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By Diane R. Rittenhouse, Laura A. Schmidt, Kevin J. Wu, and James Wiley

# The Post-Katrina Conversion Of Clinics In New Orleans To Medical Homes Shows Change Is Possible, But Hard To Sustain

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**ABSTRACT** Hurricane Katrina destroyed much of the health care infrastructure in and around New Orleans in 2005. We describe a natural experiment that occurred afterward, amid efforts to rebuild the city's health care system, in which diverse safety-net clinics were transformed into medical homes. Using surveys of clinic leaders and administrative data, we found that clinics made substantial progress in implementing new clinical processes to improve access, quality and safety, and care coordination and integration. But there was wide variation, with some clinics making only minimal progress. Because the transformation was closely tied to the receipt of federal grants and bonus payments, we observed declines in performance toward the end of the study, when clinics faced diminished federal funding and refocused their priorities on survival. Now that federal funds have dried up, moreover, clinics may be losing ground in sustaining their practice changes. The experience shows that payment to support medical home transformation must be robust and stable, and clinics need to be fully integrated into the broader health care system to improve overall coordination of care.

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**T**he patient-centered medical home is widely endorsed as a model of delivery system transformation that holds great promise for increasing the quality of care and slowing the growth of costs. The model constitutes “an approach to providing comprehensive primary care for children, youth and adults” in “a health care setting that facilitates partnerships between individual patients, and their personal physicians, and when appropriate, the patient’s family.”<sup>1</sup>

The medical home model reflects the consensus of the major primary care professional societies<sup>1</sup> and has been endorsed by payers, providers, and consumer groups.<sup>2</sup> It is being implemented in over 100 demonstration programs in an array of settings.<sup>3,4</sup> Early evaluations—mostly in large, integrated delivery systems—demonstrate that this model leads to

improvements in quality and to substantial savings in total health care costs.<sup>5-9</sup> It emphasizes robust primary care that is organized and paid for in a new way.<sup>10</sup>

Yet to date, little has been learned about implementing patient-centered medical homes across whole communities, especially in systems that serve America’s most vulnerable populations—the under- and uninsured—in what is commonly referred to as the safety net. This article presents data from a novel communitywide implementation effort throughout all of the public and nonprofit health care clinics that comprise the New Orleans primary care safety net.<sup>11</sup> Although every community is unique, New Orleans’s experience provides insights into whether, and how, a widespread implementation of medical homes can take place across a diverse array of community-based safety-net clinics.

## The Case Of New Orleans

In 2005 Hurricane Katrina wreaked havoc on the population of New Orleans, destroying much of the region's health care network. Two years later—through a provision of the Deficit Reduction Act of 2005 that authorized payments to restore access to health care in communities affected by the hurricane—the Department of Health and Human Services awarded a three-year, \$100 million Primary Care Access and Stabilization Grant to the state of Louisiana to help restore and expand safety-net services in the New Orleans area.<sup>12</sup>

Historically, the New Orleans safety net was a fragmented, inefficient system, in which the “usual source of care” for the city's poor was the public-sector emergency department at Charity Hospital.<sup>13</sup> Following Hurricane Katrina, Charity Hospital was permanently closed, leaving a gap in services for the city's most vulnerable patients. The federal grant funding was intended to restore and increase access to health care services and also to support the creation of a sustainable network of community-based health care clinics for the poor and uninsured.

Louisiana partnered with the Louisiana Public Health Institute, a nonprofit organization, to administer the federal funds. Together, the state and the institute identified sixty-eight public and nonprofit clinics that were eligible to receive the funds.

These clinics reflected the diversity of the clinics that have evolved in underserved communities throughout the United States, including federally qualified health centers, faith-based organizations, free community-based clinics, public-sector and university-affiliated primary care clinics, and behavioral health clinics.<sup>14</sup> The clinics in New Orleans also faced many of the same barriers to organizational improvement as did other safety-net health systems. These barriers included funding and staffing shortages; populations of patients who were poorly educated and hard to reach; overreliance on costly emergency department care; and poor continuity in care for chronic disease.

