to spreading and scaling models of care are significant, research has identified helpful tactics for spread and scale. During the firs workshop, Deborah Peikes from Mathematica Policy Research discussed som of the factors for successful scaling that she and her colleagues found in stu ies conducted for the Centers for Medicare & Medicaid Services (CMS). The identified success factors included substantial financial incentives; support from multiple payers, such as coordination and aligning spending, technical assistance, data feedback, stad(d(d(d(d(u)3.8-17.1(i728.(u)-2t)-30877.56)-28.3(n

impact of providing social services on health outcomes for high-need patients and encouraged states to support integration of social support services through "no wrong door" approaches that link patients to needed services regardless of how or where they enter health care or social services systems.

State governments, which control Medicaid spending, can also play a role in fostering the integration of health and social services. McGinnis and colleagues at The Commonwealth Fund developed a policy framework to help states move beyond isolated pilot efforts and establish the infrastructure necessary to support ongoing integration of health and social services, particularly for Medicaid beneficiaries (McGinnis et al., 2014). Their framework focuses on creating a statewide integrator to assume responsibility for ensuring coordination and communication across state-level services, establishing a robust set of tools to measure health outcomes and costs and share data among health systems, ar developing long-term financing sources and payment models with incentives to encourage ongoing integration.

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As multiple speakers at the first two workshops noted, payment policies that misalign financial incentives—particularly those that reimburse providers on a fee-for-service basis and that fail to pay for social services benefiting high-need patients—are perhaps the most prominent barrier to the widespread adoption of successful models of care for high-need patients. Many workshop participants stated the need for new payment policies that incentivize integration of social services and medical care and improved outcomes for high-need patients: Melissa Abrams from The Commonwealth Fund; Alan Glaseroff from Stanford Coordinated Care and Stanford School of Medicine; Bruce Chernof from The SCAN Foundation; Lisa Iezzoni from Harvard Medical School and the Mongan Institute for Health Policy at Massachusetts General Hospital; Robert Master from Commonwealth Care Alliance; John O'Brien from CareFirst Blue Cross Blue Shield; Peter Long from the Blue Shield of California Foundation; and Rahul Rajkumar from the Center for Medicare & Medicaid Innovation. A research synthesis compiled by The Commonwealth Fund also concluded that a lack of reimbursement under fee-for-service payment policies for providing care coordination and social supports is a major obstacle to spreading and scaling patient-focused care models for high-need patients (McCarthy et al., 2015).

Significant improvements have been made in paying for care coordination, and there is an increasing recognition that social supports are important components of effective care plans for high-need patients. Many insurers, including

frequently run into the complex maze of federal and state reimbursement rules that preclude payment for, and in some cases coverage of, services that health providers believe could avert costlier emergency or hospital inpatient visits, which are major driving forces for the high costs associated with high-need patients.

To best appreciate the challenges arising from dual-eligible status, it is necessary to understand how dual-eligible patients receive their benefits from these two distinct programs. Although both Medicare and Medicaid are authorized under the Social Security Act, the federal government administers Medicare, while federal and state governments jointly finance Medicaid. States cover certain mandatory benefits under Medicaid, while other services are optional and coverage is determined on a state-by-state basis. As Hayes explained in her presentation at the third workshop, Medicaid covers LTSS, including many services that deal with functional limitations. As of June 2015, only some 20 percent of dual-eligible individuals were enrolled in the type of organized systems of care that blend social services and medical care, such as Medicare managed car plans, Program of All-Inclusive Care for the Elderly (PACE), and Dual Eligible Special Needs Plans (D-SNPs).

In their report, Hayes and colleagues (2016) state that the specific care delivery model and state implementation of the model will likely determine whether full combine Medicare and Medicaid financing streams into an integrated benefit

disadvantage compared to organizations that do not serve large numbers high-need patients.

One issue, addressed by Blumenthal and colleagues in a discussion pap from the National Academy of Medicine's series of discussion papers Vita Directions for Health and Health Care (Blumenthal et al., 2016a), is that most ACOs and performance- and risk-based plans still pay clinicians on a fee-for-service basis (Bailit et al., 2015). The authors of this discussion paper not that if individual providers or practice sites do not feel accountable for health outcomes, population health, and value, the diffusion of promising practices and models of care will be slow. Another concern the authors of this paper noted is the misalignment between investment and savings: too often, the savings realized by a successful care model accrue to payers, even though i the providers who are expected to cover the up-front costs of staff training and

such as readmissions (Joynt, 2013, 2017), and may experience high penalti under value-based purchasing programs, potentially creating a disincentive t caring for these individuals.

