

HEALTH CARE REFORM

Safety-Net Providers After Health Care Reform

Lessons From Massachusetts

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Background: National health reform is designed to reduce the number of uninsured adults. Currently, many uninsured individuals receive care at safety-net health care providers such as community health centers (CHCs) or safety-net hospitals. This project examined data from Massachusetts to assess how the demand for ambulatory and inpatient care and use changed for safety-net providers after the state's health care reform law was enacted in 2006, which dramatically reduced the number of individuals without health insurance coverage.

Methods: Multiple methods were used, including analyses of administrative data reported by CHCs and hospitals, case study interviews, and analyses of data from the 2009 Massachusetts Health Reform Survey, a state-representative telephone survey of adults.

Results: Between calendar years 2005 and 2009, the number of patients receiving care at Massachusetts CHCs increased by 31.0%, and the share of CHC patients who

were uninsured fell from 35.5% to 19.9%. Nonemergency ambulatory care visits to clinics of safety-net hospitals grew twice as fast as visits to non-safety-net hospitals from 2006 to 2009. The number of inpatient admissions was comparable for safety-net and non-safety-net hospitals. Most safety-net patients reported that they used these facilities because they were convenient (79.3%) and affordable (73.8%); only 25.2% reported having had problems getting appointments elsewhere.

Conclusions: Despite the significant reduction in uninsured levels in Massachusetts that occurred with health care reform, the demand for care at safety-net facilities continues to rise. Most safety-net patients do not view these facilities as providers of last resort; rather, they prefer the types of care that are offered there. It will continue to be important to support safety-net providers, even after health care reform programs are established.

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THE AFFORDABLE CARE ACT aims to expand health insurance coverage through expansion of private health insurance and Medicaid coverage. Currently, a disproportionate share of uninsured patients obtain primary care from community health centers (CHCs) or clinics of safety-net hospitals (eg, public or charity hospitals) and specialty and inpatient care from safety-net hospitals. If uninsured individuals gain

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insurance coverage and have more choices of providers, what will be the role of the health care safety net? Will patients shift away from safety-net providers? Will the need for safety-net facilities fade?

This article addresses these issues based on the experiences of health care professionals and patients in Massachusetts after its 2006 health care reform law, known as Chapter 58, was implemented. Key elements of Massachusetts law parallel the fed-

eral health care reform law, including an individual mandate for coverage, the expansion of public coverage (ie, a modest expansion of Medicaid, known as MassHealth in Massachusetts, and the creation of Commonwealth Care, a publicly subsidized plan for individuals with incomes below 300% of the poverty line), and a health insurance exchange for more affordable private insurance. Insurance coverage of nonelderly adults, the primary target for Massachusetts' health care reform initiative, rose from 87.5% in 2006 to 95.2% in 2009, and access to care also improved.^{1,2} A recent statewide survey³ found that the uninsurance rate had fallen to 1.9% by 2010. This article focuses on CHCs and safety-net hospitals in Massachusetts and the patients who seek care at these facilities, using a combination of administrative data, the results of the 2009 Massachusetts Health Reform Survey, and qualitative data collected on visits to sites in 4 communities in early 2010. In part, this article is a follow-up of an earlier report⁴ regarding Massachusetts' CHCs after the institution of health care reform.

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Table 1. Changes in Patient Volume at Federally Qualified Health Care Centers in Massachusetts^a

Patients	Calendar Year, %				
	2005	2006	2007	2008	2009
Total, No.	431 005	446 559	482 503	535 255	564 740
Uninsured	35.5	32.7	25.6	21.4	19.9
Medicaid/CHIP	37.6	41.7	41.8	42.0	42.3
Medicare	7.2	7.3	7.9	8.2	8.3
Commonwealth Care/other public insurance	0.8	0.5	5.5	8.8	10.1
Private health insurance	18.9	17.8	19.2	19.5	19.4

Abbreviation: CHIP, Children's Health Insurance Program.

^aSource: Authors' analyses of the Bureau of Primary Health Care, Uniform Data System reports, 2005-2009. Percentages may not total 100 because of rounding.