Prescient local leaders recognized the opportunity to encourage a communitywide transformation in primary care delivery. They developed a quality improvement program that included setting minimum quality standards—such as establishing a quality assurance program, twenty-four-hour phone response in urgent cases, same-day appointments, and implementing and assessing the use of clinical evidence-based guidelines. The Louisiana Public Health Institute<sup>15</sup> also included a voluntary incentive program to provide substantial bonus payments during 2008–09 to clinics that achieved recog-

nition as patient-centered medical homes by the National Committee on Quality Assurance.

The Louisiana Public Health Institute provided the New Orleans clinics with technical assistance, such as advice on building data collection and reporting capacity to maintain compliance with federal reporting requirements. On behalf of the clinics, the institute also paid the fees required to apply for National Committee on Quality Assurance recognition. The individual clinics could decide what other forms of formal support—such as nurse care managers, practice coaches, interoperable electronic health records, and regular feedback of data on patient outcomes—they wanted to seek, according to their own organizational goals and priorities.

This observational study constitutes the only external evaluation to date of New Orleans's communitywide implementation of medical home capability and processes in the region's safety net. Although the circumstances that created the impetus for change in New Orleans were exceptional, this natural experiment in primary care redesign offers a unique window on one community's efforts to create a medical home model across a diverse array of safety-net clinics.

## Study Data And Methods

**DATA SOURCES** This study used data from two sources. First, staff at the Louisiana Public Health Institute conducted semiannual telephone surveys with the leader of each clinic site between June 2008 and June 2010. The survey instrument—created by our research team at the University of California, San Francisco—adapted items and indexes from the National Study of Small and Medium Physician Practices and the 2008 National Committee on Quality Assurance Physician Practice Connection Patient-Centered Medical Home survey tools.<sup>16,17</sup> The instrument included questions about organizational characteristics and clinical processes to improve access, quality and safety, and care coordination and integration (see Online Appendix Table 2).<sup>18</sup> The respondents held positions such as medical director, clinic director, and nurse manager. Thus, they were knowledgeable about clinical processes and quality improvement efforts at each clinic.

The second data source was administrative reports collected from all participating clinics. Audited data on organizational characteristics, numbers of patients, and numbers of patient encounters were extracted from administrative records collected by the Louisiana Public Health Institute.<sup>19</sup>

Three types of service delivery sites—primary care sites, behavioral health sites, and dental

sites—received federal grant funding. All of the sites were located in Jefferson, Orleans, Plaquemines, or St. Bernard Parish, but the number of sites in operation varied during the study period. There were sixty-eight sites in June 2008, eighty-three in December 2008 and June 2009, ninety-three in December 2009, and eighty-nine in June 2010.

At the end of the study period, the principal investigator from the University of California, San Francisco, validated each clinic's survey data during a one-hour telephone call with its current leader. For the purposes of this analysis, we included only primary care clinics with validated data.

Validation was completed for fifty of the fifty-six primary care clinics surveyed, resulting in a final response rate of 89.3 percent. Thirty-two of the fifty clinics operated during all survey periods; eighteen operated during two or more survey periods. Five clinics closed during the study period. (For details of clinic participation and response rate for each semiannual study period, see Online Appendix Table 1).<sup>18</sup>

**DOMAINS AND CHARACTERISTICS OF A PATIENT-CENTERED MEDICAL HOME** We examined the following three components of the patient-centered medical home: enhanced access; quality and safety; and care coordination and integration. Each component encompasses a number of domains or specific activities, such as providing office hours during weekends for the component of enhanced access (Exhibit 1). Consistent with prior research, we assigned each clinic one point per domain if it satisfied a minimum threshold for that activity.<sup>16,20</sup>

We summed each clinic's points to create an index for each of the three medical home components. We also created an overall medical home index reflecting the sum of these indexes. Sites treating both adult and pediatric patients could achieve a maximum of twenty-seven points. For sites treating only pediatric patients, we excluded the breast cancer screening domain. Therefore, such sites could achieve a maximum of only twenty-six points.

The scores on each index were standardized to provide a distribution ranging from 0 to 100. Details of the index's construction are available in the online Appendix.<sup>18</sup> Exhibit 2 shows the characteristics of the clinics participating in June 2008 and in June 2010.