Burstin and other participants at the third workshop voiced their concern that the proliferation of measures and “measurement for measurement’s sake has become a burden to providers. A 2016 National Academy of Medicine Perspective, Observations from the Field: Reporting Quality Metrics in Health C (Dunlap et al., 2016), offered the same concern. As David Dorr from the Oregon Health & Science University noted, it takes discipline to be parsimonious with measures. It is important for payers and health systems to choose measures t reflect realistic quality and accountability goals and to understand that program may not demonstrate marked improvements for several years. Kronick remarke that measures should not be the only means used to improve quality of care. I his opinion, public policies related to quality improvement should emphasize methods of enhancing professional intrinsic motivation while recognizing the role of organizations to promote and facilitate that motivation by providing systematic feedback to physicians, technical assistance, and opportunities providers to collaborate on projects to improve care.

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Research shows that high-quality data and analytics are an essential compone of effective models of care for high-need patients in that they are used to match high-need individuals with specific interventions (Bates et al., 2014; Bradley et al., 2016; Dale et al., 2016; Rajkumar et al., 2015). High-quality data are also needed to inform the types of measures discussed in the previous section. O major challenge Anderson noted is that there are many disparate systems th cannot easily share information, making it difficult to assess the requirements o high-need individuals and whether they are getting appropriate medical and socia care. During the first workshop, Lisa Iezzoni from Harvard Medical School and the Mongan Institute for Health Policy at Massachusetts General Hospital sai that reliable data are needed when identifying high-need patients to overcome the limitations of the diagnostic data by which chronic conditions are identified. International Classification of Diseases-Clinical Modification diagnostic codes may not fully capture disability, functional limitations, or frailty, while other measures of frailty and disability can carry biases, including cultural ones, o have gaming potential once reimbursements start being based on a particula measure. In addition, diagnostic claim codes may fail to capture the health o persons who have not received adequate care.

the identification of possible drivers of hospital readmission, said Bleicher. He noted that significant amounts of granular information can be extracted from the EHR with natural language processing and used to gain a better understandin of patient outcomes. This value-added information includes clinical findings that are not available in claims data, such as preadjusted diagnostic and procedu information and temporal data about a patient's stay in the hospital. In addition, clinical notes can be mined for details, such as the risk of falling, that are no available in the EHR's structured data.

OptumLabs has been using this type of data analysis and mining to creat predictive models that can help reduce hospitalizations. For example, a congestiv heart failure predictive model uses a patient's prior health care use and clinica findings such as blood oxygenation, laboratory results, and vital signs to predic the risk of future hospitalization over the following 6 months. Individuals in the

high-cost patients. Vital Directions for Health and Health Care Series. Discussion Paper, National Academy of Medicine, Washington, DC.

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Davis, A. C. 2013. Leveraging commDav

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COMMON THEMES AND OPPORTUNITIES FOR ACTION

At the outset of this collaborative initiative in February 2015, the goal established by the participants—the Peterson Center on Healthcare, the National segment high-need patients and match the appropriate interventions as well as

- Continue payment policy reforms and alignment initiatives to incentivize pay-for-performance instead of fee-for-service.
- Incentivize adoption and use of interoperable electronic health records that include functional, behavioral health, and social factors.
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Hayes, S. L., C. A. Salzberg, D. McCarthy, D. C. Radley, M. K. Abrams, T.

APPENDIX A

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The care models described here were presented or discussed as part of o

CARE MANAGEMENT PLUS	
Target population Generally adults 65 years and older, who have multiple comorbidities, diabetes, frailty, dementia, depression and other mental health needs; physician referral. (Care Management Plus, 2017; McCarthy, 2015)	Matched Segment Advancing illness with social risk and behavioral health factors Major complex chronic with social risk and behavioral health factors
Intervention Components • “Specially trained care managers (usually RNs or social workers) located in primary care clinics perform person-centered assessment and work with families and providers to formulate and	