METHODS

This study used multiple data sources to address different issues. For CHCs, data from the Uniform Data System for Massachusetts for 2005 through 2009 were analyzed. Uniform Data System findings are reported annually to the federal government by CHCs that receive Section 330 grants and include patient caseloads, revenue, and expenditures; other health care centers in the state are not included. For hospitals, financial and administrative data reported to the Massachusetts Division of Health Care Finance and Policy for calendar years 2006 through 2009,⁵ including data from Form 403 cost reports, were analyzed for changes in ambulatory and inpatient care provided.

Data pertaining to patients' perspectives were obtained from the 2009 Massachusetts Health Reform Survey,⁶ a state-representative telephone survey of 3041 nonelderly adults conducted in autumn 2009; its response rate (ie, 45%) is comparable of other recent telephone surveys.⁷ The survey included data pertaining to health insurance coverage status, health care use, and questions that had not been present on previous surveys regarding the use of safety-net facilities; to our knowledge, ours is the first report of that information. The survey results were weighted to account for nonresponse to represent Massachusetts adults and adjusted for complex survey design. The survey methodology has been reported elsewhere.⁶

We conducted case study interviews from January 26 through March 30, 2010, with CHC and hospital administrators and medical staff in Boston, Fall River, Springfield, and Pittsfield to help us understand recent changes, using 2-person teams and semi-structured interviews. These areas were selected to reflect sections of the state (ie, Boston, southeast, central, and western Massachusetts) that had had greater health care access problems according to the results of earlier research.⁸ The administrative and survey data represent Massachusetts, but intrastate differences may exist. Protocols were approved by the George Washington University Medical Center Institutional Review Board.

RESULTS

COMMUNITY HEALTH CENTERS

The CHCs provide comprehensive primary care services regardless of patients' ability to pay. Massachusetts had 36 CHCs in 2009 (up from 33 in 2005), providing services at 312 sites. Between 2005 and 2009, the total number of patients served increased by 31.0%, from 431 005 to 564 740 (**Table 1**). The number of uninsured individuals decreased from 35.5% of the CHC caseload in 2005 to 19.9% by 2009, primarily because more were covered by Medicaid and Commonwealth Care. Unduplicated patient counts are reported by CHCs, but overlap could occur if patients

use multiple CHCs. However, most Medicaid and Commonwealth Care patients were assigned to the CHCs per managed care arrangements and could not readily use services from multiple clinics. The average number of visits per patient also increased during this period, suggesting that there was no increased care fragmentation.

The 134 000-person increase in number of patients from 2005 to 2009 demonstrates the importance of CHCs as a source of care for insured and uninsured patients. During this period, other research^{9,10} indicated that waiting times for primary care visits at private physicians' offices in Massachusetts were growing, and a shortage of primary care physicians was a concern. The CHC staff reported that even after their uninsured patients gained health insurance coverage, they continued to seek care at the CHCs because they appreciated the care and had developed ties to center health care professionals. The CHCs also reported gaining new patients through Medicaid and Commonwealth Care managed care contracts and word of mouth.

The CHCs finance the growth primarily through higher insurance revenue, especially from Medicaid and Commonwealth Care. Between 2005 and 2009, CHCs' insurance-related revenue increased at an average annual rate of 20.0% (**Table 2**). The primary reason for increased insurance revenue was growth in the volume of Medicaid and Commonwealth Care patients, although revenue also increased because of more visits per patient, health care cost inflation, and planned Medicaid rate increases. Funding from sources other than insurance (eg, federal, state, local, or private grants or contracts) grew 8.9% annually. During this period, many CHCs received federal economic stimulus funding for capital improvements, including construction and health-related information technology. State and local funding other than Medicaid and Commonwealth Care increased just 4.0% annually between 2005 and 2009.

Although CHC revenue grew appreciably during this period, so did costs. As reported in Table 2, total revenue per patient rose an average of 6.3% per year, and total costs per patient increased by 6.4%. One reason for higher costs was to meet staffing needs, which often required increasing salary levels for clinical staff in a competitive market. The CHCs also used innovative approaches to hire physicians and other clinical staff, such as a special workforce initiative to support loan repayment similar to that of the National Health Service Corps. These approaches were supported by private sources and state matching funds and sponsored by the Massachusetts League of Community Health Centers.