**LIMITATIONS** The study has several limitations. First, we were able to obtain validated survey data on only fifty of the fifty-six primary care clinics that received federal grant funding. The six primary care clinics without validated data were privately owned, served both adult and pediatric patients, were in fixed locations with

one exception, and had a slightly smaller average number of patients seen per year than the sites for which we did have validated data.

It is possible that clinics that did not respond to our requests for data validation may also have implemented fewer medical home processes, leading us to overestimate average progress across the community. In addition, validation calls occurred well after the last period of data collection, a fact that could have influenced the respondents' recall in some cases.

Second, most data were self-reported, which means that respondents might have over-reported their use of medical home processes. To minimize this risk, all data were validated, and our comparisons focus on changes within clinics over time. In addition, during the study period our team made site visits to eight organizations that were collectively responsible for twenty-eight of the primary care clinics in the study.

Third, baseline survey data was collected in June 2008, after the first distribution of federal funds to clinics based on patient volume, but prior to the initial deadlines for participation in the quality improvement program. If our observations had begun prior to the arrival of any federal funding, we might have observed even greater practice changes during the study.

The observational nature of this study did not allow us to conduct a differential causal analysis of primary care transformation across the community. Primary care practice changes of primary interest in the study took place in the aftermath of Hurricane Katrina and coincided with the influx of substantial federal funding, the closing of the city's main public hospital, and other developments. Clinics' operating budgets varied in their dependence on federal funding.

Political and economic changes in the community and the increasing awareness of medical homes at the national level all could have had an impact on what we observed. Anecdotally, local leaders and providers emphasized the importance of the federal funding in allowing the study sites to redesign their clinical processes while expanding services.

Our analysis also failed to capture all components of the medical home model. Four principles of the model—having a personal physician, team-based care, whole-person orientation, and payment reform—were not covered by our data. Because most of the clinics had very small numbers of providers, we did not measure personal physician or team-based care. We did not provide measures of whole-person orientation because we limited our analyses to sites providing primary care clinics only.

Although the final principle, payment reform,

## EXHIBIT 1

## Domains Of The Patient-Centered Medical Home

Component	Domain
Enhanced access	<ul style="list-style-type: none"> <li>Is open weekdays before 8:00 a.m. and after 5:00 p.m.</li> <li>Is open on weekends</li> <li>Provides telephone advice on clinical issues during office hours</li> <li>Responds to urgent phone calls after hours and on weekends</li> <li>Routinely collects data on access to care</li> <li>Provides translation services</li> <li>Communicates with patients by e-mail</li> <li>Has interactive website</li> </ul>
Quality and safety	<ul style="list-style-type: none"> <li>Participates in one or more quality improvement collaboratives</li> <li>Uses rapid-cycle quality improvement strategy</li> <li>Provides performance feedback to providers</li> <li>Alerts providers to abnormal test results</li> <li>Has patient educators for chronic illness care and detection</li> <li>Sends patients reminders about chronic illness care</li> <li>Gives providers data on patient experiences</li> <li>Uses guideline-based reminders for providers</li> <li>Provides tobacco cessation resources to patients</li> <li>Uses organized systems to improve rates of breast cancer screening<sup>a</sup></li> </ul>
Care coordination and integration	<ul style="list-style-type: none"> <li>Uses electronic health record</li> <li>Is able to retrieve laboratory and imaging reports electronically</li> <li>Shares electronic health record with hospital</li> <li>Has electronic access to clinical information from hospitals, emergency departments, and specialists</li> <li>Alerts providers when patients are hospitalized</li> <li>Uses order tracking system</li> <li>Has electronic prescribing</li> <li>Uses chronic disease registries</li> <li>Uses care managers for chronic diseases</li> </ul>

**SOURCE** University of California, San Francisco, semiannual telephone surveys of clinic leaders at sites participating in the New Orleans Primary Care Access and Stabilization Grant, June 2008–June 2010. <sup>a</sup>Not asked of pediatrics clinics.

was not captured in our clinic-level medical home index, we discuss the importance of the principle in our assessment of the community-wide payment incentives program evaluated by our team.