<table>
<tr><th colspan="2">CHENMED</th></tr>
<tr><td>Target population
Program serves 60,000 moderate- to low-income Medicare members in more than 40 locations in six states. More than 30 percent of the members are dual-eligibles. (Klein, 2016)</td><td>Matched Segment
Not used in matching exercise</td></tr>
<tr><td colspan="2">Intervention Components
• For-profit model offers a one-stop-shop approach for delivering multispecialty services in the community utilizing a smaller physician panel size of 350 to 450 patients, allowing for intensive health coaching and preventive care. (Coye, 2016)
• Collaborative peer review, powered by customized informatiodr6(o)-2.1(s)-27.9þÿ o l35(u)1tv6i7.4(.(1
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CIGNA COLLABORATIVE CARE MODEL

Target population	Matched Segment
High-risk, high-cost patients identified based on having multiple comorbidities and through Cigna's proprietary predictive modeling. (Davda, 2015)	Not used in matching exercise
Intervention Components • Cigna Collaborative Care, modeled after accountable care organizations, embeds a care coordinator, typically a registered nurse, in a physician group with a substantial primary care component. (Davda, 2015) • Care coordinators work closely with Cigna's case managers to ensure that high-need individu	

COMPLEX CARE PROGRAM AT CHILDREN'S NATIONAL HEALTH SYSTEM

Target population	Matched Segment
Medically complex children with 2 or more chronic conditions. (Children's National, 2017)	Children with complex needs

Intervention Components

- "Provides ongoing care coordination between visits including communication with family, primary care providers, and specialists." (Children's National, 2017)
- "Helps families negotiate the health care system and provide a link to community resources." (Children's National, 2017)
- "Creates written care plans with the family to share with the primary care provider." (Children's National, 2017)
- "Provides comprehensive care coordination through a team approach that includes nurse case management, parent navigators, and social work." (Children's National, 2017)

Outcomes

Well-being	Utilization	Cost
	X	

Notes

- Outcomes unavailable.

SOURCE: Children's National, 2017

COMPREHENSIVE PATIENT CENTERED MEDICAL HOME INITIATIVE

Target population	Matched Segment
This model is being tested in seven states encompassing 31 payers, nearly 500 practices, and approximately 300,000 Medicare beneficiaries (Taylor, 2015)	Not used in matching exercise

Intervention Components

- A medical home model in which practices first risk-stratify their patients within physician panels. (Taylor, 2015)
- Practices use care management methods, including care planning, registries, proactive care monitoring, and enhanced access that include home-based and team-based care. (Taylor, 2015)
- While the program is not prescriptive per se, care management activities must include at least one of the following: behavioral health integration, self-management or support for beneficiaries, or medication management. (Taylor, 2015)

Outcomes

Well-being	Utilization	Cost
(study not yet completed)	(study not yet completed)	(study not yet completed)

Notes

- Practices receive monthly case management payments of $20 per month per patient over the first two years of the program and $15 per month for years three and four. They also have an opportunity to earn shared savings on reductions in total Part A and B Medicare expenditures. (Taylor, 2015)

SOURCE: Taylor, 2015

GUIDED CARE	
Target population "Older adults with multiple chronic conditions." (McCarthy, 2015)	Matched Segment Major complex chronic
Intervention Components •	

HEALTH CARE HOME HCH PROGRAM OF MINNESOTA	
Target population	

HEALTH QUALITY PARTNERS	
Target population “Medicare beneficiaries with chronic conditions.”	

HOMELESS PATIENT ALIGNED CARE TEAM H PACT

Target population	Matched Segment
Homeless veterans coming to the emergency department with complex medical and social problems.	Non-elderly disabled with social risk and behavioral health factors

Intervention Components

- “Located on the campuses of Veterans Affairs medical centers, community-based outpatient clinics, and Community Resource and Referral Centers, H-PACT clinics colocate medical staff, social workers, mental health and substance use counselors, nurses, and homeless program staff. These professionals form a team that provides Veterans with comprehensive, individualized care, including services that lead to permanent housing.” (US VA, 2017)

Outcomes

Well-being	Utilization	Cost
	X	

Notes

- Launched in 2012, so limited data are available but evidence exists to support decreased utilization.

