

The Effects of Expanding Primary Care Access for the Uninsured: Implications for the Health Care Workforce Under Health Reform

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Abstract

The Patient Protection and Affordable Care Act seeks to improve health equity in the United States by expanding Medicaid coverage for adults who are uninsured and/or socioeconomically disadvantaged; however, when millions more become eligible for Medicaid in 2014, the health care workforce and care delivery systems will be inadequate to meet the care needs of the U.S. population. To provide high-quality care efficiently to the expanded population of insured individuals, the health care workforce and care delivery structures will need to be tailored to meet the

needs of specific groups within the population.

To help create a foundation for understanding the use patterns of the newly insured and to recommend possible approaches to care delivery and workforce development, the authors describe the 13-year-old experience of the Virginia Coordinated Care program (VCC). The VCC, developed by Virginia Commonwealth University Health System in Richmond, Virginia, is a health-system-sponsored care coordination program that provides primary and specialty care services

to patients who are indigent. The authors have categorized VCC patients from fiscal year 2011 by medical complexity. Then, on the basis of the resulting utilization data for each category over the next fiscal year, the authors describe the medical needs and health behaviors of the four different patient groups. Finally, the authors discuss possible approaches for providing primary, preventive, and specialty care to improve the health of the population while controlling costs and how adoption of the approaches might be shaped by care delivery systems and educational institutions.

With further implementation of the Patient Protection and Affordable Care Act (PPACA) in 2014, millions of newly covered Americans will be seeking additional health care services, adding

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strain to the already-taxed health care delivery system. Estimates of the number of people who will enroll in the expanded Medicaid program—representing approximately half of the newly insured under PPACA—range from 8.5 to 22.4 million.¹ Previous researchers have estimated that approximately 4,500 to 12,100 new providers will be required,¹ mostly in primary care.² Access to health care in areas with existing primary care shortages will decrease further.³ This strain will only escalate through 2025 as the baby boomers age and require an additional 40,000 health care professionals to provide for their health care needs.⁴ To provide efficient, patient-centered, high-quality care in both the short and long term, the United States needs to optimize the size and composition of its health care workforce.⁵ The enactment of PPACA offers researchers and leaders an opportunity to understand the needs of communities, to implement targeted strategies of care, and to define which approaches best align the existing health care workforce and systems of care with the needs of the newly insured population. The results of these new strategies, approaches, and initiatives could reshape health care, improving quality, cost, and equity across the system.

To better understand the health care needs of the newly insured, we examined the Virginia Coordinated Care (VCC) program, a 13-year-old program that uses managed care principles.

The VCC Program

The Virginia Commonwealth University Health System (VCUHS), a major safety net academic center, established the VCC program in 2000 to serve as a primary care home for adults in the Richmond metropolitan area without health insurance.⁶ The purpose of the VCC program is twofold: (1) to improve the health of the community, and (2) to decrease use of inappropriate services, such as avoidable hospitalizations and emergency department (ED) visits for nonurgent problems. The program enrolls U.S. citizens at or below 200% of the federal poverty level (FPL) and assigns the patients to community-based primary care physicians who receive a monthly payment for the patients' care management as well as a fee-for-service payment for visits. A large percentage of individuals in the VCC program enroll after they present to the ED at VCUHS, and an increasing number of patients are reenrolling to maintain access to medications and provider services.

Enrollment includes financial screening which must be repeated annually. A recent analysis of the VCC program has shown that enrolled individuals increased their use of primary care services and amassed decreased overall health care costs through lower use of hospital and ED services.⁷ Further, the study indicates that with each additional year patients were enrolled in the program, their rates of hospitalizations and ED visits decreased even more substantially.⁷ Over the past 13 years, VCC enrollment has grown to over 25,000 enrollees.

Herein, we use data from the VCC program to describe the patterns of health care use for a population of patients similar to those who may become newly insured by Medicaid under PPACA. Under PPACA, persons under 138% of the FPL will be covered by Medicaid (in states opting to expand coverage), and persons between 138% and 200% of the FPL will be able to attain subsidized insurance through the health insurance exchanges. On the basis of utilization data within the VCC program, we define different subsets of the population and use these subsets to propose models that

could meet the needs of new patients while also controlling costs.