### Study Results

Below we present descriptive statistics on organizational characteristics, such as ownership and affiliation, for all fifty participating primary care clinics at baseline, in June 2008. Then we show trends in the medical home components we investigated—enhanced access, quality and safety, and care coordination and integration—and the overall medical home index over the five waves of semiannual data collection.

We grouped the clinics into three categories of medical home innovation, based on their final (June 2010) medical home index score. The categories were as follows: high (66–100 points); moderate (40–65 points); and low (39 or fewer points).

Clinics with high or moderate final scores were also grouped by trajectory of change, based on

their scores between June 2008 and June 2010. These trajectory categories were as follows: improved (an increase of more than 15 points) and maintained (an increase of 0–14 points). Trends were assessed by plotting mean values over time and then confirming the trend using generalized estimating equation methods. We present regression results for all fifty primary care clinics, including the eighteen that were in operation for only part of the survey period. There were no significant differences in our findings when we excluded these eighteen clinics.

**THE PRIMARY CARE SAFETY NET IN NEW ORLEANS** As in most safety-net systems, the primary care clinics participating in this federal grant program were diverse (Exhibit 2). Across sites, 77.8 percent had five or fewer full-time-equivalent primary care providers. On average, 67.2 percent of adults and 6.7 percent of children served by the clinics were uninsured. In addition, the clinics' patients were racially and ethnically diverse, with 8.6 percent of them having limited English proficiency.<sup>21,22</sup> At the start of the study period, many of the clinics had no infrastructure in place for appointment scheduling, billing, or

data collection and reporting.

The number of primary care clinics increased over the study period from thirty-six to forty-five, peaking at forty-eight in December 2009 (data not shown). Most of the new clinics were private, nonprofit, and not affiliated with academic or faith-based institutions. Across the system, the median number of full-time-equivalent providers decreased from 1.95 to 1.50 physicians, and from 1.00 to 0.50 nurse practitioners, over the study period.

The number of unduplicated patients—that is, the sum of individual patients with at least one encounter at each site served in each six-month period—rose from 58,600 to 84,800 during the study period, but it then decreased to 74,800 (Exhibit 3). The number of encounters per patient showed a similar trend. Declining patient numbers and encounters toward the end of the study period may reflect reductions in federal funding as the end of hurricane relief funds drew near.

**IMPLEMENTATION OF MEDICAL HOME PROCESSES** The trend in the overall medical home index over the study period was positive and significant, with a peak score of 52.7 points (on a scale of 0 to 100) in December 2009 (Exhibit 4). On average, medical home scores improved by 3.33 points during each six-month period. On a cumulative basis, this would average out to a 16.65-point increase on the medical home index, which ranges from 0 to 100, over the entire study period. On the whole, quality and safety scores—reflecting the use of guideline-based reminders for providers and systems to improve breast cancer screening and tobacco cessation—increased early in the observation period. Care coordination and integration scores—reflecting clinical processes such as sharing information with specialists and hospitals, as well as the use of electronic health records and chronic disease registries—improved somewhat later.

Scores for enhanced access also improved during the study period, largely reflecting improvements in responding to urgent phone calls after hours and on weekends (which was part of the mandatory quality improvement program), the increased use of e-mail between providers and patients, and improvements in access to translation services.

There was also evidence of a significant declining trend at the end of the study period for mean scores on all indexes. Between December 2009 and June 2010, there was a 1.9 percentage point decrease in the overall patient-centered medical home index and a 3.3 percentage point decrease in the enhanced access index, with decreases of 1.4 percentage points and 1.2 percentage points

**EXHIBIT 2**

**Characteristics Of Primary Care Clinics Participating In The New Orleans Primary Care Access And Stabilization Grant, 2008 And 2010**