SOURCE: US Department of Veterans Affairs, 2017

HOSPITAL AT HOME	
Target population Older patients who are acutely ill and require hospital-level care. (Johns Hopkins, 2013)	Matched Segment Advancing illness
Intervention Components • “Potentially eligible patients are identified in the hospital emergency department or ambulatory care site. If they meet the validated criteria and consent to participate, they are evaluated by a physician and transported home, usually via ambulance.” (McCarthy, 2015) •	

IMPACT	
Target population	

INDEPENDENCE AT HOME DEMONSTRATION	
Target population “Medicare beneficiaries with multiple chronic conditions.” (CMS, 2016)	

MIND AT HOME JOHNS HOPKINS UNIVERSITY	
Target population Elderly with memory disorders.	Matched Segment Frail elderly with social risk and behavioral health factors

Intervention Components

- “Links people with dementia and their caregivers to community-based agencies, medical and mental health care providers, and community resources.” (JHU, 2014)
- “Delivered by an interdisciplinary team comprised of trained nonclinical community workers and mental health clinicians, who conduct comprehensive in-home dementia-related needs assessments and provide individualized care planning and implementation.” (JHU, 2014)
- “The team uses six basic care strategies: resource referrals, attention to environmental safety, dementia care education, behavior management skills training, informal counseling, problem-solving, as well as ongoing monitoring, assessment, and planning for emergent needs.” (JHU, 2014)
- “Each component of the intervention is based on best practice recommendations and evidence from prior research, and is combined for maximum impact.” (JHU, 2014)
- Provides individualized ne1(n)-3.5()-5.8(1)-1.2(4)17.5())-9( )]TJ 0 T0reenr3ned care p26(a)0.6(i)0.5(ni
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<table>
<tr><th colspan="2">MISSIONPOINT HEALTH PARTNERS</th></tr>
<tr><td>Target population
Serving 250,000 members in seven states. (MissionPoint, 2017b)</td><td>Matched Segment
Not used in matching exercise</td></tr>
<tr><td colspan="2">Intervention Components
• MissionPoint Health Partners is a population health management organization that uses a global financing model to provide a clear picture of the resources needed for this patient population and enable personalized responses to patient needs and iterative learning and resource shifting. This iterative approach, supported by a clear leadership commitment, is a major feature of the program’s profit-and-loss strategy. (Coye, 2016)
• “Central to the MissionPoint model is [its] wraparound clinical management framework, a skilled team of Health Partners who help members solve problems and connect their medical care with everyday life. . . . [The Health Partners, who] are experienced health care professionals and</td></tr>
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PACIFIC BUSINESS GROUP ON HEALTH’S INTENSIVE OUTPATIENT CARE PROGRAM

Target population	Matched Segment
Individuals having two or more chronic conditions and behavioral and psychosocial needs that are not being met by the current health care system. (Mangiante, 2015)	Not used in matching exercise

Intervention Components

- This high-touch, care-coordinated, patient-involved program uses team-based care with both licensed and unlicensed care coordinators to ensure seamless transitions and links to needed services. (Mangiante, 2015)
- Individuals in 23 participating delivery systems and 500 practices are identified using a predictive risk model plus cognitive assessment, as well as through physician referrals. (Mangiante, 2015)

PARTNERS HEALTHCARE INTEGRATED CARE MANAGEMENT PROGRAM

Target population	Matched Segment
“Medicare beneficiaries who are high cost and/or have complex conditions” (McCarthy, 2015) (also expanded to children) (Partners Healthcare, 2016).	Major complex chronic Children w/ complex needs

Intervention Components

- “Care managers are integrated into primary care practices.” (McCarthy, 2015)
- “Care managers provide patient education and address both medical and psychosocial needs.” (McCarthy, 2015)
- “Focus on preventing exacerbations that lead to emergency department visits and inpatient admissions.” (McCarthy, 2015)
- “Case managers also support end-of-life decision making.” (McCarthy, 2015)

Outcomes

Coye, M. J. 2016. Identifying the Design Elements of Successful Models. Prese at the January 19th NAM Models of Care for High-Need Patients meeting, Washington, DC.

Davda, R. 2015. Cigna Collaborative Care: Embedded Care Coordinator. Presentation at the July 7th NAM Models of Care for High-Need Patients meeting, Washington, DC.

Dorr, D., A. B. Wilcox, C. P. Brunker, R. E. Burdon, and S. M. Donnelly. 2008. The Effect of Technology-Supported, Multidisease Care Management on the Mortality and Hospitalization of Seniors.

The University of Chicago. 2017. Comprehensive Care Program. https://ccpstu
uchicago.edu/ (accessed August 17, 2017).

US Department of Veterans Affairs. 2017.