Analysis and Classification of Patients

Using deidentified, pooled institutional data sets, we examined clinical and utilization data for patients enrolled in the VCC program for any part of the 2011 fiscal year (FY)—that is, July 1, 2010, through June 30, 2011. Specifically, we pulled diagnosis and utilization information from the VCC claims database, which includes providers external to VCUHS, and from billing data for physicians associated with VCUHS. We extracted the number of prescriptions filled by each patient from records at the VCUHS pharmacy. Because VCC patients receive subsidized medications through the VCUHS pharmacy, they fill most of their medications through this setting. Combining these databases, we captured for each enrollee specific diagnoses (e.g., congestive heart failure or depression), utilization data (hospital costs and number of ED visits), and the number of prescribed medications. Care that did not result in a claim to the VCC program

or was not provided at VCUHS was not accounted for in our analysis. The study was approved by the VCU institutional review board.

We used diagnosis, utilization, and prescription data to develop four stratifications of medical complexity: EpisodiCare, ChroniCare, ComplexiCare, and SpecifiCare (Figure 1). These groups mirror some of the population segments of the “Bridges to Health” model, a classification system which defines population subsets in order to describe public health priorities.⁸ We classified all patients with a specialized diagnosis whose management required more expertise than typical primary care (i.e., HIV, neoplasms, substance abuse, posttraumatic sequelae, significant dermatologic conditions) into the SpecifiCare category and assigned them to the appropriate specialty setting for primary care. We classified patients with the least medical complexity into the EpisodiCare category, patients with intermediate medical complexity into the ChroniCare group, and patients with the highest medical complexity into the ComplexiCare set. We further subdivided