Table 2. Changes in Revenue and Costs for Federally Qualified Health Care Centers in Massachusetts^a

Revenue and Costs, \$ (Million)	Calendar Year					Annual Growth 2005-2009, %
	2005	2006	2007	2008	2009	
Total revenue	348.4	396.3	450.7	540.4	583.0	13.7
Insurance-related revenue						
Medicaid and other public insurance	89.0	97.6	127.3	173.2	189.6	20.8
Medicare	16.0	20.3	25.1	29.6	36.6	23.1
Private and other health insurance	26.9	31.8	44.2	50.2	52.1	18.0
Self-payments	7.9	8.7	8.9	12.1	11.6	10.2
Subtotal	139.8	158.4	205.5	265.1	289.9	20.0
Grants, contracts, and other revenue						
Federal	65.0	67.4	70.2	78.6	95.2	10.0
State/local (includes indigent care)	86.4	105.5	97.6	102.9	101.5	4.1
Private	19.0	23.4	29.1	42.3	44.1	23.5
Other	38.2	41.6	48.3	51.5	52.3	8.2
Subtotal	208.6	237.9	245.2	275.3	293.1	8.9
Total costs	350.1	388.5	445.9	537.2	587.9	13.8
Revenue and cost per patient						
Total revenue per patient	808.1	888.6	934.2	1010.3	1032.3	6.3
Total cost per patient	812.2	870.1	924.1	1003.6	1041.1	6.4

^aSource: Authors' analyses of the Bureau of Primary Health Care, Uniform Data System reports, 2005-2009.

Although the number of uninsured patients treated at CHCs declined, the centers became a relatively more important strand in the safety net as providers of care for Massachusetts residents who remained uninsured. The ratio of CHC patients to uninsured state residents rose from 22.0% in 2006 to 38.0% in 2009. The Uniform Data System reported 146 000 uninsured patients in 2006 and 113 000 in 2009; the US Census Bureau's Current Population Survey estimated 657 000 uninsured residents in 2006 and 295 000 in 2009.

SAFETY-NET HOSPITALS

Hospitals and medical centers are often major components of the safety net, providing emergency care, ambulatory primary and specialty care, inpatient care, and other community services. In this analysis, *safety-net hospitals* are defined as those that received 20.0% or more of their net patient service revenue from 3 key public programs for low-income patients (ie, Medicaid, Commonwealth Care, or the Health Safety Net program [the state's uncompensated care program]) in 2009, based on financial data reported by the hospitals. This essentially identified the highest quartile of hospitals with revenue from the public programs for low-income patients: 17 hospitals were classified as safety-net hospitals and 48 were not given that designation. We did not use the state's definition of Disproportionate Share Hospitals because they include Medicare patients, who are not restricted to the low-income bracket. The unweighted average mix of net patient service revenue was 27.0% low-income programs, 35.0% Medicare/other government (eg, Tricare) programs, and 38.0% commercial/other programs for safety-net hospitals. In contrast, for non-safety-net hospitals, the average mix was 11.0%, 39.0%, and 50.0%, respectively.

As reported in **Table 3**, modest growth was observed in overall inpatient admissions at Massachusetts hospitals from 2006 to 2009, but overall growth levels were approximately 2% for safety-net and non-safety-net hospitals. Nonemergency ambulatory care visits from outpatient departments and hospitals' community clinics rose 9.2%

Table 3. Changes in Inpatient Admissions and Ambulatory Care Visits at Massachusetts Hospitals by Safety-Net Status^{a,b}

Category	Calendar Year, No.		Change 2006-2009, %
	2006	2009	
Inpatient Admissions			
Boston Medical Center	28 342	30 250	6.7
Cambridge Health Alliance	17 755	14 651	-17.5
Other safety-net hospitals	202 272	207 956	2.8
Total safety-net hospitals	248 369	252 857	1.8
Non-safety-net hospitals	596 556	609 376	2.1
Ambulatory Care Visits			
Boston Medical Center	1 040 198	1 241 325	19.3
Cambridge Health Alliance	509 390	599 771	17.7
Other safety-net hospitals	3 083 598	3 219 158	4.4
Total safety-net hospitals	4 633 186	5 060 254	9.2
Non-safety-net hospitals	6 350 377	6 612 828	4.1

^aSafety net is defined as 20% or more of net patient service revenue from Medicaid, Commonwealth Care, or Health Safety Net in 2009.