- David Meyers, MD, Agency for Healthcare Research and Quality (moderator)
- Bruce A. Chernof, MD, FACP, The SCAN Foundation
- Frank V. deGruy III, MD, MSFM, University of Colorado, Denver
- Lisa Iezzoni, MD, MSc, Harvard Medical School
- David Meltzer, MD, PhD, University of Chicago

12:15 PM Meeting goal 1: closing discussion

12:30 PM Lunch

1:30 PM Models that deliver: success(e)-7..4(0i)4.7(o)(M)]Text<FE0.3(a)-25

NATIONAL ACADEMY O

PLANNING COMMITTEE

Chair

Peter Long, PhD, Blue Shield of California Foundation

Members

Melinda Abrams, MS, The Commonwealth Fund
Gerard Anderson, PhD, Johns Hopkins Bloomberg School of Public Health
Tim Engelhardt, Centers for Medicare & Medicaid Services
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Aparna Higgins, PhD, MA, America's Health Insurance Plans
Frederick Isasi, JD, MPH, National Governors Association
Ashish K. Jha, MD, MPH, Harvard School of Public Health
David Meyers, MD, Agency for Healthcare Research and Quality
Arnold S. Milstein, MD, MPH, Stanford University

NATIONAL ACADEMY OF MEDICINE

8:00 AM Coffee and light breakfast available

8:30 AM Welcome and agenda overview

- Michael McGinnis, National Academy of Medicine
- Jeff Selberg, Peterson Center on Healthcare
- Peter Long, Blue Shield of California Foundation (Chair)

9:00 AM Patient perspective: A caregiver and clinical team example

- Eric De Jonge, MedStar Total Elder Care
- Veronica Humes Butler, Long-time Caregiver
- Gretchen Nordstrom, MedStar Total Elder Care

9:30 AM A patient taxonomy and promising care models

This session will examine a taxonomy of high-need patients matched to care mod
the most potential to improve outcomes and lower the total cost of care for high-nee

- Melinda Abrams, The Commonwealth Fund, Planning Committee Member
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APPENDIX C

Mary B. Barton, MD, MPP
Vice President for Performance Measurement
National Committee for Quality Assurance

Jayasree Basu, PhD, MBA
Senior Economist & Health Scientist
Agency for Healthcare Research and Quality

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Former Director, Medicare-Medicaid Coordination Office
Centers for Medicare and Medicaid Services

Amy Berman, BSN, LHD
Senior Program Officer
John A. Hartford Foundation

Beth Berselli, MA, MBA
Program Officer
Gordon and Betty Moore Foundation

Arlene Bierman, MD, MS
Director, Center for Evidence and Practice Improvement
Agency for Healthcare Research and Quality

Leah Binder, MA, MGA
President and Chief Executive Officer
The Leapfrog Group

Laura Birchfield Kennedy
Director of Health Policy
National Partnership for Women & Families

Paul Bleicher, MD, PhD
Chief Executive Officer
Optum Labs

David Blumenthal, MD
President
The Commonwealth Fund

Peter Boling, MD
Professor and Chair of Geriatric Medicine
Virginia Commonwealth University Medical Center

Vence L. Bonham, Jr., JD
Senior Advisor to the Director on Genomics and Health Disparities, National Human Genome Research Institute
National Institutes of Health

Cynthia Boyd, MD, MPH

Richard S. Frank, MD, MHSA

Sheldon Greenfield, MD
Donald Bren Professor of Medicine and Executive Co-Director, Health Policy Research Institute
University of California, Irvine

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Congressional Research Service

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Director
American Academy of Pediatrics

Allison Hamblin, MSPH
Vice President, Strategic Planning
Center for Health Care Strategies

Simon Hambidge, MD, PhD
Chief Ambulatory Care Of 3 O,Dhen-7.9(v)13.3(e)-3.4(r H)7.6(e)-1189(a)-35.3(

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  Johns Hopkins University

Richard G. Kronick, PhD

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Marci Nielsen
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Barbara Wells, PhD
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Ashlie Wilbon, RN, MS, MPH
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Sandra Wilkniss, PhD
Program Director, Health Division
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Sharon Zalewski
Executive Director
Regional Primary Care Coalition

Emily Zyborowicz, MPH
Manager, Research and Identification
Peterson Center on Healthcare

advocacy and policy making and the federal budget process. Prior to joining GW, Hayes served as vice president of health policy for Jennings Policy Strategie Inc. Other private-sector experience includes legal practice as a member of th health and legislative practice groups at Hogan & Hartson, LLP (now Hogan Lovells); policy director for two large Catholic health systems; and policy director for Cardinal Glennon Children's Hospital. Her government experience includes serving as legislative counsel to Senator Evan Bayh (D-IN); legislative assista to Senator John H. Chafee (R-RI) and Congressman Mickey Leland (D-TX); and as a program consultant for the State of Missouri Medicaid agency. Ms Hayes also worked as a health and education policy adviser for the State of Texa Office of State-Federal Relations. She received a BA in international studies from the University of North Carolina at Chapel Hill and a JD from The American University Washington College of Law.