Characteristic	June 2008 (36 sites)	June 2010 (45 sites)
<b>OWNERSHIP</b>		
Government-owned	10 (27.8%)	8 (17.8%)
Private/nonprofit status	26 (72.2)	37 (82.2)
<b>AFFILIATION</b>		
Faith-based	5 (13.9%)	7 (15.6%)
Academic	10 (27.8)	9 (20.0)
Other	21 (58.3)	29 (64.4)
<b>POPULATION SERVED</b>		
Adults and children	20 (55.6%)	22 (48.9%)
Adults only	1 (2.8)	3 (6.7)
Children only	10 (27.8)	14 (31.1)
Other <sup>a</sup>	5 (13.9)	6 (13.3)
<b>SITE LOCATION</b>		
Fixed	34 (94.4%)	38 (84.4%)
Mobile	2 (5.6)	7 (15.6)
<b>OTHER CHARACTERISTICS</b>		
Federally qualified health center status	3 (8.3%)	7 (15.6%)
NCQA recognition	0 (0)	28 (62.2)
Level 1	— <sup>b</sup>	17 (37.8)
Level 2	— <sup>b</sup>	1 (2.2)
Level 3	— <sup>b</sup>	10 (22.2)
Total FTE providers, mean (median)	3.61 (2.87)	3.67 (2.33)
Medical doctors	2.10 (1.95)	2.04 (1.50)
Nurse practitioners	1.11 (1.00)	0.99 (0.50)
Psychiatrists	0.06 (0.00)	0.34 (0.00)
Licensed clinical social workers	0.26 (0.00)	0.26 (0.00)
Psychologists	0.02 (0.00)	0.03 (0.00)
Licensed professional counselors	0.06 (0.00)	0.01 (0.00)
Payer mix, mean percentage of encounters		
Private	12.4	11.0
Medicaid	29.6	40.3
Medicare	4.5	5.1
Uninsured	51.2	41.9
Unknown	1.9	0.6
Limited English proficiency, mean percentage of unduplicated patients <sup>c</sup>	8.6	18.4

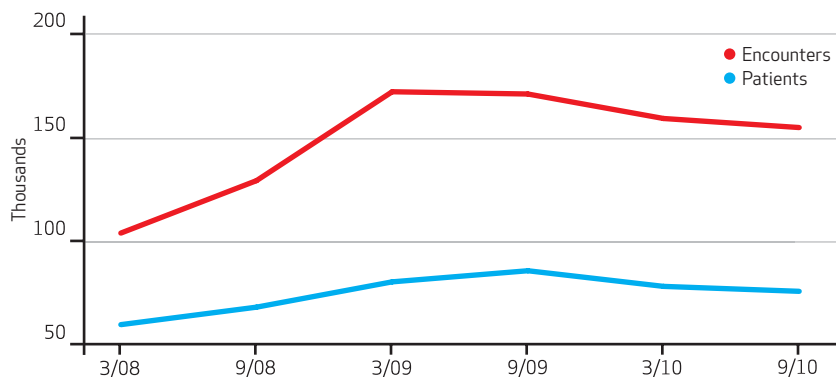
**SOURCES** Validated data from University of California, San Francisco, semiannual telephone surveys of clinic leaders at sites participating in the New Orleans Primary Care Access and Stabilization Grant and administrative data for the grant. **NOTES** Except where indicated, results are number (percent) of clinics. Percentages may not sum to 100 because of rounding. NCQA is National Committee for Quality Assurance. FTE is full-time equivalent. <sup>a</sup>Prenatal and postnatal care and care for HIV/AIDS populations, homeless populations, and musicians. <sup>b</sup>None of the clinics had NCQA recognition in 2008. <sup>c</sup>Unduplicated patients are patients with at least one encounter at each site during the specified time period.

in the quality and safety and care coordination and integration indexes, respectively.