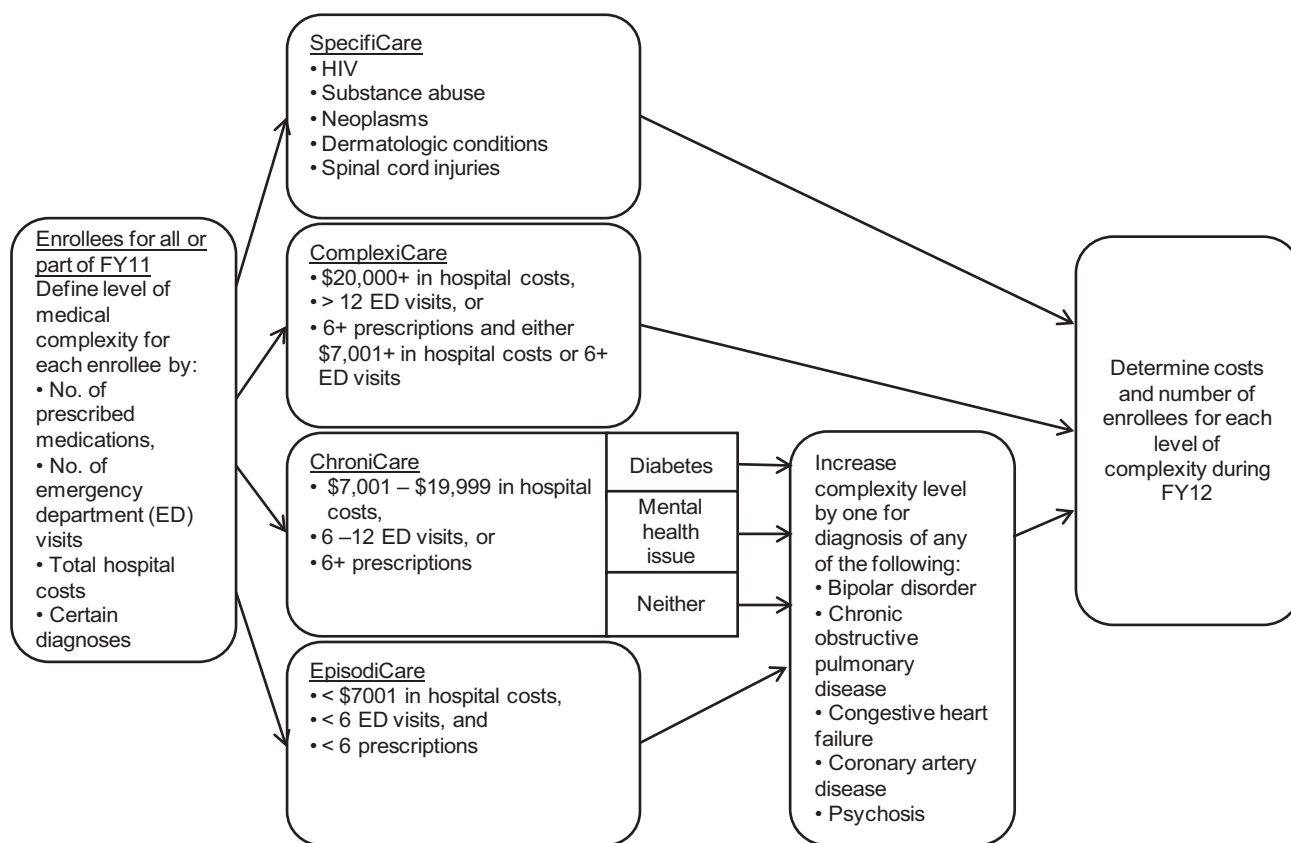


Figure 1 Algorithm for determining level of medical complexity and ensuing resource use, Virginia Coordinated Care Program, Virginia Commonwealth University Health System.

the ChroniCare group into patients with diabetes, patients with mental health disorders, or neither. Finally, because we had noted higher use patterns among patients with certain diagnoses (i.e., bipolar disorder, chronic obstructive pulmonary disease, congestive heart failure, coronary artery disease, and psychosis), we assigned all of the patients with these diagnoses into the next-higher-intensity group (unless we had initially placed them in the ComplexiCare or SpecifiCare group).

Three weeks into FY 2012, we assigned patients a level of complexity for the year based on their FY 2011 data. We adjusted these assignments halfway through the year on the basis of use patterns for the first six months of FY 2012. For the current analysis, we examined all VCC claims data from FY 2012 to define the number of patients in each level of complexity and the total costs for all patients assigned to that level.

VCC Patients

The total enrollment in the VCC program for FY 2012 was 27,551. Of these patients, 92.6% (n = 25,502) were below 133% of FPL. The racial breakdown of the population was as follows: 65.3% black (n = 17,986), 25.0% white (n = 6,896), and 2.2% Hispanic (n = 609); the remaining 7.5% (n = 2,060) were other, not listed, or multiracial. Just over half (51.8%, n = 14,269) of the individuals were female. Compared with U.S. averages, fewer enrollees were Hispanic, more were black or white, and a similar number were female.⁹

On the basis of 2012 utilization data (Table 1), 62.8% of VCC patients (n = 17,309) fell into the EpisodiCare classification. During the study period, most of the patients in this group never visited the primary care physician assigned to them by the VCC program. ChroniCare constituted 16.4% of the patients (n = 4,525). These individuals typically had one or more chronic disease diagnoses and participated in regular primary care follow-up. ComplexiCare patients, 8.7% of the population (n = 2,395), generally had multiple interacting chronic diseases, though a few of these patients had a single, severe chronic disease. This segment of the enrolled population accounted for the highest percentage of the VCC program's total costs (39.5% or \$36.1 million). A final 12.1% of the population (n = 3,322) had complex, specialized needs for care (SpecifiCare). The specialized care required for this group was demonstrated by higher costs (30.3% of total costs, \$27.7 million). The average one-year cost per enrollee was as follows: \$733 for EpisodiCare; \$3,326 for ChroniCare, \$15,104 for ComplexiCare, and \$8,363 for SpecifiCare. For comparison, Table 1 lists the estimated percentage of individuals and one-year costs for corresponding groups within the Bridges to Health classification.⁸

Implications for the Health Care Workforce

Meeting the workforce demands of the newly insured under new coverage programs (health insurance exchanges

and Medicaid expansion) may require new processes of care, realignment of patients and providers, changes in the roles of physicians and other providers, and modifications to how health care providers are trained and care is led. Using our classification system, we have been able both to draw some conclusions about workforce development and the structure of health care delivery after the introduction of new coverage programs and to suggest some approaches to meeting population needs optimally by aligning the existing health care workforce and systems of care to those needs (Table 2). Maximizing the value of PPACA will depend on targeted implementation strategies through which the existing workforce is appropriately distributed across a coordinated system.⁵

Increasing insurance and Medicaid enrollment for all patients

Helping individuals enroll in and maintain insurance is critical to promoting health and controlling health care costs under PPACA. Currently, only 61.7% of eligible citizens are enrolled in Medicaid.¹⁰ Once enrolled, decisions about maintaining enrollment are affected by a variety of issues such as the level of perceived benefits, the level of cost sharing by patients, nonfinancial barriers to enrollment (e.g., the complexity of enrollment forms), and the ability to find providers who accept Medicaid.^{11,12} Enrollment lapses are linked to increased use of the ED, increasing use overall, and worse health outcomes.¹³

Table 1

Enrollees and Total Cost by Virginia Coordinated Care (VCC) Level of Medical Complexity With Corresponding "Bridges to Health" Groups, 2012*