^bSource: Authors' analyses of data from the Massachusetts Division of Health Care Finance and Policy.

for safety-net hospitals and 4.1% for non-safety-net hospitals. The larger increase in ambulatory care use is consistent with safety-net hospital administrators' reports of an emphasis on shifting care to outpatient settings.

Two safety-net hospitals are particularly important: Boston Medical Center (BMC) and Cambridge Health Alliance (CHA). Each receives approximately half its patient revenue from Medicaid, Commonwealth Care, and the Health Safety Net program, which is approximately twice the level of that received by the other safety-net hospitals. Boston Medical Center is a large tertiary care hospital; CHA does not offer tertiary care services but operates an extensive array of community services, including behavioral health care. Both systems have an extensive presence through community clinics and operate managed-care plans for Medicaid and Commonwealth Care. Particularly large increases in use of ambulatory care at BMC (19.3%) and CHA (17.7%) occurred from 2006 to 2009. Boston Medical Center experienced larger-than-average growth in in-

Table 4. Health Insurance Coverage and Health Care Use in the Previous 12 Months by Adults^{a,b}

Category	%		
	All Adults	All Adults Below 300% of Poverty Line	Safety-Net Patients Below 300% of Poverty Line ^c
Health insurance coverage			
Employer-sponsored insurance	68.3 ^d	39.5 ^d	23.9
Public or other coverage	26.9 ^d	51.4 ^d	67.0
None (ie, uninsured)	4.8 ^d	9.1	9.2
Health care use in previous 12 mo			
Any general physician visit	86.2	84.1	82.4
Visit for preventive care	77.7	74.7	74.9
Multiple physician visits	71.0	69.9	68.1
Any specialist visit	53.0	49.3	50.5
Any dental care visit	74.6 ^d	61.4	58.5
Took any prescription drugs	58.2 ^d	60.3 ^d	67.2
Any ED visit	33.8 ^d	46.2 ^d	61.7
≥3 ED visits	8.9 ^d	14.8 ^d	22.3
Most recent ED visit was to treat a nonemergency condition	14.7 ^d	22.0 ^d	33.3
Sample size, No.	3041	1439	603

Abbreviation: ED, emergency department.

^aAged 18-64 y.

^bSource: Authors' analyses of data from the 2009 Massachusetts Health Reform Survey.

^cSee the Results section of the text for safety-net patient criteria.

^dThe value is significantly different from the value for safety-net patients with income below 300% of the poverty line; $P < .01$, 2-tailed test.

patient admissions from 2005 to 2009, and CHA's admissions decreased in 2008 and 2009. The latter occurred not because of a reduction in patients' demand for services but because of planned downsizing of inpatient capacity. In 2008 and 2009, CHA closed 2 inpatient transitional care units, a hospital inpatient facility, and a pediatric inpatient unit and reduced the number of beds for adult inpatient mental health and substance abuse services. These were undertaken as part of a broader service configuration after discussion with state officials.

Administrators and medical staff of safety-net hospitals reported that when their previously uninsured patients gained coverage, they continued to seek care at safety-net hospitals because they appreciated the services delivered and found the locations to be convenient. Safety-net hospitals had services similar to those of CHCs, such as language services and community outreach programs, that they believed met the needs and preferences of their patients.

SAFETY-NET PATIENTS AND THEIR SOURCE OF CARE

This section reports the perspectives of patients documented in the 2009 Massachusetts Health Reform Survey. Safety-net patients included those who reported that their usual source of care was a CHC, a public clinic, a hospital outpatient department, an emergency department, or a place that provides free or reduced-price care to low-income or uninsured people. The latter definition was used because some patients cannot distinguish between CHCs, public clinics, or private clinics. Overall, safety-net patients (as defined for this study) com-

prised 24% of the overall adult population but 39% of the population of those with incomes below 300% of the poverty line and 44% of those with incomes below 150% of the poverty line. We used 300% of the poverty line as the criterion for lower income because that is the income limit for Commonwealth Care. In this section, we limit analyses of safety-net patients to nonelderly adults (ie, individuals aged 18-64) whose income is below 300% of the poverty line because these low-income individuals are the primary target population for the safety net.

Approximately two-thirds of safety-net patients had public insurance coverage, and approximately 9% were uninsured (**Table 4**). This is nearly twice the rate of uninsured in the overall Massachusetts adult population but is equivalent to the rate for all lower-income adults. Safety-net patients, however, are more likely to have public insurance coverage and less likely to have private insurance coverage compared with other adults in the state.