Exhibit 5 illustrates the variation in the overall medical home index scores. There was a fairly even distribution of clinics across the three categories of high, moderate, and low final score. Some clinics (those characterized as high final score improved) achieved high final medical home scores by steadily implementing many new medical home processes, while others (high

## EXHIBIT 3

**Changes In Numbers Of Patients And Encounters At Primary Care Clinics Participating In The New Orleans Primary Care Access And Stabilization Grant, 2008-10**



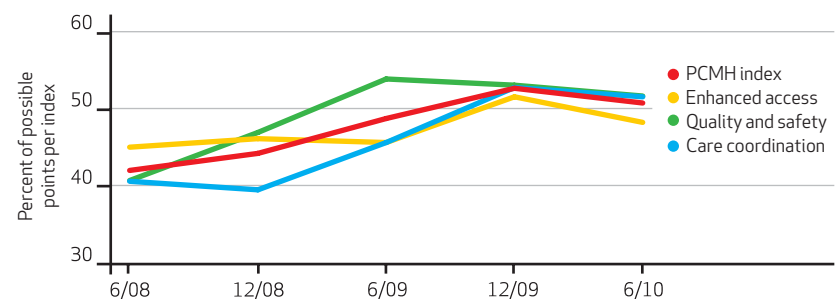
**SOURCE** Louisiana Public Health Institute administrative data for the New Orleans Primary Care Access and Stabilization Grant.

final score, maintained) had already implemented many medical home processes at the start of the study period and maintained their efforts over time.

The majority of clinics with final scores in the high and moderate range were affiliated with an academic or faith-based institution. The mean number of full-time-equivalent primary care providers was significantly higher at clinics that achieved high final scores than at other clinics.

## EXHIBIT 4

**Changes In Use Of Medical Home Processes At Primary Care Clinics Participating In The New Orleans Primary Care Access And Stabilization Grant, 2008-10**



**SOURCE** Validated data from University of California, San Francisco, semiannual telephone surveys of clinic leaders at sites participating in the New Orleans Primary Care Access and Stabilization Grant.

**NOTES** The data presented are unadjusted mean scores for each wave of data collection. We used a generalized estimating equation model to fit the trend of mean scores, adjusting for correlations between adjacent waves of data. The trend in each of four independent variables—the overall patient-centered medical home (PCMH) index and the three subindexes, for enhanced access, quality and safety, and care coordination and integration, each of which had possible scores of 0 to 100—was represented by indicator variables for waves 2 (ending in December 2008) through 5 (ending in June 2010). In each analysis, the incremental change from wave 1 (ending in June 2008) to wave 5 was positive and highly significant ( $p < 0.001$ ). The generalized estimating equation analysis provides a test of the significance of the regression coefficient for trend. The results were robust with respect to alternative assumptions about the serial correlations between the error terms in the regression equation. We also examined the change from baseline to the wave 5 follow-up using a generalized estimating equation model with indicator variables. The results were consistent with those found using the simpler linear model.

All of the clinics that achieved high final scores or improved significantly had more than 50 percent of their patient encounters with uninsured patients (data not shown).

## Discussion

This study provides the first observational data on implementation of medical home processes in safety-net primary care clinics across an entire community. In this natural experiment, the New Orleans community successfully expanded access to primary care services throughout the region's safety net. This expansion was shown by an increased number of primary care clinics, an increased number of patient encounters, and an increased number of patients served.

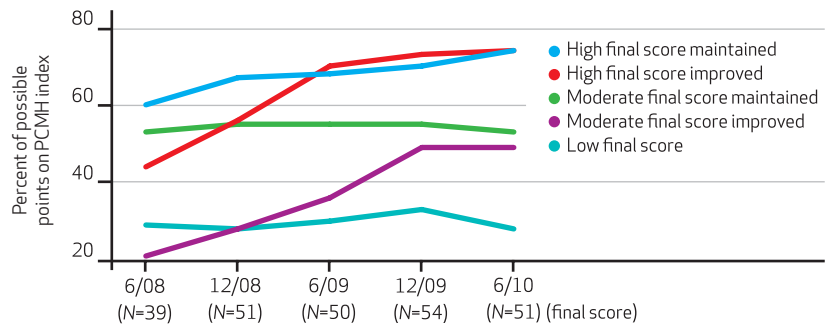
In addition, the clinics made substantial overall progress in implementing care processes that are consistent with the model of the patient-centered medical home. We observed improvements in the use of medical home processes intended to improve access, quality and safety, and care coordination and integration. It is notable that national surveys not confined to safety-net clinics suggest that most primary care practices have not yet reached the level of performance that we observed at the peak among clinics in New Orleans.<sup>16,20</sup>

However, we also observed declines in all of these areas toward the end of the study. At this point in time, clinics were no longer eligible for bonus payments from the federal grant for redesign efforts and were desperately concerned about the pending loss of federal funding for patient care services. We observed that nearly all of the clinics shifted their priorities during this period, as they turned from growth and transformation to consolidation and survival. This change was manifested in declining patient counts and numbers of encounters. In addition, we observed that clinic leaders began investigating new funding sources, particularly the state's Medicaid plan, which was undergoing a redesign in anticipation of health reform.