VCC level of complexity	Care needs	No. (% of 27,551) of enrollees	Total costs in millions of dollars (% of \$91.5 million)	Average annual costs / enrollee	Bridges to Health Classification (Lynn et al ⁸)		
					Category	% of all individuals	Average annual costs / person
EpisodiCare	Episodic, urgent care	17,309 (62.8)	12.6 (13.8)	\$733	Healthy	~53%	~\$800
ChroniCare	Straightforward primary care	4,525 (16.4)	15.1 (16.5)	\$3,326	Chronic conditions, normal function	~36%	~\$7000
ComplexiCare	Complex, coordinated care	2,395 (8.7)	36.1 (39.5)	\$15,104	Stable but serious disability, or intermittent exacerbations	~3%	~\$40,000 to \$45,000
SpecifiCare	Complex, specialized care	3,322 (12.1)	27.7 (30.3)	\$8,363	Various	N/A	N/A

*Percentages may not equal 100 because of rounding. N/A indicates not applicable.

Table 2

Measures Based on Level of Medical Complexity Needed to Deliver Care to the Newly Insured Population

Level of complexity	Focus of care	Measures to close gap between existing models and imminent needs	Key providers*	Applicable care model(s)
EpisodiCare	Episodic urgent care and/or preventive services	– Develop and expand sustainable, low-cost models for urgent care such as retail clinics – Link urgent care sites to preventive health services (e.g., screenings for colon and breast cancer) – Define and grow the health promotion workforce (e.g., community health workers) to facilitate ongoing insurance enrollment and appropriate behaviors to access care – Increase training of nonphysician providers to deliver protocol-driven care in urgent care models	NPs, PAs, PharmDs, CHWs	– Retail clinics (Weinick et al, 2010²⁰) – Community-based health promotion (Rosenthal et al, 2010¹⁷)
ChronicCare	Straightforward continuity care	– Expand existing low-cost primary care models (e.g., community health centers) – Disseminate successful practices (i.e., models for interprofessional collaboration) from low-cost primary care models, including educating health professional trainees within these models – Develop coordination mechanisms to steer patients with specific diagnoses (e.g., diabetes, mental health disorders) to the most fitting medical homes – Increase the number of graduates from advanced practice nursing and physician assistant programs – Create provider status and certification process for pharmacists trained to provide clinical services	NPs, PAs, PharmDs, RNs	– Community health centers (Ku et al, 2011²⁴) – Traditional primary care practices (Laurant et al, 2009²⁷) – Clinical pharmacy practice (Manolakis and Skelton, 2010³²)
ComplexiCare and SpecifiCare	Complex or specialized continuity care	– Target segments of the high-utilization population to multidisciplinary clinics and home-based interventions focused on case management – Extend coordinated care models led by nonphysicians for specialized conditions (e.g., HIV, mental health disorders)	RN case managers, NPs, PAs, PharmDs, physicians	– Primary care medical home (Jackson et al, 2013³⁸) – Disease-specific, interprofessional clinics (Druss et al, 2011⁴²; Wilson et al, 2005⁴⁴)
All	—	– Train interprofessional teams in collaborative practice competencies – Develop the expertise of clinical leaders in population management – Create pathways to quickly disseminate successful innovations broadly	—	—

*NP indicates nurse practitioner; PA, physician assistant; PharmD, doctor of pharmacy/pharmacist; CHW, community health worker; RN, registered nurse.

Notably, patients continuously enrolled in the VCC have better outcomes.⁷

One solution included in PPACA to help reduce both gaps and lapses in enrollment is expanding the ranks of community health workers (CHWs). Because CHWs benefit communities, payers, and facilities by helping patients navigate the health care system,^{14,15} previous state Medicaid expansions have increased the number and scope of CHWs.^{16,17} Growth in the role of CHWs may make vital contributions to the success of PPACA by helping patients understand and complete complicated insurance enrollment forms and by helping them navigate the relationships

between providers across disparate locations such as EDs, primary care settings, and specialists' offices. Although health care coverage increases use and improves outcomes, decreasing financial barriers alone for people who are indigent may prove insufficient to improve the health of this population.^{10,18} Patients also require assistance overcoming other barriers to accessing care.