As reported in Table 4, lower-income safety-net patients' use of general medical visits, preventive visits, and specialty visits was not significantly different from the visits by all lower-income adults or by all adults in Massachusetts. Safety-net patients used dental care at levels comparable to those of other low-income adults but somewhat lower than those of all adults. These results were not adjusted for variations in income, health status, or other factors that may contribute to differences in the need for and the use of health care services.

Discrepancies are apparent, however, in emergency department use. Safety-net patients were more likely to seek care at emergency departments than were all low-income adults and much more likely to use them than were all groups of adults. One-third (33.3%) of lower-income safety-net patients reported visiting an emergency department for a nonemergency condition—one that would have been treatable by a regular (ie, office-based) physician, had one been available—compared with 14.7% of all adults.

Why do safety-net patients use safety-net facilities? The survey asked respondents who reported visiting a health care professional who offers medical care at low cost or no cost to low-income or uninsured patients which of several possible reasons were applicable to them. As reported in **Table 5**, the dominant answers were that the safety-net service was convenient (79.3%) and affordable (73.8%). Approximately half (52.0%) the respondents mentioned the availability of services other than medical care at the facility. Some (8.2%) also mentioned that the facility included staff who spoke their primary language. This question was asked only of respondents who answered the survey in a language other than English; those who answered in English were coded as not having mentioned this information. Only 25.2% of the respondents reported that they used safety-net facilities because they had had problems getting an appointment elsewhere. These questions were not asked of respondents who did not report using safety-net care, so no comparisons with that population are available.

COMMENT

Our findings indicate that, although health care reform substantially increased the number of people with health

insurance in Massachusetts, the demand for services from safety-net facilities (ie, CHCs and hospitals) also grew, particularly for ambulatory care. Safety-net facilities continue to serve the uninsured after health care reform was instituted; however, their clients include many newly insured individuals. For uninsured patients, CHCs have become an even more important source of primary care, perhaps because of increasing difficulty obtaining care from other primary care physicians' offices.

Most patients use safety-net facilities willingly rather than as a last resort. Survey data indicated that patients choose to seek care from safety-net facilities because the facilities have qualities desired by the patients: they are convenient, affordable, and offer a range of services. In Massachusetts, most safety-net patients have health insurance coverage and are able to seek care elsewhere. Safety-net administrators and health care professionals reported that patients choose them because those patients are familiar with their facilities and because the safety-net facilities offer the care and types of services that their patients want. Only one-quarter of the patients reported using safety-net facilities because of having had problems getting appointments elsewhere. Although the survey results do not provide comparative data for non-safety-net patients, other research regarding long wait times for primary care in Massachusetts⁸ suggests that many non-safety-net patients also have had problems getting appointments for care elsewhere.

Hospital and health care center administrators consistently noted that they make strong efforts to maintain good relations with their patient communities and to meet their social and health care needs, offering language assistance, insurance enrollment assistance, transportation, and other services not usually offered by private health care facilities. Many also offer dental, vision, or mental health care. The survey data confirmed that the availability of other services was important to many safety-net patients. Other research in Massachusetts found that primary care practices serving economically disadvantaged neighborhoods, often including CHCs and practices affiliated with teaching hospitals, generally have capabilities such as electronic health records, staff dedicated to patient self-management, and bilingual staff that make them suitable as medical homes that can provide high-quality primary care.¹¹

Although this study used multiple methods to address the issues of safety-net facility use in Massachusetts, some limitations are noteworthy. The administrative data from CHCs and hospitals are aggregate and do not permit us to link the individual characteristics of patients to use or to track them over time. No equally comprehensive administrative sources of data are available that pertain to other sources of ambulatory care in Massachusetts; therefore, comparisons with non-safety-net ambulatory care are limited. Survey data are limited by the understanding of respondents as well as by sampling and response limitations. Data from the case study interviews may not be generalizable and are subject to the beliefs or knowledge of those interviewed.

Factors other than implementation of Massachusetts' health care reform law in 2006 also have affected subsequent events and policies. Most significantly, soon after health care reform was implemented, Massachusetts, like

Table 5. Reasons Care Sought From Safety-Net Facility^a

Reason ^b	Safety-Net-Covered Adults, % ^c
Convenient	79.3
Affordable	73.8
Availability of services other than medical care	52.0
Problem getting an appointment at a non-safety-net facility	25.2
Staff able to speak patient's primary language	8.2

^aSource: 2009 Massachusetts Health Reform Survey.