We also found wide variation across clinics in New Orleans, with some clinics achieving little or no change in spite of financial supports and incentives to do so. Finally, across clinics, there was substantial variation in the overall medical home scores achieved and in the trajectories of change over time. All of these results underscore the reality that primary care transformation is a long process and is difficult both to achieve and to sustain.<sup>23</sup>

Some process improvements, such as replacing paper-based tracking systems for specialist referrals with electronic systems, may be relatively easy to implement but require sustained



**EXHIBIT 5****Patient-Centered Medical Home (PCMH) Scores At Primary Care Clinics Participating In The New Orleans Primary Care Access And Stabilization Grant, 2008–10**

**SOURCE** Validated data from University of California, San Francisco, semiannual telephone surveys of clinic leaders at sites participating in the New Orleans Primary Care Access and Stabilization Grant. **NOTES** Each line represents a category of clinics according to final score and trajectory of change, explained in the text. Seven clinics had high final score, maintained. Ten had high final score, improved. Another ten had moderate final score, maintained. Eight had moderate final score, improved. Fifteen had low final score.

attention. Others require collaborative efforts beyond the clinic, involving community entities such as clinical laboratories and pharmacies, specialist offices, emergency departments, and hospitals. Still other aspects of the patient-centered medical home, such as improvements in the patient’s experience of care, are equally important but were not measured by our study.

We cannot draw definitive conclusions about causality. However, our finding that the clinics that achieved the highest final medical home scores had significantly more providers and were affiliated with larger entities, such as academic or faith-based institutions, is consistent with prior research demonstrating an association between greater use of patient-centered medical home processes and larger size (number of physicians) and ownership by a larger entity such as a hospital or health maintenance organization. These factors are likely to indicate the availability of additional resources.<sup>20,24</sup> But smaller clinics may have other advantages that are not measured here, such as a greater focus on the patient’s experience of care.<sup>22</sup>

### Role Of Federal Funding

The Primary Care Access and Stabilization Grant provided substantial funding to increase access to health care services and sustain the primary care safety-net clinics in New Orleans. Under a uniform quality improvement framework, incentives were designed to drive clinical improvements, and minimum quality standards were set that aligned with incentives for bonus payments.

Throughout the fieldwork for this study, clinic leaders told us that the nature of the global payments and the flexibility offered by the federal grant gave many clinics the necessary flexibility to implement change. However, the funds also had some important restrictions that limited transformation efforts. For example, funds could not be used to pay for existing services, build new buildings, or invest in health information technology. Other communities serving low-income, uninsured patients in a fragmented safety-net health care delivery system may experience similar problems with the medical home model, given insufficient data on the target population, insufficient health information technology, lack of specialty services, and time-limited grant funding with a variety of restrictions.

### Policy Implications

The New Orleans experience provides insight into the question of whether, and how, widespread medical home implementation can occur across an entire community. This is relevant to

federally qualified health centers in the United States, as well as to the Centers for Medicare and Medicaid Services and state-led Medicaid demonstrations currently under way.<sup>4,25,26</sup>

Our results suggest that financial incentives (such as the bonus payments for high performance or quality improvement offered in New Orleans) can reward change leaders for taking early actions, provide a business case for sustaining change, and stimulate action in clinics poised for change.<sup>27</sup> But our results also suggest that clinics’ responses to market and policy forces depend on internal capabilities.