Episodic care, screening, and preventive services for the healthiest patients

Although care for EpisodiCare patients represents only a small amount of the overall health care use of VCC patients in terms of cost (just 13.8%), changing how this majority group (62.8% of

enrollees) engages the health care system is important for improving population health and decreasing costs. Because they do not have a high burden of chronic disease, many of these patients require care largely for acute medical problems and for the screening and preventive services which help forestall chronic disease (and prevent these patients from moving into a higher use and higher cost-per-person group). Patients in the VCC program, as well as those examined in other studies,¹¹ commonly use the ED for acute care of nonurgent health concerns. The ED provides accessible urgent care,¹⁹ including geographic proximity and hours of operation conducive to visits by individuals who are employed but do not

have sick leave, but this approach to care is costly and does not support screening and preventive services.

One attractive alternative to meet the needs of patients like those in the EpisodiCare group is retail clinics. This fast-growing model features a clinic colocated with a pharmacy in either a drug store or supermarket.²⁰ These clinics are often staffed by nurse practitioners (NPs) or physician assistants (PAs) who follow defined protocols to evaluate minor health problems and provide screening services. Patient satisfaction is high, and clinical outcomes are positive.²¹ Changes necessary to meet the increased needs under PPACA expansion include expanding hours at existing stores and/or increasing the number of stores, especially in medically underserved areas. One limitation of the retail clinic model is that practitioners can evaluate only a handful of acute conditions. Defining protocols and care pathways—such as referrals to specialists or for screening tests—may expand the capacity of retail clinics and further shift use patterns away from higher-cost sites like the ED while still improving the health of patients.

Medical homes for patients who have a greater degree of chronic illness

Because insurance expansion will acutely exacerbate the chronic shortage of primary care physicians, an expanded nonphysician workforce and modifications to existing care structures may be required if all patients are to receive timely, equitable, high-quality, patient-centered care. Community health centers (CHCs), many of which operate under the patient-centered medical home model, provide an exemplar for caring for indigent patients, who require ongoing follow-up for chronic disease (such as those persons in the VCC ChroniCare group). CHCs are also designed to use team-based care to manage health problems that are more common in patients who are indigent, such as mental health disorders and substance abuse.²² Annually, CHCs in the United States provide care for 1.2 million patients with a primary diagnosis of a mental health disorder and for almost 150,000 patients with a primary diagnosis of a substance abuse disorder.²³ Funded to grow further under PPACA, CHCs saw a 31% increase in patient visits and reported a 20% annual increase in insurance-related patient revenues during the first three years of Massachusetts's recent Medicaid

expansion.²⁴ However, to expand coverage most beneficially under PPACA, patients should be paired to the most suitable medical home—just as the VCC program has done with patients with mental health disorders and diabetes.

One reason CHCs have been successful is that they employ lower-cost, interprofessional, primary care teams to decrease use of higher-cost settings.²⁵ In comparison with the national primary care workforce (of which 25% are nonphysicians),³ a larger proportion (approximately 40%²⁶) of clinicians at CHCs are nonphysicians—advanced practice nurses (APNs), PAs, dentists, pharmacists, and mental health professionals. Research has shown that patients who see these nonphysician providers have similar outcomes to those who experience physician-led primary care.^{27–29} By building collaborative teams of health professionals, CHCs have been able to deliver high-quality, more efficient care. However, CHCs also face workforce shortages.²⁶ While APNs and PAs are growing in number,³⁰ the per capita supply of providers (including APNs and PAs) will still be 20% less than needed by 2025.³¹ Unless the training pipeline across all health professions increases, team-based models will not be fully staffed to meet the needs of the population.

Increasing the role of pharmacists

One group of medical professionals with the desire and some capacity to help fill the workforce gap is pharmacists.³² Pharmacy-led clinics for medication management of chronic disease are increasing,³³ and research shows that their outcomes are superior and their patients' satisfaction higher than usual for primary care practices in areas such as warfarin management.³⁴ In addition, during state-based insurance coverage expansions, community pharmacists extended their traditional dispensing role to include activities such as providing counseling for women choosing between over-the-counter and prescription contraceptive methods.^{35,36} To support these practices, pharmacists are formally seeking provider status under the Social Security Act so that they can generate revenue from direct patient care.³⁷ Although expanding pharmacists' roles could augment the health care workforce—especially by providing chronic disease management for patients such as those in the ChroniCare group—increasing any

pharmacist's scope of practice should be coupled with a certification process to ensure that he or she is properly trained to provide unsupervised patient care.