^bAmong patients who reported visiting a facility that provides care at low or no cost for those who have low incomes or are uninsured.

^cAged 18-64 y, with income below 300% of the poverty line (n=309). See the Results section of the text for safety-net patient criteria.

the rest of the nation, entered into a recession, which increased unemployment and poverty and led to lower state and local revenue and, in turn, to state and local budget cuts. It is noteworthy that, despite the economic downturn, Massachusetts was able to sustain its high level of health insurance coverage and access to health care, largely because of its health care reform initiative.² The state has struggled to identify ways to contain health care costs.¹²

Health care reform and improved health insurance coverage helped safety-net facilities by reducing uncompensated care costs and raising insurance revenue. However, the facilities also become more reliant on Medicaid and Commonwealth Care revenue. The CHCs' Medicaid payment rates are largely protected under federal law, which requires cost-based reimbursement. States have considerably more leeway in establishing Medicaid hospital payment rates. Two lawsuits were filed against Massachusetts, one by BMC and the other by 6 community hospitals, citing financial problems resulting from low Medicaid payments caused by the state's fiscal problems; both suits were eventually dismissed.^{13,14} Because of the weak economy, many states have been trimming or freezing Medicaid provider payment rates.¹⁵ Even if the number of uninsured patients continues to decrease during the implementation of national health care reform, hospitals might experience financial difficulties if Medicaid payment rates fall short of treatment costs.

Massachusetts has a Health Safety Net program that subsidizes uncompensated care costs for low-income uninsured and underinsured individuals receiving care at CHCs or hospitals. As expected when Chapter 58 was enacted, the cost and volume of uncompensated care dropped, falling approximately one-third by 2009.¹⁶ Although these savings helped Massachusetts to finance health insurance expansions, safety-net facilities lost some revenue from this program, which offset some of their revenue gains. In this regard, the Massachusetts experience may differ from that of other states. Most states do not have uncompensated care programs (or at least none as extensive as that of Massachusetts), so the reduction in uncompensated care costs and the increase in health insurance revenue ought not to be offset by a loss of this state revenue.

Revenue from public programs, especially Medicaid, remains a dominant source of income for safety-net facilities, which have less ability than other facilities to shift costs to private insurance. Although the public programs may

serve fewer uninsured patients after health care reform, they are likely to serve a disproportionate share of the remaining uninsured individuals and even more of those who receive Medicaid. Thus, the traditional rationale for offering additional subsidies to safety-net facilities remains appropriate. In Medicaid, these special subsidies include Federally Qualified Health Center and Disproportionate Share Hospital payments and other supplemental payments to safety-net hospitals. Per the federal Affordable Care Act, Disproportionate Share Hospital payments will be ratcheted down beginning in 2014, although Federally Qualified Health Center payment rates will continue to be available in Medicaid and will be extended to plans operated as part of the health insurance exchanges.

Experience from earlier insurance expansions also has shown the continuing importance of safety-net facilities. For example, during the past decade, Medicaid and Children's Health Insurance Program pediatric coverage grew. The total number of children participating in Medicaid rose 43% from 2000 to 2008, and the number of Medicaid-covered children served at CHCs increased 95%, according to our analysis of administrative data from the Department of Health and Human Services. In the late 1980s and early 1990s, Medicaid eligibility for pregnant women expanded. The initial growth in maternity care was observed at safety-net hospitals, but non-safety-net hospitals then absorbed many of the low-risk maternity patients. Safety-net hospitals continued to serve the high-risk patients, which indicated the need for continued support of these facilities.¹⁷⁻¹⁹

The growth in use of safety-net facilities in Massachusetts may have been fueled, in part, by a shortage of other primary care providers; however, recent analyses have suggested that similar shortages could occur in other parts of the nation when the federal health insurance expansions are implemented in 2014.²⁰ During implementation of health care reform, states and the federal government should consider whether adequate transitional and long-term support exist to help meet the needs of patients served by safety-net facilities. At the same time, safety-net providers must consider how they can continue to offer the services that their patients want while also addressing the health care reform goals of improving efficiency and quality.

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