As we saw in New Orleans, not every clinic will be able and ready to implement change, regardless of the incentive, and some clinics will be slow to implement change because of insufficient organizational capacity. The Louisiana Public Health Institute provided New Orleans clinics with minimum quality standards and some technical assistance, such as advice on building data collection and reporting capacity to maintain compliance with federal reporting requirements. However, the institute did not provide other forms of formal support—such as nurse care managers, practice coaches, interoperable electronic health records, or regular feedback of data on patient outcomes—that are now being tested in medical home demonstrations in other areas of the country.<sup>4</sup>

More information is needed about the optimal type, source, and extent of technical assistance needed to transform clinical operations in a diverse array of clinics across a community. For example, the Affordable Care Act creates primary care extension centers—similar to agricultural

extension centers for small farmers—that are intended to provide community-based assistance with primary care redesign, especially to small independent practices.<sup>28–30</sup>

Our study highlights the trade-offs between innovation and sustainability, especially in safety-net clinics. In New Orleans, a federal grant provided a steady and reliable source of funding with relatively few restrictions that gave many clinics the opportunity to innovate. As the federal funding drew to an end, nearly all of the clinics shifted their energies toward sustaining the innovations—and, perhaps more important, sustaining the clinics themselves. Federal funding had covered a majority of patient services in some clinics, and substantial percentages of their patients remained uninsured. Implementing new models of care became a second-tier priority, after simply keeping the clinic doors open. To sustain change, payment reforms need to be robust and stable.

Health reforms must also be accompanied by capacity building beyond the level of the practice. For example, care coordination and integration are essential elements of high-quality health care that require building bridges across parts of the health care system that are traditionally isolated and poorly integrated. In New Orleans, improvements in care coordination lagged behind improvements in quality and safety.

Many aspects of care coordination are driven by electronic health record functionality and health information exchange. Incentive payments are now available—through the Health Information Technology for Economic and Clinical Health (HITECH) provisions of the American Recovery and Reinvestment Act of 2009—to encourage Medicaid providers across the country to adopt and use electronic health records for improved coordination and integration. These

payments are expected to drive the meaningful use of electronic health records, but small practices are likely to require substantial technical assistance.<sup>31</sup>

New Orleans was recently designated as one of seventeen “Beacon Communities” by the Office of the National Coordinator for Health Information Technology. As such, it is receiving substantial funding over three years to build and strengthen health information technology infrastructure and exchange capabilities across the community.<sup>32</sup> Results from our study underscore the need for these types of virtual links between medical homes, hospitals, and specialists to improve the coordination of care. However, our results also highlight how challenging it is to implement fundamental change across diverse health care settings in a period of two to three years, even with a large federal investment.

The case of New Orleans shows that success is possible, but not guaranteed. Given the right blend of external incentives and internal capacities, safety-net primary care clinics can implement evidence-based care processes and sustain their achievement over time. Despite substantial financial incentives—and a high-profile communitywide effort—no clinic in our study implemented every medical home process, and several clinics made only minimal progress.

Some observers may attribute New Orleans’s substantial progress to the unique opportunity to start anew in the tragic aftermath of a hurricane and flood. Other observers will recognize the profound challenges faced by a community in the wake of such devastation. Whatever one’s view, New Orleans provides valuable lessons for others on the journey to transform the way that health care is delivered and paid for in every US community.<sup>33,34</sup> ■

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## NOTES

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In this month's *Health Affairs*, Diane Rittenhouse and coauthors report on their evaluation of the transformation of clinics in New Orleans and vicinity into medical homes following the devastation of Hurricane Katrina in 2005. The authors found that the clinics made substantial progress in implementing new clinical processes, although there was wide variation among them—and performance declined as the federal funding that had spurred the transformation dried up. The authors write that the experience underscores the facts that payment to support medical home transformation must be robust and stable, and clinics need to be fully integrated into the broader health care system to improve overall coordination of care.

Rittenhouse was the principal investigator for the research project evaluating the infusion of \$100 million in federal funds in New Orleans to design and deliver care in a new primary care–based health system following Hurricane Katrina. She is an associate professor in the Department of Family and Community Medicine and at the Philip R. Lee Institute for Health Policy Studies at the University of California, San Francisco (UCSF). She focuses on primary care, health care organization, health services research, health policy, Medicaid, and underserved populations.

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