Frederick Isasi, JD, MPH, is the current executive director of Families USA. He previously served as the health division director with the National Governors Association Center for Best Practices (NGA Center). In that role, he oversaw the entire Health Division portfolio, including work related to: health care service delivery and payment reform; Medicaid reform and cost containment; state employee and retiree health benefits; maternal and child health; public health; prescription drug abuse prevention; health information exchange and analytics; behavioral health and the social determinants o health; and health insurance coverage issues such as insurance market refor and health insurance exchange planning and operations. Previously, he serve as the vice president of health policy at The Advisory Board Company, where he founded the health policy division focused on surfacing insights related to transforming the quality and efficiency of health care with a particular focus on risk-based payments, accountable care, population health, patient engagement, and payment bundling. Mr. Isasi also served for 5 years as the senio legislative counsel for health care to Senator Jeff Bingaman, working on both the Finance Committee and the Health Education Labor and Pension (HELP) Committee. During his time in the Senate, Mr. Isasi authored numerous health care laws related to Medicare, Medicaid, the State Children's Health Insurance Program (SCHIP), payment transformation and accountable care, quality, health information technology, health care workforce, oral health care, public health, and the Food and Drug Administration. He also worked extensively on the Affordable Care Act, including the development of new health-insurance exchanges and insurance market reforms. Mr. Isasi graduated with a J from Duke University Law School and received an MPH from the University

Arnold S. Milstein, MD, MPH, is professor of medicine and the director of the Clinical Excellence Research Center (CERC), which is housed in the Center for Advanced Study in the Behavioral Sciences at Stanford University. CERC designs and demonstrates, in multistate locations, scalable health care delive innovations that provide better care with less health care spending. His researc spans positive value outlier assessment, human-centered health care design, and partnership with Stanford’s AI Lab, the development of technology-based cognitive aids to boost the yield from health care spending. Before joining Stanford’s faculty, Dr. Milstein founded a national health care performance-improvement firm that he expanded globally after its acquisition by Mercer. He subsequently cofounded three nationally influential public benefit initiatives, including the Leapfrog Group and the Pacific Business Group on Health. As a congressiona MedPAC commissioner, he originated two legislative changes to align health care provider revenue with value to patients. Dr. Milstein was elected to the National Academy of Medicine and cochaired its analysis of opportunities to safely slow national health spending growth.

Diane Stewart, MBA, joined the Pacific Business Group on Health in January 2001. She serves as the senior directu37.2(e)-5.2-4(v)12-14.8(g)v, the East Coast. Ms. Stewart received a BS in biology from Dartmouth College and an MBA from the Yale School of Management.

Sandra Wilkniss, PhD, serves as program director for the National Governors Association (NGA) Center for Best Practices' Health Division. Dr. Wilkniss focuses on issues related to behavioral health and social determinants of health and the innovative integration of these into health system transformation efforts. She leads the NGA Center's technical assistance work with states advancing programs for high-need, high-cost populations. Prior to joining NGA, Dr. Wilkniss worked for 3 years in the US Senate as senior legislative assistant for health care to Senators Jeff Bingaman and Martin Heinrich. She joined Senator Bingaman's staff after serving 1 year as an American Association for the Advancement of Science/American Psychological Association Congressional Fellow in his office. Before her career transition to the health policy field, Dr. Wilkniss worked for 15 years as a scientist-practitioner in adult psychopathology, specializing in serious mental illness. She served as the director of Thresholds Institute at Thresholds Psychiatric Rehabilitation Centers, the research and training arm of the Chicagoland's largest psychiatric rehabilitation provider. She also served as adjunct assistant professor at Dartmouth Medical School, assistant clinical professor at the University of Illinois at Chicagoblsteont c33 Tc022.5(. S)1.s a .3(