Directed case management programs for the most complex patients

The most complex patients, individuals in the ComplexiCare and SpecifiCare groups, for example, represent the greatest potential for controlling costs. Both groups share the need for directed case management programs that improve patient well-being and decrease the use of high-cost services. Although the patient-centered medical home has shown some gains in quality, this model has not yet been demonstrated to be cost-effective.³⁸ Case management models led by nurses and supported by pharmacists have decreased health care use for the highest-cost group of Medicare patients³⁹ and decreased hospital readmissions.⁴⁰ Although these programs targeted patients who were generally older, the individuals had a pattern of higher use of health care resources similar to that of the patients in the ComplexiCare group. Successful programs share several features: targeting very-high-use patients, engaging these patients with a cohesive interprofessional team, and using a community-centered rather than clinic-centered model that involves visits to the patient's residence for assessments.³⁹ In contrast, models lacking these features have generally been unsuccessful.³⁹ Populations similar to the SpecifiCare group have also benefited from specially crafted interprofessional teams. For patients with serious mental illness—the most common reason for hospital admission in newly insured Medicaid patients⁴¹—medical case management improves both health and cost outcomes.⁴² Patients with HIV who are indigent also benefit from case management by teams led by NPs and PAs^{43,44} and augmented by clinical pharmacists⁴⁵; in these models, the physician more often provides oversight of clinical care processes through treatment protocols and may pursue clinic-based research. By distributing the work of primary care away from physicians, these models allow physicians to focus their increasingly scarce expertise on innovation in care and on the most complex cases without sacrificing patient well-being. Correctly structuring care teams for medically complex patients is essential for attaining the goals of PPACA.

Training a workforce with new abilities to meet current challenges

Because innovations to meet the needs of the newly insured range from changes in the types and roles of providers to novel care delivery structures, several broader, coordinated initiatives are essential. Health care professionals need a better understanding of the roles of others in the profession and of the capacity of the various locations of care. Moreover, while site-specific training in collaborative skills improves team performance,⁴⁶ what are needed—and have yet to be defined—are programs to train teamwork abilities that can be transferred across practice environments.⁴⁷ To improve collaboration and coordination of care, health professions educators, including designers of continuing education, need to adapt new models for education that are framed within a fundamental understanding of interprofessional practice.^{48,49} In addition, clinical leaders, regardless of profession, need expertise in population health and management so as to effectively coordinate clinical efforts across subsets of the population and across practice settings (e.g., chain-based retail clinics, the EDs of health systems, and CHCs). The most critical innovations to meet the demands of the newly insured are structures for care that coordinate across settings, maximize each profession's roles and scope of practice, and enhance collaboration. Under pressure, health systems have historically led the development of new models of care (e.g., the expansion of nurse midwives)⁵⁰ to meet societal needs. A growing number of physicians are employed by health systems,⁵¹ and integrated systems could provide platforms for a new generation of innovations in care. Because of the extent of change facing the health care system, leaders should also facilitate the diffusion of innovation, a process influenced by how an innovation is perceived, the characteristics of the individuals who adopt the change, and contextual and managerial factors within the organization.⁵²

Beyond the VCC

Several factors may limit the broad application of our experiences with the VCC program. Whereas VCC patients generally enroll in the program after a visit to the ED at VCUHS, newly insured individuals under PPACA might enroll in coverage programs differently. In a

prior Medicaid expansion that resembled PPACA, individuals tended to enroll after presenting for an acute health crisis,⁵³ but increased community-based efforts under PPACA might lead to broader range of enrollees who would presumably be less medically complex (e.g., more likely EpisodiCare than ComplexiCare). In addition, individuals enrolled in VCC represent only central, urban Virginia, and our experience may not generalize to other parts of the country, especially rural communities. Regardless, measuring the use patterns of a population to tailor care delivery should lead to higher-quality, more efficient care for that population.

In Sum

Across the heterogeneous environment of states, localities, and health care systems, many different approaches have been taken to implement PPACA. Medicaid expansion in 2014 will represent a multistate experiment including the actions of many smaller, local subgroups. Examining each approach separately will offer an opportunity to determine its impact on the health of the community, on standards for licensure and scope of practice, on system interventions, and on training programs. Defining important factors and analyzing the results of these natural experiments is critical for determining the value of different approaches to meeting the imminent challenges of improving care in the face of a strained workforce and rising health care costs. Fundamentally, the value of a government-funded expansion of insurance coverage is determined by the health benefit to the population divided by its cost. To provide the most effective and efficient care, payers or systems should both apply an analysis similar to ours to define the needs of different segments of the newly insured population and implement targeted care delivery practices. Using population-defined approaches to create the needed workforce and care delivery systems is vital to control costs and achieve the most value while improving the health of individuals and populations.

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